

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555

REPORT DATE: 8/12/22

Revision: B

|                                                                                                                                                                                                                                                                                        |                                                            |                                                                                                                                                |                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <b>TITLE:</b>                                                                                                                                                                                                                                                                          | Design Validation Testing of Series V Prototype Connectors | <b>Project No.</b>                                                                                                                             | 0798196                                  |
|                                                                                                                                                                                                                                                                                        |                                                            | <b>CLT</b>                                                                                                                                     | Various                                  |
| <b>Distribution:</b> Test Lab, D. Cogswell, J Ryder, M. Simonds, R. Barnes, J. Paul, H.Kyaw, M.Blachowicz                                                                                                                                                                              |                                                            |                                                                                                                                                |                                          |
| <b>Purpose:</b> Evaluate performance of the newly developed Series V connector prototypes.                                                                                                                                                                                             |                                                            |                                                                                                                                                |                                          |
| <b>Conclusions:</b> The series V prototype are capable of meeting MIL-DTL-38999 performance requirements.                                                                                                                                                                              |                                                            |                                                                                                                                                |                                          |
| <b>Recommendations:</b> Series V connectors meet the performance of the criteria described within; they can move into production.                                                                                                                                                      |                                                            |                                                                                                                                                |                                          |
| <b>References:</b> CLTs-10580, 10615, 10617, 10630, 10654, and 10696, MIL-DTL-38999 RevM w/Amd2.                                                                                                                                                                                       |                                                            |                                                                                                                                                |                                          |
| <b>Summary:</b><br>Size 8, 10, 12 and 14 Series V prototype connectors were subjected to DVT testing to prove out the performance of their design. The following table shows an outline of the different tests performed organized by the work order submitted to Amphenol's test lab. |                                                            |                                                                                                                                                |                                          |
| <b>CLT</b>                                                                                                                                                                                                                                                                             | <b>Connectors Tested</b>                                   | <b>Description</b>                                                                                                                             | <b>Results</b>                           |
| 10580                                                                                                                                                                                                                                                                                  | Series V Size 10                                           | DVT Testing, 4 Test Groups focusing on O-Ring seal, mechanical strength, ratcheting mechanism, Increased DWV test voltages and ice resistance. | All connectors tested meet requirements. |
| 10615                                                                                                                                                                                                                                                                                  | Series V Size 8                                            | DVT Testing, 2 Test Groups focusing on O-Ring seal, mechanical strength, ratcheting mechanism, vibration requirements.                         | All connectors tested meet requirements. |
| 10617                                                                                                                                                                                                                                                                                  | Series V Size 10                                           | DVT Testing, 1G <sup>2</sup> Random Vibration at 200°C.                                                                                        | All connectors tested meet requirements. |
| 10630                                                                                                                                                                                                                                                                                  | Series V Size 12                                           | DVT Testing, 2 Test Groups focusing on O-Ring seal, mechanical strength, ratcheting mechanism.                                                 | All connectors tested meet requirements. |
| 10654                                                                                                                                                                                                                                                                                  | Series V Size 14                                           | DVT Testing, 2 Test Groups focusing on O-Ring seal, mechanical strength, ratcheting mechanism.                                                 | All connectors tested meet requirements. |
| 10696                                                                                                                                                                                                                                                                                  | Series V Size 12 & 14                                      | DVT Testing, 1G <sup>2</sup> Random Vibration at 200°C.                                                                                        | All connectors tested meet requirements. |

|                               |                                 |                   |
|-------------------------------|---------------------------------|-------------------|
| <b>Prepared:</b> D. Cogswell  | <b>Approved:</b> <i>R. Gaur</i> | <b>Witnessed:</b> |
| <b>Date:</b> 08/12/2022       | <b>Date:</b> 2/7/23             | <b>Date:</b>      |
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## Summary (continued):

### CLT 10580 Group 1 Test Outline:

The group 1 test sequence was developed to test the performance of the mating thread, the main joint sealing O-ring, the ratcheting mechanism and the thinner wall sections of size 10 series V connectors.

### CLT 10580 Group 1 Test Samples

The following samples were subjected to the tests of group one. All samples were prepared with nominal OD wire.

| Sample ID | AAO Part Number | Size-Arrangement | Connector Type    | Sample Plating Finish |
|-----------|-----------------|------------------|-------------------|-----------------------|
| 1R1       | XPF2-782702-99S | 10-99            | Wall Mount Recpt. | Black Zinc Nickel     |
| 1P1       | XPF2-782712-99P | 10-99            | Straight Plug     | Black Zinc Nickel     |
| 1R2       | XPF2-782702-99S | 10-99            | Wall Mount Recpt. | Black Zinc Nickel     |
| 1P2       | XPF2-782712-99P | 10-99            | Straight Plug     | Black Zinc Nickel     |

### CLT 10580 Group 1 Tests Performed

| Group 1 - 2 Mated Pairs, Samples to be prepped with nominal od wire.          | Requirements MIL-DTL-38999 Section | Test Section MIL-DTL-38999 | Qty Tested/ Qty Passed | Date of Test |
|-------------------------------------------------------------------------------|------------------------------------|----------------------------|------------------------|--------------|
| Visual Exam                                                                   | 3.1, 3.3, 3.4, 3.5, 3.52 and 3.53  | 4.5.1                      | 2 Pair/2 Pair          | 8/23/21      |
| Temperature cycling                                                           | 3.8                                | 4.5.4                      | 2 Pair/2 Pair          | 8/24/21      |
| Coupling Torque - measure, no p/f                                             | 3.11                               | 4.5.7                      | 2 Pair/2 Pair          | 8/25/21      |
| Shell to Shell Conductivity                                                   | 3.29                               | 4.5.25                     | 2 Pair/2 Pair          | 8/25/21      |
| Durability                                                                    | 3.12                               | 4.5.8                      | 2 Pair/2 Pair          | 8/26/21      |
| Coupling Torque - measure, no p/f                                             | 3.11                               | 4.5.7                      | 2 Pair/2 Pair          | 8/26/21      |
| Shell to Shell Conductivity                                                   | 3.29                               | 4.5.25                     | 2 Pair/2 Pair          | 8/26/21      |
| Altitude Immersion - Test of O-Ring seal, rear of connectors shall be potted. | 3.13                               | 4.5.9                      | 2 Pair/2 Pair          | 9/10/21      |
| IR, While in salt water solution                                              | 3.14.1                             | 4.5.10.1                   | 2 Pair/2 Pair          | 9/10/21      |
| DWV, While in salt water solution                                             | 3.15                               | 4.5.11.1                   | 2 Pair/2 Pair          | 9/10/21      |
| Electrical Engagement                                                         | 3.19                               | 4.5.15                     | 2 Pair/ 2 Pair         | 9/24/21      |
| External Bending Moment - 38999 Series II Torques                             | 3.2                                | 4.5.16                     | 2 Pair/ 2 Pair         | 9/24/21      |
| Post Test Exam                                                                | 3.52 and 3.53                      | 4.5.49                     | 2 Pair/ 2 Pair         | 9/24/21      |

See Appendix A for Detailed Data Sheets.

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
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## Summary (continued):

### CLT 10580 Group 2 Test Outline:

The primary focus of the group 2 test sequence was to determine the capabilities of the Series V size 10 connector prototypes to survive the MIL-DTL-38999 series III sine vibration and 5G<sup>2</sup> random vibration test profiles.

### CLT 10580 Group 2 Test Samples:

| Sample ID | AAO Part Number | Arrangement | Connector Type    | Finish                   |
|-----------|-----------------|-------------|-------------------|--------------------------|
| 2R1       | XPF2-782702-35P | 10-35       | Wall Mount Recpt. | Black Zinc Nickel        |
| 2P1       | XPF2-782712-35S | 10-35       | Straight Plug     | Black Zinc Nickel        |
| 2R2       | XPF2-782702-35P | 10-35       | Wall Mount Recpt. | Black Zinc Nickel        |
| 2P2       | XPF2-782712-35S | 10-35       | Straight Plug     | Black Zinc Nickel        |
| 2R3       | XPFH-782702-99P | 10-99       | Wall Mount Recpt. | Thick Electroless Nickel |
| 2P3       | XPFH-782712-99S | 10-99       | Straight Plug     | Thick Electroless Nickel |

### CLT 10580 Group 2 Test Summary:

| Group 2                                      | Requirements<br>MIL-DTL-38999<br>Section | Procedure<br>MIL-DTL-38999<br>Section | Qty Tested/<br>Qty Passed | Date of Test     |
|----------------------------------------------|------------------------------------------|---------------------------------------|---------------------------|------------------|
| Visual Exam                                  | 3.1, 3.3, 3.4, 3.5,<br>3.52 and 3.53     | 4.5.1                                 | 3 Pair/3 Pair             | 8/23/21          |
| Temperature Cycling                          | 3.8                                      | 4.5.4                                 | 3 Pair/3 Pair             | 8/24/21, 8/31/21 |
| Coupling Torque - measure, no p/f            | 3.11                                     | 4.5.7                                 | 3 Pair/3 Pair             | 8/25/21, 9/1/21  |
| Shell to Shell Conductivity                  | 3.29                                     | 4.5.25                                | 3 Pair/3 Pair             | 8/25/21, 9/1/21  |
| Durability                                   | 3.12                                     | 4.5.8                                 | 3 Pair/3 Pair             | 8/26/21, 9/1/21  |
| Accessory Thread Strength                    | 3.26                                     | 4.5.22                                | 3 Pair/3 Pair             | 9/1/21           |
| Vibration Sine Profile (1 Sample)            | 3.27                                     | 4.5.23.2.1                            | 1 Pair/1 Pair             | 9/9/21           |
| Vibration 5G <sup>2</sup> Random (2 Samples) | 3.27                                     | 4.5.23.2.4                            | 2 Pair/2 Pair             | 9/15/21          |
| Coupling Torque - measure, no p/f            | 3.11                                     | 4.5.7                                 | 3 Pair/3 Pair             | 9/30/21          |
| Post Test Examination                        | 3.52 and 3.53                            | 4.5.49                                | 3 Pair/3 Pair             | 9/30/21          |

See Datasheets in Appendix B for Details.

|                               |           |            |
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**Summary (continued):****CLT 10580 Group 3 Test Outline:**

The focus of group 3 was to test the dielectric withstanding voltage of the Series V Connectors at sea level and at 75,000 ft. altitude.

**CLT 10580 Group 3 Test Samples**

| Sample ID | AAO Part Number | Arrangement | Connector Type    | Finish            |
|-----------|-----------------|-------------|-------------------|-------------------|
| 3R1       | XPF2-782702-35S | 10-35       | Wall Mount Recpt. | Black Zinc-Nickel |
| 3P1       | XPF2-782712-35P | 10-35       | Straight Plug     | Black Zinc-Nickel |
| 3R2       | XPF2-782702-35S | 10-35       | Wall Mount Recpt. | Black Zinc-Nickel |
| 3P2       | XPF2-782712-35P | 10-35       | Straight Plug     | Black Zinc-Nickel |
| 3R3       | XPF2-782702-35S | 10-35       | Wall Mount Recpt. | Black Zinc-Nickel |
| 3P3       | XPF2-782712-35P | 10-35       | Straight Plug     | Black Zinc-Nickel |
| 3R4       | XPF2-782702-35P | 10-35       | Wall Mount Recpt. | Black Zinc-Nickel |
| 3P4       | XPF2-782712-35S | 10-35       | Straight Plug     | Black Zinc-Nickel |
| 3R5       | XPF2-782702-35P | 10-35       | Wall Mount Recpt. | Black Zinc-Nickel |
| 3P5       | XPF2-782712-35S | 10-35       | Straight Plug     | Black Zinc-Nickel |

**CLT 10580 Group 3 Test Summary**

| Group 3 IR-DWV Group - 5 Mated Pairs of Connectors | Requirements MIL-DTL-38999 Section | Procedure MIL-DTL-38999 Section | QTY Tested/QTY Passed | Date of Test |
|----------------------------------------------------|------------------------------------|---------------------------------|-----------------------|--------------|
| Visual Exam                                        | 3.1, 3.3, 3.4, 3.5, 3.52 and 3.53  | 4.5.1                           | 5 Pair/5 Pair         | 8/24/21      |
| Temperature Cycling (only 10-35 arrangement)       | 3.8                                | 4.5.4                           | 5 Pair /5 Pair        | 8/26/21      |
| DWV at Sea Level (mated)                           | 3.15                               | 4.5.11.1                        | 5 Pair /5 Pair        | 8/27/21      |
| DWV at 75,000 ft. testing                          | 3.15                               | 4.5.11.2                        | 5 Pair /5 Pair        | 9/24/21      |

See Appendix C for detailed datasheets.

Prepared: D. Cogswell

Approved:

Witnessed:

Date: 08/12/2022

Date:

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## Summary (continued):

### CLT 10580 Group 4 Test Outline:

This group was solely to test ice resistance of the connectors.

### CLT 10580 Group 4 Test Samples

| Sample ID | AAO Part Number | Arrangement | Connector Type    | Finish            |
|-----------|-----------------|-------------|-------------------|-------------------|
| 4R1       | XPFS-782702-99S | 10-99       | Wall Mount Recpt. | Black Zinc Nickel |
| 4P1       | XPFS-782712-99P | 10-99       | Straight Plug     | Black Zinc Nickel |
| 4R2       | XPFS-782702-99P | 10-99       | Wall Mount Recpt. | Black Zinc Nickel |
| 4P2       | XPFS-782712-99S | 10-99       | Straight Plug     | Black Zinc Nickel |

### CLT 10580 Group 4 Test Summary

| Group 4                              | Requirements<br>MIL-DTL-38999<br>Section | Procedure<br>MIL-DTL-<br>38999 Section | Qty Tested/<br>Qty Passed | Date<br>of Test |
|--------------------------------------|------------------------------------------|----------------------------------------|---------------------------|-----------------|
| Visual and mechanical<br>examination | 3.1, 3.3, 3.4, 3.5,<br>3.52 and 3.53     | 4.5.1                                  | 2 Pair/2 Pair             | 8/26/21         |
| Ice resistance                       | 3.44                                     | 4.5.40                                 | 2 Pair/2 Pair             | 8/26/21         |
| Post Test Examination                | 3.52 and 3.53                            | 4.5.49                                 | 2 Pair/2 Pair             | 8/26/21         |

See Appendix D for detailed datasheets.

|                               |           |            |
|-------------------------------|-----------|------------|
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## Summary (continued):

### CLT 10615 Group 1 Test Outline:

The group 1 test sequence was developed to test the performance of the mating thread, the main joint sealing O-ring, the ratcheting mechanism and the thinner wall sections of size 8 series V connectors.

### CLT 10615 Group 1 Test Samples

The following samples were subjected to the tests of group one. All samples were prepared with nominal OD wire.

| Sample ID | AAO Part Number | Arrangement | Connector Type    | Finish             |
|-----------|-----------------|-------------|-------------------|--------------------|
| 1R1       | XPFH-782701-35P | 8-35        | Wall Mount Recpt. | Electroless Nickel |
| 1P1       | XPFH-782711-35S | 8-35        | Straight Plug     | Electroless Nickel |
| 1R2       | XPFH-782701-35P | 8-35        | Wall Mount Recpt. | Electroless Nickel |
| 1P2       | XPFH-782711-35S | 8-35        | Straight Plug     | Electroless Nickel |

### CLT 10615 Group 1 Tests Performed

| Group 1 - 2 Mated Pairs, Samples to be prepped with nominal od wire.          | Requirements MIL-DTL-38999 Section | Test Section MIL-DTL-38999 | Qty Tested/ Qty Passed | Date of Test |
|-------------------------------------------------------------------------------|------------------------------------|----------------------------|------------------------|--------------|
| Visual Exam                                                                   | 3.1, 3.3, 3.4, 3.5, 3.52 and 3.53  | 4.5.1                      | 2 Pair/2 Pair          | 11/4/21      |
| Temperature cycling                                                           | 3.8                                | 4.5.4                      | 2 Pair/2 Pair          | 11/4/21      |
| Coupling Torque - measure, no p/f                                             | 3.11                               | 4.5.7                      | 2 Pair/2 Pair          | 1/31/22      |
| Shell to Shell Conductivity                                                   | 3.29                               | 4.5.25                     | 2 Pair/2 Pair          | 1/31/22      |
| Durability                                                                    | 3.12                               | 4.5.8                      | 2 Pair/2 Pair          | 2/1/22       |
| Coupling Torque - measure, no p/f                                             | 3.11                               | 4.5.7                      | 2 Pair/2 Pair          | 2/15/22      |
| Shell to Shell Conductivity                                                   | 3.29                               | 4.5.25                     | 2 Pair/2 Pair          | 2/15/22      |
| Altitude Immersion - Test of O-Ring seal, rear of connectors shall be potted. | 3.13                               | 4.5.9                      | 2 Pair/2 Pair          | 2/24/22      |
| IR, While in salt water solution                                              | 3.14.1                             | 4.5.10.1                   | 2 Pair/2 Pair          | 2/24/22      |
| DWV, While in salt water solution                                             | 3.15                               | 4.5.11.1                   | 2 Pair/2 Pair          | 2/24/22      |
| Electrical Engagement                                                         | 3.19                               | 4.5.15                     | 2 Pair/ 2 Pair         | 3/2/22       |
| External Bending Moment - 38999 Series II Torques                             | 3.2                                | 4.5.16                     | 2 Pair/ 2 Pair         | 8/11/22      |
| Post Test Exam                                                                | 3.52 and 3.53                      | 4.5.49                     | 2 Pair/ 2 Pair         | 8/11/22      |

See Datasheets in Appendix E for Details.

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
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**Summary (continued):****CLT 10615 Group 2 Test Outline:**

The primary focus of the CLT 10615 group 2 test sequence was to determine the capabilities of the Series V Size 8 connector prototypes to survive the MIL-DTL-38999 series III 1G<sup>2</sup> vibration at 200°C test requirements.

**CLT 10615 Group 2 Test Samples:**

| Sample ID | AAO Part Number | Size-Arrangement | Connector Type    | Finish             |
|-----------|-----------------|------------------|-------------------|--------------------|
| 2R1       | XPFH-782701-35P | 8-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P1       | XPFH-782711-35S | 8-35             | Straight Plug     | Electroless Nickel |
| 2R2       | XPFH-782701-35P | 8-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P2       | XPFH-782711-35S | 8-35             | Straight Plug     | Electroless Nickel |
| 2R3       | XPFH-782701-35P | 8-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P3       | XPFH-782711-35S | 8-35             | Straight Plug     | Electroless Nickel |
| 2R4       | XPFH-782701-98P | 8-98             | Wall Mount Recpt. | Electroless Nickel |
| 2P4       | XPFH-782711-98S | 8-98             | Straight Plug     | Electroless Nickel |
| 2R5       | XPFH-782701-98P | 8-98             | Wall Mount Recpt. | Electroless Nickel |
| 2P5       | XPFH-782711-98S | 8-98             | Straight Plug     | Electroless Nickel |
| 2R6       | XPFH-782701-98P | 8-98             | Wall Mount Recpt. | Electroless Nickel |
| 2P6       | XPFH-782711-98S | 8-98             | Straight Plug     | Electroless Nickel |

**CLT 10615 Group 2 Test Summary:**

| Group 2                                  | Requirements MIL-DTL-38999 Section | Procedure MIL-DTL-38999 Section | Qty Tested/ Qty Passed | Date of Test     |
|------------------------------------------|------------------------------------|---------------------------------|------------------------|------------------|
| Visual Exam                              | 3.1, 3.3, 3.4, 3.5, 3.52 and 3.53  | 4.5.1                           | 6 Pair/6 Pair          | 11/4/21          |
| Temperature Cycling                      | 3.8                                | 4.5.4                           | 6 Pair/6 Pair          | 11/4/21          |
| Coupling Torque - measure, no p/f        | 3.11                               | 4.5.7                           | 6 Pair/6 Pair          | 11/8/21          |
| Shell to Shell Conductivity              | 3.29                               | 4.5.25                          | 6 Pair/6 Pair          | 11/8/21          |
| Durability                               | 3.12                               | 4.5.8                           | 6 Pair/6 Pair          | 11/12/21, 1/7/22 |
| Coupling Torque - measure, no p/f        | 3.11                               | 4.5.7                           | 6 Pair/6 Pair          | 1/26/22          |
| Shell to Shell Conductivity              | 3.29                               | 4.5.25                          | 6 Pair/6 Pair          | 1/26/22, 2/15/22 |
| Accessory Thread Strength                | 3.26                               | 4.5.32                          | 6 Pair/6 Pair          | 1/26/22, 2/15/22 |
| Vibration 1G <sup>2</sup> Random @ 200°C | 3.27                               | 4.5.23.2.4                      | 2 Pair/2 Pair          | 1/31/22          |
| Coupling Torque - measure, no p/f        | 3.11                               | 4.5.7                           | 2 Pair/2 Pair          | 2/1/22           |
| Shell to Shell Conductivity              | 3.29                               | 4.5.25                          | 2 Pair/2 Pair          | 2/1/22           |
| Post Test Examination                    | 3.52 and 3.53                      | 4.5.49                          | 2 Pair/2 Pair          | 2/1/22           |

**See Datasheets in Appendix F for Details.**

|                               |                  |                   |
|-------------------------------|------------------|-------------------|
| <b>Prepared:</b> D. Cogswell  | <b>Approved:</b> | <b>Witnessed:</b> |
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## Summary (continued):

### CLT 10617 Group 2 Test Outline:

The primary focus of the group 2B test sequence was to determine the capabilities of the Series V Size 10 connector prototypes to survive the MIL-DTL-38999 series III 1G<sup>2</sup> vibration at 200°C test requirements. These were submitted to the test lab under CLT 10617.

### CLT 10617 Group 2 Test Samples:

| Sample ID | AAO Part Number | Arrangement | Connector Type    | Finish             |
|-----------|-----------------|-------------|-------------------|--------------------|
| 2R1       | XPFH-782702-35P | 10-35       | Wall Mount Recpt. | Electroless Nickel |
| 2P1       | XPFH-782712-35S | 10-35       | Straight Plug     | Electroless Nickel |
| 2R2       | XPFH-782702-35P | 10-35       | Wall Mount Recpt. | Electroless Nickel |
| 2P2       | XPFH-782712-35S | 10-35       | Straight Plug     | Electroless Nickel |

### CLT 10617 Group 2 Test Summary:

| Group 2                                  | Requirements<br>MIL-DTL-38999<br>Section | Procedure<br>MIL-DTL-<br>38999 Section | Qty Tested/<br>Qty Passed | Date of Test |
|------------------------------------------|------------------------------------------|----------------------------------------|---------------------------|--------------|
| Visual Exam                              | 3.1, 3.3, 3.4, 3.5,<br>3.52 and 3.53     | 4.5.1                                  | 2 Pair/2 Pair             | 10/27/21     |
| Temperature Cycling                      | 3.8                                      | 4.5.4                                  | 2 Pair/2 Pair             | 10/27/21     |
| Coupling Torque - measure, no p/f        | 3.11                                     | 4.5.7                                  | 2 Pair/2 Pair             | 10/27/21     |
| Shell to Shell Conductivity              | 3.29                                     | 4.5.25                                 | 2 Pair/2 Pair             | 10/27/21     |
| Durability                               | 3.12                                     | 4.5.8                                  | 2 Pair/2 Pair             | 10/28/21     |
| Vibration 1G <sup>2</sup> Random @ 200°C | 3.27                                     | 4.5.23.2.4                             | 2 Pair/2 Pair             | 1/28/22      |
| Coupling Torque - measure, no p/f        | 3.11                                     | 4.5.7                                  | 2 Pair/2 Pair             | 2/2/22       |
| Shell to Shell Conductivity              | 3.29                                     | 4.5.25                                 | 2 Pair/2 Pair             | 2/2/22       |
| Post Test Examination                    | 3.52 and 3.53                            | 4.5.49                                 | 2 Pair/2 Pair             | 2/2/22       |

See Datasheets in Appendix G for Details.

|                               |           |            |
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## Summary (continued):

### **CLT 10630 Group 1 Test Outline:**

The group 1 test sequence was developed to test the performance of the mating thread, the main joint sealing O-ring, the ratcheting mechanism and the thinner wall sections of size 12 series V connectors.

### **CLT 10630 Group 1 Test Samples**

The following samples were subjected to the tests of group one. All samples were prepared with nominal OD wire.

| Sample ID | AAO Part Number | Arrangement | Connector Type    | Finish             |
|-----------|-----------------|-------------|-------------------|--------------------|
| 1R1       | XPFH-782703-35P | 12-35       | Wall Mount Recpt. | Electroless Nickel |
| 1P1       | XPFH-782713-35S | 12-35       | Straight Plug     | Electroless Nickel |
| 1R2       | XPFH-782703-35P | 12-35       | Wall Mount Recpt. | Electroless Nickel |
| 1P2       | XPFH-782713-35S | 12-35       | Straight Plug     | Electroless Nickel |

### **CLT 10630 Group 1 Tests Performed**

| Group 1 - 2 Mated Pairs, Samples to be prepped with nominal od wire.          | Requirements MIL-DTL-38999 Section | Test Section MIL-DTL-38999 | Qty Tested/ Qty Passed | Date of Test |
|-------------------------------------------------------------------------------|------------------------------------|----------------------------|------------------------|--------------|
| Visual Exam                                                                   | 3.1, 3.3, 3.4, 3.5, 3.52 and 3.53  | 4.5.1                      | 2 Pair/2 Pair          | 12/22/21     |
| Temperature cycling                                                           | 3.8                                | 4.5.4                      | 2 Pair/2 Pair          | 12/22/21     |
| Coupling Torque - measure, no p/f                                             | 3.11                               | 4.5.7                      | 2 Pair/2 Pair          | 12/23/21     |
| Shell to Shell Conductivity                                                   | 3.29                               | 4.5.25                     | 2 Pair/2 Pair          | 12/23/21     |
| Durability                                                                    | 3.12                               | 4.5.8                      | 2 Pair/2 Pair          | 2/7/22       |
| Coupling Torque - measure, no p/f                                             | 3.11                               | 4.5.7                      | 2 Pair/2 Pair          | 2/15/22      |
| Shell to Shell Conductivity                                                   | 3.29                               | 4.5.25                     | 2 Pair/2 Pair          | 2/15/22      |
| Altitude Immersion - Test of O-Ring seal, rear of connectors shall be potted. | 3.13                               | 4.5.9                      | 2 Pair/2 Pair          | 2/24/22      |
| IR, While in salt water solution                                              | 3.14.1                             | 4.5.10.1                   | 2 Pair/2 Pair          | 2/24/22      |
| DWV, While in salt water solution                                             | 3.15                               | 4.5.11.1                   | 2 Pair/2 Pair          | 2/24/22      |
| Electrical Engagement                                                         | 3.19                               | 4.5.15                     | 2 Pair/ 2 Pair         | 3/2/22       |
| External Bending Moment - 38999 Series II Torques                             | 3.2                                | 4.5.16                     | 2 Pair/ 2 Pair         | 8/11/22      |
| Post Test Exam                                                                | 3.52 and 3.53                      | 4.5.49                     | 2 Pair/ 2 Pair         | 8/11/22      |

**See Datasheets in Appendix H for Details.**

|                               |                  |                   |
|-------------------------------|------------------|-------------------|
| <b>Prepared:</b> D. Cogswell  | <b>Approved:</b> | <b>Witnessed:</b> |
| <b>Date:</b> 08/12/2022       | <b>Date:</b>     | <b>Date:</b>      |
| Use of this data is unlimited |                  |                   |

# ENGINEERING SUMMARY REPORT

REPORT NO. ESR-55555

REPORT DATE: 8/12/22

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

Revision: B

**Summary (continued):****CLT 10630 Group 2 Test Outline:**

The primary focus of the CLT 10630 group 2 test sequence was to determine the capabilities of the Series V Size 12 connector prototypes to make it through rear accessory durability and rear accessory thread strength.

**CLT 10630 Group 2 Test Samples:**

| Sample ID | AAO Part Number | Size- Arrangement | Connector Type    | Finish             |
|-----------|-----------------|-------------------|-------------------|--------------------|
| 2R1       | XPFH-782703-35P | 12-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P1       | XPFH-782713-35S | 12-35             | Straight Plug     | Electroless Nickel |
| 2R2       | XPFH-782703-35P | 12-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P2       | XPFH-782713-35S | 12-35             | Straight Plug     | Electroless Nickel |
| 2R3       | XPFH-782703-35P | 12-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P3       | XPFH-782713-35S | 12-35             | Straight Plug     | Electroless Nickel |
| 2R4       | XPFH-782703-35P | 12-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P4       | XPFH-782713-35S | 12-35             | Straight Plug     | Electroless Nickel |
| 2R5       | XPFH-782703-35P | 12-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P5       | XPFH-782713-35S | 12-35             | Straight Plug     | Electroless Nickel |
| 2R6       | XPFH-782703-35P | 12-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P6       | XPFH-782713-35S | 12-35             | Straight Plug     | Electroless Nickel |

**CLT 10630 Group 2 Test Summary:**

| Group 2                           | Requirements MIL-DTL-38999 Section | Procedure MIL-DTL-38999 Section | Qty Tested/ Qty Passed | Date of Test      |
|-----------------------------------|------------------------------------|---------------------------------|------------------------|-------------------|
| Visual Exam                       | 3.1, 3.3, 3.4, 3.5, 3.52 and 3.53  | 4.5.1                           | 6 Pair/6 Pair          | 12/21/21          |
| Temperature Cycling               | 3.8                                | 4.5.4                           | 6 Pair/6 Pair          | 12/22/21          |
| Coupling Torque - measure, no p/f | 3.11                               | 4.5.7                           | 6 Pair/6 Pair          | 12/23/21          |
| Shell to Shell Conductivity       | 3.29                               | 4.5.25                          | 6 Pair/6 Pair          | 12/23/21          |
| Durability                        | 3.12                               | 4.5.8                           | 6 Pair/6 Pair          | 1/19,1/20,1/23/22 |
| Accessory Thread Strength         | 3.26                               | 4.5.32                          | 6 Pair/6 Pair          | 1/23/22           |

See Datasheets in Appendix I for Details.

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

# ENGINEERING SUMMARY REPORT

REPORT NO. ESR-55555

REPORT DATE: 8/12/22

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

Revision: B

## Summary (continued):

### **CLT 10654 Group 1 Test Outline:**

The group 1 test sequence was developed to test the performance of the mating thread, the main joint sealing O-ring, the ratcheting mechanism and the thinner wall sections of size 14 series V connectors.

### **CLT 10654 Group 1 Test Samples**

The following samples were subjected to the tests of group one. All samples were prepared with nominal OD wire.

| Sample ID | AAO Part Number | Arrangement | Connector Type    | Finish             |
|-----------|-----------------|-------------|-------------------|--------------------|
| 1R1       | XPFH-782704-35P | 14-35       | Wall Mount Recpt. | Electroless Nickel |
| 1P1       | XPFH-782714-35S | 14-35       | Straight Plug     | Electroless Nickel |
| 1R2       | XPFH-782704-35P | 14-35       | Wall Mount Recpt. | Electroless Nickel |
| 1P2       | XPFH-782714-35S | 14-35       | Straight Plug     | Electroless Nickel |

### **CLT 10654 Group 1 Tests Performed**

| Group 1 - 2 Mated Pairs, Samples to be prepped with nominal od wire.          | Requirements MIL-DTL-38999 Section | Test Section MIL-DTL-38999 | Qty Tested/ Qty Passed | Date of Test |
|-------------------------------------------------------------------------------|------------------------------------|----------------------------|------------------------|--------------|
| Visual Exam                                                                   | 3.1, 3.3, 3.4, 3.5, 3.52 and 3.53  | 4.5.1                      | 2 Pair/2 Pair          | 2/18/22      |
| Temperature cycling                                                           | 3.8                                | 4.5.4                      | 2 Pair/2 Pair          | 2/18/22      |
| Coupling Torque - measure, no p/f                                             | 3.11                               | 4.5.7                      | 2 Pair/2 Pair          | 2/21/22      |
| Shell to Shell Conductivity                                                   | 3.29                               | 4.5.25                     | 2 Pair/2 Pair          | 2/21/22      |
| Durability                                                                    | 3.12                               | 4.5.8                      | 2 Pair/2 Pair          | 2/21/22      |
| Coupling Torque - measure, no p/f                                             | 3.11                               | 4.5.7                      | 2 Pair/2 Pair          | 2/22/22      |
| Shell to Shell Conductivity                                                   | 3.29                               | 4.5.25                     | 2 Pair/2 Pair          | 2/22/22      |
| Altitude Immersion - Test of O-Ring seal, rear of connectors shall be potted. | 3.13                               | 4.5.9                      | 2 Pair/2 Pair          | 2/24/22      |
| IR, While in salt water solution                                              | 3.14.1                             | 4.5.10.1                   | 2 Pair/2 Pair          | 2/24/22      |
| DWV, While in salt water solution                                             | 3.15                               | 4.5.11.1                   | 2 Pair/2 Pair          | 2/24/22      |
| Electrical Engagement                                                         | 3.19                               | 4.5.15                     | 2 Pair/ 2 Pair         | 3/2/22       |
| External Bending Moment - 38999 Series II Torques                             | 3.2                                | 4.5.16                     | 2 Pair/ 2 Pair         | 8/11/22      |
| Post Test Exam                                                                | 3.52 and 3.53                      | 4.5.49                     | 2 Pair/ 2 Pair         | 8/12/22      |

See Datasheets in Appendix J for Details.

|                               |                  |                   |
|-------------------------------|------------------|-------------------|
| <b>Prepared:</b> D. Cogswell  | <b>Approved:</b> | <b>Witnessed:</b> |
| <b>Date:</b> 08/12/2022       | <b>Date:</b>     | <b>Date:</b>      |
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# ENGINEERING SUMMARY REPORT

REPORT NO. ESR-55555

REPORT DATE: 8/12/22

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

Revision: B

**Summary (continued):****CLT 10654 Group 2 Test Outline:**

The primary focus of the CLT 10654 group 2 test sequence was to determine the capabilities of the Series V Size 14 connector prototypes to make it through rear accessory durability and rear accessory thread strength.

**CLT 10654 Group 2 Test Samples:**

| Sample ID | AAO Part Number | Size- Arrangement | Connector Type    | Finish             |
|-----------|-----------------|-------------------|-------------------|--------------------|
| 2R1       | XPFH-782704-35P | 14-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P1       | XPFH-782714-35S | 14-35             | Straight Plug     | Electroless Nickel |
| 2R2       | XPFH-782704-35P | 14-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P2       | XPFH-782714-35S | 14-35             | Straight Plug     | Electroless Nickel |
| 2R3       | XPFH-782704-35P | 14-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P3       | XPFH-782714-35S | 14-35             | Straight Plug     | Electroless Nickel |
| 2R4       | XPFH-782704-35P | 14-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P4       | XPFH-782714-35S | 14-35             | Straight Plug     | Electroless Nickel |
| 2R5       | XPFH-782704-35P | 14-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P5       | XPFH-782714-35S | 14-35             | Straight Plug     | Electroless Nickel |
| 2R6       | XPFH-782704-35P | 14-35             | Wall Mount Recpt. | Electroless Nickel |
| 2P6       | XPFH-782714-35S | 14-35             | Straight Plug     | Electroless Nickel |

**CLT 10654 Group 2 Test Summary:**

| Group 2                           | Requirements MIL-DTL-38999 Section | Procedure MIL-DTL-38999 Section | Qty Tested/ Qty Passed | Date of Test                         |
|-----------------------------------|------------------------------------|---------------------------------|------------------------|--------------------------------------|
| Visual Exam                       | 3.1, 3.3, 3.4, 3.5, 3.52 and 3.53  | 4.5.1                           | 6 Pair/6 Pair          | 1/24/22                              |
| Temperature Cycling               | 3.8                                | 4.5.4                           | 6 Pair/6 Pair          | 1/24/22                              |
| Coupling Torque - measure, no p/f | 3.11                               | 4.5.7                           | 6 Pair/6 Pair          | 1/25/22                              |
| Shell to Shell Conductivity       | 3.29                               | 4.5.25                          | 6 Pair/6 Pair          | 1/26/22, 2/16/22                     |
| Durability                        | 3.12                               | 4.5.8                           | 6 Pair/6 Pair          | 1/26/22, 2/16/22<br>2/18/22, 2/21/22 |
| Accessory Thread Strength         | 3.26                               | 4.5.32                          | 6 Pair/6 Pair          | 1/26/22, 2/22/22                     |

**See Datasheets in Appendix K for Details.**

|                               |                  |                   |
|-------------------------------|------------------|-------------------|
| <b>Prepared:</b> D. Cogswell  | <b>Approved:</b> | <b>Witnessed:</b> |
| <b>Date:</b> 08/12/2022       | <b>Date:</b>     | <b>Date:</b>      |
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# ENGINEERING SUMMARY REPORT

REPORT NO. ESR-55555

REPORT DATE: 8/12/22

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

Revision: B

**Summary (continued):****CLT 10696 Test Outline:**

The primary focus of the CLT 10696 test sequence was to determine the capabilities of the Series V Size 12 and 14 series V connectors through vibration and shock testing.

**CLT 10696 Test Samples:**

| Sample ID | AAO Part Number | Size-Arrangement | Connector Type    | Finish             |
|-----------|-----------------|------------------|-------------------|--------------------|
| R1        | XPFH-782703-35P | 12-35            | Wall Mount Recpt. | Electroless Nickel |
| P1        | XPFH-782713-35S | 12-35            | Straight Plug     | Electroless Nickel |
| R2        | XPFH-782703-35P | 12-35            | Wall Mount Recpt. | Electroless Nickel |
| P2        | XPFH-782713-35S | 12-35            | Straight Plug     | Electroless Nickel |
| R3        | XPFH-782704-35P | 14-35            | Wall Mount Recpt. | Electroless Nickel |
| P3        | XPFH-782714-35S | 14-35            | Straight Plug     | Electroless Nickel |
| R4        | XPFH-782704-35P | 14-35            | Wall Mount Recpt. | Electroless Nickel |
| P4        | XPFH-782714-35S | 14-35            | Straight Plug     | Electroless Nickel |

**CLT 10696 Test Summary:**

| Group 2                                  | Requirements<br>MIL-DTL-38999<br>Section | Procedure<br>MIL-DTL-<br>38999 Section | Qty Tested/<br>Qty Passed | Date of Test     |
|------------------------------------------|------------------------------------------|----------------------------------------|---------------------------|------------------|
| Visual Exam                              | 3.1, 3.3, 3.4, 3.5,<br>3.52 and 3.53     | 4.5.1                                  | 4 Pair/4 Pair             | 4/27/22          |
| Temperature Cycling                      | 3.8                                      | 4.5.4                                  | 4 Pair/4 Pair             | 4/27/22, 4/28/22 |
| Coupling Torque - measure, no p/f        | 3.11                                     | 4.5.7                                  | 4 Pair/4 Pair             | 4/28/22          |
| Shell to Shell Conductivity              | 3.29                                     | 4.5.25                                 | 4 Pair/4 Pair             | 4/29/22          |
| Durability                               | 3.12                                     | 4.5.8                                  | 4 Pair/4 Pair             | 4/29/22, 5/2/22  |
| Accessory Thread Strength                | 3.26                                     | 4.5.32                                 | 4 Pair/4 Pair             | 5/4/22           |
| Vibration 1G <sup>2</sup> Random @ 200°C | 3.27                                     | 4.5.23.2.4                             | 4 Pair/4 Pair             | 6/6-6/7/22       |
| Shock                                    | 3.28                                     | 4.5.24                                 | 4 Pair/4 Pair             | 6/8/22           |
| Coupling Torque - measure, no p/f        | 3.11                                     | 4.5.7                                  | 4 Pair/4 Pair             | 6/16/22          |
| Shell to Shell Conductivity              | 3.29                                     | 4.5.25                                 | 4 Pair/4 Pair             | 6/17/22          |
| Post Test Examination                    | 3.52 and 3.53                            | 4.5.49                                 | 4 Pair/4 Pair             | 6/17/22          |

See Datasheets in Appendix L for Details.

|                               |                  |                   |
|-------------------------------|------------------|-------------------|
| <b>Prepared:</b> D. Cogswell  | <b>Approved:</b> | <b>Witnessed:</b> |
| <b>Date:</b> 08/12/2022       | <b>Date:</b>     | <b>Date:</b>      |
| Use of this data is unlimited |                  |                   |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX A CLT 10580 Group 1 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

|                                                                                                        |  |                      |                 |                    |                     |
|--------------------------------------------------------------------------------------------------------|--|----------------------|-----------------|--------------------|---------------------|
| Amphenol Corporation                                                                                   |  | Aerospace Operations |                 | Sidney, N.Y. 13838 |                     |
| Visual Examination of Test Samples                                                                     |  | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10580       | Report<br>ESR-55555 |
| Test Equipment                                                                                         |  | Cal Date             | Due Date        | Technician         | Date                |
|                                                                                                        |  |                      |                 | D.Cogswell         | 8/23/2021           |
|                                                                                                        |  |                      |                 |                    |                     |
|                                                                                                        |  |                      |                 |                    |                     |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects |  |                      |                 |                    |                     |
|                                                                                                        |  |                      |                 |                    |                     |

| Sample ID | AAO Part Number | Lot Number | Observations          | Status |
|-----------|-----------------|------------|-----------------------|--------|
| 1R1       | XPF2-782702-99S | NONE       | No Observable defects | Accept |
| 1P1       | XPF2-782712-99P | NONE       | No Observable defects | Accept |
| 1R2       | XPF2-782702-99P | NONE       | No Observable defects | Accept |
| 1P2       | XPF2-782712-99S | NONE       | No Observable defects | Accept |

| Amphenol Corporation                  |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|---------------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycling                   | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10580 | Report<br>ESR-55555 |
| Test Equipment                        | Cal Date         | Due Date             | Technician   | Date                |
| Blue M. Thermal Shock Chamber IC-4648 | 7/20/2021        | 6/19/2022            | D.Cogswell   | 8/24/2021           |
|                                       |                  |                      |              |                     |
|                                       |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +175°C +5°C, -0°C. Connectors were tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 0.6 lbs) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations | Status |
|-----------|-----------------|--------------|--------|
| 1R1       | XPF2-782702-99S | None         | ACCEPT |
| 1P1       | XPF2-782712-99P | None         | ACCEPT |
| 1R2       | XPF2-782702-99P | None         | ACCEPT |
| 1P2       | XPF2-782712-99S | None         | ACCEPT |

| Amphenol Corporation  |  | Aerospace Operations |                 | Sidney, N.Y. 13838 |                     |
|-----------------------|--|----------------------|-----------------|--------------------|---------------------|
| Coupling & Uncoupling |  | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10580       | Report<br>ESR-55555 |
| Test Equipment        |  | Cal Date             | Due Date        | Technician         | Date                |
| Torquemeter PG-2738   |  | 7/28/2021            | 10/27/2021      | D.Cogswell         | 8/25/2021           |
|                       |  |                      |                 |                    |                     |
|                       |  |                      |                 |                    |                     |

**Coupling Torque** per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.

| Sample ID | Maximum<br>Coupling<br>Torque (in*lbF) | Uncoupling Torque |               | Coupling<br>Torque (in*lbF) | Uncoupling<br>Torque (in*lbF) | Status |
|-----------|----------------------------------------|-------------------|---------------|-----------------------------|-------------------------------|--------|
|           |                                        | Min. (in*lbF)     | Max. (in*lbF) |                             |                               |        |
| 1R1       | Record Data Only no Pass/Fail          |                   |               | 2.4                         | 2.8                           | Accept |
| 1P1       |                                        |                   |               |                             |                               |        |
| 1R2       | Record Data Only no Pass/Fail          |                   |               | 2.4                         | 2.6                           | Accept |
| 1P2       |                                        |                   |               |                             |                               |        |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |           |
|-----------------------------|------------------|----------------------|--------------|---------------------|-----------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10580 | Report<br>ESR-55555 |           |
| Test Equipment              | Cal Date         | Due Date             | Technician   |                     | Date      |
| Multi-Meter IC-4008         | 1/22/2021        | 12/21/2021           | D.Cogswell   |                     | 8/25/2021 |
| Power Supply IC-3991        | 5/3/2021         | 10/2/2021            |              |                     |           |
|                             |                  |                      |              |                     |           |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
5.0 millivolts.

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status | Date Tested |
|------------------|-----------------|---------------------|--------|-------------|
| 1P1 mated to 1R1 | XPF2-782702-99S | 4.2                 | Accept | 8/25/2021   |
|                  | XPF2-782712-99P |                     |        |             |
| 1P2 mated to 1R2 | XPF2-782702-99P | 4.9                 | Accept | 8/25/2021   |
|                  | XPF2-782712-99S |                     |        |             |

|                                                                                                                                                                                                                                                                                                                                                |                  |                      |              |                     |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--------------|---------------------|---------|
| Amphenol Corporation                                                                                                                                                                                                                                                                                                                           |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |         |
| Durability                                                                                                                                                                                                                                                                                                                                     | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10580 | Report<br>ESR-55555 |         |
| Test Equipment                                                                                                                                                                                                                                                                                                                                 | Cal Date         | Due Date             | Technician   | Date                |         |
|                                                                                                                                                                                                                                                                                                                                                |                  |                      | D.Cogswell   | 8/26/2021           |         |
|                                                                                                                                                                                                                                                                                                                                                |                  |                      |              |                     |         |
|                                                                                                                                                                                                                                                                                                                                                |                  |                      |              |                     |         |
| <p><b>Durability</b> test per MIL-DTL-38999 paragraphs 3.12 and 4.5.8.1. Connectors were mated and unmated 500 cycles at a rate not to exceed 300 cycles per hour. After conditioning, connectors were visually examined for damage detrimental to the operation of the connector, and connectors shall meet subsequent test requirements.</p> |                  |                      |              |                     |         |
| Sample ID                                                                                                                                                                                                                                                                                                                                      | MIL Part Number  | Shell Size           | Total Cycles | Date                | Results |
| 1R1                                                                                                                                                                                                                                                                                                                                            | XPF2-782702-99S  | 10                   | 500          | 8/25/2021           | Accept  |
| 1P1                                                                                                                                                                                                                                                                                                                                            | XPF2-782712-99P  |                      |              |                     |         |
| 1R2                                                                                                                                                                                                                                                                                                                                            | XPF2-782702-99P  | 10                   | 500          | 8/25/2021           | Accept  |
| 1P2                                                                                                                                                                                                                                                                                                                                            | XPF2-782712-99S  |                      |              |                     |         |
| <p>All durability testing was done manually at a rate of approximately 300 Cycles per hour</p>                                                                                                                                                                                                                                                 |                  |                      |              |                     |         |

| Amphenol Corporation                                                                                                                                                                                                                                               |                                        | Aerospace Operations |               | Sidney, N.Y. 13838          |                               |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|---------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling                                                                                                                                                                                                                                              | Temp.<br>Ambient                       | R.H.<br>Ambient      | CLT<br>10580  | Report<br>ESR-55555         |                               |        |
| Test Equipment                                                                                                                                                                                                                                                     | Cal Date                               | Due Date             | Technician    | Date                        |                               |        |
| Torque Meter PG-2738                                                                                                                                                                                                                                               | 7/28/2021                              | 10/27/2021           | D.Cogswell    | 8/26/2021                   |                               |        |
|                                                                                                                                                                                                                                                                    |                                        |                      |               |                             |                               |        |
|                                                                                                                                                                                                                                                                    |                                        |                      |               |                             |                               |        |
| <p><b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.</p> |                                        |                      |               |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                          | Maximum<br>Coupling<br>Torque (in*lbf) | Uncoupling Torque    |               | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |
|                                                                                                                                                                                                                                                                    |                                        | Min. (in*lbf)        | Max. (in*lbf) |                             |                               |        |
| 1R1                                                                                                                                                                                                                                                                | Record Data Only no Pass/Fail          |                      |               | 1.3                         | 2.8                           | Accept |
| 1P1                                                                                                                                                                                                                                                                |                                        |                      |               |                             |                               |        |
| 1R2                                                                                                                                                                                                                                                                | Record Data Only no Pass/Fail          |                      |               | 2.0                         | 4.4                           | Accept |
| 1P2                                                                                                                                                                                                                                                                |                                        |                      |               |                             |                               |        |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|-----------------------------|------------------|----------------------|--------------|---------------------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10580 | Report<br>ESR-55555 |
| Test Equipment              | Cal Date         | Due Date             | Technician   | Date                |
| Multi-Meter IC-4008         | 1/22/2021        | 12/21/2021           | D.Cogswell   | 8/26/2021           |
| Power Supply IC-3991        | 5/3/2021         | 10/2/2021            |              |                     |
|                             |                  |                      |              |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
5.0 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status | Date Tested |
|------------------|-----------------|---------------------|--------|-------------|
| 1P1 mated to 1R1 | XPF2-782702-99S | 1.6                 | Accept | 8/26/2021   |
|                  | XPF2-782712-99P |                     |        |             |
| 1P2 mated to 1R2 | XPF2-782702-99S | 1.2                 | Accept | 8/26/2021   |
|                  | XPF2-782712-99P |                     |        |             |

| Amphenol Corporation   |                  | Aerospace Operations |                          | Sidney, N.Y. 13838  |  |
|------------------------|------------------|----------------------|--------------------------|---------------------|--|
| Altitude Immersion     | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10580             | Report<br>ESR-55555 |  |
| Test Equipment         | Cal Date         | Due Date             | Technician               | Date                |  |
| IC-5286 Pressure Gauge | 8/3/2021         | 7/3/2022             | Kimberly Edwards (25953) | 9/10/2021           |  |
| F-0993 Clock           | 8/3/2021         | 2/1/2022             |                          |                     |  |
|                        |                  |                      |                          |                     |  |

**Altitude Immersion**, Mated connectors were tested in accordance with test procedure EIA-364-03. The following details applied:

- All wire ends were located within the chamber and exposed to the chamber atmosphere but not submerged or sealed.
- At the end of the third cycle, while the connectors are still submerged in the solution, the insulation resistance at ambient temperature shall be measured as specified in 4.5.10.1, and the dielectric withstanding voltage test shall be performed as specified in 4.5.11.1. Connectors were potted for this test since the area of concentration is the O-Ring interfacial seal.

| Sample ID | AAO Part Number | Time 1st Cycle<br>Start/Finish | Time 2nd Cycle<br>Start/Finish | Time 3rd Cycle<br>Start/Finish | Status* |
|-----------|-----------------|--------------------------------|--------------------------------|--------------------------------|---------|
| 1R1       | XPF2-782702-99S | 11:00 /<br>11:30am             | 12:10 /<br>12:40 pm            | 1:20/<br>1:50pm                | Accept  |
| 1P1       | XPF2-782712-99P |                                |                                |                                | Accept  |
| 1R2       | XPF2-782702-99S |                                |                                |                                | Accept  |
| 1P2       | XPF2-782712-99P |                                |                                |                                | Accept  |

\*See next 2 data sheets for IR DWV results

|                                                                            |                  |                 |                          |                     |
|----------------------------------------------------------------------------|------------------|-----------------|--------------------------|---------------------|
| Insulation Resistance While in Salt Water Solution Post Altitude Immersion | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10580             | Report<br>ESR-55555 |
| Test Equipment                                                             | Cal Date         | Due Date        | Technician               | Date                |
| F-2672 159 Circuit Connector Tester                                        | 6/15/2021        | 12/14/2021      | Kimberly Edwards (25953) | 9/10/2021           |
|                                                                            |                  |                 |                          |                     |
|                                                                            |                  |                 |                          |                     |

**Insulation Resistance post Altitude Immersion:** Mated Connectors were tested in accordance with test procedure EIA-364-21. All cavities were tested. 500 VDC was applied to each contact during test.

| Sample ID | AAO Part Number | Minimum IR Requirement | Results                 | Status |
|-----------|-----------------|------------------------|-------------------------|--------|
| 1R1       | XPF2-782702-99S | 5,000 MΩ               | All locations >5,000 MΩ | Accept |
| 1P1       | XPF2-782712-99P | 5,000 MΩ               |                         |        |
| 1R2       | XPF2-782702-99S | 5,000 MΩ               | All locations >5,000 MΩ | Accept |
| 1P2       | XPF2-782712-99P | 5,000 MΩ               |                         |        |

| Amphenol Corporation                                                                 |  | Aerospace Operations |                 | Sidney, N.Y. 13838       |                     |
|--------------------------------------------------------------------------------------|--|----------------------|-----------------|--------------------------|---------------------|
| Dielectric Withstanding Voltage While in Salt Water Solution Post Altitude Immersion |  | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10580             | Report<br>ESR-55555 |
| Test Equipment                                                                       |  | Cal Date             | Due Date        | Technician               | Date                |
| F-2672 159 Circuit Connector Tester                                                  |  | 6/15/2021            | 12/14/2021      | Kimberly Edwards (25953) | 9/10/2021           |
|                                                                                      |  |                      |                 |                          |                     |
|                                                                                      |  |                      |                 |                          |                     |

**Dielectric Withstanding Voltage post Altitude Immersion:** Mated Connectors were tested in accordance with test procedure EIA-364-20. All cavities were tested. 1800 VAC RMS was applied to each contact during test. Connectors were mated in salt water solution for the test.

| Sample ID | AAO Part Number | Maximum Leak Requirement | Results                     | Status |
|-----------|-----------------|--------------------------|-----------------------------|--------|
| 1R1       | XPF2-782702-99S | 2 mA                     | All locations tested < 2 mA | Accept |
| 1P1       | XPF2-782712-99P | 2 mA                     |                             |        |
| 1R2       | XPF2-782702-99S | 2 mA                     | All locations tested < 2 mA | Accept |
| 1P2       | XPF2-782712-99P | 2 mA                     |                             |        |

|                              |                         |                        |                     |                            |
|------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Electrical Engagement</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10580 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>        | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Caliper 44-177425-1 F49      | 5/14/2021               | 5/3/2022               | B. Martin           | 9/24/2021                  |
|                              |                         |                        |                     |                            |
|                              |                         |                        |                     |                            |

**Electrical Engagement** per MIL-DTL-38999 paragraphs 3.19 and 4.5.15. Counterpart plugs and receptacles were wired to provide a complete series circuit through all contacts of the mated connector. A suitable power source and indicator was used such that the earliest point at which the circuit was completed, during normal connector mating, was established. Connector halves were slowly mated until first indication of a completed circuit was observed. The mating operation was held at this point and the overall connector length was measured from solid reference points on the connector halves. The mating operation was continued until the connector halves were the completely mated position. A second overall length measurement was then taken from the same reference points. The difference of these two measurements shall not be less than 0.034 in.

| Sample ID | AAO Part Number | Min. Engagement Requirement<br>(in.) | First Reference<br>(in.) | Second<br>Reference (in.) | Overall<br>Engagement<br>(in.) | Status |
|-----------|-----------------|--------------------------------------|--------------------------|---------------------------|--------------------------------|--------|
| 1R1       | XPF2-782702-99S | 0.034                                | 1.560                    | 1.470                     | 0.090                          | Accept |
| 1P1       | XPF2-782712-99P | 0.034                                | 1.560                    | 1.470                     | 0.090                          | Accept |
| 1R2       | XPF2-782702-99P | 0.034                                | 1.570                    | 1.490                     | 0.080                          | Accept |
| 1P2       | XPF2-782712-99S | 0.034                                | 1.570                    | 1.490                     | 0.080                          | Accept |

|                                |                         |                        |                     |                            |
|--------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>External Bending Moment</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10580 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>          | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Zwick PG-3141                  | 8/12/2021               | 2/10/2022              | B. Martin           | 10/1/2021                  |
| Discontinuity Meter IC-4882    | 12/21/2020              | 12/21/2021             |                     |                            |
| Caliper 44-177425-1 F49        | 5/14/2021               | 5/3/2022               |                     |                            |

**External Bending Moment** per MIL-DTL-38999 paragraphs 4.5.16 and 3.20. The receptacle connector was mounted as in normal service to a rigid panel. Before mating the plug connector to the receptacle, an adapter was attached as shown on figure 22. After mating the plug and receptacle connectors, the distance "L" from the point of load application "P" to the mounting panel was determined. The applied load at point "P" was determined as the bending moment specified in table XVII divided by the lever arm "L". This load was applied at a rate of approximately 10 pounds per second until the required load was achieved. The applied load was held for 1 minute, then the load was released. Continuity of the contacts were monitored during the test. The test circuit used to monitor the circuit was capable of detecting a discontinuity in excess of 1 microsecond.

| Sample ID | AAO Part Number | Minimum Torque<br>(in*lb) | Moment Arm<br>(in) | Applied Force<br>(lb) | Observations       | Status |
|-----------|-----------------|---------------------------|--------------------|-----------------------|--------------------|--------|
| 1R1       | XPF2-782702-99S | 75                        | 2.1                | 35.7                  | No Discontinuities | Accept |
| 1P1       | XPF2-78212-99P  |                           |                    |                       |                    |        |
| 1R2       | XPF2-782702-99P | 75                        | 2.1                | 35.7                  | No Discontinuities | Accept |
| 1P2       | XPF2-782712-99S |                           |                    |                       |                    |        |

|                                                                                                        |                 |                      |                                  |                    |                     |
|--------------------------------------------------------------------------------------------------------|-----------------|----------------------|----------------------------------|--------------------|---------------------|
| Amphenol Corporation                                                                                   |                 | Aerospace Operations |                                  | Sidney, N.Y. 13838 |                     |
| Post Test Examination                                                                                  |                 | Temp.<br>Ambient     | R.H.<br>Ambient                  | CLT<br>10580       | Report<br>ESR-55555 |
| Test Equipment                                                                                         |                 | Cal Date             | Due Date                         | Technician         | Date                |
|                                                                                                        |                 |                      |                                  | D. Cogswell        | 10/1/2021           |
|                                                                                                        |                 |                      |                                  |                    |                     |
|                                                                                                        |                 |                      |                                  |                    |                     |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects |                 |                      |                                  |                    |                     |
|                                                                                                        |                 |                      |                                  |                    |                     |
| Sample ID                                                                                              | AAO Part Number | Lot Number           | Observations                     | Status             |                     |
| 1R1                                                                                                    | XPF2-782702-99S | NONE                 | No performance inhibiting damage | Accept             |                     |
| 1P1                                                                                                    | XPF2-782712-99P | NONE                 | No performance inhibiting damage | Accept             |                     |
| 1R2                                                                                                    | XPF2-782702-99P | NONE                 | No performance inhibiting damage | Accept             |                     |
| 1P2                                                                                                    | XPF2-782712-99S | NONE                 | No performance inhibiting damage | Accept             |                     |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX B CLT 10580 Group 2 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--------------|---------------------|--|-----------|-----------------|------------|--------------|--------|-----|-----------------|------|------------|--------|-----|-----------------|------|------------|--------|-----|-----------------|------|------------|--------|-----|-----------------|------|------------|--------|-----|-----------------|------|------------|--------|-----|-----------------|------|------------|--------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10580 | Report<br>ESR-55555 |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Cal Date         | Due Date             | Technician   | Date                |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 10X Magnification Microscope                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                  |                      | D.Cogswell   | 8/23/2021           |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |                      |              |                     |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |                      |              |                     |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                  |                      |              |                     |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| <table border="1"> <thead> <tr> <th>Sample ID</th> <th>AAO Part Number</th> <th>Lot Number</th> <th>Observations</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>2R1</td> <td>XPF2-782702-35P</td> <td>NONE</td> <td>No Defects</td> <td>Accept</td> </tr> <tr> <td>2P1</td> <td>XPF2-782712-35S</td> <td>NONE</td> <td>No Defects</td> <td>Accept</td> </tr> <tr> <td>2R2</td> <td>XPF2-782702-35P</td> <td>NONE</td> <td>No Defects</td> <td>Accept</td> </tr> <tr> <td>2P2</td> <td>XPF2-782712-35S</td> <td>NONE</td> <td>No Defects</td> <td>Accept</td> </tr> <tr> <td>2R3</td> <td>XPFH-782702-99P</td> <td>NONE</td> <td>No Defects</td> <td>Accept</td> </tr> <tr> <td>2P3</td> <td>XPFH-782712-99S</td> <td>NONE</td> <td>No Defects</td> <td>Accept</td> </tr> </tbody> </table> |                  |                      |              |                     |  | Sample ID | AAO Part Number | Lot Number | Observations | Status | 2R1 | XPF2-782702-35P | NONE | No Defects | Accept | 2P1 | XPF2-782712-35S | NONE | No Defects | Accept | 2R2 | XPF2-782702-35P | NONE | No Defects | Accept | 2P2 | XPF2-782712-35S | NONE | No Defects | Accept | 2R3 | XPFH-782702-99P | NONE | No Defects | Accept | 2P3 | XPFH-782712-99S | NONE | No Defects | Accept |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | AAO Part Number  | Lot Number           | Observations | Status              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 2R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPF2-782702-35P  | NONE                 | No Defects   | Accept              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 2P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPF2-782712-35S  | NONE                 | No Defects   | Accept              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 2R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPF2-782702-35P  | NONE                 | No Defects   | Accept              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 2P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPF2-782712-35S  | NONE                 | No Defects   | Accept              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 2R3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPFH-782702-99P  | NONE                 | No Defects   | Accept              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 2P3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPFH-782712-99S  | NONE                 | No Defects   | Accept              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |

| Amphenol Corporation                 |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|--------------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycling                  | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10580 | Report<br>ESR-55555 |
| Test Equipment                       | Cal Date         | Due Date             | Technician   | Date                |
| Blue M Thermal Shock Chamber IC-4648 | 7/20/2021        | 6/19/2022            | D.Cogswell   | 8/24/2021           |
|                                      |                  |                      |              |                     |
|                                      |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +175°C +5°C, -0°C. Connectors were tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 2.81 lbs) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations    | Status |
|-----------|-----------------|-----------------|--------|
| 2R1       | XPF2-782702-35P | No Observations | Accept |
| 2P1       | XPF2-782712-35S | No Observations | Accept |
| 2R2       | XPF2-782702-35P | No Observations | Accept |
| 2P2       | XPF2-782712-35S | No Observations | Accept |

| Amphenol Corporation                 |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|--------------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycling                  | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10580 | Report<br>ESR-55555 |
| Test Equipment                       | Cal Date         | Due Date             | Technician   | Date                |
| Blue M Thermal Shock Chamber IC-4648 | 7/20/2021        | 6/19/2022            | D.Cogswell   | 8/31/2021           |
|                                      |                  |                      |              |                     |
|                                      |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +200°C +5°C, -0°C. Connectors were tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 0.6 lbs) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations       | Status |
|-----------|-----------------|--------------------|--------|
| 2R3       | XPFH-782702-99P | No visible defects | Accept |
| 2P3       | XPFH-782712-99S | No visible defects | Accept |

| Amphenol Corporation                                                                                                                                                                                                                                       |                                        | Aerospace Operations |                 |                             | Sidney, N.Y. 13838            |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|-----------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling                                                                                                                                                                                                                                      |                                        | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10580                | Report<br>ESR-55555           |        |
| Test Equipment                                                                                                                                                                                                                                             |                                        | Cal Date             | Due Date        | Technician                  | Date                          |        |
| Torquemeter PG-2738                                                                                                                                                                                                                                        |                                        | 7/28/2021            | 10/27/2021      | D.Cogswell                  | 8/25/2021                     |        |
|                                                                                                                                                                                                                                                            |                                        |                      |                 |                             |                               |        |
|                                                                                                                                                                                                                                                            |                                        |                      |                 |                             |                               |        |
| <b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4.For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded. |                                        |                      |                 |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                  | Maximum<br>Coupling<br>Torque (in*lbf) | Uncoupling Torque    |                 | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |
|                                                                                                                                                                                                                                                            |                                        | Min. (in*lbf)        | Max. (in*lbf)   |                             |                               |        |
| 2R1                                                                                                                                                                                                                                                        | Record Data Only/ No Pass/Fail         |                      |                 | 2.2                         | 2.0                           | Accept |
| 2P1                                                                                                                                                                                                                                                        |                                        |                      |                 |                             |                               |        |
| 2R2                                                                                                                                                                                                                                                        | Record Data Only/ No Pass/Fail         |                      |                 | 2.2                         | 2.2                           | Accept |
| 2P2                                                                                                                                                                                                                                                        |                                        |                      |                 |                             |                               |        |
| 2R3                                                                                                                                                                                                                                                        | Record Data Only/ No Pass/Fail         |                      |                 | 2.4                         | 1.8                           | Accept |
| 2P3                                                                                                                                                                                                                                                        |                                        |                      |                 |                             |                               |        |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|-----------------------------|------------------|----------------------|--------------|---------------------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10580 | Report<br>ESR-55555 |
| Test Equipment              | Cal Date         | Due Date             | Technician   | Date                |
| Multi-Meter IC-4008         | 1/22/2021        | 12/21/2021           | D.Cogswell   | 8/25/2021           |
| Power Supply IC-3991        | 5/3/2021         | 10/2/2021            |              | 9/1/2021            |
|                             |                  |                      |              |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:

2 millivolts for Sample 3 and 5 millivolts for Samples 1 & 2.

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status | Date Tested |
|------------------|-----------------|---------------------|--------|-------------|
| 2P1 mated to 2R1 | XPF2-782702-35P | 4.4 mV              | Accept | 8/25/2021   |
|                  | XPF2-782712-35S |                     |        |             |
| 2P2 mated to 2R2 | XPF2-782702-35P | 4.2 mV              | Accept | 8/25/2021   |
|                  | XPF2-782712-35S |                     |        |             |
| 2P3 mated to 2R3 | XPFH-782702-35P | 0.26 mV             | Accept | 9/1/2021    |
|                  | XPFH-782712-35S |                     |        |             |

|                |                  |                 |              |                     |
|----------------|------------------|-----------------|--------------|---------------------|
| Durability     | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10580 | Report<br>ESR-55555 |
| Test Equipment | Cal Date         | Due Date        | Technician   | Date                |
|                |                  |                 | D.Cogswell   | 8/26/2021           |
|                |                  |                 |              |                     |
|                |                  |                 |              |                     |

**Durability** test per MIL-DTL-38999 paragraphs 3.12 and 4.5.8.1. Connectors were mated and unmated 500 cycles manually. After conditioning, connectors were visually examined for damage detrimental to the operation of the connector, and connectors shall meet subsequent test requirements.

| Sample ID | MIL Part Number | Shell Size | Total Cycles | Date      | Results |
|-----------|-----------------|------------|--------------|-----------|---------|
| 2R1       | XPF2-782702-35P | 10         | 500          | 8/26/2021 | Accept  |
| 2P1       | XPF2-782712-35S |            |              |           |         |
| 2R2       | XPF2-782702-35P | 10         | 500          | 8/26/2021 | Accept  |
| 2P2       | XPF2-782712-35S |            |              |           |         |
| 2R3       | XPFS-782702-99P | 10         | 500          | 9/1/2021  | Accept  |
| 2P3       | XPFS-782712-99S |            |              |           |         |

|  |
|--|
|  |
|--|

|                                           |
|-------------------------------------------|
| Durability cycles were performed by hand. |
|-------------------------------------------|

|  |
|--|
|  |
|--|

|                                  |                         |                        |                         |                            |
|----------------------------------|-------------------------|------------------------|-------------------------|----------------------------|
| <b>Accessory Thread Strength</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10580     | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>            | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>       | <b>Date</b>                |
| Spring Scale PG-2234             | 8/10/2021               | 10/8/2021              | Kimberly Edwards(25953) | 9/1/2021                   |
| IC-5025 Timer                    | 6/15/2021               | 12/14/2021             |                         |                            |
|                                  |                         |                        |                         |                            |

**Accessory Thread Strength** per MIL-DTL-38999 paragraphs 3.26 and 4.5.32. Mated connectors were mounted as in normal service to a rigid panel. The specified torque per table IX of MIL-DTL-38999 was applied to the accessory of the plug and held for one minute and released. The specified torque was then applied to the accessory of the receptacle for one minute and released. The connectors were unmated and visual inspected at 3X magnification for damage or breakage.

| Sample ID | AAO Part Number | Minimum Torque (in*lb) | Moment Arm (in) | Applied Force (lb) | Observations                   | Status |
|-----------|-----------------|------------------------|-----------------|--------------------|--------------------------------|--------|
| 2R1       | XPF2-782702-35P | 50                     | 8.5             | 5.8                | No damage or breakage occurred | Accept |
| 2P1       | XPF2-782712-35S |                        |                 |                    |                                |        |
| 2R2       | XPF2-782702-35P | 50                     | 8.5             | 5.8                | No damage or breakage occurred | Accept |
| 2P2       | XPF2-782712-35S |                        |                 |                    |                                |        |
| 2R3       | XPFS-782702-99P | 50                     | 8.5             | 5.8                | No damage or breakage occurred | Accept |
| 2P3       | XPFS-782712-99S |                        |                 |                    |                                |        |

| Vibration                                          | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10580  | Report<br>ESR-55555        |
|----------------------------------------------------|------------------|-----------------|---------------|----------------------------|
| Test Equipment                                     | Cal Date         | Due Date        | Technician    | Date                       |
| To be added later (need vibration report from lab) |                  |                 | Andrew Hosier | 9/8/2021 thru<br>9/17/2021 |
|                                                    |                  |                 |               |                            |
|                                                    |                  |                 |               |                            |

**Vibration** per MIL-DTL-38999 3.27 and 4.5.23.2, 2 pairs per the Sign and 5G^2 vibration profiles.  
 Samples are to be prepped in accordance with L-40990-141.

| Sample ID           | AAO Part<br>Number | Profile    | Date Complete           | Discontinuities | Coupling Nut<br>Movement | Breakage/<br>Loosening |
|---------------------|--------------------|------------|-------------------------|-----------------|--------------------------|------------------------|
| 2P1 mated to<br>2R1 | XPF2-782702-35P    | 4.5.23.2.4 | 9/15/21 thru<br>9/17/21 | None            | None                     | None                   |
|                     | XPF2-782712-35S    |            |                         |                 |                          |                        |
| 2P2 mated to<br>2R2 | XPF2-782702-35P    | 4.5.23.2.4 | 9/15/21 thru<br>9/17/21 | None            | None                     | None                   |
|                     | XPF2-782712-35S    |            |                         |                 |                          |                        |
| 2P3 mated to<br>2R3 | XPFS-782702-99P    | 4.5.23.2.1 | 9/10/21 thru<br>9/15/21 | None            | None                     | None                   |
|                     | XPFS-782712-99S    |            |                         |                 |                          |                        |

|                                             |                         |                             |                          |                            |  |
|---------------------------------------------|-------------------------|-----------------------------|--------------------------|----------------------------|--|
| <b>Amphenol Corporation</b>                 |                         | <b>Aerospace Operations</b> |                          | <b>Sidney, N.Y. 13838</b>  |  |
| <b>Coupling &amp; Uncoupling After Vibe</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient      | <b>CLT</b><br>10580      | <b>Report</b><br>ESR-55555 |  |
| <b>Test Equipment</b>                       | <b>Cal Date</b>         | <b>Due Date</b>             | <b>Technician</b>        | <b>Date</b>                |  |
| Torque meter PG-2738                        | 7/28/2021               | 10/27/2021                  | Kimberly Edwards (25953) | 9/30/2021                  |  |
|                                             |                         |                             |                          |                            |  |
|                                             |                         |                             |                          |                            |  |

**Coupling Torque** per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.

| Sample ID | Maximum Coupling Torque (in*lbf) | Uncoupling Torque |               | Coupling Torque (in*lbf) | Uncoupling Torque (in*lbf) | Status |
|-----------|----------------------------------|-------------------|---------------|--------------------------|----------------------------|--------|
|           |                                  | Min. (in*lbf)     | Max. (in*lbf) |                          |                            |        |
| 2R1       | Record Data Only/ No Pass/Fail   |                   |               | 4                        | 5                          | Accept |
| 2P1       |                                  |                   |               |                          |                            |        |
| 2R2       | Record Data Only/ No Pass/Fail   |                   |               | 4                        | 6                          | Accept |
| 2P2       |                                  |                   |               |                          |                            |        |
| 2R3       | Record Data Only/ No Pass/Fail   |                   |               | 3                        | 4                          | Accept |
| 2P3       |                                  |                   |               |                          |                            |        |

| <b>Amphenol Corporation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 | <b>Aerospace Operations</b> |                                                                                                | <b>Sidney, N.Y. 13838</b> |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------|------------------------------------------------------------------------------------------------|---------------------------|----------------------------|-----------|-----------------|------------|--------------|--------|-----|-----------------|------|------------------------------------------------------------------------------------------------|--------|-----|-----------------|------|-----|-----------------|------|------------------------------------------------------------------------------------------------|--------|-----|-----------------|------|-----|-----------------|------|------------------------------------------------------------------------|--------|-----|-----------------|------|
| <b>Post Test Examination of Samples</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | <b>Temp.</b><br>Ambient     | <b>R.H.</b><br>Ambient                                                                         | <b>CLT</b><br>10580       | <b>Report</b><br>ESR-55555 |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
| <b>Test Equipment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 | <b>Cal Date</b>             | <b>Due Date</b>                                                                                | <b>Technician</b>         | <b>Date</b>                |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
| 10X Magnification Microscope                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                             |                                                                                                | Kimberly Edwards (25953)  | 9/30/2021                  |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                             |                                                                                                |                           |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                             |                                                                                                |                           |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                             |                                                                                                |                           |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
| <table border="1"> <thead> <tr> <th>Sample ID</th> <th>AAO Part Number</th> <th>Lot Number</th> <th>Observations</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>2R1</td> <td>XPF2-782702-35P</td> <td>NONE</td> <td rowspan="2">Meets conformance to drawing and specifications. No defects or damage detrimental to operation</td> <td rowspan="2">Accept</td> </tr> <tr> <td>2P1</td> <td>XPF2-782712-35S</td> <td>NONE</td> </tr> <tr> <td>2R2</td> <td>XPF2-782702-35P</td> <td>NONE</td> <td rowspan="2">Meets conformance to drawing and specifications. No defects or damage detrimental to operation</td> <td rowspan="2">Accept</td> </tr> <tr> <td>2P2</td> <td>XPF2-782712-35S</td> <td>NONE</td> </tr> <tr> <td>2R3</td> <td>XPFS-782702-99P</td> <td>NONE</td> <td rowspan="2">Meets conformance to drawing and specifications. No defects or damage.</td> <td rowspan="2">Accept</td> </tr> <tr> <td>2P3</td> <td>XPFS-782712-99S</td> <td>NONE</td> </tr> </tbody> </table> |                 |                             |                                                                                                |                           |                            | Sample ID | AAO Part Number | Lot Number | Observations | Status | 2R1 | XPF2-782702-35P | NONE | Meets conformance to drawing and specifications. No defects or damage detrimental to operation | Accept | 2P1 | XPF2-782712-35S | NONE | 2R2 | XPF2-782702-35P | NONE | Meets conformance to drawing and specifications. No defects or damage detrimental to operation | Accept | 2P2 | XPF2-782712-35S | NONE | 2R3 | XPFS-782702-99P | NONE | Meets conformance to drawing and specifications. No defects or damage. | Accept | 2P3 | XPFS-782712-99S | NONE |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | AAO Part Number | Lot Number                  | Observations                                                                                   | Status                    |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
| 2R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPF2-782702-35P | NONE                        | Meets conformance to drawing and specifications. No defects or damage detrimental to operation | Accept                    |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
| 2P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPF2-782712-35S | NONE                        |                                                                                                |                           |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
| 2R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPF2-782702-35P | NONE                        | Meets conformance to drawing and specifications. No defects or damage detrimental to operation | Accept                    |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
| 2P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPF2-782712-35S | NONE                        |                                                                                                |                           |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
| 2R3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPFS-782702-99P | NONE                        | Meets conformance to drawing and specifications. No defects or damage.                         | Accept                    |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |
| 2P3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | XPFS-782712-99S | NONE                        |                                                                                                |                           |                            |           |                 |            |              |        |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                                                |        |     |                 |      |     |                 |      |                                                                        |        |     |                 |      |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX C CLT 10580 Group 3 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

|                                                                                                         |                 |                      |                       |                    |                     |
|---------------------------------------------------------------------------------------------------------|-----------------|----------------------|-----------------------|--------------------|---------------------|
| Amphenol Corporation                                                                                    |                 | Aerospace Operations |                       | Sidney, N.Y. 13838 |                     |
| Visual Examination                                                                                      |                 | Temp.<br>Ambient     | R.H.<br>Ambient       | CLT<br>10580       | Report<br>ESR-55555 |
| Test Equipment                                                                                          |                 | Cal Date             | Due Date              | Technician         | Date                |
|                                                                                                         |                 |                      |                       | D.Cogswell         | See Below           |
|                                                                                                         |                 |                      |                       |                    |                     |
|                                                                                                         |                 |                      |                       |                    |                     |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects. |                 |                      |                       |                    |                     |
|                                                                                                         |                 |                      |                       |                    |                     |
| Sample ID                                                                                               | AAO Part Number | Lot Number           | Observations          | Status             | Date                |
| 3R1                                                                                                     | XPF2-782702-35S | NONE                 | No defects on samples | Accept             | 8/24/2021           |
| 3P1                                                                                                     | XPF2-782712-35P | NONE                 | No defects on samples | Accept             | 8/24/2021           |
| 3R2                                                                                                     | XPF2-782702-35S | NONE                 | No defects on samples | Accept             | 8/24/2021           |
| 3P2                                                                                                     | XPF2-782712-35P | NONE                 | No defects on samples | Accept             | 8/24/2021           |
| 3R3                                                                                                     | XPF2-782702-35S | NONE                 | No defects on samples | Accept             | 8/24/2021           |
| 3P3                                                                                                     | XPF2-782712-35P | NONE                 | No defects on samples | Accept             | 8/24/2021           |
| 3R4                                                                                                     | XPF2-782702-35P | NONE                 | No defects on samples | Accept             | 8/24/2021           |
| 3P4                                                                                                     | XPF2-782712-35S | NONE                 | No defects on samples | Accept             | 8/24/2021           |
| 3R5                                                                                                     | XPF2-782702-35P | NONE                 | No defects on samples | Accept             | 8/24/2021           |
| 3P5                                                                                                     | XPF2-782712-35S | NONE                 | No defects on samples | Accept             | 8/24/2021           |

|                                       |                         |                        |                     |                            |
|---------------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Temperature Cycling</b>            | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10580 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>                 | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Blue M. Thermal Shock Chamber IC-4648 | 7/20/2021               | 6/19/2022              | D.Cogswell          | 8/26/2021                  |
|                                       |                         |                        |                     |                            |
|                                       |                         |                        |                     |                            |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +175°C +5°C, -0°C. Connectors were tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 3.6 lbs.) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations       | Status |
|-----------|-----------------|--------------------|--------|
| 3R1       | XPF2-782702-35S | No damage to parts | Accept |
| 3P1       | XPF2-782712-35P | No damage to parts | Accept |
| 3R2       | XPF2-782702-35S | No damage to parts | Accept |
| 3P2       | XPF2-782712-35P | No damage to parts | Accept |
| 3R3       | XPF2-782702-35S | No damage to parts | Accept |
| 3P3       | XPF2-782712-35P | No damage to parts | Accept |
| 3R4       | XPF2-782702-35P | No damage to parts | Accept |
| 3P4       | XPF2-782712-35S | No damage to parts | Accept |
| 3R5       | XPF2-782702-35P | No damage to parts | Accept |
| 3P5       | XPF2-782712-35S | No damage to parts | Accept |

|                                                     |                         |                        |                     |                            |
|-----------------------------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Dielectric Withstanding Voltage at Sea Level</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10580 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>                               | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Multi-Circuit Tester F-2672                         | 6/15/2021               | 12/14/2021             | D. Cogswell         | 8/27/2021                  |
|                                                     |                         |                        |                     |                            |
|                                                     |                         |                        |                     |                            |

**Dielectric Withstanding Voltage:** Mated Connectors were tested in accordance with test procedure EIA-364-20. All cavities were tested. 1800 VAC RMS was applied to each contact during test. Connectors were to be mated for test.

| Sample ID | AAO Part Number | Maximum Leak Requirement | Maximum Test Voltage (V AC) | Results              | Status                     |
|-----------|-----------------|--------------------------|-----------------------------|----------------------|----------------------------|
| 3R1       | XPF2-782702-35S | 2 mA                     | 2500                        | All locations passed | Exceeds 38999 Requirements |
| 3P1       | XPF2-782712-35P |                          |                             |                      |                            |
| 3R2       | XPF2-782702-35S | 2 mA                     | 2500                        | All locations passed | Exceeds 38999 Requirements |
| 3P2       | XPF2-782712-35P |                          |                             |                      |                            |
| 3R3       | XPF2-782702-35S | 2 mA                     | 2500                        | All locations passed | Exceeds 38999 Requirements |
| 3P3       | XPF2-782712-35P |                          |                             |                      |                            |
| 3R4       | XPF2-782702-35P | 2 mA                     | 2500                        | All locations passed | Exceeds 38999 Requirements |
| 3P4       | XPF2-782712-35S |                          |                             |                      |                            |
| 3R5       | XPF2-782702-35P | 2 mA                     | 2500                        | All locations passed | Exceeds 38999 Requirements |
| 3P5       | XPF2-782712-35S |                          |                             |                      |                            |

|                                                    |                         |                        |                     |                            |
|----------------------------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Dielectric Withstanding Voltage at Altitude</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10580 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>                              | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Multi-Circuit Tester F-2672                        | 6/15/2021               | 12/14/2021             | D.Cogswell          | 9/24/2021                  |
|                                                    |                         |                        |                     |                            |
|                                                    |                         |                        |                     |                            |

**Dielectric Withstanding Voltage:** Mated Connectors were tested in accordance with test procedure EIA-364-20, except altitude was 75,000 ft. All cavities were tested.

| Sample ID | AAO Part Number | Maximum Leak Requirement | Maximum Test Voltage (V AC) | Results                                                                | Status                     |
|-----------|-----------------|--------------------------|-----------------------------|------------------------------------------------------------------------|----------------------------|
| 3R1       | XPF2-782702-35S | 2 mA                     | 1600                        | All locations passed                                                   | Exceeds 38999 Requirements |
| 3P1       | XPF2-782712-35P |                          |                             |                                                                        |                            |
| 3R2       | XPF2-782702-35S | 2 mA                     | 1600                        | Location 4 arched at 1600 V. The other locations passed                | Exceeds 38999 Requirements |
| 3P2       | XPF2-782712-35P |                          |                             |                                                                        |                            |
| 3R3       | XPF2-782702-35S | 2 mA                     | 1600                        | All locations passed                                                   | Exceeds 38999 Requirements |
| 3P3       | XPF2-782712-35P |                          |                             |                                                                        |                            |
| 3R4       | XPF2-782702-35P | 2 mA                     | 1600                        | All locations passed                                                   | Exceeds 38999 Requirements |
| 3P4       | XPF2-782712-35S |                          |                             |                                                                        |                            |
| 3R5       | XPF2-782702-35P | 2 mA                     | 1600                        | Location 7 arched at 1550 V during ramp up. The other locations passed | Exceeds 38999 Requirements |
| 3P5       | XPF2-782712-35S |                          |                             |                                                                        |                            |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX D CLT 10580 Group 4 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

|                                                                                                         |                 |                      |                 |                    |                     |
|---------------------------------------------------------------------------------------------------------|-----------------|----------------------|-----------------|--------------------|---------------------|
| Amphenol Corporation                                                                                    |                 | Aerospace Operations |                 | Sidney, N.Y. 13838 |                     |
| Visual Examination of Samples                                                                           |                 | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10580       | Report<br>ESR-55555 |
| Test Equipment                                                                                          |                 | Cal Date             | Due Date        | Technician         | Date                |
|                                                                                                         |                 |                      |                 | D. Cogswell        | 8/26/2021           |
|                                                                                                         |                 |                      |                 |                    |                     |
|                                                                                                         |                 |                      |                 |                    |                     |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects. |                 |                      |                 |                    |                     |
|                                                                                                         |                 |                      |                 |                    |                     |
| Sample ID                                                                                               | AAO Part Number | Lot Number           | Observations    | Status             |                     |
| 4R1                                                                                                     | XPFS-782702-99S | NONE                 | No Defects      | Accept             |                     |
| 4P1                                                                                                     | XPFS-782712-99P | NONE                 | No Defects      | Accept             |                     |
| 4R2                                                                                                     | XPFS-782702-99P | NONE                 | No Defects      | Accept             |                     |
| 4P2                                                                                                     | XPFS-782712-99S | NONE                 | No Defects      | Accept             |                     |

|                            |                         |                        |                     |                            |
|----------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Temperature Cycling</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10580 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>      | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Thermometer IC-2587        | 6/23/2021               | 12/19/2021             | D. Cogswell         | 8/26/2021                  |
|                            |                         |                        |                     |                            |
|                            |                         |                        |                     |                            |

**Ic Resistance** per MIL-DTL-38999 paragraphs 3.44 and 4.5.40.

Mated connectors were immersed in tap water for 1 minute and then placed in an ambience of - 65° C +0°C/- 5°C for 1 hour. A minimum of three such cycles were performed until the connector surfaces are completely iced over. Immediately after removal from the last cycle, the frozen connectors were uncoupled and then recoupled. The connectors were then uncoupled and recoupled a second time with the uncoupling and coupling torque measured in accordance with 4.5.7. The uncoupling and coupling torque shall not be measured on the first uncoupling and recoupling. See Following datasheet for coupling/uncoupling torque data.

\*May need more than 3 cycles if the connectors are not iced over after 3 cycles.

| Sample ID | AAO Part Number | Cycle 1 (Start/Finish) | Cycle 2 (Start/Finish) | Cycle 3 (Start/Finish) | Iced Over? |
|-----------|-----------------|------------------------|------------------------|------------------------|------------|
| 4R1       | XPF2-782702-99S | 12:12 PM               | 1:13 PM                | 2:15                   | Yes        |
| 4P1       | XPF2-782712-99P | 1:12 PM                | 2:13 PM                | 3:15                   |            |
| 4R2       | XPF2-782702-99P | 12:12 PM               | 1:13 PM                | 2:15                   | Yes        |
| 4P2       | XPF2-782712-99S | 1:12 PM                | 2:13 PM                | 3:15                   |            |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                     |                                        | Aerospace Operations |                 |                             | Sidney, N.Y. 13838            |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|-----------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling, Post Ice Resistance                                                                                                                                                                                                                                                                                                               |                                        | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10580                | Report<br>ESR-55555           |        |
| Test Equipment                                                                                                                                                                                                                                                                                                                                           |                                        | Cal Date             | Due Date        | Technician                  | Date                          |        |
| Torquemeter PG-2738                                                                                                                                                                                                                                                                                                                                      |                                        | 7/28/2021            | 10/27/2021      | D.Cogswell                  | 8/26/2021                     |        |
|                                                                                                                                                                                                                                                                                                                                                          |                                        |                      |                 |                             |                               |        |
|                                                                                                                                                                                                                                                                                                                                                          |                                        |                      |                 |                             |                               |        |
| <b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4.For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded. For quality conformance, suitable gauges may be used instead of the appropriate counterparts. |                                        |                      |                 |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                                                                                                                | Maximum<br>Coupling<br>Torque (in*lbf) | Uncoupling Torque    |                 | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |
|                                                                                                                                                                                                                                                                                                                                                          |                                        | Min. (in*lbf)        | Max. (in*lbf)   |                             |                               |        |
| 4R1                                                                                                                                                                                                                                                                                                                                                      | Record Data Only no Pass/Fail          |                      |                 | 4.0                         | 3.8                           | Accept |
| 4P1                                                                                                                                                                                                                                                                                                                                                      |                                        |                      |                 |                             |                               |        |
| 4R2                                                                                                                                                                                                                                                                                                                                                      | Record Data Only no Pass/Fail          |                      |                 | 2.8                         | 3.2                           | Accept |
| 4P2                                                                                                                                                                                                                                                                                                                                                      |                                        |                      |                 |                             |                               |        |

|                                                                                                         |  |                      |                 |                    |                     |
|---------------------------------------------------------------------------------------------------------|--|----------------------|-----------------|--------------------|---------------------|
| Amphenol Corporation                                                                                    |  | Aerospace Operations |                 | Sidney, N.Y. 13838 |                     |
| Post Test Examination                                                                                   |  | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10580       | Report<br>ESR-55555 |
| Test Equipment                                                                                          |  | Cal Date             | Due Date        | Technician         | Date                |
|                                                                                                         |  |                      |                 | D. Cogswell        | 8/26/2021           |
|                                                                                                         |  |                      |                 |                    |                     |
|                                                                                                         |  |                      |                 |                    |                     |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects. |  |                      |                 |                    |                     |
|                                                                                                         |  |                      |                 |                    |                     |

| Sample ID | AAO Part Number | Lot Number | Observations | Status |
|-----------|-----------------|------------|--------------|--------|
| 4R1       | XPF2-782702-99S | NONE       | No Defects   | Accept |
| 4P1       | XPF2-782712-99P | NONE       | No Defects   | Accept |
| 4R2       | XPF2-782702-99P | NONE       | No Defects   | Accept |
| 4P2       | XPF2-782712-99S | NONE       | No Defects   | Accept |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX E CLT 10615 Group 1 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

|                                                                                                         |  |                      |                 |                    |                     |
|---------------------------------------------------------------------------------------------------------|--|----------------------|-----------------|--------------------|---------------------|
| Amphenol Corporation                                                                                    |  | Aerospace Operations |                 | Sidney, N.Y. 13838 |                     |
| Examination of Test Samples                                                                             |  | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10615       | Report<br>ESR-55555 |
| Test Equipment                                                                                          |  | Cal Date             | Due Date        | Technician         | Date                |
|                                                                                                         |  |                      |                 | D. Cogswell        | 11/4/2021           |
|                                                                                                         |  |                      |                 |                    |                     |
|                                                                                                         |  |                      |                 |                    |                     |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects. |  |                      |                 |                    |                     |
|                                                                                                         |  |                      |                 |                    |                     |

| Sample ID | AAO Part Number | Lot Number | Observations     | Status |
|-----------|-----------------|------------|------------------|--------|
| 1R1       | XPFH-782701-35P | NONE       | No Defects, good | Accept |
| 1P1       | XPFH-782711-35S | NONE       | No Defects, good | Accept |
| 1R2       | XPFH-782701-35P | NONE       | No Defects, good | Accept |
| 1P2       | XPFH-782711-35S | NONE       | No Defects, good | Accept |

| Amphenol Corporation                 |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|--------------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycling                  | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10615 | Report<br>ESR-55555 |
| Test Equipment                       | Cal Date         | Due Date             | Technician   | Date                |
| Blue M Thermal Shock Chamber IC-4648 | 7/20/2021        | 6/19/2022            | D. Cogswell  | 11/4/2021           |
|                                      |                  |                      |              |                     |
|                                      |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +200°C +5°C, -0°C. Connectors were tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 0.6 lbs) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations       | Status |
|-----------|-----------------|--------------------|--------|
| 1R1       | XPFH-782701-35P | No damage to parts | Accept |
| 1P1       | XPFH-782711-35S | No damage to parts | Accept |
| 1R2       | XPFH-782701-35P | No damage to parts | Accept |
| 1P2       | XPFH-782711-35S | No damage to parts | Accept |

| Amphenol Corporation                                                                                                                                                                                                                                               |                                            | Aerospace Operations |               | Sidney, N.Y. 13838          |                               |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------|---------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling                                                                                                                                                                                                                                              | Temp.<br>Ambient                           | R.H.<br>Ambient      | CLT<br>10615  | Report<br>ESR-55555         |                               |        |
| Test Equipment                                                                                                                                                                                                                                                     | Cal Date                                   | Due Date             | Technician    | Date                        |                               |        |
| Torquemeter PG-2738                                                                                                                                                                                                                                                | 1/26/2022                                  | 4/27/2022            | D.Cogswell    | 1/31/2022                   |                               |        |
|                                                                                                                                                                                                                                                                    |                                            |                      |               |                             |                               |        |
|                                                                                                                                                                                                                                                                    |                                            |                      |               |                             |                               |        |
| <p><b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.</p> |                                            |                      |               |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                          | Maximum<br>Coupling<br>Torque (in*lbF)     | Uncoupling Torque    |               | Coupling<br>Torque (in*lbF) | Uncoupling<br>Torque (in*lbF) | Status |
|                                                                                                                                                                                                                                                                    |                                            | Min. (in*lbF)        | Max. (in*lbF) |                             |                               |        |
| 1R1                                                                                                                                                                                                                                                                | Record Results only, No Pass/Fail Criteria |                      |               | 1.8                         | 2.2                           | Accept |
| 1P1                                                                                                                                                                                                                                                                |                                            |                      |               |                             |                               |        |
| 1R2                                                                                                                                                                                                                                                                |                                            |                      |               | 2                           | 2.4                           | Accept |
| 1P2                                                                                                                                                                                                                                                                |                                            |                      |               |                             |                               |        |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |           |
|-----------------------------|------------------|----------------------|--------------|---------------------|-----------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10615 | Report<br>ESR-55555 |           |
| Test Equipment              | Cal Date         | Due Date             | Technician   |                     | Date      |
| Multi-Meter IC-4089         | 12/9/2021        | 12/8/2022            | D. Cogswell  |                     | 1/31/2022 |
| Power Supply IC-3991        | 12/7/2021        | 6/7/2022             |              |                     |           |
|                             |                  |                      |              |                     |           |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2.0 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status |
|------------------|-----------------|---------------------|--------|
| 1P1 mated to 1R1 | XPFH-782701-35P | 0.9                 | Accept |
|                  | XPFH-782711-35S |                     |        |
| 1P2 mated to 1R2 | XPFH-782701-35P | 0.9                 | Accept |
|                  | XPFH-782711-35S |                     |        |

|                                                                                                                                                                                                                                                                                                                                         |                  |                      |              |                     |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--------------|---------------------|---------|
| Amphenol Corporation                                                                                                                                                                                                                                                                                                                    |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |         |
| Durability                                                                                                                                                                                                                                                                                                                              | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10615 | Report<br>ESR-55555 |         |
| Test Equipment                                                                                                                                                                                                                                                                                                                          | Cal Date         | Due Date             | Technician   | Date                |         |
|                                                                                                                                                                                                                                                                                                                                         |                  |                      | C.Boecke     | 2/1/2022            |         |
|                                                                                                                                                                                                                                                                                                                                         |                  |                      |              |                     |         |
|                                                                                                                                                                                                                                                                                                                                         |                  |                      |              |                     |         |
| <b>Durability</b> test per MIL-DTL-38999 paragraphs 3.12 and 4.5.8.1. Connectors were mated and unmated 500 cycles at a rate not to exceed 300 cycles per hour. After conditioning, connectors were visually examined for damage detrimental to the operation of the connector, and connectors shall meet subsequent test requirements. |                  |                      |              |                     |         |
| Sample ID                                                                                                                                                                                                                                                                                                                               | MIL Part Number  | Shell Size           | Total Cycles | Date                | Results |
| 1R1                                                                                                                                                                                                                                                                                                                                     | XPFH-782701-35P  | 10                   | 500          | 2/1/2022            | Accept  |
| 1P1                                                                                                                                                                                                                                                                                                                                     | XPFH-782711-35S  |                      |              |                     |         |
| 1R2                                                                                                                                                                                                                                                                                                                                     | XPFH-782701-35P  | 10                   | 500          | 2/1/2022            | Accept  |
| 1P2                                                                                                                                                                                                                                                                                                                                     | XPFH-782711-35S  |                      |              |                     |         |
| All durability testing was done manually at a rate of approximately 300 Cycles per hour                                                                                                                                                                                                                                                 |                  |                      |              |                     |         |
|                                                                                                                                                                                                                                                                                                                                         |                  |                      |              |                     |         |

| Amphenol Corporation                                                                                                                                                                                                                                               |                                        | Aerospace Operations |               | Sidney, N.Y. 13838          |                               |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|---------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling                                                                                                                                                                                                                                              | Temp.<br>Ambient                       | R.H.<br>Ambient      | CLT<br>10615  | Report<br>ESR-55555         |                               |        |
| Test Equipment                                                                                                                                                                                                                                                     | Cal Date                               | Due Date             | Technician    | Date                        |                               |        |
| Torquemeter PG-2738                                                                                                                                                                                                                                                | 1/26/2022                              | 4/27/2022            | D.Cogswell    | 2/15/2022                   |                               |        |
|                                                                                                                                                                                                                                                                    |                                        |                      |               |                             |                               |        |
|                                                                                                                                                                                                                                                                    |                                        |                      |               |                             |                               |        |
| <p><b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.</p> |                                        |                      |               |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                          | Maximum<br>Coupling<br>Torque (in*lbf) | Uncoupling Torque    |               | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |
|                                                                                                                                                                                                                                                                    |                                        | Min. (in*lbf)        | Max. (in*lbf) |                             |                               |        |
| 1R1                                                                                                                                                                                                                                                                | Record Data Only no Pass/Fail          |                      |               | 1.2                         | 3.8                           | Accept |
| 1P1                                                                                                                                                                                                                                                                |                                        |                      |               |                             |                               |        |
| 1R2                                                                                                                                                                                                                                                                | Record Data Only no Pass/Fail          |                      |               | 1.6                         | 4.2                           | Accept |
| 1P2                                                                                                                                                                                                                                                                |                                        |                      |               |                             |                               |        |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |           |
|-----------------------------|------------------|----------------------|--------------|---------------------|-----------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10615 | Report<br>ESR-55555 |           |
| Test Equipment              | Cal Date         | Due Date             | Technician   |                     | Date      |
| Multi-Meter IC-4089         | 12/9/2021        | 12/8/2022            | D. Cogswell  |                     | 2/15/2022 |
| Power Supply IC-3991        | 12/7/2021        | 6/7/2022             |              |                     |           |
|                             |                  |                      |              |                     |           |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2.0 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status |
|------------------|-----------------|---------------------|--------|
| 1P1 mated to 1R1 | XPFH-782701-35P | 1.1                 | Accept |
|                  | XPFH-782711-35S |                     |        |
| 1P2 mated to 1R2 | XPFH-782701-35P | 1.1                 | Accept |
|                  | XPFH-782711-35S |                     |        |

|                           |                         |                        |                     |                            |
|---------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Altitude Immersion</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10615 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>     | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| IC-5286 Pressure Gauge    | 8/3/2021                | 7/3/2022               | D. Cogswell         | 2/24/2022                  |
|                           |                         |                        |                     |                            |
|                           |                         |                        |                     |                            |

**Altitude Immersion**, Mated connectors were tested in accordance with test procedure EIA-364-03. The following details applied:

- a. All wire ends were located within the chamber and exposed to the chamber atmosphere but not submerged or sealed.
- b. At the end of the third cycle, while the connectors are still submerged in the solution, the insulation resistance at ambient temperature shall be measured as specified in 4.5.10.1, and the dielectric withstanding voltage test shall be performed as specified in 4.5.11.1. Connectors were potted for this test since the area of concentration is the O-Ring interfacial seal.

| Sample ID | AAO Part Number | Time 1st Cycle<br>Start/Finish | Time 2nd Cycle<br>Start/Finish | Time 3rd Cycle<br>Start/Finish | Status* |
|-----------|-----------------|--------------------------------|--------------------------------|--------------------------------|---------|
| 1R1       | XPFH-782701-35P | 9:30 AM/<br>10:00 AM           | 10:30 AM/<br>11:00AM           | 11:30 AM/<br>12:00 PM          | Accept  |
| 1P1       | XPFH-782711-35S |                                |                                |                                | Accept  |
| 1R2       | XPFH-782701-35P |                                |                                |                                | Accept  |
| 1P2       | XPFH-782711-35S |                                |                                |                                | Accept  |

\*See next 2 data sheets for IR DWV results

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | Aerospace Operations   |                      | Sidney, N.Y. 13838 |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------|----------------------|--------------------|---------------------|-----------|-----------------|------------------------|---------|--------|-----|-----------------|----------|----------------------|--------|-----|-----------------|----------|-----|-----------------|----------|----------------------|--------|-----|-----------------|----------|
| Insulation Resistance While in Salt Water Solution Post Altitude Immersion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | Temp.<br>Ambient       | R.H.<br>Ambient      | CLT<br>10615       | Report<br>ESR-55555 |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 | Cal Date               | Due Date             | Technician         | Date                |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| F-2672 159 Circuit Connector Tester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 | 1/9/2022               | 4/8/2022             | D.Cogswell         | 2/24/2022           |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                        |                      |                    |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                        |                      |                    |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| <b>Insulation Resistance post Altitude Immersion:</b> Mated Connectors were tested in accordance with test procedure EIA-364-21. All cavities were tested. 500 VDC was applied to each contact during test.                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                        |                      |                    |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| <table border="1"> <thead> <tr> <th>Sample ID</th> <th>AAO Part Number</th> <th>Minimum IR Requirement</th> <th>Results</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>1R1</td> <td>XPFH-782701-35P</td> <td>5,000 MΩ</td> <td rowspan="2">All locations &gt;50 GΩ</td> <td rowspan="2">Accept</td> </tr> <tr> <td>1P1</td> <td>XPFH-782711-35S</td> <td>5,000 MΩ</td> </tr> <tr> <td>1R2</td> <td>XPFH-782701-35P</td> <td>5,000 MΩ</td> <td rowspan="2">All locations &gt;50 GΩ</td> <td rowspan="2">Accept</td> </tr> <tr> <td>1P2</td> <td>XPFH-782711-35S</td> <td>5,000 MΩ</td> </tr> </tbody> </table> |                 |                        |                      |                    |                     | Sample ID | AAO Part Number | Minimum IR Requirement | Results | Status | 1R1 | XPFH-782701-35P | 5,000 MΩ | All locations >50 GΩ | Accept | 1P1 | XPFH-782711-35S | 5,000 MΩ | 1R2 | XPFH-782701-35P | 5,000 MΩ | All locations >50 GΩ | Accept | 1P2 | XPFH-782711-35S | 5,000 MΩ |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | AAO Part Number | Minimum IR Requirement | Results              | Status             |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| 1R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | XPFH-782701-35P | 5,000 MΩ               | All locations >50 GΩ | Accept             |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| 1P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | XPFH-782711-35S | 5,000 MΩ               |                      |                    |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| 1R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | XPFH-782701-35P | 5,000 MΩ               | All locations >50 GΩ | Accept             |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| 1P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | XPFH-782711-35S | 5,000 MΩ               |                      |                    |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |

| Amphenol Corporation                                                                    |  | Aerospace Operations |                 | Sidney, N.Y. 13838 |                     |
|-----------------------------------------------------------------------------------------|--|----------------------|-----------------|--------------------|---------------------|
| Dielectric Withstanding Voltage While in Salt Water<br>Solution Post Altitude Immersion |  | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10615       | Report<br>ESR-55555 |
| Test Equipment                                                                          |  | Cal Date             | Due Date        | Technician         | Date                |
| F-2672 159 Circuit Connector Tester                                                     |  | 1/9/2022             | 4/8/2022        | D. Cogswell        | 2/24/2022           |
|                                                                                         |  |                      |                 |                    |                     |
|                                                                                         |  |                      |                 |                    |                     |

**Dielectric Withstanding Voltage post Altitude Immersion:** Mated Connectors were tested in accordance with test procedure EIA-364-20. All cavities were tested. 2000 VAC RMS was applied to each contact during test.

| Sample ID | AAO Part Number | Maximum Leak Requirement | Results                           | Status |
|-----------|-----------------|--------------------------|-----------------------------------|--------|
| 1R1       | XPFH-782701-35P | 2 mA                     | All locations <2mA. No flash-over | Accept |
| 1P1       | XPFH-782711-35S | 2 mA                     |                                   |        |
| 1R2       | XPFH-782701-35P | 2 mA                     | All locations <2mA. No flash-over | Accept |
| 1P2       | XPFH-782711-35S | 2 mA                     |                                   |        |

| Amphenol Corporation    |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |  |
|-------------------------|------------------|----------------------|--------------|---------------------|--|
| Electrical Engagement   | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10615 | Report<br>ESR-55555 |  |
| Test Equipment          | Cal Date         | Due Date             | Technician   | Date                |  |
| Caliper 44-177425-1 F49 |                  |                      | D.Cogswell   | 3/2/2022            |  |
| Multi-Meter IC-4756     | 11/23/2021       | 5/24/2022            |              |                     |  |
|                         |                  |                      |              |                     |  |

**Electrical Engagement per MIL-DTL-38999 paragraphs 3.19 and 4.5.15.** Counterpart plugs and receptacles were wired to provide a complete series circuit through all contacts of the mated connector. A suitable power source and indicator were used to determine the easiest point a complete circuit was established. Connector halves were slowly mated by the normal mating means until first indication of a completed circuit was observed. The mating operation was held at this point and the overall connector length was measured from solid reference points on the connector halves. The mating operation was then continued until the connector halves were in the completely mated position. A second overall length measurement was then taken from the same reference points. The difference of these two measurements shall be not less than .034 in.

| Sample ID | AAO Part Number | Min Engagement Requirement (in.) | First Reference (in.) | Second Reference (in.) | Overall Engagement (in) | Status |
|-----------|-----------------|----------------------------------|-----------------------|------------------------|-------------------------|--------|
| 1R1       | XPFH-782701-35P | 0.034                            | 1.515                 | 1.446                  | 0.069                   | Accept |
| 1P1       | XPFH-782711-35S | 0.034                            |                       |                        |                         |        |
| 1R2       | XPFH-782701-35P | 0.034                            | 1.524                 | 1.446                  | 0.078                   | Accept |
| 1P2       | XPFH-782711-35S | 0.034                            |                       |                        |                         |        |

|                                |                         |                        |                     |                            |
|--------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>External Bending Moment</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10615 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>          | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Zwick PG-3141                  | 8/9/2022                | 2/7/2023               | J. Lee              | 8/11/2022                  |
| Caliper I47                    | 4/19/2022               | 4/18/2023              |                     |                            |
|                                |                         |                        |                     |                            |

**External Bending Moment** per MIL-DTL-38999 paragraphs 4.5.16 and 3.20. The receptacle connector was mounted as in normal service to a rigid panel. Before mating the plug connector to the receptacle, an adapter was attached as shown on figure 22. After mating the plug and receptacle connectors, the distance "L" from the point of load application "P" to the mounting panel was determined. The applied load at point "P" was determined as the bending moment specified in table XVII divided by the lever arm "L". This load was applied at a rate of approximately 10 pounds per second until the required load was. The applied load was held for 1 minute, then the load was released. Continuity of the contacts were monitored during the test. The test circuit used to monitor the circuit was capable of detecting a discontinuity in excess of 1 microsecond.

| Sample ID | AAO Part Number | Minimum Torque (in*lb) | Moment Arm (in) | Applied Force (lb) | Observations       | Status |
|-----------|-----------------|------------------------|-----------------|--------------------|--------------------|--------|
| 1R1       | XPFH-782701-35P | 50                     | 2.1             | 35.7               | No Discontinuities | Accept |
| 1P1       | XPFH-782711-35S |                        |                 |                    |                    |        |
| 1R2       | XPFH-782701-35P | 50                     | 2.1             | 35.7               | No Discontinuities | Accept |
| 1P2       | XPFH-782711-35S |                        |                 |                    |                    |        |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 | Aerospace Operations |                                | Sidney, N.Y. 13838 |                     |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|--------------------------------|--------------------|---------------------|-----------|-----------------|------------|--------------|--------|-----|-----------------|------|--------------------------------|--------|-----|-----------------|------|--------------------------------|--------|-----|-----------------|------|--------------------------------|--------|-----|-----------------|------|--------------------------------|--------|
| Post Test Examination of Samples                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 | Temp.<br>Ambient     | R.H.<br>Ambient                | CLT<br>10615       | Report<br>ESR-55555 |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | Cal Date             | Due Date                       | Technician         | Date                |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                      |                                | D. Cogswell        | 8/11/2022           |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                      |                                |                    |                     |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                      |                                |                    |                     |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |                                |                    |                     |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
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| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | AAO Part Number | Lot Number           | Observations                   | Status             |                     |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
| 1R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XPFH-782701-35P | none                 | No detrimental damage to parts | Accept             |                     |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
| 1P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XPFH-782711-35S | none                 | No detrimental damage to parts | Accept             |                     |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
| 1R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XPFH-782701-35P | none                 | No detrimental damage to parts | Accept             |                     |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |
| 1P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XPFH-782711-35S | none                 | No detrimental damage to parts | Accept             |                     |           |                 |            |              |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |     |                 |      |                                |        |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX F CLT 10615 Group 2 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

| <b>Amphenol Corporation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 | <b>Aerospace Operations</b> |                        | <b>Sidney, N.Y. 13838</b> |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------|------------------------|---------------------------|----------------------------|-----------|-----------------|------------|--------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|
| <b>Visual Examination of Samples</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 | <b>Temp.</b><br>Ambient     | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10615       | <b>Report</b><br>ESR-55555 |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| <b>Test Equipment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | <b>Cal Date</b>             | <b>Due Date</b>        | <b>Technician</b>         | <b>Date</b>                |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                             |                        | D. Cogswell               | 11/4/2021                  |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                             |                        |                           |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                             |                        |                           |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
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| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | AAO Part Number | Lot Number                  | Observations           | Status                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782701-35P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782711-35S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782701-35P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782711-35S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782701-35P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782711-35S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782701-98P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782711-98S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782701-98P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782711-98S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782701-98P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782711-98S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |

| Amphenol Corporation                 |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|--------------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycling                  | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10615 | Report<br>ESR-55555 |
| Test Equipment                       | Cal Date         | Due Date             | Technician   | Date                |
| Blue M Thermal Shock Chamber IC-4648 | 7/20/2021        | 6/19/2022            | D. Cogswell  | 11/4/2021           |
|                                      |                  |                      |              |                     |
|                                      |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +200°C +5°C, -0°C. Connectors were tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 0.6 lbs) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations          | Status |
|-----------|-----------------|-----------------------|--------|
| 2R1       | XPFS-782701-35P | No Observable Defects | Accept |
| 2P1       | XPFS-782711-35S | No Observable Defects | Accept |
| 2R2       | XPFS-782701-35P | No Observable Defects | Accept |
| 2P2       | XPFS-782711-35S | No Observable Defects | Accept |
| 2R3       | XPFS-782701-35P | No Observable Defects | Accept |
| 2P3       | XPFS-782711-35S | No Observable Defects | Accept |
| 2R4       | XPFS-782701-98P | No Observable Defects | Accept |
| 2P4       | XPFS-782711-98S | No Observable Defects | Accept |
| 2R5       | XPFS-782701-98P | No Observable Defects | Accept |
| 2P5       | XPFS-782711-98S | No Observable Defects | Accept |
| 2R6       | XPFS-782701-98P | No Observable Defects | Accept |
| 2P6       | XPFS-782711-98S | No Observable Defects | Accept |

| Amphenol Corporation                                                                                                                                                                                                                                       |                                        | Aerospace Operations |                 | Sidney, N.Y. 13838          |                               |        |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|-----------------|-----------------------------|-------------------------------|--------|--|
| Coupling & Uncoupling                                                                                                                                                                                                                                      |                                        | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10615                | Report<br>ESR-55555           |        |  |
| Test Equipment                                                                                                                                                                                                                                             |                                        | Cal Date             | Due Date        | Technician                  | Date                          |        |  |
| Torquemeter PG-2738                                                                                                                                                                                                                                        |                                        | 10/27/2021           | 1/26/2022       | D.Cogswell                  | 11/8/2021                     |        |  |
|                                                                                                                                                                                                                                                            |                                        |                      |                 |                             |                               |        |  |
|                                                                                                                                                                                                                                                            |                                        |                      |                 |                             |                               |        |  |
| <b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4.For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded. |                                        |                      |                 |                             |                               |        |  |
| Sample ID                                                                                                                                                                                                                                                  | Maximum<br>Coupling<br>Torque (in*lbf) | Uncoupling Torque    |                 | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |  |
|                                                                                                                                                                                                                                                            |                                        | Min. (in*lbf)        | Max. (in*lbf)   |                             |                               |        |  |
| 2R1                                                                                                                                                                                                                                                        | Record Data Only no Pass/Fail          |                      | 1.4             | 2.6                         | Accept                        |        |  |
| 2P1                                                                                                                                                                                                                                                        |                                        |                      |                 |                             |                               |        |  |
| 2R2                                                                                                                                                                                                                                                        | Record Data Only no Pass/Fail          |                      | 2.0             | 2.8                         | Accept                        |        |  |
| 2P2                                                                                                                                                                                                                                                        |                                        |                      |                 |                             |                               |        |  |
| 2R3                                                                                                                                                                                                                                                        | Record Data Only no Pass/Fail          |                      | 2.6             | 3.8                         | Accept                        |        |  |
| 2P3                                                                                                                                                                                                                                                        |                                        |                      |                 |                             |                               |        |  |
| 2R4                                                                                                                                                                                                                                                        | Record Data Only no Pass/Fail          |                      | 2.4             | 3.2                         | Accept                        |        |  |
| 2P4                                                                                                                                                                                                                                                        |                                        |                      |                 |                             |                               |        |  |
| 2R5                                                                                                                                                                                                                                                        | Record Data Only no Pass/Fail          |                      | 1.6             | 1.4                         | Accept                        |        |  |
| 2P5                                                                                                                                                                                                                                                        |                                        |                      |                 |                             |                               |        |  |
| 2R6                                                                                                                                                                                                                                                        | Record Data Only no Pass/Fail          |                      | 2.2             | 2.4                         | Accept                        |        |  |
| 2P6                                                                                                                                                                                                                                                        |                                        |                      |                 |                             |                               |        |  |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|-----------------------------|------------------|----------------------|--------------|---------------------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10615 | Report<br>ESR-55555 |
| Test Equipment              | Cal Date         | Due Date             | Technician   | Date                |
| Multi-Meter IC-4553         | 3/19/2021        | 2/16/2022            | D.Cogswell   | 11/8/2021           |
| Power Supply IC-3991        | 10/5/2021        | 3/6/2022             |              |                     |
|                             |                  |                      |              |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status |
|------------------|-----------------|---------------------|--------|
| 2P1 mated to 2R1 | XPFS-782701-35P | 1.8                 | Accept |
|                  | XPFS-782711-35S |                     |        |
| 2P2 mated to 2R2 | XPFS-782701-35P | 0.8                 | Accept |
|                  | XPFS-782711-35S |                     |        |
| 2P3 mated to 2R3 | XPFS-782701-35P | 0.5                 | Accept |
|                  | XPFS-782711-35S |                     |        |
| 2P4 mated to 2R4 | XPFS-782701-98P | 1.3                 | Accept |
|                  | XPFS-782711-98S |                     |        |
| 2P5 mated to 2R5 | XPFS-782701-98P | 1.5                 | Accept |
|                  | XPFS-782711-98S |                     |        |
| 2P6 mated to 2R6 | XPFS-782701-98P | 0.6                 | Accept |
|                  | XPFS-782711-98S |                     |        |

|                       |                         |                        |                     |                            |
|-----------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Durability</b>     | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10615 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b> | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
|                       |                         |                        | D. Cogswell         | See Below                  |
|                       |                         |                        |                     |                            |
|                       |                         |                        |                     |                            |

**Durability** test per MIL-DTL-38999 paragraphs 3.12 and 4.5.8.1. Connectors were mated and unmated 500 cycles manually. After conditioning, connectors were visually examined for damage detrimental to the operation of the connector, and connectors shall meet subsequent test requirements.

| Sample ID | AAO Part Number | Shell Size | Total Cycles | Date       | Results |
|-----------|-----------------|------------|--------------|------------|---------|
| 2R1       | XPFS-782701-35P | 8          | 500          | 11/12/2021 | Accept  |
| 2P1       | XPFS-782711-35S |            |              |            |         |
| 2R2       | XPFS-782701-35P | 8          | 500          | 11/12/2021 | Accept  |
| 2P2       | XPFS-782711-35S |            |              |            |         |
| 2R3       | XPFS-782701-35P | 8          | 500          | 1/7/2022   | Accept  |
| 2P3       | XPFS-782711-35S |            |              |            |         |
| 2R4       | XPFS-782701-98P | 8          | 500          | 11/13/2021 | Accept  |
| 2P4       | XPFS-782711-98S |            |              |            |         |
| 2R5       | XPFS-782701-98P | 8          | 500          | 11/13/2021 | Accept  |
| 2P5       | XPFS-782711-98S |            |              |            |         |
| 2R6       | XPFS-782701-98P | 8          | 500          | 11/13/2021 | Accept  |
| 2P6       | XPFS-782711-98S |            |              |            |         |

Durability cycles were performed by hand.

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

| Amphenol Corporation                                                                                                                                                                                                                                        |                                        | Aerospace Operations |                 | Sidney, N.Y. 13838          |                               |        |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|-----------------|-----------------------------|-------------------------------|--------|--|
| Coupling & Uncoupling                                                                                                                                                                                                                                       |                                        | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10615                | Report<br>ESR-55555           |        |  |
| Test Equipment                                                                                                                                                                                                                                              |                                        | Cal Date             | Due Date        | Technician                  | Date                          |        |  |
| Torquemeter PG-2738                                                                                                                                                                                                                                         |                                        | 1/26/2022            | 4/27/2022       | D.Cogswell                  | 1/26/2022                     |        |  |
|                                                                                                                                                                                                                                                             |                                        |                      |                 |                             |                               |        |  |
|                                                                                                                                                                                                                                                             |                                        |                      |                 |                             |                               |        |  |
| <b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded. |                                        |                      |                 |                             |                               |        |  |
| Sample ID                                                                                                                                                                                                                                                   | Maximum<br>Coupling<br>Torque (in*lbf) | Uncoupling Torque    |                 | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |  |
| 2R1                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 1.6                         | 2.2                           | Accept |  |
| 2P1                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |
| 2R2                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 1.8                         | 3.4                           | Accept |  |
| 2P2                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |
| 2R3                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 2.0                         | 2.2                           | Accept |  |
| 2P3                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |
| 2R4                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 1.6                         | 2.2                           | Accept |  |
| 2P4                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |
| 2R5                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 1.8                         | 3.4                           | Accept |  |
| 2P5                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |
| 2R6                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 2.8                         | 4.6                           | Accept |  |
| 2P6                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|-----------------------------|------------------|----------------------|--------------|---------------------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10615 | Report<br>ESR-55555 |
| Test Equipment              | Cal Date         | Due Date             | Technician   | Date                |
| Multi-Meter IC-4008         | 7/22/2021        | 6/21/2022            | D.Cogswell   | See below           |
| Power Supply IC-3991        | 12/7/2021        | 6/7/2022             |              |                     |
|                             |                  |                      |              |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status | Date      |
|------------------|-----------------|---------------------|--------|-----------|
| 2P1 mated to 2R1 | XPFS-782701-35P | 1.8                 | Accept | 2/15/2022 |
|                  | XPFS-782711-35S |                     |        |           |
| 2P2 mated to 2R2 | XPFS-782701-35P | 0.7                 | Accept | 2/15/2022 |
|                  | XPFS-782711-35S |                     |        |           |
| 2P3 mated to 2R3 | XPFS-782701-35P | 1.3                 | Accept | 2/15/2022 |
|                  | XPFS-782711-35S |                     |        |           |
| 2P4 mated to 2R4 | XPFS-782701-98P | 2.0                 | Accept | 2/15/2022 |
|                  | XPFS-782711-98S |                     |        |           |
| 2P5 mated to 2R5 | XPFS-782701-98P | 1.3                 | Accept | 1/26/2022 |
|                  | XPFS-782711-98S |                     |        |           |
| 2P6 mated to 2R6 | XPFS-782701-98P | 1.8                 | Accept | 1/26/2022 |
|                  | XPFS-782711-98S |                     |        |           |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                         | Aerospace Operations |                     |              | Sidney, N.Y. 13838  |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|----------------------|---------------------|--------------|---------------------|--------|
| Accessory Thread Strength                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                         | Temp.<br>Ambient     | R.H.<br>Ambient     | CLT<br>10615 | Report<br>ESR-55555 |        |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                         | Cal Date             | Due Date            | Technician   | Date                |        |
| Spring Scale PG-2234                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                         | 12/7/2021            | 2/4/2022            | D. Cogswell  | See Below           |        |
| IC-5025 Timer                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                         | 12/7/2021            | 6/7/2022            |              |                     |        |
| Spring Scale PG-2234                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                         | 2/4/2022             | 4/5/2022            |              |                     |        |
| <b>Accessory Thread Strength</b> per MIL-DTL-38999 paragraphs 3.26 and 4.5.32. Mated connectors were mounted as in normal service to a rigid panel. The specified torque per table IX of MIL-DTL-38999 was applied to the accessory of the plug and held for one minute and released. The specified torque was then applied to the accessory of the receptacle for one minute and released. The connectors were unmated and visual inspected at 3X magnification for damage or breakage. |                 |                         |                      |                     |              |                     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                         |                      |                     |              |                     |        |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | AAO Part Number | Minimum Torque (in*lbF) | Moment Arm (in)      | Applied Force (lbF) | Observations | Date                | Status |
| 2R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782701-35P | 50                      | 8.5                  | 5.8                 | No damage    | 2/15/2022           | Accept |
| 2P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782711-35S |                         |                      |                     |              |                     |        |
| 2R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782701-35P | 50                      | 8.5                  | 5.8                 | No damage    | 2/15/2022           | Accept |
| 2P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782711-35S |                         |                      |                     |              |                     |        |
| 2R3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782701-35P | 50                      | 8.5                  | 5.8                 | No damage    | 2/15/2022           | Accept |
| 2P3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782711-35S |                         |                      |                     |              |                     |        |
| 2R4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782701-98P | 50                      | 8.5                  | 5.8                 | No damage    | 2/15/2022           | Accept |
| 2P4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782711-98S |                         |                      |                     |              |                     |        |
| 2R5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782701-98P | 50                      | 8.5                  | 5.8                 | No damage    | 1/26/2022           | Accept |
| 2P5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782711-98S |                         |                      |                     |              |                     |        |
| 2R6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782701-98P | 50                      | 8.5                  | 5.8                 | No damage    | 1/26/2022           | Accept |
| 2P6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFS-782711-98S |                         |                      |                     |              |                     |        |

|                       |                         |                        |                     |                            |
|-----------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Vibration</b>      | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10615 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b> | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| See Vibe/Shock Report |                         |                        | A. Hosier           | 1/31/2022                  |
|                       |                         |                        |                     |                            |
|                       |                         |                        |                     |                            |

**Vibration** per MIL-DTL-38999 3.27 and 4.5.23.2, 2 pairs per each of the 3 vibration profiles.  
Samples are to be prepped in accordance with L-40990-141.

| Sample ID           | AAO Part Number | Profile    | Date Complete | Discontinuities | Coupling nut Movement | Status |
|---------------------|-----------------|------------|---------------|-----------------|-----------------------|--------|
| 2P5 mated<br>to 2R5 | XPFS-782701-98P | 4.5.23.2.4 | 1/31/2022     | None            | No Movement           | Accept |
|                     | XPFS-782711-98S |            |               |                 |                       |        |
| 2P6 mated<br>to 2R6 | XPFS-782701-98P | 4.5.23.2.4 | 1/31/2022     | None            | No Movement           | Accept |
|                     | XPFS-782711-98S |            |               |                 |                       |        |

| Amphenol Corporation                                                                                                                                                                                                                                               |                                        | Aerospace Operations |                 | Sidney, N.Y. 13838          |                               |             |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|-----------------|-----------------------------|-------------------------------|-------------|--------|
| Coupling & Uncoupling After Vibe                                                                                                                                                                                                                                   |                                        | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10615                | Report<br>ESR-55555           |             |        |
| Test Equipment                                                                                                                                                                                                                                                     |                                        | Cal Date             | Due Date        | Technician                  | Date                          |             |        |
| Torquemeter PG-2738                                                                                                                                                                                                                                                |                                        | 1/26/2022            | 4/27/2022       | D. Cogswell                 | 2/1/2022                      |             |        |
|                                                                                                                                                                                                                                                                    |                                        |                      |                 |                             |                               |             |        |
|                                                                                                                                                                                                                                                                    |                                        |                      |                 |                             |                               |             |        |
| <p><b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.</p> |                                        |                      |                 |                             |                               |             |        |
| Sample ID                                                                                                                                                                                                                                                          | Maximum<br>Coupling<br>Torque (in*lbf) | Uncoupling Torque    |                 | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Date Tested | Status |
|                                                                                                                                                                                                                                                                    |                                        | Min. (in*lbf)        | Max. (in*lbf)   |                             |                               |             |        |
| 2R5                                                                                                                                                                                                                                                                | Record Data Only no Pass/Fail          |                      |                 | 4.4                         | 4.2                           | 2/1/2022    | Accept |
| 2P5                                                                                                                                                                                                                                                                |                                        |                      |                 |                             |                               |             |        |
| 2R6                                                                                                                                                                                                                                                                | Record Data Only no Pass/Fail          |                      |                 | 6.0                         | 6.6                           | 2/1/2022    | Accept |
| 2P6                                                                                                                                                                                                                                                                |                                        |                      |                 |                             |                               |             |        |

|                                               |                         |                        |                     |                            |
|-----------------------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Shell-to-Shell Conductivity After Vibe</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10615 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>                         | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Multi-Meter IC-4008                           | 7/22/2021               | 6/21/2022              | D. Cogswell         | See Below                  |
| Power Supply IC-3991                          | 12/7/2021               | 6/7/2022               |                     |                            |
|                                               |                         |                        |                     |                            |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status | Date     |
|------------------|-----------------|---------------------|--------|----------|
| 2P5 mated to 2R5 | XPFS-782701-98P | 1.3                 | Accept | 2/1/2022 |
|                  | XPFS-782711-98S |                     |        |          |
| 2P6 mated to 2R6 | XPFS-782701-98P | 1.8                 | Accept | 2/1/2022 |
|                  | XPFS-782711-98S |                     |        |          |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | Aerospace Operations |                      | Sidney, N.Y. 13838 |                     |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|----------------------|--------------------|---------------------|-----------|-----------------|------------|--------------|--------|-----|-----------------|------|----------------------|--------|-----|-----------------|------|----------------------|--------|-----|-----------------|------|----------------------|--------|-----|-----------------|------|----------------------|--------|
| Post Test Examination of Samples                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 | Temp.<br>Ambient     | R.H.<br>Ambient      | CLT<br>10615       | Report<br>ESR-55555 |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | Cal Date             | Due Date             | Technician         | Date                |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |                      | D.Cogswell         | 2/1/2022            |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |                      |                    |                     |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |                      |                    |                     |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
| <b>Post Test Exam of Parts:</b> Samples were inspected for damage detrimental to the operation of the connectors at the end of testing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                      |                      |                    |                     |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
| <table border="1"> <thead> <tr> <th>Sample ID</th> <th>AAO Part Number</th> <th>Lot Number</th> <th>Observations</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>2R5</td> <td>XPFS-782701-98P</td> <td>NONE</td> <td>No Observable Damage</td> <td>Accept</td> </tr> <tr> <td>2P5</td> <td>XPFS-782711-98S</td> <td>NONE</td> <td>No Observable Damage</td> <td>Accept</td> </tr> <tr> <td>2R6</td> <td>XPFS-782701-98P</td> <td>NONE</td> <td>No Observable Damage</td> <td>Accept</td> </tr> <tr> <td>2P6</td> <td>XPFS-782711-98S</td> <td>NONE</td> <td>No Observable Damage</td> <td>Accept</td> </tr> </tbody> </table> |                 |                      |                      |                    |                     | Sample ID | AAO Part Number | Lot Number | Observations | Status | 2R5 | XPFS-782701-98P | NONE | No Observable Damage | Accept | 2P5 | XPFS-782711-98S | NONE | No Observable Damage | Accept | 2R6 | XPFS-782701-98P | NONE | No Observable Damage | Accept | 2P6 | XPFS-782711-98S | NONE | No Observable Damage | Accept |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | AAO Part Number | Lot Number           | Observations         | Status             |                     |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
| 2R5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | XPFS-782701-98P | NONE                 | No Observable Damage | Accept             |                     |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
| 2P5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | XPFS-782711-98S | NONE                 | No Observable Damage | Accept             |                     |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
| 2R6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | XPFS-782701-98P | NONE                 | No Observable Damage | Accept             |                     |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |
| 2P6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | XPFS-782711-98S | NONE                 | No Observable Damage | Accept             |                     |           |                 |            |              |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |     |                 |      |                      |        |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX G CLT 10617 Group 2 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--------------|---------------------|--|-----------|-----------------|------------|--------------|--------|-----|-----------------|------|------------|--------|-----|-----------------|------|------------|--------|-----|-----------------|------|------------|--------|-----|-----------------|------|------------|--------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10617 | Report<br>ESR-55555 |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cal Date         | Due Date             | Technician   | Date                |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 10X Magnification Microscope                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |                      | D.Cogswell   | 10/27/2021          |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |                      |              |                     |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |                      |              |                     |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                  |                      |              |                     |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| <table border="1"> <thead> <tr> <th>Sample ID</th> <th>AAO Part Number</th> <th>Lot Number</th> <th>Observations</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>2R1</td> <td>XPFH-782702-35P</td> <td>NONE</td> <td>No Defects</td> <td>Accept</td> </tr> <tr> <td>2P1</td> <td>XPFH-782712-35S</td> <td>NONE</td> <td>No Defects</td> <td>Accept</td> </tr> <tr> <td>2R2</td> <td>XPFH-782702-35P</td> <td>NONE</td> <td>No Defects</td> <td>Accept</td> </tr> <tr> <td>2P2</td> <td>XPFH-782712-35S</td> <td>NONE</td> <td>No Defects</td> <td>Accept</td> </tr> </tbody> </table> |                  |                      |              |                     |  | Sample ID | AAO Part Number | Lot Number | Observations | Status | 2R1 | XPFH-782702-35P | NONE | No Defects | Accept | 2P1 | XPFH-782712-35S | NONE | No Defects | Accept | 2R2 | XPFH-782702-35P | NONE | No Defects | Accept | 2P2 | XPFH-782712-35S | NONE | No Defects | Accept |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | AAO Part Number  | Lot Number           | Observations | Status              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 2R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XPFH-782702-35P  | NONE                 | No Defects   | Accept              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 2P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XPFH-782712-35S  | NONE                 | No Defects   | Accept              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 2R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XPFH-782702-35P  | NONE                 | No Defects   | Accept              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |
| 2P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XPFH-782712-35S  | NONE                 | No Defects   | Accept              |  |           |                 |            |              |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |     |                 |      |            |        |

| Amphenol Corporation                 |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|--------------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycling                  | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10617 | Report<br>ESR-55555 |
| Test Equipment                       | Cal Date         | Due Date             | Technician   | Date                |
| Blue M Thermal Shock Chamber IC-4648 | 7/20/2021        | 6/19/2022            | D.Cogswell   | 10/27/2021          |
|                                      |                  |                      |              |                     |
|                                      |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +200°C +5°C, -0°C. Connectors were tested in the fully mated condition. 1/2 hour dwells at temperature extremes were used (weight of sample approximately 0.6 lbs) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations          | Status |
|-----------|-----------------|-----------------------|--------|
| 2R1       | XPFH-782702-35P | No observable defects | Accept |
| 2P1       | XPFH-782712-35S | No observable defects | Accept |
| 2R2       | XPFH-782702-35P | No observable defects | Accept |
| 2P2       | XPFH-782712-35S | No observable defects | Accept |

| Amphenol Corporation                                                                                                                                                                                                                                               |                                          | Aerospace Operations |               | Sidney, N.Y. 13838          |                               |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------|---------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling                                                                                                                                                                                                                                              | Temp.<br>Ambient                         | R.H.<br>Ambient      | CLT<br>10617  | Report<br>ESR-55555         |                               |        |
| Test Equipment                                                                                                                                                                                                                                                     | Cal Date                                 | Due Date             | Technician    | Date                        |                               |        |
| Torquemeter PG-2738                                                                                                                                                                                                                                                | 10/27/2021                               | 1/26/2022            | D.Cogswell    | 10/27/2021                  |                               |        |
|                                                                                                                                                                                                                                                                    |                                          |                      |               |                             |                               |        |
|                                                                                                                                                                                                                                                                    |                                          |                      |               |                             |                               |        |
| <p><b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.</p> |                                          |                      |               |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                          | Maximum<br>Coupling<br>Torque (in*lbf)   | Uncoupling Torque    |               | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |
|                                                                                                                                                                                                                                                                    |                                          | Min. (in*lbf)        | Max. (in*lbf) |                             |                               |        |
| 2R1                                                                                                                                                                                                                                                                | No Pass/Fail Criteria. Record data only. |                      |               | 1.8                         | 2.0                           | Accept |
| 2P1                                                                                                                                                                                                                                                                |                                          |                      |               |                             |                               |        |
| 2R2                                                                                                                                                                                                                                                                | No Pass/Fail Criteria. Record data only. |                      |               | 2.2                         | 2.4                           | Accept |
| 2P2                                                                                                                                                                                                                                                                |                                          |                      |               |                             |                               |        |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |            |
|-----------------------------|------------------|----------------------|--------------|---------------------|------------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10617 | Report<br>ESR-55555 |            |
| Test Equipment              | Cal Date         | Due Date             | Technician   |                     | Date       |
| Multi-Meter IC-4858         | 6/22/2021        | 12/21/2021           | D.Cogswell   |                     | 10/27/2021 |
| Power Supply IC-3991        | 10/5/2021        | 3/6/2022             |              |                     |            |
|                             |                  |                      |              |                     |            |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status |
|------------------|-----------------|---------------------|--------|
| 2P1 mated to 2R1 | XPFH-782702-35P | 0.92                | Accept |
|                  | XPFH-782712-35S |                     |        |
| 2P2 mated to 2R2 | XPFH-782702-35P | 0.95                | Accept |
|                  | XPFH-782712-35S |                     |        |

|                       |                         |                        |                     |                            |
|-----------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Durability</b>     | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10617 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b> | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
|                       |                         |                        | D.Cogswell          | 10/28/2021                 |
|                       |                         |                        |                     |                            |
|                       |                         |                        |                     |                            |

**Durability** test per MIL-DTL-38999 paragraphs 3.12 and 4.5.8.1. Connectors were mated and unmated 500 cycles manually. After conditioning, connectors were visually examined for damage detrimental to the operation of the connector, and connectors shall meet subsequent test requirements.

| Sample ID | MIL Part Number | Shell Size | Total Cycles | Date       | Results |  |
|-----------|-----------------|------------|--------------|------------|---------|--|
| 2R1       | XPFH-782702-35P | 10         | 500          | 10/28/2021 | Accept  |  |
| 2P1       | XPFH-782712-35S |            |              |            |         |  |
| 2R2       | XPFH-782702-35P | 10         | 500          | 10/28/2021 | Accept  |  |
| 2P2       | XPFH-782712-35S |            |              |            |         |  |

|                                           |
|-------------------------------------------|
| Durability cycles were performed by hand. |
|-------------------------------------------|

| Amphenol Corporation    |                  | Aerospace Operations |               | Sidney, N.Y. 13838  |           |
|-------------------------|------------------|----------------------|---------------|---------------------|-----------|
| Vibration               | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10617  | Report<br>ESR-55555 |           |
| Test Equipment          | Cal Date         | Due Date             | Technician    |                     | Date      |
| See Vibe/Shock Report # |                  |                      | Andrew Hosier |                     | 1/28/2022 |
|                         |                  |                      |               |                     |           |
|                         |                  |                      |               |                     |           |

**Vibration** per MIL-DTL-38999 3.27 and 4.5.23.3.  
Samples are to be prepped in accordance with L-40990-141.

| Sample ID           | AAO Part Number | Profile    | Date Complete | Status |
|---------------------|-----------------|------------|---------------|--------|
| 2P1 mated<br>to 2R1 | XPF2-782702-35P | 4.5.23.2.3 | 1/28/2022     | Accept |
|                     | XPF2-782712-35S |            |               |        |
| 2P2 mated<br>to 2R2 | XPF2-782702-35P | 4.5.23.2.3 | 1/28/2022     | Accept |
|                     | XPF2-782712-35S |            |               |        |

There were no discontinuities observed on test samples.  
There was no damage to connectors resulting from test.  
There was no coupling nut movement.

| Amphenol Corporation                   |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |          |
|----------------------------------------|------------------|----------------------|--------------|---------------------|----------|
| Shell-to-Shell Conductivity After Vibe | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10617 | Report<br>ESR-55555 |          |
| Test Equipment                         | Cal Date         | Due Date             | Technician   |                     | Date     |
| Multi-Meter IC-3994                    | 7/22/2021        | 6/21/2022            | D.Cogswell   |                     | 2/2/2022 |
| Power Supply IC-3991                   | 10/5/2021        | 3/6/2022             |              |                     |          |
|                                        |                  |                      |              |                     |          |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status |
|------------------|-----------------|---------------------|--------|
| 2P1 mated to 2R1 | XPFH-782702-35P | 1.98                | Accept |
|                  | XPFH-782712-35S |                     |        |
| 2P2 mated to 2R2 | XPFH-782702-35P | 1.62                | Accept |
|                  | XPFH-782712-35S |                     |        |

| Amphenol Corporation                                                                                                                                                                                                                                               |                                          | Aerospace Operations |                 | Sidney, N.Y. 13838          |                               |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------------|-----------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling After Vibe                                                                                                                                                                                                                                   |                                          | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10617                | Report<br>ESR-55555           |        |
| Test Equipment                                                                                                                                                                                                                                                     |                                          | Cal Date             | Due Date        | Technician                  | Date                          |        |
| Torquemeter PG-2738                                                                                                                                                                                                                                                |                                          | 1/26/2022            | 4/27/2022       | D.Cogswell                  | 2/2/2022                      |        |
|                                                                                                                                                                                                                                                                    |                                          |                      |                 |                             |                               |        |
|                                                                                                                                                                                                                                                                    |                                          |                      |                 |                             |                               |        |
| <p><b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.</p> |                                          |                      |                 |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                          | Maximum<br>Coupling<br>Torque (in*lbf)   | Uncoupling Torque    |                 | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |
|                                                                                                                                                                                                                                                                    |                                          | Min. (in*lbf)        | Max. (in*lbf)   |                             |                               |        |
| 2R1                                                                                                                                                                                                                                                                | No Pass/Fail Criteria. Record data only. |                      |                 | 2.8                         | 3.2                           | Accept |
| 2P1                                                                                                                                                                                                                                                                |                                          |                      |                 |                             |                               |        |
| 2R2                                                                                                                                                                                                                                                                | No Pass/Fail Criteria. Record data only. |                      |                 | 1.4                         | 3.6                           | Accept |
| 2P2                                                                                                                                                                                                                                                                |                                          |                      |                 |                             |                               |        |

|                                                                                                         |  |                      |                 |                    |                     |
|---------------------------------------------------------------------------------------------------------|--|----------------------|-----------------|--------------------|---------------------|
| Amphenol Corporation                                                                                    |  | Aerospace Operations |                 | Sidney, N.Y. 13838 |                     |
| Post Test Examination of Samples                                                                        |  | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10617       | Report<br>ESR-55555 |
| Test Equipment                                                                                          |  | Cal Date             | Due Date        | Technician         | Date                |
| 10X Magnification Microscope                                                                            |  |                      |                 | D. Cogswell        | 2/2/2022            |
|                                                                                                         |  |                      |                 |                    |                     |
|                                                                                                         |  |                      |                 |                    |                     |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects. |  |                      |                 |                    |                     |
|                                                                                                         |  |                      |                 |                    |                     |

| Sample ID | AAO Part Number | Lot Number | Observations             | Status |
|-----------|-----------------|------------|--------------------------|--------|
| 2R1       | XPFH-782702-35P | NONE       | No Performance hindering | Accept |
| 2P1       | XPFH-782712-35S | NONE       | damage from testing.     |        |
| 2R2       | XPFH-782702-35P | NONE       | No Performance hindering | Accept |
| 2P2       | XPFH-782712-35S | NONE       | damage from testing.     |        |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX H CLT 10630 Group 1 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

|                                                                                                         |  |                      |                 |                    |                     |
|---------------------------------------------------------------------------------------------------------|--|----------------------|-----------------|--------------------|---------------------|
| Amphenol Corporation                                                                                    |  | Aerospace Operations |                 | Sidney, N.Y. 13838 |                     |
| Preliminary Examination of Test Samples                                                                 |  | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10630       | Report<br>ESR-55555 |
| Test Equipment                                                                                          |  | Cal Date             | Due Date        | Technician         | Date                |
|                                                                                                         |  |                      |                 | D. Cogswell        | 12/22/2021          |
|                                                                                                         |  |                      |                 |                    |                     |
|                                                                                                         |  |                      |                 |                    |                     |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects. |  |                      |                 |                    |                     |
|                                                                                                         |  |                      |                 |                    |                     |

| Sample ID | AAO Part Number | Lot Number | Observations     | Status |
|-----------|-----------------|------------|------------------|--------|
| 1R1       | XPFH-782703-35P | NONE       | No Defects, good | Accept |
| 1P1       | XPFH-782713-35S | NONE       | No Defects, good | Accept |
| 1R2       | XPFH-782703-35P | NONE       | No Defects, good | Accept |
| 1P2       | XPFH-782713-35S | NONE       | No Defects, good | Accept |

| Amphenol Corporation                 |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|--------------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycling                  | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10630 | Report<br>ESR-55555 |
| Test Equipment                       | Cal Date         | Due Date             | Technician   | Date                |
| Blue M Thermal Shock Chamber IC-4648 | 7/20/2021        | 6/19/2022            | D. Cogswell  | 12/22/2021          |
|                                      |                  |                      |              |                     |
|                                      |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +200°C +5°C, -0°C. Connectors were tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 0.6 lbs) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations       | Status |
|-----------|-----------------|--------------------|--------|
| 1R1       | XPFH-782703-35P | No damage to parts | Accept |
| 1P1       | XPFH-782713-35S | No damage to parts | Accept |
| 1R2       | XPFH-782703-35P | No damage to parts | Accept |
| 1P2       | XPFH-782713-35S | No damage to parts | Accept |

| Amphenol Corporation                                                                                                                                                                                                                                       |                                            | Aerospace Operations |                 |                             | Sidney, N.Y. 13838            |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------|-----------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling                                                                                                                                                                                                                                      |                                            | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10630                | Report<br>ESR-55555           |        |
| Test Equipment                                                                                                                                                                                                                                             |                                            | Cal Date             | Due Date        | Technician                  | Date                          |        |
| Torquemeter PG-2738                                                                                                                                                                                                                                        |                                            | 10/25/2021           | 1/26/2022       | D.Cogswell                  | 12/23/2021                    |        |
|                                                                                                                                                                                                                                                            |                                            |                      |                 |                             |                               |        |
|                                                                                                                                                                                                                                                            |                                            |                      |                 |                             |                               |        |
| <b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4.For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded. |                                            |                      |                 |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                  | Maximum<br>Coupling<br>Torque (in*lbf)     | Uncoupling Torque    |                 | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |
|                                                                                                                                                                                                                                                            |                                            | Min. (in*lbf)        | Max. (in*lbf)   |                             |                               |        |
| 1R1                                                                                                                                                                                                                                                        | Record Results only, No Pass/Fail Criteria |                      |                 | 4.2                         | 4.0                           | Accept |
| 1P1                                                                                                                                                                                                                                                        |                                            |                      |                 |                             |                               |        |
| 1R2                                                                                                                                                                                                                                                        |                                            |                      |                 | 3.6                         | 4.4                           | Accept |
| 1P2                                                                                                                                                                                                                                                        |                                            |                      |                 |                             |                               |        |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |            |
|-----------------------------|------------------|----------------------|--------------|---------------------|------------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10630 | Report<br>ESR-55555 |            |
| Test Equipment              | Cal Date         | Due Date             | Technician   |                     | Date       |
| Multi-Meter IC-4049         | 12/9/2021        | 12/9/2022            | D. Cogswell  |                     | 12/23/2021 |
| Power Supply IC-3991        | 12/7/2021        | 6/7/2022             |              |                     |            |
|                             |                  |                      |              |                     |            |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2. millivolts

| Sample ID           | AAO Part<br>Number | Millivolt Drop<br>(mV) | Status |
|---------------------|--------------------|------------------------|--------|
| 1P1 mated<br>to 1R1 | XPFH-782703-35P    | 0.6                    | Accept |
|                     | XPFH-782713-35S    |                        |        |
| 1P2 mated<br>to 1R2 | XPFH-782703-35P    | 0.6                    | Accept |
|                     | XPFH-782713-35S    |                        |        |

|                                                                                                                                                                                                                                                                                                                                                |                 |                      |                 |                    |                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|-----------------|--------------------|---------------------|
| Amphenol Corporation                                                                                                                                                                                                                                                                                                                           |                 | Aerospace Operations |                 | Sidney, N.Y. 13838 |                     |
| Durability                                                                                                                                                                                                                                                                                                                                     |                 | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10630       | Report<br>ESR-55555 |
| Test Equipment                                                                                                                                                                                                                                                                                                                                 |                 | Cal Date             | Due Date        | Technician         | Date                |
|                                                                                                                                                                                                                                                                                                                                                |                 |                      |                 | C.Boecke           | 2/7/2022            |
|                                                                                                                                                                                                                                                                                                                                                |                 |                      |                 |                    |                     |
|                                                                                                                                                                                                                                                                                                                                                |                 |                      |                 |                    |                     |
| <p><b>Durability</b> test per MIL-DTL-38999 paragraphs 3.12 and 4.5.8.1. Connectors were mated and unmated 500 cycles at a rate not to exceed 300 cycles per hour. After conditioning, connectors were visually examined for damage detrimental to the operation of the connector, and connectors shall meet subsequent test requirements.</p> |                 |                      |                 |                    |                     |
| Sample ID                                                                                                                                                                                                                                                                                                                                      | MIL Part Number | Shell Size           | Total Cycles    | Results            |                     |
| 1R1                                                                                                                                                                                                                                                                                                                                            | XPFH-782703-35P | 12                   | 500             | Accept             |                     |
| 1P1                                                                                                                                                                                                                                                                                                                                            | XPFH-782713-35S |                      |                 |                    |                     |
| 1R2                                                                                                                                                                                                                                                                                                                                            | XPFH-782703-35P | 12                   | 500             | Accept             |                     |
| 1P2                                                                                                                                                                                                                                                                                                                                            | XPFH-782713-35S |                      |                 |                    |                     |
| All durability testing was done manually at a rate of approximately 300 Cycles per hour                                                                                                                                                                                                                                                        |                 |                      |                 |                    |                     |
|                                                                                                                                                                                                                                                                                                                                                |                 |                      |                 |                    |                     |

| Amphenol Corporation                                                                                                                                                                                                                                               |                                            | Aerospace Operations |               | Sidney, N.Y. 13838          |                               |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------|---------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling                                                                                                                                                                                                                                              | Temp.<br>Ambient                           | R.H.<br>Ambient      | CLT<br>10630  | Report<br>ESR-55555         |                               |        |
| Test Equipment                                                                                                                                                                                                                                                     | Cal Date                                   | Due Date             | Technician    | Date                        |                               |        |
| Torquemeter PG-2738                                                                                                                                                                                                                                                | 1/26/2022                                  | 4/27/2022            | D.Cogswell    | 2/15/2022                   |                               |        |
|                                                                                                                                                                                                                                                                    |                                            |                      |               |                             |                               |        |
|                                                                                                                                                                                                                                                                    |                                            |                      |               |                             |                               |        |
| <p><b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.</p> |                                            |                      |               |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                          | Maximum<br>Coupling<br>Torque (in*lbf)     | Uncoupling Torque    |               | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |
|                                                                                                                                                                                                                                                                    |                                            | Min. (in*lbf)        | Max. (in*lbf) |                             |                               |        |
| 1R1                                                                                                                                                                                                                                                                | Record Results only, No Pass/Fail Criteria |                      |               | 4.4                         | 8.8                           | Accept |
| 1P1                                                                                                                                                                                                                                                                |                                            |                      |               |                             |                               |        |
| 1R2                                                                                                                                                                                                                                                                |                                            |                      |               | 3.8                         | 7.2                           | Accept |
| 1P2                                                                                                                                                                                                                                                                |                                            |                      |               |                             |                               |        |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|-----------------------------|------------------|----------------------|--------------|---------------------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10630 | Report<br>ESR-55555 |
| Test Equipment              | Cal Date         | Due Date             | Technician   | Date                |
| Multi-Meter IC-4049         | 12/9/2021        | 12/9/2022            | D. Cogswell  | 2/15/2022           |
| Power Supply IC-3991        | 12/7/2021        | 6/7/2022             |              |                     |
|                             |                  |                      |              |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2. millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status |
|------------------|-----------------|---------------------|--------|
| 1P1 mated to 1R1 | XPFH-782703-35P | 0.6                 | Accept |
|                  | XPFH-782713-35S |                     |        |
| 1P2 mated to 1R2 | XPFH-782703-35P | 0.6                 | Accept |
|                  | XPFH-782713-35S |                     |        |

|                           |                         |                        |                     |                            |
|---------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Altitude Immersion</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10630 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>     | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| IC-5286 Pressure Gauge    | 8/3/2021                | 7/3/2022               | D. Cogswell         | 2/24/2022                  |
| F-0993 Clock              |                         |                        |                     |                            |
|                           |                         |                        |                     |                            |

**Altitude Immersion**, Mated connectors were tested in accordance with test procedure EIA-364-03. The following details applied:

- a. All wire ends were located within the chamber and exposed to the chamber atmosphere but not submerged or sealed.
- b. At the end of the third cycle, while the connectors are still submerged in the solution, the insulation resistance at ambient temperature shall be measured as specified in 4.5.10.1, and the dielectric withstanding voltage test shall be performed as specified in 4.5.11.1. Connectors were potted for this test since the area of concentration is the O-Ring interfacial seal.

| Sample ID | AAO Part Number | Time 1st Cycle<br>Start/Finish | Time 2nd Cycle<br>Start/Finish | Time 3rd Cycle<br>Start/Finish | Status* |
|-----------|-----------------|--------------------------------|--------------------------------|--------------------------------|---------|
| 1R1       | XPFH-782703-35P | 9:30 AM/<br>10:00 AM           | 10:30 AM/<br>11:00AM           | 11:30 AM/<br>12:00 PM          | Accept  |
| 1P1       | XPFH-782713-35S |                                |                                |                                | Accept  |
| 1R2       | XPFH-782703-35P |                                |                                |                                | Accept  |
| 1P2       | XPFH-782713-35S |                                |                                |                                | Accept  |

\*See next 2 data sheets for IR DWV results

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | Aerospace Operations   |                      | Sidney, N.Y. 13838 |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------|----------------------|--------------------|---------------------|-----------|-----------------|------------------------|---------|--------|-----|-----------------|----------|----------------------|--------|-----|-----------------|----------|-----|-----------------|----------|----------------------|--------|-----|-----------------|----------|
| Insulation Resistance While in Salt Water Solution Post Altitude Immersion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | Temp.<br>Ambient       | R.H.<br>Ambient      | CLT<br>10630       | Report<br>ESR-55555 |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 | Cal Date               | Due Date             | Technician         | Date                |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| F-2672 159 Circuit Connector Tester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 | 1/9/2022               | 4/8/2022             | D.Cogswell         | 2/24/2022           |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                        |                      |                    |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                        |                      |                    |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| <b>Insulation Resistance post Altitude Immersion:</b> Mated Connectors were tested in accordance with test procedure EIA-364-21. All cavities were tested. 500 VDC was applied to each contact during test.                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                        |                      |                    |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| <table border="1"> <thead> <tr> <th>Sample ID</th> <th>AAO Part Number</th> <th>Minimum IR Requirement</th> <th>Results</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>1R1</td> <td>XPFH-782703-35P</td> <td>5,000 MΩ</td> <td rowspan="2">All locations &gt;50 GΩ</td> <td rowspan="2">Accept</td> </tr> <tr> <td>1P1</td> <td>XPFH-782713-35S</td> <td>5,000 MΩ</td> </tr> <tr> <td>1R2</td> <td>XPFH-782703-35P</td> <td>5,000 MΩ</td> <td rowspan="2">All locations &gt;50 GΩ</td> <td rowspan="2">Accept</td> </tr> <tr> <td>1P2</td> <td>XPFH-782713-35S</td> <td>5,000 MΩ</td> </tr> </tbody> </table> |                 |                        |                      |                    |                     | Sample ID | AAO Part Number | Minimum IR Requirement | Results | Status | 1R1 | XPFH-782703-35P | 5,000 MΩ | All locations >50 GΩ | Accept | 1P1 | XPFH-782713-35S | 5,000 MΩ | 1R2 | XPFH-782703-35P | 5,000 MΩ | All locations >50 GΩ | Accept | 1P2 | XPFH-782713-35S | 5,000 MΩ |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | AAO Part Number | Minimum IR Requirement | Results              | Status             |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| 1R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | XPFH-782703-35P | 5,000 MΩ               | All locations >50 GΩ | Accept             |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| 1P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | XPFH-782713-35S | 5,000 MΩ               |                      |                    |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| 1R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | XPFH-782703-35P | 5,000 MΩ               | All locations >50 GΩ | Accept             |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |
| 1P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | XPFH-782713-35S | 5,000 MΩ               |                      |                    |                     |           |                 |                        |         |        |     |                 |          |                      |        |     |                 |          |     |                 |          |                      |        |     |                 |          |

|                                                                                         |                  |                 |              |                     |
|-----------------------------------------------------------------------------------------|------------------|-----------------|--------------|---------------------|
| Dielectric Withstanding Voltage While in Salt Water<br>Solution Post Altitude Immersion | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10630 | Report<br>ESR-55555 |
| Test Equipment                                                                          | Cal Date         | Due Date        | Technician   | Date                |
| F-2672 159 Circuit Connector Tester                                                     | 1/9/2022         | 4/8/2022        | D. Cogswell  | 2/24/2022           |
|                                                                                         |                  |                 |              |                     |
|                                                                                         |                  |                 |              |                     |

**Dielectric Withstanding Voltage post Altitude Immersion:** Mated Connectors were tested in accordance with test procedure EIA-364-20. All cavities were tested. 2000 VAC RMS was applied to each contact during test.

| Sample ID | AAO Part Number | Maximum Leak Requirement | Results                           | Status |
|-----------|-----------------|--------------------------|-----------------------------------|--------|
| 1R1       | XPFH-782703-35P | 2 mA                     | All locations <2mA. No flash-over | Accept |
| 1P1       | XPFH-782713-35S | 2 mA                     |                                   |        |
| 1R2       | XPFH-782703-35P | 2 mA                     |                                   |        |
| 1P2       | XPFH-782713-35S | 2 mA                     | All locations <2mA. No flash-over | Accept |

|                         |                  |                 |              |                     |
|-------------------------|------------------|-----------------|--------------|---------------------|
| Electrical Engagement   | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10630 | Report<br>ESR-55555 |
| Test Equipment          | Cal Date         | Due Date        | Technician   | Date                |
| Caliper 44-177425-1 F49 |                  |                 | D.Cogswell   | 3/2/2022            |
| Multi-Meter IC-4756     | 11/23/2021       | 5/24/2022       |              |                     |
|                         |                  |                 |              |                     |

**Electrical Engagement per MIL-DTL-38999 paragraphs 3.19 and 4.5.15.** Counterpart plugs and receptacles were wired to provide a complete series circuit through all contacts of the mated connector. A suitable power source and indicator were used to determine the easiest point a complete circuit was established. Connector halves were slowly mated by the normal mating means until first indication of a completed circuit was observed. The mating operation was held at this point and the overall connector length was measured from solid reference points on the connector halves. The mating operation was then continued until the connector halves were in the completely mated position. A second overall length measurement was then taken from the same reference points. The difference of these two measurements shall be not less than .034 in.

| Sample ID | AAO Part Number | Min Engagement Requirement (in.) | First Reference (in.) | Second Reference (in.) | Overall Engagement (in) | Status |
|-----------|-----------------|----------------------------------|-----------------------|------------------------|-------------------------|--------|
| 1R1       | XPFH-782703-35P | 0.034                            | 1.534                 | 1.437                  | 0.097                   | Accept |
| 1P1       | XPFH-782713-35S | 0.034                            |                       |                        |                         |        |
| 1R2       | XPFH-782703-35P | 0.034                            | 1.532                 | 1.438                  | 0.094                   | Accept |
| 1P2       | XPFH-782713-35S | 0.034                            |                       |                        |                         |        |

|                                |                         |                        |                     |                            |
|--------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>External Bending Moment</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10630 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>          | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Zwick PG-3141                  | 8/9/2022                | 2/7/2023               | J. Lee              | 8/11/2022                  |
| Caliper I47                    | 4/19/2022               | 4/18/2023              |                     |                            |
|                                |                         |                        |                     |                            |

**External Bending Moment** per MIL-DTL-38999 paragraphs 4.5.16 and 3.20. The receptacle connector was mounted as in normal service to a rigid panel. Before mating the plug connector to the receptacle, an adapter was attached as shown on figure 22. After mating the plug and receptacle connectors, the distance "L" from the point of load application "P" to the mounting panel was determined. The applied load at point "P" was determined as the bending moment specified in table XVII divided by the lever arm "L". This load was applied at a rate of approximately 10 pounds per second until the required load was. The applied load was held for 1 minute, then the load was released. Continuity of the contacts were monitored during the test. The test circuit used to monitor the circuit was capable of detecting a discontinuity in excess of 1 microsecond.

| Sample ID | AAO Part Number | Minimum Torque (in*lb) | Moment Arm (in) | Applied Force (lb) | Observations       | Status |
|-----------|-----------------|------------------------|-----------------|--------------------|--------------------|--------|
| 1R1       | XPFH-782703-35P | 75                     | 2.1             | 35.9               | No Discontinuities | Accept |
| 1P1       | XPFH-782713-35S |                        |                 |                    |                    |        |
| 1R2       | XPFH-782703-35P | 75                     | 2.1             | 35.9               | No Discontinuities | Accept |
| 1P2       | XPFH-782713-35S |                        |                 |                    |                    |        |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 | Aerospace Operations |                                   | Sidney, N.Y. 13838 |                     |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|-----------------------------------|--------------------|---------------------|-----------|-----------------|------------|--------------|--------|-----|-----------------|------|-----------------------------------|--------|-----|-----------------|------|-----------------------------------|--------|-----|-----------------|------|-----------------------------------|--------|-----|-----------------|------|-----------------------------------|--------|
| Post Test Examination of Samples                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 | Temp.<br>Ambient     | R.H.<br>Ambient                   | CLT<br>10630       | Report<br>ESR-55555 |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 | Cal Date             | Due Date                          | Technician         | Date                |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                      |                                   | D. Cogswell        | 8/12/2022           |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                      |                                   |                    |                     |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                      |                                   |                    |                     |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                      |                                   |                    |                     |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
| <table border="1"> <thead> <tr> <th>Sample ID</th> <th>AAO Part Number</th> <th>Lot Number</th> <th>Observations</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>1R1</td> <td>XPFH-782703-35P</td> <td>none</td> <td>No Performance Inhibiting Defects</td> <td>Accept</td> </tr> <tr> <td>1P1</td> <td>XPFH-782713-35S</td> <td>none</td> <td>No Performance Inhibiting Defects</td> <td>Accept</td> </tr> <tr> <td>1R2</td> <td>XPFH-782703-35P</td> <td>none</td> <td>No Performance Inhibiting Defects</td> <td>Accept</td> </tr> <tr> <td>1P2</td> <td>XPFH-782713-35S</td> <td>none</td> <td>No Performance Inhibiting Defects</td> <td>Accept</td> </tr> </tbody> </table> |                 |                      |                                   |                    |                     | Sample ID | AAO Part Number | Lot Number | Observations | Status | 1R1 | XPFH-782703-35P | none | No Performance Inhibiting Defects | Accept | 1P1 | XPFH-782713-35S | none | No Performance Inhibiting Defects | Accept | 1R2 | XPFH-782703-35P | none | No Performance Inhibiting Defects | Accept | 1P2 | XPFH-782713-35S | none | No Performance Inhibiting Defects | Accept |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | AAO Part Number | Lot Number           | Observations                      | Status             |                     |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
| 1R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | XPFH-782703-35P | none                 | No Performance Inhibiting Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
| 1P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | XPFH-782713-35S | none                 | No Performance Inhibiting Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
| 1R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | XPFH-782703-35P | none                 | No Performance Inhibiting Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |
| 1P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | XPFH-782713-35S | none                 | No Performance Inhibiting Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |     |                 |      |                                   |        |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX I CLT 10630 Group 2 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

| <b>Amphenol Corporation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 | <b>Aerospace Operations</b> |                        | <b>Sidney, N.Y. 13838</b> |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------|------------------------|---------------------------|----------------------------|-----------|-----------------|------------|--------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|
| <b>Preliminary Examination of Test Samples</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 | <b>Temp.</b><br>Ambient     | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10630       | <b>Report</b><br>ESR-55555 |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| <b>Test Equipment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | <b>Cal Date</b>             | <b>Due Date</b>        | <b>Technician</b>         | <b>Date</b>                |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                             |                        | D. Cogswell               | 12/21/2021                 |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                             |                        |                           |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                             |                        |                           |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                             |                        |                           |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
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| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | AAO Part Number | Lot Number                  | Observations           | Status                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782703-35P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782713-35S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782703-35P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782713-35S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782703-35P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782713-35S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782703-35P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782713-35S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782703-35P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782713-35S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFS-782703-35P | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782713-35S | NONE                        | No Observable Defects  | Accept                    |                            |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |

| Amphenol Corporation                 |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|--------------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycling                  | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10630 | Report<br>ESR-55555 |
| Test Equipment                       | Cal Date         | Due Date             | Technician   | Date                |
| Blue M Thermal Shock Chamber IC-4648 | 7/20/2021        | 6/19/2022            | D. Cogswell  | 12/22/2021          |
|                                      |                  |                      |              |                     |
|                                      |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +200°C +5°C, -0°C. Connectors were tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 0.6 lbs) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations          | Status |
|-----------|-----------------|-----------------------|--------|
| 2R1       | XPFH-782703-35P | No Observable Defects | Accept |
| 2P1       | XPFH-782713-35S | No Observable Defects | Accept |
| 2R2       | XPFH-782703-35P | No Observable Defects | Accept |
| 2P2       | XPFH-782713-35S | No Observable Defects | Accept |
| 2R3       | XPFH-782703-35P | No Observable Defects | Accept |
| 2P3       | XPFH-782713-35S | No Observable Defects | Accept |
| 2R4       | XPFH-782703-35P | No Observable Defects | Accept |
| 2P4       | XPFH-782713-35S | No Observable Defects | Accept |
| 2R5       | XPFH-782703-35P | No Observable Defects | Accept |
| 2P5       | XPFH-782713-35S | No Observable Defects | Accept |
| 2R6       | XPFH-782703-35P | No Observable Defects | Accept |
| 2P6       | XPFH-782713-35S | No Observable Defects | Accept |

| Amphenol Corporation                                                                                                                                                                                                                                        |                                        | Aerospace Operations |                 | Sidney, N.Y. 13838          |                               |        |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|-----------------|-----------------------------|-------------------------------|--------|--|
| Coupling & Uncoupling                                                                                                                                                                                                                                       |                                        | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10630                | Report<br>ESR-55555           |        |  |
| Test Equipment                                                                                                                                                                                                                                              |                                        | Cal Date             | Due Date        | Technician                  | Date                          |        |  |
| Torquemeter PG-2738                                                                                                                                                                                                                                         |                                        | 10/25/2021           | 1/26/2022       | D.Cogswell                  | 12/23/2021                    |        |  |
|                                                                                                                                                                                                                                                             |                                        |                      |                 |                             |                               |        |  |
|                                                                                                                                                                                                                                                             |                                        |                      |                 |                             |                               |        |  |
| <b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded. |                                        |                      |                 |                             |                               |        |  |
| Sample ID                                                                                                                                                                                                                                                   | Maximum<br>Coupling<br>Torque (in*Ibf) | Uncoupling Torque    |                 | Coupling<br>Torque (in*Ibf) | Uncoupling<br>Torque (in*Ibf) | Status |  |
|                                                                                                                                                                                                                                                             |                                        | Min. (in*Ibf)        | Max. (in*Ibf)   |                             |                               |        |  |
| 2R1                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 3.24                        | 2.5                           | Accept |  |
| 2P1                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |
| 2R2                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 3.25                        | 3.27                          | Accept |  |
| 2P2                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |
| 2R3                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 2.88                        | 3.42                          | Accept |  |
| 2P3                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |
| 2R4                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 3.03                        | 2.82                          | Accept |  |
| 2P4                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |
| 2R5                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 3.33                        | 3.35                          | Accept |  |
| 2P5                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |
| 2R6                                                                                                                                                                                                                                                         | Record Data Only no Pass/Fail          |                      |                 | 3.25                        | 3.07                          | Accept |  |
| 2P6                                                                                                                                                                                                                                                         |                                        |                      |                 |                             |                               |        |  |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|-----------------------------|------------------|----------------------|--------------|---------------------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10630 | Report<br>ESR-55555 |
| Test Equipment              | Cal Date         | Due Date             | Technician   | Date                |
| Multi-Meter IC-4553         | 3/19/2021        | 2/16/2022            | D.Cogswell   | 12/23/2021          |
| Power Supply IC-3991        | 10/5/2021        | 3/6/2022             |              |                     |
|                             |                  |                      |              |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status |
|------------------|-----------------|---------------------|--------|
| 2P1 mated to 2R1 | XPFH-782703-35P | 0.58                | Accept |
|                  | XPFH-782713-35S |                     |        |
| 2P2 mated to 2R2 | XPFH-782703-35P | 0.59                | Accept |
|                  | XPFH-782713-35S |                     |        |
| 2P3 mated to 2R3 | XPFH-782703-35P | 0.74                | Accept |
|                  | XPFH-782713-35S |                     |        |
| 2P4 mated to 2R4 | XPFH-782703-35P | 0.76                | Accept |
|                  | XPFH-782713-35S |                     |        |
| 2P5 mated to 2R5 | XPFH-782703-35P | 0.73                | Accept |
|                  | XPFH-782713-35S |                     |        |
| 2P6 mated to 2R6 | XPFH-782703-35P | 0.76                | Accept |
|                  | XPFH-782713-35S |                     |        |

|                      |                  |                      |                            |                     |  |
|----------------------|------------------|----------------------|----------------------------|---------------------|--|
| Amphenol Corporation |                  | Aerospace Operations |                            | Sidney, N.Y. 13838  |  |
| Durability           | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10630               | Report<br>ESR-55555 |  |
| Test Equipment       | Cal Date         | Due Date             | Technician                 | Date                |  |
| IC-5025 Timer        | 12/7/2021        | 6/7/2022             | Matt Simonds, Chris Boecke | See Below           |  |
|                      |                  |                      |                            |                     |  |
|                      |                  |                      |                            |                     |  |

**Durability** test per MIL-DTL-38999 paragraphs 3.12 and 4.5.8.1. Connectors were mated and unmated 500 cycles manually. After conditioning, connectors were visually examined for damage detrimental to the operation of the connector, and connectors shall meet subsequent test requirements.

| Sample ID | AAO Part Number | Shell Size | Total Cycles | Date      | Results |
|-----------|-----------------|------------|--------------|-----------|---------|
| 2R1       | XPFH-782703-35P | 12         | 500          | 1/19/2022 | Accept  |
| 2P1       | XPFH-782713-35S |            |              |           |         |
| 2R2       | XPFH-782703-35P | 12         | 500          | 1/20/2022 | Accept  |
| 2P2       | XPFH-782713-35S |            |              |           |         |
| 2R3       | XPFH-782703-35P | 12         | 500          | 1/23/2022 | Accept  |
| 2P3       | XPFH-782713-35S |            |              |           |         |
| 2R4       | XPFH-782703-35P | 12         | 500          | 1/23/2022 | Accept  |
| 2P4       | XPFH-782713-35S |            |              |           |         |
| 2R5       | XPFH-782703-35P | 12         | 500          | 1/23/2022 | Accept  |
| 2P5       | XPFH-782713-35S |            |              |           |         |
| 2R6       | XPFH-782703-35P | 12         | 500          | 1/23/2022 | Accept  |
| 2P6       | XPFH-782713-35S |            |              |           |         |

Durability cycles were performed by hand.

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | Aerospace Operations      |                    |                       | Sidney, N.Y. 13838 |                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------|--------------------|-----------------------|--------------------|---------------------|
| Accessory Thread Strength                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | Temp.<br>Ambient          | R.H.<br>Ambient    | CLT<br>10630          |                    | Report<br>ESR-55555 |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 | Cal Date                  | Due Date           | Technician            |                    | Date                |
| Spring Scale PG-2234                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | 12/7/2021                 | 2/4/2022           | Chris Boecke          |                    | 1/23/2022           |
| IC-5025 Timer                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 | 12/7/2021                 | 6/7/2022           |                       |                    |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                           |                    |                       |                    |                     |
| <b>Accessory Thread Strength</b> per MIL-DTL-38999 paragraphs 3.26 and 4.5.32. Mated connectors were mounted as in normal service to a rigid panel. The specified torque per table IX of MIL-DTL-38999 was applied to the accessory of the plug and held for one minute and released. The specified torque was then applied to the accessory of the receptacle for one minute and released. The connectors were unmated and visual inspected at 3X magnification for damage or breakage. |                 |                           |                    |                       |                    |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                           |                    |                       |                    |                     |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | AAO Part Number | Minimum<br>Torque (in*lb) | Moment Arm<br>(in) | Applied Force<br>(lb) | Observations       | Status              |
| 2R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782703-35P | 50                        | 6.0                | 8.3                   | N/A                | Accept              |
| 2P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782713-35S |                           |                    |                       |                    |                     |
| 2R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782703-35P | 50                        | 6.0                | 8.3                   | N/A                | Accept              |
| 2P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782713-35S |                           |                    |                       |                    |                     |
| 2R3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782703-35P | 50                        | 6.0                | 8.3                   | N/A                | Accept              |
| 2P3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782713-35S |                           |                    |                       |                    |                     |
| 2R4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782703-35P | 50                        | 6.0                | 8.3                   | N/A                | Accept              |
| 2P4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782713-35S |                           |                    |                       |                    |                     |
| 2R5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782703-35P | 50                        | 6.0                | 8.3                   | N/A                | Accept              |
| 2P5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782713-35S |                           |                    |                       |                    |                     |
| 2R6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782703-35P | 50                        | 6.0                | 8.3                   | N/A                | Accept              |
| 2P6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782713-35S |                           |                    |                       |                    |                     |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX J CLT 10654 Group 1 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 | Aerospace Operations |                  | Sidney, N.Y. 13838 |                     |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|------------------|--------------------|---------------------|-----------|-----------------|------------|--------------|--------|-----|-----------------|------|------------------|--------|-----|-----------------|------|------------------|--------|-----|-----------------|------|------------------|--------|-----|-----------------|------|------------------|--------|
| Visual Examination of Test Samples                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 | Temp.<br>Ambient     | R.H.<br>Ambient  | CLT<br>10654       | Report<br>ESR-55555 |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | Cal Date             | Due Date         | Technician         | Date                |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |                  | D. Cogswell        | 2/18/2022           |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |                  |                    |                     |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |                  |                    |                     |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                      |                  |                    |                     |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
| <table border="1"> <thead> <tr> <th>Sample ID</th> <th>AAO Part Number</th> <th>Lot Number</th> <th>Observations</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>1R1</td> <td>XPFH-782704-35P</td> <td>NONE</td> <td>No Defects, good</td> <td>Accept</td> </tr> <tr> <td>1P1</td> <td>XPFH-782714-35S</td> <td>NONE</td> <td>No Defects, good</td> <td>Accept</td> </tr> <tr> <td>1R2</td> <td>XPFH-782704-35P</td> <td>NONE</td> <td>No Defects, good</td> <td>Accept</td> </tr> <tr> <td>1P2</td> <td>XPFH-782714-35S</td> <td>NONE</td> <td>No Defects, good</td> <td>Accept</td> </tr> </tbody> </table> |                 |                      |                  |                    |                     | Sample ID | AAO Part Number | Lot Number | Observations | Status | 1R1 | XPFH-782704-35P | NONE | No Defects, good | Accept | 1P1 | XPFH-782714-35S | NONE | No Defects, good | Accept | 1R2 | XPFH-782704-35P | NONE | No Defects, good | Accept | 1P2 | XPFH-782714-35S | NONE | No Defects, good | Accept |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | AAO Part Number | Lot Number           | Observations     | Status             |                     |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
| 1R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | XPFH-782704-35P | NONE                 | No Defects, good | Accept             |                     |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
| 1P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | XPFH-782714-35S | NONE                 | No Defects, good | Accept             |                     |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
| 1R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | XPFH-782704-35P | NONE                 | No Defects, good | Accept             |                     |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |
| 1P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | XPFH-782714-35S | NONE                 | No Defects, good | Accept             |                     |           |                 |            |              |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |     |                 |      |                  |        |

| Amphenol Corporation                 |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|--------------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycling                  | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10654 | Report<br>ESR-55555 |
| Test Equipment                       | Cal Date         | Due Date             | Technician   | Date                |
| Blue M Thermal Shock Chamber IC-4648 | 7/20/2021        | 6/19/2022            | D. Cogswell  | 2/18/2022           |
|                                      |                  |                      |              |                     |
|                                      |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +200°C +5°C, -0°C. Connectors were tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 0.6 lbs) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations       | Status |
|-----------|-----------------|--------------------|--------|
| 1R1       | XPFH-782704-35P | No damage to parts | Accept |
| 1P1       | XPFH-782714-35S | No damage to parts | Accept |
| 1R2       | XPFH-782704-35P | No damage to parts | Accept |
| 1P2       | XPFH-782714-35S | No damage to parts | Accept |

| Amphenol Corporation                                                                                                                                                                                                                                               |                                            | Aerospace Operations |               | Sidney, N.Y. 13838          |                               |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------|---------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling                                                                                                                                                                                                                                              | Temp.<br>Ambient                           | R.H.<br>Ambient      | CLT<br>10654  | Report<br>ESR-55555         |                               |        |
| Test Equipment                                                                                                                                                                                                                                                     | Cal Date                                   | Due Date             | Technician    | Date                        |                               |        |
| Torquemeter PG-2738                                                                                                                                                                                                                                                | 1/26/2022                                  | 4/26/2022            | D.Cogswell    | 2/21/2022                   |                               |        |
|                                                                                                                                                                                                                                                                    |                                            |                      |               |                             |                               |        |
|                                                                                                                                                                                                                                                                    |                                            |                      |               |                             |                               |        |
| <p><b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.</p> |                                            |                      |               |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                          | Maximum<br>Coupling<br>Torque (in*lbf)     | Uncoupling Torque    |               | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |
|                                                                                                                                                                                                                                                                    |                                            | Min. (in*lbf)        | Max. (in*lbf) |                             |                               |        |
| 1R1                                                                                                                                                                                                                                                                | Record Results only, No Pass/Fail Criteria |                      |               | 5.2                         | 7.4                           | Accept |
| 1P1                                                                                                                                                                                                                                                                |                                            |                      |               |                             |                               |        |
| 1R2                                                                                                                                                                                                                                                                |                                            |                      |               | 4.0                         | 4.8                           | Accept |
| 1P2                                                                                                                                                                                                                                                                |                                            |                      |               |                             |                               |        |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |           |
|-----------------------------|------------------|----------------------|--------------|---------------------|-----------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10654 | Report<br>ESR-55555 |           |
| Test Equipment              | Cal Date         | Due Date             | Technician   |                     | Date      |
| Multi-Meter IC-4098         | 12/9/2021        | 12/9/2022            | D.Cogswell   |                     | 2/21/2022 |
| Power Supply IC-3991        | 12/7/2021        | 6/7/2022             |              |                     |           |
|                             |                  |                      |              |                     |           |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2. millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status | Date Tested |
|------------------|-----------------|---------------------|--------|-------------|
| 1P1 mated to 1R1 | XPFH-782704-35P | 0.91                | Accept | 2/16/2022   |
|                  | XPFH-782714-35S |                     |        |             |
| 1P2 mated to 1R2 | XPFH-782704-35P | 0.76                | Accept | 2/16/2022   |
|                  | XPFH-782714-35S |                     |        |             |

|                                                                                                                                                                                                                                                                                                                                         |                  |                      |              |                     |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--------------|---------------------|---------|
| Amphenol Corporation                                                                                                                                                                                                                                                                                                                    |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |         |
| Durability                                                                                                                                                                                                                                                                                                                              | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10654 | Report<br>ESR-55555 |         |
| Test Equipment                                                                                                                                                                                                                                                                                                                          | Cal Date         | Due Date             | Technician   | Date                |         |
|                                                                                                                                                                                                                                                                                                                                         |                  |                      | D.Cogswell   | 2/21/2022           |         |
|                                                                                                                                                                                                                                                                                                                                         |                  |                      |              |                     |         |
|                                                                                                                                                                                                                                                                                                                                         |                  |                      |              |                     |         |
| <b>Durability</b> test per MIL-DTL-38999 paragraphs 3.12 and 4.5.8.1. Connectors were mated and unmated 500 cycles at a rate not to exceed 300 cycles per hour. After conditioning, connectors were visually examined for damage detrimental to the operation of the connector, and connectors shall meet subsequent test requirements. |                  |                      |              |                     |         |
| Sample ID                                                                                                                                                                                                                                                                                                                               | MIL Part Number  | Shell Size           | Total Cycles | Date                | Results |
| 1R1                                                                                                                                                                                                                                                                                                                                     | XPFH-782704-35P  | 14                   | 500          | 2/21/2022           | Accept  |
| 1P1                                                                                                                                                                                                                                                                                                                                     | XPFH-782714-35S  |                      |              |                     |         |
| 1R2                                                                                                                                                                                                                                                                                                                                     | XPFH-782704-35P  | 14                   | 500          | 2/21/2022           | Accept  |
| 1P2                                                                                                                                                                                                                                                                                                                                     | XPFH-782714-35S  |                      |              |                     |         |
| All durability testing was done manually at a rate of approximately 300 Cycles per hour.                                                                                                                                                                                                                                                |                  |                      |              |                     |         |
|                                                                                                                                                                                                                                                                                                                                         |                  |                      |              |                     |         |

| Amphenol Corporation                                                                                                                                                                                                                                               |                                        | Aerospace Operations |               | Sidney, N.Y. 13838          |                               |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------|---------------|-----------------------------|-------------------------------|--------|
| Coupling & Uncoupling                                                                                                                                                                                                                                              | Temp.<br>Ambient                       | R.H.<br>Ambient      | CLT<br>10654  | Report<br>ESR-55555         |                               |        |
| Test Equipment                                                                                                                                                                                                                                                     | Cal Date                               | Due Date             | Technician    | Date                        |                               |        |
| Torque Meter PG-2738                                                                                                                                                                                                                                               | 1/26/2022                              | 4/26/2022            | D.Cogswell    | 2/22/2022                   |                               |        |
|                                                                                                                                                                                                                                                                    |                                        |                      |               |                             |                               |        |
|                                                                                                                                                                                                                                                                    |                                        |                      |               |                             |                               |        |
| <p><b>Coupling Torque</b> per MIL-DTL-38999 paragraphs 3.11 and 4.6.4. For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.</p> |                                        |                      |               |                             |                               |        |
| Sample ID                                                                                                                                                                                                                                                          | Maximum<br>Coupling<br>Torque (in*lbf) | Uncoupling Torque    |               | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status |
|                                                                                                                                                                                                                                                                    |                                        | Min. (in*lbf)        | Max. (in*lbf) |                             |                               |        |
| 1R1                                                                                                                                                                                                                                                                | Record Data Only no Pass/Fail          |                      |               | 11.0                        | 13.4                          | Accept |
| 1P1                                                                                                                                                                                                                                                                |                                        |                      |               |                             |                               |        |
| 1R2                                                                                                                                                                                                                                                                | Record Data Only no Pass/Fail          |                      |               | 9.0                         | 11.2                          | Accept |
| 1P2                                                                                                                                                                                                                                                                |                                        |                      |               |                             |                               |        |

| Amphenol Corporation        |  | Aerospace Operations |                 | Sidney, N.Y. 13838 |                     |
|-----------------------------|--|----------------------|-----------------|--------------------|---------------------|
| Shell-to-Shell Conductivity |  | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10654       | Report<br>ESR-55555 |
| Test Equipment              |  | Cal Date             | Due Date        | Technician         | Date                |
| Multi-Meter IC-4089         |  | 12/9/2021            | 12/9/2022       | D.Cogswell         | 2/22/2022           |
| Power Supply IC-3991        |  | 10/5/2021            | 3/6/2022        |                    |                     |
|                             |  |                      |                 |                    |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2. millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status |
|------------------|-----------------|---------------------|--------|
| 1P1 mated to 1R1 | XPFH-782704-35P | 0.89                | Accept |
|                  | XPFH-782714-35S |                     |        |
| 1P2 mated to 1R2 | XPFH-782704-35P | 0.85                | Accept |
|                  | XPFH-782714-35S |                     |        |

|                           |                         |                        |                     |                            |
|---------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Altitude Immersion</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10654 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>     | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| IC-5286 Pressure Gauge    | 8/3/2021                | 7/3/2022               | D. Cogswell         | 2/24/2022                  |
| F-0993 Clock              |                         |                        |                     |                            |
|                           |                         |                        |                     |                            |

**Altitude Immersion**, Mated connectors were tested in accordance with test procedure EIA-364-03. The following details applied:

- a. All wire ends were located within the chamber and exposed to the chamber atmosphere but not submerged or sealed.
- b. At the end of the third cycle, while the connectors are still submerged in the solution, the insulation resistance at ambient temperature shall be measured as specified in 4.5.10.1, and the dielectric withstanding voltage test shall be performed as specified in 4.5.11.1. Connectors were potted for this test since the area of concentration is the O-Ring interfacial seal.

| Sample ID | AAO Part Number | Time 1st Cycle<br>Start/Finish | Time 2nd Cycle<br>Start/Finish | Time 3rd Cycle<br>Start/Finish | Status* |
|-----------|-----------------|--------------------------------|--------------------------------|--------------------------------|---------|
| 1R1       | XPFH-782704-35P | 9:30 AM/<br>10:00 AM           | 10:30 AM/<br>11:00AM           | 11:30 AM/<br>12:00 PM          | Accept  |
| 1P1       | XPFH-782714-35S |                                |                                |                                | Accept  |
| 1R2       | XPFH-782704-35P |                                |                                |                                | Accept  |
| 1P2       | XPFH-782714-35S |                                |                                |                                | Accept  |

\*See next 2 data sheets for IR DWV results

|                                                                               |                  |                 |              |                     |
|-------------------------------------------------------------------------------|------------------|-----------------|--------------|---------------------|
| Insulation Resistance While in Salt Water Solution Post<br>Altitude Immersion | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10654 | Report<br>ESR-55555 |
| Test Equipment                                                                | Cal Date         | Due Date        | Technician   | Date                |
| F-2672 159 Circuit Connector Tester                                           | 1/9/2022         | 4/8/2022        | D.Cogswell   | 2/24/2022           |
|                                                                               |                  |                 |              |                     |
|                                                                               |                  |                 |              |                     |

**Insulation Resistance post Altitude Immersion:** Mated Connectors were tested in accordance with test procedure EIA-364-21. All cavities were tested. 500 VDC was applied to each contact during test.

| Sample ID | AAO Part Number | Minimum IR Requirement | Results              | Status |
|-----------|-----------------|------------------------|----------------------|--------|
| 1R1       | XPFH-782704-35P | 5,000 MΩ               | All locations >50 GΩ | Accept |
| 1P1       | XPFH-782714-35S | 5,000 MΩ               |                      |        |
| 1R2       | XPFH-782704-35P | 5,000 MΩ               | All locations >50 GΩ | Accept |
| 1P2       | XPFH-782714-35S | 5,000 MΩ               |                      |        |

|                                                                                         |                  |                 |              |                     |
|-----------------------------------------------------------------------------------------|------------------|-----------------|--------------|---------------------|
| Dielectric Withstanding Voltage While in Salt Water<br>Solution Post Altitude Immersion | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10654 | Report<br>ESR-55555 |
| Test Equipment                                                                          | Cal Date         | Due Date        | Technician   | Date                |
| F-2672 159 Circuit Connector Tester                                                     | 1/9/2022         | 4/8/2022        | D. Cogswell  | 2/24/2022           |
|                                                                                         |                  |                 |              |                     |
|                                                                                         |                  |                 |              |                     |

**Dielectric Withstanding Voltage post Altitude Immersion:** Mated Connectors were tested in accordance with test procedure EIA-364-20. All cavities were tested. 2000 VAC RMS was applied to each contact during test.

| Sample ID | AAO Part Number | Maximum Leak Requirement | Results                           | Status |
|-----------|-----------------|--------------------------|-----------------------------------|--------|
| 1R1       | XPFH-782704-35P | 2 mA                     | All locations <2mA. No flash-over | Accept |
| 1P1       | XPFH-782714-35S | 2 mA                     |                                   |        |
| 1R2       | XPFH-782704-35P | 2 mA                     | All locations <2mA. No flash-over | Accept |
| 1P2       | XPFH-782714-35S | 2 mA                     |                                   |        |

| Amphenol Corporation    |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |  |
|-------------------------|------------------|----------------------|--------------|---------------------|--|
| Electrical Engagement   | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10654 | Report<br>ESR-55555 |  |
| Test Equipment          | Cal Date         | Due Date             | Technician   | Date                |  |
| Caliper 44-177425-1 F49 |                  |                      | D.Cogswell   | 3/2/2022            |  |
| Multi-Meter IC-4756     | 11/23/2021       | 5/24/2022            |              |                     |  |
|                         |                  |                      |              |                     |  |

**Electrical Engagement per MIL-DTL-38999 paragraphs 3.19 and 4.5.15.** Counterpart plugs and receptacles were wired to provide a complete series circuit through all contacts of the mated connector. A suitable power source and indicator were used to determine the earliest point a complete circuit was established. Connector halves were slowly mated by the normal mating means until first indication of a completed circuit was observed. The mating operation was held at this point and the overall connector length was measured from solid reference points on the connector halves. The mating operation was then continued until the connector halves were in the completely mated position. A second overall length measurement was then taken from the same reference points. The difference of these two measurements shall be not less than .034 in.

| Sample ID | AAO Part Number | Min Engagement Requirement (in.) | First Reference (in.) | Second Reference (in.) | Overall Engagement (in) | Status |
|-----------|-----------------|----------------------------------|-----------------------|------------------------|-------------------------|--------|
| 1R1       | XPFH-782704-35P | 0.034                            | 1.523                 | 1.442                  | 0.081                   | Accept |
| 1P1       | XPFH-782714-35S | 0.034                            |                       |                        |                         |        |
| 1R2       | XPFH-782704-35P | 0.034                            | 1.521                 | 1.440                  | 0.081                   | Accept |
| 1P2       | XPFH-782714-35S | 0.034                            |                       |                        |                         |        |

|                                |                         |                        |                     |                            |
|--------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>External Bending Moment</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10654 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>          | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Zwick PG-3141                  | 8/9/2022                | 3/7/2023               | J. Lee              | 8/11/2022                  |
| Caliper F47                    | 4/19/2022               | 4/18/2023              |                     |                            |
|                                |                         |                        |                     |                            |

**External Bending Moment** per MIL-DTL-38999 paragraphs 4.5.16 and 3.20. The receptacle connector was mounted as in normal service to a rigid panel. Before mating the plug connector to the receptacle, an adapter was attached as shown on figure 22. After mating the plug and receptacle connectors, the distance "L" from the point of load application "P" to the mounting panel was determined. The applied load at point "P" was determined as the bending moment specified in table XVII divided by the lever arm "L". This load was applied at a rate of approximately 10 pounds per second until the required load was. The applied load was held for 1 minute, then the load was released. Continuity of the contacts were monitored during the test. The test circuit used to monitor the circuit was capable of detecting a discontinuity in excess of 1 microsecond.

| Sample ID | AAO Part Number | Minimum Torque (in*lb) | Moment Arm (in) | Applied Force (lb) | Observations       | Status |
|-----------|-----------------|------------------------|-----------------|--------------------|--------------------|--------|
| 1R1       | XPFH-782704-35P | 100                    | 2.09            | 23.8               | No Discontinuities | Accept |
| 1P1       | XPFH-782714-35S |                        |                 |                    |                    |        |
| 1R2       | XPFH-782704-35P | 100                    | 2.08            | 23.9               | No Discontinuities | Accept |
| 1P2       | XPFH-782714-35S |                        |                 |                    |                    |        |

|                                       |                  |                 |              |                     |
|---------------------------------------|------------------|-----------------|--------------|---------------------|
| Post Test Examination of Test Samples | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10654 | Report<br>ESR-55555 |
| Test Equipment                        | Cal Date         | Due Date        | Technician   | Date                |
|                                       |                  |                 | D. Cogswell  | 8/12/2022           |
|                                       |                  |                 |              |                     |
|                                       |                  |                 |              |                     |

Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects.

| Sample ID | AAO Part Number | Lot Number | Observations                     | Status |
|-----------|-----------------|------------|----------------------------------|--------|
| 1R1       | XPFH-782704-35P | none       | No performance inhibiting damage | Accept |
| 1P1       | XPFH-782714-35S | none       | No performance inhibiting damage | Accept |
| 1R2       | XPFH-782704-35P | none       | No performance inhibiting damage | Accept |
| 1P2       | XPFH-782714-35S | none       | No performance inhibiting damage | Accept |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX K CLT 10654 Group 2 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 | Aerospace Operations |                       | Sidney, N.Y. 13838 |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|-----------------------|--------------------|---------------------|-----------|-----------------|------------|--------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|-----|-----------------|------|-----------------------|--------|
| Visual Examination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | Temp.<br>Ambient     | R.H.<br>Ambient       | CLT<br>10654       | Report<br>ESR-55555 |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 | Cal Date             | Due Date              | Technician         | Date                |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                      |                       | Matt Simonds       | 1/24/2022           |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                      |                       |                    |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                      |                       |                    |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| Parts were examined to ensure that they were functioning and free of workmanship or mechanical defects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                      |                       |                    |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| <table border="1"> <thead> <tr> <th>Sample ID</th> <th>AAO Part Number</th> <th>Lot Number</th> <th>Observations</th> <th>Status</th> </tr> </thead> <tbody> <tr><td>2R1</td><td>XPFH-782704-35P</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2P1</td><td>XPFH-782714-35S</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2R2</td><td>XPFH-782704-35P</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2P2</td><td>XPFH-782714-35S</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2R3</td><td>XPFH-782704-35P</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2P3</td><td>XPFH-782714-35S</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2R4</td><td>XPFH-782704-35P</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2P4</td><td>XPFH-782714-35S</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2R5</td><td>XPFH-782704-35P</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2P5</td><td>XPFH-782714-35S</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2R6</td><td>XPFH-782704-35P</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> <tr><td>2P6</td><td>XPFH-782714-35S</td><td>NONE</td><td>No Observable Defects</td><td>Accept</td></tr> </tbody> </table> |                 |                      |                       |                    |                     | Sample ID | AAO Part Number | Lot Number | Observations | Status | 2R1 | XPFH-782704-35P | NONE | No Observable Defects | Accept | 2P1 | XPFH-782714-35S | NONE | No Observable Defects | Accept | 2R2 | XPFH-782704-35P | NONE | No Observable Defects | Accept | 2P2 | XPFH-782714-35S | NONE | No Observable Defects | Accept | 2R3 | XPFH-782704-35P | NONE | No Observable Defects | Accept | 2P3 | XPFH-782714-35S | NONE | No Observable Defects | Accept | 2R4 | XPFH-782704-35P | NONE | No Observable Defects | Accept | 2P4 | XPFH-782714-35S | NONE | No Observable Defects | Accept | 2R5 | XPFH-782704-35P | NONE | No Observable Defects | Accept | 2P5 | XPFH-782714-35S | NONE | No Observable Defects | Accept | 2R6 | XPFH-782704-35P | NONE | No Observable Defects | Accept | 2P6 | XPFH-782714-35S | NONE | No Observable Defects | Accept |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | AAO Part Number | Lot Number           | Observations          | Status             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782704-35P | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782714-35S | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782704-35P | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782714-35S | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782704-35P | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782714-35S | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782704-35P | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782714-35S | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782704-35P | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782714-35S | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2R6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782704-35P | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |
| 2P6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | XPFH-782714-35S | NONE                 | No Observable Defects | Accept             |                     |           |                 |            |              |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |     |                 |      |                       |        |

| Amphenol Corporation                 |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|--------------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycling                  | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10654 | Report<br>ESR-55555 |
| Test Equipment                       | Cal Date         | Due Date             | Technician   | Date                |
| Blue M Thermal Shock Chamber IC-4648 |                  |                      | Matt Simonds | 1/24/2022           |
|                                      |                  |                      |              |                     |
|                                      |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 test condition I, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 was -65°C +0°C, -5°C and the temperature off step 3 was +200°C +5°C, -0°C. Connectors were tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 0.6 lbs) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID | AAO Part Number | Observations          | Status |
|-----------|-----------------|-----------------------|--------|
| 2R1       | XPFH-782704-35P | No Observable Defects | Accept |
| 2P1       | XPFH-782714-35S | No Observable Defects | Accept |
| 2R2       | XPFH-782704-35P | No Observable Defects | Accept |
| 2P2       | XPFH-782714-35S | No Observable Defects | Accept |
| 2R3       | XPFH-782704-35P | No Observable Defects | Accept |
| 2P3       | XPFH-782714-35S | No Observable Defects | Accept |
| 2R4       | XPFH-782704-35P | No Observable Defects | Accept |
| 2P4       | XPFH-782714-35S | No Observable Defects | Accept |
| 2R5       | XPFH-782704-35P | No Observable Defects | Accept |
| 2P5       | XPFH-782714-35S | No Observable Defects | Accept |
| 2R6       | XPFH-782704-35P | No Observable Defects | Accept |
| 2P6       | XPFH-782714-35S | No Observable Defects | Accept |

|                       |                  |                 |              |                     |
|-----------------------|------------------|-----------------|--------------|---------------------|
| Coupling & Uncoupling | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10654 | Report<br>ESR-55555 |
| Test Equipment        | Cal Date         | Due Date        | Technician   | Date                |
| Torquemeter PG-2738   | 1/26/2022        | 4/27/2022       | D. Cogswell  | See Below           |
|                       |                  |                 |              |                     |
|                       |                  |                 |              |                     |

**Coupling Torque** per MIL-DTL-38999 paragraphs 3.11 and 4.6.4.For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.

| Sample ID | Maximum<br>Coupling<br>Torque (in*lbf) | Uncoupling Torque |               | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status | Date      |
|-----------|----------------------------------------|-------------------|---------------|-----------------------------|-------------------------------|--------|-----------|
|           |                                        | Min. (in*lbf)     | Max. (in*lbf) |                             |                               |        |           |
| 2R1       | Record Data Only no Pass/Fail          |                   |               | 4.1                         | 3.5                           | Accept | 1/26/2022 |
| 2P1       |                                        |                   |               |                             |                               |        |           |
| 2R2       | Record Data Only no Pass/Fail          |                   |               | 4.0                         | 4.5                           | Accept | 1/26/2022 |
| 2P2       |                                        |                   |               |                             |                               |        |           |
| 2R3       | Record Data Only no Pass/Fail          |                   |               | 4.8                         | 6.6                           | Accept | 2/16/2022 |
| 2P3       |                                        |                   |               |                             |                               |        |           |
| 2R4       | Record Data Only no Pass/Fail          |                   |               | 4.6                         | 4.8                           | Accept | 2/16/2022 |
| 2P4       |                                        |                   |               |                             |                               |        |           |
| 2R5       | Record Data Only no Pass/Fail          |                   |               | 3.6                         | 6.8                           | Accept | 2/16/2022 |
| 2P5       |                                        |                   |               |                             |                               |        |           |
| 2R6       | Record Data Only no Pass/Fail          |                   |               | 3.8                         | 6                             | Accept | 2/16/2022 |
| 2P6       |                                        |                   |               |                             |                               |        |           |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|-----------------------------|------------------|----------------------|--------------|---------------------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10654 | Report<br>ESR-55555 |
| Test Equipment              | Cal Date         | Due Date             | Technician   | Date                |
| Multi-Meter IC-4098         | 12/9/2021        | 12/9/2022            | D.Cogswell   | See Below           |
| Power Supply IC-3991        | 12/7/2021        | 6/7/2022             |              |                     |
|                             |                  |                      |              |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status | Date      |
|------------------|-----------------|---------------------|--------|-----------|
| 2P1 mated to 2R1 | XPFH-782704-35P | 1.56                | Accept | 1/26/2022 |
|                  | XPFH-782714-35S |                     |        |           |
| 2P2 mated to 2R2 | XPFH-782704-35P | 1.86                | Accept | 1/26/2022 |
|                  | XPFH-782714-35S |                     |        |           |
| 2P3 mated to 2R3 | XPFH-782704-35P | 1.98                | Accept | 2/16/2022 |
|                  | XPFH-782714-35S |                     |        |           |
| 2P4 mated to 2R4 | XPFH-782704-35P | 1.44                | Accept | 2/16/2022 |
|                  | XPFH-782714-35S |                     |        |           |
| 2P5 mated to 2R5 | XPFH-782704-35P | 1.65                | Accept | 2/16/2022 |
|                  | XPFH-782714-35S |                     |        |           |
| 2P6 mated to 2R6 | XPFH-782704-35P | 1.56                | Accept | 2/16/2022 |
|                  | XPFH-782714-35S |                     |        |           |

|                       |                         |                        |                     |                            |
|-----------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Durability</b>     | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10654 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b> | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Timer IC-5025         | 12/7/2021               | 6/7/2022               | Chris Boecke        | See Below                  |
|                       |                         |                        |                     |                            |
|                       |                         |                        |                     |                            |

**Durability** test per MIL-DTL-38999 paragraphs 3.12 and 4.5.8.1. Connectors were mated and unmated 500 cycles manually. After conditioning, connectors were visually examined for damage detrimental to the operation of the connector, and connectors shall meet subsequent test requirements.

| Sample ID | AAO Part Number | Shell Size | Total Cycles | Date      | Results |
|-----------|-----------------|------------|--------------|-----------|---------|
| 2R1       | XPFH-782704-35P | 14         | 500          | 1/26/2022 | Accept  |
| 2P1       | XPFH-782714-35S |            |              |           |         |
| 2R2       | XPFH-782704-35P | 14         | 500          | 1/26/2022 | Accept  |
| 2P2       | XPFH-782714-35S |            |              |           |         |
| 2R3       | XPFH-782704-35P | 14         | 500          | 2/16/2022 | Accept  |
| 2P3       | XPFH-782714-35S |            |              |           |         |
| 2R4       | XPFH-782704-35P | 14         | 500          | 2/21/2022 | Accept  |
| 2P4       | XPFH-782714-35S |            |              |           |         |
| 2R5       | XPFH-782704-35P | 14         | 500          | 2/18/2022 | Accept  |
| 2P5       | XPFH-782714-35S |            |              |           |         |
| 2R6       | XPFH-782704-35P | 14         | 500          | 2/16/2022 | Accept  |
| 2P6       | XPFH-782714-35S |            |              |           |         |

|                                           |
|-------------------------------------------|
| Durability cycles were performed by hand. |
|-------------------------------------------|

|  |
|--|
|  |
|--|

|                       |                  |                 |              |                     |
|-----------------------|------------------|-----------------|--------------|---------------------|
| Coupling & Uncoupling | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10654 | Report<br>ESR-55555 |
| Test Equipment        | Cal Date         | Due Date        | Technician   | Date                |
| Torquemeter PG-3452   | 12/16/2021       | 3/17/2022       | D.Cogswell   | See Below           |
|                       |                  |                 |              |                     |
|                       |                  |                 |              |                     |

**Coupling Torque** per MIL-DTL-38999 paragraphs 3.11 and 4.6.4.For qualification testing, mating halves were coupled and uncoupled; the forces or torques which must be applied to facilitate full coupling and uncoupling were measured and recorded.

| Sample ID | Maximum<br>Coupling<br>Torque (in*lbf) | Uncoupling Torque |               | Coupling<br>Torque (in*lbf) | Uncoupling<br>Torque (in*lbf) | Status | Date      |
|-----------|----------------------------------------|-------------------|---------------|-----------------------------|-------------------------------|--------|-----------|
|           |                                        | Min. (in*lbf)     | Max. (in*lbf) |                             |                               |        |           |
| 2R1       | Record Data Only no Pass/Fail          |                   |               | 11.7                        | 14.6                          | Accept | 1/26/2022 |
| 2P1       |                                        |                   |               |                             |                               |        |           |
| 2R2       | Record Data Only no Pass/Fail          |                   |               | 13.2                        | 13.6                          | Accept | 1/26/2022 |
| 2P2       |                                        |                   |               |                             |                               |        |           |
| 2R3       | Record Data Only no Pass/Fail          |                   |               | 12.6                        | 11.2                          | Accept | 2/22/2022 |
| 2P3       |                                        |                   |               |                             |                               |        |           |
| 2R4       | Record Data Only no Pass/Fail          |                   |               | 11.0                        | 19.0                          | Accept | 2/22/2022 |
| 2P4       |                                        |                   |               |                             |                               |        |           |
| 2R5       | Record Data Only no Pass/Fail          |                   |               | 10.4                        | 12.6                          | Accept | 2/22/2022 |
| 2P5       |                                        |                   |               |                             |                               |        |           |
| 2R6       | Record Data Only no Pass/Fail          |                   |               | 14.6                        | 17.6                          | Accept | 2/22/2022 |
| 2P6       |                                        |                   |               |                             |                               |        |           |

| Amphenol Corporation        |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|-----------------------------|------------------|----------------------|--------------|---------------------|
| Shell-to-Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10654 | Report<br>ESR-55555 |
| Test Equipment              | Cal Date         | Due Date             | Technician   | Date                |
| Multi-Meter IC-4553         | 3/19/2021        | 2/16/2022            | D.Cogswell   | 2/22/2022           |
| Power Supply IC-3991        | 10/5/2021        | 3/6/2022             |              |                     |
|                             |                  |                      |              |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. When tested as specified in 4.5.25, the probes did not puncture or otherwise damage the connector finish and the maximum measured potential drop across assemblies shall be as follows:  
2 millivolts

| Sample ID        | AAO Part Number | Millivolt Drop (mV) | Status | Date Tested |
|------------------|-----------------|---------------------|--------|-------------|
| 2P1 mated to 2R1 | XPFH-782704-35P | 0.84                | Accept | 1/26/2022   |
|                  | XPFH-782714-35S |                     |        |             |
| 2P2 mated to 2R2 | XPFH-782704-35P | 0.56                | Accept | 1/26/2022   |
|                  | XPFH-782714-35S |                     |        |             |
| 2P3 mated to 2R3 | XPFH-782704-35P | 0.66                | Accept | 2/22/2022   |
|                  | XPFH-782714-35S |                     |        |             |
| 2P4 mated to 2R4 | XPFH-782704-35P | 0.70                | Accept | 2/22/2022   |
|                  | XPFH-782714-35S |                     |        |             |
| 2P5 mated to 2R5 | XPFH-782704-35P | 0.38                | Accept | 2/22/2022   |
|                  | XPFH-782714-35S |                     |        |             |
| 2P6 mated to 2R6 | XPFH-782704-35P | 0.48                | Accept | 2/22/2022   |
|                  | XPFH-782714-35S |                     |        |             |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | Aerospace Operations      |                    |                            | Sidney, N.Y. 13838 |                     |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------|--------------------|----------------------------|--------------------|---------------------|-----------|
| Accessory Thread Strength                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | Temp.<br>Ambient          | R.H.<br>Ambient    | CLT<br>10654               |                    | Report<br>ESR-55555 |           |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 | Cal Date                  | Due Date           | Technician                 |                    | Date                |           |
| Spring Scale PG-2234                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 | 2/4/2022                  | 4/5/2022           | Chris Boecke<br>D.Cogswell |                    | See Below           |           |
| IC-5025 Timer                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 | 12/7/2021                 | 6/7/2022           |                            |                    |                     |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                           |                    |                            |                    |                     |           |
| <b>Accessory Thread Strength</b> per MIL-DTL-38999 paragraphs 3.26 and 4.5.32. Mated connectors were mounted as in normal service to a rigid panel. The specified torque per table IX of MIL-DTL-38999 was applied to the accessory of the plug and held for one minute and released. The specified torque was then applied to the accessory of the receptacle for one minute and released. The connectors were unmated and visual inspected at 3X magnification for damage or breakage. |                 |                           |                    |                            |                    |                     |           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                           |                    |                            |                    |                     |           |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | AAO Part Number | Minimum<br>Torque (in*lb) | Moment Arm<br>(in) | Applied Force<br>(lb)      | Observations       | Status              | Date      |
| 2R1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782704-35P | 50                        | 8.5"               | 5.8                        | N/A                | Accept              | 1/26/2022 |
| 2P1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782714-35S |                           |                    |                            |                    |                     |           |
| 2R2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782704-35P | 50                        | 8.5"               | 5.8                        | N/A                | Accept              | 1/26/2022 |
| 2P2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782714-35S |                           |                    |                            |                    |                     |           |
| 2R3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782704-35P | 50                        | 8.5"               | 5.8                        | N/A                | Accept              | 2/22/2022 |
| 2P3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782714-35S |                           |                    |                            |                    |                     |           |
| 2R4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782704-35P | 50                        | 8.5"               | 5.8                        | N/A                | Accept              | 2/22/2022 |
| 2P4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782714-35S |                           |                    |                            |                    |                     |           |
| 2R5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782704-35P | 50                        | 8.5"               | 5.8                        | N/A                | Accept              | 2/22/2022 |
| 2P5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782714-35S |                           |                    |                            |                    |                     |           |
| 2R6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782704-35P | 50                        | 8.5"               | 5.8                        | N/A                | Accept              | 2/22/2022 |
| 2P6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | XPFH-782714-35S |                           |                    |                            |                    |                     |           |

# ENGINEERING SUMMARY REPORT

Amphenol Corporation Aerospace Operations  
Sidney, NY 13838-1395

REPORT NO. ESR-55555  
REPORT DATE: 8/12/22  
Revision: B

## APPENDIX L CLT 10696 Test Results

|                               |           |            |
|-------------------------------|-----------|------------|
| Prepared: D. Cogswell         | Approved: | Witnessed: |
| Date: 08/12/2022              | Date:     | Date:      |
| Use of this data is unlimited |           |            |

|                                   |                  |                 |              |                     |
|-----------------------------------|------------------|-----------------|--------------|---------------------|
| Visual and Mechanical Examination | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10696 | Report<br>ESR-55555 |
| Test Equipment                    | Cal Date         | Due Date        | Technician   | Date                |
| 10X Magnification Microscope      |                  |                 | D. Cogswell  | 4/27/2022           |
|                                   |                  |                 |              |                     |
|                                   |                  |                 |              |                     |

**Visual and Mechanical Examination** per MIL-DTL-38999 paragraphs 3.1, 3.3, 3.4, 3.55, 3.52, 3.53, and 4.5.1. The connectors, accessories, and piece parts shall be visually and mechanically examined to ensure product is in accordance with the specification and the applicable military standards.

| Sample ID | Amphenol Part Number | Description   | Observations | Status |
|-----------|----------------------|---------------|--------------|--------|
| P1        | XPFH-782713-35S      | Plug 12       | No Defects   | Accept |
| R1        | XPFH-782703-35P      | Receptacle 12 | No Defects   | Accept |
| P2        | XPFH-782713-35S      | Plug 12       | No Defects   | Accept |
| R2        | XPFH-782703-35P      | Receptacle 12 | No Defects   | Accept |
| P3        | XPFH-782714-35S      | Plug 14       | No Defects   | Accept |
| R3        | XPFH-782704-35P      | Receptacle 14 | No Defects   | Accept |
| P4        | XPFH-782714-35S      | Plug 14       | No Defects   | Accept |
| R4        | XPFH-782704-35P      | Receptacle 14 | No Defects   | Accept |

| Amphenol Corporation          |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|-------------------------------|------------------|----------------------|--------------|---------------------|
| Temperature Cycle             | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10696 | Report<br>ESR-55555 |
| Test Equipment                | Cal Date         | Due Date             | Technician   | Date                |
| Environmental Chamber IC-5918 | 3/9/2022         | 9/7/2022             | D. Barbeisch | 4/27/2022           |
|                               |                  |                      |              | 4/28/2022           |
|                               |                  |                      |              |                     |

**Temperature Cycling** per MIL-DTL-38999 paragraphs 3.8 and 4.5.4, and EIA-364-32 Test Method A, Test Duration A, 5 cycles, except that steps 2 and 4 shall be 2 minutes maximum. The temperature of step 1 to be -65°C +0°C, -5°C and the temperature off step 3 to be +200°C +5°C, -0°C for classes F and K. Connectors to be tested in the fully mated condition. One (1) hour dwells at temperature extremes were used (weight of sample approximately 4.22 lbs.) After conditioning, connectors to be visually examined for damage detrimental to operation.

| Sample ID      | AAO Part Number | Observations    | Status    |
|----------------|-----------------|-----------------|-----------|
| P1 mated to R1 | XPFH-782713-35S | Nothing to note | Compliant |
|                | XPFH-782703-35P | Nothing to note | Compliant |
| P2 mated to R2 | XPFH-782713-35S | Nothing to note | Compliant |
|                | XPFH-782703-35P | Nothing to note | Compliant |
| P3 mated to R3 | XPFH-782714-35S | Nothing to note | Compliant |
|                | XPFH-782704-35P | Nothing to note | Compliant |
| P4 mated to R4 | XPFH-782714-35S | Nothing to note | Compliant |
|                | XPFH-782704-35P | Nothing to note | Compliant |

|                                       |                         |                        |                     |                            |
|---------------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Coupling and Uncoupling Torque</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10696 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>                 | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Torque Meter PG-3452                  | 3/17/2022               | 6/16/2022              | D. Barbeisch        | 4/28/2022                  |
|                                       |                         |                        |                     |                            |
|                                       |                         |                        |                     |                            |

**Coupling Torque** per MIL-DTL-38999 paragraphs 3.11 and 4.5.7. The maximum torque required to fully mate and unmate connectors was recorded.

| Sample ID      | Amphenol Part Number | Maximum Coupling Torque (in*lbf) | Uncoupling Torque |               | Coupling Torque (in*lbf) | Uncoupling Torque (in*lbf) |
|----------------|----------------------|----------------------------------|-------------------|---------------|--------------------------|----------------------------|
|                |                      |                                  | Min. (in*lbf)     | Max. (in*lbf) |                          |                            |
| P1 mated to R1 | XPFH-782713-35S      | 16                               | 2                 | 16            | 3.4                      | 7.8                        |
|                | XPFH-782703-35P      |                                  |                   |               |                          |                            |
| P2 mated to R2 | XPFH-782713-35S      | 16                               | 2                 | 16            | 3.4                      | 6.7                        |
|                | XPFH-782703-35P      |                                  |                   |               |                          |                            |
| P3 mated to R3 | XPFH-782714-35S      | 20                               | 4                 | 20            | 5.4                      | 6.9                        |
|                | XPFH-782704-35P      |                                  |                   |               |                          |                            |
| P4 mated to R4 | XPFH-782714-35S      | 20                               | 4                 | 20            | 6.8                      | 7.4                        |
|                | XPFH-782704-35P      |                                  |                   |               |                          |                            |

|                             |                  |                 |              |                     |
|-----------------------------|------------------|-----------------|--------------|---------------------|
| Shell to Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10696 | Report<br>ESR-55555 |
| Test Equipment              | Cal Date         | Due Date        | Technician   | Date                |
| Power Supply IC-4859        | 10/20/2021       | 10/20/2022      | D. Barbeisch | 4/29/2022           |
| Multimeter IC-4089          | 12/9/2021        | 12/9/2022       |              |                     |
|                             |                  |                 |              |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. A 1.0 ± 0.1 A DC current at 1.5V DC maximum open circuit voltage was applied from the rear accessory thread of the plug connector through the flange of the receptacle. The voltage drop from the rear accessory thread of the plug to the receptacle flange was measured. The maximum millivolt drop to be 2 mV (after conditioning)..

| Sample ID         | Part Number     | Millivolt Drop<br>(mV) | Status |
|-------------------|-----------------|------------------------|--------|
| P1 mated<br>to R1 | XPFH-782713-35S | 0.63                   | Accept |
|                   | XPFH-782703-35P |                        |        |
| P2 mated<br>to R2 | XPFH-782713-35S | 0.55                   | Accept |
|                   | XPFH-782703-35P |                        |        |
| P3 mated<br>to R3 | XPFH-782714-35S | 0.58                   | Accept |
|                   | XPFH-782704-35P |                        |        |
| P4 mated<br>to R4 | XPFH-782714-35S | 0.65                   | Accept |
|                   | XPFH-782704-35P |                        |        |

|                       |                         |                        |                     |                            |
|-----------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Durability</b>     | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10696 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b> | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Timer F-0027          | 3/8/2022                | 9/6/2022               | D, Barbeisch        | 4/26/2022                  |
|                       |                         |                        |                     | to                         |
|                       |                         |                        |                     | 5/2/2022                   |

**Durability** test per MIL-DTL-38999 paragraphs 3.12 and 4.5.8. Connectors to be mated and unmated 500 times at a rate not to exceed 300 cycles per hour. After conditioning, connectors to be visually examined for damage detrimental to the operation of the connector. Failure to complete durability test due to mechanical malfunction shall be cause for rejection.

| Sample ID      | Part Number     | Cycles | Status |
|----------------|-----------------|--------|--------|
| P1 mated to R1 | XPFH-782713-35S | 500    | Pass   |
|                | XPFH-782703-35P |        |        |
| P2 mated to R2 | XPFH-782713-35S | 500    | Pass   |
|                | XPFH-782703-35P |        |        |
| P3 mated to R3 | XPFH-782714-35S | 500    | Pass   |
|                | XPFH-782704-35P |        |        |
| P4 mated to R4 | XPFH-782714-35S | 500    | Pass   |
|                | XPFH-782704-35P |        |        |

| Amphenol Corporation                                                                                                                                                                                                                                                                                                                                                                             |                 | Aerospace Operations   |                 | Sidney, N.Y. 13838 |                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------|-----------------|--------------------|---------------------|
| Accessory Thread Strength                                                                                                                                                                                                                                                                                                                                                                        |                 | Temp.<br>Ambient       | R.H.<br>Ambient | CLT<br>10696       | Report<br>ESR-55555 |
| Test Equipment                                                                                                                                                                                                                                                                                                                                                                                   |                 | Cal Date               | Due Date        | Technician         | Date                |
| Timer F-0027                                                                                                                                                                                                                                                                                                                                                                                     |                 | 3/8/2022               | 9/6/2022        | D. Barbeisch       | 5/4/2022            |
| Spring Scale PG-746                                                                                                                                                                                                                                                                                                                                                                              |                 | 4/5/2022               | 6/3/2022        |                    |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                        |                 |                    |                     |
| <p><b>Accessory Thread Strength</b> per MIL-DTL-38999M paragraphs 3.26 and 4.. Mated connectors were mounted as in normal service to a rigid panel. The specified torque per table IX of MIL-DTL-38999M was applied to the accessory of the plug and held for one minute and released. The specified torque was then applied to the accessory of the receptacle for one minute and released.</p> |                 |                        |                 |                    |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                        |                 |                    |                     |
| Sample ID                                                                                                                                                                                                                                                                                                                                                                                        | Part Number     | Inch-pounds<br>Applied | Status          |                    |                     |
| P1 mated<br>to R1                                                                                                                                                                                                                                                                                                                                                                                | XPFH-782713-35S | 50                     | Pass            |                    |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                  | XPFH-782703-35P | 50                     | Pass            |                    |                     |
| P2 mated<br>to R2                                                                                                                                                                                                                                                                                                                                                                                | XPFH-782713-35S | 50                     | Pass            |                    |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                  | XPFH-782703-35P | 50                     | Pass            |                    |                     |
| P3 mated<br>to R3                                                                                                                                                                                                                                                                                                                                                                                | XPFH-782714-35S | 50                     | Pass            |                    |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                  | XPFH-782704-35P | 50                     | Pass            |                    |                     |
| P4 mated<br>to R4                                                                                                                                                                                                                                                                                                                                                                                | XPFH-782714-35S | 50                     | Pass            |                    |                     |
|                                                                                                                                                                                                                                                                                                                                                                                                  | XPFH-782704-35P | 50                     | Pass            |                    |                     |

| Amphenol Corporation |                  | Aerospace Operations |              | Sidney, N.Y. 13838  |
|----------------------|------------------|----------------------|--------------|---------------------|
| Vibration            | Temp.<br>Ambient | R.H.<br>Ambient      | CLT<br>10696 | Report<br>ESR-55555 |
| Test Equipment       | Cal Date         | Due Date             | Technician   | Date                |
| See Vibration report |                  |                      | A. Hosier    | 6/6-6/7/2022        |
|                      |                  |                      |              |                     |
|                      |                  |                      |              |                     |

Group 2 Vibration Procedure for Series III class F. (1G<sup>2</sup> at 200C)Random Profile

Vibration per MIL-DTL-38999 Rev.M paragraphs3.27, 4.5.23, and EIA-364-28 Test Condition VI - series III, class F crimp contact style connectors, which shall be tested at elevated temperature ( 200°C ± 5°C). The duration of the test to be 8 hours in the longitudinal direction and 8 hours in the perpendicular direction. Microsecond discontinuity to be monitored per EIA-364-46 .

| Sample ID | Amphenol Part Number | Discontinuities | Coupling Nut Movement | Status |
|-----------|----------------------|-----------------|-----------------------|--------|
| P1        | XPFH-782713-35S      | None            | None                  | Accept |
| R1        | XPFH-782703-35P      |                 |                       |        |
| P2        | XPFH-782713-35S      | None            | None                  | Accept |
| R2        | XPFH-782703-35P      |                 |                       |        |
| P3        | XPFH-782714-35S      | None            | None                  | Accept |
| R3        | XPFH-782704-35P      |                 |                       |        |
| P4        | XPFH-782714-35S      | None            | None                  | Accept |
| R4        | XPFH-782704-35P      |                 |                       |        |

|                            |                  |                 |              |                     |
|----------------------------|------------------|-----------------|--------------|---------------------|
| Shock                      | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10696 | Report<br>ESR-55555 |
| Test Equipment             | Cal Date         | Due Date        | Technician   | Date                |
| See Vibration/Shock Report |                  |                 | A. Hosier    | 6/8/2022            |
|                            |                  |                 |              |                     |
|                            |                  |                 |              |                     |

Mechanical Shock per MIL-DTL-38999M paragraphs 3.28 and 4.5.24, and EIA-364-27. Connectors to be subjected to 3 shocks in each direction of 3 mutually perpendicular axes, for a total of 18 shocks. Each shock to be an approximate half sine wave of 300 G ± 15% magnitude with a duration of 3 ± milliseconds. The wire bundle to be clamped to fixed points at least 8 inches from the rear of the connector. Microsecond discontinuity to be monitored per EIA-364-46.

| Sample ID | Amphenol Part Number | Discontinuities | Coupling Nut Movement | Status |
|-----------|----------------------|-----------------|-----------------------|--------|
| P1        | XPFH-782713-35S      | None            | None                  | Accept |
| R1        | XPFH-782703-35P      |                 |                       |        |
| P2        | XPFH-782713-35S      | None            | None                  | Accept |
| R2        | XPFH-782703-35P      |                 |                       |        |
| P3        | XPFH-782714-35S      | None            | None                  | Accept |
| R3        | XPFH-782704-35P      |                 |                       |        |
| P4        | XPFH-782714-35S      | None            | None                  | Accept |
| R4        | XPFH-782704-35P      |                 |                       |        |

|                                       |                         |                        |                     |                            |
|---------------------------------------|-------------------------|------------------------|---------------------|----------------------------|
| <b>Coupling and Uncoupling Torque</b> | <b>Temp.</b><br>Ambient | <b>R.H.</b><br>Ambient | <b>CLT</b><br>10696 | <b>Report</b><br>ESR-55555 |
| <b>Test Equipment</b>                 | <b>Cal Date</b>         | <b>Due Date</b>        | <b>Technician</b>   | <b>Date</b>                |
| Torque Meter PG-3452                  | 3/17/2022               | 6/16/2022              | D. Cogswell         | 6/16/2022                  |
|                                       |                         |                        |                     |                            |
|                                       |                         |                        |                     |                            |

**Coupling Torque** per MIL-DTL-38999 paragraphs 3.11 and 4.5.7. The maximum torque required to fully mate and unmate connectors was recorded.

| Sample ID      | Amphenol Part Number | Maximum Coupling Torque (in*lbf) | Uncoupling Torque |               | Coupling Torque (in*lbf) | Uncoupling Torque (in*lbf) |
|----------------|----------------------|----------------------------------|-------------------|---------------|--------------------------|----------------------------|
|                |                      |                                  | Min. (in*lbf)     | Max. (in*lbf) |                          |                            |
| P1 mated to R1 | XPFH-782713-35S      | 16                               | 2                 | 16            | 10.4                     | 11.8                       |
|                | XPFH-782703-35P      |                                  |                   |               |                          |                            |
| P2 mated to R2 | XPFH-782713-35S      | 16                               | 2                 | 16            | 9.6                      | 12.4                       |
|                | XPFH-782703-35P      |                                  |                   |               |                          |                            |
| P3 mated to R3 | XPFH-782714-35S      | 20                               | 4                 | 20            | 11.6                     | 13.8                       |
|                | XPFH-782704-35P      |                                  |                   |               |                          |                            |
| P4 mated to R4 | XPFH-782714-35S      | 20                               | 4                 | 20            | 12.0                     | 15.4                       |
|                | XPFH-782704-35P      |                                  |                   |               |                          |                            |

|                             |                  |                 |              |                     |
|-----------------------------|------------------|-----------------|--------------|---------------------|
| Shell to Shell Conductivity | Temp.<br>Ambient | R.H.<br>Ambient | CLT<br>10696 | Report<br>ESR-55555 |
| Test Equipment              | Cal Date         | Due Date        | Technician   | Date                |
| Power Supply IC-4859        | 10/20/2021       | 10/20/2022      | D. Cogswell  | 6/17/2022           |
| Multimeter IC-4089          | 12/9/2021        | 12/9/2022       |              |                     |
|                             |                  |                 |              |                     |

**Shell-to-Shell Conductivity** per MIL-DTL-38999 paragraphs 3.29 and 4.5.25, and EIA-364-83. A 1.0 ± 0.1 A DC current at 1.5V DC maximum open circuit voltage was applied from the rear accessory thread of the plug connector through the flange of the receptacle. The voltage drop from the rear accessory thread of the plug to the receptacle flange was measured. The maximum millivolt drop to be 2 mV (after conditioning).

| Sample ID         | Part Number     | Millivolt Drop<br>(mV) | Status |
|-------------------|-----------------|------------------------|--------|
| P1 mated<br>to R1 | XPFH-782713-35S | 0.57                   | Accept |
|                   | XPFH-782703-35P |                        |        |
| P2 mated<br>to R2 | XPFH-782713-35S | 0.89                   | Accept |
|                   | XPFH-782703-35P |                        |        |
| P3 mated<br>to R3 | XPFH-782714-35S | 0.78                   | Accept |
|                   | XPFH-782704-35P |                        |        |
| P4 mated<br>to R4 | XPFH-782714-35S | 0.86                   | Accept |
|                   | XPFH-782704-35P |                        |        |

| Amphenol Corporation              |  | Aerospace Operations |                 | Sidney, N.Y. 13838 |
|-----------------------------------|--|----------------------|-----------------|--------------------|
| Visual and Mechanical Examination |  | Temp.<br>Ambient     | R.H.<br>Ambient | CLT<br>10696       |
| Test Equipment                    |  | Cal Date             | Due Date        | Technician         |
| 10X Magnification Microscope      |  |                      |                 | D. Cogswell        |
|                                   |  |                      |                 |                    |
|                                   |  |                      |                 |                    |
|                                   |  |                      |                 | 6/17/2022          |

**Visual and Mechanical Examination** per MIL-DTL-38999 paragraphs 3.1, 3.3, 3.4, 3.55, 3.52, 3.53, and 4.5.1. The connectors, accessories, and piece parts shall be visually and mechanically examined to ensure product is in accordance with the specification and the applicable military standards.

| Sample ID | Amphenol Part Number | Description   | Observations | Status |
|-----------|----------------------|---------------|--------------|--------|
| P1        | XPFH-782713-35S      | Plug 12       | No Defects   | Accept |
| R1        | XPFH-782703-35P      | Receptacle 12 | No Defects   | Accept |
| P2        | XPFH-782713-35S      | Plug 12       | No Defects   | Accept |
| R2        | XPFH-782703-35P      | Receptacle 12 | No Defects   | Accept |
| P3        | XPFH-782714-35S      | Plug 14       | No Defects   | Accept |
| R3        | XPFH-782704-35P      | Receptacle 14 | No Defects   | Accept |
| P4        | XPFH-782714-35S      | Plug 14       | No Defects   | Accept |
| R4        | XPFH-782704-35P      | Receptacle 14 | No Defects   | Accept |