

USB 3 DATA & POWER CONVERTER, ETHERNET SWITCH

PDS-AMHS2



Titan bridges three USB 3.2 channels with power delivery to 1G and 10G Ethernet, giving the platform high-speed data and power over a single compact interface.

Network connectivity includes two 10GBase-T channels and two 1GBase-SX fiber channels that can also operate at 10G, with six additional channels reserved for future growth. A built-in managed switch supports PTP along with other Layer 2/3 features, while integrated security and built-in test (BIT) capabilities meet mission requirements. Connector shells are tin zinc nickel plated aluminum alloy on the USB and RJ field connectors (J4 through J7) and nickel-plated composite on the D38999 connectors (J1 through J3), with protective caps, LEDs, and labels included.

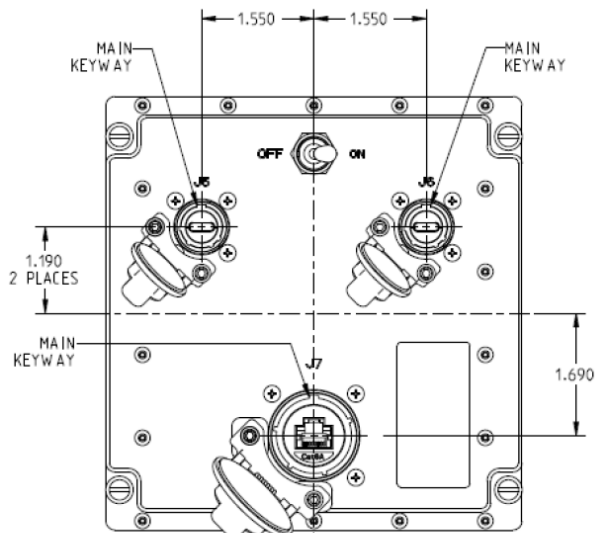
FEATURES & BENEFITS:

- 3X USB 3.2 channels with power delivery linked to 10G Ethernet (up to 25 watts per channel)
- 2X channels supporting up to 10GBase-T
- 2X channels of 1GBase-SX (with 10G capability)
- 6X additional channels reserved for expansion, not connected to fiber optic ports
- 28V aircraft power converted internally
- Managed switch featuring PTP and other layer 2/3 functionalities
- TSN features - 802.1CM-2018 Profile B, 802.1AS-2020, Qav, Qbv, Qbu, Qci, CB, 802.3br
- Security protocols and BIT specifications
- Ruggedized enclosure qualified high altitude operational environment
- J4, J5, J6, and J7 connector shells made of tin zinc nickel-plated aluminum alloy (USB / RJ Field)
- J1, J2, and J3 connector shells are nickel plated composite (D38999)
- Connector caps, LEDs, and labels

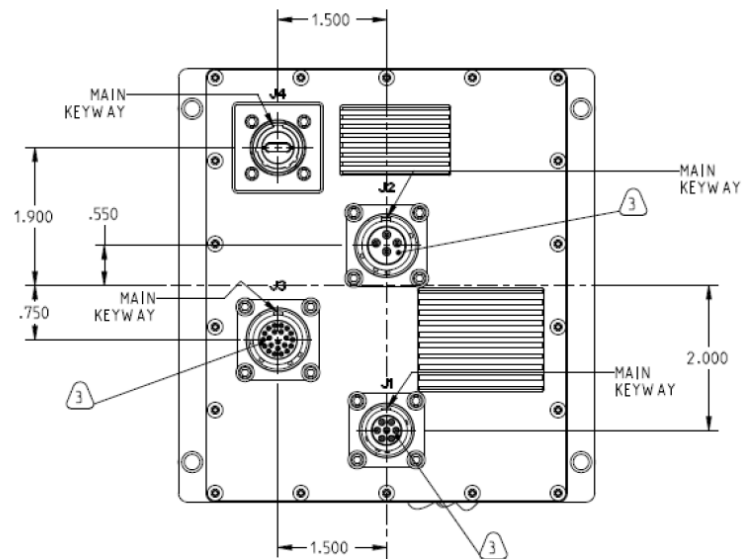
DIMENSIONAL INFORMATION:

PN CF-02WA00-50X

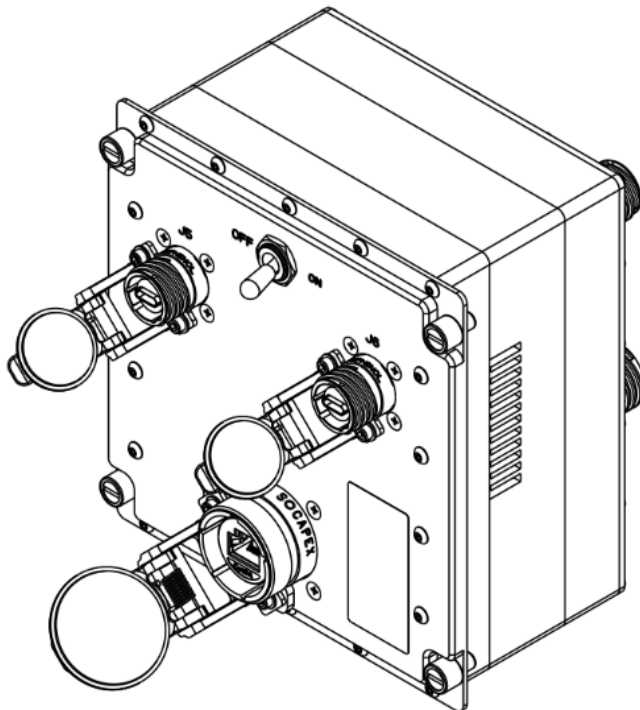
Amphenol
MILITARY HIGH SPEED



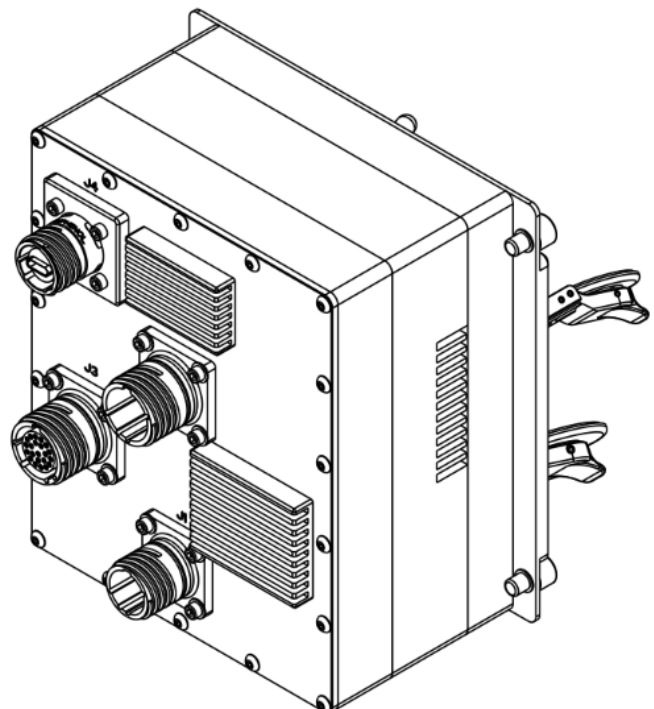
FRONT VIEW
CAPS SHOWN OPEN FOR CLARITY
SCALE 1.000



REAR VIEW
SCALE 1.000



FRONT ISOMETRIC VIEW
CAPS SHOWN OPEN FOR CLARITY
SCALE 0.600



REAR ISOMETRIC VIEW
SCALE 0.600

I/O CHART		
CONNECTOR	PIN NO.	SIGNAL NAME
J1 POWER 11-99P	A	28VDC_IN
	B	28VDC_RTN
	C	SAFETY GROUND / CHASSIS
	D	NVMD
	E	GND
	F	RESET
	G	GND
	SHELL	CHASSIS

I/O CHART		
CONNECTOR	PIN NO.	SIGNAL NAME
J2 FIBER 13-4P	A	1/10GBase-SX/SR_TX1
	B	1/10GBase-SX/SR_RX1
	C	1/10GBase-SX/SR_TX2
	D	1/10GBase-SX/SR_RX2
	SHELL	CHASSIS

I/O CHART		
CONNECTOR	PIN NO.	SIGNAL NAME
J3 ETHERNET 13-35S	1	RS232_TX
	2	RS232_RX
	3	GND
	4	NC
	5	MGMT_1GBase-T_DA+
	6	MGMT_1GBase-T_DA-
	7	MGMT_1GBase-T_DB+
	8	MGMT_1GBase-T_DB-
	9	MGMT_1GBase-T_DC+
	10	MGMT_1GBase-T_DC-
	11	MGMT_1GBase-T_DD+
	12	MGMT_1GBase-T_DD-
	13	NC
	14	1/10GBase-T_DA+
	15	1/10GBase-T_DA-
	16	1/10GBase-T_DB+
	17	1/10GBase-T_DB-
	18	1/10GBase-T_DC+
	19	1/10GBase-T_DC-
	20	1/10GBase-T_DD+
	21	1/10GBase-T_DD-
	22	NC
	SHELL	CHASSIS

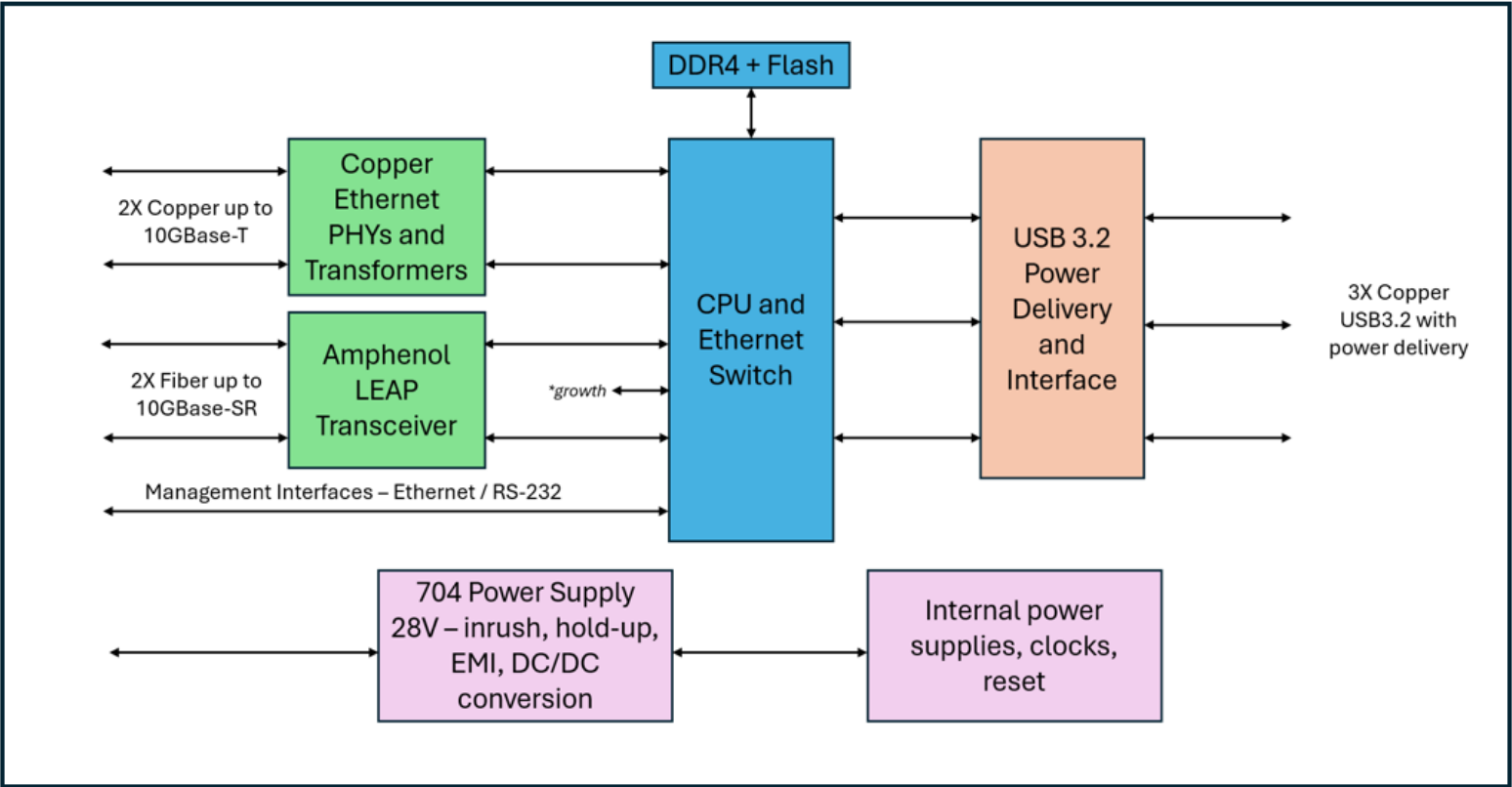
I/O CHART		
CONNECTOR	PIN NO.	SIGNAL NAME
J7 ETHERNET RJ45	1	1/10GBase-T_DA+
	2	1/10GBase-T_DA-
	3	1/10GBase-T_DB+
	4	1/10GBase-T_DB-
	5	1/10GBase-T_DC+
	6	1/10GBase-T_DC-
	7	1/10GBase-T_DD+
	8	1/10GBase-T_DD-

I/O CHART				
CONNECTOR	PIN NO.	SIGNAL NAME	PIN NO.	SIGNAL NAME
J4 USB-C	A1	GND	B12	GND
	A2	SSTX1+	B11	SSRX1+
	A3	SSTX1-	B10	SSRX1-
	A4	VBUS	B9	VBUS
	A5	CC1	B8	SBU2
	A6	D+	B7	D-
	A7	D-	B6	D+
	A8	SBU1	B5	CC2
	A9	VBUS	B4	VBUS
	A10	SSRX2-	B3	SSTX2-
	A11	SSRX2+	B2	SSTX2+
	A12	GND	B1	GND

I/O CHART				
CONNECTOR	PIN NO.	SIGNAL NAME	PIN NO.	SIGNAL NAME
J5 USB-C	A1	GND	B12	GND
	A2	SSTX1+	B11	SSRX1+
	A3	SSTX1-	B10	SSRX1-
	A4	VBUS	B9	VBUS
	A5	CC1	B8	SBU2
	A6	D+	B7	D-
	A7	D-	B6	D+
	A8	SBU1	B5	CC2
	A9	VBUS	B4	VBUS
	A10	SSRX2-	B3	SSTX2-
	A11	SSRX2+	B2	SSTX2+
	A12	GND	B1	GND

I/O CHART				
CONNECTOR	PIN NO.	SIGNAL NAME	PIN NO.	SIGNAL NAME
J6 USB-C	A1	GND	B12	GND
	A2	SSTX1+	B11	SSRX1+
	A3	SSTX1-	B10	SSRX1-
	A4	VBUS	B9	VBUS
	A5	CC1	B8	SBU2
	A6	D+	B7	D-
	A7	D-	B6	D+
	A8	SBU1	B5	CC2
	A9	VBUS	B4	VBUS
	A10	SSRX2-	B3	SSTX2-
	A11	SSRX2+	B2	SSTX2+
	A12	GND	B1	GND





SOFTWARE

FULLY MANAGED | 60 SECOND BOOT | MANUALS AVAILABLE UPON REQUEST

STACKING

- Stacking Ring Topology
- Stacking Chain Topology
- Removing and Replacing Stacking Members
- Exchanging Stacking Members
- Switching the Stacking Master

CONFIGURING SYSTEM TIME

- Configuring of Daylight Savings Time
- Configuring SNTP
- Polling for Unicast Time Informaiton
- Polling for Anycast Time Information
- Broadcast Time Information
- Defining SNTP Settings

CONFIGURING DEVICE SECURITY

- Configuring Management Security
- Configuring Authentication Methods
- Defining Access Profiles
- Defining Profile Rules
- Defining Authenticaion Profiles
- Defining RADIOUS Settings
- Defining TACACS+ Authentication
- Configuring Passwords
- Defining Local Users
- Defining Line Passwords
- Defining Enable Passwords
- Configuring Network Security
- Network Security Overview
- Port-Based Authentication
- Advanced Port-Based Authentication
- Defining Port Authentication Properties
- Defining Port Authentication
- Configuring Multiple Hosts
- Defining Authentication Hosts
- Viewing EAP Statistics
- Defining Access Control Lists
- Defining IP Based Access Control Lists
- Defining MAC Based Access Control Lists
- Binding Device Security ACL's
- Managing Port Security

Enabling Storm Control

CONFIGURING SYSTEM LOGS

- Defining General Log Properties
- Viewing Memory Logs
- Viewing Flash Logs
- Defining System Log Servers

CONFIGURING INTERFACES

- Configuring Ports
- Aggregating Ports
- Configuring LACP

- Configuring VLAN's
- Defining VLAN Properties
- Defining VLAN Membership
- Defining VLAN Interface Settings
- Configuring GARP
- Defining GARP
- Defining GVRP
- Viewing GVRP Statistics

DEFINING IP ADDRESSES

- Configuring IP Addressing
- Defining IP Addressing
- Defining ARP
- Defining Domain Name Servers
- Defining DNS Servers
- Defining DNS Host Mapping

DEFINING THE FORWARDING DATABASE

- Defining Static Forwarding Database Entries
- Defining Dynamic Forwarding Database Entries
- CONFIGURING SPANNING TREE
- Defining Classic Spanning Tree
- Defining STP on Interfaces
- Defining Rapid Spanning Tree
- Defining Multiple Spanning Tree
- Defining MSTP Instances Settings

CONFIGURING SNMP

- SNMP v1 and v2c
- SNMP v3
- Configuring SNMP Security
- Defining SNMP View
- Defining SNMP Group Profiles
- Defining SNMP Group Members
- Defining SNMP Communities
- SNMP Communities Basic Table
- SNMP Communities Advanced Table
- Configuring SNMP Notifications
- Defining SNMP Notification Global Parameters
- Defining SNMP Notificaiton Filters
- Defining SNMP Notification Recipients
- SNMP v3 Notification Recipients

CONFIGURING MULTICAST FORWARDING

- Multicast Forwarding
- Typical Multicast Setup
- Multicast Operation
- Multicast Registration
- Multicast Address Properties
- Defining Multicast Properties
- Adding MAC Group Address
- Adding IP Multicast Groups
- Configuring IGMP Snooping
- Configuring MLD Snooping
- Viewing IGMP/MLD IP Multicast Groups
- Defining Multicast Router Ports
- Defining Forward All Multicast

MANAGING SYSTEM FILES

- Downloading System Files
- Firmware Download
- Configuration Download
- Uploading System Files
- Upload Type
- Software Image Upload
- Configuration Upload
- Copying Files
- Restoring the Default Configuration File

CONFIGURING QUALITY OF SERVICE

- Quality of Service Overview
- VPT Classification Information
- CoS Services
- Defining General QoS Settings
- Configuring QoS Settings
- Restoring Factory Default QoS Interface Settings
- Defining Queues
- Defining Bandwidth Settings
- Mapping CoS Values to Queues
- Mapping DSCP Values to Queues
- Defining QoS Basic Mode
- Defining Basic Mode Settings
- Rewriting Basic Mode DSCP Values
- Defining QoS Advanced Mode
- Setting Policy Binding

MANAGING DEVICE DIAGNOSTICS

- Configuring Port Mirroring

VIEWING STATISTICS

- Viewing Interface Statistics
- Recieve Statistics
- Transmit Statistics
- Viewing Etherlike Statistics
- Managing RMON Statistics
- Viewing RMON Statistics
- Configuring RMON History
- Defining RMON History Control
- Viewing the RMON History Table
- Configuring RMON Events
- Defining RMON Events Control
- Viewing the RMON Events Logs
- Defining RMON Alarms

AMPHENOL RUGGEDIZATION DESIGN

OVERVIEW

Amphenol integrated electronic products are designed and manufactured to our Ruggedization guidelines listed below. These guidelines ensure years of reliable operation in harsh environment applications where extreme operating temperatures, shock, vibration, and corrosive atmospheres are regularly experienced. Unless otherwise noted, the parts conform to the below specifications.

TEMPERATURE

Operating Temperature - thermal cycles between -40°C and 85°C while device is operating.

Temperature is measured at chassis housing or card edge

Storage temperature - thermal cycles between -55°C and 125°C

HUMIDITY

Operating Humidity - humidity cycle between 0-100% non-condensing humidity while device operating

Storage Humidity - humidity cycle between 0-100% condensing humidity

SEALING

Sealing can be optionally provided at the MIL-DTL-38999 interface with up to 10-5 cc/sec performance

SHOCK AND VIBRATION

Sine Vibration - 10g Peak. 5-2,000Hz
o Based on a sine sweep duration of 10 minutes per axis in each of three mutually perpendicular axes. May be displacement limited from 5 to 44 Hz, depending on specific test.

Random Vibration - 0.0005 @ 5Hz, 0.1 @ 15 Hz, 0.1 @ 2,000 Hz
o 60 minutes per axis, in each of three mutually perpendicular axes.

40 G Peak Shock Cycle
o Three hits in each axis, both directions, 1/2 sine and terminal-leak saw tooth, total 36 hits

FLUID SUSCEPTABILITY

MIL-DTL-38999 receptacle interface per EIA-364-10E

ALTITUDE

-1,500 to 60,000 ft Altitude Testing w/ Rapid Depressurization

ELECTROMAGNETIC COMPATIBILITY

Designed to comply with MIL-STL-461E

PRINTED CIRCUIT BOARD ASSEMBLIES

Conformal Coat

Amphenol performs Conformal Coating to both sides of printed circuit board assemblies using HUSMISEAL IB31 in accordance with IPC-610, Class 3.

Printed Circuit Board Rigidity

Amphenol printed circuit boards are fabricated in accordance with IPC-6012, Class 3

Printed Circuit Board Fabrication

Amphenol printed circuit boards acceptance criteria is in accordance with IPC-610, Class 3.

RELIABILITY PREDICTIONS (MTBF)

Amphenol can perform Mean Time Between Failure (MTBF) reliability analysis in full compliance with MIL-HDBK-217F-1 Parts Count Prediction and MIL-HDBK-217F-1 Parts Stress Analysis Prediction. We can also perform reliability analyses in full compliance of ANSI/VITA 51.1 if it is required or preferred over the later method