Fiber Optic Convection Cooled Ethernet Switch

168-Channel 25G/100G

PDS - 374



DESCRIPTION

Amphenol's rugged 168-channel 25G/100G Fiber Optic Convection Cooled Ethernet switch box offers configurable system connectivity, supporting a variety of speeds, port types, and seamless integration with high-speed media converters and connectors. Additionally, the switch is capable of supporting 1G, 10G, and 40G speeds.

Featuring 168 multi-mode fiber optic ports, each supporting up to 25G Ethernet, this switch undergoes rigorous testing at Amphenol's state-of-the-art communications testing center. It is tested at line rates in accordance with RFC 2889 for switching and RFC 2544 for Layer 2/Layer 3 performance, including metrics such as latency, packet forwarding, and other key performance indicators.

The switch is built using Amphenol's MIL-DTL-38999 Series connectors, incorporating standard AS39029-qualified Size 22D contacts, Octonet contacts, and 48F MT Ferrule Fiberoptic contact assemblies. For fiber optic Ethernet ports, Amphenol employs advanced MT ferrules, while the MT 38999-style contacts are utilized for power input and management functions.

FEATURES & BENEFITS

- 168 channels of up to 25G fiber Ethernet
- 28V MIL-STD-704 input module; MFM and DC/DC mil-spec power supply with hold-up capacitor and in-rush current limiting circuit.
- Built-in test functionality for power up, initiated, and continuous operation.
- Link status on demand, port counter status, configurable port speed/routing, ARP list, drop report, ping, MTU configuration, LUA configuration
- Power connector, debug connector, maintenance connector all D38999's
- · Mil-Spec black painted chassis with cold plate external conduction cooling

Part Number	Description
CF-02WA00-33X	168-channel 25G fiber Ethernet switch box

SOFTWARE FEATURES

Stacking
Stacking Ring Topology
Stacking Chain Topology
Stacking Members and Unit ID
Removing and Replacing Stacking Members
Exchanging Stacking Members
Switching the Stacking Master
Configuring System Time
Configuring Davlight Savings Time
Configuring SNTP
Polling for Unicast Time Information
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 Authentication Profiles
Mapping Authentication Methods
Defining RADIOS Settings
Denning TACACS+ Autoentication
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 ACLs
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 Porto
Conniguring Ports
Aggregating Ports
CONTINUE LAGE

Configuring VLANs
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 Addresses
Defining ARP
Defining Domain Name Servers
Defining DNS Servers
Defining DNS Host Mapping
Defining the Forwarding Database
Defining the Forwarding Database
Defining Access Profiles
Configuring Spanning Tree
Defining Classic Spanning Tree
Defining STP on Interfaces
Defining Rapid Spanning Tree
Defining Multiple Spanning Tree
Defining MSTP Instance Settings
Defining MSTP Interface Settings
Configuring SNMP
SNMP v1 and v2c
SNMP V3
Configuring SNMP Security
Configuring SNMP Security Defining SNMP Security
Configuring SNMP Security Defining SNMP Security Defining SNMP View
Configuring SNMP Security Defining SNMP Security Defining SNMP View Defining SNMP Group Profiles
Configuring SNMP Security Defining SNMP Security Defining SNMP View Defining SNMP Group Profiles Defining SNMP Group Members
Configuring SNMP Security Defining SNMP Security Defining SNMP View Defining SNMP Group Profiles Defining SNMP Group Members Defining SNMP Communities
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SNMP V3 Configuring SNMP Security Defining SNMP Security Defining SNMP Group Profiles 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 Notification Filters Defining SNMP Notification Recipients SNMPv1,2c Notification Recipients SNMPv3 Notification Recipients Configuring Multicast Forwarding Multicast Forwarding Typical Multicast Setup Multicast Registration
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SNMP V3 Configuring SNMP Security Defining SNMP Security Defining SNMP Group Profiles Defining SNMP Group Members Defining SNMP Communities SNMP Communities SNMP Communities SNMP Communities Basic Table SNMP Communities Advanced Table Configuring SNMP Notifications Defining SNMP Notification Global Parameters Defining SNMP Notification Filters Defining SNMP Notification Recipients SNMPv1,2c Notification Recipients SNMPv3 Notification Recipients Configuring Multicast Forwarding Multicast Forwarding Typical Multicast Setup Multicast Registration Multicast Address Properties Defining Multicast Properties
SNMP V3 Configuring SNMP Security Defining SNMP Security 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 Notification Filters Defining SNMP Notification Recipients SNMPv1,2c Notification Recipients SNMPv3 Notification Recipients Configuring Multicast Forwarding Multicast Operation Multicast Address Properties Defining Multicast Properties
SNMP V3 Configuring SNMP Security Defining SNMP Security 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 Notification Recipients SNMPV1,2c Notification Recipients SNMPv3 Notification Recipients Configuring Multicast Forwarding Multicast Operation Multicast Registration Multicast Address Properties Defining MAC Group Address Adding MAC Group Address

Amphenol MILITARY HIGH SPEED

Configuring IGMP Snooping
Configuring MLD Snooping
Viewing IGMP/MLD IP Multicast Groups
Defining Multicast Router Ports
Defining Forward All Multicast
Defining Unregistered Multicast Settings
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 OoS Settings
Configuring OoS General Settings
Restoring Factory Default OoS 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
Viewing Interface Statistics
Receive Statistics
Transmit Statistics
Viewing Etherlike Statistics
Managing RMON Statistics
Viewing RMON Statistics
Configuring KMUN History
Defining KMUN History Control
viewing the KMUN History lable
Configuring RMON Events
Defining RMON Events Control
Viewing the RMON Events Logs
Defining RMON Alarms

DIMENSIONAL INFORMATION



Pinout Chart

I/O CHART								
CONNECTOR DESCRIPTION	IECTOR PIN NO. DATA SIGNAL NAME							
11	A	IN	28VDC_IN					
(POW ER)	В	OUT	28VDC_RTN					
15-4P	C		SAFETY GROUND / CHASSIS					
KEYING	D		NOT CONNECTED					
" <u>N</u> "	SHELL		CHASSIS					

I/O CHART							
CONNECTOR DESCRIPTION	PIN NO.	DATA DIRECTION	SIGNAL NAME				
	1	OUT	RS232_CONSOLE_TX				
	2	IN	RS232_CONSOLE_RX				
	3		GND				
	4		N/C				
	5		NZC				
	6		GND				
	7	BI	SW ITCHBOX_RESET				
	8		GND				
	9		N/C				
	10		N/C				
	11		GND				
	12		DEBUG1_1GBase-T_DA+				
	13		DEBUG1_1GBase-T_DA-				
	14		DEBUG1_1GBase-T_DB+				
	15		DEBUG1_1GBase-T_DB-				
	16		DEBUG1_1GBase-T_DC+				
	17		DEBUG1_1GBase-T_DC-				
J2 (DERUG)	18		DEBUG1_1GBase-T_DD+				
(DEBUU)	19		DEBUG1_1GBase-T_DD-				
15-35P	20		N/C				
N"	21		GND				
"N"	22		N/C				
	23		N/C				
	24		N/C				
	25		NZC				
	26		N/C				
	27		GND				
	28		N/C				
	29		N/C				
	30		DEBUG2_1GBase-T_DA+				
	31		DEBUG2_1GBase-T_DA-				
	32		DEBUG2_1GBase-T_DB+				
	33	DI	DEBUG2_1GBase-T_DB-				
	34	ВІ	DEBUG2_1GBase-T_DC+				
	35		DEBUG2_1GBase-T_DC-				
	36]	DEBUG2_1GBase-T_DD+				
	37	1	DEBUG2_1GBase-T_DD-				
	SHELL		CHASSIS				

	1/0	CHART			I/0	CHART			1/0	CHART			I/0	CHART	
CONNECTOR DESCRIPTION	PIN NO	SIGNAL NAME	ETHERNET PORT NO	CONNECTOR	PIN NO	SIGNAL NAME	ETHERNET PORT NO	CONNECTOR	PIN NO	SIGNAL NAME	ETHERNET PORT NO	CONNECTOR DESCRIPTION	PIN NO	SIGNAL NAME	ETHERNET PORT NO
	A1	25GBase-SR_RX	12		B1	25GBase-SR_RX	36		C1	25GBase-SR_RX	60		D1	25GBase-SR_RX	84
	A2	25GBase-SR_RX	11		B2	25GBase-SR_RX	35		C2	25GBase-SR_RX	59		D2	25GBase-SR_RX	83
	A3	25GBase-SR_RX	10		B3	25GBase-SR_RX	34		С3	25GBase-SR_RX	58		D3	25GBase-SR_RX	82
	A4	256Base-SR_RX	9		B4	25GBase-SR_RX	33		Ε4	25GBase-SR_RX	57		D 4	25GBase-SR_RX	81
	A5	25GBase-SR_RX	8		B5	25GBase-SR_RX	32		C 5	25GBase-SR_RX	56		D.5	25GBase-SR_RX	80
	A6	25GBase-SR_RX	7		86	25GBase-SR_RX	31		C 6	25GBase-SR_RX	55		D6	25GBase-SR_RX	79
	A7	25GBase-SR_RX	6		B7	25GBase-SR_RX	30		C 7	25GBase-SR_RX	54		D7	25GBase-SR_RX	78
	A8	25GBase-SR_RX	5		B8	25GBase-SR_RX	29		C 8	25GBase-SR_RX	53		D8	25GBase-SR_RX	77
	A9	25GBase-SR_RX	4		B9	25GBase-SR_RX	28		С9	25GBase-SR_RX	52		D9	25GBase-SR_RX	76
	A10	25GBase-SR_RX	3		B10	25GBase-SR_RX	27		C 10	25GBase-SR_RX	51		D 10	25GBase-SR_RX	75
	A11	25GBase-SR_RX	2		B11	25GBase-SR_RX	26		C 11	25GBase-SR_RX	50		D 11	25GBase-SR_RX	74
	A12	25GBase-SR_RX	1		B12	25GBase-SR_RX	25		C 12	25GBase-SR_RX	49		D12	25GBase-SR_RX	73
	A13	25GBase-SR_TX	12		B13	25GBase-SR_TX	36		C 13	25GBase-SR_TX	60		D 13	25GBase-SR_TX	84
	A14	25GBase-SR_TX	11		B14	25GBase-SR_TX	35		C 14	25GBase-SR_TX	59		D14	25GBase-SR_TX	83
	A15	25GBase-SR_TX	10		B15	25GBase-SR_TX	34		C 15	25GBase-SR_TX	58		D 15	25GBase-SR_TX	82
	A16	25GBase-SR_TX	9		B16	25GBase-SR_TX	33		C 16	25GBase-SR_TX	57		D16	25GBase-SR_TX	81
	A17	25GBase-SR_TX	8		B17	25GBase-SR_TX	32		C 17	25GBase-SR_TX	56		D 17	25GBase-SR_TX	80
	A18	25GBase-SR_TX	7		B18	25GBase-SR_TX	31		C 18	25GBase-SR_TX	55		D18	25GBase-SR_TX	79
	A19	25GBase-SR_TX	6		B19	25GBase-SR_TX	30		C 19	25GBase-SR_TX	54		D19	25GBase-SR_TX	78
	A20	25GBase-SR_TX	5		B20	25GBase-SR_TX	29		C 20	25GBase-SR_TX	53		D20	25GBase-SR_TX	77
J3	A21	25GBase-SR_TX	4	JB	B21	25GBase-SR_TX	28	J3	C21	25GBase-SR_TX	52	JΒ	D21	25GBase-SR_TX	76
	A22	25GBase-SR_TX	3		B22	25GBase-SR_TX	27		C22	25GBase-SR_TX	51		D22	25GBase-SR_TX	75
21-04S	A23	25GBase-SR_TX	2	21-04S	B23	25GBase-SR_TX	26	21-04S	C 23	25GBase-SR_TX	50	21-04S	D23	25GBase-SR_TX	74
	A24	25GBase-SR_TX	1		B24	25GBase-SR_TX	25		C24	25GBase-SR_TX	49		D24	25GBase-SR_TX	73
4X 48F MT	A25	25GBase-SR_RX	24	4X 48F MT	B25	25GBase-SR_RX	48	4X 48F MT	C 25	25GBase-SR_RX	72	4X 48F MT	D25	25GBase-SR_RX	96
VENDO	A26	25GBase-SR_RX	23	VENDO	B26	25GBase-SR_RX	47	VENDAG	C 26	25GBase-SR_RX	71	(CENTING)	D26	25GBase-SR_RX	95
KEYING	A27	25GBase-SR_RX	22	KEYING	B27	25GBase-SR_RX	46	KEYING	C 27	25GBase-SR_RX	70	KEYING	D27	25GBase-SR_RX	94
N	A28	25GBase-SR_RX	21	N	B28	25GBase-SR_RX	45	N	C28	25GBase-SR_RX	69	N	D28	25GBase-SR_RX	93
	A29	25GBase-SR_RX	20		B29	25GBase-SR_RX	44		C 29	25GBase-SR_RX	68		D29	25GBase-SR_RX	92
	0EA	25GBase-SR_RX	19		B30	25GBase-SR_RX	43		C 30	25GBase-SR_RX	67		D 30	25GBase-SR_RX	91
	A31	25GBase-SR_RX	18		B31	25GBase-SR_RX	42		C 31	25GBase-SR_RX	66		D 31	25GBase-SR_RX	90
	A32	25GBase-SR_RX	17		B32	25GBase-SR_RX	41		C 32	25GBase-SR_RX	65		032	25GBase-SR_RX	89
	A33	25GBase-SR_RX	16		B33	25GBase-SR_RX	40		C 33	25GBase-SR_RX	64		D 33	25GBase-SR_RX	88
	A34	256Base-SR_RX	15		834	256Base-SR_RX	39		634	256Base-SR_RX	63		034	256Base-SR_RX	87
	A35	256Base-SR_RX	14		835	25GBase-SR_RX	38		L 35	256Base-SR_RX	62		035	25GBase-SR_RX	86
	6LA	25GBase-SR_RX	13		836	256Base-SR_RX	37		0136	256Base-SR_RX	61		U 36	25GBase-SR_RX	85
	A37	25GBase-SR_TX	24		837	25GBase-SR_TX	48		137	250Base-SR_TX	72		037	25GBase-SR_TX	96
	8EA	256Base-SR_TX	23		838	25GBase-SR_TX	47		138	25GBase-SR_TX	71		U 38	250Base-SR_TX	95
	A19	25GBase-SR_TX	22		B39	250Base-SR_TX	40		619	250Base-SR_TX	70		0.39	25GBase-SR_TX	94
	A40	ZOUBASE-SR_IX	21		B40	ZOUBASE-SR_IX	45		L40	ZOUBASE-SK_IX	69		D40	ZDUBBSE-SR_TX	93
	A41	ZOUBBSE-SR_IX	20		841	ZOUBASE-DR_IX	44		L41	ZOUBASE-SK_IX	00		041	ZOUBASE-SR_IX	92
	A4Z	ZSUBASE-SR_TX	19		842	ZSUBASE-SR_TX	43		L42	ZSUBASE-SR_TX	0/		042	25uBase-SR_TX	91
	A43	ZOUBASE-SR_TX	18		B43	ZOUBASE-SR_IX	42		L43	ZOUBASE-SR_TX	66		043	ZouBase-SR_TX	90
	A44	ZOUBASE-SR_IX	1/		B44	ZOUBASE-SR_IX	41		C/5	ZOUBASE-SR_IX	65		044	ZDUBASE-SR_TX	89
	A45	ZOUBBSE-SR_IX	10		845	ZOUBASE-DR_IX	40		L45	ZOUBASE-SR_IX	04		045	ZOUBASE-SR_IX	00
	A46	ZSUBASE-SR_TX	15		846	ZOUBASE-SR_TX	46		L46	Zoubase-SR_TX	63		046	ZSUBASE-SR_TX	87
	A47	ZOUBASE-SK_TX	14		B47	250Base_SR_TX	20		C47	ZOUBASE-SK_IX	02		04/	ZOUBUSE-SK_IX	00

I/O CHART	I/O CHART	I/O CHART	I/O CHART				
CONNECTOR PIN DESCRIPTION NO SIGNAL NAME ETHERNET PORT NO	CONNECTOR PIN SIGNAL NAME ETHERNET DESCRIPTION NO	CONNECTOR PIN SIGNAL NAME ETHERNET PORT NO	CONNECTOR PIN DESCRIPTION NO SIGNAL NAME ETHERNET PORT NO				
DESCRIPTION NO Constraints PORT NO A1 2556Base-SR_RX 108 A2 256Base-SR_RX 107 A3 256Base-SR_RX 107 A3 256Base-SR_RX 106 A4 256Base-SR_RX 106 A4 256Base-SR_RX 101 A5 256Base-SR_RX 101 A6 256Base-SR_RX 101 A6 256Base-SR_RX 101 A7 256Base-SR_RX 101 A9 256Base-SR_RX 100 A10 256Base-SR_RX 99 A11 256Base-SR_RX 97 A11 256Base-SR_RX 106 A12 256Base-SR_RX 107 A13 256Base-SR_RX 106 A14 256Base-SR_RX 101 A12 256Base-SR_RX 101 A21 256Base-SR_RX 102 A22 256Base-SR_RX 101 A22 256Base-SR_RX 102	DESCRIPTION NO PRABLE AND PORTON PORT NO B1 25GBase-SR_RX 131 B2 25GBase-SR_RX 131 B3 25GBase-SR_RX 130 B4 25GBase-SR_RX 130 B4 25GBase-SR_RX 129 B5 25GBase-SR_RX 126 B6 25GBase-SR_RX 126 B6 25GBase-SR_RX 126 B7 25GBase-SR_RX 126 B8 25GBase-SR_RX 125 B9 25GBase-SR_RX 122 B11 25GBase-SR_RX 121 B11 25GBase-SR_RX 122 B12 25GBase-SR_RX 121 B13 25GBase-SR_RX 122 B14 25GBase-SR_TX 126 B20 25GBase-SR_TX 126 B21 25GBase-SR_TX 126 B22 25GBase-SR_TX 122 B24 25GBase-SR_TX 123 B24 25GBase-SR_RX 144 <	DESCRIPTION NO Character PORT NO C1 256Base-SR_RX 156 C2 256Base-SR_RX 155 C3 256Base-SR_RX 153 C5 256Base-SR_RX 153 C5 256Base-SR_RX 151 C7 256Base-SR_RX 150 C8 256Base-SR_RX 150 C8 256Base-SR_RX 149 C9 256Base-SR_RX 147 C11 256Base-SR_RX 146 C12 256Base-SR_RX 146 C12 256Base-SR_RX 146 C12 256Base-SR_RX 146 C12 256Base-SR_RX 147 C13 256Base-SR_RX 155 C14 256Base-SR_RX 156 C14 256Base-SR_RX 147 C16 256Base-SR_RX 150 C16 256Base-SR_RX 150 C17 256Base-SR_RX 147 C18 256Base-SR_RX 147	J4 21-04S 4X 48F MT D NO CONNECT KEYING "A" D NO CONNECT				

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
 - 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
 - 60 minutes per axis, in each of three mutually perpendicular axes.
- 40 G Peak Shock Cycle
 - Three hits in each axis, both directions, ½ sine and terminal-peak saw tooth, Total 36 hits.

FLUIDS SUSEPTABILITY:

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

Amphenol

MILITARY HIGH SPEED

ALTITUDE:

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

ELECTRONMAGNETIC COMPATIBILITY:

Designed to comply with MIL-STD-461E

PRINTED CIRCUIT BOARD ASSEMBLIES:

- Conformal Coat
- Amphenol performs Conformal Coting 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

Notice: Specifications are subject to change without notice. Contact your nearest Amphenol Corporation Sales Office for the latest specifications. All statements, information and data given herein are believed to be accurate and reliable but are presented without guarantee, warranty, or responsibility of any kind, expressed or implied. Statements or suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should assume that all safety measures are indicated or that other measures may not be

required.

Specifications are typical and may not apply to all connectors.

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