

## 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

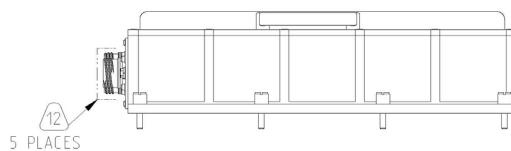
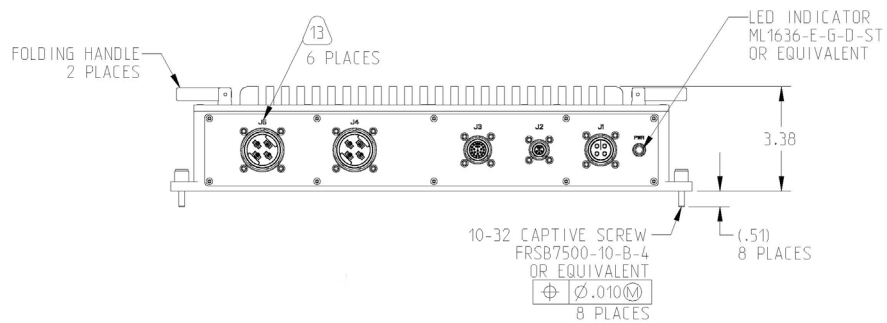
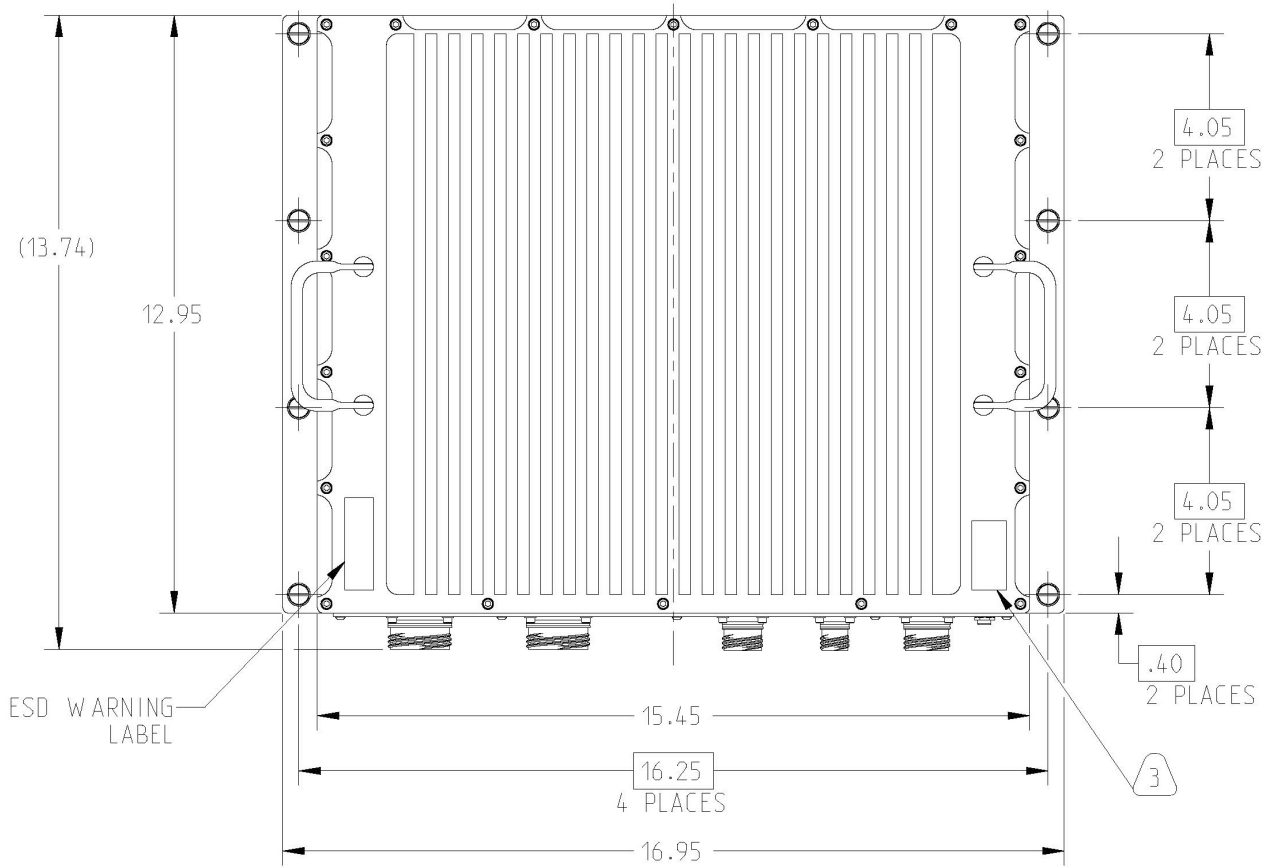
## SOFTWARE FEATURES

<b>Stacking</b>
Stacking Ring Topology
Stacking Chain Topology
Stacking Members and Unit ID
Removing and Replacing Stacking Members
Exchanging Stacking Members
Switching the Stacking Master
<b>Configuring System Time</b>
Configuring Daylight Savings Time
Configuring SNTP
Polling for Unicast Time Information
Polling for Anycast Time Information
Broadcast Time Information
Defining SNTP Settings
<b>Configuring Device Security</b>
Configuring Management Security
Configuring Authentication Methods
Defining Access Profiles
Defining Profile Rules
Defining Authentication Profiles
Mapping Authentication Methods
Defining RADIUS 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 ACLs
Managing Port Security
Enabling Storm Control
<b>Configuring System Logs</b>
Defining General Log Properties
Viewing Memory Logs
Viewing Flash Logs
Defining System Log Servers
<b>Configuring Interfaces</b>
Configuring Ports
Aggregating Ports
Configuring LACP

Configuring VLANs
Defining VLAN Properties
Defining VLAN Membership
Defining VLAN Interface Settings
Configuring GARP
Defining GARP
Defining GVRP
Viewing GVRP Statistics
<b>Defining IP Addresses</b>
Configuring IP Addressing
Defining IP Addresses
Defining ARP
Defining Domain Name Servers
Defining DNS Servers
Defining DNS Host Mapping
<b>Defining the Forwarding Database</b>
Defining the Forwarding Database
Defining Access Profiles
<b>Configuring Spanning Tree</b>
Defining Classic Spanning Tree
Defining STP on Interfaces
Defining Rapid Spanning Tree
Defining Multiple Spanning Tree
Defining MSTP Instance Settings
Defining MSTP Interface Settings
<b>Configuring SNMP</b>
SNMP v1 and v2c
SNMP v3
Configuring SNMP Security
Defining 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 Notification Filters
Defining SNMP Notification Recipients
SNMPv1,2c Notification Recipients
SNMPv3 Notification Recipients
<b>Configuring Multicast Forwarding</b>
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
Defining Unregistered Multicast Settings
<b>Managing System Files</b>
Downloading System Files
Firmware Download
Configuration Download
Uploading System Files
Upload Type
Software Image Upload
Configuration Upload
Copying Files
Restoring the Default Configuration File
<b>Configuring Quality of Service</b>
Quality of Service Overview
VPT Classification Information
CoS Services
Defining General QoS Settings
Configuring QoS General 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
<b>Managing Device Diagnostics</b>
Configuring Port Mirroring
<b>Viewing Statistics</b>
Viewing Interface Statistics
Viewing Interface Statistics
Receive 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

## DIMENSIONAL INFORMATION



## Pinout Chart

I/O CHART			
CONNECTOR DESCRIPTION	PIN NO.	DATA DIRECTION	SIGNAL NAME
J1 (POWER)  15-4P KEYING "N"	A	IN	28VDC_IN
	B	OUT	28VDC_RTN
	C	--	SAFETY GROUND / CHASSIS
	D	--	NOT CONNECTED
	SHELL	--	CHASSIS

I/O CHART			
CONNECTOR DESCRIPTION	PIN NO.	DATA DIRECTION	SIGNAL NAME
J2 (STATUS/RESET)  9-35P KEYING "N"	1	IN	SWITCHBOX_RESET
	2	OUT	POWERSUPPLY_STATUS
	3	OUT	CHASSIS_STATUS
	4	OUT	TEMPERATURE_WARNING_STATUS
	5	--	RESET_RTN
	6	--	NOT CONNECTED
	SHELL	--	CHASSIS

I/O CHART			
CONNECTOR DESCRIPTION	PIN NO.	DATA DIRECTION	SIGNAL NAME
J3 (DEBUG)  13-35P KEYING "N"	1	OUT	RS232_CONSOLE_TX
	2	IN	RS232_CONSOLE_RX
	3	--	RS232_CONSOLE_GND
	4	BI	PIC_A_PGM_PGC
	5	BI	PIC_A_PGM_PGD
	6	IN	PIC_A_PGM_3.3V
	7	OUT	PIC_A_PGM_GND
	8	BI	DEBUG_I2C_SCL
	9	BI	DEBUG_I2C_SDA
	10	BI	PIC_A_PGM_MCLR
	11	--	PIC_RS232_GND
	12	OUT	PIC_RS232_TXD
	13	IN	PIC_RS232_RXD
	14	BI	DEBUG_CPU_1GBase-T_DA+
	15		DEBUG_CPU_1GBase-T_DA-
	16		DEBUG_CPU_1GBase-T_DB+
	17		DEBUG_CPU_1GBase-T_DB-
	18		DEBUG_CPU_1GBase-T_DC+
	19		DEBUG_CPU_1GBase-T_DC-
	20		DEBUG_CPU_1GBase-T_DD+
	21		DEBUG_CPU_1GBase-T_DD-
	22	--	NOT CONNECTED
SHELL	--	CHASSIS	

## 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

### ALTITUDE:

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

### ELECTROMAGNETIC COMPATIBILITY:

- Designed to comply with MIL-STD-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

# Amphenol

MILITARY HIGH SPEED

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Specifications are typical and may not apply to all connectors.

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