

432-CHANNEL 100G FIBER OPTIC

L2/L3 MANAGED LIQUID COOLED RUGGED ETHERNET SWITCH

PDS - 336



DESCRIPTION

Amphenol's Rugged 432-Channel 100G Ethernet Switch Box is liquid cooled and configurable for system connectivity, speeds, port types, and interoperation with various high-speed media converters and connectors for system interfacing.

Each fiber optic port is capable of 100G-Base-SR4, 40G-Base-SR4, 25G-Base-SR, 10G-Base-SR and 1G-Base-SX. In Amphenol's state of the art communications testing center, the switch box is aggressively tested at line rates to RFC 2889 for switching and RFC 2544 for L2/L3 performance, latency, packet forwarding, and other key items.

The switch is manufactured using derivatives of Amphenol's MIL-DTL-38999 Series connectors. These connectors contain standard AS39029 qualified Size 22D contacts and 48F MT Ferrule Fiber Optic contact assemblies. The MT ferrules are used for fiber optic Ethernet ports and the AS39029 style contacts are used for power inputs and management functions.



432-CHANNEL 100G FIBER OPTIC

L2/L3 Managed Liquid Cooled Rugged Ethernet Switch

FEATURES & BENEFITS

- 432 fiber optic non-blocking switched Ethernet ports capable of 100G-Base-SR4, 40GBase-SR4, 25G-Base-SR, 10G-Base-SR and 1G-Base-SX protocols.
- Switch is made of two independently powered halves of 216 channels that form a monolithic switch when both powered.
- Two independent power inputs and supplies through J1 and J2. Each has a 270VDC input and can supply 12VDC @ 1300 Watts through both an EMI filter and COTS DC/DC regulator compliant with the mil-spec. Each power circuit supplies half of the switch.
- Two independent, but matrixed, 25G fiber optical managed Ethernet switch systems. Each switch system has its own management processor, 25G (50G line rate capable) switch, and 18X 12x12 transceivers for a total of 5.4Tbps non-blocking 25G Ethernet switching. Each side has a switched 2Tbps copper connection to the other side through 80X 50G channels between the two switches. When utilized as one system, the overall switch as 432-25G Ethernet ports for a total of 10.8Tbps non-blocking Ethernet switching. The two management processors have a side band 1G Ethernet connection for inter-switch communication (master / slave / status) and PCI-express connections to the switches. Finally, each management processor has a dedicated 1GBase-T and RS-232 port for management as well as discretes.
- Built in test functionality for power up, initiated, and continuous operation.
- Host management processor
 - o Multicast
 - o Link Aggregation Control Protocol (LACP)
 - o Protocol-Independent Multicast (PIM)
 - o Internet Group Management Protocol (IGMP)
 - o Simple Network Management Protocol (SNMP)
 - o Capable of supporting thousands of virtual local area networks (VLAN) each with its own dynamic host configuration protocol (DHCP) server for various devices within the VLAN
 - o Configurable cross VLAN multicast routing
 - o Storm-prevention
 - o IPV4 and IPV6 support
 - o Spanning tree protocol
 - o Temperature and current monitoring and thermal shutdown in the event of over temperature
 - o SSH, NTP, PTP, TFTP, secure FTP support
 - o Custom configuration files
 - o Web server interaction
 - o Other
- Link status on demand, port counter status, configurable port speed/routing, ARP list, drop report, ping, MTU configuration, LUA configuration
- The switch has two power connectors for the two supplies, two I/O connectors for the two management Ethernet ports and serial consoles for the two processors, and fiber MT fiber optic connectors. All the connectors are based on MIL-DTL-38999.
- The chassis is designed with an input for thermal coolant liquid and output such that we can meet the specification for operating temperatures. The housing is made of Aluminum, plated, and painted. All metal to metal junctions are combined via mil-spec screws that are no more than 1.5 inches away from each other. Also, EMI gaskets are used such that such requirements can be met.

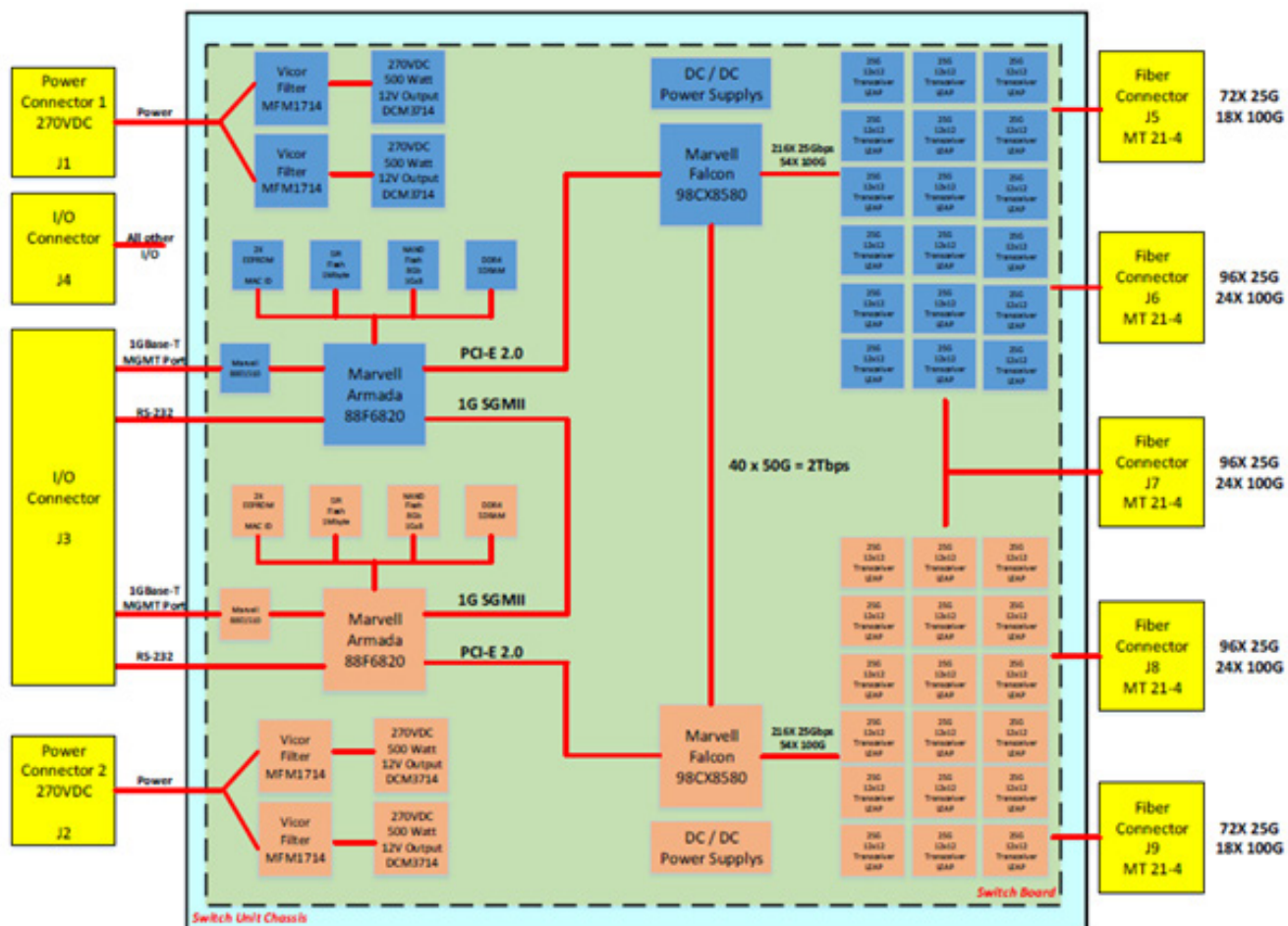
432-CHANNEL 100G FIBER OPTIC

L2/L3 Managed Liquid Cooled Rugged Ethernet Switch

ENVIRONMENTAL

- Liquid cooled for -40C to +85C environments
 - Thermal survey and analysis available on request
- Altitudes up to 70K feet
- Shock, vibration, bench handling, EMI/EMC per 461E, 704F power, salt/fog/dust, fluids/rain, explosive atmosphere, humidity
- Plating & paint is configurable but currently mil-spec black paint with back cover chromated for grounding

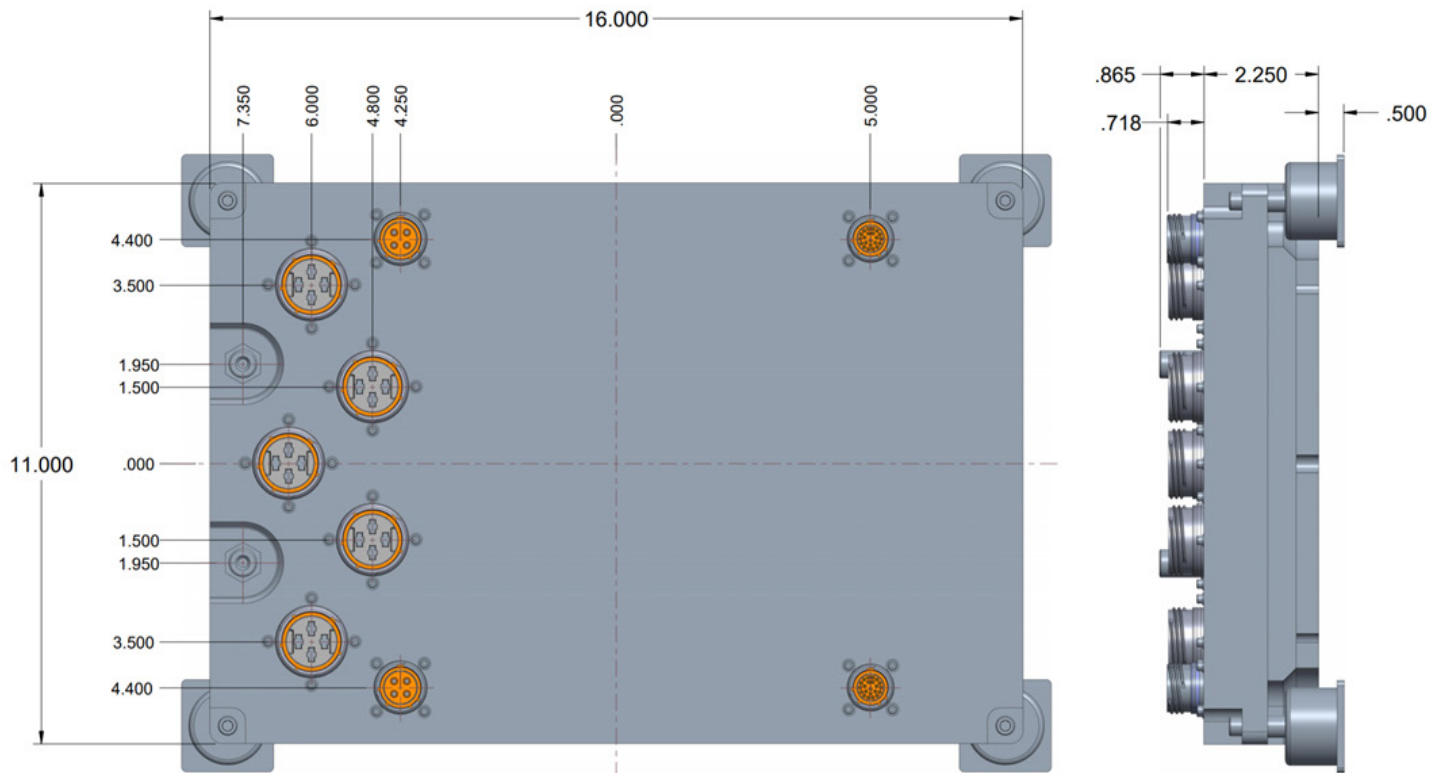
BLOCK DIAGRAM



432-CHANNEL 100G FIBER OPTIC

L2/L3 Managed Liquid Cooled Rugged Ethernet Switch

DIMENSIONAL INFORMATION



432-CHANNEL 100G FIBER OPTIC

L2/L3 Managed Liquid Cooled Rugged Ethernet Switch

DIMENSIONAL INFORMATION

J#	Function	Details	Receptacle P/N	Contacts
J1-J2	Power Input 1 and 2	270VDC and ground pins	CF-971354-04P	M39029 size 12 pin
J3-J4	Status 1 and 2	Ethernet and RS-232	CF-971353-22P	M39029 size 22D pin
J5-J9	Fiber Connectors 1-5	25G/100G Ethernet	CF-971337-04S	48MT Ferrule 12599 with CF-198233-001 kit

P#	Function	Details	Plug P/N	Contacts
P1-P2	Power Input 1 and 2	270VDC and ground pins	TV06RF-15-4S	M39029 size 12 socket
P3-P4	Status 1 and 2	Ethernet and RS-232	TV06RF-13-35S	M39029 size 22D socket
P5-P9	Fiber Connectors 1-5	25G/100G Ethernet	CF-594621-04P	48MT Ferrule 12599 with CF-198234-001 kit

All connectors on the front of the unit are based on MIL-DTL-38999 Series III and are electroless nickel plating, rotation proof such that a cable cannot go onto the wrong connector, and wall mount with EMI gaskets securing the two metallic pieces. Three of the fiber optic connectors each have four MT contacts with 48 active fiber optic pins each and two of the connectors have 48 active fiber optics pins.