156-CHANNEL RUGGED ETHERNET SWITCHBOX

Amphenol Aerospace

PDS - 340

DESCRIPTION

Amphenol's Rugged 156-Channel Ethernet Switch Box is conduction cooled and configurable for system connectivity, speeds, port types, and interoperation with various high-speed media converters and connectors for system interfacing.

This switch box features 12 copper ports and 144 fiber optic ports, each capable of 1GBase-SX, 10GBase-SR, 40GBase-SR4, 25GBase-SR, and 100GBase-SR4. In Amphenol's state of the art communications testing center, the switch boxes are aggressively tested at line rates to RFC 2889 for switching and RFC 2544 for L2/L3 performance, latency, packet forwarding, and other key metrics.

The switch is manufactured using derivatives of Amphenol's MIL-DTL-38999 Series connectors. These connectors contain standard AS39029 qualified Size 22D contacts, Octonet contacts, and 48F MT Ferrule Fiber Optic contact assemblies.

Amphenol's Octonet Contacts are a proven design used in a variety of Military Programs. The Octonet is a Size 8 contact which houses (4) differential pair contacts. It is a 100 Ohm impedance contact, capable of a data rate of 4 Gbps maximum per contact pair. The contact system has been tested and passed all the Qualification Requirements of an AS39029 contact. The MT ferrules are used for fiber optic Ethernet ports and the AS39029 style contacts are used for power inputs and management functions.

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12-CHANNEL 10G COPPER RUGGED ETHERNET SWITCH

FEATURES & BENEFITS

- 144 fiber optic non-blocking switched Ethernet ports capable of 1GBase-SX, 10GBase-SR, 40GBase-SR4, 25GBase-SR, and 100GBase-SR4 protocols.
- 12 channels of copper capable of 10GBase-T
- 28V MIL-STD-704A input module; VICOR 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.
- Host management processor:
    - Multicast
    - Link Aggregation Control Protocol (LACP)
    - Protocol-Independent Multicast (PIM)
    - Internet Group Management Protocol (IGMP)
    - Simple Network Management Protocol (SNMP)
    - 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
    - Configurable cross VLAN multicast routing
    - Storm-prevention
    - IPV4 and IPV6 support
    - Spanning tree protocol
    - Temperature and current monitoring and thermal shutdown in the event of over temperature
    - SSH, NTP, PTP, TFTP, secure FTP support
    - Custom configuration files
    - Web server interaction
    - Other

    - 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

ENVIRONMENTAL

- -55 C to 85 C operating depending on altitude – perfect for military aerospace environments
- Conduction cooled for cold plate interface
- 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

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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 Daylight 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 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
Configuring System Logs
Defining General Log Properties
Viewing Memory Logs
Viewing Flash Logs
Configuring Interfaces
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

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 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 Instance Settings
Defining MSTP Interface Settings
Configuring SNMP
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
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
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 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
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 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

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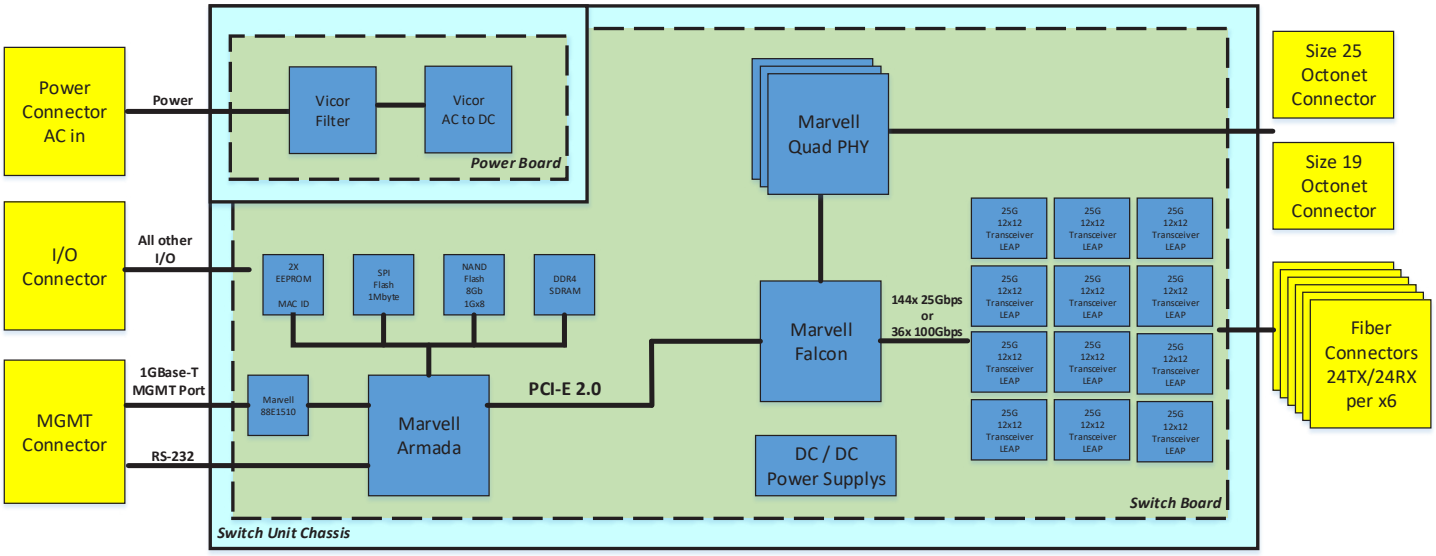
BLOCK DIAGRAM



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