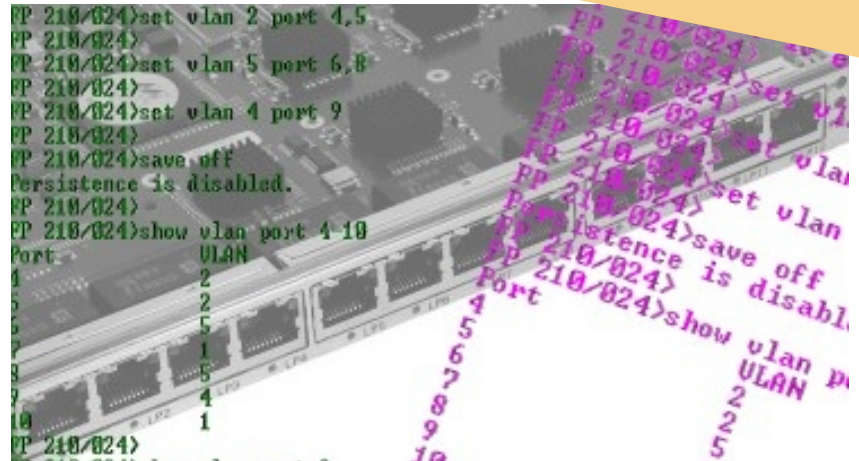


Fabric Switch Configuration Software Tool



The SW FSC/001 Switch Configuration Tool is a software package which allows the user to configure and control several of the features of Concurrent Technologies Ethernet switch fabric board products for VME, VXS and CompactPCI® architectures. It works in conjunction with the board's standard operating firmware but runs on a host computer (which may be a single-board computer or a PC) that is connected to the switch board via a serial

port. Alternatively, when the host computer board and the switch board are both in a CompactPCI backplane, the communication between the host computer and the switch board may be via the IPMB connection in the backplane. The Switch Configuration Tool will run on Microsoft® Windows® or Linux® operating systems. The tool uses a command line dialog for operator command entry.

HIGHLIGHTS

- Remotely hosted software:
 - runs under Windows® XP, Windows® Server 2003 and Windows® 2000
 - runs under RedHat Enterprise Linux®
 - level 2 switch management setup
- Uses serial port or IPMB connection to fabric switch in remote chassis
- Range of Ethernet Switch Fabric boards available for VME, VXS and CompactPCI
- Command-line driven interface using plain text commands
- Uses the switch board's non-volatile memory to save configuration settings
- Supports a range of configuration and control commands, including:
 - switch setup and configuration display
 - hardware status display
 - VLAN setup and display
 - QoS configuration and display
 - spanning tree control



Concurrent Technologies Plc

Concurrent Technologies Inc

4 Gilberd Court, Colchester, Essex, CO4 9WN, UK
 Tel: +44 (0)1206 752626 Fax: +44 (0)1206 751116
 6 Tower Office Park, Woburn, MA 01801, USA
 Tel: (781) 933 5900 Fax: (781) 933 5911
 email: info@gocct.com <http://www.gocct.com>

Fabric Switch Configuration Tool

- controls many switch features in Concurrent Technologies Ethernet switch fabric board products
- VME, VXS and CompactPCI® architectures
- tool operates on a host PC and communicates with the switch fabric board's firmware via a serial connection:-
 - command line interpreter on host PC
- support for Microsoft® Windows® or Linux®
- level 2 switch management setup

Host Operating Systems

- Microsoft Windows® XP, Windows® Server 2003, Windows® 2000
- RedHat® Enterprise™ Linux®:-
 - Linux ABI compliant software
- portable to other host operating system environments (consult factory)
- serial port connection to fabric switch
- tool is not required for normal operation of the switch

Operator Interface

- command-line driven
- plain text command language
- software allows for easy extension to support new switches and/or fabrics
- currently supports the following Concurrent Technologies fabric switch boards:-
 - FP 210/024
 - FX 210/018
 - FP 110/019

Switch Interface

- host connects to fabric switch via RS232 serial port or IPMB connection
- connection required only during setup or configuration change
- switch board provides support for non-volatile memory to save configuration settings

Command Options

- commands are available for the following types of operation:-
 - switch setup and configuration display
 - control of non-volatile settings
 - Ethernet port setup and configuration display
 - Ethernet port statistics display
 - VLAN configuration and display
 - spanning tree configuration and display
 - QoS parameter setting and display

```

FP 210/024>set vlan 2 port 4,5
FP 210/024>
FP 210/024>set vlan 5 port 6,8
FP 210/024>
FP 210/024>set vlan 4 port 9
FP 210/024>
FP 210/024>save off
Persistence is disabled.
FP 210/024>
FP 210/024>show vlan port 4-10
Port      VLAN
4         2
5         2
6         5
7         1
8         5
9         4
10        1
FP 210/024>
FP 210/024>show vlan port 8
Port      VLAN
8         5
FP 210/024>
FP 210/024>clear vlan 2 port 8,9
FP 210/024>
FP 210/024>show vlan port 4-9
Port      VLAN
4         2
5         2
6         5
7         1
8         1
9         1
FP 210/024>
FP 210/024>
FP 210/024>
    
```

```

C:\WINDOWS\system32\cmd.exe - switchtool.exe -lserial,COM6
FP 210/024>
FP 210/024>save on
Persistence is enabled.
FP 210/024>
FP 210/024>set vlan 2 port 4,5
FP 210/024>
FP 210/024>set vlan 5 port 6,8
FP 210/024>
FP 210/024>set vlan 4 port 9
FP 210/024>
FP 210/024>save off
Persistence is disabled.
FP 210/024>
FP 210/024>show vlan port 4-10
Port      VLAN
4         2
5         2
6         5
7         1
8         5
9         4
10        1
FP 210/024>
FP 210/024>show vlan port 8
Port      VLAN
8         5
FP 210/024>
FP 210/024>
FP 210/024>clear vlan 2 port 8,9
FP 210/024>
FP 210/024>show vlan port 4-9
Port      VLAN
4         2
5         2
6         5
7         1
8         1
9         1
FP 210/024>
FP 210/024>
FP 210/024>
    
```

ORDERING INFORMATION

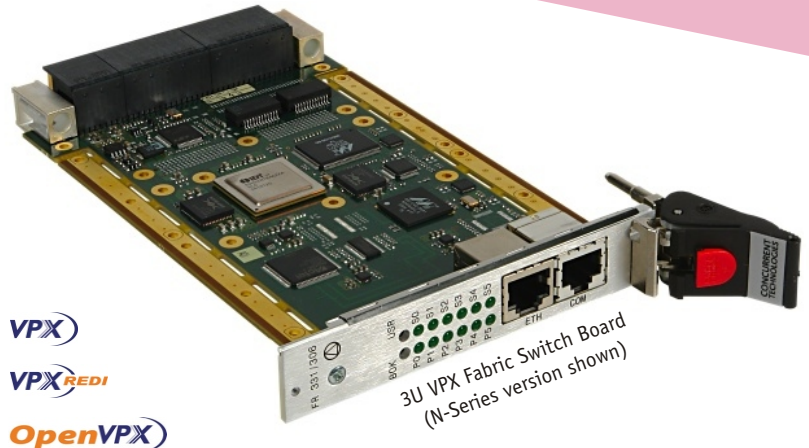
Order Number	Product Description (Software)
SW FSC/001-LO	Fabric Switch Configuration Tool



www.redlinx.co.za

Datasheet Code 1612/0709a
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**Fabric Switch Board -
3U OpenVPX (VITA 65)
PCI Express (VITA 46.4)
and Ethernet (VITA 46.6)**



APPLICATIONS

The FR 331/306 is a 3U OpenVPX fabric switch board with a x4 PCI Express™ data plane (VITA 46.4) and a 1000 Base-BX control plane (VITA 46.6), for use in VPX or VPX-REDI PCI Express Backplane environments. The FR 331/306 supports six payload boards with options for Ethernet and RS232 user control connections via the front panel. The FR 331/306 is suitable for use in centralized switching systems as defined in OpenVPX™

(VITA 65). The FR 331/306-RCS is a VPX-REDI Type 1 Two-Level Maintenance conduction-cooled board and the FR 331/306-RCT is VPX-REDI Type 2. Typical applications include networking equipment, data management and blade-based servers in vertical markets such as defense, communications, medical and automation.

HIGHLIGHTS

- 3U VPX-REDI (VITA 48.0) RCx-Series switch fabric board:
 - conduction-cooled to VITA 48.2
 - conformally coated
 - -40°C to +85°C operating temperature
 - RCS-Series supports VPX-REDI Type 1 Two Level Maintenance in 3U VPX-REDI 0.85-inch slot
 - RCT-Series supports VPX-REDI Type 2 in 3U VPX-REDI 0.8-inch slot
- 3U VPX (VITA 46.0) N-Series switch fabric board:
 - rear I/O compatible with the VPX-REDI RCx-Series
 - air-cooled
 - 0°C to +55°C operating temperature
 - use in commercial (non-rugged) applications
 - 3U VPX 0.8 inch slot
- 3U OpenVPX (VITA 65) fabric switch board:
 - compatible with a range of OpenVPX profiles
- 3U OpenVPX fabric switch board:
 - for use in PCI Express™ Backplane environments
 - supporting six payloads
 - x4 PCI Express (Gen 1 or Gen 2) data plane (VITA 46.4)
 - utilizing non-transparent/transparent PCI bridges
 - supports DMA on any two PCI Express ports
 - 1000 Base-BX unmanaged control plane (VITA 46.6)
- Switch configuration using serial terminal via front panel or rear panel:
 - Fabric Switch Configuration software
- Non-volatile EEPROM storage for:
 - board configuration data
 - both PCI Express and Ethernet switch configuration data
- Gigabit Ethernet port via rear panel and optional Gigabit Ethernet port via front panel

VPX (-REDI) Fabric Switch Board

- ruggedized 3U VPX-REDI (RCx-Series) PCI Express™ fabric switch board:-
 - conduction-cooled (VITA 48.2)
 - conformally coated
- non-ruggedized VPX (N-Series) version:-
 - commercial air-cooled
- compatible with range of OpenVPX (VITA 65) module profiles

Data Plane Switch

- 6-port VITA 46.4 data plane switch board:-
 - for use with PCI Express Fabric backplanes
 - x4 PCI Express links
 - support for Gen 1 or Gen 2
 - transparent and non-transparent bridge functionality on each port
- supports two DMA engines which can be assigned to any of the six ports:-
 - any two assigned ports can use DMA
- EEPROM storage for switch configuration data

Control Plane Switch

- 6-port VITA 46.6 control plane switch board:-
 - for use with VITA 46.6, unmanaged 1000 Base-BX control plane
- high performance IEEE 802.1 switch:-
 - implemented by Marvell® Prestera™ 98DX106 single-chip switch
 - full line rate Layer 2 switching engine
 - 8K MAC address cache with automatic learning and aging
- EEPROM storage for switch configuration data

System Management Hardware

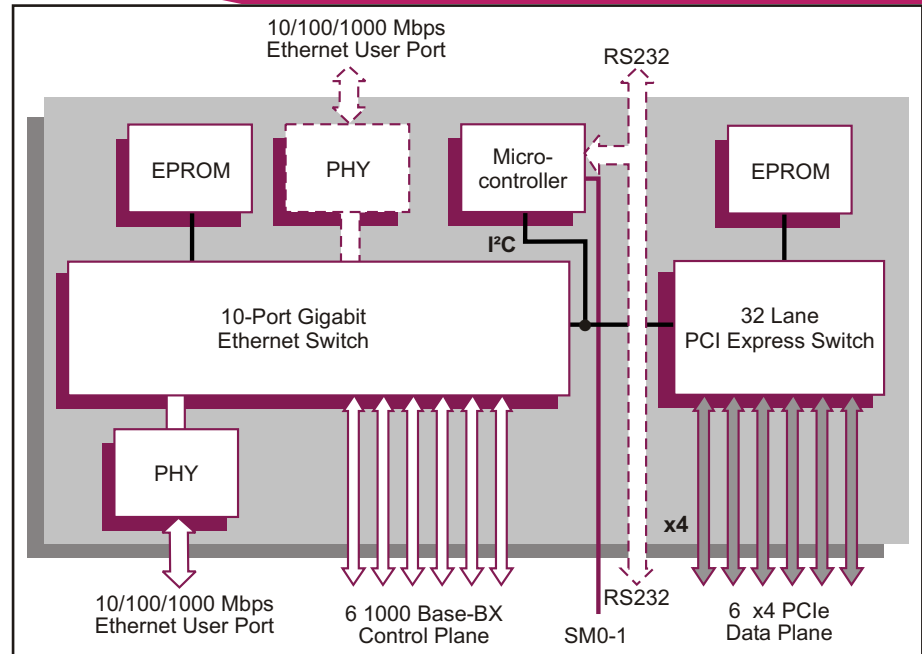
- on-board System Management Controller:-
 - implemented by microcontroller
 - supports dual 8 Kbytes non-volatile memory for inventory details of board
 - implements SM0-1 used for IPMI management

Switch Configuration Setup

- PCI Express switch and Ethernet switch configuration setup interface using RS232 serial port:-
 - implemented by microcontroller
 - switch initialization
 - separate EEPROM for storing PCI Express configurations
 - separate EEPROM for storing Ethernet configurations
- RS232 serial port options:-
 - front panel, VPX N-Series
 - rear panel, VPX-REDI RCx-Series
- Fabric Switch Configuration software:-
 - see separate SW FSC/001 datasheet

Switch Status Indicators

- front panel, VPX N-Series only:-
 - Link/Activity LEDs for all VPX backplane 1000 Base-BX ports
 - LinkUp/Active status LEDs for all PCI Express ports



Ethernet Interfaces

- Gigabit Ethernet user port via front panel, VPX N-Series
- Gigabit Ethernet user port via rear panel, VPX N-Series and VPX-REDI RCx-Series

Electrical Specification (estimated)

- typical current figures
- +5V@ 4A, voltage +5% / -3%
- +3.3V@ 1.5A, voltage +5% / -3%

Environmental Specification

- operating temperature, VPX N-Series:-
 - VITA 47 Class AC1, 0°C to +55°C
 - useful for bench development
 - air-cooled
- storage temperature, VPX N-Series:-
 - VITA 47 Class C1, -40°C to +85°C
- operating altitude, VPX N-Series: 0 to 15,000 feet (0 to 4,572 meters)
- operating temperature, VPX-REDI RCx-Series:-
 - VITA 47 Class CC4, -40°C to +85°C
 - conduction-cooled (VITA 48.2)
- storage temperature, VPX-REDI RCx-Series:-
 - VITA 47 Class C4, -55°C to +105°C
- operating altitude, VPX-REDI RCx-Series: -1,000 to 50,000 feet (-305 to 15,240 meters)
- 5% to 95% Relative Humidity, non condensing* (operating/storage for N-Series and RCx-Series)

Mechanical Specification

- 3U VPX form-factor (VITA 46.0, VITA 48.0): 3.9 inches x 6.3 inches (100mm x 160mm)
- slot widths, N-Series and RCx-Series:-
 - 0.8 inches VPX N-Series (VITA 46.0)
 - 0.8 inches VPX-REDI Type 2, RCT-Series (VITA 48.0)
 - 0.85 inches VPX-REDI Type 1, RCS-Series (VITA 48.0). Where REDI Type 1 is Two Level Maintenance (VITA 48.2)
- connectors to VITA 46.0 for P0, P1 and P2
- operating mechanical, VPX N-Series:-
 - shock - VITA 47 Class OS1, 20g
 - vibration - 0.002g²/Hz
- operating mechanical, VPX-REDI RCx-Series:-
 - shock - VITA 47 Class OS2, 40g
 - random vibration - VITA 47 Class V3, 0.1g²/Hz

Safety

- PCB (PWB) manufactured with flammability rating of 94V-0



ORDERING INFORMATION

Order Number	Product Description (Hardware)
FR 331/306-11	6-port PCI Express Fabric Switch, 3U VPX, RS232 via front panel, N-Series
FR 331/306-13RCS	6-port PCI Express Fabric Switch, 3U VPX-REDI Type 1, RS232 via rear panel, RCS-Series
FR 331/306-13RCT	6-port PCI Express Fabric Switch, 3U VPX-REDI Type 2, RS232 via rear panel, RCT-Series

SW FSC/001-L0 Fabric Switch Configuration Tool

For accessories please contact your local sales office. For further information on the VPX and VPX-REDI boards please contact your local sales office.

10/100/1000 Ethernet Switched Fabric Board, Rugged Conduction-Cooled



APPLICATIONS

The FP 110/019-RC is an entry-level 24-port 10/100/1000Mbps ruggedized conduction-cooled Ethernet Switched Fabric Board for use in PICMG® 2.16 and VITA 31.1 Packet Switched Backplane environments. It supports up to nineteen node boards and a fabric to fabric link. It offers high speed, full line rate Layer 2 switching fabric on all Ethernet ports. Quality of Service (QoS) operation is supported with four priority queues and a variety of traffic classes for time-critical and

multimedia traffic. System monitoring is provided by the PICMG 2.9 compliant IPMI subsystem, supporting the IPMB0 serial management bus. The board operates in temperatures ranging from -40°C to +85°C. Commercial air-cooled versions are available and ruggedized air-cooled versions are planned. Typical applications include networking equipment, voice over IP (VoIP) and blade-based servers.

HIGHLIGHTS

- 20-port 10/100/1000Mbps Ethernet Switched Fabric Board:
 - compatible with PICMG 2.16 Packet Switched Backplane (PSB)
 - 19 PSB Ethernet ports for PSB node boards
 - PSB Ethernet port for fabric board interconnect link
- Low cost, low power, high performance switched fabric:
 - full line rate Layer 2 switching engine
 - supports up to 8K MAC addresses with automatic learning and aging
- Auto-negotiation on all Ethernet ports:
 - 1000Mbps full-duplex
 - 10/100Mbps full-duplex and half-duplex
- Speed and Link/Activity status LEDs on all Ethernet ports
- Non-volatile EEPROM storage for board and Ethernet switch configuration data
- Fabric Switch Configuration software
- Hardware support for Quality of Service (QoS):
 - 4 priority queues per port
 - variety of classification services
 - fixed priority or weighed packet streams
- IPMI (Intelligent Platform Management Interface):
 - PICMG 2.9 (System Management Specification)
 - access to network management registers
- Ruggedized air-cooled version (RA-Series) planned:
 - -40°C to +75°C, and conformally coated
 - see separate FP 110/019-RA datasheet
- Non-ruggedized air-cooled versions available:
 - rear plug compatible with the ruggedized version
 - useful for bench development
 - use in commercial (non-rugged) applications
 - see separate FP 110/019 datasheet
- Supports hot insertion and removal
- Single slot, 6U CompactPCI form factor

Ruggedized Ethernet Switch

- CompactPCI® or VME backplanes
- conduction-cooled to IEEE 1101.2
- conformally coated

Ethernet Switched Fabric

- 20-port 10/100/1000Mbps Ethernet Switched Fabric board:-
 - for use with PICMG® 2.16 and VITA 31.1 Packet Switched Backplanes (PSB)
 - for use with non-PICMG 2.16 CompactPCI backplanes
- high performance Ethernet Switched Fabric:-
 - implemented by Marvell® Prestera® 98DX240 single-chip switch
 - full line rate Layer 2 switching engine
 - 8K MAC address cache with automatic learning and aging
- auto-negotiation on all ports:-
 - 1000Mbps full-duplex
 - 10/100Mbps full-duplex and half-duplex
- EEPROM storage for user configuration data
- Fabric Switch Configuration software:-
 - see separate SW FSC/001 datasheet

Backplane Interfaces

- compatible with CompactPCI® Packet Switched Backplane (PSB):-
 - conforms to the relevant sections of PICMG 2.16 R1.0
 - support for geographic address (GA) on J2
- compatible with ANSI/VITA 31.1-2003 Gigabit Ethernet on VME64x backplanes
- 19 PSB Ethernet ports for PSB node boards
- Ethernet port for linking with second fabric board:-
 - enables redundant fabric board
- J1, J2, J3 and J5 connectors fitted as standard

System Management

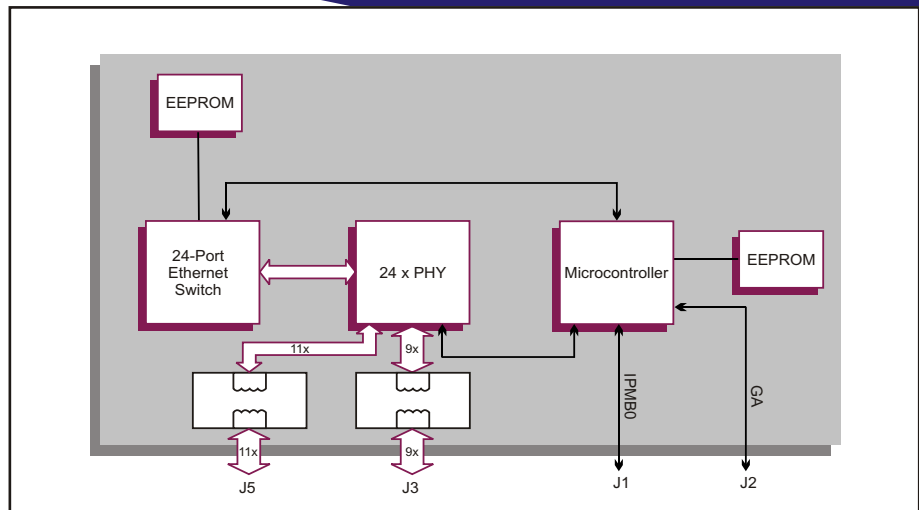
- board health and status management:-
 - conforms to PICMG® 2.9 R1.0 (System Management Specification)
 - implements the IPMB0 interface on J1
 - microcontroller-based Peripheral Management Controller
 - EEPROM for Field Replaceable Unit (FRU) and Sensor Data Record (SDR) storage
- hot swap insertion and removal

Quality of Service (QoS)

- supports prioritized packet streams for management of voice, video and data
- 4 hardware priority queues per port
- fixed priority or weighted fair queuing
- QoS traffic classification, determined by:-
 - port ID
 - IEEE 802.1p multimedia traffic tags
 - IPv6 Traffic Class

Electrical Specification

- +5V (+5%/-3%) @ 3.8A
- +12V (+5%/-5%) @ 0.01A (maximum)
- +3.3V and -12V supplies are not required



Safety

- PCB (PWB) manufactured with flammability rating of 94V-0

Environmental Specification

- operating temperatures (VITA 47 Class CC4):-
 - -40°C to +85°C
- storage temperatures (VITA 47 Class C4)
 - -55°C to +105°C
- 5% to 95% Relative Humidity, non condensing (operating and storage)
- altitude (operating):
 - 1,000 to 50,000 feet (-305 to 15,240 metres)
- commercial air-cooled versions available (copper or fiber):-
 - rear plug compatible
 - see separate FP 110/019 datasheet
- ruggedized air-cooled version planned (copper only):-
 - rear plug compatible
 - see separate FP 110/019-RA datasheet

Mechanical Specification

- 6U form factor: 9.2 inches x 6.3 inches (233mm x 160mm)
- single slot: 0.8 inches (20.3mm)
- connectors: IEC 60917 and IEC-61076-4-101 (PICMG 2.0 R3.0 S2.2) for J1, J2, J3 and J5
- operating shock (VITA 47, conduction-cooled): 40g, 11ms, 1/2 sine
- operating random vibration (VITA 47 Class V3):-
 - PSD increasing at +3dB/octave (5Hz to 100Hz)
 - PSD = 0.1 g²/Hz (100Hz to 1kHz)
 - PSD decreasing at -6dB/octave (1kHz to 2kHz)

(PSD = Power Spectral Density)

ORDERING INFORMATION

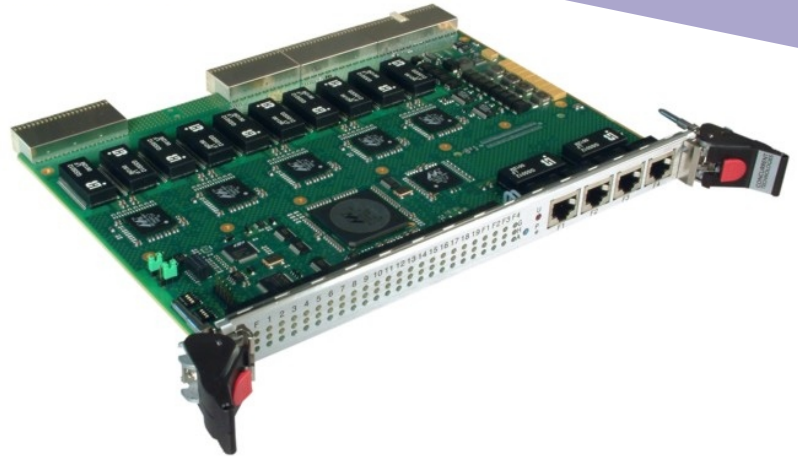
Order Number Product Description (Hardware)

FP 110/019-00RC 20-port 10/100/1000 Ethernet Switched Fabric Board (19 PSB Ethernet node ports)

SW FSC/001-L0 Fabric Switch Configuration Tool

For more information on the ruggedized air-cooled version (copper only) see separate FP 110/019-RA datasheet or the commercial non-rugged version (copper or fiber) then see separate FP 110/019 datasheet, alternatively please contact your local sales office

10/100/1000 Ethernet Switched Fabric Board



APPLICATIONS

The FP 110/019 is an entry-level 24-port 10/100/1000Mbps Ethernet Switched Fabric Board for use in CompactPCI® PICMG® 2.16 and VITA 31.1 Packet Switched Backplane environments. It supports up to nineteen node boards, a fabric to fabric link and for user connections, up to four front panel Ethernet interfaces. It offers high speed, full line rate Layer 2 switching fabric on all Ethernet ports. Quality of Service (QoS) operation is supported with four priority queues and a variety of traffic classes for time-critical and multimedia

traffic. System monitoring is provided by the PICMG 2.9 compliant IPMI subsystem, supporting the IPMB0 serial management bus. The FP 110/019 is an excellent choice for cost sensitive applications. Typical applications include networking equipment, voice over IP (VoIP) telephony systems and blade-based servers. Options to operate in temperatures ranging from -40°C to +85°C are available. Ruggedized conduction-cooled versions are available and ruggedized air-cooled versions are planned.

HIGHLIGHTS

- 24-port 10/100/1000Mbps Ethernet Switched Fabric Board:
 - compatible with PICMG 2.16 Packet Switched Backplane (PSB)
 - 19 PSB Ethernet ports for PSB node boards
 - PSB Ethernet port for fabric board interconnect link
 - supplied with either 4 front panel Ethernet ports via RJ45 connectors or 2 front panel Gigabit Ethernet LC optical fiber connectors
- Low cost, low power, high performance switched fabric:
 - full line rate Layer 2 switching engine
 - supports up to 8K MAC addresses with automatic learning and aging
- Auto-negotiation on all Ethernet ports:
 - 1000Mbps full-duplex
 - 10/100Mbps full-duplex and half-duplex
- Non-volatile EEPROM storage for board and Ethernet switch configuration data
- Fabric Switch Configuration software
- Speed and Link/Activity status LEDs on all Ethernet ports
- Hardware support for Quality of Service (QoS):
 - 4 priority queues per port
 - variety of classification services
 - fixed priority or weighed packet streams
- IPMI (Intelligent Platform Management Interface):
 - PICMG 2.9 (System Management Specification)
 - access to network management registers
- Extended temperature versions available:
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series, includes humidity sealant)
- Ruggedized versions:
 - conduction cooled versions available
 - air cooled versions planned
- 10-port 10/100/1000 Mbps version available:
 - see separate FP 110/008-U datasheet
- Supports hot insertion and removal
- Single slot, 6U CompactPCI form factor

Ethernet Switched Fabric

- 22-port or 24-port 10/100/1000Mbps Ethernet Switched Fabric board:-
 - for use with PICMG® 2.16 and VITA 31.1 Packet Switched Backplanes (PSB)
 - for use with non-PICMG 2.16 CompactPCI backplanes when used with AD FP1/001 transition module
- high performance Ethernet Switched Fabric:-
 - implemented by Marvell® Prestera® 98DX240 single-chip switch
 - full line rate Layer 2 switching engine
 - 8K MAC address cache with automatic learning and aging
- auto-negotiation on all ports:-
 - 1000Mbps full-duplex
 - 10/100Mbps full-duplex and half-duplex
- EEPROM storage for user configuration data
- Fabric Switch Configuration software:-
 - see separate SW FSC/001 datasheet
- 10-port board available:-
 - see separate FP 110/008-U datasheet

Backplane Interfaces

- compatible with CompactPCI® Packet Switched Backplane (PSB):-
 - conforms to the relevant sections of PICMG 2.16 R1.0
 - supports geographic address (GA) on J2
- compatible with ANSI/VITA 31.1-2003 Gigabit Ethernet on VME64x backplanes
- 19 PSB Ethernet ports for PSB node boards
- Ethernet port for linking with second fabric board:-
 - enables redundant fabric board
- J1, J2, J3 and J5 connectors fitted as standard

Front Panel Interfaces

- option for Ethernet user ports:-
 - 4 x RJ45 connectors @ 10/100/1000Mbps
 - 2 x SFP LC optical connectors @ 1000Base-SX with multimode optical fiber
- speed and Link/Activity LEDs for all Ethernet ports
- 1 user LED
- reset switch (recessed)

System Management

- board health and status management:-
 - conforms to PICMG® 2.9 R1.0 (System Management Specification)
 - implements the IPMB0 interface on J1
 - microcontroller-based Peripheral Management Controller
 - EEPROM for Field Replaceable Unit (FRU) and Sensor Data Record (SDR) storage
- hot swap insertion and removal

Quality of Service (QoS)

- supports prioritized packet streams for management of voice, video and data
- 4 hardware priority queues per port
- fixed priority or weighted fair queuing
- QoS traffic classification, determined by:-
 - port ID
 - IEEE 802.1p multimedia traffic tags
 - IPv6 Traffic Class

Electrical Specification

- +5V (+5%/-3%) @ 3.8A (typical, with 4 x RJ45 front panel connectors)
- +12V (+5%/-5%) @ 0.01A (maximum)
- +3.3V and -12V supplies are not required

ORDERING INFORMATION

Order Number Product Description (Hardware)

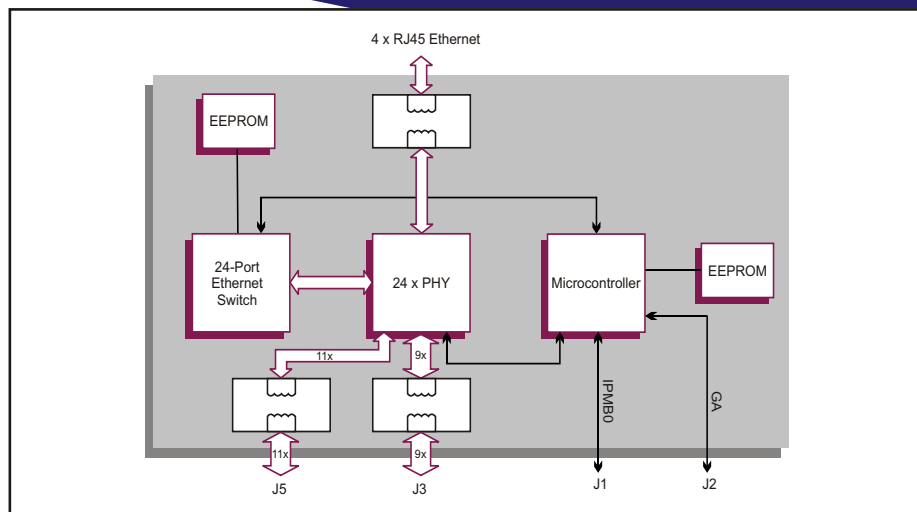
FP 110/019-00 24-port 10/100/1000 Ethernet Switched Fabric Board (19 PSB Ethernet node ports) with 4 copper RJ45 front panel connectors
 FP 110/019-10 22-port 10/100/1000 Ethernet Switched Fabric Board (19 PSB Ethernet node ports) with 2 fiber 1000 Base-SX SFP LC front panel connectors

AD FP1/001-12 CompactPCI Single Slot Ethernet RTM, 12 RJ45 ports
 AD FP1/001-24 CompactPCI Dual Slot Ethernet RTM, 19 RJ45 ports
 SW FSC/001-L0 Fabric Switch Configuration Tool

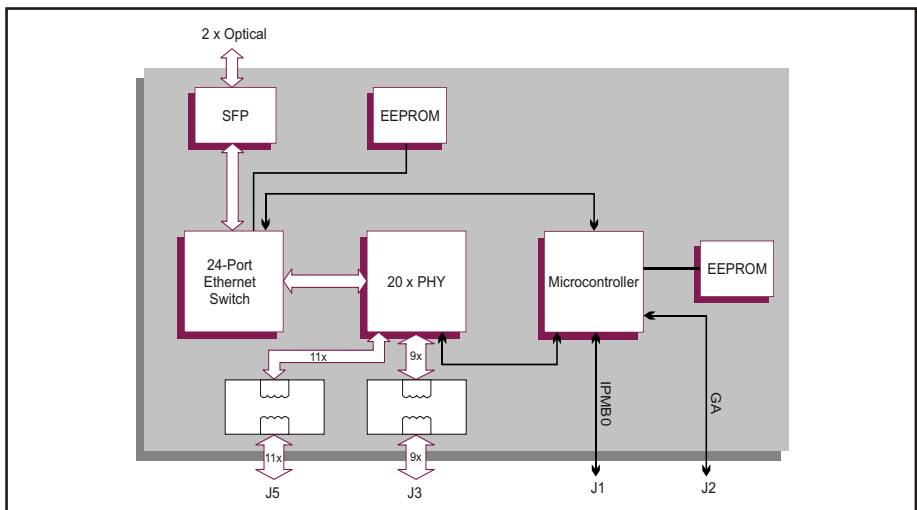
For extended temperature, E or K-Series, or for front panel fiber optical connection, please contact your local sales office

For ruggedized versions (copper only), see separate datasheets: FP 110/019-RC (conduction-cooled) or FP 110/019-RA (air-cooled)

All companies and product names are trademarks of their respective organizations. Specification subject to change; E and OE. RoHS 2002/95/EC compliant.



FP 110/019 with 4 x copper RJ45 front panel connectors



FP 110/019 with 2 x fiber LC front panel connectors

Safety

- PCB (PWB) manufactured with flammability rating of 94V-0

Environmental Specification

- operating temperature:-
 - 0°C to +55°C (N-Series)
 - 25°C to +70°C (E-Series)
 - 40°C to +85°C (K-Series)
- 5% to 95% Relative Humidity, non-condensing (operating):-
 - K-Series includes humidity sealant
- 40°C to +85°C (storage)
- 5% to 95% Relative Humidity, non-condensing (storage)
- ruggedized air-cooled version planned (copper only):-
 - see separate FP 110/019-RA datasheet
- ruggedized conduction-cooled version available (copper only):-
 - see separate FP 110/019-RC datasheet

Mechanical Specification

- 6U form factor: 9.2 inches x 6.3 inches (233mm x 160mm)
- single slot: 0.8 inches (20.3mm)
- connectors: IEC 60917 and IEC-61076-4-101 (PICMG 2.0 R3.0 S2.2) for J1, J2, J3 and J5
- shock:
 - 20g, 11ms, ½ sine (operating);
 - 30g, 11ms, ½ sine (non-operating)
- vibration:
 - 5Hz-2000Hz at 2g, 0.38mm peak displacement (operating);
 - 5Hz-2000Hz at 5g, 0.76mm peak displacement (non-operating)

10/100/1000 Ethernet Switched Fabric Board



APPLICATIONS

The FP 110/008-U is an entry-level 10-port 10/100/1000Mbps Ethernet Switched Fabric Board for use in CompactPCI® PICMG® 2.16 and VITA 31.1 Packet Switched Backplane environments. It supports up to eight node boards, a front panel Ethernet interface for user interface and a fabric to fabric link. It offers high speed, non-blocking Layer 2 switching fabric on all Ethernet ports. Quality of Service (QoS) operation is supported with four priority queues and a variety of traffic classes for time-critical and multimedia traffic.

Virtual LAN (VLAN) operation is also supported, e.g. Layer 2 firewall protection. System monitoring is provided by the PICMG 2.9 compliant IPMI subsystem, supporting the IPMB0 serial management bus. The FP 110/008-U is an excellent choice for cost sensitive applications or those requiring only a small number of node boards. Typical applications include networking equipment, voice over IP (VoIP) telephony systems and blade-based servers.

HIGHLIGHTS

- 10-port 10/100/1000Mbps Ethernet Switched Fabric Board:
 - compatible with PICMG 2.16 Packet Switched Backplane (PSB)
 - 8 PSB Ethernet ports for PSB node boards
 - PSB Ethernet port for fabric board to fabric board link
 - front panel Ethernet port via RJ45 connector
- Low cost, low power, high performance switched fabric:
 - non-blocking Layer 2 for full wire throughput
 - supports up to 8K MAC addresses with automatic learning and aging
 - full Virtual LAN (VLAN) support
- Auto-negotiation on all Ethernet ports:
 - 10Mbps/100/1000Mbps
 - full duplex/half duplex
- Speed and Link/Activity status LEDs on all Ethernet ports
- Non-volatile EEPROM storage for:
 - board configuration data
 - Ethernet switch configuration data
- Hardware support for Quality of Service (QoS):
 - 4 priority queues per port
 - variety of classification services
 - fixed priority or weighed packet streams
- Hardware support for Virtual LAN (VLAN) operation:
 - IEEE 802.1Q VLAN support for up to 4096 VLANs
 - port-based VLANs
- Extensive registers for collection of traffic statistics:
 - support for Remote Monitoring (RMON)
- IPMI (Intelligent Platform Management Interface):
 - PICMG 2.9 (System Management Specification)
 - access to network management registers
- Extended temperature version available:
 - -25°C to +70°C (E-Series)
- 24-port 10/100/1000 Mbps version available:
 - see separate FP 110/019 datasheet
- Supports hot insertion and removal
- Single slot, 6U CompactPCI form factor

Ethernet Switched Fabric

- 10-port 10/100/1000Mbps Ethernet Switched Fabric board:-
 - for use with PICMG® 2.16 and VITA 31.1 Packet Switched Backplanes (PSB)
 - for use with non-PICMG 2.16 CompactPCI backplanes when used with AD FP1/001 transition module
- high performance Ethernet Switched Fabric:-
 - implemented by Marvell® 88E6185 single-chip switch
 - Layer 2 non-blocking fabric
 - 8K MAC address cache with automatic learning and aging
 - full Virtual LAN (VLAN) support
- auto-negotiation on all ports:-
 - 10/100/1000Mbps
 - full/half duplex
- EEPROM storage for user configuration data
- 24-port 10/100/1000Mbps board available:-
 - see separate FP 110/019 datasheet

Backplane Interfaces

- compatible with CompactPCI® Packet Switched Backplane (PSB):-
 - conforms to the relevant sections of PICMG 2.16 R1.0
- compatible with ANSI/VITA 31.1-2003 Gigabit Ethernet on VME64x backplanes
- 8 PSB Ethernet ports for PSB node boards
- Ethernet port for linking with second fabric board:-
 - enables redundant fabric board or
 - increases the number of Ethernet ports in the system
- J1, J2 and J3 connectors fitted as standard

Front Panel Interfaces

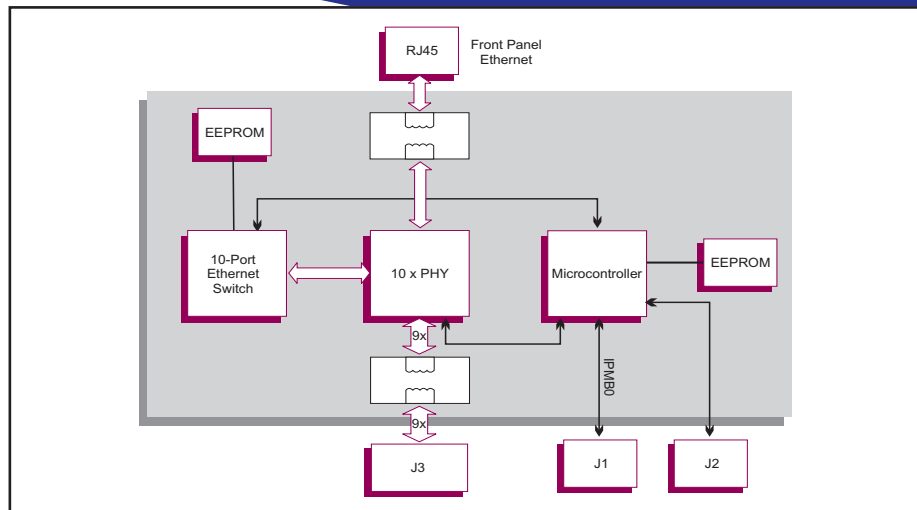
- RJ45 connector for 10/100/1000Mbps Ethernet User port
- speed and Link/Activity LEDs for all Ethernet ports
- 1 user LED
- reset switch (recessed)

System Management

- board health and status management:-
 - conforms to PICMG® 2.9 R1.0 (System Management Specification)
 - implements the IPMB0 interface on J1
 - microcontroller-based Peripheral Management Controller
 - EEPROM for Field Replaceable Unit (FRU) and Sensor Data Record (SDR) storage
- network management:-
 - extensive statistics counters per port
 - SNMP support for Remote Monitoring (RMON)
 - IGMP snooping (IPv4)
 - MLD snooping (IPv6)
 - accessible via the IPMB0 interface
- hot swap insertion and removal

Virtual LAN (VLAN)

- hardware based VLAN operation supporting:-
 - port-based membership
 - IEEE 802.1Q VLAN (up to 4096 VLANs)
- offering security through:-
 - controlling group membership
 - providing Layer 2 firewall protection



Quality of Service (QoS)

- prioritized packet streams for management of voice, video and data
- 4 hardware priority queues per port
- fixed priority or weighted fair queuing
- QoS traffic classification, determined by:-
 - MAC address (SA or DA)
 - port ID
 - IEEE 802.1Q VLAN ID
 - IEEE 802.1p multimedia traffic tags
 - IPv4 Type of Service (TOS) or DiffServ
 - IPv6 Traffic Class

Electrical Specification

- +5V (+5%/-3%) @ 3.0A (maximum)
- +12V (+5%/-5%) @ 0.01A (maximum)
- +3.3V and -12V supplies are not required

Safety

- PCB (PWB) manufactured with flammability rating of 94V-0

Environmental Specification

- operating temperature:-
 - 0°C to +55°C (N-Series)
 - -25°C to +70°C (E-Series)
- 10% to 90% Relative Humidity, non-condensing (operating)
- 40°C to +85°C (storage)
- 10% to 90% Relative Humidity, non-condensing (operating)

Mechanical Specification

- 6U form factor: 9.2 inches x 6.3 inches (233mm x 160mm)
- single slot: 0.8 inches (20.3mm)
- connectors: IEC-1076-4-101 for J1 and J3
- shock:
 - 20g, 11ms, ½ sine (operating);
 - 30g, 11ms, ½ sine (non-operating)
- vibration:
 - 5Hz-2000Hz at 2g, 0.38mm peak displacement (operating);
 - 5Hz-2000Hz at 5g, 0.76mm peak displacement (non-operating)



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ORDERING INFORMATION

Order Number Product Description (Hardware)

FP 110/008-00U 10-port 10/100/1000 Ethernet Switched Fabric Board (8 PSB Ethernet node ports)

AD FP1/001-12 CompactPCI Single Slot Ethernet RTM, 8 RJ45 ports

For extended temperature, E-Series, please contact your local sales office

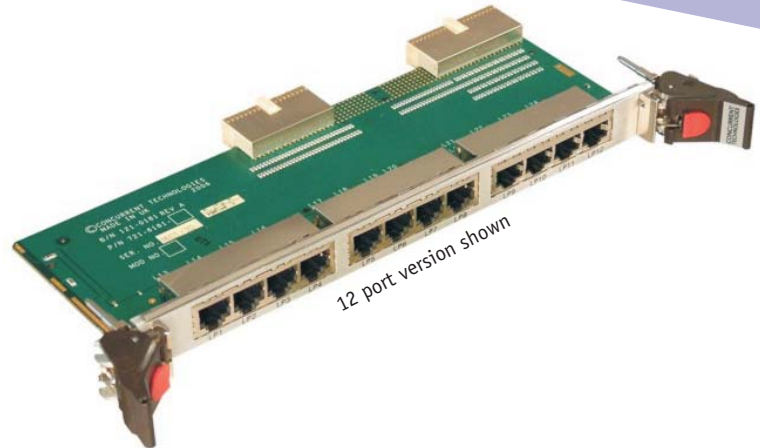
Ethernet Switched Fabric Transition Module



APPLICATIONS

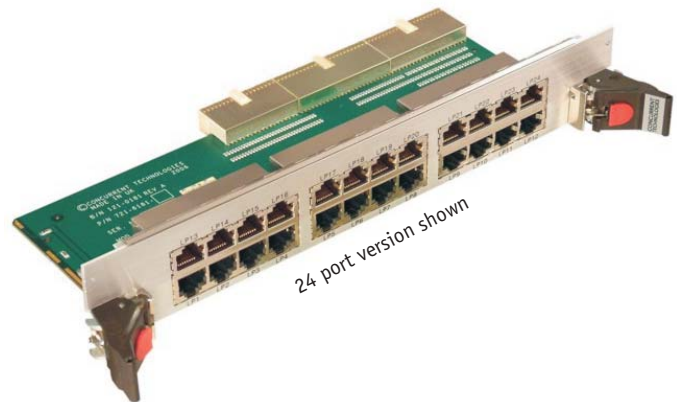
The AD FP1/001 is designed to be used with Concurrent Technologies' Switched Fabric Boards, including the FP 110/019 and FP 110/008-U. The Transition Module mounts in the rear transition area of the CompactPCI® backplane and provides simple access to the Ethernet ports when used with conventional CompactPCI

backplanes. The Transition Module is available in two styles: a single slot board with 12 ports on the front panel or a dual slot board with 24 ports available. Options to operate in extended temperatures, ranging from -40°C to +85°C are available.



HIGHLIGHTS

- Up to 24 x 10/100/1000Mbps Ethernet ports:
 - accessed via RJ45 connectors on Transition Module's front panel
- 12 and 24 port versions available:
 - 12 port version uses single slot
 - 24 port version uses dual slots
- Extended temperature version available:
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series, includes humidity sealant)
- Interfaces with Concurrent Technologies' Switched Fabric Boards:
 - FP 110/008-U (10-port Gigabit Switch)
 - FP 110/019 (24-port Gigabit Switch)
- Designed for use with non-PICMG 2.16 CompactPCI backplanes



Ethernet Interface

- 12 or 24 channel versions available
- supports 10Base-T, 100Base-TX and 1000Base-T for UTP via RJ45 connectors on front panel
- designed for use with non-PICMG 2.16 CompactPCI® backplanes

Compatible Switch Boards

- FP 110/019:-
 - 24-port 10/100/1000 Mbps CompactPCI Switch
 - 19 ports routed to packet switched backplane or rear transition module
 - RoHS compliant
- FP 110/008-U:-
 - 10-port 10/100/1000 Mbps CompactPCI Switch
 - 8 ports routed to packet switched backplane or rear transition module
 - RoHS compliant
- FP 100/008:-
 - 10-port 10/100 Mbps CompactPCI Switch
 - 8 ports routed to packet switched backplane or rear transition module
 - not RoHS compliant

Electrical Specification

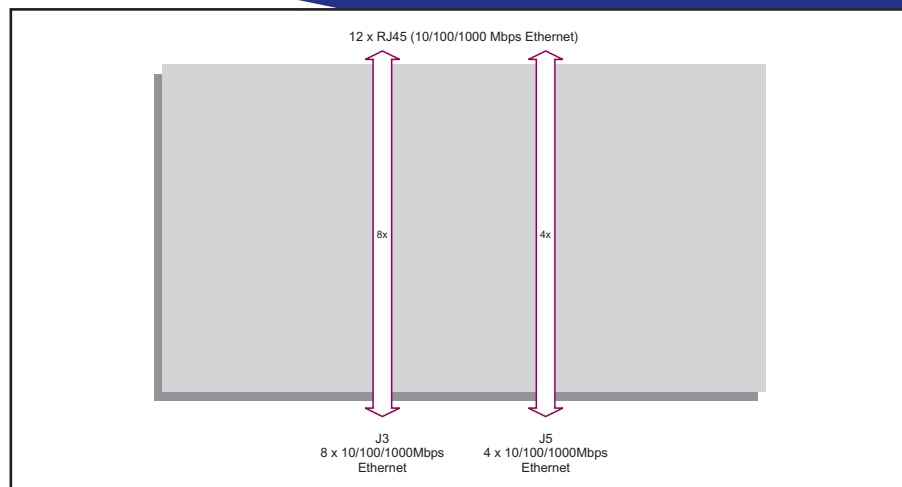
- +5V@0.0A; +3.3V@0.0A
 - there are no active components on the board

Environmental Specification

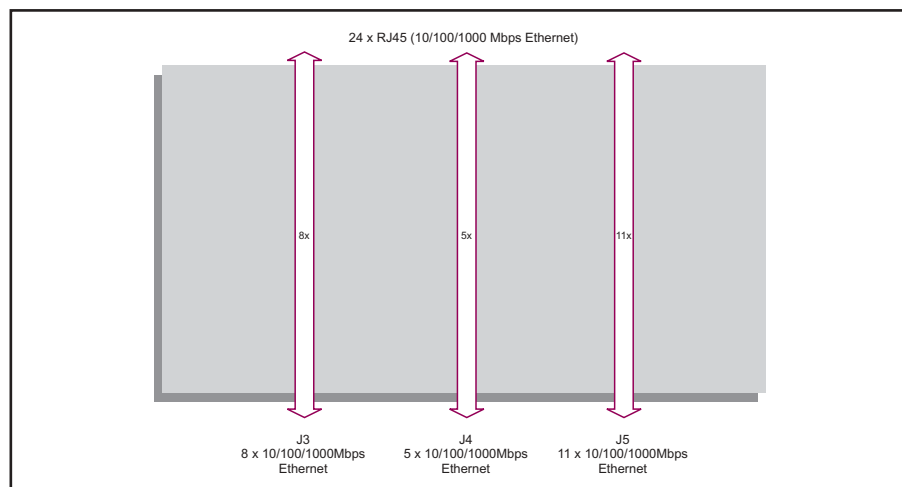
- operating temperatures:-
 - 0°C to +55°C (N-Series)
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series)
- -40°C to +85°C (storage)
- 5% to 95% Relative Humidity, non-condensing (operating)
 - K-Series includes humidity sealant
- 10% to 90% Relative Humidity, non-condensing (storage)

Mechanical Specification

- 6U form-factor: 9.2" x 3.2" (233.35mm x 80mm)
 - 12 port version fits in single-slot width (4HP)
 - 24 port version fits in two slots width (8HP)
- connectors: IEC-1076-4-101 for J3, J4 and J5
 - J4 fitted on 24 port version only
- shock:
 - 20g, 11ms, ½ sine (operating);
 - 30g, 11ms, ½ sine (non-operating)
- vibration:
 - 5Hz-2000Hz at 2g, 0.38mm peak displacement (operating);
 - 5Hz-2000Hz at 5g, 0.76mm peak displacement (non-operating)



Block Diagram for 12-port version (AD FP1/001-12)



Block Diagram for 24-port version (AD FP1/001-24)

ORDERING INFORMATION

Order Number	Product Description (Hardware)
AD FP1/001-12	CompactPCI Single Slot Ethernet RTM, 12 RJ45 ports
AD FP1/001-24	CompactPCI Dual Slot Ethernet RTM, 24 RJ45 ports

For extended temperature, E or K-Series, please contact your local sales office

VXS Switch Board - PCI Express (VITA 41.4) and Ethernet (VITA 41.6)



APPLICATIONS

The FX 322/0xx is a Gen1/Gen2, 4-Lane PCI Express™ Switch Board for use in VXS VITA 41.4 Switched Serial Backplane environments. The FX 322/0xx provides a data plane with up to eighteen x4 PCI Express payload boards, a control plane with up to eighteen 1000 Base-BX ports (as per VITA 41.6) and an inter-switch interface. This VXS fabric switch gives the end-user higher bandwidth and lower latency while maintaining backward compatibility within a VME ecosystem. The PCI Express and Gigabit

Ethernet fabrics provide switching for a dual star topology allowing boards within the system to communicate. The Ethernet fabric also enables interconnection between legacy VME boards as well as access to an outside local area network. Options for extended temperature boards or ruggedized boards are available. The FX 322/0xx is suitable for a range of applications within the defense, industrial control, telecomms, telemetry, scientific and aerospace markets.

HIGHLIGHTS

- VXS PCI Express™ switch board:
 - supporting 6, 12 or 18 payloads
 - utilizing non-transparent/transparent bridges
 - x4 PCI Express (Gen1 or Gen 2) data plane (VITA 41.4) with DMA
 - 1000 Base-BX unmanaged control plane (VITA 41.6)
 - for use in PCI Express Backplane environments
- Inter-switch ports for interconnecting switch boards:
 - two PCI Express inter-switch ports
 - four 1000 Base-BX inter-switch ports
- Link/Activity status LEDs on all ports
- Non-volatile EEPROM storage provides board configuration data per port:
 - Ethernet switch configuration data
 - PCI Express configuration data
- Extended temperature versions:
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series, includes humidity sealant)
- Ruggedized conduction-cooled versions (RC-Series):
 - conduction-cooled to ANSI/VITA 30.1-2002
 - -40°C to +85°C, conformally coated
 - see separate FX 322/0xx-RC datasheet
- Ruggedized air-cooled versions (RA-Series):
 - -40°C to +75°C, conformally coated
 - see separate FX 322/0xx-RA datasheet
- Terminal interface for operator setup
- Fabric Switch Configuration software
- Single slot, 6U VXS form factor

Data Plane Switch

- 6, 12 or 18-port VITA 41.4 data plane switch:-
 - for use with VITA 41.4 PCI Express™ fabric backplanes
 - x4 PCI Express lanes
 - support for Gen 1 or Gen 2
 - DMA support on each port
 - transparent and non-transparent bridge functionality on each port
- EEPROM storage for user configuration data

Control Plane Switch

- 6, 12, or 18-port unmanaged Ethernet switch:-
 - for use with VITA 41.6, 1000 Base-BX control plane
- high performance IEEE 802.1 switch:-
 - implemented by Marvell® Presteria™ 98DX240 single-chip switch
 - full line rate Layer 2 switching engine
 - 8K MAC address cache with automatic learning and aging
- EEPROM storage for user configuration data

System Management

- configuration and setup interface:-
 - implemented by microcontroller
 - operator controlled via front panel serial port or onboard serial header
 - configuration data retained in EEPROM
- non-volatile EEPROM storage provides board configuration data per port:-
 - Ethernet switch configuration data
 - PCI Express configuration data
- inter-switch ports for interconnecting switch boards:-
 - two PCI Express inter-switch ports
 - four 1000 Base-BX inter-switch ports
- Fabric Switch Configuration software:-
 - see separate SW FSC/001 datasheet

Electrical Specification (estimated)

- +5V@10A (typical, with 18 ports), voltage +5%/-3%
- +3.3V, +12V and -12V supplies are not required

Safety

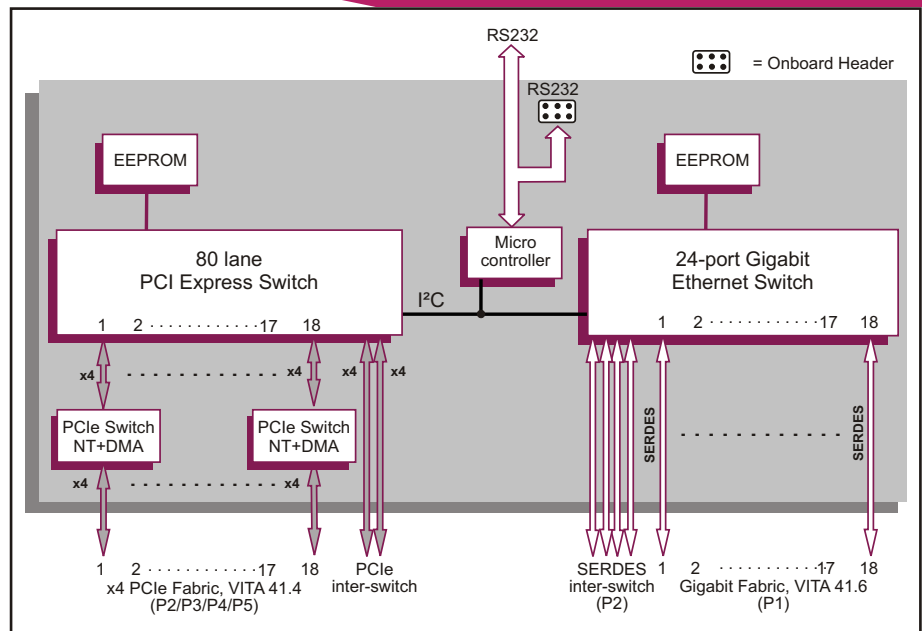
- PCB (PWB) manufactured with flammability rating of 94V-0

Environmental Specification

- operating temperatures:-
 - 0°C to +55°C (N-Series)
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series)
- storage temperature: -40°C to +85°C
- 5% to 95% Relative Humidity, non condensing (operating or storage):-
 - K-Series includes humidity sealant
- ruggedized versions, see separate datasheets:-
 - conduction-cooled: FX 322/0xx-RC
 - air-cooled: FX 322/0xx-RA

Mechanical Specification

- 6U form factor: 9.2 inches x 6.3 inches (233mm x 160mm)
- single slot: 0.8 inches (20.3mm)
- operating shock: 20g, 11ms, ½ sine
- operating vibration: 5Hz-2000Hz at 2g, 0.38mm peak displacement



ORDERING INFORMATION

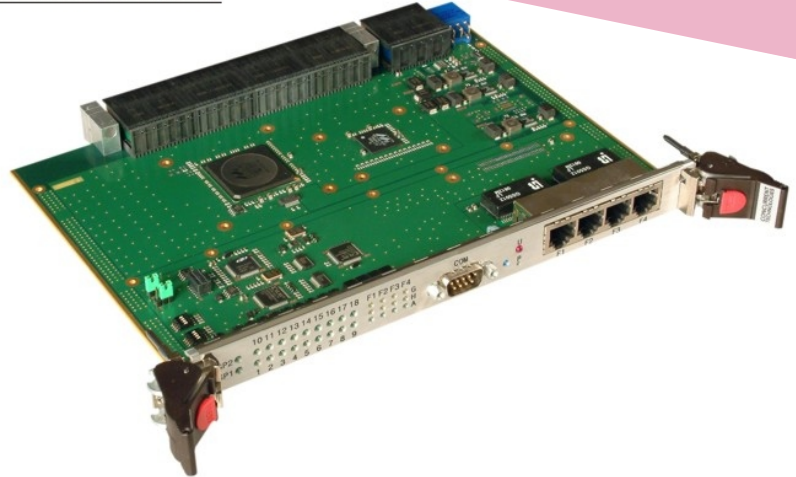
Order Number Product Description (Hardware and Software)

FX 322/006-10 6-port VXS PCI Express Fabric Switch
 FX 322/012-10 12-port VXS PCI Express Fabric Switch
 FX 322/018-10 18-port VXS PCI Express Fabric Switch

SW FSC/001-L0 Fabric Switch Configuration Tool

For extended temperature or ruggedized boards please contact your local sales office

1000Mbps (IEEE 802.3) VITA 41.3 Ethernet Switch Board



APPLICATIONS

The FX 210/01x is an entry-level 1000Mbps baseband IEEE 802.3 Switch Board for use in VXS VITA 41.3 Switched Serial Backplane environments. It supports up to eighteen payload boards, an inter-switch port for linking to a second switch, and for user connections, up to four front panel Ethernet interfaces. It offers high speed, full line rate Layer 2 switching fabric on all ports. Quality of Service (QoS) operation is

supported with four priority queues and a variety of traffic classes for time-critical and multimedia traffic. Typical applications include networking equipment, voice over IP (VoIP) telephony systems, data management and blade-based servers in vertical markets such as defense, communications, medical and automation.

HIGHLIGHTS

- 22 or 24-port VITA 41.3 switch board:
 - compatible with VXS Switched Serial Backplane
 - 18 x 1000Mbps baseband IEEE 802.3 backplane ports for payload boards
 - inter-switch port for switch board interconnect
 - 2 or 4 front panel interfaces
- Front panel interface options for either:
 - 4 x front panel 10/100/1000Mbps Ethernet ports
 - or:
 - 2 x front panel optical fiber ports
- Low cost, low power, high performance switch:
 - full line rate Layer 2 switching engine
 - supports up to 8K MAC addresses with automatic learning and ageing
- Link/Activity status LEDs on all ports
- Terminal interface for operator setup
- Fabric Switch Configuration software
- Non-volatile EEPROM storage for:
 - board configuration data
 - Ethernet switch configuration data
- Hardware support for Quality of Service (QoS):
 - 4 priority queues per port
 - variety of classification services
 - fixed priority or weighed packet streams
- Extended temperature versions available:
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series)

Ethernet Switch

- 22 or 24-port VITA 41.3 switch board:-
 - for use with VXS Switched Serial Backplanes
- high performance IEEE 802.1 switch:-
 - implemented by Marvell® Prestera™ 98DX240 single-chip switch
 - full line rate Layer 2 switching engine
 - 8K MAC address cache with automatic learning and aging
- EEPROM storage for user configuration data

Backplane Interfaces

- compatible with VXS 1000Mbps Switched Serial Backplanes:-
 - conforms to the relevant sections of VITA 41.3
 - supports geographic address (GA) on P1
- 18 x 1000Mbps baseband IEEE 802.3 backplane links for payload boards
- inter-switch port for linking between two switch boards:-
 - using 2 x 1000Mbps baseband IEEE 802.3 links

Front Panel Interfaces

- option for Ethernet user ports:-
 - 4 x RJ45 connectors @ 10/100/1000Mbps
 - 2 x SFP LC optical connectors @ 1000Base-SX with multimode optical fiber
- Link/Activity LEDs for all VXS backplane IEEE 802.3 ports
- Speed and Link/Activity LEDs for all user Ethernet ports
- reset switch (recessed)
- RS232 serial port for configuration and setup

System Management

- configuration and setup interface:-
 - implemented by microcontroller
 - operator controlled via front panel serial port
 - configuration data retained in EEPROM
- Fabric Switch Configuration software:-
 - see separate SW FSC/001 datasheet

Quality of Service (QoS)

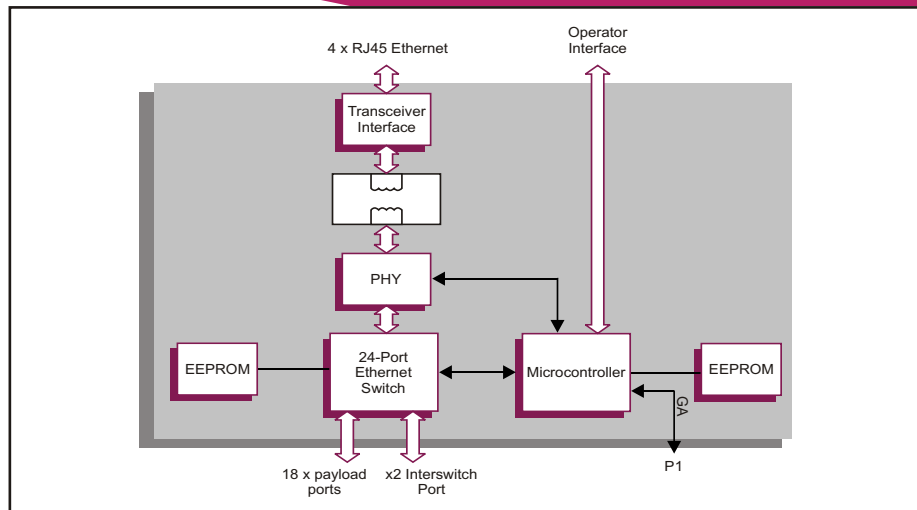
- prioritized packet streams for management of voice, video and data
- 4 hardware priority queues per port
- fixed priority or weighted fair queuing
- QoS traffic classification, determined by:-
 - port ID
 - IEEE 802.1p multimedia traffic tags
 - IPv6 Traffic Class

Electrical Specification

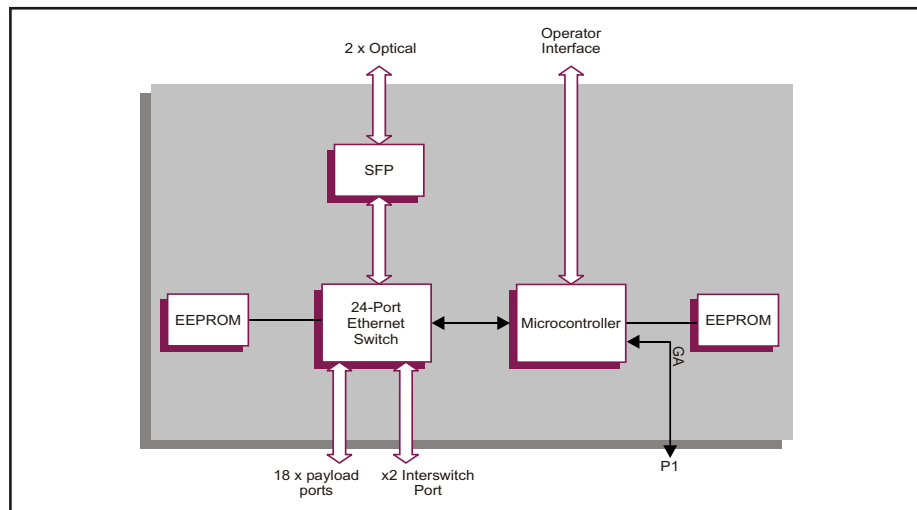
- +5V@1.9A (maximum, with 4 x RJ45 front panel connectors)
- +5V@1.3A (maximum, with 2 x SFP LC front panel connectors)
- voltage +5%/-3%
- +3.3V, +12V and -12V supplies are not required

Safety

- PCB (PWB) manufactured with flammability rating of 94V-0



FX 210/018 with 4 x copper RJ45 front panel connectors



FX 210/018 with 2 x fiber LC front panel connectors

Environmental Specification

- operating temperature:-
 - 0°C to +55°C (N-Series)
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series, copper only)
- 5% to 95% Relative Humidity, non-condensing (operating):-
 - K-Series includes humidity sealant
- -40°C to +85°C (storage)
- 5% to 95% Relative Humidity, non-condensing (storage)

Mechanical Specification

- 6U form factor: 9.2 inches x 6.3 inches (233mm x 160mm)
- single slot: 0.8 inches (20.3mm)
- operating shock: 20g, 11ms, ½ sine
- operating vibration: 5Hz-2000Hz at 2g, 0.38mm peak displacement (operating);



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ORDERING INFORMATION

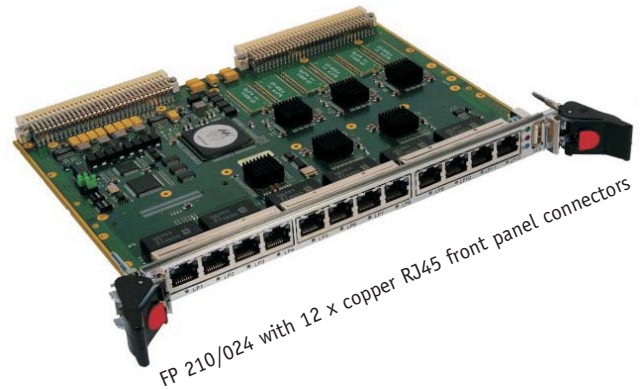
Order Number Product Description (Hardware and Software)

FX 210/018-00 24-port 1000Mbps IEEE 802.3 Switch Board (18 backplane ports) with 4 copper 10/100/1000 Mbps Ethernet RJ45 front panel connectors
 FX 210/018-10 22-port 1000Mbps IEEE 802.3 Switch Board (18 backplane ports) with 2 fiber 1000Base-SX SFP LC front panel connectors

SW FSC/001-L0 Fabric Switch Configuration Tool

For extended temperature, E or K-Series, please contact your local sales office

10/100/1000 Unmanaged Ethernet Switch Board



APPLICATIONS

The FP 210/024 is an entry-level 24-port 10/100/1000Mbps Ethernet Switch Board for use in a standard VME backplane. It supports up to twelve front panel connections and twelve connections to the rear. It offers high speed, full line rate Layer 2 switching fabric on all Ethernet ports. Quality of Service (QoS) operation is supported with four priority queues and a variety of traffic classes for time-critical and multimedia

traffic. Switch configuration and control is provided via a front panel RS232 port. The FP 210/024 is an excellent choice for a range of applications. Typical applications include networking equipment, voice over IP (VoIP) telephony systems and blade-based servers. Options to operate in temperatures ranging from -40°C to +85°C are available. Ruggedized conduction-cooled and ruggedized air-cooled versions are planned.

HIGHLIGHTS

- 24-port 10/100/1000Mbps Ethernet Switch Board:
 - 12 rear ports
 - supplied with either 12 front panel Ethernet ports via RJ45 connectors, or 8 RJ45 connectors and 2 front panel Gigabit Ethernet LC optical fiber connectors
- Low cost, low power, high performance switched fabric:
 - full line rate Layer 2 switching engine
 - supports up to 8K MAC addresses with automatic learning and aging
- Auto-negotiation on all Ethernet ports:
 - 1000Mbps full-duplex
 - 10/100Mbps full-duplex and half-duplex
- Non-volatile EEPROM storage for:
 - board configuration data
 - Ethernet switch configuration data
- Hardware support for Quality of Service (QoS):
 - 4 priority queues per port
 - variety of classification services
 - fixed priority or weighed packet streams
- Configuration controlled via front panel RS232 port:
 - command-driven selections
- Extended temperature versions planned:
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series)
- Ruggedized versions planned:
 - conduction cooled and air cooled
- Single slot, VME64x form factor

Ethernet Switched Fabric

- 24-port or 22-port 10/100/1000Mbps Ethernet switch board:-
 - for use with VME64x compliant backplane and Rear transition module AD FP2/001
- high performance Ethernet Switch:-
 - implemented by Marvell® Prestera® 98DX240 single-chip switch
 - full line rate Layer 2 switching engine
 - 8K MAC address cache with automatic learning and aging
- auto-negotiation on all ports:-
 - 1000Mbps full-duplex
 - 10/100Mbps full-duplex and half-duplex

Ethernet Interfaces

- option for front panel Ethernet user ports:-
 - 12 x RJ45 connectors @ 10/100/1000Mbps
 - 8 x RJ45 connectors and 2 x SFP LC optical connectors @ 1000Base-SX with multimode optical fiber
- 12 x 10/100/1000Mbps Ethernet ports via P2
- Option to fit rear Ethernet magnetic interfaces onboard or on rear transition module
- 1 user LED
- 1 power indication LED
- reset switch (recessed)

Switch Management

- controlled via operator command interface:-
 - via front panel RS232 port (cable supplied)
 - configuration maintained in Flash EPROM
- Geographical Address (GA) available for slot position decoding

Quality of Service (QoS)

- supports prioritized packet streams for management of voice, video and data
- 4 hardware priority queues per port
- fixed priority or weighted fair queuing
- QoS traffic classification, determined by:-
 - port ID
 - IEEE 802.1p multimedia traffic tags
 - IPv6 Traffic Class

Electrical Specification

- +5V (+5%/-3%) @ 3.5A (typical, with 12 x RJ45 front panel connectors)
- +5V (+5%/-3%) @ 3.0A (typical, with 8 x RJ45 and 2 fiber LC front panel connectors)
- +12V, +3.3V and -12V supplies are not required

Safety

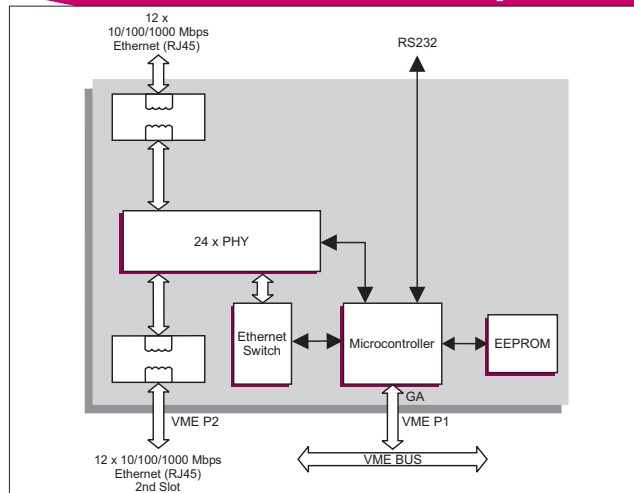
- PCB (PWB) manufactured with flammability rating of 94V-0

Environmental Specification

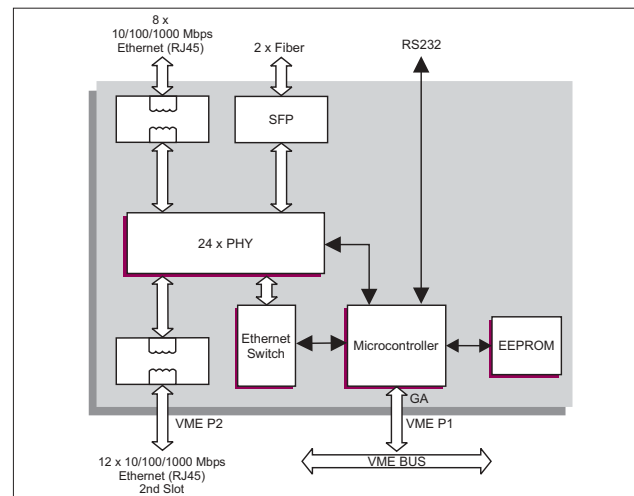
- operating temperature:-
 - 0°C to +55°C (N-Series)
 - -25°C to +70°C (E-Series)
 - -40°C to +85°C (K-Series)
- 5% to 95% Relative Humidity, non-condensing (operating or storage):-
 - K-Series includes humidity sealant
- -40°C to +85°C (storage)
- ruggedized versions planned:-
 - conduction cooled (RC-Series)
 - air cooled (RA-Series)

Mechanical Specification

- 6U form factor: 9.2 inches x 6.3 inches (233mm x 160mm)
- single slot: 0.8 inches (20.3mm)
- IEEE 1101.10 handles
- shock:
 - 20g, 11ms, ½ sine (operating);
 - 30g, 11ms, ½ sine (non-operating)
- vibration:
 - 5Hz-2000Hz at 2g, 0.38mm peak displacement (operating);
 - 5Hz-2000Hz at 5g, 0.76mm peak displacement (non-operating)



FP 210/024 with 12 x copper RJ45 front panel connectors



FP 210/024 with 8 x copper RJ45 and 2 x fiber LC front panel connectors

ORDERING INFORMATION

Order Number Product Description (Hardware)

FP 210/024-00	VME, 24-port Gigabit Ethernet Switch, 12 RJ45 front panel ports, 12 Ethernet ports via P2 (with magnetics)
FP 210/024-01	VME, 24-port Gigabit Ethernet Switch, 12 RJ45 front panel ports, 12 Ethernet ports via P2 (without magnetics)
FP 210/024-10	VME, 22-port Gigabit Ethernet Switch, 8 RJ45 and 2 fiber 1000 Base-SX SFP LC front panel ports, 12 Ethernet ports via P2 (with magnetics)
FP 210/024-11	VME, 22-port Gigabit Ethernet Switch, 8 RJ45 and 2 fiber 1000 Base-SX SFP LC front panel ports, 12 Ethernet ports via P2 (without magnetics)

AD FP2/001-23 VME RTM: 12 RJ45 front panel connectors (with magnetics), use with either FP 210/024-01 or FP 210/024-11

AD FP2/001-24 VME RTM: 12 RJ45 front panel connectors (without magnetics), use with either FP 210/024-00 or FP 210/024-10

CB 232/101-10 spare RS232 adaptor cable - USB style connector to 9-pin D-connector (this cable is included with the FP 210/024)

For extended temperature E and K-Series, please contact your local sales office