

## 10/100/1000 Ethernet Switched Fabric Board



### APPLICATIONS

The FP 110/008 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.

### 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)
- 10/100Mbps board available:
  - see separate FP 100/008 datasheet
- Supports hot insertion and removal
- Single slot, 6U CompactPCI form factor

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 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.

## 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)
- 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
- 10/100Mbps board available:-
  - see separate FP 100/008 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

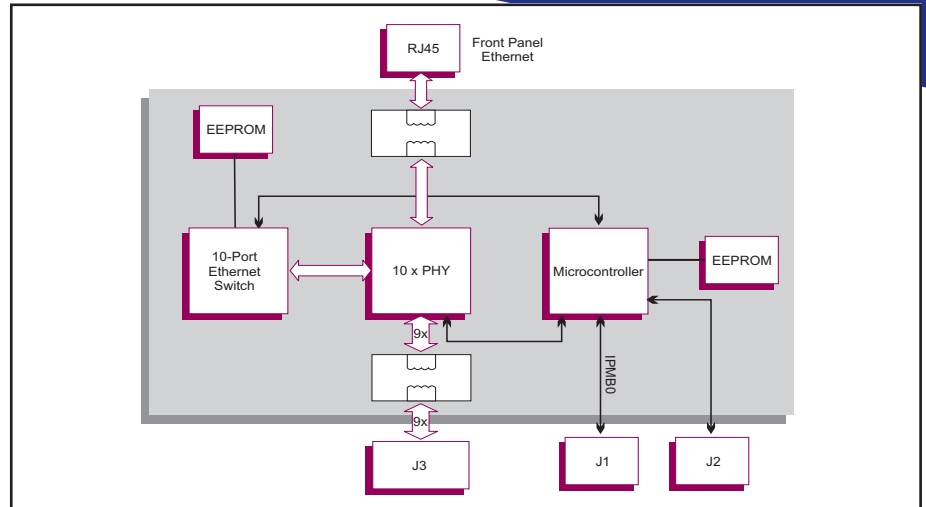
- RJ45 connector for 10/100/1000Mbps Ethernet User port
- speed and Link/Activity LEDs for all Ethernet ports
- 1 user LED
- reset switch (recessed)

## System Management

- board health and status management:-
  - conforms to PICMG® 2.9 R1.0 (System Management Specification)
  - implements the IPMBO 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 IPMBO 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 +70°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)

## ORDERING INFORMATION

### Order Number Product Description (Hardware)

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

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