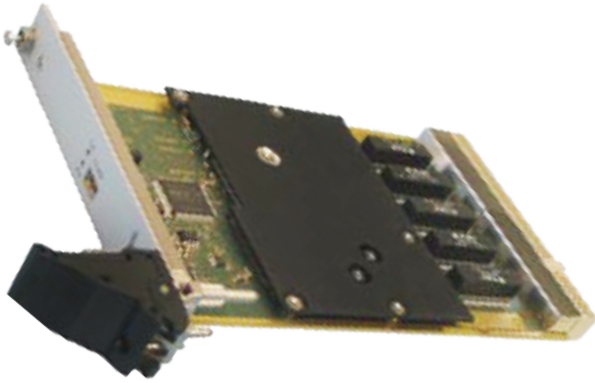


3U CompactPCI® Networking Switch

10 Port Gigabit Ethernet Switch



Description

The T4050a cPCI switch features 10 gigabit Ethernet ports with full wire speed switching capacity up to 37Mpps

T4050a-3U is built on the latest generation of gigabit switch engine and PHY transceiver. It combines a layer 2+ switch and a full layer 3 router with optimized power consumption. T4050a-3U supports full-wire speed L2 bridging and L3 routing with L2-L4 advanced traffic classification, filtering and prioritization. It can provide strict priority traffic needed for delay-sensitive or critical applications.

T4050a-3U ports are compatible both with PICMG 2.16 or VITA 31.1 systems. Ten gigabit Ethernet ports are routed to the J2 rear I/O connector. Two gigE channels are available on the front or on the rear panel through an RTM. The optional front fiber ports use LC connectors. The gigabit transceivers automatically select the media with activity.

Auto-crossover, auto-polarity, auto-negotiation and automatic MAC address management make the T4050a-3U a true Plug & Play switch. The Marvell Virtual Cable tester allows remote identification of potential cable malfunctions such as excessive pair skew, opens and impedance mismatch. This switch is fully upward compatible with T4000a, T4020a, T4030a and T4050a range.

Management Capabilities

The T4050a-3U can be monitored from a browser, a remote application via UDP or SNMP. The whole system lends itself to easy management and includes comprehensive built in test capability. Many additional functions are provided on this full-managed version:

- Configuration of all the PHY and switch parameters: ports monitoring, static MAC address, QoS policy, Multicast and VLAN control, STP/RSTP protocols, MAC security.
- Monitoring of all statistical counters and an extensive list of RMON counters.

The Switchware software provides layer 3 functions, allowing local IP forwarding (IPv4/ IPv6), static and dynamic protocols (RIP, OSPF) routing, proxy-ARP and DHCP-relay. These L3 functions are managed through a CLI interface. The IP routing and the L3 protocols are carried out by the processor and full wire speed forwarding by the L3 engine router. The T4050a-3U can be used as an open switching platform to implement specific functions.

Flexible Configurations

Its 3U form factor allows the T4050a-3U to be integrated in 3U cPCI or stand-alone applications and is available from standard convection to conduction-cooled grade.

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Ethernet



PICMG

Main Features

Physical layer

- 24 auto-sensing 10/100/1000Mbps ports
- Optional front SX or LX Fiber (LC) interface 802.3U compliant
- Auto-Negotiation with Downshift
- Automatic MDI/MDIX crossover for all 3 speeds of operation
- Automatic polarity correction
- Online virtual cable tester
- Optional fast Ethernet out of band management port

Layer 2 switching

- 802.1D/Q Compliant with a full-line rate Ethernet switching engine
- 16000 MAC address database
- Automatic or controlled aging and learning mechanism
- Tag extraction and insertion (802.1p), Jumbo frames up to 9KBytes
- Back pressure for half-duplex, IEEE802.3x for full duplex
- Discard broadcasts above critical threshold
- Link aggregation with static or dynamic LACP (7 trunks of 8 channels)
- Enhanced port mirroring
- IGMP & MLD snooping

VLAN

802.1Q compliant: supports Layer 2 domain partitioning of up to 4000 active VLANs.

VLAN programmable to any value from 1 to 4094 Protocol-based VLAN (802.1v) or Port-based VLAN (802.1v).

Security

Port and MAC access control compliant with 802.1X authentication
VLAN programmable to any value from 1 to 4094. Protocol-based VLAN (802.1v) or Port-based VLAN (802.1v).

L2/3 QoS

Eight queues per port.

Minimal and maximal bandwidth affectation per traffic class using weighted round robin and strict priority scheduling.
72 quality of services profiles for traffic class drop precedence.

L3 Services

IGMP V2

RIP V2

OSPF V2

UDP relay

STP/RSTP provides redundant link support. Rapid STP capability for minimizing STP convergence.

Rear Transition module routes ports to the rear panel

Please refer to ordering information

Front panel LEDs

Power supply and Switch status
Switched ports: activity & link

Power Supply

3.3VDC Power Supply only
Ptyp=32W

Related Products and Applications

- Elma's high speed Ethernet switching products provide network enabled operations in many application areas including:
 - ISR systems such as radar, high definition video, voice and data
 - Engine control systems in military as well as industrial applications
 - Command and control communications
 - Transportation management
 - Telecommunications
- Rugged and conduction cooled versions allow operations in harsh environments at high altitudes and desert conditions
- Elma's fully managed Layer 3 Ethernet switches support complex network management and configuration via a robust and easy to use graphical user interface

Example Order Number: T4057a-740

10 port fully managed Gigabit Ethernet switch: 10 ports to the backplane or RTM



- Intel & Freescale Single Board Computers
- Blade level networking boards (Ethernet, PCI Express)
- FPGA configurable I/O solutions
- Rackmount, desktop, and ATR chassis platforms
- Ruggedization programs

VPX

3U CompactPCI® Networking Switch

10 Port Gigabit Ethernet Switch



Ethernet



PICMG

Feature Summary

Layer 2 Switching capabilities:

- 16k entry forwarding database
- Automatic or controlled learning and aging routing table
- Full line rate switching engine
- Port and MAC access control
- Flow control and back pressure
- 9KB jumbo frames
- IPV4 IGMP IPV6 MLD snooping
- MAC address transplant for rapid reconfiguration 802.1W
- Link aggregation – static or LACP
- Bandwidth management
 - Multicast rate limiting
 - Egress rate shaping with rate port ranging from 64K to 1Gbs
 - Minimal bandwidth guarantee per traffic class

VLAN Services

- 4K active VLAN
- 4K bridge multicast groups
- Flexible VLAN assignment 802.1Q
 - port based, protocol based 802.1V, service VLANs
 - 802.1ad, policy based VLANs

Quality of Service engine

- Eight priority queues per port
- Traffic class assignment per 802.1p tag, MAC address, port, DiffServ, CP or policy engine

L3 IP V4 and V6 routing

- 1K UC ARP entries
- RIP V2, OSPF, V2 routing
- Proxy ARP
- DHCP relay

Security features

- 802.1x port authentication
- Multicast / broadcast limiting
- STP / RSTP protocol
- Virtual cable tester on line

Flexible management tools

- Web or CLI management
- Standard and private MIBS
- Enhanced port mirroring
- Easy software updating

Environmental

	Standard Grade	Extended Grade	Rugged Grade	CC Grade
Conformal Coating	Optional	Standard	Standard	Standard
Operating Temp.	0 to 55°C	-20 to 65°C	-40 to 75°C	-40 to 75°C
Humidity - Non Cond.	5 to 90%	5 to 95%	5 to 95%	5 to 95%
Storage Temp.	-45 to 85°C	-45 to 85°C	-45 to 100°C	-45 to 100°C
Sinusoidal Vibration	2G 20 to 2,000Hz	2G 20 to 2,000Hz	5G 20 to 2,000Hz	5G 20 to 2,000Hz
Random Vibration	0.002g ² /Hz 10 to 2,000Hz	0.002g ² /Hz 10 to 2,000Hz	0.05g ² /Hz 10 to 2,000Hz	0.1g ² /Hz 10 to 2,000Hz
Shock 1/2Sin. 11ms	20G	20G	40G	40G

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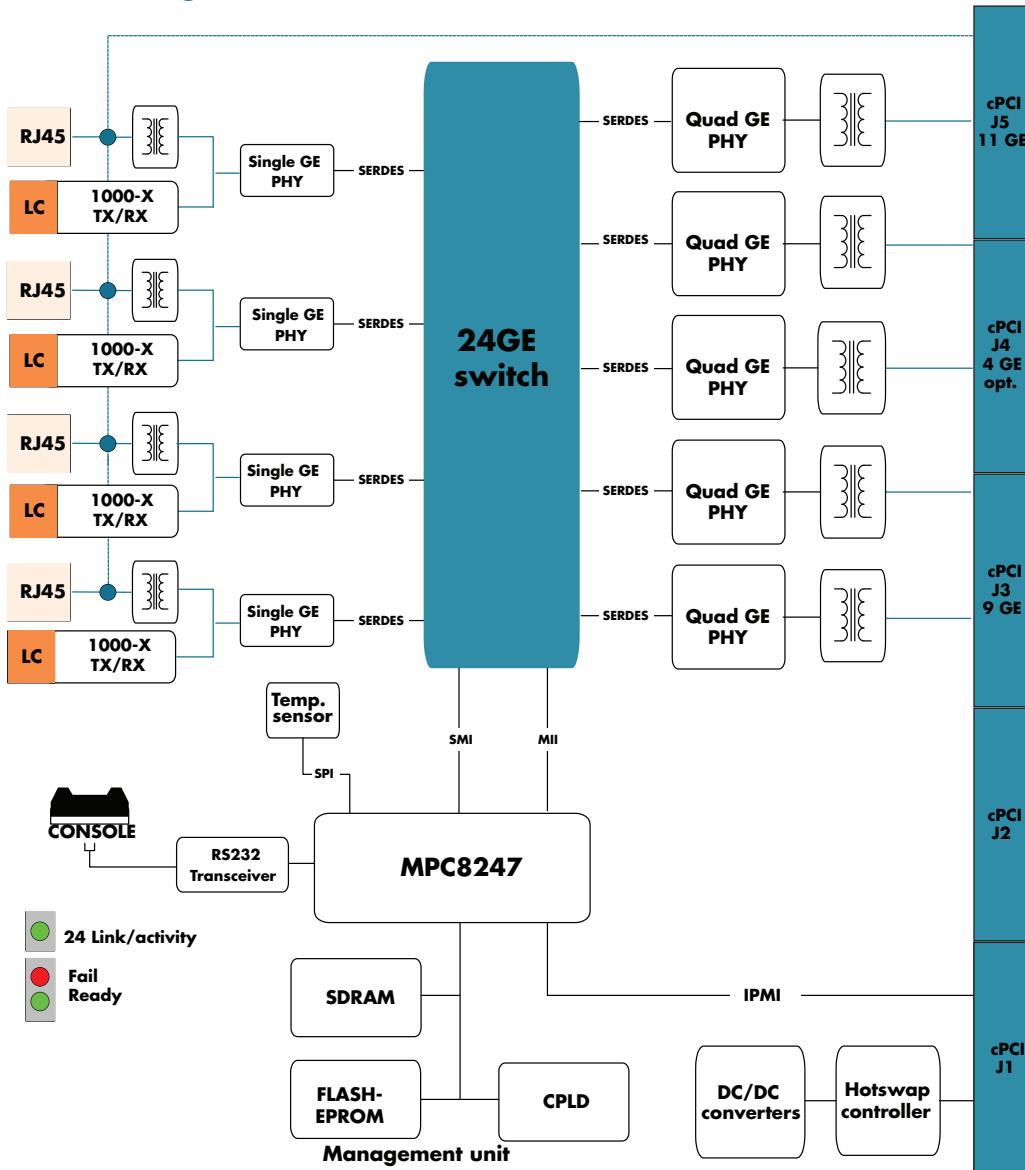


Ethernet



PICMG

Block Diagram



Standard Compliance

Emissions: EN55022 Class A

Immunity: CEI 6000-4-2 (ESD), 6000-4-3 (Electric field), 6000-4-4 (Burst), 6000-4-5 (Surge).

Security: EN60950

MTBF: TBD

Ordering Information

Please contact our sales department at (215) 956-1200 or via email at sales@elma.com.