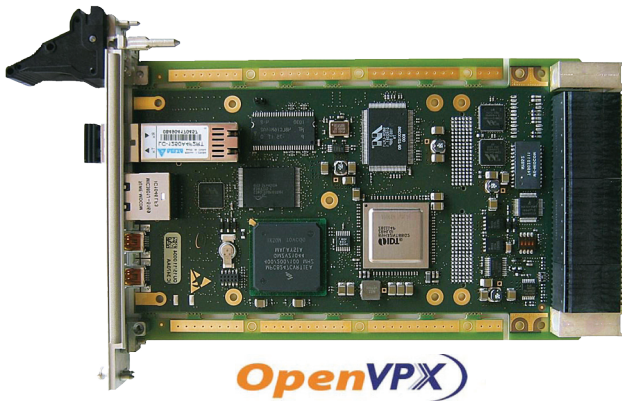


T4410a - 3U OpenVPX Fabric Switch

PCI Express Data Plane and Ethernet Control Plane



Description

With the T4410a, Elma Electronic introduces to the OpenVPX market, a hybrid switch reflecting all its experience regarding managed Ethernet switches. The T4410a is built on the same architecture as the T44xx family. On the control plane the Ethernet switch supports full-wire speed L2 bridging and L3 routing with L2-L4 advanced traffic classification, filtering and prioritization. The T4410a is fully managed by Switchware our tried and tested switch management package which is regularly enriched with new features.

For the data plan, the T4410a implements a modular PCI Express Gen2 switch, delivering up to 32Gbps of switching capacity and ensuring very low latency due to its cut-through architecture. This switch supports multiple simultaneous peer-to-peer traffic flows in high speed, demanding applications.

Each port can be configured as the upstream switch port; Non-Transparent bridging (NTB mode) feature allows support for multiple NT endpoints (for external PCIe domains or CPUs). It is possible to split the switch into independent partitions.

Incorporating a microcontroller dedicated to the management plan (VITA 46.11), the T4410a represents the most modular and powerful OpenVPX 3U fabric switch solution on the market.

Data Plane: PCI Express Interfaces

- Six, x4 lanes PCIe ports on P1/P2

Control Plane: Ethernet Interfaces

- Six (or eight) 1000Base-BX ports on P2 (8 ports => MOD3-SWH-6F8U version)
- Two (or one) 1000Base-T ports on P2 (1 port => MOD3-SWH-6F8U version)
- One front auto media detect Ethernet port, 10/100/1000 Base-T Copper Ethernet (RJ45) - 1000 Base-SX (or LX) optical Ethernet (LC)

Miscellaneous:

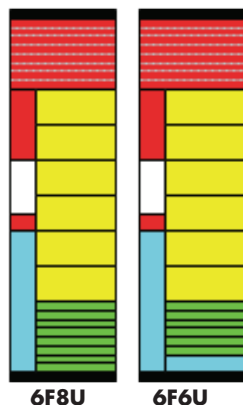
- One RS232 port, front mini-USB or on P1 connector
- Status LED indicators (front and onboard)

The T4410a is a 3U VPX, 4HP (0.8") board compliant with the VITA 46 standard. It is available from Standard to Conduction Cooled grades.

Switch Management

The T4410a is compliant with the OpenVPX module profiles (VITA 65):

- MOD3-SWH-6F6U-16.4.1 (-2 & -3)
- MOD3-SWH-6F8U-16.4.10 (-1 & -2)



The T4410a can be monitored from a browser, a CLI or SNMP, via the console port or any of the Ethernet ports. The console port is available on the front panel and on P1 connector. A comprehensive Built-In Test eases switch maintenance. Many additional functions are provided on this full-managed version for both the Ethernet and the PCI Express switches: Configuration of all the PHY and switch parameters, ports monitoring, static MAC address, QoS policy, Multicast and VLAN control, STP/RSTP protocols, MAC security, Non transparent bridging, partitioning, monitoring of all statistical counters and an extensive list of RMON counters.

This switch management application, SWITCHWARE, is run on the PowerPC processor resident on the T4410a.

Please consult the Switchware User's Manual for a comprehensive overview of the product features.

T4410a - 3U OpenVPX Fabric Switch

PCI Express Data Plane and Ethernet Control Plane



Ethernet

VITA

PICMG

Main Features

Ethernet Features:

- Layer2 Switching capabilities
- 16K entries forwarding database
- Automatic or controlled learning and aging routing table
- Port and MAC access control
- Flow control and backpressure
- 10KB Jumbo Frame
- IGMPv3 & MLDv2 snooping
- Rapid Reconfiguration 802.1w
- Link aggregation static or LACP
- Bandwidth management (rate limiting, minimal bandwidth guarantee)

VLANs services

- 4K active VLANs
- Flexible VLAN assignment
- 802.1Q port-based
- Protocol based 802.1v
- Service VLANs 802.1ad
- Policy based VLANs

Quality of Service Engine

- 8 priority queues per port
- Flexible bandwidth management with hierarchical shaping

Uni-cast and Multi-cast routing engine

- (RIPV2, OSPF V2 Routing, proxy-ARP, DHCP relay)

IPv6 capable

Security features:

- 802.1X Port authentication
- Multicast / Broadcast limiting
- STP/RSTP protocol
- Virtual cable tester
- Multicast, Failover (require additional drivers)
- Flow control

PCI Express features:

- PCIe Gen1 2.5GT/s or Gen2
- 5.0GT/s (Link speed configurable,
- Automatic x4, x2, x1 link width negotiation
- Two consecutive x4 ports can be managed to form a x8 port automatic lane reversal
- Automatic differential pair polarity inversion

Ports Configuration:

- Upstream, Downstream, Disabled or Unattached modes
- Non-transparent bridging

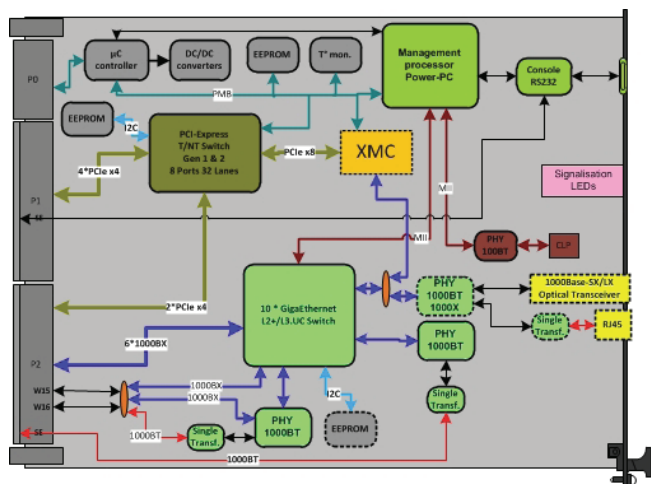
Advanced Switch Features

- Switch Partitioning
- DMA controllers

Power supply

- Estimated Pmax = TBD
- VS3, 3V3 Aux, VBat

Block Diagram



Standard Conformance

Emissions

EN55022 Class B

Immunity

CEI 6000-4-2 (ESD), 6000-4-3 (Electric field), 6000-4-4 (Burst), 6000-4-5 (Surge), 6000-4-6.

Security

EN60950

Environmental Specifications

Visit our website for the environmental specifications of all of our network switching products. Visit our website at www.elmasystems.com for the environmental specifications of all of our network switching products.

Ordering Information

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