

L3 Gigabit Switch for mixed networks VITA31 or PICMG2.16

4020a

12 or 24 Giga Ethernet ports with a full-wire speed switching capacity of 37Mpps.

Layer2 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 backpressure.
- 9 KB Jumbo Frame
- IPV4 IGMP IPV6 MLD snooping.
- MAC address transplanting for Rapid Reconfiguration 802.1w.

Link aggregation static or LACP

Bandwidth management :

- Multicast rate limiting
- Egress rate shaping with rate ranging port from 64K to 1Gbs.
- Minimal bandwidth guarantee per traffic Class.

VLANs services :

- 4K active VLANs.
- 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 :

- 8 priority queues per port.
- Traffic Class assignment according to 802-1p tag, MAC address, Port, DiffServ CP or Policy engine.

L3 IP V4 & V6 routing :

- 1K UC ARP entries
- RIPV2, OSPF V2 Routing
- Proxy-ARP
- DHCP relay

Security features :

- 802.1X Port authentication.
- Multicast/Broadcast limiting
- STP/RSTP protocol.

Flexible management tools :

- Web or CLI management
- Standard & private MIBs
- Enhanced Port mirroring
- Easy software updating



Description

ComEth4020a 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 in a single equipment with an optimized power consumption.

ComEth4020a supports full-wire speed L2 bridging and L3 routing with L2-L4 advanced traffic classification, filtering and prioritization. The queue priority eight levels combined with QoS policy make easier the jitter tuning in critical applications.

ComEth4020a is designed to optimize the mixed switched networks integration. The twelve rear Giga channels allow an easy integration in a PICMG2.16 PSB when the 12 front fiber ports carry out the optical network connections. This high level of flexibility only requires one slot in the chassis. Many types of transceivers are available for multi-mode or single mode fiber transmission. One front channel operates in fiber or 10/100/1000BT mode with an automatic interface selection.

The optical interfaces provide a full immunity against radiated or conducted interferences. Fiber lines can be routed regardless of high power conductors. These interfaces easily comply with EMC directives and provide a completed electrical isolation. ComEth4020a optical channels are the best solution to secure critical data transmission.

The switch functions are fully compatible with ComEth4000, 4030a and 4050a ranges.

Management Capabilities

The ComEth4020a can be monitored from a browser, a remote application via UDP or SNMP. The whole system can be easily managed and handled. A comprehensive Built-In Test makes the maintenance of this switch easier. 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 the forwarding is carried out by a full-speed L3 router.

ComEth4020a can be used as an open switching platform to implement specific functionalities.

Flexible configurations

Its 6U form factor allows the ComEth4020a to be integrated in VME VITA31.1, cPCI 2.16 or stand-alone applications. A rear transition module can be used to connect the rear ports on a 6U rear panel.

COMETH 4020a

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Main features

Physical layer

- ▶ 1000SX transceivers with :
 - LC-duplex connectors : 850nm source
 - maximum link lengths : 275m for 62.5/125µm MMfiber or 550m for 50/125µm fiber.
- ▶ 1000LX transceivers with :
 - LC-duplex connectors : 1300nm source
 - maximum link lengths : 550m for 62.5/125µm MMfiber or 10 Km for 8/125µm SM fiber.

Consult us for other Fiber transceiver : Single fiber mode or 1500nm.

- ▶ Auto-sensing triple speed copper rear ports with :
 - Auto-Negotiation with Downshift.
 - Automatic MDI/MDIX crossover for all 3 speeds.
 - Automatic polarity correction.

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 with up to 4000 active VLANs.
VLAN is flexibly programmed 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.

L2/3 QoS

Eight queues per port.
Minimal and maximal bandwidth allocation 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 routing protocols.
ARP relay, Proxi DHCP.
STP/RSTP provides redundant link support.

CompactPCI

3.3VDC Power Supply

Power supply

Pest = 30W (full configuration)

Switch Management

Onboard firmware is implemented with comprehensive Built-In Test (loop back mode used during the diagnostics), maintenance functions and network (BootP) updating functions.
Management software provides a wide range of configuration L2/3 functions on any port : transmission speed/mode, VLAN, STP parameters, mirroring, QoS, etc.

Supervision gets lots of information in real time on the switch.
MIB and RMON counters and private information are reachable from SNMP agent, web-browser and CLI for L3 functions.

This Open Application, named **SWITCHWARE**, is carried out by a PowerPC processor running LINUX.

Standard Conformance

Laser AEL Class I

per US 21 CFR(J) and IEC60825-1

Emissions

EN55022 Class A

Immunity

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

Security

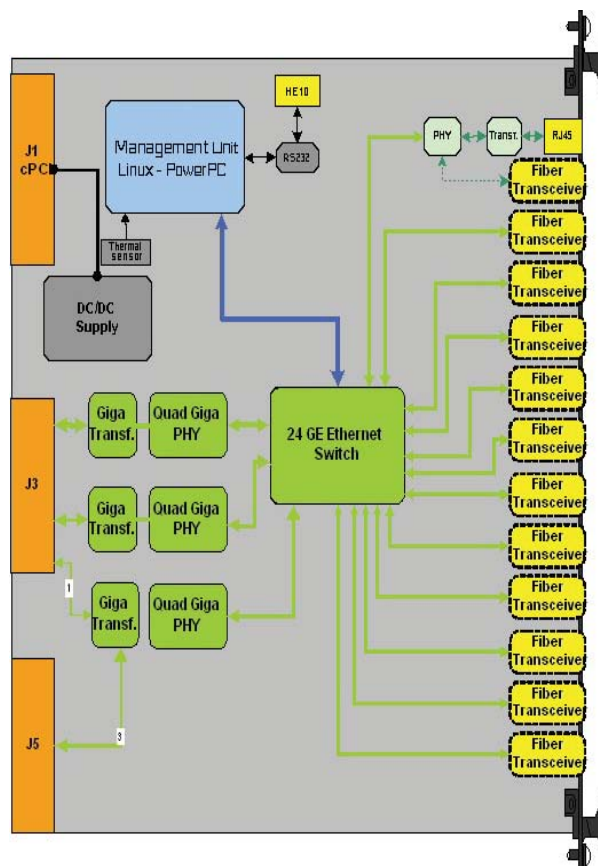
EN60950

MTBF

TBD

Environment

See ordering grade Information.



Environnement Specifications:

Please refer to information below.

Ordering Information:

Please consult the **ComEth 4020a datasheet** at www.interfaceconcept.com (listing all products reference and environment grades availability).

This document supersedes any earlier documentation relating to the products referred to herein. The information contained in this document is current at the date of publication. It may subsequently be updated or withdrawn without notice.

