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L2 & L3 Gigabit Ethernet Switch

For VME or CompactPCI systems

4000a

12 or 24 10/100/1000 Ethernet ports with a full-wire speed switching capacity of up to 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*

L3 IP V4 & V6 routing Engine:
- *1K UC ARP entries*
- *RIPV2, OSPF V2 Routing*
- *proxy-ARP*
- *DHCP relay*
- *IGMP server*

Bandwidth management :
- *Flow rate limiting*
- *Egress rate shaping*
- *Minimal bandwidth guarantee per traffic Class*

VLANs services :
- *4K VLANs (256 actif)*
- *4K Bridge mulcticast 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 level per port*
- *Traffic Class assignment according to 802-1p tag, MAC address, Port, DiffServ CP or Policy engine*

Security features :
- *802.1X Port authentication (*)*
- *Multicast/Broadcast limiting*
- *STP/RSTP protocol*
- *Virtual cable tester On-Line*

Flexible management tools :
- *Web or CLI management*
- *SNMP Standard & private MIBs*
- *Enhanced Port mirroring*
- *Easy software updating*



RoHS 2002 / 95 / EC

Description

ComEth4000a is built on the latest generation of Gigabit switch engine and PHY transceiver. It combines in a single equipment a layer 2+ switch and a full layer 3 router with an optimized power consumption.

ComEth4000a supports full-wire speed L2 bridging and L3 routing with L2-L4 advanced traffic classification, filtering and prioritization. The eight level of queue priority combined with QoS policy make easier to tune the delay-sensitive in critical applications.

ComEth4000a ports are compatible both with VME or cPCI system. It is designed to optimize the integration of Gigabit switched network. Twelve front Giga channels are implemented on the one slot version, twelve additional ports are available on the two slots configuration.

According to the configuration, ComEth4000a provides a combination of 10/100/1000BT or Fiber ports. Several types of optical interface are available 1000SX, 1000LX, WDM mode.

Auto-crossover, auto-polarity, auto-negotiation and automatic MAC address management make ComEth4000a a true Plug&Play switch.

The Marvell Virtual Cable tester allows a remote identification of potential cable malfunctions as excessive pair skew, cable opens, impedance mismatch...

This switch is fully compatible with ComEth40x0a range.

Management Capabilities

The ComEth4000a can be monitored from a browser, a CLI or SNMP. The whole system can be easily managed and handled. A comprehensive Built-in test makes easier the maintenance of this switch. 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 by a full-speed L3 engine router running a the line-wired speed.

ComEth4000a can be used as an open switching platform to implement specific functionalities.

Flexible configurations

Its 6U form factor allows the ComEth4000a to be integrated in VME 32 or 64x, cPCI 6U or stand-alone applications. ComEth4000a is available from standard to rugged grade.

INTERFACE CONCEPT
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COMETH 4000a

L2 & L3 Giga-Ethernet Switch

Main features

Physical layer

►10/100/1000BT ports :
- Auto-Negotiation with Downshift
- Automatic MDI/MDIX crossover for all 3 speeds of operation
- Automatic polarity correction
- Online virtual cable tester

►1000SX transceivers with :
- LC-duplex connectors 850nm source
- maximum link lengths : 275m for 62.5/125µm MMfiber or 50m for 50/125µm fiber

►1000LX transceivers with : :
- LC-duplex connectors 1300nm source
- maximum link lengths : 550m for 62.5/125µm MMfiber Automatic or 10 Km for 8/125µm SM fiber polarity correction

Consult us for other Fiber transceiver : 1500nm (20..40Km) or WDM

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
IGMP & MLD snooping.

VLAN

supports L2 partitioning of up to 4000 VLANs 802.1Q (256 active)
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.

L3 Switching/routing

Non-blocking Router engine running at full wire-speed
Eight queues level 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 server
RIP V2, OSPF V2
UDP relay
STP/RSTP redundant link support.

Front Panel LEDs

Power supply and Switch status
Switched ports : activity & link

cPCI

3.3 VDC Power Supply only

VME

5 VDC Power Supply only

Power supply Pest = 30W (full configuration)

Switch Management

Onboard firmware are implemented with comprehensive Built-In Test (loop back mode used during the diagnostic), 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 get 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.

Standard Conformance

Emissions

EN55022 Class A

Immunity

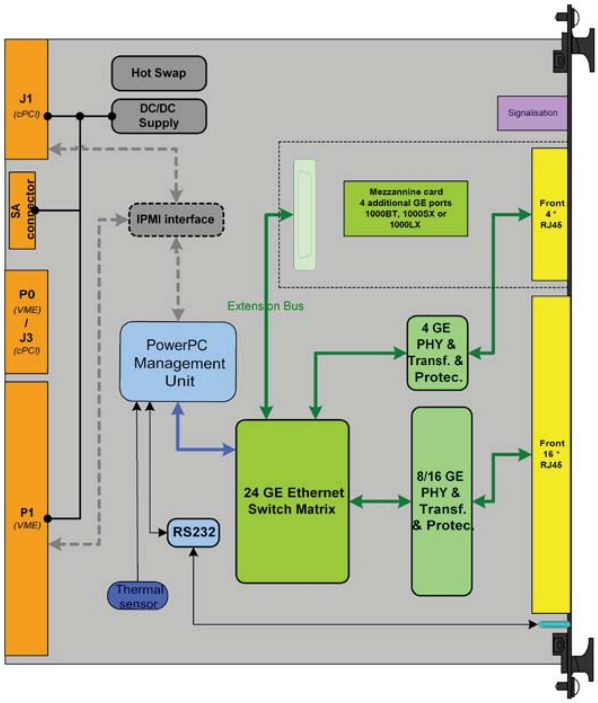
CEI 6000-4-2 (ESD), 6000-4-3 (Electric field), 6000-4-4 (Burst), 6000-4-5 (Surge),

Security

EN60950

Environment

See ordering grade Information.



Environnement Specifications:

Please consult the **ComEth 4000a** page at **www.interfaceconcept.com**.

Ordering Information:

Please contact our sales department : tel. **+33 (0)2 98 573 030** - email : **info@interfaceconcept.com**

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.

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