ComEth4582a

3U VPX 10/40 Gigabit Ethernet Switch and IP router

- *3U VPX*
- *Managed Layer 2+/3 switch*
- *VITA 65.0 SLT3-SWH-6F6U-14.4.1*
- *VITA 65.0 SLT3-SWH-6F1U7U-14.4.14 (option)*
- *Up to 32 ports*
- *2 * SFP+ cages or 2 * LC connectors (front)*
- *1GBASE-KX, 10GBASE-KX4/KR 40GBASE-KR4 ports*

Overview

The **ComEth4582a** is a 3U VPX 10/40 Gigabit Ethernet switch, based on a new generation of multi-layer Ethernet matrix for high speed embedded interconnect applications requiring low-power 10G and 40G connectivity.

Description

The **ComEth4582a** integrates a Layer 2 (Ethernet) and Layer 3 switch, and a control processor to support virtually separated Control and Data Planes for highly secured 3U VPX systems.

The Ethernet packet processor, managed by the dual-core ARM processor, offers remarkable switching capabilities with 1G, 10G and 40G Ethernet configurations.

The **ComEth4582a** is available in two versions:

  • **Build version A** is compatible with VITA 65.0 SLT3-SWH-6F6U-14.4.1 slot profile
  • **Build version B** compatible with VITA 65.0 SLT3-SWH-6F1U7U-14.4.14 slot profile. This version is aligned with the SOSA™ (Sensor Open Systems Architecture) Technical Standard.

Ethernet interfaces

The **ComEth4582a** (Build version A) supports up to 32 ports:

- 30 * 1GBASE-KX/10GBASE-KR ports[1] [VPX backplane P1/P2]
- 2 * front panel ports: SFP+ cages or on-board 1G/10G optical transceivers (build option)

  [1] *Note: ports can be merged by groups of 4 to support 40GBASE-KR4*

The **ComEth4582a** (Build version B) supports up to 31 ports:

10G/40G Data Plane

- 6 * Fat Pipe ports capable of 40GBASE-KR4/10GBASE-KX4 operation [VPX backplane P1/P2] [2]

  [2] *Note: each Fat Pipe can also be split into 4 * 10GBASE-KR/1000BASE-KX ports*

10G Control Plane

- 5 * Ultra-Thin Pipe ports capable of 10GBASE-KR/1000BASE-KX operation [VPX backplane P2]
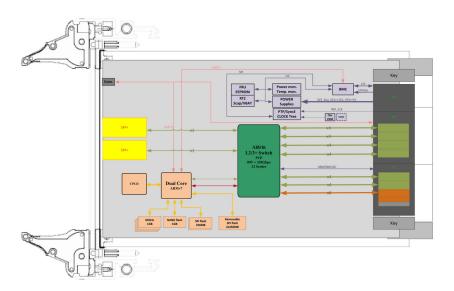
Front panel interface

- 2 * ports on the front panel that can be either SFP+ cages or on-board 1G/10G optical transceivers (build option)

The **ComEth4582a** is compliant with VITA 46.0 standard. It is available in air-cooled (1") and conduction-cooled (0.8") versions.

SOSA
Sensor Open Systems Architecture
MEMBER

Block Diagram

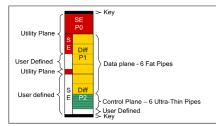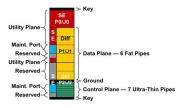The **ComEth4582a** is compliant with VITA 65.0 Slot Profile SLT3-SWH-6F6U-14.4.1.

Figure 14.4.1-1 SLT3-SWH-6F6U-14.4.1

The **ComEth4582a** is available (build option) in a version that complies with VITA 65.0 SLT3-SWH-6F1U7U-14.4.14. (Note that 5 of the 7 Control plane ports can be supported). Please consult us.

Main features

Layer 1/2
- Speed, duplex, auto-negotiation, flow control and power management on all ports
- VLAN support / 802.1Q tagging
- Port mirroring
- Port rights management
- Static MAC address list
- Static IPM address list
- Port static authentication
- IEEE 802.1X authentication
- Ingress filtering
- Storm prevention
- QoS on all ports
- Ingress / egress access lists
- Rate limiting
- QoS remarking
- Static trunking / LACP
- STP / RSTP
- IGMP/MLD snooping

Security Management
- Login/password, key or certificate authentication
- Secure switch management by HTTPS, SSH or SNMPv3
- 802.1X port-based authentication

QoS
- Layer 2 802.1p User Priority tagging
- Layer 3 IP DSCP (Diffsev)
- Access Control Lists (L2, L3, L4)

Multicast
- IGMP snooping (v1, v2, v3)
- MLD snooping (v1, v2)

Layer 3
- ICMP
- Proxy-ARP
- DHCP-relay
- NAT
- IPv4 routing (unicast/multicast)
- Static IP routing (unicast and multicast)
- RIPv1, RIPv2 (IPv4)
- RIPng (IPv6)
- OSPFv2 (IPv4) / OSPFv3(IPv6)

Miscellaneous
- 1 * RS232 port, front mini-USB or on P1 connector
- Status Led indicators (front)
- µ-controller for System Management (as per VITA 46.11)

Others
- PBIT results
- Temperature information
- CPU load
- Switch state
- Global and detailed ports statistics
- VLANs statistics
- Bridge egress, ingress and RMON statistics
- Ingress and egress access lists statistics
- Rate limiting statistics
- Queues and ingress buffers counters
- IGMP snooping state by
- VLAN and by port
- MAC address table access
- IPM address table access
- STP/RTSP state
- 1588-PTP-Transparent mode

Switch management

Switchware is a comprehensive switch management stack running on Interface Concept's Ethernet switch product line. It is running on the **ComEth4582a** on-board processor and supports a rich set of Layer 2/3 features controlled through the following interfaces:

• Graphical User Interface (GUI)
• Command Line Interface (CLI)
• SNMP (v2c or v3)

IC's Switchware management application provides IPv6 support, RIPng, OSPF v3, VRRP, security features, configurable memory allocation, new status counters.

The **ComEth4582a** also supports VPX System Management in compliance with VITA 46.11 and based on the Intelligent Platform Management Interface (IPMI v1.5) for sensor management (temperature, voltage, current), inventory management, system configuration, recovery and diagnostic management.

Grades

Criterion	Coating	Operation Temperature	Rec. Airflow	Oper. HR% no cond.	Storage Temperature	Sinusoidal Vibration	Random Vibration	Shock 1/2 Sin. 11ms
Standard	Optional	0 to 55°C	1 .. 2 m/s	5 to 90%	-45 to 85°C	2G [20..2000]Hz	0.002g2 /Hz [10..2000]Hz	20G
Extended	Yes	-20 to 65°C	2 .. 3 m/s	5 to 95%	-45 to 85°C	2G [20..2000]Hz	0.002g2 /Hz [10..2000]Hz	20G
Rugged	Yes	-40 to 75°C or 85° C (∗)	2 .. 5 m/s	5 to 95%	-45 to 100°C	5G [20..2000]Hz	0.05g2 /Hz [10..2000]Hz	40G
Conduction-Cooled 71°C	Yes	-40 to 71°C at the thermal interface (∗)	-	5 to 95%	-45 to 100°C	5G [20..2000]Hz	0.05g2 /Hz [10..2000]Hz	40G
Conduction-Cooled 85°C	Yes	-40 to 85° C at the thermal interface (∗)	-	5 to 95%	-45 to 100°C	5G [20..2000]Hz	0.1g2 /Hz [10..2000]Hz	40G

(∗) : Temperature grades are subject to availability according to IC products. Please consult us.

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