XChange3013

3U VPX Gigabit Ethernet Switch with Optional Layer 2 Switching and Layer 3 Routing Management Support

- Non-blocking, full wire-speed, Ethernet switch

- Layer 2 Switching and Layer 3 Routing Management with extensive IEEE protocol and IETF RFC support (optional)

- VICTORY Infrastructure Switch and Router support (optional)

- Fourteen 10/100/1000BASE-T Gigabit Ethernet ports

- Six 1000BASE-X SerDes Gigabit Ethernet ports

- Supports the XPedite5205 Cisco IOS® Embedded Services Router (ESR)

- Ruggedized Enhanced Design Implementation (REDI) per VITA 48

- Conduction or air cooling

- IPv4 and IPv6 support

- Support for jumbo frames up to 12 kB

- IEEE 1588v2 and SyncE support (optional)

- NTP, SSH, SNMP, and DHCP server support (optional)

- Freescale QorIQ P1010 Management Processor

- Optional VITA 46.11 Tier 1 and Tier 2 IPMI Controller (IPMC)

XChange3013

The XChange3013 is a conduction- or air-cooled, 3U VPX Ethernet switch module. The XChange3013 provides fourteen backplane 10/100/1000BASE-T Ethernet ports and six backplane network 1000BASE-X Ethernet ports. The XChange3013 delivers full wire-speed across all of its ports and supports jumbo packets up to 12 kB. It also supports IPv6, Energy Efficient Ethernet™ (EEE), and a comprehensive set of IETF RFCs and IEEE protocols. The XChange3013 can also support compliance to the VICTORY specification as an Infrastructure Switch and Router.

When configured as a fully managed Layer 2 switch, support for features such as fast boot, flow control, MAC bridging (IEEE 802.1D), port mirroring, port authentication (IEEE 802.1x), VLANs (IEEE 802.1Q), Quality of Service (QoS), GVRP, MVRP, port and protocol classification (IEEE 802.1v), GARP, MRP, GMRP, MMRP, LACP, RMON, STP, RSTP, MSTP, RPVST+, AgentX, and IGMP are included. When configured as a Layer 3 router, support for Multicast and Unicast Routing features such as DVMRP, IGMP, PIM-DM, PIM-SM, PIM-SSM, MLD, RIP, BGP, OSPFv2/OSPFv3, and VRRP are added.

When paired with the XPedite5205 XMC router module, the XChange3013 includes Cisco IOS® IP routing and Cisco Mobile Ready Net capabilities. With this technology, the router provides highly secure data, voice, and video communications to stationary and mobile network nodes across both wired and wireless links. With the XPedite5205, Cisco IOS® security features are also supported, including hardware encryption, firewalls with integrated threat control, zone-based firewalls, Intrusion Prevention System (IPS), content filtering, identity management using Authentication, Authorization, and Accounting (AAA), and Public Key Infrastructure (PKI).

X-ES

Extreme Engineering Solutions

...Always Fast

Ethernet

- Fourteen 10/100/1000BASE-T Ethernet interfaces
- Six 1000BASE-X SerDes Gigabit Ethernet interfaces
- IPv4 and IPv6 support
- Support for jumbo frames up to 12 kB
- Advanced cable open/short detection
- Energy Efficient Ethernet™ (EEE) support
- Non-blocking, full wire-speed
- IEEE 1588v2 and SyncE support (optional)

Ethernet Management Features (Optional)

- Layer 2 switching and Layer 3 routing
- Extensive IEEE protocol and IETF RFC support
- Configuration through CLI or SNMP
- 196 MB packet buffer
- VICTORY Infrastructure Switch and Router support

Management Controller

- Freescale QorIQ P1010 Management Processor at up to 800 MHz
- Up to 2 GB DDR3L-800 ECC SDRAM
- Up to 8 GB NAND flash
- Dual-redundant SPI boot flash
- NTP, SSH, SNMP, and DHCP server support (optional)

XMC

- One XMC site
- Full support for XPedite5205 Cisco IOS® Embedded Services Router (ESR)
- J14 RS-232 I/O routed to P1

Additional Features

- Optional VITA 46.11 Tier 1 and Tier 2 IPMI Controller (IPMC)

Physical Characteristics

- 3U VPX form factor
- Dimensions: 100 mm x 160 mm
- 0.8 in. or 1.0 in. pitch
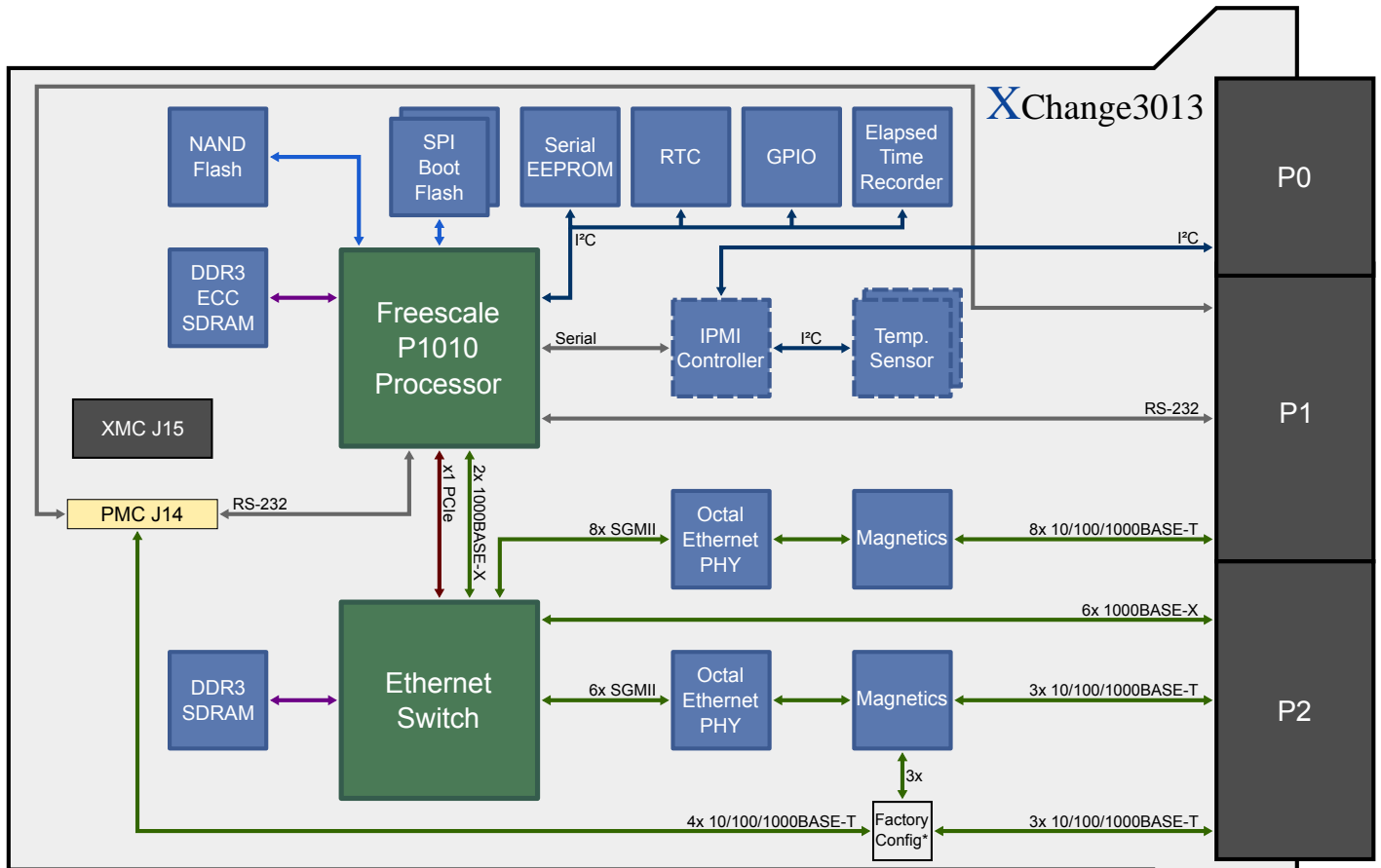- Compliant to the VITA 48.2 Type 1, Two-Level Maintenance (2LM) standard (optional)

Environmental Requirements

Contact factory for appropriate board configuration based on environmental requirements.

- Supported ruggedization levels (see chart below): 1, 3, 5
- Conformal coating available as an ordering option

Power Requirements

- Power will vary based on configuration and usage. Please consult factory.

Ruggedization Level	Level 1	Level 3	Level 5
Cooling Method	Standard Air-Cooled	Rugged Air-Cooled	Conduction-Cooled
Operating Temperature	0 to +55°C ambient (300 LFM)	-40 to +70°C (600 LFM)	-40 to +85°C (board rail surface)
Storage Temperature	-40 to +85°C ambient	-55 to +105°C ambient	-55 to +105°C ambient
Vibration	0.002 g²/Hz, 5 to 2000 Hz	0.04 g²/Hz (maximum), 5 to 2000 Hz	0.1 g²/Hz (maximum), 5 to 2000 Hz
Shock	20 g, 11 ms sawtooth	30 g, 11 ms sawtooth	40 g, 11 ms sawtooth
Humidity	0% to 95% non-condensing	0% to 95% non-condensing	0% to 95% non-condensing

* Configuration	Switch-to-VPX Ports	Router-to-VPX Ports	Router-to-Switch Ports
No Router	3	0	0
Router	1	2	2
Router Firewall	2	1	1
x3 Router	0	3	1