# XPand6241

13th Gen Intel® Core™ i7 Processor-Based Rugged Small Form Factor (SFF) COTS System with 12-Port Gigabit Ethernet Switch & Router with Cisco IOS-XE®

- Four 10GBASE-T Ethernet switch ports

- Eight 10/100/1000BASE-T Ethernet switch ports

- One 10/100/1000BASE-T Ethernet SBC port

- Includes one XPedite8270 13th Gen Intel® Core™ i7 processor-based 3U VPX SBC with optional XPort6107 XMC NVM Express® Solid-State Drive (SSD)

- Includes one XChange3031 Gigabit Ethernet switch with Layer 2 switching

- Layer 2 switching with extensive IEEE protocol and IETF RFC support

- Includes one XChange6300 Cisco IOS-XE® Gigabit Ethernet Embedded Services Router

- Supports one removable memory module (optional)

- Small Form Factor (SFF) sub-½ ATR system

- Conduction-cooled chassis

- Integrated 28 VDC power supply

- MIL-STD-461, MIL-STD-810, MIL-STD-704F qualifiable*

- Environmentally sealed

- Rugged circular connectors with 10 Gigabit Ethernet-rated inserts



## XPand6241

The XPand6241 is a true Commercial-Off-The-Shelf (COTS) rugged system based on the 13th Gen Intel® Core™ i7 series (formerly Raptor Lake-P) of processors and a Gigabit Ethernet switch hosting an XChange6300 Cisco IOS-XE® Gigabit Ethernet Embedded Services Router. With a compact design, the XPand6241 maximizes processing and networking performance while providing a SWaP-optimized alternative to traditionally larger slot-based systems; it is an actual Small Form Factor (SFF) system based on COTS 3U VPX modules.

The XPand6241's first slot supports the XPedite8270 13th Gen Intel® Core™ i7 processor-based 3U VPX SBC, which can host an optional XPort6107 XMC NVM Express® Solid-State Drive (SSD). The XPand6241's second slot supports the XChange3031 3U VPX Gigabit Ethernet switch. The XChange3031 can be configured as a fully managed Layer 2 switch. The XChange3031 delivers full wire-speed across all of its ports and supports jumbo frames up to 10 kB. It supports IPv6 and a comprehensive set of IETF RFCs and IEEE protocols. The XChange6300 Cisco IOS-XE® router XMC installed on the XChange3031 provides highly secure data, voice, and video communications to stationary and mobile network nodes. The system supports a memory module bay to host a removable PCI Express Solid-State Drive (SSD) flash memory module.

The XPand6241 supports the rear I/O from the installed VPX modules with two circular connectors: a 130-pin connector for the SBC in the first slot, and a 93-pin connector with four integrated high-speed interface inserts for the switch in the second slot. This fully ruggedized system is designed to meet the rigorous standards of MIL-STD-810 and DO-160, while integrating the latest power-saving and performance-enhancing technology. The heat from the internal conduction-cooled modules is conducted to sidewall heat exchangers, where it is dissipated to an externally attached cold plate. The system includes an integrated MIL-STD-704 28 VDC power supply and MIL-STD-461 EMI filtering.

*X-ES tests against portions of MIL-STD-461, MIL-STD-810, and MIL-HDBK-704. Please contact factory for details.

## X-ES
**Extreme Engineering Solutions**

*"Fast, Flexible, Customer-Focused Embedded Solutions"*

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## Physical Characteristics

- Chassis dimensions and weight are dependent on configuration; contact factory for assistance

## Ethernet Management Features

- Layer 2 switching
- Extensive IEEE protocol and IETF RFC support
- Configuration through CLI or SNMP
- 4 MB packet buffer
- XChange6300 Cisco IOS-XE® Gigabit Ethernet Embedded Services Router XMC

## Ethernet Switch Features

- IPv4 and IPv6 support
- Support for jumbo frames up to 10 kB
- Non-blocking, full wire-speed
- IEEE 1588v2 transparent clocking support

## First Slot I/O (XPedite8270 and Optional XPort6107)

- One 10/100/1000BASE-T Ethernet port to J2
- Two RS-232/422/485 serial ports to J2
- Two USB 2.0 ports to J2
- One DisplayPort interface to J2
- XMC J16 I/O, mapping P1w9-X12d per VITA 46.9 routes to J2

## Second Slot I/O (XChange3031 and XChange6300)

- Four 10GBASE-T Ethernet switch ports to J3
- Eight 10/100/1000BASE-T Ethernet switch ports to J3
- One RS-232 serial port from XChange3031 to J3
- One RS-232 serial port from XChange6300 to J3

## Slot-to-Slot Connectivity

- One 40GBASE-KR4 Ethernet port

## Removable Memory Bay (Optional)

- Supports one X-ES ruggedized 2.5 in. Solid-State Drive (SSD)
- Up to 1 TB of TLC NAND flash (configurable as SLC with reduced storage capacity)
- Connects to first slot via one x4 PCI Express Gen3-capable interface

## Power Supply

- Integrated power supply
- MIL-STD-704 28 VDC input voltage support
- MIL-STD-461 EMI filtering

## Thermal

- The system is designed and tested to operate in ambient temperatures down to -40°C and extreme high temperatures. Maximum operating temperature is dependent on configuration and usage. Contact X-ES for further information.