X-ES Releases Integrated 10 Gigabit Ethernet & PCI Express Gen3 Switch with Superior Performance

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The newest 10 Gigabit Ethernet switch module from Extreme Engineering Solutions (X-ES), the XChange3021, is now available. This 3U VPX switch provides both 10 Gigabit Ethernet and PCI Express Gen3 (backwards compatible with Gen2 and Gen1) functionality, which allows the XChange3021 to serve as the heart of inter-board communications inside a high-end OpenVPX™ system.

Integrated Broadcom Switch for Rapid Data Plane Switching

The XChange3021 was designed to provide the Ethernet switching capability needed for the next generation of 3U VPX systems, such as within X-ES' own 3U VPX rugged, embedded systems. This 3U VPX switch module features a managed 10 Gigabit Broadcom BCM56450 Ethernet switch, including 102.5 Gb/s of non-blocking switching, an on-chip ARM A9-based CPU, an integrated hierarchical traffic manager to reduce overall board complexity and power, and a feature-rich packet processing engine, all within a single 40 nm device.

The XChange3021 is unique in that it also includes a PCI Express switch that increases throughput by supporting PCI Express Gen3 technology. The integration of a PCI Express switch allows the XChange3021 to support X-ES' latest 3U VPX modules, such as the XPedite767x family of single board computers, and consequently provides our customers with a higher bandwidth for both the data plane and control plane.

With one 10-port, 10 Gigabit Ethernet switch, up to eight 10BASE-KR or 1000BASE-BX/KX Ethernet ports, and up to three 10/100/1000BASE-T Ethernet ports connected to the XMC site, the XChange3021 is capable of switching some of the largest 3U VPX backplanes.

Compliance with a Wide Variety of Industry Standards

The XChange3021 is within the second generation of X-ES' embedded switch line which also includes the XChange3018 and XChange3013 3U VPX Ethernet switches, and the XChange3100 6U VPX Ethernet switch. All of X-ES' switches include Managed Layer 2 Switching and optional Layer 3 Routing Management support.

Compliance with a variety of VITA 65 OpenVPX™ switch slot profiles allows for easy integration of the XChange3021 into ready-made backplanes. XChange3021 can optionally include VITA 48.2 Type 1 Two-Level Maintenance (2LM) REDI support.

The XChange3021 features a wide variety of configuration options depending on project requirements. Additional features include extensive IEEE protocol and IETF RFC support, VICTORY Infrastructure Switch support, advanced cable open/short detection, IPv4 and IPv6 support, Energy Efficient Ethernet™ support, and a Ruggedized Enhanced Design Implementation (REDI) per VITA 48.

Extend XChange3021's Capabilities with Hosted XMC Modules

The XPedite5205 XMC/PMC Embedded Services Router (ESR) can be installed on the XChange3021, allowing users to augment XChange3021's already rich feature set with the power and security offered by the XPedite5205's via supported Cisco IOS® software. The Cisco IOS® Software with Cisco Mobile Ready Net capabilities, enables the XPedite5205 to provide highly secure data, voice, and video communications to stationary and mobile network nodes across wired and wireless links.

The XChange3021 supports IEEE1588v2 transparent clocking and can be combined with the XPort3200 XMC/PMC Grandmaster Clock module, enabling tight synchronization between all devices connected to the switch.

Add up to 512 GB of secure, Solid-State Storage with a hosted XPort6105 XMC module. This storage module's security features include AES-256 XTS encryption, where the encryption key can be purged in less than 30 ms, leaving no remnants of the key behind. In addition, the XPort6105 supports several military sanitization protocols, including a fast clear.

About X-ES — Extreme Engineering Solutions, Inc. (X-ES), a 100% U.S.A.-based company, designs and builds single board computers, I/O boards, power supplies, chassis, and system-level solutions for embedded computing customers. X-ES offers cutting-edge performance and flexibility in design, plus an unparalleled level of customer support and service. For further information on X-ES products or services, please visit our website: www.xes-inc.com or call (608) 833-1155.

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