X-ES Reveals Their Latest Extremely Rugged, Small Form Factor (SFF) Embedded System

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The newest Small Form Factor (SFF) rugged embedded system from Extreme Engineering Solutions (X-ES), the XPand6052, is now available. This small system combines the computing power of the Intel® Core™ i7 processor-based XPedite7450 COM Express® mezzanine module with the high-performance networking and communications capabilities of the XPedite5205 XMC/PMC Embedded Services Router (ESR).

High-Performance Processing in a Compact Package

The conduction-cooled XPand6052 combines the XPedite5205 high-performance router and the XPedite7450 Intel® Core™ i7 quad-core general-purpose processor in a compact, Small Form Factor (SFF) system with plenty of computing power for a diverse array of embedded and commercial applications.

The XPand6052 is the second generation of X-ES' popular XPand6000 Series of Small Form Factor (SFF) chassis. While maintaining the compact design of its first-generation XPand6000 legacy, the XPand6052 improves modularity, thus providing a flexible basis for derivative designs, while reducing assembly complexity. The XPand6052 further enhances the EMI and environmental performance of this diminutive chassis.

Rugged Design with Versatile I/O Options

To ensure the highest caliber of performance and reliability under duress and adverse conditions, the XPand6052 COTS system has been comprehensively designed to meet or exceed the demanding military specifications of MIL-STD-810 and DO-160. This rugged and trusted design has also been thoroughly tested on-site at X-ES' Middleton, WI facility, as well as at independent US-based labs to certify compliance with the exacting standards it was designed against. The XPand6052 has been tested against the rigorous environmental requirements of MIL-STD-810 for vibration, shock, humidity, contamination by fluids, storage and operating temperature, altitude, temperature variation, and the EMI requirements of MIL-STD-461G.

With its separate XPedite5205 routing and XPedite7450 processing elements, the XPand6052 provides integration versatility for system designers.

The XPand6052 provides an abundance of XPedite7450 processor I/O, including two USB 2.0 ports, two configurable RS-232/422/485 serial ports, DisplayPort and VGA graphics ports, and two 10/100/1000BASE-T Gigabit Ethernet ports. The XPedite5205 router adds four 10/100/1000BASE-T Gigabit Ethernet ports, along with two RS-232 serial ports. The XPand6052 also provides up to 64 GB of internal SATA-accessed storage.

As a flight-qualified system, XPand6052 supports a MIL-STD-704A-F 28 VDC power input that is ideal for use on many types of aircraft. In addition to its airborne-optimized feature set, XPand6052 is suitable for many other applications, including harsh ground conditions and in-vehicle use.

XPedite5205 | Embedded Services Router (ESR) with Cisco IOS® on an XMC/PMC Mezzanine Module

The XPedite5205 is an XMC/PMC-based Embedded Services Router (ESR) router that runs Cisco IOS® Software with Cisco Mobile Ready Net capabilities, providing highly secure data, voice, and video communications to stationary and mobile network nodes across wired and wireless links.

The router offers high performance, four Gigabit Ethernet interfaces, and a rich Cisco IOS® Software feature set, suitable for the most Size, Weight, and Power (SWaP)-constrained applications. To meet the needs of demanding mobile and embedded networking applications, the XPedite5205 ESR provides onboard hardware encryption to off-load encryption processing, radio aware routing (RAR) with support for the latest Dynamic Link Exchange Protocol (DLEP), support for IPv6, integrated threat control with integrated Cisco IOS® firewalls and Intrusion Prevention System (IPS), and Quality of Service (QoS).

The XPedite5205 ESR uses the same Cisco IOS® that IT staffs in the military, energy, public safety, and other industries are already trained on, enabling these organizations to expand their network to personnel, equipment, facilities, and vehicles at the edge of the network – warfighters on the battlefield, mines and drilling platforms, natural disaster mobile command centers – without any additional training.

XPedite7450 | Intel® Core™ i7 Processor-Based Rugged Basic COM Express® Mezzanine Module

The XPedite7450 is an enhanced, COM Express® Type 6 module based on the 2nd or 3rd generation Intel® Core™ i7 processor and Intel® QM67 chipset. It is ideal for the high-bandwidth and processing-intensive requirements of today's commercial, industrial, and military applications, and its small footprint and standards-based form factor make the XPedite7450 perfect for portable and rugged environments.

The XPedite7450 accommodates up to 16 GB of DDR3-1600 ECC SDRAM in two channels to support memory-intensive applications, and also hosts numerous I/O ports and interfaces, including graphics, PCI Express, SATA, USB 2.0, HD audio, and serial.

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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