



## Press Release

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### **X-ES Adds Ultra-Small Form-Factor ATR System for Rugged Applications with Severe Size, Weight, and Power Constraints**

**Middleton, WI – August 11, 2011** – Extreme Engineering Solutions, Inc. (X-ES) announces the availability of the [XPand6000](#), a rugged ATR system measuring just 4.88 in. x 1.9 in. x 7.7 in. A fully-loaded [XPand6000](#) utilizes three types of industry-standard Commercial-Off-The-Shelf (COTS) components: rugged COM Express modules, PMC/XMC modules, and solid-state storage. With COTS components, the [XPand6000](#) can be deployed quickly into airborne or ground vehicles. Its natural convection-cooling and small size allow the [XPand6000](#) to be bolted to any available surface; and with a fully-loaded weight of less than 4.5 lbs., it is perfect for small UAV ATR applications.

A system can be built simply by combining several industry-standard COTS components – a COM Express module for processing power, a PMC or XMC module for I/O capability, and a solid-state storage module for non-volatile memory. Virtually any conduction-cooled PMC or XMC can be integrated into the [XPand6000](#), which also supports an optional 1.8-in. or Slim SATA Solid-State Disk (SSD) for applications requiring ruggedized, non-volatile storage.

Initially, the [XPand6000](#) will support COM Express modules based on the Intel® Core™ i7 and Atom™ processors, with Freescale QorIQ™ support to follow. To meet a wide variety of application needs, the [XPand6000](#) is available in three configurations: a horizontal orientation with natural convection-cooling, a horizontal orientation with conduction-cooling, and a vertical orientation with natural convection-cooling.

The [XPand6000](#) features include:

- Natural convection-cooled or conduction-cooled, ultra-small form-factor, ATR chassis
- Supports a single, ruggedized, COM Express module
- Supports a single, conduction-cooled, PMC or XMC module
- Optional, 1.8-in. or Slim SATA, non-volatile SSD memory module
- Physical dimensions
  - Horizontal (natural convection-cooled): 4.88 in. (W), 2.10 in. (H), 7.70 in. (L)
  - Horizontal (natural conduction-cooled): 4.88 in. (W), 1.90 in. (H), 7.70 in. (L)
  - Vertical (natural convection-cooled): 2.36 in. (W), 4.88 in. (H), 7.10 in. (L)
- Weighs approximately 4.5 pounds (fully populated)
- Integrated MIL-STD-704 28V DC power supply
- Integrated MIL-STD-461E/F EMI filtering and optional internal holdup
- Environmentally sealed
- D38999 connector support with configurable I/O connections

“The [XPand6000](#) is one of the smallest of the Small Form Factor ATR systems on the market with the advantage of being based on existing, open, industry standards – COM Express, PMC, XMC, and 1.8-in. SSD,” states Bret Farnum, VP Sales. “Our customers can get a tremendous

amount of processing power and I/O capability in a very small, rugged package while using off-the-shelf modules, allowing them to get through development and deploy quickly.”

The [XPand6000](#) was developed to address SWaP-constrained applications. The goal was to create a box that is as small as possible and utilizes COTS components.

Most SFF systems need only one or two high-performance processors, so basing a system on form factors such as 3U VPX or cPCI unnecessarily increases the size, weight, and power, and it also reduces thermal efficiency. 3U VPX and cPCI modules use large backplane connectors, allocating pins for functions and interconnect fabrics that are not needed in most SFF systems. X-ES developed an innovative solution using a very small SFF that supports off-the-shelf components and provides flexibility by creating a baseboard that can host both a CPU card and an I/O card.

Using the COM Express form factor for the CPU card allows for modules from third-party vendors. Most importantly, it provides a thermally-superior solution because the CPU is located on the opposite side of the module connectors, allowing for direct contact between the CPU's die and the system's external cooling interface. The PMC/XMC form factor was chosen for the plug-in I/O card because of the wide ecosystem of PMC/XMC I/O modules available from a number of vendors.

The majority of COM Express modules are not designed for use in harsh environments, especially those that support high-performance processors. They typically use vulnerable SO-DIMM modules for SDRAM and have few mounting holes for structural retention. They are unproven at extreme temperatures and do not utilize the circuit board fabrication, manufacturing, and assembly techniques required for applications in harsh environments. X-ES is developing a line of COM Express modules designed specifically for customers who require rugged and reliable processor solutions.

The end result is a convection-cooled SFF ATR system from X-ES that supports COTS COM Express modules, PMC/XMC modules for I/O, and an optional 1.8-in. SSD in a package that is only 1.9 in. high, 4.88 in. wide, and 7.7 in. long.

Visit [X-ES at AUVSI 2011](#) in Washington DC, booth 833, August 16, 2011 through August 19, 2011, to see all of our new products and talk with our sales and engineering staff on hand.

**About X-ES** — Extreme Engineering Solutions, Inc. (X-ES) designs and builds chassis, single-board computers, I/O, power, backplane, and system-level products within the embedded computer industry. 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](http://www.xes-inc.com) or call (608) 833-1155.

Data Sheet: <http://xes-inc.com/assets/products/files/XPand6000-DS.pdf>

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