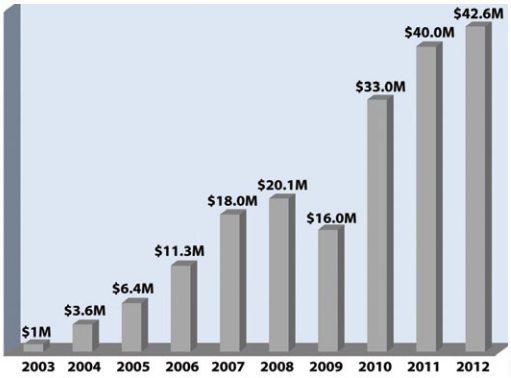
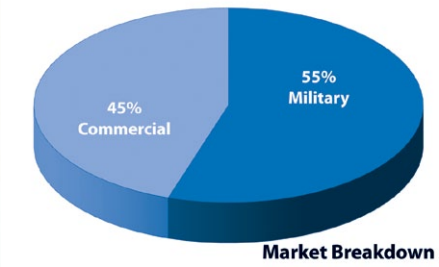
X-ES

Fast, Flexible, and Customer-Focused Embedded Solutions

X-ES Corporate Overview

- Freescale and Intel processor board solutions
- Complete CPU, I/O, storage, and system-level solutions
- 100% U.S.-based; ITAR-certified
- Derivative/Modified (MOTS) and custom solutions available
- System Integration and MIL-STD-810F/461E qualification
- 4-hour customer support response guarantee





Market Breakdown

XPedite5205: X-ES Router running CISCO IOS

Extreme Leadership

Extreme Engineering Solutions (X-ES) is a leader in the design, manufacture, and support of standard and custom embedded computing solutions. X-ES engineering, manufacturing, and support is 100% U.S.-based. X-ES combines leading-edge technology with the ability to meet aggressive development schedules to offer an extensive product portfolio that includes commercial and ruggedized single board computers, processor modules, mezzanines, I/O, power supplies, storage, backplanes, enclosures, IP routers running Cisco IOS, and fully integrated systems. Delivering cutting-edge performance, flexibility in design, and an unparalleled level of customer service and support, X-ES is committed to providing quality-engineered hardware and software solutions that meet the rigorous requirements of commercial and rugged embedded systems applications.

Measuring Success Year After Year

Extreme Engineering Solutions has experienced exceptional growth over the past several years, and our sales revenues continue to increase dramatically.

Commitment to Quality

X-ES is an ISO 9001:2008 registered company with a strong commitment to quality. X-ES's Quality Policy is to provide products that meet or exceed the needs of customers. X-ES tracks and verifies a wide variety of requirements throughout the design and manufacturing processes. X-ES monitors compliance to a number of military, aerospace, and industry standards in areas such as workmanship, configuration management, export compliance, reliability and maintainability, counterfeit parts prevention, obsolescence management, supply chain management, and risk management.

Integral components of the X-ES quality system are the documentation and training systems. X-ES's corrective action process ensures that when a customer reports a problem the focus is on the root cause analysis to determine the reason for the problem and to prevent recurrence. X-ES makes sure problems are resolved quickly and correctly. X-ES's Quality Objectives of reducing design and manufacturing defects and delivering products on time help ensure customers get the right products delivered when they need them.

BSI REGISTERED

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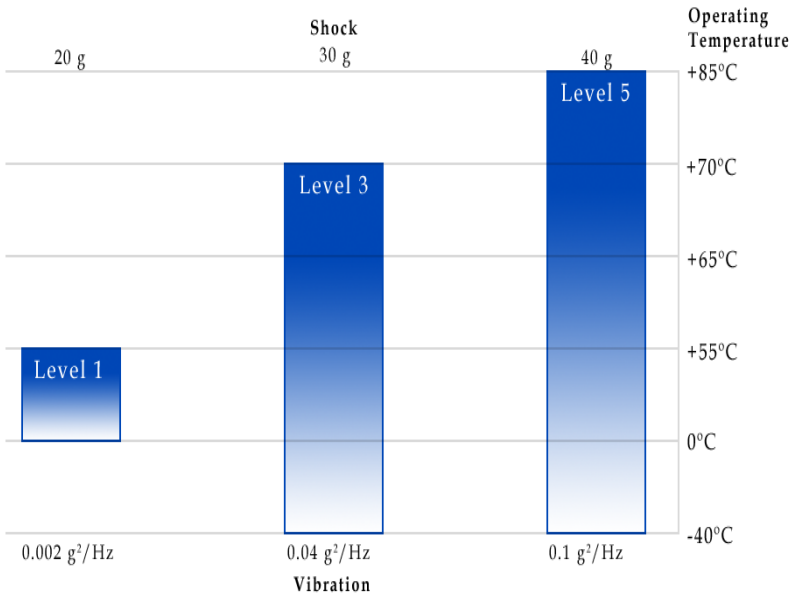
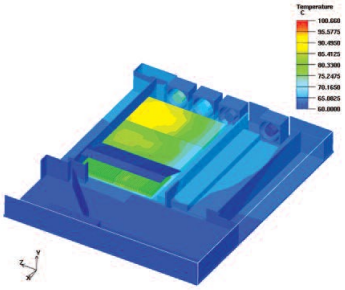
Extreme Environments Demand Extreme Engineering Solutions

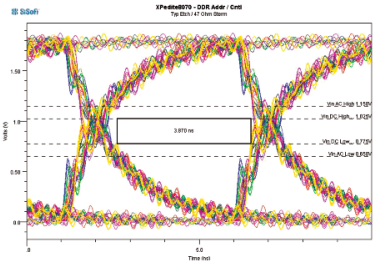
X-ES is a leader in designing advanced, embedded computing products for the harsh environments seen in military and industrial applications. X-ES utilizes best-in-class design, test, and manufacturing methodologies to design, develop, and manufacture products that deliver reliable operation in the extremes of temperature, shock, vibration, and environment.

Three levels of ruggedization are available for X-ES products supporting commercial, extended temperature, and conduction-cooled applications. These levels allow a customer to tailor a solution to their application by selecting the range that best suits their needs for thermal, vibration, shock and performance.





Thermal & Structural Simulation



Signal Integrity Simulation

Extreme Reliability

Reliability is a major concern in most military applications. To proactively address this issue, X-ES generates a detailed MTBF (Mean Time Between Failure) analysis with every product. To increase MTBF and improve design robustness, all X-ES products are subject to the X-ES component derating guidelines.

X-ES complements a robust hardware design with a rich set of BIT (Built-In Test) software. Hardware problems can be diagnosed at power-on or detected via continuous tests (CBIT) or initiated tests (IBIT).

With hardware and software design information, X-ES has the capability to perform system-level FMECA (Failure Mode, Effects, and Criticality Analysis) and generate FDFI (Failure Detection and Fault Isolation) reports. This information can be used by system designers to evaluate failure risks in a systematic fashion.

Extreme Manufacturing

X-ES has a streamlined manufacturing process that is efficient, scalable, and meets all Class 3 requirements as required by most military applications. In order to assure scheduling requirements can be met, X-ES owns a product assembly line. X-ES manufacturing is 100% U.S.-based. Product is assembled per IPC-A-610. BGAs are 100% X-rayed and assembled boards go through 100% AOI (Automated Optical Inspection).

All products undergo a formal ATP (Acceptance Test Procedure) and, if required, an ESS (Environmental Stress Screening) procedure. Test logs, available in either electronic or print format, can be provided. X-ES uses a leaded manufacturing process. If required, X-ES can provide a lead-free/RoHS-compliant process.

Full Spectrum of Solutions

Recognizing the diversity of application requirements demanded by a variety of markets in the embedded computing industry, X-ES provides the full spectrum of solutions to enable all of our customers to succeed:

- Standard Form Factors and Custom Designs
- Military, Commercial, and Industrial
- Air-Cooled and Conduction-Cooled
- Systems, Components, and Software

Form Factors

VPX, VME, CompactPCI, XMC, PMC, PrPMC, COM Express, SEM-E, Custom

Processors

Freescale, Intel, Broadcom, IBM

Logic Devices

Xilinx, Altera, Actel, Cypress

Systems

Development Platforms, 1/2 ATR and Small Form Factor (SFF) Chassis with Conduction, Forced Air, and Convection Cooling, Backplanes, Power Supplies

Operating Systems

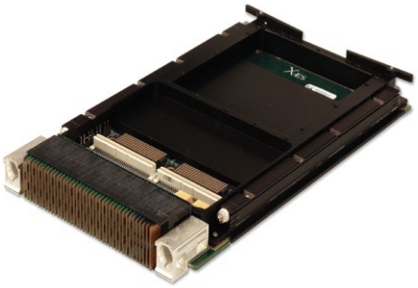
Linux, VxWorks, INTEGRITY, QNX, LynxOS, OSE, Windows, Cisco IOS

X-ES has a broad product line centered around Single Board Computers (SBCs) and Processor Mezzanines (XMCs and PrPMCs). X-ES strives to be the first to market with the latest Freescale and Intel processor technology. X-ES is also committed to make available the latest Freescale and Intel processor technologies across all of our supported form factors to support a wide range of application needs.

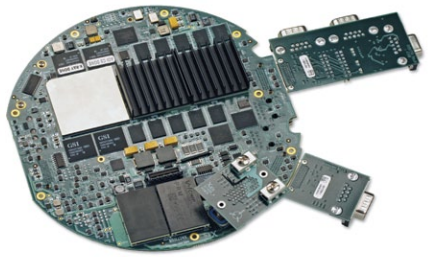
When a standard product does not fit an application's needs, X-ES has a streamlined process to provide a derivative design (Modified COTS or MOTS) or to develop a full custom design. X-ES makes it easy for customers to utilize derivative or custom designs in their applications with a short approval process and prototype delivery schedules that rival other vendors COTS products delivery schedules.

For customers looking for one vendor to provide the complete system solution, X-ES provides full hardware selection and integration services. If X-ES does not already have a particular component in-house, X-ES offers the option either to design it or acquire it from another vendor and provide integration.

X-ES can perform in-house environmental and EMI pre-qualification. Utilizing our in-house equipment, X-ES also has the expertise to perform full environmental qualification for temperature, humidity, altitude, shock, and vibration based on MIL-STD-810F/G or DO-160 requirements. And working with third party test facilities, X-ES can perform full EMI/EMC qualification based on MIL-STD-461E/F, DO-160, FCC, or UL requirements.



XPedite7470: Core i7 Processor



Custom Processor and FPGA Design

XAct1008: FPGA Design

XPedite5550: P2020 COM Express

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Commitment to Customer Service

Extreme Engineering Solutions' commitment to high-quality products is reinforced by our industry-leading customer service and support. X-ES's talented engineers are dedicated to providing the highest quality support to all of our customers, and this is consistently proven by our exceptional customer feedback and testimonials.

When a support request is received at X-ES, it enters a fully automated, multi-tiered escalation process that guarantees a quick and thorough response. X-ES customers will always speak directly to one of our engineers, each having the knowledge and experience necessary to assist with the development, integration, and use of our products. We strive to quickly respond to each support request in an effort to considerably shorten your development cycle and time-to-market.

XPand6002 Small Form Factor (SFF) System

XPand4200 Sub-1/2 ATR Forced-Air-Cooled Chassis for Conduction-Cooled Modules

XPand1200 3U VPX Development Platform for Conduction-Cooled Modules

MADE IN USA

Customer Testimonials

"I have never come across a more complete and satisfying embedded package. The documentation, firmware, software, cross-compilation and hardware all performed well. I was up and running in hours with our custom application."
- Sr. Design Engineer, Military Customer

"Given our difficult vendor experiences over the last several months, Extreme Engineering Solutions proved the exception by consistently delivering timely solutions that exceeded our expectations. It is a real joy to work with a team that is so committed to the success of their customers."
- CTO, Security Customer

"X-ES has been providing [us] with embedded processor boards since 2005. Throughout this time, X-ES has consistently demonstrated a strong customer focus with a clear dedication to providing both rapid and detailed technical support. The quality and reliability of your products combined with the stated outstanding support has resulted in the successful integration of X-ES boards into our systems."
- CEO, Military/Civil Customer

"I'd have to say that your support service is outstanding! I'm working with many suppliers on this project and X-ES stands WAY out infront of the others with response time to technical questions. That really makes a big difference helping our project succeed! Thank you!"
- Project Manager, Commercial Customer

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