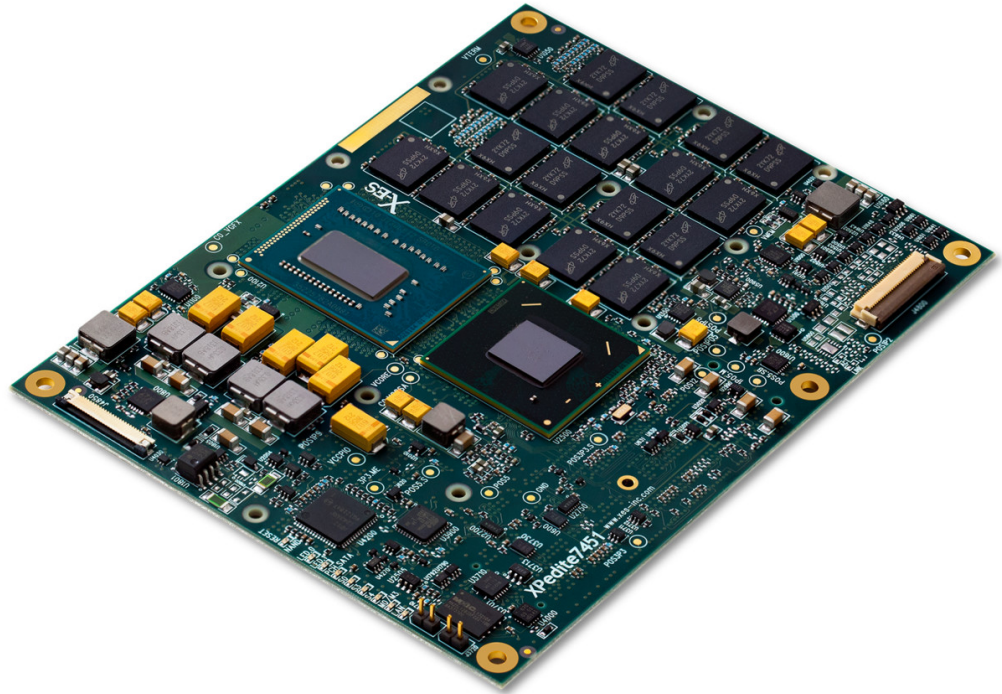


XPedite7451

End of Life

Intel® Core™ i7 Processor-Based Rugged Basic Enhanced Type 6 COM Express® Module **Please contact X-ES Sales**

- ▶ Supports 2nd generation and 3rd generation Intel® Core™ i7 processors
- ▶ Quad- or dual-core processor with Intel® Hyper-Threading Technology
- ▶ Standard COM Express® Basic form factor with ruggedization enhancements
- ▶ COM Express® enhanced Type 6 pinout
- ▶ Up to 16 GB of DDR3 ECC SDRAM in two channels
- ▶ Up to 32 GB of NAND flash
- ▶ 16 lanes of PCI Express from CPU. Default configuration is two x8 lanes.
- ▶ Six lanes of PCI Express from Intel® QM77 chipset. Default configuration is one x4, two x1 lanes.
- ▶ One 10/100/1000BASE-T Gigabit Ethernet port
- ▶ Five USB 2.0 ports
- ▶ Four SATA ports
- ▶ Two digital display interfaces (DP/DVI/HDMI)
- ▶ One VGA interface
- ▶ One LVDS interface
- ▶ Intel® High Definition Audio port
- ▶ Wind River VxWorks BSP
- ▶ Linux BSP
- ▶ Microsoft Windows drivers
- ▶ Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynuxWorks LynxOS BSPs



XPedite7451

The XPedite7451 is an enhanced, Type 6 COM Express® module based on the 2nd or 3rd generation Intel® Core™ i7 processor and Intel® QM77 chipset. COM Express® provides a standards-based form factor to bring PC processing to a wide range of applications. The XPedite7451 is ideal for the high-bandwidth and processing-intensive requirements of today's commercial, industrial, and military applications. The small footprint and standards-based form factor make the XPedite7451 perfect for portable and rugged environments, while providing an upgrade path for the future.

The XPedite7451 accommodates up to 16 GB of DDR3 ECC SDRAM in two channels to support memory-intensive applications. The XPedite7451 also hosts numerous I/O ports and interfaces, including a Gigabit Ethernet port, two Dual-Mode DisplayPort interfaces, one VGA interface, and one LVDS graphics interface, 16 lanes of PCIe from the CPU, six lanes of PCIe from the Intel® QM77 chipset, four SATA ports, five USB 2.0 ports, HD audio link, LPC bus, I²C, and two serial ports.

The XPedite7451 supports the latest Unified Extensible Firmware Interface (UEFI) BIOS customized with PBIT support. Wind River VxWorks and Linux Board Support Packages (BSPs) are available, as well as Microsoft Windows drivers.

X-ES

Extreme Engineering Solutions

...Always Fast

Extreme Engineering Solutions

9901 Silicon Prairie Parkway • Verona, WI 53593

Phone: 608.833.1155 • Fax: 608.827.6171

sales@xes-inc.com • <https://www.xes-inc.com>

Processor

- Quad- or dual-core Intel® Core™ i7
- Intel® Turbo Boost Technology
- Intel® Hyper-Threading Technology
- AVX instruction set extensions
- Integrated with Intel® QM77 chipset
- Dual-channel integrated memory controller
- Integrated high-performance 3D graphics controller

Quad-Core Processor Configurations

- Core™ i7-3612QE: 2.1 GHz, 6 MB cache

Dual-Core Processor Configurations

- Core™ i7-2655LE: 2.2 GHz, 4 MB cache
- Core™ i7-2610UE: 1.5 GHz, 4 MB cache
- Core™ i7-3555LE: 2.5 GHz, 4 MB cache
- Core™ i7-3517UE: 1.7 GHz, 4 MB cache

Memory

- Up to 16 GB of DDR3 ECC SDRAM in two channels
- Up to 32 GB of NAND flash

Graphics

- Integrated high-performance 3D graphics controller
- Two digital display interfaces (DP/DVI/HDMI)
- One VGA interface
- One LVDS interface

COM Express®

- Basic form factor (95 mm x 125 mm)
- Enhanced Type 6 pinout
- Adds non-volatile write protect
- Adds two external interrupts

Interface

- Five USB 2.0 ports
- One 10/100/1000BASE-T Gigabit Ethernet port
- Four SATA ports capable of 3 Gb/s
- Intel® High Definition Audio port
- 16 lanes of PCI Express from CPU. Default configuration is two x8 lanes.
- Six lanes of PCI Express from Intel® QM77 chipset. Default configuration is one x4, two x1 lanes.
- Two serial ports
- LPC
- SMB
- I²C

Ruggedization and Reliability

- Class III PCB fabrication and assembly
- Soldered DDR3 ECC SDRAM
- Tin whisker mitigation
- Designed and tested for extended solder joint reliability
- Additional mounting holes for rugged and conduction-cooled environments
- BIT support

Security and Management

- Optional Trusted Platform Module (TPM)
- Non-volatile memory write protection

Software Support

- Wind River VxWorks BSP
- Linux BSP
- Microsoft Windows drivers
- Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynuxWorks LynxOS BSPs

Physical Characteristics

- Dimensions: 95 mm x 125 mm

Environmental Requirements

Contact factory for appropriate board configuration based on environmental requirements.

- Supported ruggedization levels (see chart below): 3, 5
- Conformal coating available as an ordering option

Power Requirements

- Power will vary based on configuration and usage. Please consult factory.

Ruggedization Level	Level 1	Level 3	Level 5
Cooling Method	Standard Air-Cooled	Rugged Air-Cooled	Conduction-Cooled
Operating Temperature	0 to +55°C ambient †	-40 to +70°C ambient †	-40 to +85°C (board rail surface)
Storage Temperature	-40 to +85°C ambient	-55 to +105°C ambient	-55 to +105°C (maximum)
Vibration	0.002 g²/Hz (maximum), 5 to 2000 Hz	0.04 g²/Hz (maximum), 5 to 2000 Hz	0.1 g²/Hz (maximum), 5 to 2000 Hz
Shock	20 g, 11 ms sawtooth	30 g, 11 ms sawtooth	40 g, 11 ms sawtooth
Humidity	0% to 95% non-condensing	0% to 95% non-condensing	0% to 95% non-condensing

† Contact factory for airflow rate details.

