The XPedite8150 is a ruggedized COM Express module that complies with the COM Express Mini form factor (55 mm x 84 mm) and supports an enhanced Type 10 pinout. The ultra-small, standards-based, COM Express form factor brings processing to a wide range of applications. Available in both conduction- and air-cooled versions, the XPedite8150 supports the Intel® Atom™ processor. With up to four cores running at up to 1.91 GHz, the Intel® Atom™ delivers enhanced performance and efficiency for today’s network information processing and other embedded computing applications.

The XPedite8150 complements processor performance with up to 4 GB of DDR3-1333 ECC SDRAM. It also hosts numerous I/O ports, including two Gigabit Ethernet ports, two x1 PCIe ports, four USB 2.0 ports, one USB 3.0 port, two SATA 3.0 Gb/s ports, two I²C ports, two serial ports, one Dual-Mode DisplayPort interface, one Embedded DisplayPort interface, and a Serial Peripheral Interface (SPI).

The XPedite8150 provides a high-performance, feature-rich solution for current and future generations of embedded applications. Wind River VxWorks and Linux Board Support Packages (BSPs) are available, as well as Microsoft Windows drivers.
**Processor**
- Intel® Atom™ E3800 Family processors (formerly Bay Trail-I)
- Up to four cores

**Memory**
- Up to 4 GB of DDR3-1333 SDRAM

**COM Express®**
- Enhanced Type 10 pinout
- Mini form factor (55 mm x 84 mm)

**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
- Bootloader and OS-level BIT support

**Interface**
- Two 10/100/1000BASE-T ports
- Two SATA 3.0 Gb/s ports
- Two PCIe x1 links
- Four USB 2.0 ports
- One USB 3.0 port
- Two I²C interfaces
- Two serial ports
- One Dual-Mode DisplayPort interface
- One Embedded DisplayPort interface
- One Serial Peripheral Interface (SPI)

**Additional Features**
- 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 BSPs

**Environmental Requirements**
Contact factory for appropriate board configuration based on environmental requirements.
- Supported ruggedization levels (see chart below): 1, 3, 5
- Conformal coating available as an ordering option
- Thermal performance will vary based on CPU frequency and application

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

---

**Ruggedization Level**

<table>
<thead>
<tr>
<th>Ruggedization Level</th>
<th>Level 1</th>
<th>Level 3</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling Method</td>
<td>Standard Air-Cooled</td>
<td>Rugged Air-Cooled</td>
<td>Conduction-Cooled</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>0 to +55°C ambient (300 LFM)</td>
<td>-40 to +70°C (600 LFM)</td>
<td>-40 to +85°C (board rail surface)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 to +85°C ambient</td>
<td>-55 to +105°C ambient</td>
<td>-55 to +105°C ambient</td>
</tr>
<tr>
<td>Vibration</td>
<td>0.002 g²/Hz, 5 to 2000 Hz</td>
<td>0.04 g²/Hz (maximum), 5 to 2000 Hz</td>
<td>0.1 g²/Hz (maximum), 5 to 2000 Hz</td>
</tr>
<tr>
<td>Shock</td>
<td>20 g, 11 ms sawtooth</td>
<td>30 g, 11 ms sawtooth</td>
<td>40 g, 11 ms sawtooth</td>
</tr>
<tr>
<td>Humidity</td>
<td>0% to 95% non-condensing</td>
<td>0% to 95% non-condensing</td>
<td>0% to 95% non-condensing</td>
</tr>
</tbody>
</table>

---

**Figure Xpedite8150**

---

Copyright © 2014 Extreme Engineering Solutions, Inc. (X-ES). All rights reserved. Specifications are subject to change without notice. All trademarks are property of their respective owners.