Hardware Specification
Revision 2.2 ECN 1

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IMPORTANT INFORMATION

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1. Background

The *PXI Express Hardware Specification* under development during the publishing of this ECN brings PCI Express to the PXI standard and allows additional instrumentation capability. The *PXI Express Hardware Specification* provides compatibility with PXI-1 (*PXI Hardware Specification*) Peripheral Modules in two ways. First, PXI Express Chassis may implement Peripheral Slots as defined in the PXI-1 specification. Second, PXI Express Chassis may implement a Slot that supports two types of Peripheral Modules:

- A Peripheral Module with PCI Express capability (known as a PXI Express Peripheral Module)
- A Peripheral Module (known as a Hybrid Slot-Compatible PXI-1 Module) that is only a slightly modified version of Peripheral Modules designed to PXI-1

This ECN serves as the requirements to create a Hybrid Slot-Compatible PXI-1 Module and indicates that such a module is PXI-1 compliant. This allows PXI Peripheral Module suppliers to start supplying customers with modules that take advantage of both PXI Express compatibility options.

2. Hybrid Slot-Compatible PXI-1 Peripheral Module

A Hybrid Slot-Compatible PXI-1 Peripheral Module is a PXI Peripheral Module that fully complies with the PXI-1 specification, except that the J2 HM connector is replaced with an eHM connector (XJ4) populated in the upper columns of the J2 footprint. The eHM connector is designated the eHM-F2 and defined within the CompactPCI Express specification maintained by the PICMG. Existing PXI-1 Peripheral Modules can be reworked to populate the eHM connector in place of the J2 HM, or new PXI-1 Peripheral Modules can be designed to accept only the eHM connector. In either case, a Peripheral Module meeting the requirements of this ECN is considered PXI-1 compliant.

When creating a Hybrid Slot-Compatible PXI-1 Peripheral Module care should be taken if the Peripheral Module originally connected to certain local bus and star trigger pins. Table 1 shows the signal name from the PXI-1 specification that should be considered and the associated new signal name that the pin becomes with the voltage that may be present when the Hybrid Slot-Compatible PXI-1 Module is used in a PXI Express Hybrid Slot. If a PXI-1 Module connects to a signal in Table 1 that would cause an electrical conflict when used in a PXI Express Hybrid slot, then either the module should use an eHM connector with the conflicting pins not populated or the module should have its designed modified prior to creating a Hybrid Slot-Compatible PXI-1 Module to remove the conflict.
Table 1 PXI-1 Peripheral to PXI Express Hybrid Slot Critical Signals

<table>
<thead>
<tr>
<th>PXI-1 Peripheral Module Signal Name</th>
<th>PXI Express Hybrid Slot Signal Name</th>
<th>Voltage Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>PXI_LBR0</td>
<td>5Vaux</td>
<td>5V</td>
</tr>
<tr>
<td>PXI_LBR2</td>
<td>WAKE#</td>
<td>0-3.3V</td>
</tr>
<tr>
<td>PXI_LBR3</td>
<td>ALERT#</td>
<td>0-3.3V</td>
</tr>
<tr>
<td>PXI_LBR4</td>
<td>12V</td>
<td>12V</td>
</tr>
<tr>
<td>PXI_LBR5</td>
<td>12V</td>
<td>12V</td>
</tr>
<tr>
<td>PXI_LBL0 / PXI_STAR0</td>
<td>GND</td>
<td>GND</td>
</tr>
<tr>
<td>PXI_LBL1 / PXI_STAR1</td>
<td>GND</td>
<td>GND</td>
</tr>
<tr>
<td>PXI_LBL2 / PXI_STAR2</td>
<td>GND</td>
<td>GND</td>
</tr>
<tr>
<td>PXI_LBL3 / PXI_STAR3</td>
<td>3.3V</td>
<td>3.3V</td>
</tr>
<tr>
<td>PXI_LBL4 / PXI_STAR4</td>
<td>3.3V</td>
<td>3.3V</td>
</tr>
<tr>
<td>PXI_LBL5 / PXI_STAR5</td>
<td>3.3V</td>
<td>3.3V</td>
</tr>
</tbody>
</table>

Figure 1 shows a 3U Hybrid Slot-Compatible PXI-1 Peripheral Module.

![Figure 1 3U Hybrid Slot-Compatible PXI-1 Peripheral Module](image)

Figure 2 shows a 6U Hybrid Slot-Compatible PXI-1 Peripheral Module.
Figure 3 shows the Physical Location where the eHM is populated on a 3U Peripheral Module.
Figure 3 eHM Physical Location on a 3U Peripheral Module
Figure 4 shows the Physical Location where the eHM is populated on a 6U Peripheral Module.

Figure 4  eHM Physical Location on a 6U Peripheral Module