

PXITM -1

Hardware Specification
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PXI
Systems Alliance

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

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

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

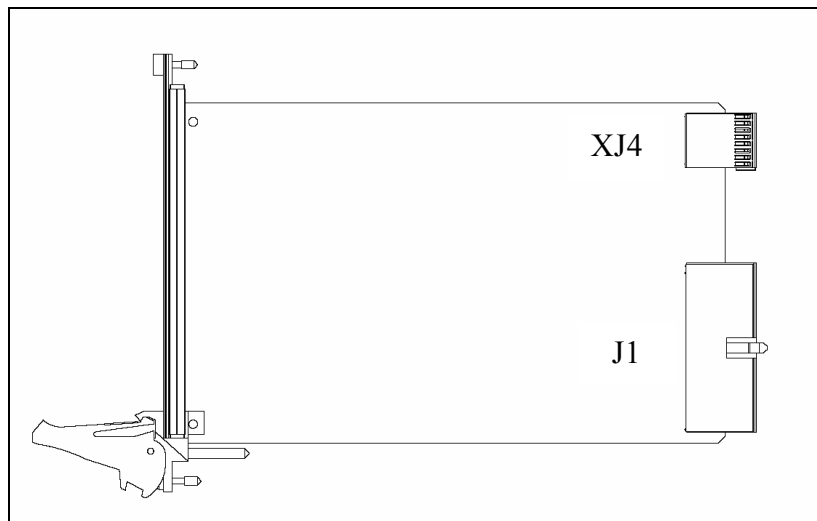


Figure 1 3U Hybrid Slot-Compatible PXI-1 Peripheral Module

Figure 2 shows a 6U Hybrid Slot-Compatible PXI-1 Peripheral Module.

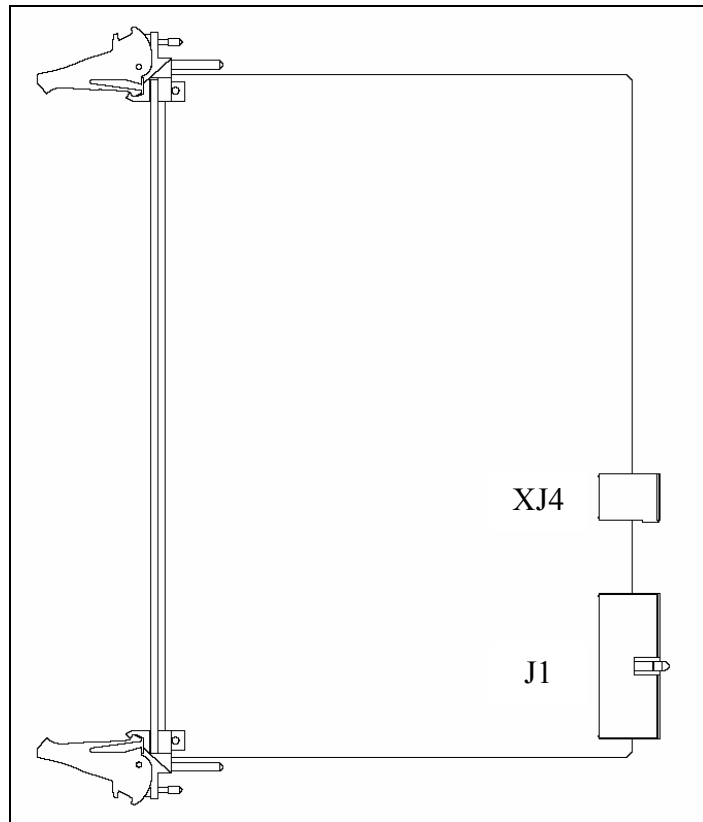


Figure 2 6U Hybrid Slot-Compatible PXI-1 Peripheral Module

Figure 3 shows the Physical Location where the eHM is populated on a 3U Peripheral Module.

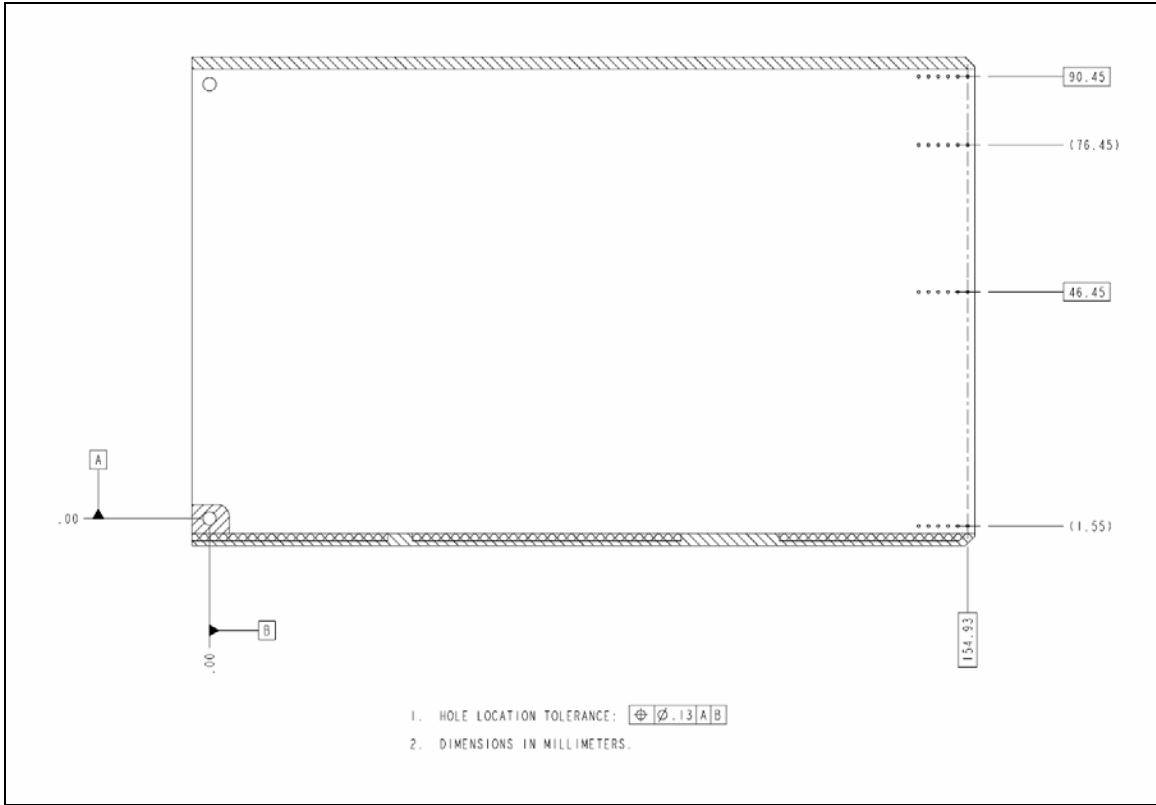


Figure 3 eHM Physical Location on a 3U Peripheral Module

Figure 4 shows the Physical Location where the eHM is populated on a 6U Peripheral Module.

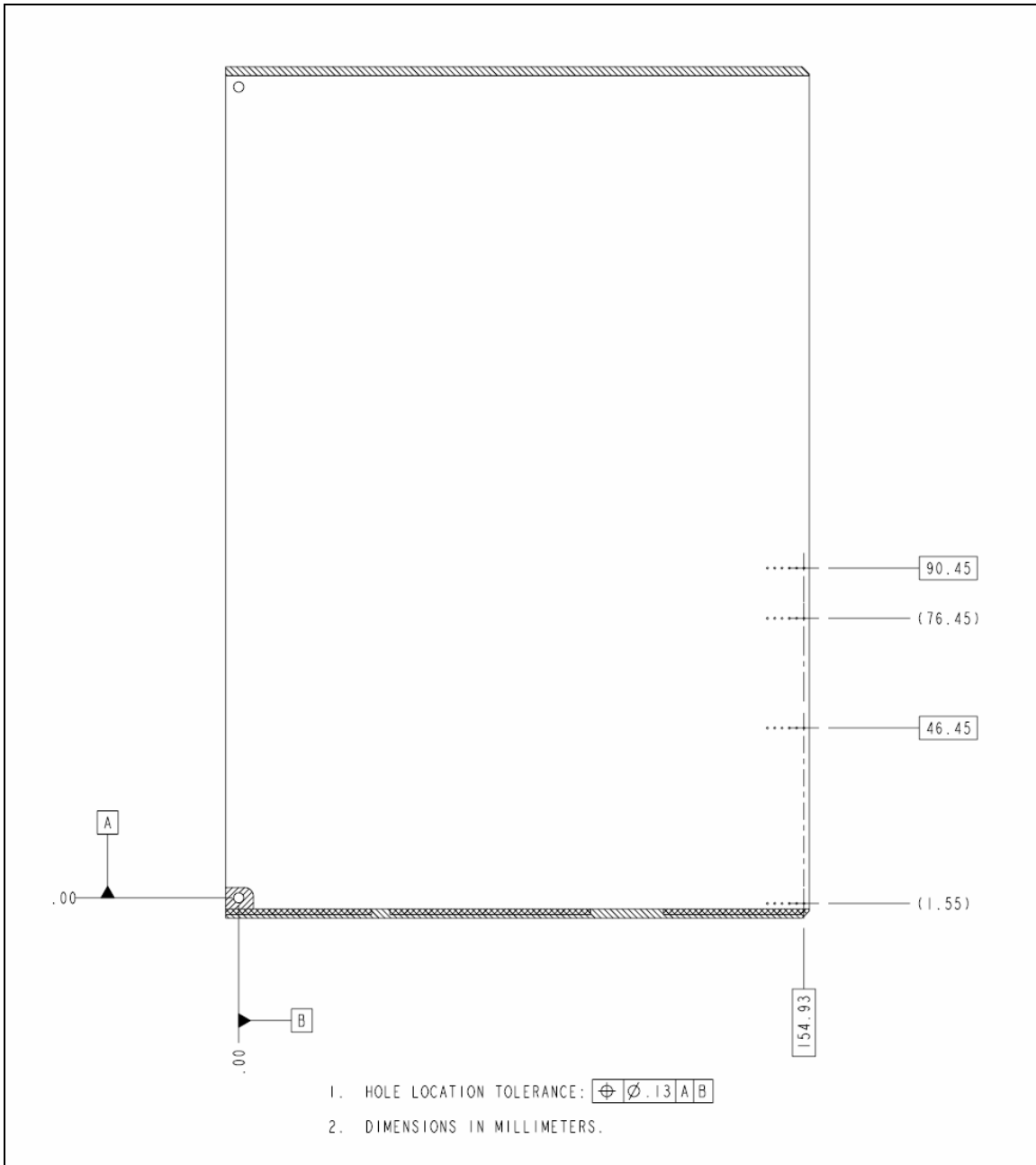


Figure 4 eHM Physical Location on a 6U Peripheral Module