

PCI-8570, PXI-8570

PCI-to-PXI, PXI-to-PXI Extension

Features

- PCI local bus specifications Rev. 2.2 compliant
- PCI to PCI bridge architecture specifications Rev. 1.1 compliant
- PXI specifications Rev. 2.2 compliant
- Direct PC control of PXI/CompactPCI systems
- Multi-chassis configurations for PXI/CompactPCI
- Up to 2 PCI segments extended from single 8570
- Up to 64-bit, 66 MHz PCI bus extension
- StarFabric link performance
 - 528 MB/s peak (64-bit, 66 MHz PCI)
 - 132 MB/s peak (32-bit, 33 MHz PCI)
- Shielded copper cabling
- 10 m maximum distance
- Completely hardware and software transparent
- Independence of operating systems
- Seamless PCI interrupt extension



Introduction

ADLINK PCI/PXI-8570 extension kit is a PCI-to-PXI or PXI-to-PXI extension module that functions as a transparent PCI-PCI bridge register set. Implementing master and slave extension modules, users can have direct control on PXI/CompactPCI chassis from any other PC or another PXI/CompactPCI system. All devices on the system are deemed to be local devices on the same PCI bus.

The PCI interface supports 64-bit or 32-bit PCI buses operating at 66 MHz or 33MHz. By adopting shielded twisted copper cables, PCI-8570/PXI-8570 can extend the transmission distance in no less than 10 m. One master extension card (either PCI-8570 or PXI-8570) can expand up to 2 slave extension modules (PXI-8570) at the same time. A bundled link can support the full bandwidth of 64-bit/66 MHz PCI bus. All interrupts asserted by add-in cards in the extension system are passed through the extension set to the host system.

With ADLINK PCI/PXI-8570, users can combine PCI, CompactPCI, and PXI devices in the same system, increase the available number of PXI/CompactPCI slots for high density I/O application and separate a control system from a harsh environment with an extension chassis.

Specifications

Architecture

- Functions as a PCI-to-PCI bridge
- PCI-to-PCI bridge architecture specifications Rev. 1.1 compliant
- PCI local bus specifications Rev. 2.2
- PXI specifications Rev. 2.2 compliant
- Maximum data throughput
 - 132 MB/s (32-bit, 33 MHz PCI)
 - 528 MB/s (64-bit, 66 MHz PCI)

Certification

- EMC/EMI: CE, FCC Class A

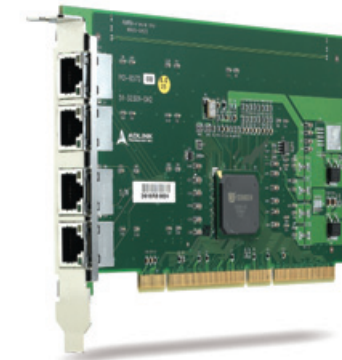
General Specifications

- I/O Connector: RJ-45 connector x 4
- Maximum cable length: 10 m
- Operating temperature: 0 to 55°C
- Storage temperature: -20 to 80°C
- Relative humidity: 10 to 90%, non-condensing
- Power requirements

Device	+5 V	+3.3 V
PCI-8570	190 mA	250 mA
PXI-8570	-	540 mA

- Dimensions (not including connectors)

Device	Dimension
PXI-8570	175 mm x 107 mm
PCI-8570	160 mm x 100 mm



PCI-8570



PXI-8570

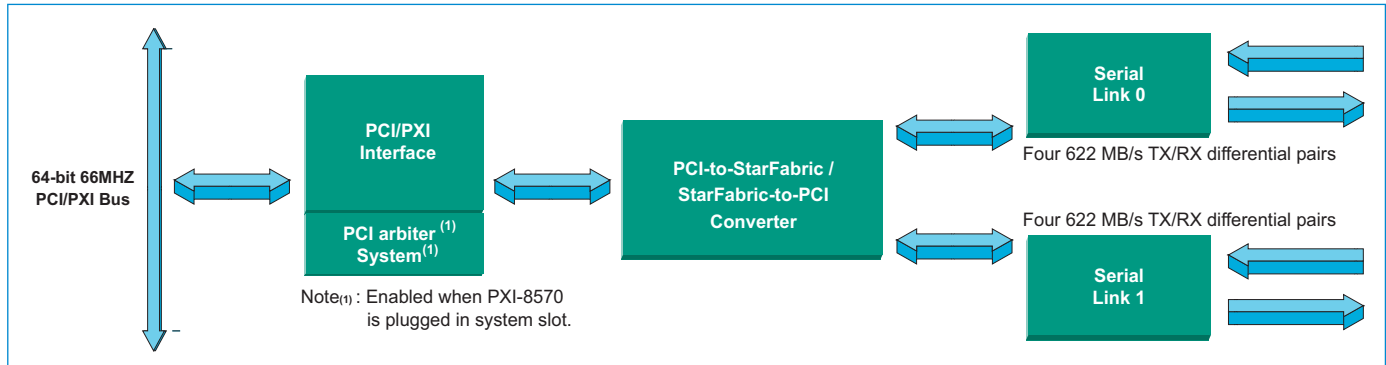


ACL-PXIES-2 cable

Hardware Overview

■ Basic Architecture of PCI Extension Module

The PCI/PXI-8570 extension module is essentially as the PCI-to-PCI bridge. The PCI-to-PCI bridge function in the PCI/PXI-8570 supports legacy address routed traffic, which provides 100% capability with PCI drivers, application software, BIOS, O/Ss, etc. These functions allow users to transfer their designs without extra effort.



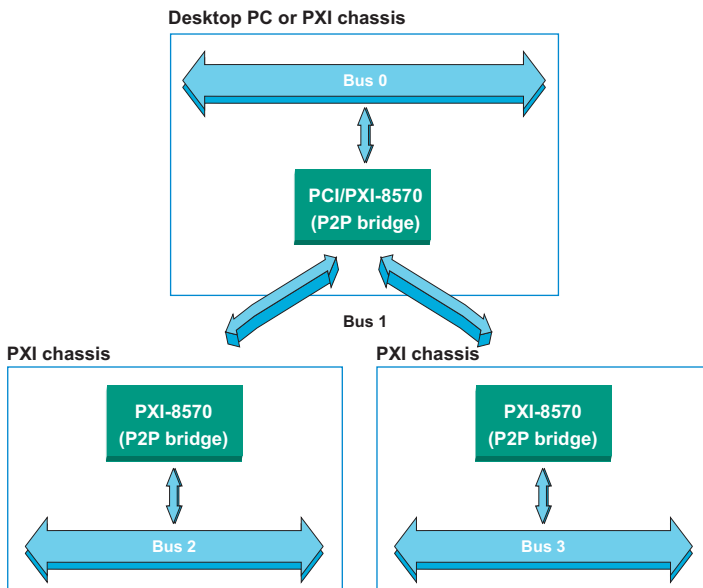
The PCI/PXI-8570 employs a serial interconnect technology, 622 MB/s low voltage differential signaling (LVDS). Each PCI/PXI-8570 extension module has two link ports, Link 0 and Link 1. Each link is divided into transmit (TX) and receive (RX). Four TX and RX differential pairs in each link are used to provide 2.5 Gbps full duplex link bandwidth or 5 Gbps of total bandwidth. Incorporated with the high speed serial LVDS, it is easy to extend the transmission up to 10 meters through shielded twisted pair copper cables.

Inside the PCI-to-PCI bridge, a PCI-to-StarFabric/StarFabric-to-PCI converter is used to translate PCI transactions into StarFabric frames and StarFabric frames into PCI transactions. The PCI interface of the PCI/PXI-8570 is capable of 64-bit/66 MHz. Thus the maximum data throughput can up to 528 MB/s. The PCI interface in PCI/PXI-8570 acts like the primary side of a PCI-to-PCI bridge if PCI/PXI-8570 is plugged into the peripheral slot. The PCI interface in PXI-8570 acts like the secondary side of a PCI-to-PCI bridge if PXI-8570 is plugged into the system slot. The secondary side PCI interface of PCI-to-PCI bridge is responsible to the central resources and system clocks generation.

■ Bus Architecture

Each PCI/PXI-8570 extension module has two link ports. Users can use one of them to extend PCI bus to a PXI chassis or both of them to extend PCI bus to two PXI chassis.

The following figure represents an example of the PCI extension architecture. The desktop PC or PXI system extends the PCI bus to two PXI chassis via PCI/PXI-8570 modules. From the system view, the three PCI/PXI-8570 modules act as three PCI-to-PCI bridges. Thus the serial interconnection between these bridges is also a bus, i.e. bus 1 in this example, although it's not PCI architecture.



Ordering Information

- **PCI-PXI Extension Kit**
Including one PCI-8570, one PXI-8570 and one 2 m cable
- **PCI-8570**
PCI-to-PXI Extension Interface Card for PCI Chassis
- **PXI-8570**
PXI Extension Interface Module for PXI Chassis
- **PXI System Extension Cable Kit**
 - **ACL-PXIES-2**
2 m Copper Cable Kit
 - **ACL-PXIES-5**
5 m Copper Cable Kit
 - **ACL-PXIES-10**
10 m Copper Cable Kit

- 1 Software Solutions
- 2 **PXI/CompactPCI Platforms**
- 3 PXI-Based Instruments
- 4 PXI/CompactPCI Modules
- 5 PCI DAQ Cards
- 6 PCI DIO Cards
- 7 PC/104-Plus Products
- 8 ISA DAS/DIO Cards
- 9 Wiring Termination Boards
- 10 Motion Vision & COM
- 11 Remote I/O Modules
- 12 Industrial Computers