PCI-3488/LPCI-3488/PXI-3488

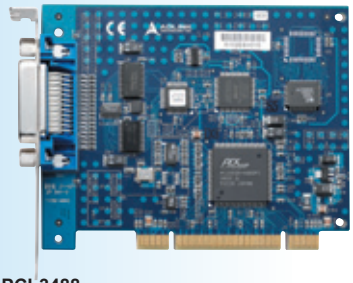
High-Performance IEEE488 GPIB Interface

Features

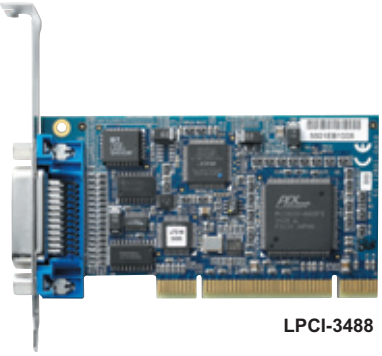
- Fully compatible with IEEE 488 standard
- Supports a 32-bit 3.3 V or 5 V PCI bus (PCI-3488 & LPCI-3488)
- PXI specification Rev. 2.2 compliant (PXI-3488)
- Up to 1.5 MB/s data transfer rates
- Onboard 1 KB FIFO for read/write operations
- Provides driver APIs compatible with NI-488.2* driver software
- Supports industrial-standard VISA library
- Interactive utility for testing and diagnostics

Operating Systems
- Windows Vista/XP/2000/2003

Recommended Software
- VB/VC++/BCB/Delphi
- LabVIEW™*
- LabWindows/CVI*



PCI-3488



LPCI-3488

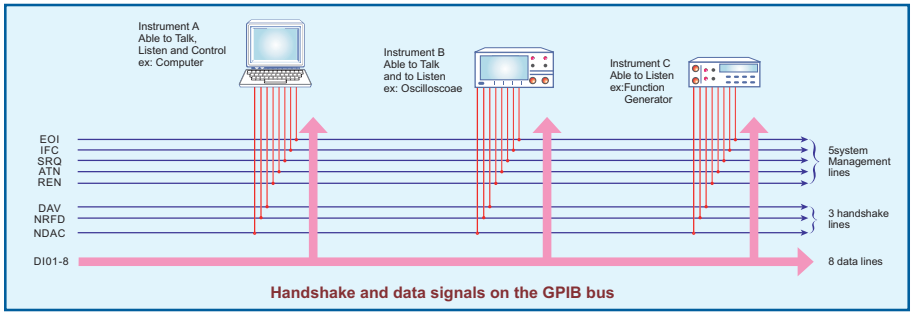


PXI-3488

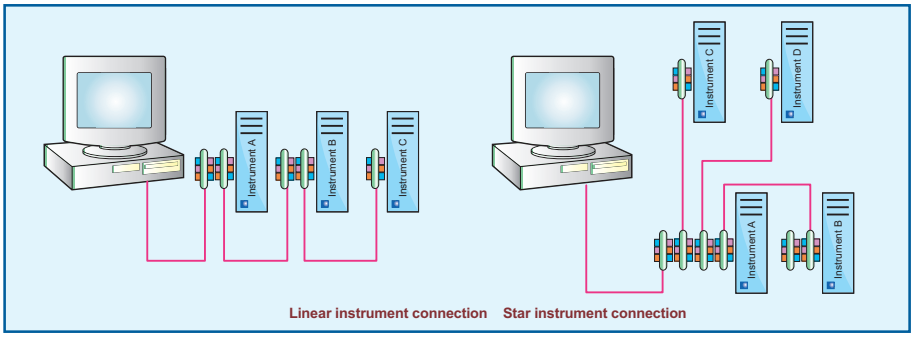
Introduction

The IEEE488 standard, also known as GPIB, is a bus interface that connects instruments with a computer to form an ATE system. GPIB was initially developed by Hewlett Packard and was recognized as an IEEE standard in 1978. The IEEE488.1-1978 standard defines the convention for electrical and mechanical bus characteristics, as well as the state diagram for each bus function. In 1987, another standard was derived from the original IEEE488.1-1978 known as the IEEE488.2-1987. It was introduced to define data formats, common commands, and control protocols for instruments. In general, IEEE488.1 defines hardware specifications, and IEEE488.2 defines software specifications. The IEEE488 standard has been widely accepted by instrument vendors for the past few decades. Today, GPIB is still the most popular interface between computer and instruments.

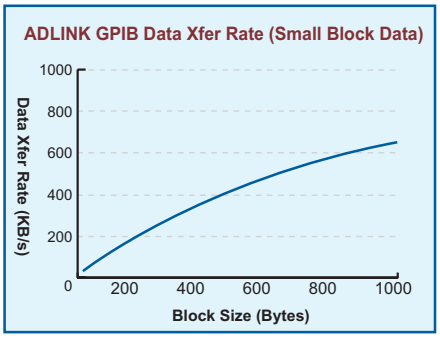
ADLINK's GPIB controller interface cards,are fully compatible with the IEEE488 instrumentation control and communication standard,and are capable of controlling up to 14 stand-alone instruments via IEEE488 cables. They are designed to meet high performance requirements and maximize programming portability. They are equipped with 1 KB onboard FIFO and a block transfer mode able to reach GPIB transfer rates up to 1.5 MB/s. With the Application Program Interfaces (APIs) that are compatible with NI-488.2* driver software and VISA support, ADLINK's GPIB controller interface cards provide the greatest compatibility with your existing applications and instrument drivers.

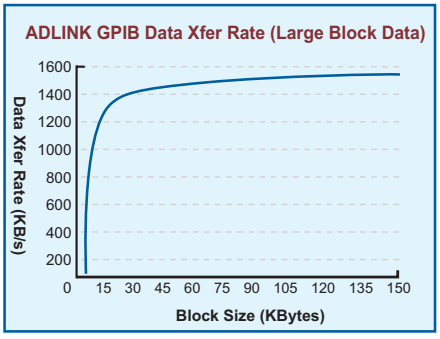


Handshake and data signals on the GPIB bus



Linear instrument connection Star instrument connection





Performance

ADLINK's expertise in the PCI and PXI field was elevated after completing our newest GPIB controller. The PCI-3488 and LPCI-3488 supports both 3.3 V and 5 V PCI buses and can be adapted to most industrial and desktop computers. The PXI-3488 is compliant with PXI specification Rev. 2.2 and can be installed on standard PXI and CompactPCI chassis.

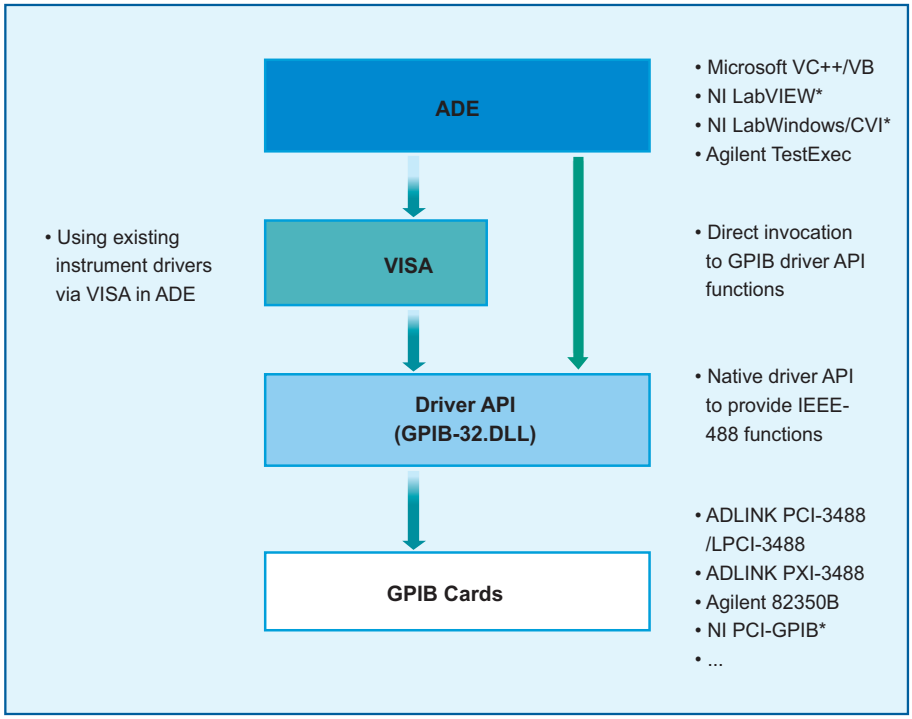
A 1 KB onboard FIFO is placed between the GPIB bus and PCI controller to buffer GPIB read/write operations. The FIFO eliminates the gap between the slower GPIB bus (~1.5 MB/s) and the faster PCI bus (132 MB/s), and dramatically increases overall system performance.

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How ADLINK's GPIB Interface Cards Work?

The objective of a test and measurement application is to test a specific Unit Under Test (UUT) automatically. A typical automatic testing system includes various testing programs and testing equipment connected to the host computer via a GPIB interface. To manage the connections with GPIB instruments, testing programs are usually developed according to the following model:

ADLINK's GPIB interface cards work with your applications in two ways. Its GPIB-32.DLL provides binary compatibility with the popular NI-488.2* driver software. The PCI-3488/LPCI-3488/PXI-3488 also provides VISA library support that can be used most common instrument drivers written by instrument vendors. Regardless if you are using VC++, VB, Delphi, LabVIEW*, or any other T&M ADE, ADLINK's GPIB interface cards are the most cost-effective GPIB solution compatible with all your applications.



Application Development Environments (ADEs) is an the environment where applications are written. These are popular because users can implement any function needed using textual programming (ex. VC++/VB, TestExec) or graphical programming (ex. LabVIEW*) techniques. A vital part of a test and measurement application is to control and communicate with GPIB instruments. Two techniques are generally used to control the GPIB interface: invoking native driver API or using existing instrument drivers via VISA.

A native driver API is provided by most GPIB interface vendors and is usually in the form of ANSI C functions. For users who need more comprehensive control over GPIB instruments, using a driver API with SCPI string commands is a better choice. For others who want to keep away from complicated instrument commands, instrument drivers developed for specific ADEs (ex. LabVIEW*/TestExec) can significantly simplify the complexity of instrument control. Most instrument drivers use a VISA library to control the GPIB interface and to communicate with instruments. VISA support is essential in those cases.

Fully Compatible with Your Existing Applications

ADLINK's GPIB interface cards come with complete software support, including a driver API that is fully binary compatible with NI-488.2* driver software. All programs written for the interface cards is based on GPIB-32.DLL and can be executed on the PCI-3488/LPCI-3488/PXI-3488 without any modification. The interface cards also support the VISA library in order to ensure compatibility with applications utilizing VISA. ADLINK's GPIB interface cards are all "Plug and Play" compatible, thus can work with all your existing applications.

ADLINK's PCI-3488 works with your applications in both ways. Its GPIB-32.DLL, provides the binary compatibility with the world's most popular NI-488.2* GPIB commands. The PCI-3488 also provides VISA library support that can be used with most common instrument drivers written by instrument vendors. Regardless if you are using VC++, VB, Delphi, LabVIEW*, or any other T&M ADE, PCI-3488 is the most cost-effective GPIB solution compatible with all your applications.

Specifications

GPIB Bus Specification

- Up to 14 instruments connected
- Maximal 1.5 MB/s data transfer rate
- Cable length
  - 2 meters between each instrument (suggested)
  - 20 meters total cable length
- Data transfer mode: 8 bits parallel
- Handshake: 3 wire handshake, reception of each data byte is acknowledged

Certificate

- EMC/EMI: CE, FCC Class A

Programming Interface

- VB/VC++/BCB/Delphi
- LabVIEW™*
- LabWindows/CVI*

General Specification

- I/O connector : IEEE 488 standard 24-pin
- Operating temperature : 0 to 55˚C
- Storage temperature : -20 to 80˚C
- Relative humidity : 5 to 95%, non-condensing
- Power Consumption

Power consumption	
+5 V	+3.3 V
400 mA (typical) 750 mA (maximum)	400 mA (typical) 750 mA (maximum)

- Dimension :
  - PCI-3488:
    134 mm x 107 mm (not including connectors)
  - LPCI-3488:
    120 mm x 64.5 mm (not including connectors)
  - PXI-3488:
    160 mm x 100 mm (not including connectors)

Ordering Information

- **PCI-3488**
  High-Performance IEEE488 GPIB Interface card for PCI bus
- **LPCI-3488**
  High-Performance IEEE488 GPIB Interface card for low-profile PCI bus, shipped with an additional low-profile bracket.
- **PXI-3488**
  High-Performance IEEE488 GPIB Interface card for PXI/CompactPCI bus
- **ACL-IEEE488-1**
  IEEE 488 standard cable, 1 meter length
- **ACL-IEEE488-2**
  IEEE 488 standard cable, 2 meter length
- **ACL-IEEE488-4**
  IEEE 488 standard cable, 4 meter length
- **ACL-IEEE488-8**
  IEEE 488 standard cable, 8 meter length

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