

GPIB Interfaces for VMEbus

NI VME-GPIB

- 2 GPIB ports on the front panel
 - FIFO buffers decouple GPIB transfers from VME transfers
 - Complete IEEE 488 Talker/Listener/Controller
- 6U VMEbus interface board with ejector handles
- High-performance DMA transfers
 - More than 2.0 Mbytes/s (IEEE 488.1)
 - More than 6.5 Mbytes/s (HS488)
 - Unlimited data block lengths
 - Full 24-bit addressing
 - General-purpose DMA capability
- Programmable configuration
 - 1 of 4 bus request/grant lines
 - 1 of 7 interrupt request lines
- Supervisor or user access
- VMEbus SYSFAIL and board ACCESSED front panel Indicators
- Complies with IEEE 1014 (VMEbus) standard

NI PMC-GPIB

- Complete IEEE 488 interface on PMC daughter card

Operating Systems

- Any operating system (examples included for Solaris)

Driver Software (included)

- NI-488DDK



Overview

National Instruments offers two high-performance solutions for GPIB control in VME systems – the VME-GPIB and the PMC-GPIB. Both solutions implement the full range of GPIB controller functions. Both solutions handle normal and extended talker and listener, serial and parallel poll, service request, and remote programming functions.

VME-GPIB

The National Instruments VME-GPIB is a high-performance IEEE 488 interface for VMEbus. The electrical, timing, and mechanical characteristics of the NI VME-GPIB conform to both IEEE 1014 (VMEbus) and IEEE 488 standards.

The National Instruments ASICs make the VME-GPIB a maximum performance IEEE 488.2 interface for the VMEbus. The VME-GPIB can sustain data transfer rates of more than 2.0 Mbytes/s using the IEEE 488.1 3-wire interlocked handshake. The VME-GPIB also implements the high-speed HS488 GPIB protocol for benchmarked data transfers at more than 6.5 Mbytes/s. Figure 1 shows the VME-GPIB block diagram.

Each GPIB port on the VME-GPIB is connected to a dedicated DMA controller.

PMC-GPIB Daughtercard

The National Instruments PMC-GPIB is our daughter card GPIB solution for VME systems. You can install the PMC-GPIB on any VME board with PMC slots. See page 683 for more information about the PMC-GPIB.

NI-488DDK

The NI-488DDK (driver development kit) is a comprehensive source code package for developing applications for operating systems other than those supported by a standard NI-488.2 driver. NI-488DDK consists of more than 20 board-level functions provided in source code to give you a head start when you must design your own GPIB driver. Because the NI-488DDK is a subset of our NI-488.2 and uses the same syntax, migration of applications from NI-488DDK to NI-488.2 is straightforward. Refer to page 683 for software options for the PMC-GPIB.

| Compliance | Mode | Description |
|---------------------------|-------------|--|
| D64, D32, D16 and D8 (EO) | Slave | Offers 8, 16, 32, or 64-bit data path to DMA controller or GPIB controller |
| A16 | Slave | Responds to 16-bit I/O addresses |
| D64, D32, D16 and D8 (EO) | Master | Handles 8, 16, 32, or 64-bit data transfers |
| A24 | Master | Provides full 24-bit addressing |
| R0R | Requester | Offers programmable release on request |
| D8 (0) | Interrupter | Provides 8-bit status/ID byte |

Table 1. IEEE 1014 Compliance Levels

GPIB Interfaces for VMEbus

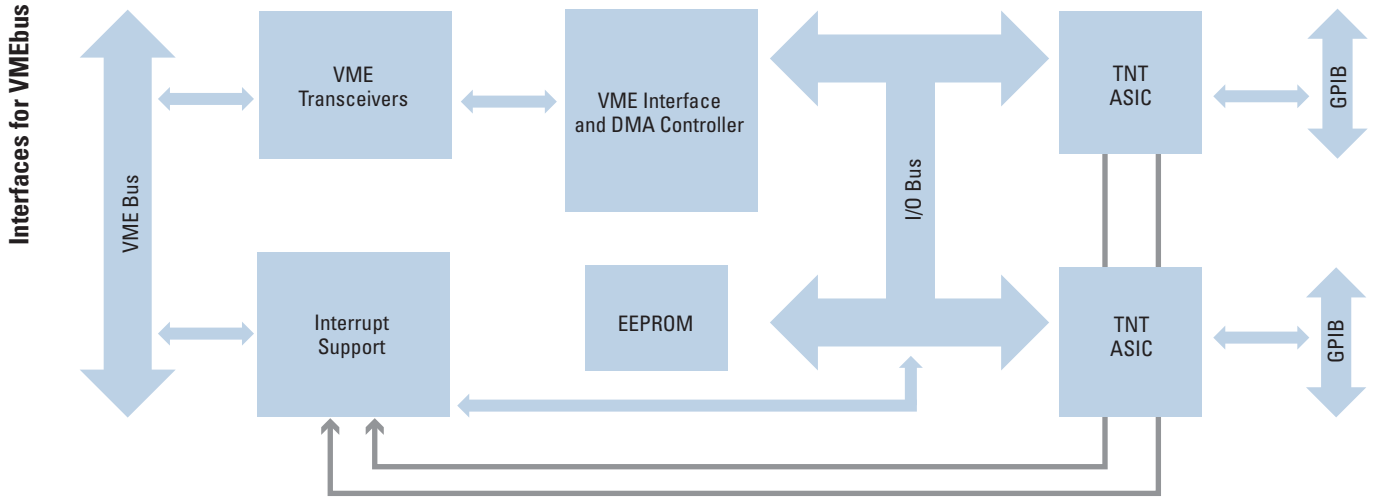


Figure 1. VME-GPIB Block Diagram

Ordering Information

Hardware and Software

| | |
|---|-----------|
| VME-GPIB and NI-488DDK | 778677-01 |
| PMC-GPIB, NI-488.2, and 2 m GPIB cable for | |
| Windows 2000/XP/Me/98..... | 778040-01 |
| Windows NT | 777485-01 |
| Windows 95 | 777486-01 |
| PMC-GPIB, NI-488DDK, and 2 m GPIB cable | 777431-01 |

Hardware

| | |
|----------------|-----------|
| VME-GPIB | 778578-01 |
|----------------|-----------|

BUY ONLINE!

Visit ni.com/info and enter *vmegpib*.

Specifications

IEEE 488 Transfer Rates

| | |
|--|------------------------|
| IEEE 488 interlocked handshake | More than 2.0 Mbytes/s |
| IEEE 488 non-interlocked (HS488) handshake ... | More than 6.4 Mbytes/s |

Physical

| | |
|----------------------|--------------------------------|
| Dimensions | 16 by 23.4 cm (6.3 by 9.2 in.) |
| I/O Connectors | IEEE 488 standard 24 pin |

Power Requirement

| | |
|--------------|----------------|
| +5 VDC | 800 mA typical |
|--------------|----------------|

Operating Environment

| | |
|-------------------------|--------------------------|
| Temperature | 0 to 55 °C |
| Relative humidity | 10 to 90%, noncondensing |

Storage Environment

| | |
|-------------------------|-------------------------|
| Temperature | -20 to 70 °C |
| Relative humidity | 5 to 95%, noncondensing |

Compliance

Online at ni.com/hardref.nsf