

GPIB Serial Port Controller/Converter

NI GPIB-RS485/422

- RoHS-compliant
- Completely IEEE 488.2-compatible
- Maximum data transfer rates (baud rates) of 115.2 kb/s; hardware handshaking and XON/XOFF protocols prevent data loss
- Extends GPIB to cable lengths up to 1.2 km (4,000 ft)
- External 12 VDC universal power supply (100 to 240 VAC input)
- Compatible with RS422 ports
- Host configuration utility to configure mode of operation (software-selectable modes for compatibility with existing GPIB-485CT-A and adds CV-A capability)
- 4 modes of operation
 - S Mode – control GPIB-based instruments from your PC using RS485/422
 - G Mode – integrate an RS485/422 instrument into your GPIB system; change serial parameters in software
 - C Mode – control a single GPIB instrument through your RS485/422 port (simple protocol translation)
 - D Mode – interface an RS485/422 instrument to a GPIB bus; configure serial parameters up front
- Optional rack-mount and DIN-rail hardware kits



Overview

The National Instruments GPIB-RS485/RS422 is a high-performance serial-to-GPIB interface. With it connected, a computer with an RS485 or RS422 serial port can be a talker, listener, or controller on the GPIB bus. The NI GPIB-RS485/422 can also interface RS485 or RS422 instruments and peripherals to the GPIB.

The GPIB-RS485/422 has all the software and logic required to implement the physical and electrical specifications of the IEEE 488, RS485, and RS422 standards. It can interpret and execute high-level commands you send to it over the serial port, performing all GPIB-to-RS485 and GPIB-to-RS422 protocol conversions. The GPIB-RS485/422 uses the TNT5004 controller chip, implementing all IEEE 488 talker/listener/controller functionality.

Two protection mechanisms ensure that the GPIB-RS485/422 does not lose incoming serial data – data buffering and handshaking. The GPIB-RS485/422 has an internal RAM buffer that stores incoming serial data until it can output the data to the GPIB port. The serial RAM buffer size is 1 MB. When the serial RAM buffer is nearly full, the GPIB-RS485/422 can handshake with the serial host to stop data transmission. When more space is available in the buffer, the GPIB-RS485/422 can again handshake with the serial host to start data transmission. The GPIB-RS485/422 can use both the XON/XOFF software handshaking and the hardware handshaking protocols.

Modes of Operation

The GPIB-RS485/422 has four software-selectable modes of operation, ensuring compatibility with existing applications:

S Mode

Configure the GPIB-RS485/422 to operate in S Mode if your serial device acts as a controller in the GPIB system, addressing one or more devices, and performing other GPIB controller functions.

G Mode

Configure the GPIB-RS485/422 to operate in G Mode if your serial device acts only as a talker and/or listener while a GPIB controller manages the system, sending and receiving data to and from the serial device.

D Mode

Set the GPIB-RS485/422 to operate in D Mode to connect a serial device to a GPIB system with a GPIB controller responsible for addressing the GPIB-RS485/422 to talk or listen.

C Mode

Set the GPIB-RS485/422 to operate in C Mode when transferring data between a single GPIB device with no controller capabilities and a serial device.

GPIB Serial Port Controller/Converter

Specifications

IEEE 488 Compatibility

IEEE 488.1 and IEEE 488.2 compatible

Data Transfer Rate

RS485/422..... Up to 115.2 kb/s

Physical

Dimensions..... 16.01 by 9.35 by 3.15 cm
(6.30 by 3.68 by 1.24 in.)

Weight..... 196 g (6.875 oz)

Connectors

GPIB IEEE 488 24-pin
RS485/422..... DB-9 male
DC power Coaxial plug (single
output models)
5.5 mm outer diameter,
2.1 mm inner diameter,
11 mm length, center "+"

Power Requirements

Input voltage range..... 9 to 28 VDC
Current consumption (@12 VDC)..... 800 mA max, 300 mA typical
Internally fused (nonreplaceable)
F 2.2 A 125 V (fast-acting)

12 VDC power supply (included)
Input voltage/current range 100 to 240 VAC, 0.4 A,
47 to 63 Hz

Operating Environment

Ambient temperature..... 0 to 55 °C

(Note: For the GPIB-RS485/422 to operate over the entire specified ambient temperature range, stacking the product is not recommended.)

Relative humidity 10 to 90%, noncondensing

Maximum altitude..... 2,000 m
(at 25 °C ambient temperature)

Pollution degree 2

Indoor use only (in accordance with IEC-60068-2-1, IEC-60068-2-2, and IEC-60068-2-56).

Storage Environment

Ambient temperature..... -20 to 70 °C

Relative humidity 5 to 95%, noncondensing

(in accordance with IEC-60068-2-1, IEC-60068-2-2, and IEC-60068-2-56)

Shock and Vibration

Operational shock 30 g peak, half-sine,
11 ms pulse

(in accordance with IEC-60068-2-27; test profile developed in accordance with MIL-PRF-28800F)

Random Vibration

Operating..... 5 to 500 Hz, 0.3 g_{rms}

Nonoperating 5 to 500 Hz, 2.4 g_{rms}

(in accordance with IEC-60068-2-64; test profile developed in accordance with MIL-PRF-28800F, Class 3)

Compliance and Safety

Online at ni.com/certification

Ordering Information

NI GPIB-RS485/422

U.S. 120 VAC779733-01

Universal Euro 240 VAC779733-04

BUY NOW!

For complete product specifications, pricing, and accessory information, call 800 813 3693 (U.S.) or go to ni.com/gpib.

NI Services and Support



NI has the services and support to meet your needs around the globe and through the application life cycle – from planning and development through deployment and ongoing maintenance. We offer services and service levels to meet customer requirements in research, design, validation, and manufacturing. Visit ni.com/services.

Training and Certification

NI training is the fastest, most certain route to productivity with our products. NI training can shorten your learning curve, save development time, and reduce maintenance costs over the application life cycle. We schedule instructor-led courses in cities worldwide, or we can hold a course at your facility. We also offer a professional certification program that identifies individuals who have high levels of skill and knowledge on using NI products. Visit ni.com/training.

Professional Services

Our Professional Services Team is composed of NI applications engineers, NI Consulting Services, and a worldwide National Instruments Alliance Partner program of more than 600 independent consultants and

integrators. Services range from start-up assistance to turnkey system integration.

Visit ni.com/alliance.



OEM Support

We offer design-in consulting and product integration assistance if you want to use our products for OEM applications. For information about special pricing and services for OEM customers, visit ni.com/oem.

Local Sales and Technical Support

In offices worldwide, our staff is local to the country, giving you access to engineers who speak your language. NI delivers industry-leading technical support through online knowledge bases, our applications engineers, and access to 14,000 measurement and automation professionals within NI Developer Exchange forums. Find immediate answers to your questions at ni.com/support.

We also offer service programs that provide automatic upgrades to your application development environment and higher levels of technical support. Visit ni.com/ssp.

Hardware Services

NI Factory Installation Services

NI Factory Installation Services (FIS) is the fastest and easiest way to use your PXI or PXI/SCXI combination systems right out of the box. Trained NI technicians install the software and hardware and configure the system to your specifications. NI extends the standard warranty by one year on hardware components (controllers, chassis, modules) purchased with FIS. To use FIS, simply configure your system online with ni.com/pxiadvisor.

Calibration Services

NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. We provide manual calibration procedures, services to recalibrate your products, and automated calibration software specifically designed for use by metrology laboratories. Visit ni.com/calibration.

Repair and Extended Warranty

NI provides complete repair services for our products. Express repair and advance replacement services are also available. We offer extended warranties to help you meet project life-cycle requirements. Visit ni.com/services.



ni.com • 800 813 3693

National Instruments • info@ni.com

