

PC GPIB PRODUCTS

1105

USB-to-GPIB HUB CONTROLLER

- Converts any PC with a USB interface into a GPIB Bus Controller.
Lets any PC control GPIB and HP-IB Devices.
- Completely IEEE-488.2 Compatible
Runs all required command protocols.
- NI 488.2 Compatible Command Library
Runs C/C++, Visual Basic, LabView, BenchLink, VEE and IntuiLink plus other NI compatible programs.
- Hub function provides 6 powered USB ports.
Expands USB system to control USB based instruments.
- Includes ICS's Explorer and GPIB Keyboard programs for interactive control of GPIB devices.
Lets you try out commands and control instruments without writing a program.
- Includes GPIB AnyWhere
Lets you control your GPIB devices from a remote computer or over the Internet.

DESCRIPTION

ICS's Model 1105 USB-to-GPIB Hub Controller combines a GPIB Controller and a USB Hub in a single rugged unit. The GPIB Controller function converts any PC with a USB interface into a full-function, IEEE 488.2 Bus Controller. The USB Hub function provides six powered USB ports that can be used to expand the USB bus system and drive other USB devices or USB based instruments. The 1105 is a Plug & Play USB peripheral that is fully compatible with Windows 2K, XP and Vista (32-bit) operating systems. The Model 1105 is housed in a small Minibox™ case that can be rack mounted or used as a stand-alone box on the bench top.

Now with ICS's new 488.2V3 Drivers



USB-to-GPIB Hub Controller

Applications

The 1105 is the first USB-to-GPIB Controller to include a USB Hub. As such, it can control both GPIB and USB based instruments. Mixed instrument control and rack mounting makes the 1105 the ideal Controller for test systems with GPIB and USB based instruments. The 1105's rugged design makes it superior to commercial USB hubs for heavy duty or prolonged high temperature operation.

GPIB Controller

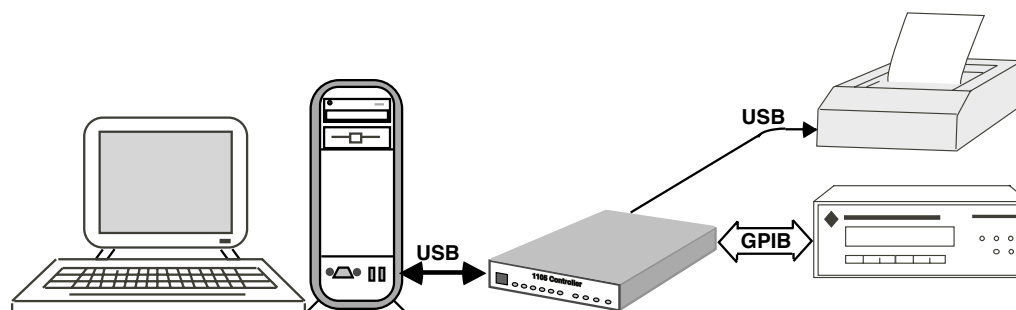
As a GPIB Controller the 1105 performs all of the basic IEEE 488.1 functions such as talker, listener and system controller. It directly drives up to 14 devices and 20 meters of GPIB bus cables and can drive more devices when used with the appropriate Bus Expanders. LEDs on the front panel display GPIB bus status for troubleshooting system problems.

Driver Library

ICS's new 488.2V3 multi-controller Driver Library supports the National Instruments' style 488.1 'ib' and 488.2 command sets with its own GPIB-32.DLL. It is command compatible with GPIB Controllers from National Instruments, Measurement Computing, CEC, and others. ICS's 488.2V3 Driver supports C, C#, Visual Basic 6, and Visual Basic.NET (2005) programs that make GPIB-32.DLL calls.

ICS's 488.2V3 Driver is also compatible with National Instruments' VISA and Agilent's VISA/SICL libraries. This industry standard compatibility lets the 1105 run LabVIEW and LabWindows/CVI, VEE, MATLAB, TestPoint and other programs that make VISA calls.

Use the 1105 with ICS's older 488.2 Driver for Windows 98 and Me systems or when you need support for ICS's PC2 command set.



Model 1105 shown controlling an Instrument and driving a Printer



CE Approved



7034 Commerce Circle
Pleasanton, CA 94588
Phone: 925.416.1000
Fax: 925.416.0105
Web: www.icselect.com

Included Utility Programs

The 488.2V3 Driver includes ICS's new Explorer program and individual GPIBkybd and Configure programs for non-.NET systems. The user must run Explorer or the separate configure program to complete the 1105 installation.

ICS's Explorer is a .NET utility that takes advantage of Microsoft's .NET Framework's added capabilities to automate and improve your GPIB Controller experience. Explorer requires .NET Framework 2.0 or later. .NET is included with Vista or with Visual Studio 2005 and can be downloaded from Microsoft's website. A manual Configuration utility and GPIBkybd program are provided for users who do not have or do not want to install .NET Framework on their computers.

ICS Explorer Program

ICS's new Explorer program automatically configures your Controllers then locates and displays all compatible GPIB Controllers and Devices in your system. ICS's Explorer can display up to 16 GPIB Controllers and their instruments.

From the Tree window you can examine every device, link to the Configure and Communicate with Instrument forms or verify the software installation. The Configure form lets you quickly view and change the Controller's settings. The Communicate with Instrument form lets you interactively control any GPIB device from the computer keyboard without having to write a program. The Communicate form is ideal for testing the Model 1105, for exercising GPIB devices or for trying out device commands before using them in a program.



ICS Explorer Main Window

Configure

Configure is a Windows utility program that lets the user add GPIB Controllers to his system and to set their configuration settings.

The user can configure up to 16 GPIB Controllers. The Configure utility is similar to the Configure capability in Explorer except the user has to manually add new controllers to the Configuration file.

Keyboard Controller Program

The 1105 includes an enhanced version of ICS's Keyboard Controller program for Windows which provides interactive control of GPIB devices from the computer keyboard without having to write a program. The Keyboard Controller program is the ideal utility program for testing the 1105 Controller, for exercising GPIB devices or for trying out device commands before using them in a program.



GPIB Keyboard Window

GPIB AnyWhere™ Software

The 1105 also includes a license for ICS's GPIB AnyWhere™ software that lets you control your GPIB instruments from anywhere over the Internet or over an in-house network. GPIB AnyWhere™ adds a service to the host PC with the GPIB Controller and a client application to your desktop so that you can remotely control any GPIB devices connected to the host computer from your desktop. GPIB AnyWhere can control ICS controllers or ICS compatible controllers that install a GPIB-32.DLL on the host computer.

Ease of Installation

ICS's 1105 Module is very easy to install. First run the software installation program to load the 488.2V3 Driver into the PC. Next use the included USB cable to plug the 1105 into an open USB port. The Windows operating system will automatically detect the 1105 module and make it available to your program.

Never obsolete

ICS's 1105 has a soft boot feature which downloads the controller firmware over the USB bus. When a future firmware change occurs, it can be downloaded from ICS's website. The 1105 will be automatically updated the next time the PC is re-booted or when the 1105 is reconnected to the PC.

USB Hub

As a USB Hub, the 1105 provides six powered USB ports that meet the USB 1.1 Specification. Each port meets the USB 1.1 specification and can supply up to 500 milliamperes of power at 5 volts DC with over current fault protection. Each USB port can be used to drive non-powered USB devices such as mice, joysticks, keyboards etc. The USB ports can also be used to drive the new class of IEEE-488.2 instruments with USB interfaces. Front panel LEDs display the status of each port.

The 1105's rear panel contains six downstream USB ports and one upstream USB port as shown below.



1105 Rear Panel

Rack Mounting

The 1105 is designed to be rack mounted or used on a bench top. All GPIB and USB connections are made on the rear panel. The front panel contains the power switch and the diagnostic LEDs which display USB and GPIB bus status. The 1105 can be rack mounted by installing it in one of ICS's Minibox™ rack mounting kits. The kits require only a 1 U high space and fit in a standard RETMA or DIN 19 inch wide rack.



Dual Large Rack Mounting Kit

The above figure shows a rack mounting kit that holds two 1105 size Miniboxes™. Kits are available for a single 1105 and for a 1105 with another large or small Minibox™ device.

1105 SPECIFICATIONS

GPIB Capabilities

IEEE 488.1 Capabilities:

The 488-USB2 meets IEEE-STD-488.1 with the following capabilities:

AH1, SH1, C1, C2, C3, C4, and C9

E2 Drivers incorporate power up/down protection and signal filtering.

IEEE 488.2 Capabilities:

Includes all required 488.2 controller protocols and the ability to monitor the bus signal lines.

GPIB Handshake Rate

1105 100 kbytes/sec

USB Specifications

Device Type:

USB 1.1 Full-speed device
Bus Powered

Compatibility:

USB 1.1 and USB 2.0 compatible

Hub Specifications:

The 1105 USB-to-GPIB Hub Controller is USB 1.1 compliant. It meets or exceeds all USB standards for a self-powered hub. The hub design provides individual power switching, over-current protection and USB repeater for each downstream port. Upon detection of downstream errors, the Hub communicates the error condition to the host and disables the respective port.

Hub Driver

Microsoft generic hub driver supplied in Windows 98/Me/2K/XP and Vista operating systems.

Number of ports: 6

Transfer Rate: Up to 12 Mbs.

Current capacity: 0.5 amperes at 5 Vdc.

Power protection: Over-current detection on each port.

LabView is a trademark of National Instruments, Austin, TX.
VEE, IntuiLink and Benchlink are trademarks of Agilent Technologies, Palo Alto, CA.
GPIB AnyWhere is a trademark of ICS Electronics

488.2V3 Driver Capabilities

ICS's new 488.2V3 Driver provides the following capabilities:

Supported Operating Systems

488.2V3 Driver Windows 2K, XP and Vista 32-bit
488.2 Driver Windows 98 and Me

Commands

Full NI 488.1 and 488.2 command sets except for Parallel Poll, Pass Control and device operation.

Number of Controllers

Sixteen. Any mix of the following ICS Controllers:

488-USB, 488-USB2, 488-LPCI, 488-PXI and the Model 1105.

Windows Supported Languages:

Microsoft Visual C/C++
Microsoft Visual Basic 6
Microsoft Visual Studio 2005 Visual Basic and C/C#

Included Utility Programs

ICS Explorer - Performs automatic Controller configuration after driver installation and finds all GPIB devices. Provides Configure, Communicate with Instrument and Installation Verification capabilities.
GPIBkybd - Finds and controls GPIB devices.
Configure - Manual Controller configuration.

Test Programs Compatibility

488-USB2 and 488.2V3 driver support:
Agilent Vee (3.1 thru 6.0)
CEC Testpoint with VISA
Labview (5.1 thru 8.2)
MathWorks MATLAB* with VISA
Tektronix WaveStar
Transera HTBasic

Notes: * requires additional mfr software

System Requirements

Intel type PC with a USB 1.1 or USB 2.0 USB port.

Windows 2K/XP/Vista32 with latest upgrades.
20 Mbytes of free Hard Disk space.

.NET Framework 2.0 or later for ICS Explorer.

Physical

Size W x H x D

185.2 x 38.6 x 185.2 mm
(7.29 x 1.52 x 7.29 inches)

Weight

.82 kg (1.82 lbs)

Temperature

Operating 0 °C to +55 °C
Storage -20 °C to + 80 °C

Connectors

IEEE 488 Standard 24-pin connector with metric lockstuds
One USB Female B connector
Six USB Female A connectors

Indicators

PWR, 6 USB Ports, RDY, TALK, LSTN, ATN and SRQ LEDs

Power

AC Powered Uses 18 to 24 VA of unregulated 9-32 Vdc power from the supplied wall mounted AC adapter.

RFI/EMI

CE, FCC Class A
ED89/336/EEC
EN55082-2, EN50081-1

Included Accessories

488.2V3 Instruction Manual with complete programming instructions and command definitions.

Older 488.2 Driver and Manual available on request for Windows 98/Me installations.

USB 2.0 Cable, 6 foot long.

Support CD with ICS 488.2V3 Driver, command libraries, example programs, ICS Explorer and GPIB AnyWhere™ program.

UL/CSA/VDE approved AC power adapters provided for:

US = 115±10% Vac, 60 Hz (std)

E = Europe - 230±10% Vac, 50/60 Hz

B = UK - 230±10% Vac, 60 Hz

A = Australia- 230±10% Vac, 60 Hz

Japan= 100±10% Vac, 50/60 Hz

ORDERING INFORMATION

USB-to-GPIB Hub Controller with 115 VAC adapter

USB-to-GPIB Hub Controller with 230 VAC adapter

GPIB Accessory Cables

Rack Mounting Kits

Part Number

1105

(Specify country/plug style) -E(Europe), -B(UK), -A(Australia)

See separate data sheet

114212 (Single unit kit), 114213 (Dual unit kit), 114227 (Mixed large/small unit kit)