# 488-USB

**USB-to-GPIB CONTROLLER MODULE for PCs**

**NEW**

## DESCRIPTION

ICS's 488-USB is a small USB-to-GPIB Controller Module that converts any PC with a USB interface into a full-function, IEEE 488.2 Bus Controller. The 488-USB performs all of the basic IEEE 488.1 functions such as talker, listener and system controller. Its IEEE-488.2 controller routines make it fully compliant with the IEEE 488.2 specification. The 488-USB module is a Plug & Play USB peripheral that is fully compatible with Windows 98, ME, 2000 and XP operating systems.

### Hardware

ICS's 488-USB Controller is a small module that plugs onto any open GPIB connector. The open GPIB connector can be the open end of a cable stack, on the back of an instrument or an unused connector on ICS's GPIB BusStrip™. Finger size jackscrews secure and hold the 488-USB module in any position. Three LEDs provide visual status and diagnostic help for troubleshooting system problems.

### Software

The 488-USB includes ICS's 488.2 Driver which supports Windows 98, ME, 2000 and XP operating systems. The 488.2 Driver includes National Instruments' style 488.1 'ib' and 488.2 command sets plus ICS's 488-PC2 Command Set. Release 1.6 provides support to run Visual Basic and C language programs and for LabView. The upcoming Release 2 will complete the VISA support and also support Agilent's VEE programs. Example programs are provided for C/C++ and Visual Basic. Use ICS's 488-PC2 Command Set to adapt an existing 488-PC2 programs to newer PCs with USB interfaces.

### Keyboard Controller Program

The 488-USB includes a new 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 488-USB Controller, for exercising GPIB devices or for trying out device commands before using them in a program.

### Ease of Installation

ICS's 488-USB Module is very easy to install. First run the software installation program to load the driver. Next use the included USB cable to plug the Module into a open USB port. The Windows operating system will automatically detect the 488-USB module and make it available to your program.

### Never obsolete

ICS's 488-USB has a soft boot feature which downloads the controller firmware over the USB bus. When a future firmware change like Release 2 occurs, it can be downloaded to the PC from ICS's website. The 488-USB will be updated the next time the PC is re-booted or when the 488-USB is reconnected to the PC

- 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, Visual Basic and LabView programs with NI style command sets.*

- Includes ICS's GPIB Keyboard Controller program for interactive control of GPIB devices.
  *Lets you try out commands and control instruments without writing a program.*

- Windows Plug&Play.
  *Easy USB installation - No dip switches to set or resource conflicts.*

- Firmware downloaded over USB bus
  *Upgrade as new drivers become available.*

CE *Approved*

**LabVIEW**

**ICS**
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# 488-USB SPECIFICATIONS

## GPIB Capabilities

### IEEE 488.1 Capabilities:
The 488-USB meets IEEE-STD-488.1 with the following capabilities:
   AH1, SH1, C1, C2, C3, C4, and C9
   E2 Drivers incorporate power up/down protection.

### IEEE 488.2 Capabilities:
Includes all required 488.2 controller protocols and the ability to monitor the bus signal lines.

### 488 Bus Performance
GPIB Handshake Rate>100 kbyte/s

## Software Capabilities

### Operating Systems
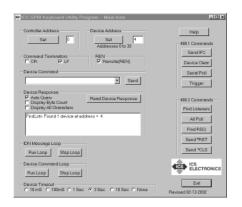Windows 98 (Second Edition), Me, 2000 and XP.

### Commands
ICS, NI 488 and NI 488.2 commands

### Windows Supported Languages:
Microsoft Visual C/C++
Microsoft Visual Basic
NI LabView

### GPIB Keyboard Controller Program
Interactively sends user inputs from the PC Keyboard to bus device, reads back device responses and executes other bus commands.



**GPIB KeyBoard Controller Panel**

## Commands

The following table lists just the NI 488.2 compatible commands. Contact ICS for a list of all supported commands.

### NI 488.2 Compatible Command Set

| Command | Function |
| --- | --- |
| AllSpoll | Serial poll all devices |
| DevClear | Clears a single device |
| DevClearList | Clears multiple devices |
| EnableLocal | Sets a device to local |
| EnableRemote | Set a device to remote mode |
| FindLstn | Finds all devices that can listen |
| FindRQS | Finds the device requesting service |
| PPoll | Parallel polls all devices |
| PPollConfig | Configures a device for parallel polls |
| PPollUnconfig | Unconfigures a device |
| RcvRespMsg | Reads data from a talker |
| ReadStatusByte | Serial poll a device |
| Receive | Read data from a device |
| ReceiveSetup | Address a device to talk |
| ResetSys | Initialize system |
| Send | Send data to a device |
| SendCmds | Send GPIB commands |
| SendDataBytes | Send data to a listener |
| SendIFC | Sends IFC |
| SendList | Send data to multiple devices |
| SendLLO | Local lockout all devices |
| SendSetup | Address devices |
| SetRWLS | Puts device in Remote with local lockout state |
| TestSRQ | Check SRQ line |
| TestSys | Selftest devices |
| Trigger | Trigger a device(s) |
| TriggerList | Trigger listed devices |
| WaitSRQ | Wait for SRQ |

## Test Programs Compatibility

488-USB and ICS's current 488.2 Driver Release supports:
 NI LabVIEW (4.0 thru 6.1)
 MCC Softwire
Future release will support:
 HP VEE ( 3.1, 4.0 and 5.0)

## System Requirements

Intel type PC with a USB interface.
3Mbytes of free Hard Disk space

## Physical

### Size
 3.75 in x 2.45 in x 1.0 in plus jackscrews
 (9.53 cm x 6.22 cm x 2.54cm)

### GPIB Connector
 IEEE 488 Standard 24-pin connector with metric jackscrews

### Indicators
 PWR, TALK and LSTN LEDs

### Power
 USB powered

## Included Accessories

Instruction Manual
488.2 Driver, command libraries, example programs and GPIB Keyboard Controller program on CD-ROM.

2 meter USB cable.



**488-USB rear view showing USB connector and diagnostic LEDs**

LabView is a trademark of National Instruments, Austin, TX. VEE is a trademark of Agilent Technologies, Palo Alto, CA.

# ORDERING INFORMATION

Part Number

| | |
| --- | --- |
| 488.2 USB Controller Module with 2 m USB cable, Manual, 488.2 Driver Libraries and GPIBkybd Ctlr Program | 488-USB |
| IEEE 488 Bus Cables from 0.5 to 10 meters long | See separate data sheet |