ICS ELECTRONICS
division of Systems West Inc.

IEEE 488

APPLICATION BULLETIN

FREQUENTLY ASKED QUESTIONS (FAQ) FOR
ICS's 488.2 DRIVER LIBRARY AND GPIB CONTROLLER CARDS

See AB48-40 for questions about ICS's 488.2V3 Driver Library

INTRODUCTION

This application note lists the Frequently Asked Questions (FAQ) for ICS's Model 488-PCI, Model 488-PCM, 488-cPCI, 488-USB and Model 1105 GPIB Controller Products when used with the 488.2 Driver Library. This FAQ list changes often so look here first for the latest answers to your problems. LabVIEW, VISA and MAX users see FAQ #20 to #24. NT users see FAQ #18. Agilent VEE, Benchlink, IntuiLink or IO Library users see FAQ #29.

FAQ #1 What version operating system do I need to run ICS's GPIB Cards?

You require the following Windows software or later versions:
For Windows 98, Second Edition
For Windows 2K, Service Pack 3
For Windows XP, Service Pack 2
For Windows NT, Service Pack 3 (NT has no USB capability)

In addition, check with your computer manufacturer for the latest version of BIOS for your computer. Some major PC manufacturers ship computers with older versions of BIOS for several months after posting newer versions on their website.

FAQ #2 How do you install ICS's GPIB Drivers over old GPIB Drivers?

The GPIB DLLs from ICS have the same names as DLLs from National Instruments, Measurement Computing (formerly Computer Boards) and some other GPIB card manufacturers for program compatibility. However, the GPIB DLLs from different manufacturers are **not** compatible and only work with their respective hardware.

If you had previously installed a GPIB card from some other manufacturer, uninstall the old software before installing ICS's software. Use the manufacturer's recommended uninstall method. Search for and remove all old copies of GPIB.DLL and GPIB-32.DLL. Then install ICS's driver. ICS's new GPIB-32.DLL and GPIB.DLL DLLs will be placed in the Windows System or System32 directory. For help, refer to our Upgrade Html page at http://www.icselect.com/upgrade1.html

FAQ #3 Card did not function after the installation

Run GPIBtest to quickly find and fix the problem. GPIBtest is in ICS's Utilities folder and can be run by navigating from Start > Programs > ICS Electronics > GPIBtest. Click the yellow icon in the toolbar to run the test once. Fix any red error conditions.

If the Card still does not run, check the remaining FAQs to see if they answer your problem and then contact support at ICS Electronics.

FAQ #4 GPIBtest shows an error but the card runs fine with GPIBkybd.

This problem occasionally shows up when uninstalling an old PCI or PCM driver and then installing the new 488.2 Driver and is caused by the uninstaller not completely uninstalling the older driver.

1. Check the Autoexec.bat file and remove all but the last 'SET GPIBDIR' statement.

2. Check the Path statement to be sure it points to ICS_Electronics and not to the old GPIB-32 folder.

3. Manually delete the C:\GPIB directory if it is still there.

4. Search and remove all older GPIB-32.DLLs. Keep only the copies in ICS_Electronics folder and in the SYSTEM or SYSTEM32 folder.

FAQ #5 Windows cannot find the driver after the installation.

This error is often caused by installing the hardware before the software. Cancel the Device Manager's New Hardware wizard and run the driver installation program and reboot. If you are still having installation problems, download GPIBTest from ICS's website. Follow its recommendations to fix the installation problem.

FAQ #6 Windows cannot find the 488-PCM card after its installation.

If the DLLs do not find the 488-PCM card and the device is present in the Device Manager, run the Configuration program and verify that the GPIB0 board type is set to 488-PCM. If the wrong card is configured the program will complain and ask you to re-configure. Refer to FAQ #8 for how to run the Configuration Program.

Sometimes the DLLs cannot find the 488-PCM card when it is installed in a PCMCIA slot in a docking station or in the second slot in the computer. When this happens, turn the computer off, move the 488-PCM card to the slot 0 location in the computer and reboot the computer.

FAQ #7 Windows cannot find the PCI card after installation or has an privilege exception error.

If after installation, Windows NT, 2K or XP does not find the 488-PCI card, their are three possible problems: The first is that it was detected as an unknown device because it was installed prior to installing the drivers. Look in the Device Manager to see how the card was installed. It should have shown up under 'ICS-PCMPCI DEVICES'. If not, the board should be in the unknown category. If the card is in the unknown category, select Update Driver in the Device Manager, reboot and then run CBCONF32.EXE to configure the card. See FAQ #8.

If the card did not show up in the unknown category, then the system BIOS did not detect the card. Solutions are to try another PCI card slot or check with your PC manufacturer to be sure you have the latest BIOS that can correctly support your version of Windows. The far end slot, slot 0, is frequently a bad choice for PCI GPIB cards. The recommendation is to move the audio or sound card to the end PCI slot and move the GPIB card closer to the processor.

If the card was installed on a PCI bus 1 or later bus design, or on a computer with an ACPI system (Automatic Power Shutdown) then CBCONF32 may get a privilege exception error. This is caused by an older driver. Download the latest installation program from the Program Update page on our website to correct this problem.

FAQ #8 How do I run the Configuration Program.

To run the Configuration Program, navigate from the START button as shown below:

```
    START>PROGRAMS>ICS Electronics
    Then select >CBCONF32
    Edit GPIB0 <Enter>
    GPIB0 Board Options <Enter>
```

Verify the board type matches your GPIB Controller. If it doesn't change it by:

```
    Board Type is 488-xxx <Enter>
    488-yyyy <Enter>
```

 Make any other necessary changes. In a WIN Plug&Play environment the device manager sets the IRQ level. You can only confirm that the Configuration File has the same setting. If the setting is different, change it to match the Device Manager setting. When done, press <ESC> twice to get back to the main menu and exit:

```
    <Esc>
    <Esc>
    Save Current Configuration <Enter>
    Exit from IBCONF Program <Enter>
```

If you need to change the configuration to match an old existing program written with the NI-488 functions (ib functions), you must setup your device names and addresses to match the device names used by the existing program. Select the devices from the menu with the device list. Select the device by its GPIB address and press <Enter>. The names ARE case sensitive so be sure to use the same case as used in the existing program. Force readdressing should be set to Yes. When done, press <Esc> once to get back to the device menu. Repeat the above as needed for each device to be changed. Unused devices can be ignored. Press <ESC> to get back to the main menu. Select Save Current Configuration and press <Enter>. Select Exit and press <Enter>.

FAQ #9 Missing Configuration File.

Current installation programs put the Configuration File (GPIB. CFG) in the \Program Files\ICS_Electronics\Utility Programs\ directory. Earlier installation programs put the GPIB.CFG file in the installation directory with the COPYRITE.TXT file. Run GPIBtest to locate and verify the GPIB.CFG file. Move it to the correct directory if necessary.

GPIB.CFG is pointed to by the Environmental Variable GPIBDIR. The Installation Program puts a Set GPIBDIR statement in the Autoexec file to locate the GPIB.CFG file. It is possible that a 'WIN' or some other earlier statement in the Autoexec file kept the new statement from being executed. The solution is to remove the offending statement from the Autoexec file and relocate it after the SET GPIB DEVICE = C:\directory_name statement. (The directory_name is the directory that contains the GPIB.CFG file.)

Windows 2K and XP systems maintain the Environmental Variable from earlier installations in a separate file. Go to Control Panel\ System\Advanced\Environment Variables or \Environment Setting. If a GPIBDIR is present, delete it. Priority will drop to the user's application and then to the Autoexec SET GPIBDIR statement. See FAQ #10.

Another reason for 'missing' files is that the installation directory was changed from the default directory. Check the Autoexec.bat file and verify that the path and the GPIBDIR variable point to the directory with the GPIB.CFG and COPYRITE.TXT files. Remove any duplicate or incorrect statements.

If your system fails to run when lower priotity user logs in, the GPIB.CFG file may not be accessible from the user's account. To fix this problem, make the GPIBDIR a system variable. To change the GPIBDIR variable, log in as the Administrator and go to:

```
        Start > Settings > Control Panel > System
```
Select the advanced Page and then select Environmental Variables. Set GPIBDIR as a system variable.

FAQ #10 Exception error with CBCONF32.EXE.

Exception errors can be caused by an incorrect GPIBDIR variable setting. ICS's installation programs place a SET GPIBDIR= statement in the Autoexec.bat file. Environment variables are prioritized as follows: System, User, and then Autoexec.bat file. GPIBDIR becomes an environment variable at installation time and at reboot time. If an older installation has declared GPIBDIR as a System Variable, then it will become necessary to edit the System Variable and delete this setting from the system level to allow the priority to default to the Autoexec.bat file statement. These System Variables can be found under:

Control Panel\System\Advanced\Environment Variables or Settings. This handling of Environment Variables is used by Win NT, Win 2K and Win XP.

FAQ #11 Windows 98 Missing GPIB Device Driver Message at bootup time.

Check the path statement in the SYSTEM.INI file in the Windows System Directory. It should contain the following statement under [386Enh]

    setting device=c:\directory_name\Gpibvxd.386

The directory_name is the installation directory containing the Gpibvxd.386 driver.

If you have removed the 488.2 Driver and get a message that the gpibvxd.386 file is missing, the message is because there is still a reference to gpibvxd.386 in the SYSTEM.INI file. To remove the reference to this file, use NotePad to edit the following file:

    C:\Windows\System.ini

Search (Edit/Find) for "GPIBVXD.386". The line starts with "device=". Once the line is found, delete the line. Then save (File/Save) the edited file. The system should now be able to reboot and no longer complain about the missing file.

FAQ #12 How do I convert a C Language program written for National Instruments Cards to run ICS Cards?

Normally, all C language programs written for National Instruments GPIB Cards will run on ICS's 488-PCI and 488-PCM cards once the copyright string has been changed. Locate the COPYRITE. TXT file is located in the \Program Files\ICS_Electronics\Utility Programs\ directory and verify that the first line is "National Instruments Corporation". If the first line is not correct, change it to say "National Instruments Corporation". This does not violate any copyright laws as you are not reproducing or distributing National Instruments software.

If you are making changes to a 32-bit, C language Windows program written for the National Instruments GPIB cards, the program should be recompiled with the ICS's ICSDECL.H file included in place of National Instrument's DECL-32.H header file and linked

with the GPIB-32.LIB library in place of National's GPIB-32.OBJ file. The program then requires ICS's GPIB-32.DLL to run. Be sure ICS's GPIB-32.DLL replaces the NI GPIB-32.DLL in the Windows System or System32 directory.

If your program uses the old NI-488 functions (ib functions), you must run the Configuration Program (CBCONF.EXE) and setup your device names and addresses to match the device names used by the old program. The names ARE case sensitive for the 488-PCI and 488-PCM cards so be sure to use the same case as used in the old program. Force Readdressing should be set to Yes. The program then requires ICS's GPIB.DLL to run. Be sure ICS's GPIB.DLL replaces the NI GPIB.DLL in the Windows System or System32 directory. See FAQ #18.

FAQ #13 How do I convert a Visual Basic program written for National Instruments Cards to run ICS's Cards?

Normally, all Visual Basic language programs written for National Instruments GPIB Cards will run on ICS's GPIB Controller cards once the copyright string has been changed as described in FAQ #11 above and the GPIB Controller is installed and working. If you are making changes to a 32-bit, Visual Basic Windows program written for the National Instruments GPIB cards, the program must be recompiled. You may use the National Instrument's NIGLOBAL. BAS and VBIV.BAS files or replace them with ICS's GPIB-32.BAS and ICSvb.bas files.

To update a 16-bit Visual Basic Windows GPIB program written for the National Instruments GPIB cards, open it with Visual Basic 5.0 or later. Recompile the program with National Instrument's NIGLOBAL.BAS and VBIV.BAS files or replace them with ICS's GPIB-32.BAS and ICSvb.bas files.

FAQ #14 How do I convert a DOS Quick Basic program written for National Instruments Cards to run ICS's Cards?

Install and test the ICS 488-PCI or 488-PCM card per the instructions in the manual. Test it with the GPIBkybd program to be sure it is working. Then:

1. Copy the GPIBQB.LIB, GPIBQB.QLB and DECL.BAS files to the QB45 Directory.

2. Copy the program to be converted into the QB45 directory.

3. Run QB with the following statement:
    QB C:\QB45\your.program /L GPIBQB

4. Change the include file from QBDECL.BAS to DECL.BAS.

The program should run without any other changes. Note that the 488-USB does not support DOS programs.

FAQ #15 Can I run a 16-bit program written for National Instruments Cards on ICS's Cards?

Install the 16-bit Drivers for the 488-PCI or 488-PCM cards and the program will run. Note that the 16-bit drivers will only work on Win 95 and 98. Win NT, 2K and XP cannot run 16-bit hardware drivers. Neither can the USB Controllers. Recompile the program with the 32-bit library.

FAQ #16 How do I control ICS GPIB Cards from Borland's Delphi programs?

Install and test ICS's GPIB Controller per the instructions in the manual. Borland Delphi is supported via a header file GPIB.PAS. Use GPIB.PAS to compile the Delphi program with the loaded GPIB-32.DLL and it should run your GPIB Controller. GPIB. PAS is on the Support CD and can also be downloaded from the Measurement Computing website.

FAQ #17 How do I run an old program written for a National Instruments card that needs GPIB.COM?

You have to use an existing GPIB.COM file or you can obtain one by installing the 16-bit Driver. Install the 16-bit Drivers for the 488-PCI or 488-PCM cards. Follow the instructions in the readme file for 16-bit and DOS applications.

You can use and existing GPIB.COM or CBGPIB.COM by adding the following line to your CONFIG.SYS file:

```
        device=c:\installation directory path\gpib.com
or      device=c:\installation directory path\cbgib.com
```

The COM file must be located in the directory pointed to by the device statement.

See FAQ #8 for instructions on how to set up the configuration file.

FAQ #18 Are there any NT Drivers for ICS's 488-PCI and 488-PCM Cards?

Yes. The NT Drivers are included in the current ICS_488.2_Install program. Click on Support to expose the GPIB Driver page link and download the latest installer program. Note - NT does not support USB bus products.

FAQ #19 How do I run 488-PCM cards under DOS?

If you are running on a strictly DOS-based machine or on one with Windows 3.1, then you need DOS Card&Socket services. If you are running under Windows 95/98 then you can just use the 16-bit drivers "as is". THE USER MUST CONFIGURE THE BOARD TYPE WITH CBCONF BEFORE TRYING TO USE THE LIBRARY. The installation can be checked with CBIC which is a DOS-based program.

FAQ #20 How can I run LabVIEW on ICS's GPIB Controller Cards?

LabVIEW VIs are normally written so they make VISA calls. The VISA layer then makes calls to the GPIB-32.DLL that runs the manufacturer's GPIB Controller or other hardware. LabVIEW VIs can also make direct calls to the GPIB-32.DLL. ICS's GPIB-32.DLL is compatible with National Instruments' VISA and will run LabVIEW programs when National Instruments VISA is properly installed and setup. The correct installation steps are:

1. Install LabVIEW and all applicable updates. This will install the VISA layer.

2. Check the version of NI 488.2 Driver that was just installed. If it was version 2.2 or later then NI's Measurement and Automation Explorer (MAX) will not find ICS's GPIB Controllers or any of NI's older cards. However LabView will still run with ICS's GPIB Controller Cards. If you are upgrading an older version of LabView and have a CD with an older NI 488.2 Driver, the Driver is likely version 1.7 or earlier. You can use this earlier Driver to replace the 2.2 version that was just installed.

3. Download and run ICS's latest ICS_488.2_Install program from ICS's website.

4. After the installation, locate and run ICS_NI_Support_Install utility in the ICS Electronics folder in the Program Files directory. Running ICS_NI_Support_Install more than once may result in an 'Administrator Privilege' error message. Ignore the error message. The Device manager will display the NI_Support pseudo-driver with a yellow exclamation mark which is okay.

5. ICS's CBCONF32 defaults to enabling Auto Serial Polling. You do not need to run CBCONF32 if you have not changed this setting. If you have changed the 'disable Auto Serial Polling' value in the CONFIG file, be sure it is set to 'No'. Refer to FAQ #8 for directions on running CBCONF32.

Run GPIBtest and GPIBkybd to test ICS's driver and hardware. Follow the steps in FAQ #22 to test the VISA layer. If you are using the 488-PCI or 488-PCM cards, be sure that the LabView VIs are set to use synchronous commands. The PCI and PCMCIA cards do not work properly with asynchronous commands.

FAQ #21 What is VISA? Is VISA compatible with ICS's GPIB Controllers?

VISA is an API layer that converts industry standard VISA calls into GPIB-32.DLL or HP type DLL calls. Test application programs such as NI's LabVIEW and Agilent's VEE make VISA calls. You can also make VISA calls from Visual Basic and C/C++ programs. VISA calls are compatible with ICS's GPIB Controllers as long as you have installed National Instruments' or Agilent's VISA.

FAQ #22 How do I install VISA for ICS's GPIB Controllers?

Both Agilent and National Instruments make VISA layers that are compatible with ICS's 488 series GPIB Controllers.

Agilent's VISA is installed as part of its IO Library Suite and is available free to any owner of HP or Agilent instruments. This is the recommended VISA for use with Visual Basic or C Language programs. Go to Agilent's Test and Measurement website to download IO Libraries Suite version 14.2 or later.

If you have purchased and installed LabVIEW as directed above, then VISA was automatically installed when you installed LabVIEW. If you just want to try VISA without LabVIEW, you can download it from National Instruments' web site. Follow the LabVIEW installation steps in FAQ #20 to properly install VISA and ICS's 488.2 Driver.

National supplies a VISA Interactive Control panel to test its VISA layer. Depending upon your installation, the VISA Interactive Control utility is located under either PROGRAMS>National Instruments>VISA or PROGRAMS>VXIPNP. Click on VISA Interactive Control (You should have your GPIB Controller installed, tested and connected to an instrument before running the VISA Interactive Control). This will start the VISA Control and open a window showing the GPIB Controller and the GPIB Device(s) as a tree structure. Double-click on a found Device to open its window. Click on the Instrument Basic I/O tab to open the control window. Use the I/O Write tabs to send the *IDN? query to the device and then the I/O Read tab to read the response. If you get an error, uncheck the ASYNC box.

If you are running a program that makes VISA calls, edit the VISACONF.INI file and disable all but the first GPIB board.

FAQ #23 How do you run NI's Measurement & Automation Explorer (MAX) with ICS's GPIB Controllers?

The newer versions of NI's Measurement & Automation Explorer (MAX) do not recognize ICS Electronics and older NI GPIB Controller Cards. However ICS Electronics' GPIB Controllers still run LabVIEW programs.

If you replace the current NI-488.2 Driver with version 1.7, then MAX can 'see' ICS's GPIB Controllers. If you wish to run MAX, perform the following steps described below after installing the version 1.7 NI-488.2 Driver.

For ICS's USB Controllers on Win 2K and XP, locate and run ICS_NI_Support_Install utility. This utility is located in the ICS_Electronics Utility Programs folder in the Program Files directory. Running ICS_NI_Support_Install more than once may result in an 'Administrator Privilege' error message. Ignore the error message.

For other ICS GPIB Controllers, start MAX and it will bring up a window with a tree structure. Expand the Devices and Interfaces

branch. You should see a GPIB Controller branch. Right click on it and delete it. Go back and right click on Devices and Interfaces. Select Create New. This brings up the Create New window. Select GPIB Interfaces and click Finish. This starts NI's Add Hardware Wizard which will display a list of possible GPIB Controllers. Select the non-Plug&Play AT-GPIB/TNT entry at the top of the list. **Do not select the P&P type card**. The Add Hardware Wizard will then assign the card an address, IRQ and DMA channel. Ignore these assignments. It does **not** matter if the assignments do not match the settings used by your GPIB Controller. Click Finish.

You should now see a new GPIB0 (AT-GPIB/TNT) Controller under the Devices and Interfaces branch. Right click on it and select Scan for Instruments. When the scan is complete the instruments connected to the GPIB Bus will appear under the GPIB0 Controller. If MAX quits while scanning, restart it and the instrument list will appear under the GPIB Controller. Right click on an instrument and select Communicate with your Instrument. You can now use MAX to Query, Write to or Read data from your instrument.

Next run National Instruments 'Add GPIB Hardware' wizard to install a non Plug&Play (P&P) type GPIB Controller card in the NI-488.2 Device Manager. Do this by navigating from START>PROGRAMS>National Instruments NI-488.2>Add GPIB Hardware. The Add GPIB Hardware wizard will list several GPIB Controllers. Select the non-Plug&Play AT-GPIB/TNT card. **Do not select the Plug&Play type card**. The Add Hardware Wizard will then assign the card an address, IRQ and DMA channel. Ignore these assignments. It does **not** matter if the assignments do not match the settings used by your GPIB Controller. Reboot the computer after running the Add Hardware Wizard.

If MAX does not see ICS's GPIB Controller after you have performed the above steps, you probably have a NI-488.2 Driver version that does not support ICS GPIB Controllers. NI-488.2 Driver version 2.2 only sees the latest NI GPIB cards and does not 'see' ICS, MCC or earlier NI GPIB Cards.

FAQ #24 How do I fix LabVIEW hangups or crashes?

If you are using the 488-USB or 1105 with LabVIEW and Windows XP or 2K, you need the latest ICS driver. Stop all programs, unplug the 488-USB or 1105, uninstall the current ICS driver, then download and install the latest 488.2V3 driver from ICS's website.

If you are using the 488-PCM or 488-PCI card, change the LabVIEW VIs to make synchronous GPIB calls.

FAQ #25 GPIBkybd will not run on Win 2K/Win XP or has a parameter error

You probably have an older version of GPIBkybd. Download the latest version from ICS's website. You may also see this error if ICS's driver is not installed or if the GPIB Controller is not plugged in.

FAQ #26 488-USB renumerates forever on Win XP

Some OEM versions of Win XP have a defective USB driver. Download Service Pack 1 from Microsoft's website. Also verify that your computer has the latest version of BIOS.

FAQ #27 USB Controllers not seen by PC or Win 2K and XP crashes running USB Controllers

These problems are often caused by the USB Controllers not being plugged into a powered USB port or running with obsolete versions of BIOS. Verify that you are connected to the USB port on your PC or to a powered hub and not to a keyboard port. Next, check your PC manufacturer's website and update your computer with the latest BIOS.

FAQ #28 Upgrade Installation Problems with the USB Controllers.

There is a potential problem when running an ICS Driver Installation Program over a older 'removed' driver. The Installation Program may display a message that says an older driver is still installed.

The problem is caused by the driver not being completely un-installed or a remnant of the earlier installation that was not removed by the automatic uninstall process. First try the Windows Add/Remove Software wizard in the Control Panels to remove the existing driver. If that doesn't work, carefully follow the steps in the upgrade1.html page on ICS's website to remove the remnant files. See www.icselect.com/upgrade1.html.

FAQ #29 How do I use the 488-USB or 1105 with Agilent's IO Library, Intuilink, VEE, or Benchlink?

VEE, Benchlink, and Intuilink use different versions of Agilent's IO Library. Refer to Agilent's website to select the correct IO Library for your version of VEE, Benchlink or Intuilink.

Agilent's latest IO Library, IO Library Suite 14.2 has an improved VISA and communicates directly with ICS's GPIB-32.DLL. This is the best version to use since it has a simpler installation. IO Library Suite 14.2's installation program does the installation and searches for the GPIB Controller and instruments. It should automatically find ICS GPIB Controller if it was installed prior to installing the IO Library.

When you run the Agilent IO Library Suite 14.2, click on the Connection Expert. You should see a GPIB0 entry. If not, click Refresh All. You may have to do this a couple of times. Do not select the USB entry as that is not the correct entry for the 488-USB Controller. Highlight the GPIB0 entry to use it to control the GPIB Instruments. Agilent's VISA Assistant also shows the GPIB0 entry and the instruments connected to the 488-USB.

Agilent's older IO Libraries use National Instruments' VISA and the NI 488.2 Driver to connect to ICS's GPIB-32.DLL. Here Agilent's VISA should be installed as the secondary VISA. The NI VISA must be the primary VISA with Agilent's older libraries The following are the basic steps for making the connection.

1. Download NI-VISA and NI-488.2 (Win32) Version 1.70 for Windows 2000/95/98/ME/NT/XP from National Instrument's website. Follow the steps in FAQ #20 to install VISA and the 488.2 drivers.

2. Test the ICS installation with ICS's GPIBtest and GPIBkybd.

3. Add a pseudo NI card to the system. For ICS's USB Controllers running on Win 2K or XP, run ICS_NI_Support_Install. For all other cards and operating systems, run the NI Add Hardware Wizard and add the AT/GPIB(TNT) non-Plug&Play card. Refer to FAQ #22 for detailed directions.

4. Run NI's VISA Interactive Control Panel as described in FAQ #22 to verify that NI-VISA is working with the ICS GPIB Controller.

You can now install and run Agilent's IO Libraries. VEE, Benchlink, or Intuilink. When installing the older Agilent IO Libraries, select install Agilent VISA as the second VISA when asked. After the installation, run IO Config and select 'GPIB using NI-488.2'. This should put a GPIB0 entry in the right hand window. After that, you can scan for instruments and proceed using the IO Library.

IntuiLink's IO Config will scan your system and find your GPIB Controller. Select 'GPIB using NI-488.2' and click the Configure button and then OK. Exit the IO Config routine. You now have a connection to your ICS GPIB Controller.

VEE's IO Instrument Manager finds all of the I/O controllers in the system. GPIB14 is used to access National Instruments and ICS GPIB Controllers. Highlight GPIB14 and click Find Instruments do see all of the devices connected to ICS's GPIB Controller. Note that NI's MAX must be working with the GPIB Controller before you can use VEE.

If Benchlink fails to find your oscilloscope you can manually edit the Benchlnk.ini file as follows:

1. Find the Benchlnk.ini file (typically in C:\WINNT) and make a backup copy.

2. Set the "InterfaceCard=" line to read InterfaceCard=National Instruments AT-GPIB

3. Set the "IDNDisable=" line to skip all GPIB addresses but your scope address. If your scope is at address 7 then set IDNDisable=1,2,3,4,5,6,8,9,....28,29,30

4. Set the "ScopeModel=" line to your scope model.

5. Set the "Points=" line to the number of points to be read. Model number and points should match what is in the scope definition section of the file.

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Save the edited Benchlnk.ini file. Next, find the HPIB.DLL file (typically in C:\WINNT) and rename it to oldHPIB.DLL. Run Benchlnk and it should find your scope and display its model number in the menu bar window. If it doesn't display the correct name and model, you may have to adjust the INI file settings.

FAQ #30 LLL.LIB:Fatal Error LNK1106: Invalid File or Disk Full:Cannot seek to 0xNNNNNN.

This problem has been observed with Visual Studio 5 which was running with a missing service pack or with a corrupt file. The solution is to update Visual Studio 5 with the latest service packs.

FAQ #31 1105 HUB DRIVER MISSING

Device Manager shows a yellow ! mark in front of the 1105 USB Hub Driver. The solution is to ask Windows to replace the driver with a better driver. For most systems you can highlight the 1105 Driver name, double click it to bring up the Properties Window and select Driver. Click the Update Driver button.

FAQ #32 How do I use the 488-USB or 1105 with Borland C Builder 6?

Modify ICSdecl.h by deleting all "FAR" keywords in the function declarations. Also be sure all "void" keyword are in lower case. Use Borland's IMPLIB function to generate an import library for the GPIB-32.DLL. Name it something like GPIBUSB.LIB.

Use ICS's Thread functions to import the GPIB Status Variables into your program before testing the values. An example is:

```
int myibsta
myibsta = ThreadIbsta();
```

FAQ #33 How do I use the 488-USB or 1105 with Transera's HTBasic?

Load and run Transera's HT Basic per their instructions. Select and load their GPIBNI driver to link HTBasic to the 488-USB's GPIB-32.DLL. This can be done from the HTBasic Tools menu tab by selecting Device Setup and then clicking the Add button to open a Device Selection window. Select GPIBNI and click Add to add the device and close the window. Next highlight the GPIBNI interface and click Load to load the driver. Run your HTBasic program and it will automatically use the 488-USB or 1105 to communicate with your GPIB devices.

FAQ #34 How do use ICS's GPIB-32.DLL with Visual Basic. NET?

ICS supports Visual Basic 2005 (VB8) under Microsoft's Visual Studio 2005 development system. Two new include files are now available for VB8 programs. Download and run the latest 488.2 Installation program from ICS's website. Follow the directions in the .NET Addendum to upgrade a VB6 program to a VB8 program or to write a new VB8 program.

FAQ #35 How do use ICS's GPIB-32.DLL with .NET C Language Programs

C language programs developed with Microsoft's Visual Studio 6 (C6 programs) will work under Microsoft's Visual Studio 2005 development system. Download and run ICS's latest 488.2 Installation program from ICS's website. Then follow the directions in the .NET Addendum to upgrade a Visual Studio 6 C program to a .NET program.

FAQ #36 Why do I get a 'Blue Screen of Death'?

With the 488.2 Driver, the 'Blue Screen of Death' is caused by data being returned to a nonexistent buffer area. Typically this occurs when the application is ended ungracefully by abruptly terminating the program instead of doing a gracefully shutdown but can occur randomly in some cases.

488-USB users can eliminate this problem by switching to ICS's new 488.2V3 Driver Library which eliminates the buffer passing problem. Download the new 488.2V3 Driver from ICS's Website - httP://www.icselect.com.

FAQ #37 Why can't I address device with GPIB addresses greater than 16?

CBCONF32 limits the number of devices the GPIB Card can control to 16 device. It has a Table of devices that is prefilled for addresses 1 to 16. To address devices with higher GPIB addresses, just change an unused device entry to the higher GPIB address.

FAQ #38 Can I install the 488.2 driver on Windows 7?

No. The 488.2 Driver cannot be installed on Windows 7. Contact ICS for information and trade-in options for upgrading to newer GPIB Controllers and our 488.2V4 Driver.