



TekVISA OpenChoice Instrument Manager

Application Help



077-1829-00





TekVISA OpenChoice Instrument Manager

Application Help

Register now!
Click the following link to protect your product.
tek.com/register



077-1829-00 January 2024

Copyright © 2024, Tektronix. 2024 All rights reserved. Licensed software products are owned by Tektronix or its subsidiaries or suppliers, and are protected by national copyright laws and international treaty provisions. Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specifications and price change privileges reserved. All other trade names referenced are the service marks, trademarks, or registered trademarks of their respective companies.

TEKTRONIX and TEK are registered trademarks of Tektronix, Inc.

Tektronix, Inc.
14150 SW Karl Braun Drive
P.O. Box 500
Beaverton, OR 97077
US

For product information, sales, service, and technical support visit tek.com to find contacts in your area. For warranty information visit tek.com/warranty.

Contents

Introduction.....	6
Overview.....	6
Technical Support.....	6
Operating Basics.....	8
Installation.....	8
Getting Started.....	8
Understanding the Instrument Manager.....	9
Setting the Start Up Preferences.....	12
Managing Search Criteria.....	13
Using the Search Criteria Dialog Box.....	13
Setting Up a LAN Search.....	18
Deleting a LAN Search Location.....	25
Setting Up a Serial Search.....	27
Searching for Instruments.....	33
Troubleshooting.....	34
Quick Checks.....	34
Using the Troubleshooter.....	35
Checking for Power.....	35
Checking Interconnect Cables.....	35
Verifying Communications.....	37
Ethernet Checks.....	37
Checking Ethernet Communications.....	37
Checking Ethernet Hardware.....	38
Checking Ethernet Software.....	39
GPIB Checks.....	41
Checking GPIB Communications.....	41
Checking GPIB Hardware.....	41
Checking GPIB Software.....	42
USB Checks.....	43
Checking USB Communications.....	43
Checking USB Hardware.....	43
Checking USB Software.....	44
Serial Checks.....	45
Checking Serial (RS-232) Communications.....	45
Checking Serial (RS-232) Hardware.....	45
Checking Serial (RS-232) Software.....	46

Introduction

Overview



The Tektronix OpenChoice Instrument Manager helps your PC communicate with instruments, such as oscilloscopes, over Ethernet LAN, Socket, GPIB, USB, or Serial connections.

You can use the Instrument Manager to search for available instruments on a network. When an instrument is identified, you can add it to or delete it from the Instruments list, or search for additional instruments. Once you have added an instrument, VISA (Virtual Instrument Software Architecture) based programs can set up and communicate with the instrument.

You can also use the Instrument Manager to list and run desired programs. Simply add or delete a program to the Applications and Utilities list and launch it when convenient.

For additional information on how to use the Instrument Manager, refer to the following topics:

[*Understanding the Instrument Manager*](#)

[*Setting the Search Criteria*](#)

[*Setting Up a GPIB Search*](#)

[*Setting Up a LAN Search*](#)

[*Setting Up a Serial Search*](#)

[*Setting Up a VXI Search*](#)

[*Setting Up a USB Search*](#)

[*Searching for Instruments*](#)

[*LAN Access Overview*](#)

[*Troubleshooting*](#)

Technical Support

To Contact Tektronix

Click www.tek.com/en/contact-tek for information to contact Tektronix.

Instrument-Specific Information

When you contact Tektronix, please have the following information available:

- Model and serial number of your instrument
- Firmware version of your instrument
- TekVISA and OpenChoice software versions operating on both your PC and instrument
- Communications protocols you are using (Ethernet, GPIB, USB, Serial)
- Driver version, if you are using VXI plug and play or IVI-COM

- Software development environment and language of your application (Visual Studio, .NET 2003 using C#.NET)

Operating Basics

Installation

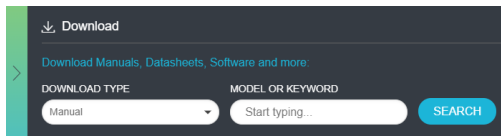
Install and configure TekVISA on each PC that will communicate with an instrument using the VISA standard. Most Windows-based Tektronix instruments already have TekVISA installed at the factory.

If you have already installed TekVISA from an earlier version of the Tektronix Software Solutions CD or WaveStar, you need to uninstall that version first, and then reinstall TekVISA from the most recent CD.

Installation of TekVISA connectivity software

Follow the steps to download and install the latest TekVISA connectivity software.

1. Go to www.tek.com
2. Click **Downloads**. In the Downloads menu, select DOWNLOAD TYPE as software, enter **TekVISA connectivity software** in the MODEL or KEYWORD field, and click **SEARCH**.



3. Select the latest version of software and follow the instructions to download the software. Copy the executable file to the pc.
4. Double-click the executable and follow the on-screen instructions.

The software is installed on `C:\Program Files\IVI Foundation\VISA\Win64\TekVISA`.

Follow the instructions in the installation wizard.



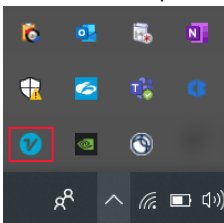
Note: Switch from an existing communications standard to a different standard (Serial-to-USB, Ethernet-to-GPIB, USB-to-GPIB) before connecting an instrument to a PC, it is possible using the conversion software that is available from the National Instruments and others.

Getting Started

The OpenChoice Instrument Manager allows you to specify a search criteria and to add or remove networked devices to the Instruments list. If you have previously listed an instrument you can search for it at any time, allowing VISA-based programs to communicate with the instrument.

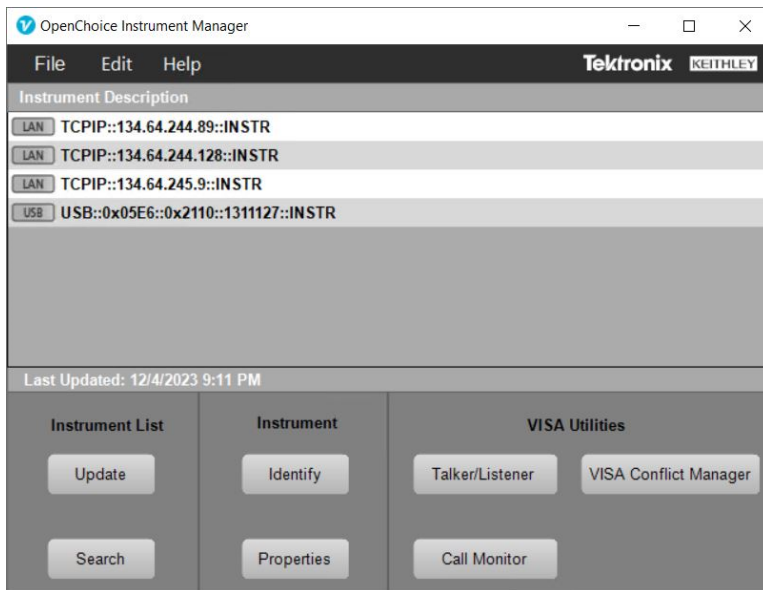
When you install TekVISA, a shortcut to the OpenChoice Instrument Manager is placed in the Start > All Programs startup menu. When the computer is powered on, this icon appears in the System Tray.

To access the OpenChoice Instrument Manager, click the VISA icon in the System Tray.



Alternatively, you can select **Start > All Programs > TekVISA > OpenChoice Instrument Manager**.

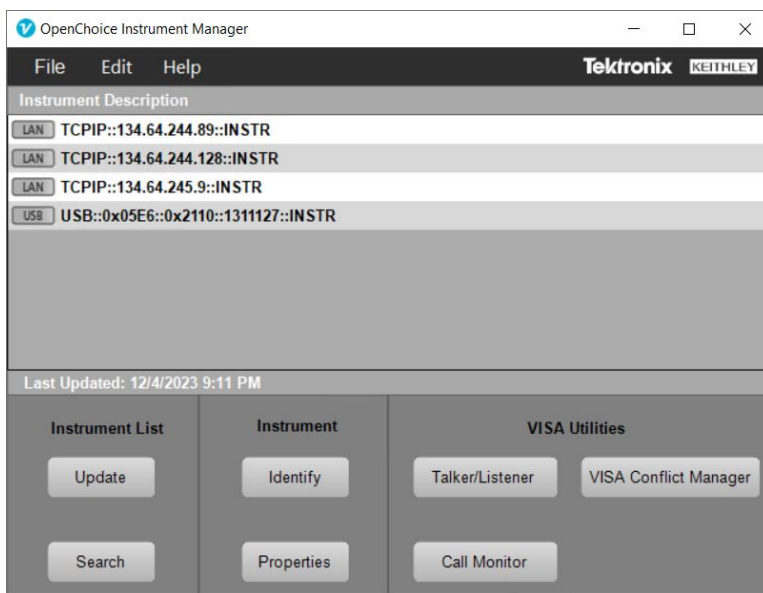
Either method will open the OpenChoice Instrument Manager window, similar to the one shown below.



To learn more about the Instrument Manager, see [Understanding the Instrument Manager](#).

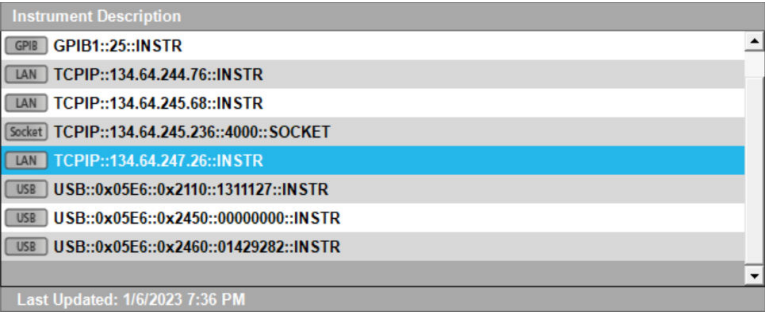
Understanding the Instrument Manager

The OpenChoice Instrument Manager main window is shown below.



Instruments List

This field lists all of the resources that TekVISA discovers. The OpenChoice Instrument Manager automatically detects Serial, GPIB, USB, and LAN devices operating on a local network.



Update Button

Clears the Instruments list and rescans the VISA resources, rebuilding the list. This is useful in verifying the presence of new instruments.

Search Criteria Button

Displays the Search Criteria dialog box, where you can set up the criterion that defines when and how to search for instruments.

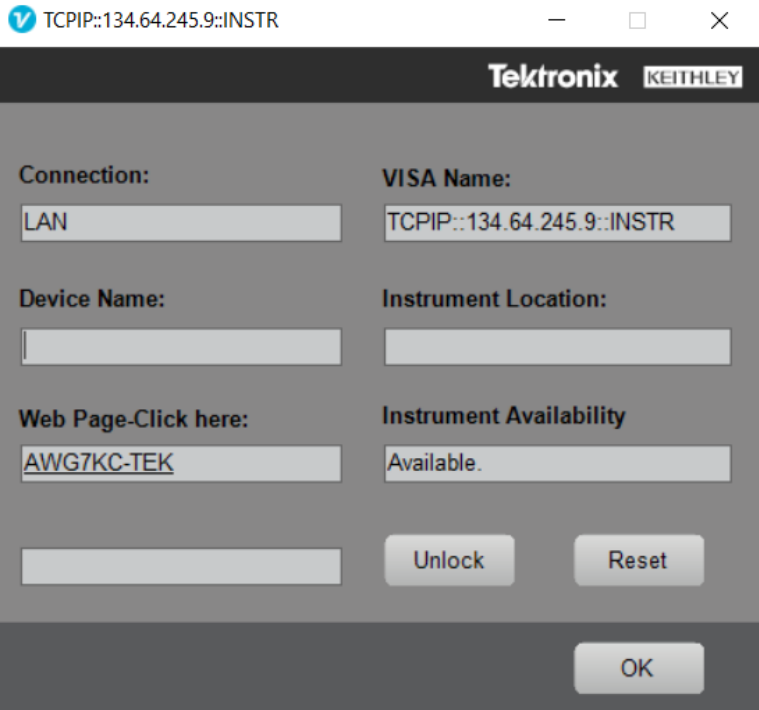
Identify Button

Displays identifying information for the currently selected instrument. Select an entry in the **Instruments** list; then click the **Identify** button.

Properties Button

Opens the Properties dialog box and displays information specific to the currently selected instrument. Select an entry in the Instruments list; then click the **Properties** button.

For example, if you selected TCPIP::128.181.102.240::INSTR in the Instrument list, and then clicked the Properties button, a dialog box similar to the one below would appear.



The following table describes the contents of the Instrument Manager Properties dialog box.

Text Box / Button	Description
Connection	Lists the type of communications used to connect to the instrument.
VISA Name	Lists the legal VISA descriptor used to open the specified instrument when passed to viOpen.
Device Name	Lists an alternative name to access the specified instrument.
Instrument Location	Available for LAN connections only. The VXI-11 server must be installed and running on the instrument. Lists a location-specific name specified by the user; otherwise this field remains empty.
Web Page-Click here	Lists the instrument-specific URL, if available. Click to open the instrument Web page. The instrument must be connected to a local area network.
Instrument Availability	Indicates whether the instrument is available for use (not locked).
Unlock	Click to initiate an attempt to unlock the instrument. If the instrument is available, this button will disappear.
Reset	Click to return the target instrument to default settings. This sends the IEEE 488.2 * RST (Reset) command to the connected instrument and returns the results in the associated text box. Refer to the instrument programmer manual to predict the behavior of the device to this command.

Talker Listener

In the **VISA Utilities** list click the **Talker/Listener** button to open the Talker Listener. You can use this program to send and receive commands from your PC to a host instrument.

The Talker Listener program allows you to do the following:

- Observe detailed communications between your PC and any instrument.
- Send individual commands to an instrument.
- Create and save scripts.
- Run scripts.

The OpenChoice Talker Listener program has its own application help documentation.

Call Monitor

The Call Monitor captures and displays VISA-based communications between your PC and any instruments it communicates with.

In the **VISA Utilities** list click the **Call Monitor** button to open the Call Monitor. This program lists the current TekVISA or TVC statements as they are being executed along with the amount of time required for the call to return. This aids debugging and requires no additional instrumentation of the code being debugged.



Note: Displaying the Call Monitor will slow the execution of any program that uses TekVISA. If you close the Call Monitor, the program will run at full speed.

The OpenChoice Call Monitor program has its own application help documentation.

VISA Conflict Manager

In the **VISA Utilities** list click the **VISA Conflict Manager** button to open the VISA Conflict Manager. The OpenChoice VISA Conflict Manager allows to view and configure a particular vendor's VISA on your computer. Also, it lets you select a particular vendor's VISA to use for a particular communication type (LAN, GPIB, USB, etc).

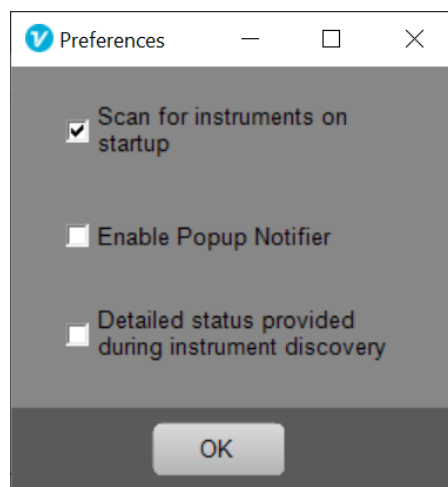
The OpenChoice VISA Conflict Manager program has its own application help documentation.

Setting the Start Up Preferences

In the menu bar, select **File > Preferences**. The open the Preferences dialog box appears.

Click the desired check boxes to enable the behavior of the Instrument Manager. Some of the possible entries are shown below:

- **Scan for instruments on startup.** Searches for instruments and updates the Instruments list each time you start the OpenChoice Instrument Manager software.
- **Enable Popup Notifier.** Pops up a window from the PC System Tray when a new instrument is discovered or a configuration change is made.
- **Detailed status provided during instrument discovery.** Includes detailed instrument-specific information in the pop-up window, if enabled.

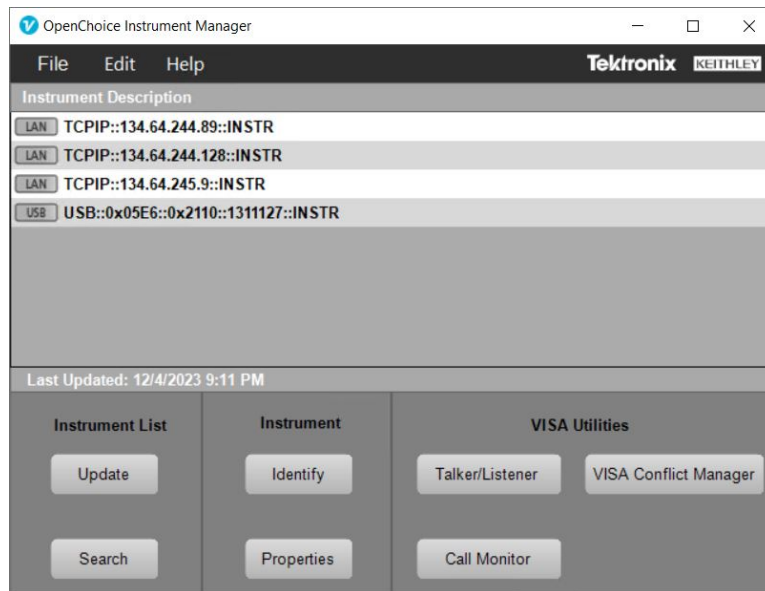


Managing Search Criteria

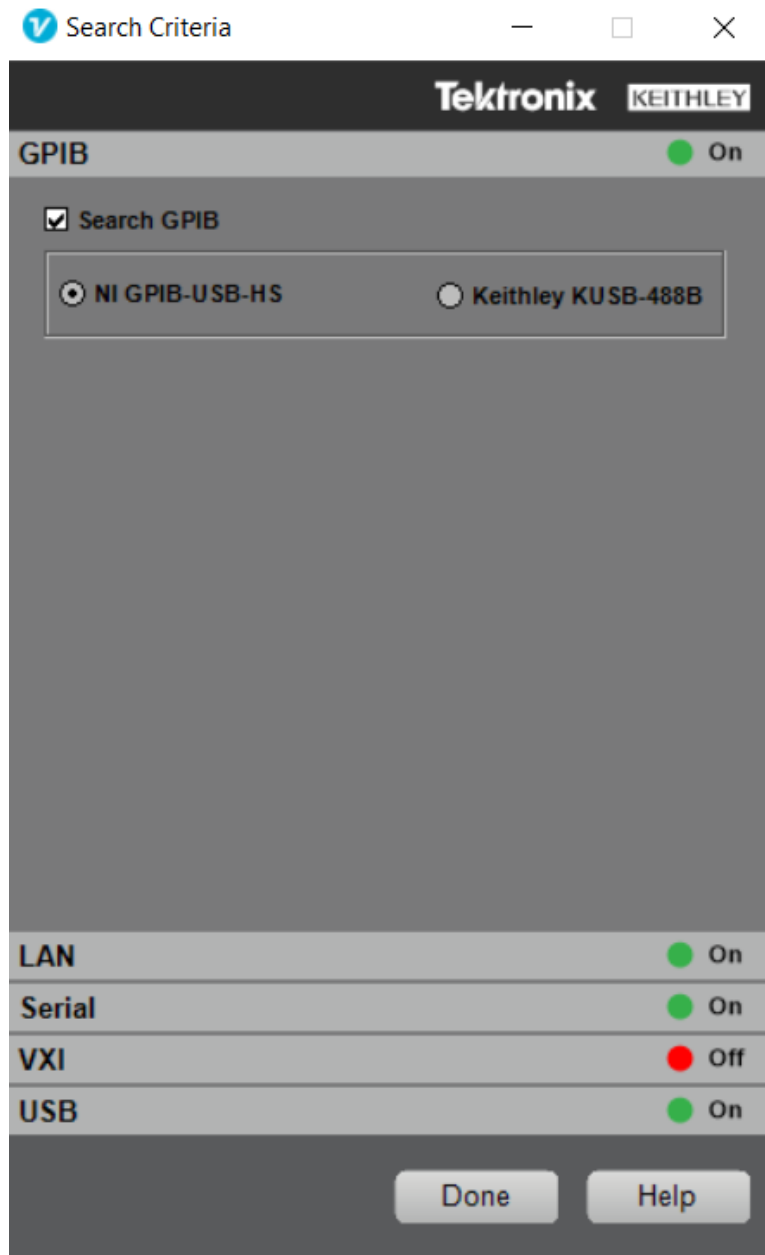
Using the Search Criteria Dialog Box

To set up an instrument search, do the following:

1. Click the **Search Criteria** button in the *Instrument Manager* window.



The Search Criteria dialog box appears. The included selections will vary depending on your PC and the available network.

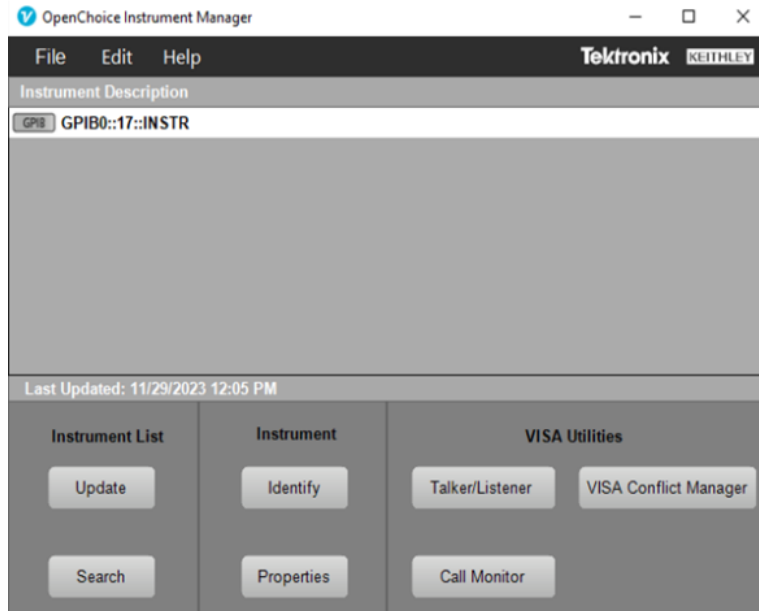


2. To set up an instrument search, TekVISA supports the USB to GPIB converter for the below models.

- Model KUSB-488B
- National Instruments GPIB USB HS

Visit the detail description page to learn about the prerequisites for using this hardware.

- a. Once the hardware is connected to the desktop controller through a USB port, select the appropriate hardware in the **Instrument Manager > Search > GPIB tab**.
- b. Click the Update button in the **Instrument Manager** window. It will be refreshed, and the device will be listed with a GPIB descriptor.

**Detailed Section:**

Model KUSB-488B USB to GPIB Converter. Click [here](#) for the hardware Manual.

**Prerequisite for using the KUSB-488B:**

Before connecting the KUSB-488B to your computer, ensure that you follow these steps:

- a. Software driver installation:
 - Install the required software driver for the KUSB-488B.
 - To download the latest software drivers, visit www.tek.com/en/products/keithley
- b. Hardware manual:

- Refer to the [hardware manual](#) for detailed instructions and information.

National Instruments GPIB USB HS and The GPIB USB HS+

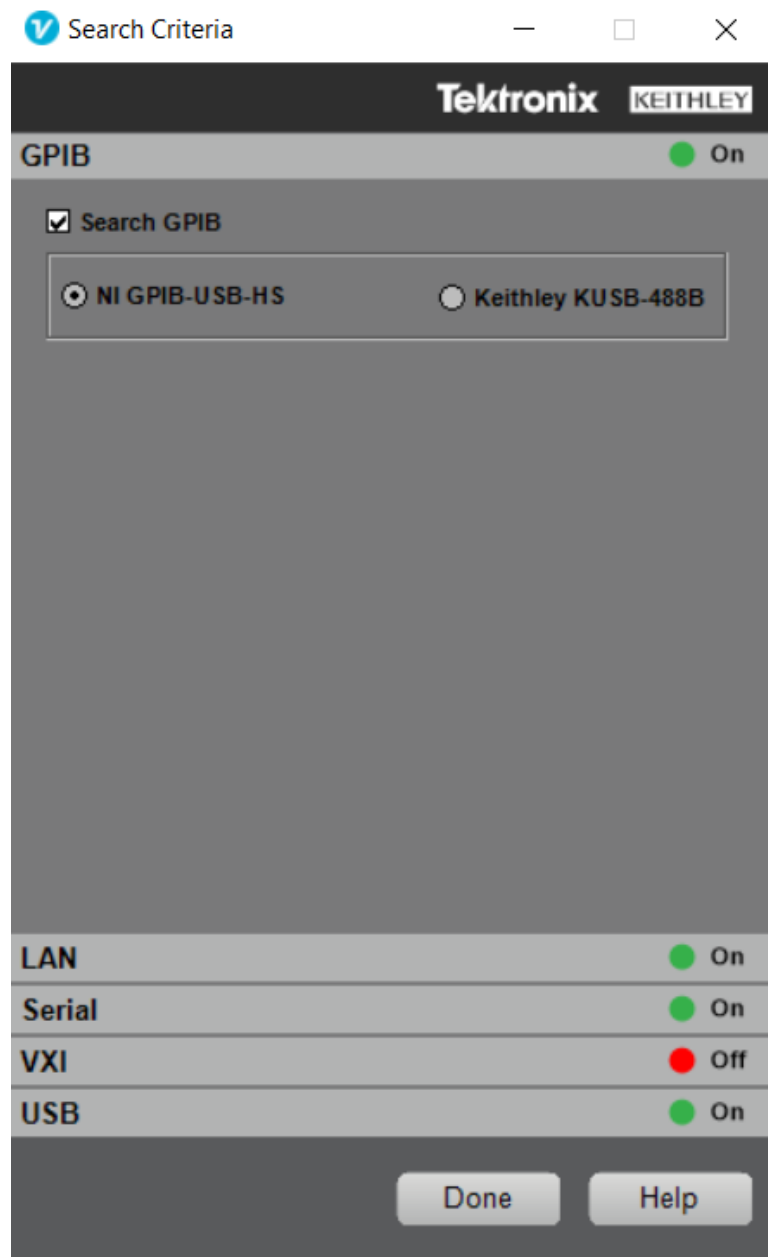
Before connecting the National Instruments GPIB USB HS and GPIB USB HS+ to your computer, adhere to the following prerequisites:

- a. Software driver installation:
 - Install the necessary software driver for the National Instruments GPIB USB HS and GPIB USB HS+.
 - For the latest software and License Agreement, visit ni.com.
- b. Hardware manual:
 - Refer to the hardware manual for detailed instructions and information.
 - Access the hardware manual [National Instruments GPIB USB Getting Guide](#)



[Click](#) the link for more details.

3. Check the check box available for that type.



The LED changes from red to green for each communication type included in the search. In the above example, the Instrument Manager will search for the GPIB communication type.

4. Enter any additional information necessary for the search. These options will vary depending on the communication type.

For example, the following dialog box shows the additional criteria available for a Serial search.

Search Criteria

Tektronix KEITHLEY

GPIB Off

LAN On

Serial On

☒ Search Serial

Port: COM3 VISA Name: ASRL3::INSTR

COM3 Port Available.

☒ Automatically detect port settings

Detect Now

☐ Manually override port settings

Baud Rate: 9600 Parity: No Parity

Flagging: Hardware Flagging

(Match instrument settings)

VXI Off

USB On

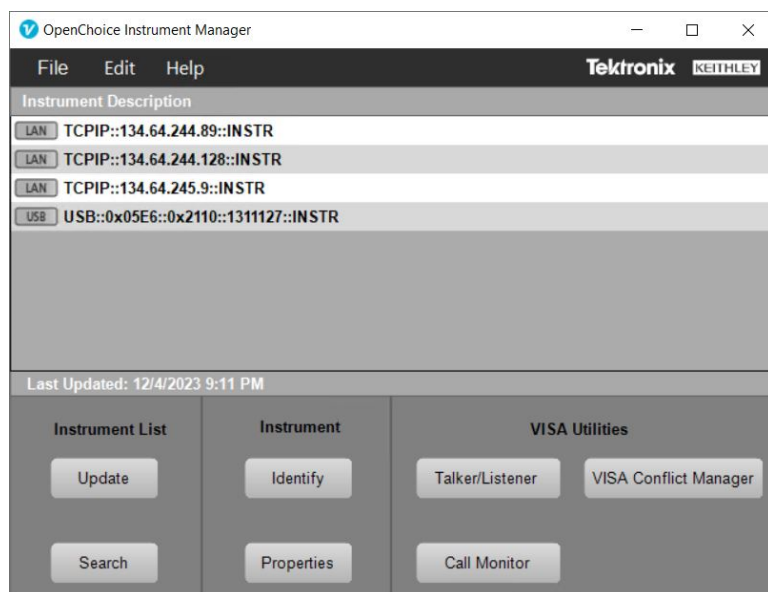
Done Help

See Also: [Searching for Instruments](#)

Setting Up a LAN Search

To set up a search for instruments connected to a remote [Local Area Network](#), do the following:

1. Click the **Search Criteria** button in the [Instrument Manager](#) window.



2. Select **LAN** in the Search Criteria dialog box.
3. Click the **Search LAN** check box. The LAN LED turns from red to green.

Tektronix KEITHLEY

GPIB ● Off

LAN ● On

☒ Search LAN

☐ Auto Discovery Parameters

Protocol: VXI-11

IP Address / Hostname:

Port: 4000 ▼ Add

VXI 11	134.64.245.9
VXI 11	134.64.244.245
VXI 11	134.64.244.204
Socket	134.64.244.204 4000

Delete Search

Serial ● On

VXI ● Off

USB ● On

Done Help

4. Enable the **Auto Discovery** check box and click **Update** in the OpenChoice Instrument Manager window to automatically detect the VXI-11 instruments that are connected to this physical LAN segment.



Note: The Auto Discovery option is available only for VXI-11 instruments.

Tektronix KEITHLEY

GPIB ● Off

LAN ● On

☒ Search LAN

☐ Auto Discovery Parameters

Protocol
VXI-11

IP Address / Hostname

Port
4000 ▼ Add

VXI 11	134.64.245.9
VXI 11	134.64.244.245
VXI 11	134.64.244.204
Socket	134.64.244.204 4000

Delete Search

Serial ● On

VXI ● Off

USB ● On

Done Help

5. Select **VXI-11** from the list to add VXI-11 instrument to the host list. The Port box is disabled for VXI-11 devices.
6. Select **Socket** from the list to add Socket devices to the host list. Enter the port number for Socket resources. The default port number is 4000. This Socket port can be set through TekVISA LAN Server Control Systray application.



Note: When an oscilloscope or instrument is set up with the default Socket port of 4000, the client can connect to the instrument using its IP Address or Name and Port 4000. Multiple clients cannot open a Socket connection to the same instrument at the same time.

Tektronix KEITHLEY

GPIB ● Off

LAN ● On

☒ Search LAN

☒ Auto Discovery Parameters

Protocol
VXI-11

IP Address / Hostname

Port
 ▼ Add

VXI 11	134.64.245.9
Socket	134.64.245.9 4000

Delete Search

Serial ● On

VXI ● Off

USB ● On

Done Help

7. In the **IP Address / Hostname** box, enter the name or equivalent IP address for a new instrument. If a field is unknown, use x (for example 192.158.97.x), wildcard characters (for example 241.241.241.*), a comma separated list (for example 241.241.241.135,155,205), or a hyphen separated list (for example 192.158,97.144-200) to search for a range of instruments using the host IDs.
8. Click the down arrow to add this new location to the search list.

Tektronix KEITHLEY

GPIB ● Off

LAN ● On

☒ Search LAN

☒ Auto Discovery Parameters

Protocol: VXI-11 IP Address / Hostname:

Port: ▼ Add

VXI 11	134.64.245.9
Socket	134.64.245.9 4000

Delete Search

Serial ● On

VXI ● Off

USB ● On

Done Help

9. Click the **Parameters** button to change the LAN Auto Discovery settings.

LAN Auto Discovery Parameters

LAN Discovery Wait Time

Address (secs)

Total (secs)

LAN Search Wait Time

Address (msecs)

Default Settings Done

- Increase the wait time when the network is heavily loaded. Typically, this is not necessary.
 - Modify the LAN settings.
 - **LAN Discovery Wait Time**
 - Enter the **Address (secs)** time to wait for responses to a local broadcast request of VXI-11.
 - Enter the **Total (secs)** time. This total time divided by the address time is the number of retries for IP discovery.
 - **LAN Search Wait Time**
 - Enter the **Address (msec)** time to set the wait time for a valid VXI-11 connection.
 - Click Close.
10. Select one or more host entries from the list and click the Search button to initiate a search on the selected hosts.

Tektronix KEITHLEY

GPIB ● Off

LAN ● On

☒ Search LAN

☒ Auto Discovery Parameters

Protocol: VXI-11 IP Address / Hostname:

Port: 4000 ▼ Add

Protocol	IP Address / Hostname	Port
VXI 11	134.64.245.9	
Socket	134.64.245.9	4000
VXI 11	134.64.245.236	

Delete Search

Serial ● On

VXI ● Off

USB ● On

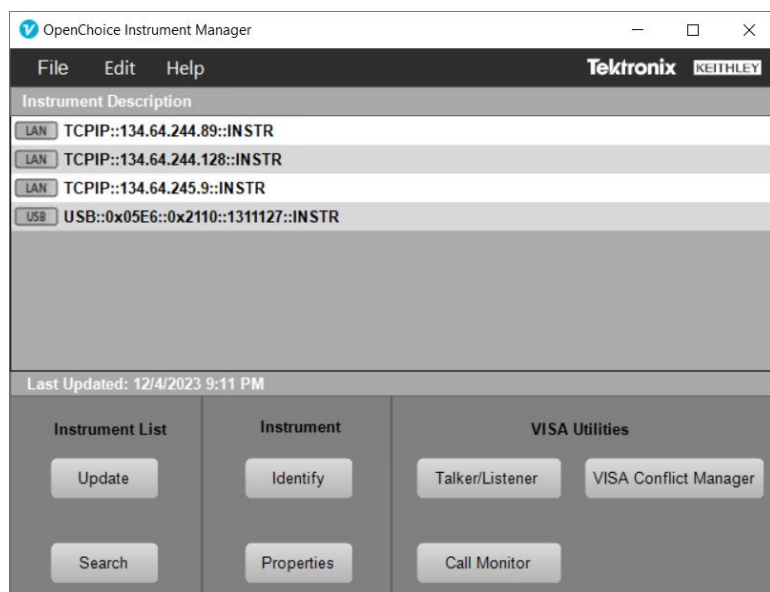
Done Help

11. Click **Done**.

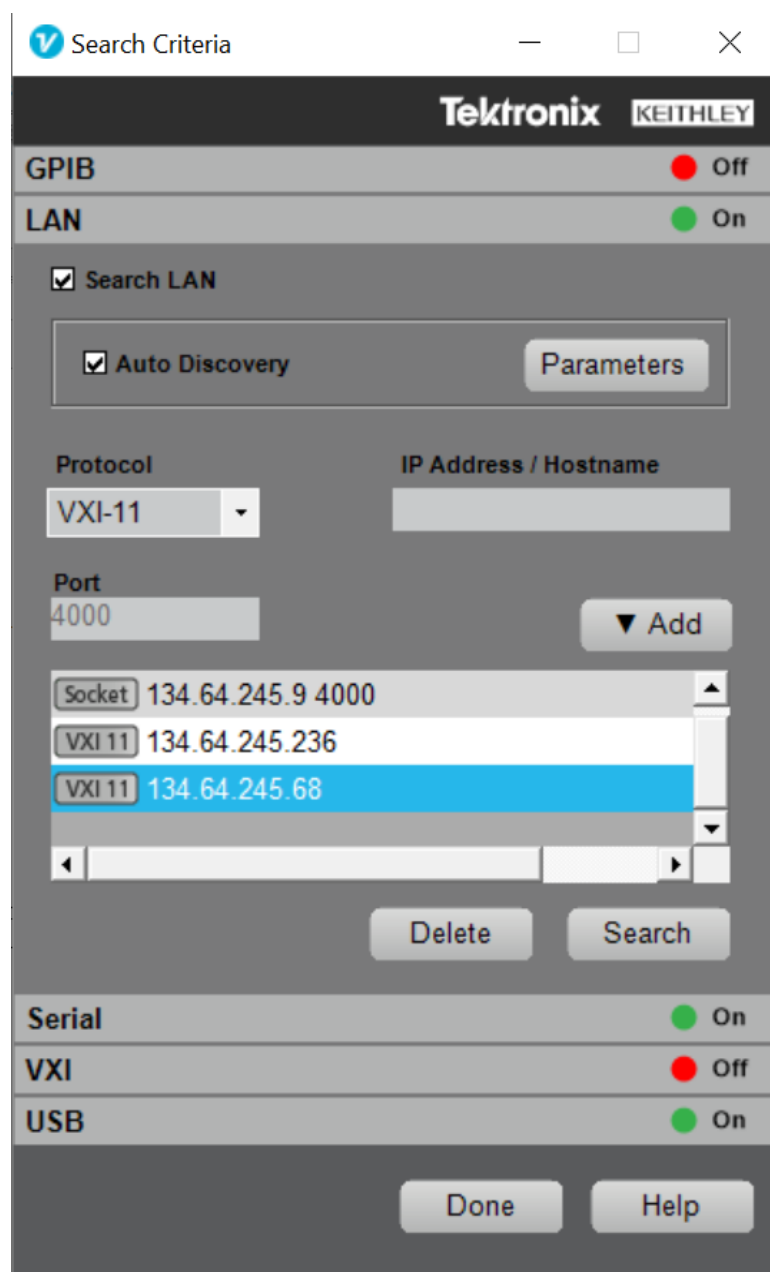
Deleting a LAN Search Location

To delete a LAN search location, do the following:

1. Click the **Search Criteria** button in the *Instrument Manager* window.



2. Select **LAN** in the Search Criteria dialog box.
3. Select one or more instrument addresses from the host list and click on the **Delete** button.

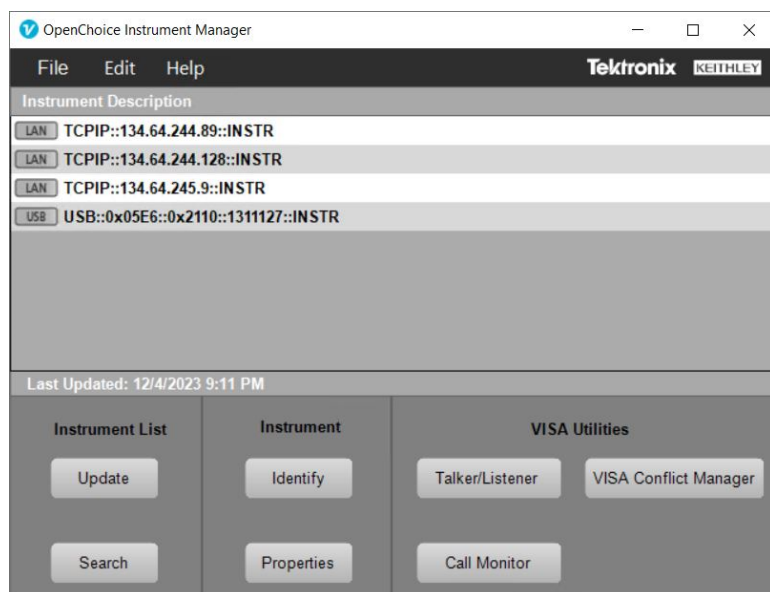


4. Click **Done**.

Setting Up a Serial Search

To set up a search for instruments using Serial ports, do the following:

1. Click the **Search Criteria** button in the *Instrument Manager* window.



2. Select **Serial** in the Search Criteria dialog box.
3. Click the **Search Serial** check box. The Serial LED turns from red to green.

Search Criteria

Tektronix KEITHLEY

GPIB ● On

LAN ● On

Serial ● On

☒ **Search Serial**

Port: COM1 VISA Name: ASRL1::INSTR

COM1 Port Available.

☒ **Automatically detect port settings**

Detect Now

☐ **Manually override port settings**

Baud Rate: 1200 Parity: No Parity

Flagging: Hardware Flagging (Match instrument settings)

VXI ● Off

USB ● On

Done Help

4. Enter any additional information needed for the search.
5. Click **Done**.

Automatic Search

If you want the Instrument Manager to search for all serial port settings, do the following:

1. Select the **Automatically detect port settings** check box.

Search Criteria

Tektronix KEITHLEY

GPIB	Off
LAN	On
Serial	On
VXI	Off
USB	On

☒ **Search Serial**

Port: COM3 VISA Name: ASRL3::INSTR

COM3 Port Available.

☒ **Automatically detect port settings**

Detect Now

☐ **Manually override port settings**

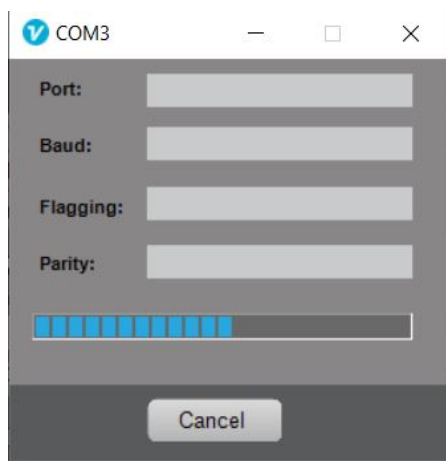
Baud Rate: 9600 Parity: No Parity

Flagging: Hardware Flagging

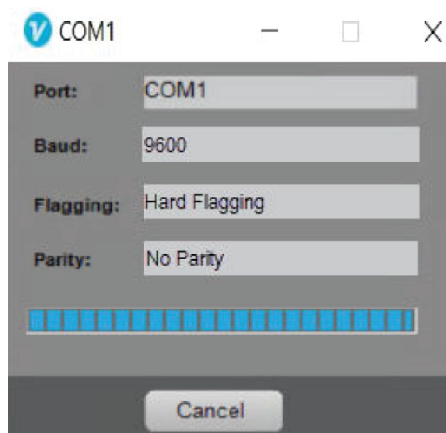
(Match instrument settings)

Done Help

2. Click the **Detect Now** button to initiate a search and detect port settings at this time.
A results dialog box, similar to the one shown below, reports real-time feedback on the event.



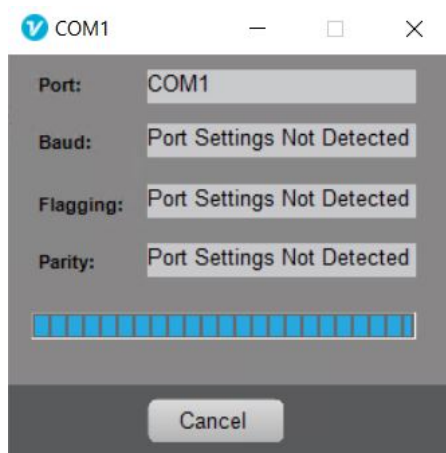
On completion, the following dialog box appears.



In this dialog box:

- The progress bar is at full.
- The reported settings should match the Serial port settings on your instrument.

If the search failed, the following dialog box appears.



Manual Search



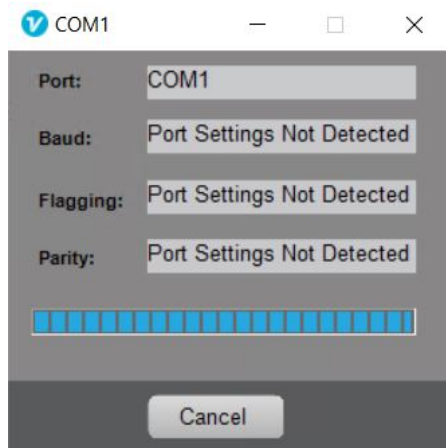
Note: Manual searches apply to Tektronix instruments only. The settings you enter must match the settings on the instrument you are trying to communicate with. Refer to your instrument user manual to verify these settings.

If you know the instrument settings and want to manually search for a port, do the following:

1. Select the **Manually override port settings** check box.

2. Enter your search criteria.
3. Click the **Detect Now** button to initiate the search at this time.

If the port is in use, the dialog reports the following:



Searching for Instruments

To initiate a search for new instruments, click the Update button in the *Instrument Manager* window.

Update Button: Empties the instruments list and rescans the VISA resources, rebuilding the list. This is useful in verifying the presence of new instruments.

The Instrument Manager will clear the Instruments list and scan the available VISA resources to find any new instruments. Instruments are displayed as they are found.

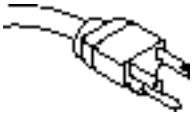
This process may take several minutes, depending on the number and type of instrument connections available.

Troubleshooting

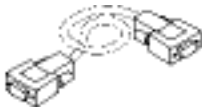
Quick Checks

To troubleshoot common problems that cause VISA communications errors, click the following topics.


[Check Device Power](#)

	Do all instruments and the computer you are using have power?
---	---

[Check Interconnect Cables](#)

	Did you use the correct cables to connect the instrument to the PC?
---	---


[Check Ethernet Communications](#)

	Use these checks to verify Ethernet communications between the instrument and PC.
--	---


[Check GPIB Communications](#)

	Use these checks to verify GPIB communications between the instrument and PC.
---	---

[Check USB Communications](#)

	Use these checks to verify USB communications between the instrument and PC.
---	--

[Check Serial Communications](#)

	Use these checks to verify Serial communications between the instrument and PC.
---	---

Using the Troubleshooter

The Tektronix OpenChoice Instrument Manager helps your PC communicate with instruments. If an instrument and PC are not communicating properly, use the Troubleshooter to help resolve technical issues.

Click the following topic to continue:



[Check for Power](#) - Verify that the instrument you are attempting to communicate with has power.

Checking for Power

Does the instrument you are attempting to communicate with have power:

- Is the power indicator illuminated?
- Is the power switch in the on position?
- Are you using the correct power cord?
- Is the power cord properly connected to the instrument and to the power source?
- If your instrument is operating from battery power (TPS2000, TDS3000, or TDS3000B), verify that the battery is charged.



Note: For Tektronix TDS5000, TDS6000, TDS7000, and TDS8000 Series oscilloscopes, power switches may be located on both the front and rear panels.

If you are still having problems, click the following topic to continue:



[Check Cables](#) - Verify the cable connections between the instrument and PC.

Checking Interconnect Cables

Verify that you used the correct cables to connect the instrument to the PC. Ensure that all cable connections are properly seated.

Ethernet



- Are you using a patch (straight-through) cable for the network connection?
- Are you using a crossover cable for direct instrument-to-PC connections?
- Are your network cables routed to the correct ports on the instrument and PC?
- Did you seat all connectors firmly? Some connectors make an audible click when correctly mated.
- Did you install the cable into another system that is operating properly? Does this system function correctly after you exchanged the cable?



Note: For TDS3000 and TDS3000B Series oscilloscopes, make all Ethernet cable connections before you power on the oscilloscope or the VXI-11 server will not launch correctly.

GPIB



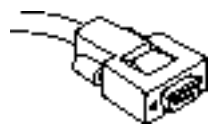
- Did you seat all cable connectors firmly? Are the connector retaining screws firmly tightened?
- Did you install the cable into another system that is operating properly? Does this system function correctly after you exchanged the cable?

USB




- Are your cables routed to the correct ports on the instrument and PC?
- Did you seat all cable connectors firmly?
- Did you install the cable into another system that is operating properly? Does this system function correctly after you exchanged the cable?

Serial (RS-232)



- Did you seat all cable connectors firmly? Are the connector retaining screws firmly tightened?
- Are you using a [null modem cable](#) for a direct oscilloscope-to-PC connection?
- Did you install the cable into another system that is operating properly? Does the system function correctly after you exchanged the cable?

If you are using the correct cables and still having problems, click the following topic to continue:

 [Verify Communications](#) - Use protocol-specific tests to troubleshoot communications between the instrument and PC.

Null Modem Cable

A Null Modem cable allows two RS-232 devices to directly communicate with each other without using a modem device. To achieve this, the transmit and receive signals of each device must be properly connected to one another.

The common null-modem cable wiring connections for DB-25 and DB-9 cables are described in the tables below.

Table 1: DB-25 Pin

Signal	DB-25 Pin	Signal	DB-25 Pin
Frame ground	1	Frame ground	1
Transmitt data	2	Receive data	3
Receive data	3	Transmit data	2
Request to send	4	Clear to send	5

Table continued...

Signal	DB-25 Pin	Signal	DB-25 Pin
Clear to send	5	Request to send	4
Signal ground	7	Signal ground	7
Data set ready	6	Data terminal ready	20
Carrier detect	8	Data terminal ready	20
Data terminal ready	20	Carrier detect	8
Data terminal ready	20	Data set ready	6

Table 2: DB-9 Pin

Signal	DB-9 Pin	Signal	DB-9 Pin
Frame ground	-	Frame ground	-
Transmit data	3	Receive data	2
Receive data	2	Transmit data	3
Request to send	7	Clear to send	8
Clear to send	8	Request to send	7
Signal ground	5	Signal ground	5
Data set ready	6	Data terminal ready	4
Carrier detect	1	Data terminal ready	4
Data terminal ready	4	Carrier detect	1
Data terminal ready	4	Data set ready	6

Verifying Communications

Your PC uses a communication protocol to talk to the instrument.



Click the communications protocol you are using:

[Ethernet](#)

[GPIB](#)

[USB](#)

[Serial \(RS-232\)](#)

Ethernet Checks

Checking Ethernet Communications

Use the following checks to verify communications between the instrument and the PC.

Use the Instrument Manager to Verify Communications

1. Find your instrument in the OpenChoice Instrument Manager **Instruments** list.
2. If you cannot find your instrument, remove power from the instrument and click the **Update** button.
3. If one of the selections disappears from the list, power your instrument back on and click **Update**.
4. Confirm that your instrument is included in the list.

If you cannot find your instrument, click the **Search Criteria** button on the Instrument Manager. Verify that you used the correct search criteria to locate your instrument.



Note: The Search Criteria for LAN detects both VXI-11 and Socket instruments.

Windows-based Tektronix Oscilloscopes

The Instrument Manager lists LAN instruments in IP address format. If you are using a network that dynamically assigns addresses, the address may change from one session to the next.

To confirm the IP address assigned to the instrument during a given session:

1. Select **Start > Run**.
2. In the Run dialog box, type `cmd`; then click **OK**.
3. In the DOS command window, type `ipconfig`.
4. Press **Enter** to view the Ethernet adapter Local Area Connection.

To verify the IP address on a nonWindows-based Tektronix oscilloscope (TDS3000/B, and others), follow the instructions provided in the user manual.

Use the OpenChoice Talker Listener to Verify Communications

1. Open the OpenChoice Talker Listener application.
2. Click the **Update** button and select the address of your instrument.
3. Send the IDN ? command to verify basic communications. Did the Listener return the ID of your instrument? For example, did the Listener return something similar to the following:

TEKTRONIX, TDS.2024, 0, CF :91.1CT.FV:V4.12.TDS2CM: CMV :V1.01

If you are still having problems, click the following topic to continue:



[Check Ethernet Hardware](#) - Troubleshoot problems with communications hardware.

Checking Ethernet Hardware

Use the following checks to troubleshoot hardware that may affect communications between the instrument and the PC.

Verify the Operation of Communications Hardware

Is there a working Network Adapter connected to the PC?

1. Access the Control Panel on the PC. (This will vary depending on the operating system and settings on the PC.)

For example, in the Start menu for Windows XP Pro and Windows 2000 computers, select **Start > Settings > Control Panel**. On Windows XP computers, select **Start > Control Panel**.

2. Open the **System** icon.
3. In the System Properties dialog box, open the **Hardware** tab and click the **Device Manager** button.

4. In the Device Manager, scroll to and open **Network adapters**.
5. Double-click the adapter selections; in the Device status field, verify that “This device is working properly.”
6. If the “working properly” statement is not present, click the **Troubleshoot** button to help resolve the problem.

Is the network adapter working properly on your Tektronix Windows-based oscilloscope?

1. Access the Control Panel on the oscilloscope as explained in the steps above.
2. Verify that the network adapter is working properly.

For Tektronix Windows-based oscilloscopes:

1. Locate the Ethernet port on the rear of the oscilloscope.
2. Verify that the LED located next to the port connector is flickering. This is an indication that the port is passing Ethernet communications.

Use the Call Monitor to Analyze Communications

You can use the OpenChoice Call Monitor to report all VISA communications passed between the instrument and the PC, including TekVISA control (TVC.ocx). This may provide evidence of miscommunications between devices.

1. Open the OpenChoice Call Monitor in the TekVISA suite.
2. Use the application to monitor the command stream transfer between devices.

If the Call Monitor returns information suggesting your hardware is operating improperly, contact the vendor for user assistance.

If you are still having problems, click the following topic to continue:



[Check Ethernet Software](#) - Verify that your software version, instrument firmware compatibility, and system settings are correct.

Checking Ethernet Software

Use the following checks to troubleshoot software that may be causing communications problems between the instrument and the PC.

Verify the Software Installation

Is the TekVISA LAN Server software correctly installed and running on the instrument?



Note: The following suggestion applies to Tektronix performance oscilloscopes that use Windows operating systems with desktops.



If this icon appears in the System Tray on the instrument desktop, the VXI-11 and/or Socket servers are running.



If this icon appears in the System Tray on the instrument desktop, the TekVISA LAN Server is installed but neither of the servers (Socket or VXI-11) are running.

To start the VXI-11 server, open the icon and select [Start VXI-11Server](#) from the pop-up menu.

To start the Socket server, open the icon and select [Start Socket Server](#) from the pop-up menu.



Figure 1: TekVisa LAN Popup from Server Tray Icon

? If no icon appears in the System tray, verify the installation of VXI-11 server software on your instrument.

Is the correct version of TekVISA installed?

1. Go to the Software Finder at www.tek.com. Confirm the latest compatible version of TekVISA software.
2. If you do not have the compatible version installed, download and install it.

Is the instrument running current firmware?

1. Check the instrument start up screen or user manual to obtain the firmware version currently installed.
2. Go to the Software Finder at www.tek.com to find the most recent compatible version of firmware for your instrument.
3. If necessary, update the instrument firmware.

Verify the System Software Settings

Are the software settings correct for the system?

Is the IP addresses unique for the instrument and PC; are the subnet masks identical for both?

- For additional information go to www.microsoft.com; enter "IP address" in the search window and review the articles appropriate to your version of MS Windows.
- Did you ping the destination port and receive a response?

For additional information go to www.microsoft.com; enter "ping" in the search window and review the articles appropriate to your version of MS Windows.

- Did you disable your local firewall and test for a communications response?



Note: You must assess the risk and assume responsibility for lowering the firewall.

Miscellaneous

If your instrument is a TDS5000, TDS6000, or TDS7000 Series oscilloscope:

- Is the instrument locked up? Do the buttons and knobs respond?

If the instrument is not responding, reboot it and try to confirm communications.

- Is the [Ethernet Network Adapter](#) enabled on the instrument?

If the Network Adapter is not listed, enable it in the oscilloscope BIOS. Follow the procedure described in your oscilloscope user manual.

Getting User Assistance

For assistance with Tektronix applications, such as WaveStar, OpenChoice Desktop, TekXL Toolbar, and TekW Toolbar, or if you are having other problems:



www.tek.com/en/contact-tek.

GPIB Checks

Checking GPIB Communications

Use the following checks to verify communications between the instrument and the PC.

Use the Instrument Manager to Verify Communications

1. Find your instrument in the OpenChoice Instrument Manager **Instruments** list.
2. If you cannot find your instrument, remove power from the instrument and click the **Update** button.
3. If one of the selections disappears from the list, power your instrument back on and click **Update**.
4. Confirm that your instrument is included in the list.

If you cannot find your instrument, click the **Search Criteria** button on the OpenChoice Instrument Manager. Verify that you used the correct search criteria to locate your instrument.

Use the OpenChoice Talker Listener to Verify Communications

1. Open the OpenChoice Talker Listener application.
2. Click the **Update** button and select the address of your instrument.
3. Send the IDN ? command to verify basic communications. Did the Listener return the ID of your instrument?

If you are still having problems, click the following topic to continue:



[Check GPIB Hardware](#) - Troubleshoot problems with communications hardware.

Checking GPIB Hardware

Use the following checks to troubleshoot hardware that may affect communications between the instrument and the PC.

Verify the Operation of Communications Hardware

Are you using the correct communications module for the instrument?

- For TDS200 Series oscilloscopes: Are you using a TDS2CM, TDS2CMA, or TDS2CMAX Communications Module?
- For TDS1000, TDS2000 Series oscilloscopes: Are you using a TDS2CM, TDS2CMA, or TDS2CMAX Communications Module?
- For TDS3000B Series oscilloscopes: Are you using a TDS3GV Communications Module?

Is the correct communications hardware installed on your Tektronix Windows-based instrument and personal computer?

1. Access the Control Panel on the PC. (This will vary depending on the operating system and settings on the PC.)

For example, in the Start menu for Windows XP Pro and Windows 2000 computers, select **Start > Settings > Control Panel**. On Windows XP computers, select **Start > Control Panel**.

2. Open the **System** icon.

3. In the System Properties dialog box, open the **Hardware** tab and click the **Device Manager** button.
4. In the Device Manager, scroll to and open the GPIB interface devices, for example, National Instruments GPIB Interface, Capitol Equipment, and others.



Note: If there are no selections for GPIB devices, refer to the interface vendor documentation or contact them directly to resolve the problem.

5. Double-click the GPIB interface selection(s); in the **Device status** field, verify that “This device is working properly.”
6. If the “working properly” statement is not present, click the **Troubleshoot** button or open the troubleshooting help (provided by the vendor) to help resolve the problem.

For TDS5000B Series oscilloscopes used as GPIB controllers:

- If you are attempting to communicate with other instruments from this oscilloscope, verify that the oscilloscope is configured as the GPIB Controller. Refer to the oscilloscope user manual for detailed information.

Use the Call Monitor to Analyze Communications

You can use the OpenChoice Call Monitor to report all VISA communications passed between the instrument and PC, including TekVISA control (TVC.ocx). This may provide evidence of miscommunications between devices.

1. Open the OpenChoice Call Monitor in the TekVISA suite.
2. Use the application to monitor the command stream transfer between devices.

If the Call Monitor returns information suggesting your hardware is operating improperly, contact the vendor for user assistance.

If you are still having problems, click the following topic to continue:



[Check GPIB Software](#) - Verify that your software version, instrument firmware compatibility, and system settings are correct.

Checking GPIB Software

Use the following checks to troubleshoot software that may be causing communications problems between the instrument and the PC.

Verify the Software Installation

Is the correct version of TekVISA installed on the PC?

1. Go to the Software Finder at www.tek.com. Confirm the latest compatible version of TekVISA software.
2. If you do not have a compatible version installed, download and install it.

Is the instrument running current firmware?

1. Check the instrument start up screen or user manual to obtain the firmware version currently installed.
2. Go to the Software Finder at www.tek.com to find the most recent compatible version of firmware for your instrument.
3. If necessary, update the instrument firmware.

Verify the System Software Settings

Are the software settings correct for the system?

- Does each device on the bus (PC and each instrument) have a unique GPIB address?

Miscellaneous

If the instrument is a Tektronix Windows-based oscilloscope:

- Is the instrument locked up? Do the buttons and knobs respond?

If the instrument is not responding, reboot it and try to confirm communications.

Getting User Assistance

For assistance with Tektronix applications, such as WaveStar, OpenChoice Desktop, TekXL Toolbar, and TekW Toolbar, or if you are having other problems:

 www.tek.com/en/contact-tek.

USB Checks

Checking USB Communications

Use the following checks to verify communications between the instrument and the PC.

Use the Instrument Manager to Verify Communications


1. Find your instrument in the OpenChoice Instrument Manager **Instruments** list.
2. If you cannot find your instrument, remove power from the instrument and click the **Update** button.
3. If one of the selections disappears from the list, power your instrument back on and click **Update**.
4. Confirm that your instrument is included in the list.

If you cannot find your instrument, click the **Search Criteria** button on the OpenChoice Instrument Manager. Verify that you used the correct search criteria to locate your instrument.

Use the OpenChoice Talker Listener to Verify Communications

1. Open the OpenChoice Talker Listener application.
2. Click the **Update** button and select the address of your instrument.
3. Send the IDN ? command to verify basic communications. Did the Listener return the ID of your instrument?

If you are still having problems, click the following topic to continue:

 [Check USB Hardware](#) - Troubleshoot problems with communications hardware.

Checking USB Hardware

Use the following checks to troubleshoot hardware that may affect communications between the instrument and the PC.

Verify the Operation of Communications Hardware

For instruments communicating using USB:

- Is the instrument USBTMC (Universal Serial Bus Test and Measurement Class) compliant?

Refer to the documentation included with the instrument. Only instruments compliant with USBTMC will communicate properly with versions of VISA, including TekVISA.

- Is the USB hub connected?

For Tektronix Windows-based instruments and personal computers, verify that USB is enabled and working properly.

1. Access the Control Panel on the PC. (This will vary depending on the operating system and settings on the PC.)

For example, in the Start menu for Windows XP Pro and Windows 2000 computers, select **Start > Settings > Control Panel**. On Windows XP computers, select **Start > Control Panel**.

2. Open the **System** icon.
3. In the System Properties dialog box, open the **Hardware** tab and click the **Device Manager** button.
4. In the Device Manager, scroll to and open the **Universal Serial Bus controller**.



Note: If there are no selections for USB controller devices, refer to your interface vendor documentation or contact them directly to resolve the problem.

5. Double-click the USB controller selection(s); in the **Device status** field, verify that “This device is working properly.”
6. If the “working properly” statement is not present, or if the controller icon has a red circle with an arrow through it, click the **Troubleshoot** button or open the troubleshooting help (provided by the vendor) to help resolve the problem.

Use the Call Monitor to Analyze Communications

You can use the OpenChoice Call Monitor to report all VISA communications passed between the instrument and the PC, including TekVISA control (TVC.ocx). This may provide evidence of miscommunications between devices.

1. Open the OpenChoice Call Monitor in the TekVISA suite.
2. Use the application to monitor the command stream transfer between devices.

If the Call Monitor returns information suggesting your hardware is operating improperly, contact the vendor for user assistance.

If you are still having problems, click the following topic to continue:



[Check USB Software](#) - Verify that your software version, instrument firmware compatibility, and system settings are correct.

Checking USB Software

Use the following checks to troubleshoot software that may be causing communications problems between the instrument and the PC.

Verify the Software Installation

Is the correct version of TekVISA installed?

1. Go to the Software Finder at www.tek.com. Confirm the latest compatible version of TekVISA software.
2. If you do not have a compatible version installed, download and install it.

Is the instrument running current firmware?

1. Check the instrument start up screen or user manual to obtain the firmware version currently installed.
2. Go to the Software Finder at www.tek.com to find the most recent compatible version of firmware for your instrument.
3. If necessary, update the instrument firmware.

Miscellaneous

If the instrument is a Tektronix Windows-based oscilloscope:

- Is the instrument locked up? Do the buttons and knobs respond?

If the instrument is not responding, reboot it and try to confirm communications.

Getting User Assistance

For assistance with Tektronix applications, such as WaveStar, OpenChoice Desktop, TekXL Toolbar, and TekW Toolbar, or if you are having other problems:



Serial Checks

Checking Serial (RS-232) Communications

Use the following checks to verify communications between the instrument and the PC.

Use the Instrument Manager to Verify Communications

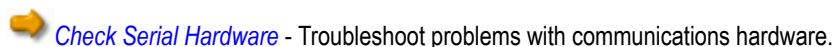
1. Find your instrument in the OpenChoice Instrument Manager **Instruments** list.
2. If you cannot find your instrument, remove power from the instrument and click the **Update** button.
3. If one of the selections disappears from the list, power your instrument back on and click **Update**.
4. Confirm that your instrument is included in the list.

If you cannot find your instrument, click the **Search Criteria** button on the OpenChoice Instrument Manager. Verify that you used the correct search criteria to locate your instrument.

Use the OpenChoice Talker Listener to Verify Communications

1. Open the OpenChoice Talker Listener application.
2. Click the **Update** button and select the address of your instrument.
3. Send the IDN ? command to verify basic communications. Did the Listener return the ID of your instrument?

If you are still having problems, click the following topic to continue:



Checking Serial (RS-232) Hardware

Use the following checks to troubleshoot hardware that may affect communications between the instrument and the PC.

Verify the Operation of Communications Hardware

Are you using the correct communications module for the instrument?

- For TDS200 Series instruments: Are you using a TDS2CM, TDS2CMA, or TDS2CMAX Communications Module?
- For TDS1000, TDS2000 Series instruments: Are you using a TDS2CM, TDS2CMA, TDS2CMAX, or TDS2MEM Communications Module?
- For TDS3000 Series instruments: Are you using a TDS3GM, TDS3GV, or TDS3VM Communications Module?

For Tektronix Windows-based instruments and personal computers, verify that the communications hardware is enabled and the software is installed.

For example, in the Start menu for Windows XP Pro and Windows 2000 computers, select **Start > Settings > Control Panel**.

1. Open the **System** icon.
2. In the System Properties dialog box, open the **Hardware** tab and click the **Device Manager** button.
3. In the Device Manager, scroll to and open **Ports** or **Ports (COM & LPT)**.
4. Double-click the Port selections (COM1, COM2, and others); in the **Device status** field, verify that "This device is working properly."

5. If the “working properly” statement is not present, click the **Troubleshoot** button to help resolve the problem.



Note: If the instrument is configured with a port designated for printer use only, you cannot use this port to transfer data to the PC.

Use the Call Monitor to Analyze Communications

You can use the OpenChoice Call Monitor to report all VISA communications passed between the instrument and the PC, including TekVISA control (TVC.ocx). This may provide evidence of miscommunications between devices.

1. Open the OpenChoice Call Monitor in the TekVISA suite.
2. Use the application to monitor the command stream transfer between devices.

If the Call Monitor returns information suggesting your hardware is operating improperly, contact the vendor for user assistance.

If you are still having problems, click the following topic to continue:



[Check Serial Software](#) - Verify that your software version, instrument firmware compatibility, and system settings are correct.

Checking Serial (RS-232) Software

Use the following checks to troubleshoot software that may be causing communications problems between the instrument and the PC.

Verify the Software Installation

Is the correct version of TekVISA installed?

1. Go to the Software Finder at www.tek.com. Confirm the latest compatible version of TekVISA software.
2. If you do not have a compatible version installed, download and install it.

Is the instrument running current firmware?

1. Check the instrument start up screen or user manual to obtain the firmware version currently installed.
2. Go to the Software Finder at www.tek.com to find the most recent compatible version of firmware for your instrument.
3. If necessary, update the instrument firmware.

Verify the System Software Settings

Are the software settings correct for the system?

- Are the instrument and PC communication settings identical?

Verify that the baud rate, flagging, parity, data bits, and stop bits are identical on both devices. You can scan for these automatically or set them up manually. Click the Instrument Manager **Search Criteria** button; then select **Serial**.

- For Tektronix TPS2000, TDS3000, or TDS3000B Oscilloscopes, refer to the user manual for information on how to set up basic serial communications.



Note: Try reducing the Baud Rate or Flagging settings. Lowering the settings often improves communications quality.

Getting User Assistance

For assistance with Tektronix applications, such as WaveStar, OpenChoice Desktop, TekXL Toolbar, and TekW Toolbar, or if you are having other problems:



www.tek.com/en/contact-tek.