



TekVISA OpenChoice Talker Listener

Application Help



077-1786-00



TekVISA OpenChoice Talker Listener

Application Help

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Introduction

Overview of the product

The Talker Listener application provides a way for you to observe the detailed communications between the PC and the instrument(s), to send individual commands to an instrument, to run commands scripts, and to create and save scripts. You can open more than one instance of the Talker Listener application. You can save many commands in a script (text format) and also open scripts for running. You can run the entire script at a time or can single step through it. You can also send a selected command continuously using the Loop button.

You can talk to instruments connected over either Serial Port (ASRL), GPIB, Network (TCPIP), and USB. You can send GPIB commands or receive responses. The application logs the communication between instruments in the Talker Listener Readout for later viewing. You can copy and paste the Talker Listener Readout into any text editor and save it.

You can set and get the current values of supported VISA attributes using the Attribute Explorer.

Supported information

Refer to Contacting Tektronix at the beginning of the online help.

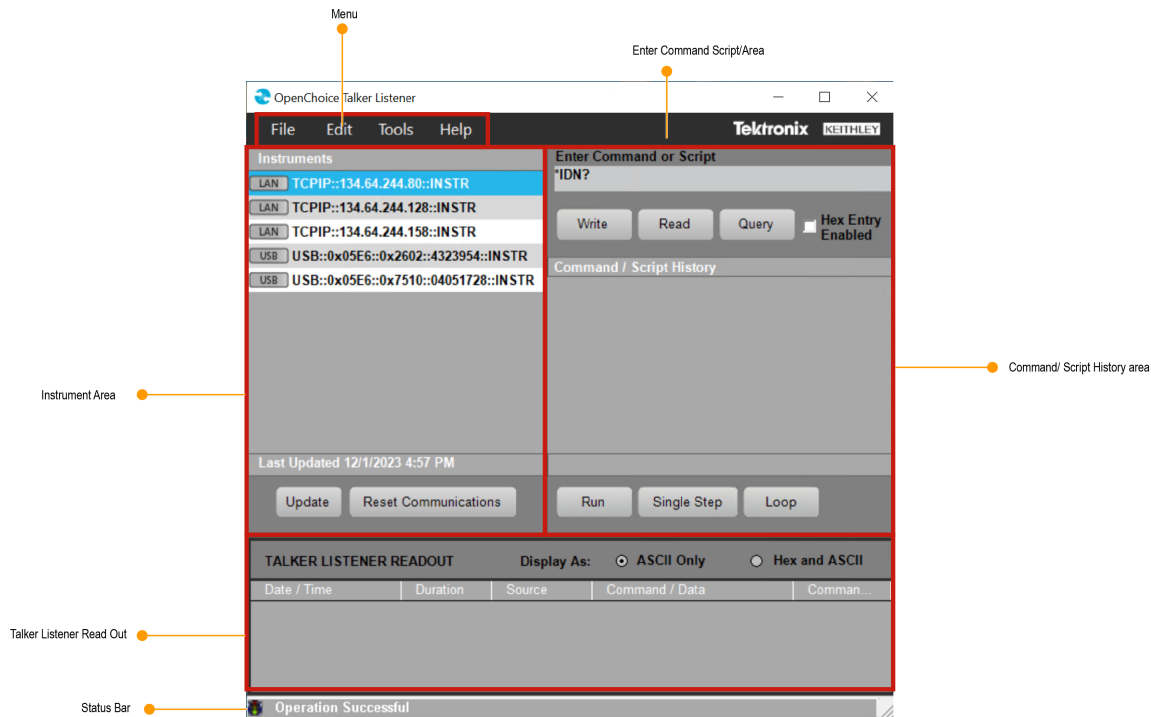
Please have the following information available when you contact Tektronix:

- Model and serial number of your instrument.
- Firmware version of your instrument.
- TekVISA or OpenChoice VISA 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


Application view

The following image shows the application screen and the areas of the screen.



Starting and Exiting the application

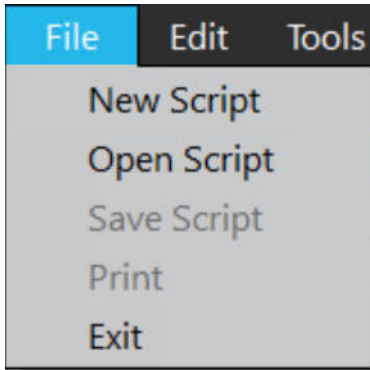
Invoke the Talker Listener application from **Start > Programs > TekVisa > Talker Listener**.

Select **File > Exit** to exit from the application or click .

Menus

File Menu

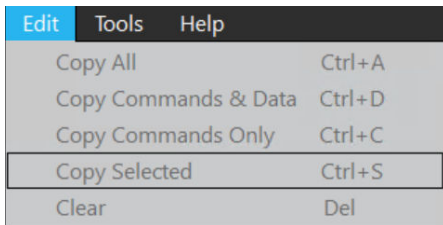
The following menu items are available in the File menu.



Menu item	Description
<i>New Script</i>	Opens a new script file in Notepad for editing. The file includes the Talker Listener Script header. You can type or cut-and-paste the commands and save the script.
<i>Open Script</i>	Opens a File Open dialog box to select and open an existing script file. The application adds the commands from that script to the command history.
<i>Save Script</i>	Saves the commands in a script.
Print	Opens a Print dialog box and prints the whole or the selected portion of the Talker Listener Readout.
Exit	Exits the application.

Edit Menu

The following menu items are available in the Edit menu.



Menu item	Description
Copy All	Copies the contents of all the rows and columns in the Talker Listener Readout. The shortcut key is Ctrl+A.
Copy Commands & Data	Copies the contents of only the Commands and Data column in the Talker Listener Readout. The shortcut key is Ctrl+D.
Copy Commands Only	Copies only the Commands in the Talker Listener Readout. The shortcut key is Ctrl+C.
Copy Selected	Copies the contents of only the selected row in the Talker Listener Readout. The shortcut key is Ctrl+S.
Clear	Clears or deletes the entire contents in the Talker Listener Readout. The shortcut key is Del.

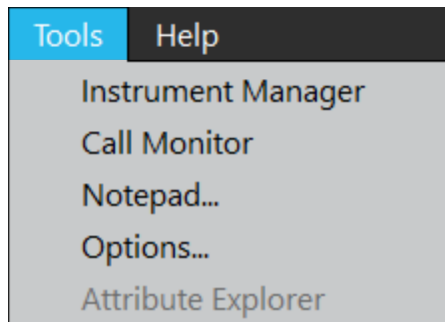
The menu items conform to the shortcut menu in the Talker Listener Readout area.

See also

[Shortcut menu](#)

Tools Menu

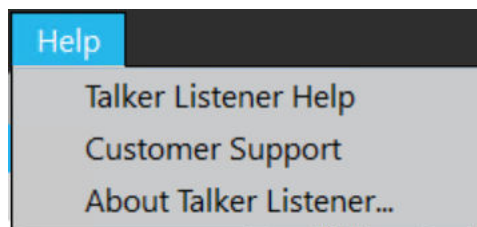
The Tools menu has the following options.



Menu item	Description
Instrument Manager	Opens an instance of Instrument manager.
Call Monitor	Opens an instance of Call Monitor.
Notepad...	Opens Notepad for creating Talker Listener scripts.
Options...	Opens the Talker Listener options dialog.
Attribute Explorer	Opens the Attribute Explorer dialog.

Help Menu

The following menu items are available in the Help menu.



Menu item	Description
Talker Listener Help	Opens the Talker Listener Online Help file.
Customer Support	Opens the Contacting Tektronix topic in the help file.
About Talker Listener...	Displays the About Talker Listener dialog box.

Shortcut Menus

Right-click within the Command/Script History area, for a shortcut menu.

Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Clear	Del

The shortcut menu options are:

Menu item	Description
Cut	Cuts the selected command or script. The shortcut key is Ctrl+X.
Copy	Copies the selected command or script. The shortcut key is Ctrl+C.
Paste	Pastes the cut or copied command or script. The shortcut key is Ctrl+V.
Clear	Removes the selected command or script. The shortcut key is Del.

Right-click within the Talker Listener Readout area, for a shortcut menu. This menu is the same as the Edit Menu.

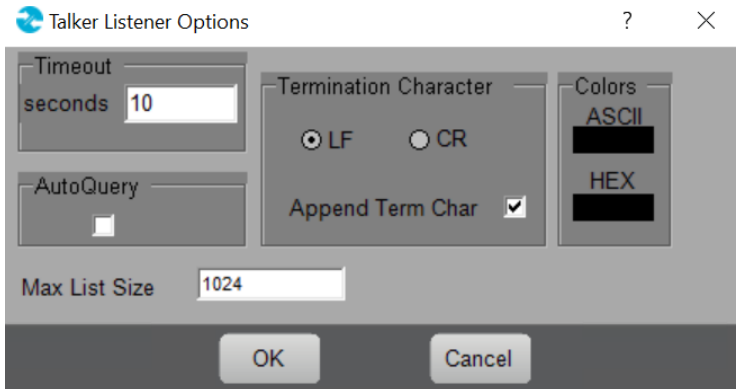
Copy All	Ctrl+A
Copy Commands & Data	Ctrl+D
Copy Commands Only	Ctrl+C
Copy Selected	Ctrl+S
Clear	Del

The shortcut menu options are:

Menu item	Description
Copy All	Copies the contents of all the rows and columns in the Talker Listener Readout. The shortcut key is Ctrl+A.
Copy Commands & Data	Copies the contents of only the Commands and Data column in the Talker Listener Readout. The shortcut key is Ctrl+D.
Copy Commands Only	Copies only the Commands in the Talker Listener Readout. The shortcut key is Ctrl+C.
Copy Selected	Copies the contents of only the selected row in the Talker Listener Readout. The shortcut key is Ctrl+S.
Clear	Clears or deletes the entire contents in the Talker Listener Readout. The shortcut key is Del.

Talker Listener Options

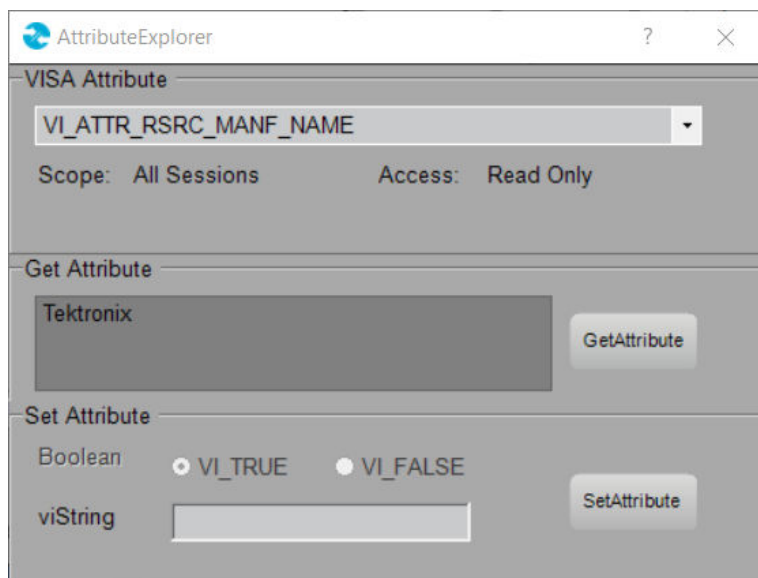
Select **Tools> Options** to invoke Talker Listener options dialog.



Option	Description
Timeout	Timeout is a duration in seconds, which indicates the time duration after which the application times out while waiting for a response from a connected instrument. The default timeout value is 10 seconds.
AutoQuery	If the selected command is a query command, then the Write command is always followed by a Read command. AutoQuery is enabled by default .
Termination Character	This is the character appended to every command. The Append Term Char is enabled by default and the termination character is line feed.
Colors	Specifies the colors for Talker Listener Readout. The default ASCII text and HEX text colors are black and blue.

Attribute Explorer

Select **Tools> Attribute Explorer** to explore the attributes of the selected instrument. If the attribute is a Read Only attribute, the Set Attribute area is disabled.



Option	Description
VISA Attribute	Select the attribute from a list of supported VISA attributes. The application displays the scope of the attribute (All Sessions or This Session) and the access of the attribute (Read Only, Read Write).
Get Attribute	Click GetAttribute to display the current value of the selected attribute.
Set Attribute	Click SetAttribute to set the specified value for the selected attribute.
Boolean	Enabled only when you select an attribute of type Boolean. Allows you to select True or False values.
viString	Based on the data type of the selected attribute, you can enter integer or string type values.

The following VISA attributes are supported.

Attribute	Description
VI_ATTR_INTF_INST_NAME	Human-readable text describing the given interface.
VI_ATTR_INTF_NUM	Board number for the given interface.
VI_ATTR_RSRC_CLASS	Specifies the resource class (for example, "INSTR").
VI_ATTR_RSRC_NAME	The unique identifier for a resource compliant with the address structure.
VI_ATTR_RSRC_SPEC_VERSION	Resource version that uniquely identifies the version of the VISA specification to which the implementation is compliant.
VI_ATTR_RSRC_IMPL_VERSION	Resource version that uniquely identifies each of the different revisions or implementations of a resource.
VI_ATTR_RSRC_MANF_ID	A value that corresponds to the VXI manufacturer ID of the manufacturer that created the implementation.
VI_ATTR_RSRC_MANF_NAME	A string that corresponds to the VXI manufacturer name of the manufacturer that created the implementation.
VI_ATTR_TMO_VALUE	Minimum timeout value to use, in milliseconds.
VI_ATTR_ASRL_BAUD	This is the baud rate of the interface. It is represented as an unsigned 32-bit integer so that any baud rate can be used, but it usually requires a commonly used rate such as 300, 1200, 2400, or 9600 baud.
VI_ATTR_ASRL_DATA_BITS	This is the number of data bits contained in each frame (from 5 to 8). The data bits for each frame are located in the low order bits of every byte stored in memory.
VI_ATTR_ASRL_END_IN	This attribute indicates the method used to terminate read operations.
VI_ATTR_ASRL_END_OUT	This attribute indicates the method used to terminate write operations.
VI_ATTR_ASRL_FLOW_CNTRL	This attribute indicates the flow control method used in Serial port data transfer.
VI_ATTR_ASRL_PARITY	This is the parity used with every frame transmitted and received.
VI_ATTR_ASRL_STOP_BITS	This is the number of stop bits used to indicate the end of a frame.
VI_ATTR_GPIB_ADDR_STATE	This attribute shows whether the specified GPIB interface is currently addressed to talk or listen, or is not addressed.
VI_ATTR_GPIB_ATN_STATE	This attribute shows the current state of the GPIB ATN (Attention) interface line.
VI_ATTR_GPIB_CIC_STATE	This attribute shows whether the specified GPIB interface is currently CIC (controller in charge).
VI_ATTR_GPIB_NDAC_STATE	This attribute shows the current state of the GPIB NDAC (Not Data Accepted) interface line.
VI_ATTR_GPIB_PRIMARY_ADDR	Primary address of the local GPIB controller used by the given session.
VI_ATTR_GPIB_READDR_EN	This attribute specifies whether to use repeat addressing before each read or write operation.

Table continued...

Attribute	Description
VI_ATTR_GPIB_RECV_CIC_STATE	Notification that the GPIB controller has gained or lost CIC (controller in charge) status.
VI_ATTR_GPIB_REN_STATE	This attribute returns the current state of the GPIB REN (Remote ENable) interface line.
VI_ATTR_GPIB_SECONDARY_ADDR	Secondary address of the local GPIB controller used by the given session
VI_ATTR_GPIB_SRQ_STATE	This attribute shows the current state of the GPIB SRQ (Service ReQuest) interface line.
VI_ATTR_GPIB_SYS_CNTRL_STATE	This attribute shows whether the specified GPIB interface is currently the system controller. In some implementations, this attribute may be modified only through a configuration utility. On these systems, this attribute is read only (RO).
VI_ATTR_GPIB_UNADDR_EN	This attribute specifies whether to unaddress the device (UNT and UNL) after each read or write operation.
VI_ATTR_SEND_END_EN	Whether to assert END during the transfer of the last byte of the buffer.
VI_ATTR_SUPPRESS_END_EN	Whether to suppress the END indicator termination. If this attribute is set to VI_TRUE, the END indicator does not terminate read operations. If this attribute is set to VI_FALSE, the END indicator terminates read operations.
VI_ATTR_TERMCHAR	Termination character. When the termination character is read and VI_ATTR_TERMCHAR_EN is enabled during a read operation, the read operation terminates.
VI_ATTR_TERMCHAR_EN	Flag that determines whether the read operation should terminate when a termination character is received.
VI_ATTR_TCPIP_ADDR	This is the TCPIP address of the device to which the session is connected. This string is formatted in dot-notation.
VI_ATTR_TCPIP_DEVICE_NAME	This specifies the LAN device name used by the VXI-11 protocol during connection.
VI_ATTR_TCPIP_HOSTNAME	This specifies the host name of the device. If no host name is available, this attribute returns an empty string.
VI_ATTR_TCPIP_PORT	This specifies the port number for a given TCPIP address. For a TCPIP SOCKET resource, this is a required part of the address string.

Buttons

The following buttons are available when the Talker Listener application opens.

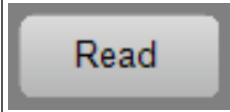
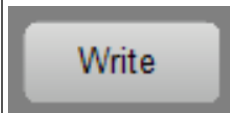
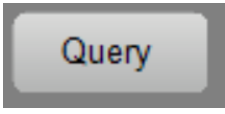
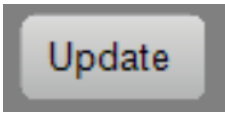
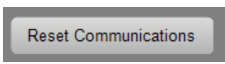
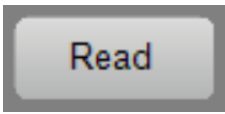
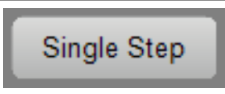
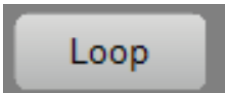
Button	Description
	The Read button is available in the Enter Command or Script area. Click the Read button to connect to an instrument and Read data from it.
	The Write button is available in the Enter Command or Script area. Click the Write button to write selected command to an instrument.

Table continued...

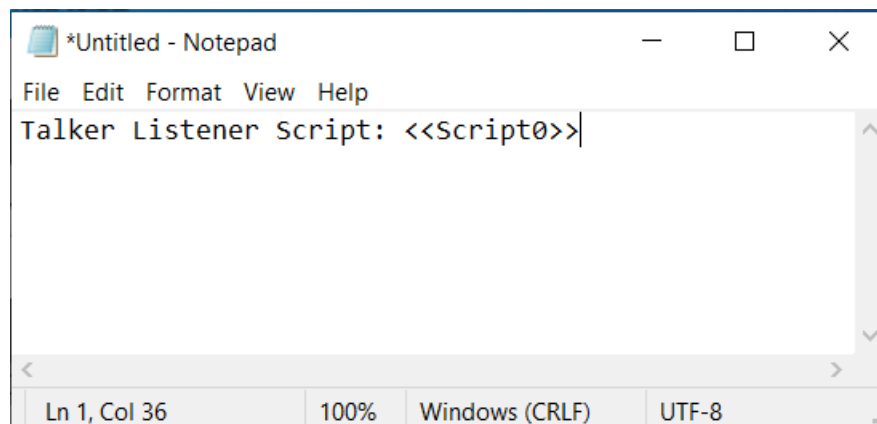
Button	Description
	<p>The Query button is available in the Enter Command or Script area. Click the send a command and read the response from an instrument.</p>
	<p>The Update button is available in the Instruments area. Click the Update button to update the instrument list.</p>
	<p>The Reset Communications button is available in the Instruments area. Click the Reset Communications button to reset the communication with the selected instrument. This closes the session with the instrument, clears the buffers, and opens a new session with the same instrument.</p>
	<p>The Run button is available in the Command/Script History area. Click the Run button to run the selected script.</p>
	<p>The Single Step button is available in the Command/Script History area. Click the Single Step button to execute the commands in a script one at a time.</p>
	<p>The Loop button is available in the Command/Script History area. Click the Loop button to execute the selected command or script continuously till you click the Loop button again. While the command is executing in a loop, the button changes to green.</p>

How to

Create and Open a Script

To create a new script, select **File > New Script**. This action opens a Notepad file with the Talker Listener header.

The Talker Listener header in a script is the text "Talker Listener Script: Script <n>" where n (an integer) is the script id.



To open a script file, select **File > Open Script**. This opens a dialog box, which allows you to select a text file. The application checks for the existence of the header in the file. For an invalid file, script are added to the Command/Script History area. If the header does not exist, an error message is displayed.

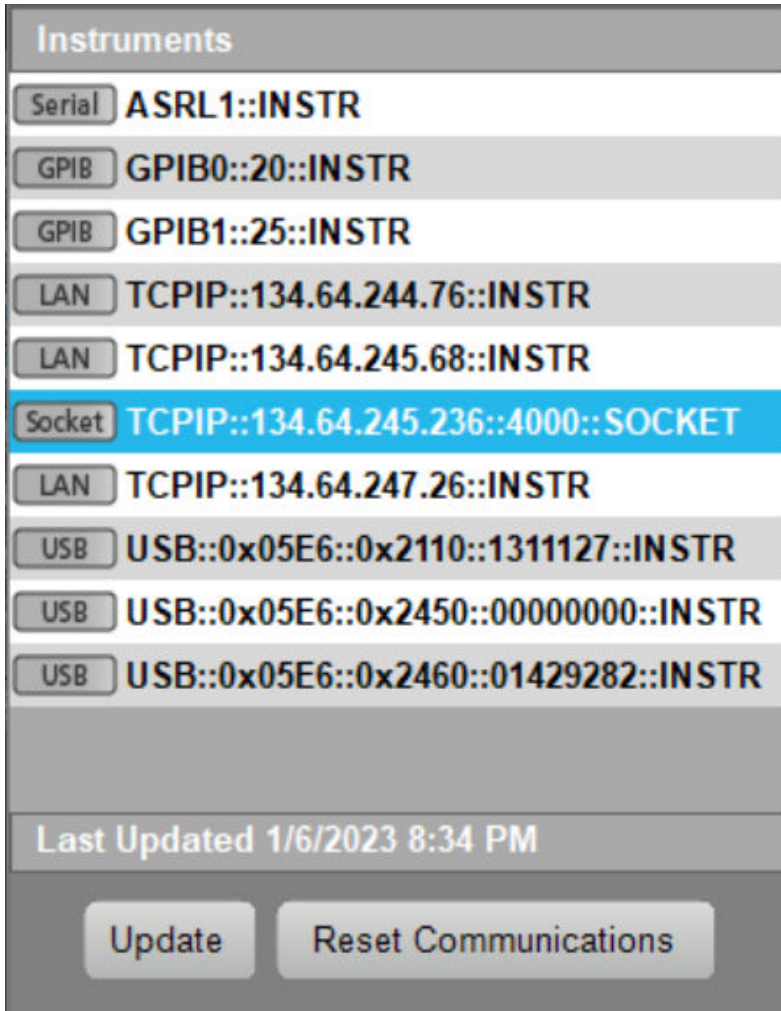
Save a Script

The commands that you can save are available in the Command/Script History area.

The commands that are included in the script begin from the current selection until the application encounters a script header or the end of tree. If the current selection is a script header, then the entire script is saved. If there are no scripts but only individual commands, then all the commands are saved under a default script name <<Script "n">> where n indicates the script id. The next time you save a script, the header would be <<Script "n+1">>, indicating the OpenChoice Talker Listener has so far created n+1 scripts in the current session.

Display and Select an Instrument

Select an instrument from the Instrument List located at the top left of the Talker Listener application.



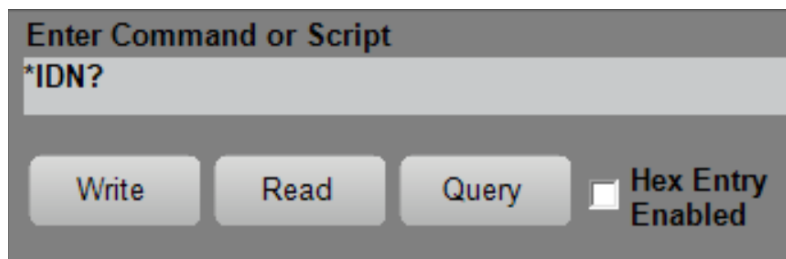
The Instrument List displays all the instruments available for communication over a Serial port (ASRL), GPIB, Network (TCPIP), and USB. The icon next to the instrument name indicates the mode of communication between the application and the instrument.

When you click **Update**, the instrument list is updated and the last updated time is displayed in the text box below the instrument list. Any connected session remains unaffected.

When you click **Reset Communications**, any open session is closed and then reopened. If, at the time of reset, the selected instrument is different from the opened instrument, the session with the opened instrument is closed and the session with the newly selected instrument is opened.

Read, Write, or Query a Command

The Enter Command or Script area is located at the top right of the Talker Listener application.



The Read, Write, and Query buttons act on the selected command in the command history.

You can type in any command in the text box. The command can be of either Set type or the Query type.

After you type the command, and press **Enter** or click the **Write** button, the command is added to the command history, if it does not already exist, and then sent to the instrument. If the **AutoQuery** option is enabled and the entered command is a Query command, then a Read command is followed by the Write command.

When you click **Read**, the application reads the response from the instrument. Upon receiving the response, the application adds it to the Talker Listener Readout. If there is no response from the instrument within the specified timeout period, the application adds a timeout error message to the Talker Listener Readout.

When you click **Query**, the application writes the command and waits for a response from the instrument irrespective of the AutoQuery option.

If **Hex Entry Enabled** is checked, the command text box accepts only hex characters. By default, the Hex Entry Enabled is unchecked.



Note: The command entered in the command text box will be added to the command history only if it does not already exist.

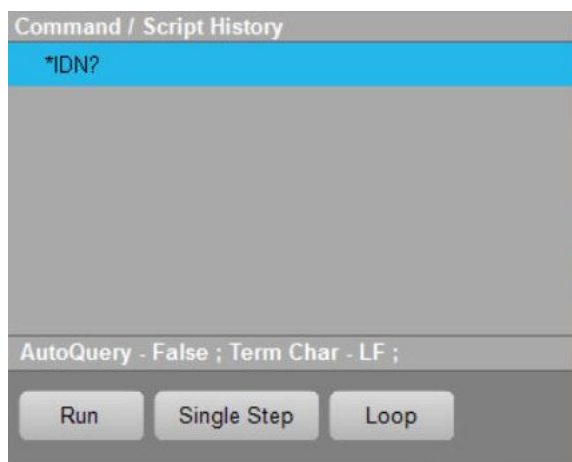
See also

[Buttons](#)

[Options](#)

Run, Single Step, or Loop a Command

Run and Single Step are applicable for scripts. Loop is applicable to a script and a command.



You can open a script file using the File menu and display it in the Command history.

When you click **Run**, the selected script is executed fully - all the commands within the script will be sent to the instrument and responses received.

When you click **Single Step**, the command following the selected command is executed. This can be used for debugging the script.

When you click **Loop**, the selected command or script is executed continuously till you click **Loop** again.

The text box below the command history displays the selected options - the AutoQuery, the Termination Character (if enabled), and the Loop Count. If the loop is currently executing, the loop counts increments.

Talker Listener Readouts and Display Options

The Talker Listener Readout records all the communication that occurs between the Talker Listener application and the selected instrument. The communication record consists of date and time, the duration for each command, the source, the command/data, and the command type.

TALKER LISTENER READOUT				
Display As: <input checked="" type="radio"/> ASCII Only <input type="radio"/> Hex and ASCII				
Date / Time	Duration	Source	Command / Data	Comman...
12/21/2022 10:18 ...	0.2032s	VISA	GPIB8::1::INSTR	Open Se...
12/21/2022 10:18 ...	0.0011s	TEKSCO...	*IDN?	Write
12/21/2022 10:18 ...	0.0082s	GPIB8::1:...	TEKTRONIX,DPO73304D,B...	Read

Source is the computer name that initiated the communication. Command/Data is the actual command or data that was sent or received.

Command type can be either **Write or Read**, indicating a write to the instrument or a read from the instrument. Open session indicates the session open command, while the close session indicates a session close command and an error-write indicates a error in write and similarly an error-read indicates a error in reading.

Display Options

In the Talker Listener Readout, you have an option to display all the write-read communications in either ASCII alone or in both Hex and ASCII. The default display option is "ASCII" indicating that the Talker Listener Readout displays the communication in ASCII format. You can choose to display the communication in Hex and ASCII indicating that the communication between the Talker Listener application and the target instrument is displayed both in hex and ASCII formats using the colors that you specify in the Options dialog.