

for HypotULTRA® 7800 Series

Overview

This application note will detail the installation instructions and LabVIEW programming examples for Associated Research's IVI Instrument Driver.

STEP 1: IVI Instrument Driver Setup

Instructions on downloading and Installing IVI Instrument Drivers from Associated Research's website. Download and install Shared Components from IVI Foundation Website.

STEP 2: Creating LabVIEW ActiveX Object

Create ActiveX object inside of LabVIEW to establish communication with the instrument.

STEP 3: Sample Code Connecting to 7800 Series Instrument

Sample LabVIEW code to initialize and send "TEST" command to the instrument.

STEP 1 - IVI Instrument Driver Setup

Associated Research instrument drivers are available to download at our website. Please follow the link below to download the drivers.

http://www.arisafety.com/products/software-solutions/instrument-drivers/

The drivers are also included in the USB stick that contains the product manual.

After downloading, run the self-extracting setup file and you will see the following screens.

Proceed with the software installation.



The setup will detect if IVI Shared Components are installed. If prompted with the following screen, click on Download, The IVI Foundation Website will open.



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lvilharedComponents_2.3.0.4+4	This Nie is an executable installer that installs the IVI Shared Components on a 32-bit system. This executable installer installs the same components as the POI package.	
IviSheredComponental4_3.3.0.exe	This file is an executable installer that installs the TVI Shared Components on a 64-bit system. This executable installer installs the same components as the HSI package.	
IviCleanopUblity_2.2.1.exe	Utility used to uninstall the IVI Shared Components version 2.2.1 or greater.	
	This document provides information on the current and previous versions of the Tri Shared	
IVI Shared Components Release Notes	Components, including known issues.	

http://www.ivifoundation.org/shared_components/Default.aspx

Download the latest IVI Shared Components either 32-bit or 64 bit version. After downloading, install the shared components by following the on screen instructions.



After installing the shared components, restart the IVI Driver installation by re-launching the instrument driver MSI or EXE file.



The Associated Research's IVI drivers are stored in a subdirectory of the IVI Foundation folder. The default directory is located at **C:\Program Files\IVI Foundation\IVI\Drivers\.**

STEP 2: Creating LabVIEW ActiveX Object

Open LabVIEW and create a new VI. Click on View menu to bring up the Function Palette. Use the search function to find **ActiveX** Functions.









Double Click ActiveX Folder to bring up additional functions under Connectivity. Drag the **Automation Open** function icon onto the block diagram window.

Right Click on the Automation Open Icon to bring up additional menus. Select the **ActiveX Class** options then select **Browse**.

In the next window browse to the location of the IVI drivers. The default location is at **C:\Program Files\IVI Foundation\IVI\Bin**, next select the appropriate .DLL file. For our example we will be using the **ARI78XX_64.dll**

Once the .DLL file is loaded additional options show up under **"Objects"**, Select the **IARI78XX** to load the object will all functionality.



Click OK to finish linking **Automation Open** Block with the **ARI78XX** object.



Quick Reference (See following page for full instructions) STEP 3: Sample Code Connecting to 7800 Series Instrument



- b. Browse to C:\Program Files\IVI Foundation\IVI\Bin\7800.dll file.
- c. On the next windows under Objects, select "7800".

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Using Function Palette, add an "Invoke Node" and connect the "Automation Refnum" from step 1 to "reference" input.

- a. Browse to select the "Initialize" method to invoke.
- b. Create constants for "ResourceName", "IdQuery" and "Reset".
- c. Use figure 1 for different types of COM ports.

ASRL4::INSTR

TCPIP::192.168.1.113::10001::INSTR

GPIB::8::INSTR

Figure 1

Continue to add Property Node with "Files" and "Steps" methods with corresponding Invoke Nodes to add filename and default ACW test.

Using Function Palette, add a "Property Node" and connect the "reference out" from step 2 to "reference" input. a. Browse to select "Execution" property.

- b. Add an "Invoke Node" and connect the "Execution from step 3(a) to "reference" input.
- c. Browse to select the "Execute" method.

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Using Function Palette, add a "Close Reference Node" and connect the "reference out" from Step 3(a) to "reference" input.

a. Connect "Error Out" from Automation Open node all the way through to "Error IN" of Close Reference node.

STEP 3: Sample Code Connecting to 7800 Series Instrument

Start with Automation Open Block linked to the ARI78XX DLL as described in Step 2 of this document.

Use the Function Palette to insert an **Invoke Node** next to the Automation Open block. Next connect the **"Automation Refnum"** to **"reference"** input of the Invoke Node as shown in the image on the right:

Left-Click on the Invoke Node Method section and select browse which brings up additional options. Select **"Initialize"** from the list of methods and click OK.

Right-Click **ResourceName**, next click on Create menu and select Constant. Enter the string "ASRL4::INSTR" for instrument located at COM port 4 in our example.

Communication Type	Resource Name String	Parameter to Edit
Serial (USB or RS-232)	ASRL4::INSTR	Replace "4" with the correct COM port
TCPIP	TCPIP::192.168.1.113::10001::INSTR	Replace "192.168.1.113" with correct IP address
GPIB	GPIB::8::INSTR	Replace "8" with correct GPIB address







Right-Click IdQuery, next click on Create menu and select Constant (Defaults to False)

Right-Click **Reset**, next click on Create menu and select **Constant** (Defaults to False)

Right-Click **OptionString**, next click on Create menu and select **Constant**. Enter the string **"DriverSetup=BaudRate=38400"**, replace the BaudRate with the correct baud rate listed in the manual.



Use the Function Palette to insert a **Property Node**. Next connect the "reference out" of Initialize node to "reference" input of the new Property Node as shown in the image on the right.

Left-Click on the Property Node's Property section and select browse which brings up additional options. Select **"Files"** from the list of properties and click OK. This node is used to create a test file on the 7800 series hipot testers.

Use the Function Palette to insert an **Invoke Node**. Next connect the "File" to "reference" input of the Invoke Node as shown in the image on the right.

Left-Click on the Invoke Node Method section and select browse which brings up additional options. Select **"Create"** from the list of methods and click OK.





Right-Click **Number**, next click on Create menu and select **Constant**. Enter the numerical value of the file memory location on the instrument. For the example on the right we are using "1".

Right-Click **Name**, next click on Create menu and select **Constant**. Enter the string for the filename.

Use the Function Palette to insert a **Property Node**. Next connect the "reference out" of Files node to "reference" input of the new Property Node as shown in the image on the right:

Left-Click on the Property Node's Property section and select browse which brings up additional options. Select "Steps" from the list of properties and click OK. This node is used to create test steps inside of the file created in the steps above.

Use the Function Palette to insert an **Invoke Node**. Next connect the "Steps" to "reference" input of the Invoke Node as shown in the image on the right.

Left-Click on the Invoke Node Method section and select browse which brings up additional options. Select "ACWTESTWithDefaults" from the list of methods and click OK. This node will add an AC hipot test with default parameters.









Use the Function Palette to insert a **Property Node**. Next connect the "reference out" of Steps node to "reference" input of the new Property Node as shown in the image on the right.

Left-Click on the Property Node's Property section and select browse which brings up additional options. Select **"Execution"** from the list of properties and click OK.

Use the Function Palette to insert an **Invoke Node**. Next connect the "Execution" to "reference" input of the Invoke Node as shown in the image on the right.

Left-Click on the Invoke Node Method section and select browse which brings up additional options. Select **"Execute"** from the list of methods and click OK. This node is used to send "TEST" command to the tester.



Connect **"Error Out"** from Automation Open node all the way through to **"Error In"** of Close Reference node. Making sure each Error In/Out on each node is connected.



