



Simple Control Excel Program

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Solution: The Rigol SimpleControl_VISA programs are designed to allow user's that own Microsoft Excel(c) 2010 or greater the ability to control a Rigol Oscilloscope using the built in VBA (Visual Basic for Applications) tools.

NOTE: There are different programs available. Each is tailored for use with a different Scope Series:

- “ SimpleControl_VISA_DS1”
 - DS1000E Series

- “ SimpleControl_VISA_DS6”
 - DS6000 Series
 - DS4000 Series

- “ SimpleControl_VISA_DS1CAB”
 - DS1000CA Series
 - DS1000B Series

The basic code allows you to:

- Search the available USB, GPIB, and RS-232 buses for instruments.
- Select a Rigol Oscilloscope
- Perform an identification query (IDN?)
- Return Channel 1 data

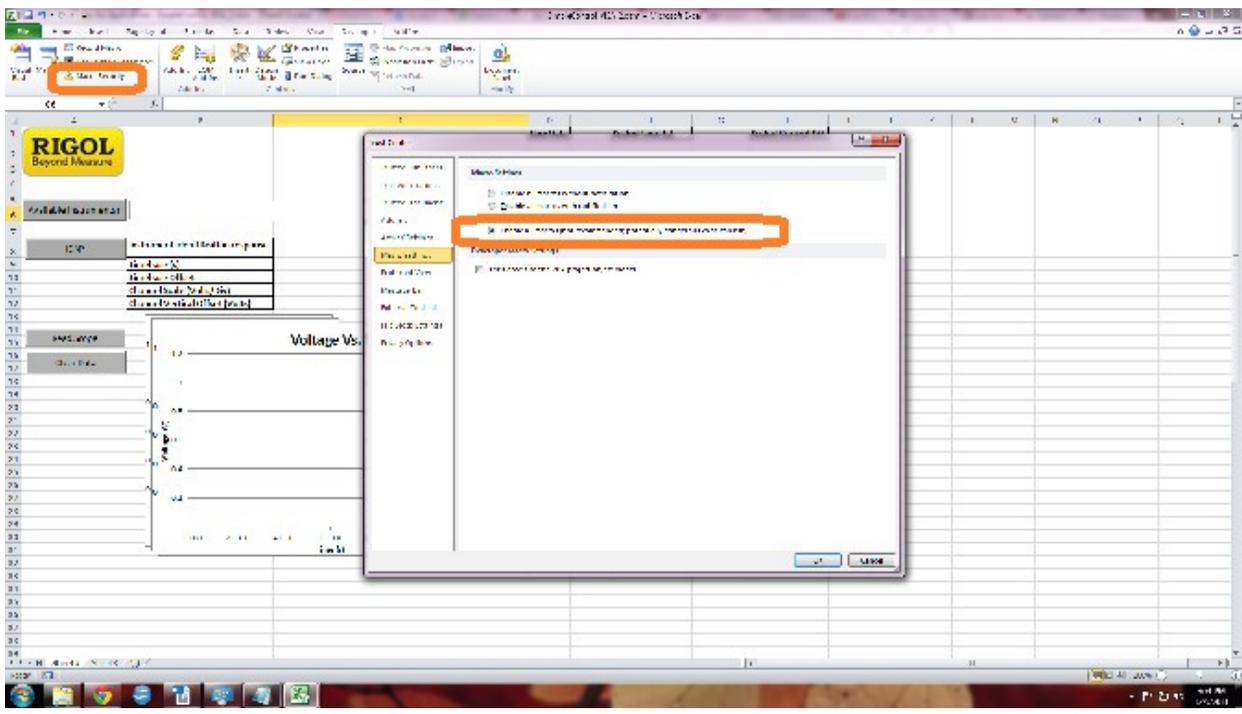


NOTE: The program utilizes NI-VISA for communications and requires that NI-VISA is installed on the computer used for control.

1. Install all necessary software, including NI-VISA and Microsoft Excel.
2. Download and install the SimpleContol spreadsheet (*.xslm)
3. Connect the instrument power cord and communication cable.
4. Open the SimpleControl Spreadsheet.

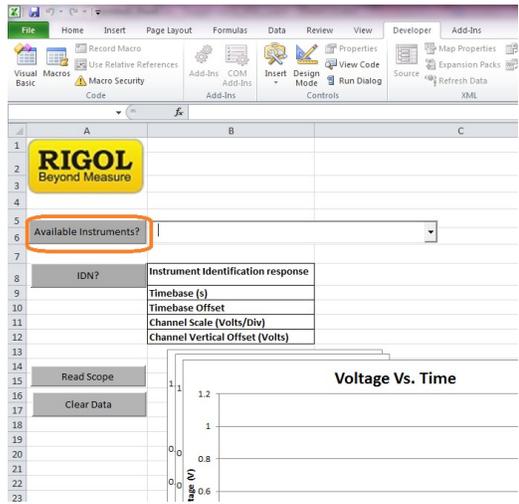


NOTE: The SimpleControl Program utilizes Macros. You will need to enable Macro's for Excel in order to successfully use the program. See the following figure for the location of Macro controls. Be cautious, as enabling Macros can allow easier entry for viruses to your system.



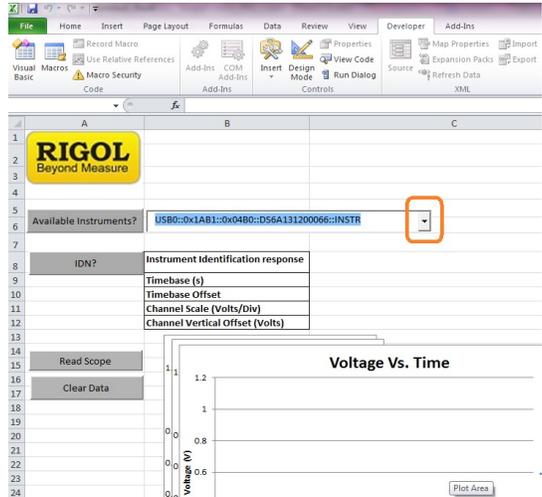


6. Click on the button labeled Available Instruments. This command will search through the USB, GPIB, and Serial buses for instruments that are connected.





7. Using the drop-down box, select the address for the instrument you are interested in controlling.



NOTE: DS6000 series scopes can be identified with the string DS6 in their VISA address. DS4000 series scopes can be identified with the string DS4 in their VISA address. See below for an example.

DS6000 connected via USB: “USB0::0x1AB1::0x04B0::DS6xxxxxxxx::INSTR”

DS4000 connected via USB: “USB0::0x1AB1::0x04B0::DS4xxxxxxxx::INSTR”

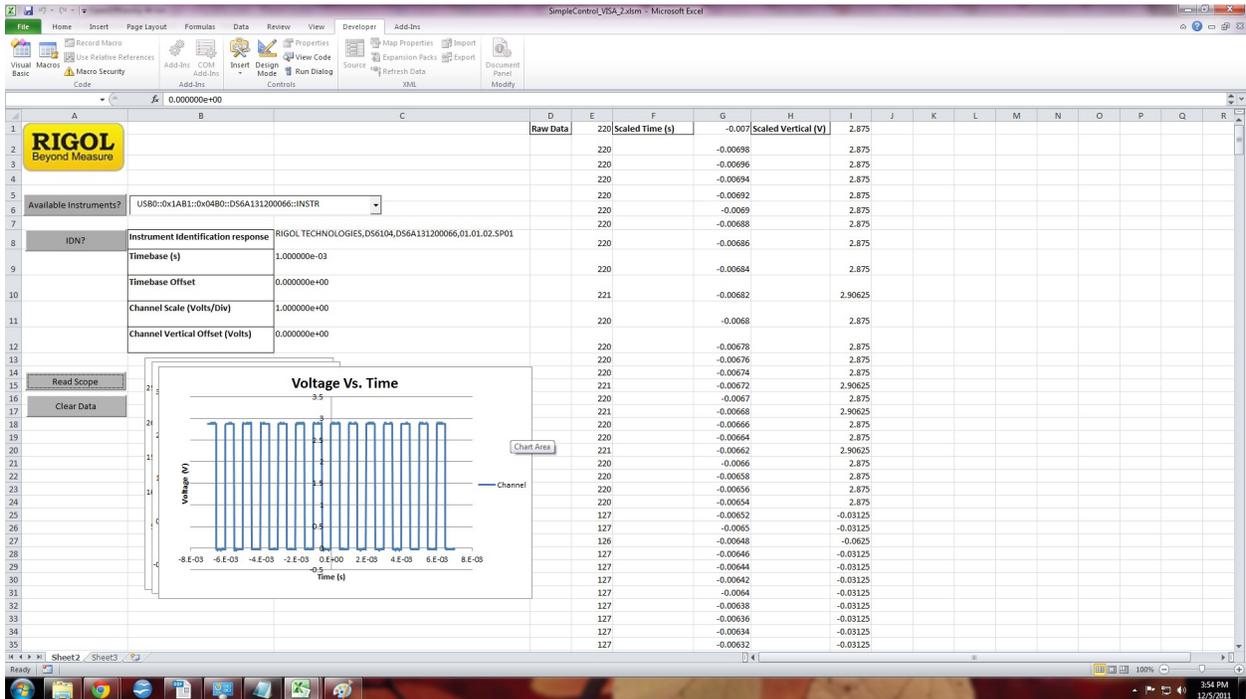


8. Select the IDN? Button to request an identification string from the instrument. A typical IDN? Return is shown below.

The screenshot shows a software interface with a ribbon menu at the top (File, Home, Insert, Page Layout, Formulas, Data, Review, View, Developer, Add-Ins). Below the ribbon is a grid with columns A, B, and C, and rows 1 through 30. In row 1, column A, there is a yellow box with the RIGOL logo. In row 5, column B, there is a dropdown menu labeled 'Available Instruments?' with the value 'USB0::0x1AB1::0x04B0::DS6A131200066::INSTR'. In row 8, column B, there is a button labeled 'IDN?'. To the right of this button, in column C, there is a text box containing the string 'RIGOL TECHNOLOGIES,DS6104,DS6A131200066,01.01.02.SP01'. Below the 'IDN?' button, there are several labels: 'Instrument Identification response', 'Timebase (s)', 'Timebase Offset', 'Channel Scale (Volts/Div)', and 'Channel Vertical Offset (Volts)'. In row 15, column A, there is a button labeled 'Read Scope'. In row 16, column A, there is a button labeled 'Clear Data'. In the bottom right corner, there is a graph titled 'Voltage Vs. Time'. The graph has a vertical axis labeled 'Voltage (V)' ranging from 0 to 1.2, and a horizontal axis ranging from 0.E+00 to 1.E+00. A single data series is plotted, labeled 'Channel', which shows a constant voltage of approximately 0.6V over the time range.



9. Manually configure the scope to the proper settings for capturing the waveform of interest. Once the waveform has been captured, it can be retrieved using the Read Scope button. Here is a sample waveform:



- Cell C3 returns the horizontal timebase
- C4 returns timebase offset
- C5 returns channel vertical scale
- C6 returns channel vertical offset
- Column E returns raw unsigned byte array data from the scope
- Column G returns calculated time
- Column I returns calculated voltage

10. Now that the data is in Excel, you can perform many different types of data manipulation and analysis.