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Guide to read and print waveforms from the Tektronix TDS220 oscilloscope

1. Turn on the power of the oscilloscope

2. In the window of "Measurement & Automation"
    a. Double click "Devices and Interfaces"
    b. Select "GPIB0(PCI-GPIB)". If there is no instrument listed, right click the mouse button, then select "scan for instruments".
    c. After the "Instrument0" is listed, click to see its properties. Write down its primary address.
    d. Click on "Communicate with the instrument" on top of the property list to verify the communication with the instrument. The communicator window pops up and "*IDN?" shows up in the "Send string" box. Click on "Query", and you should receive the following string: "TEKTRONIX,TDS 220,0,CF:91.1CT FV:v1.19 TDS2CM:CMV:v1.04". This means the computer communicates successfully with the instrument. Click "exit" to close the window.

3. Open Labview 7.1.
    a. Open a new blank VI.
    b. In its block diagram, right click to access the function palette. Choose "all functions", then choose "Instrument I/O". Click on "instrument drivers", and choose "TKTDS2XX". Under the "application examples", choose "TKTDS2XX getting started 2.vi", and place this vi to the block diagram.
    c. Click "help" on the menu bar of the block diagram, and check the "show context help". Then put the mouse on the icon of the vi, the help window showing the details of the vi will pop up.
    d. Examine the help window of the TKTDS2XX getting started 2.vi. Provide the "Time base", "Resource name", "CH select", and "vol/div" with your own values.
    e. In the front panel, right click to access the control palette. Choose "waveform chart" under "graph indicators". Put the waveform chart on the front panel. The block diagram of the chart appears on the block diagram window.
    f. Connect the waveform chart to the "curve graph" terminal of the TKTDS2XX getting started 2.vi.

4. Run the program, and the waveform chart will display the waveform from the oscilloscope. If there is any error or the waveform does not look right, check the values you supplied for the TKTDS2XX getting started 2.vi.
5. To print the data to an Excel datasheet, place the "write to spreadsheet file.vi" on the block diagram, and connect the "1-D" terminal to TKTDS2XX getting started

2.vi. Set the "transpose" terminal to "True" to enable transpose. Run the program again, and enter the name of the Excel file when the program asks you to. When the program stops running, open the Excel file that is created, and plot the data in Excel.