

Instructions for Internet Use of Tektronix Digital Oscilloscopes

- 1.) Before turning on the Tektronix digital oscilloscope make certain that the orange Ethernet cable is plugged into it, and that the far end of this cable is either plugged into an Ethernet jack on a wall patch-panel or into a jack in an Ethernet hub module in the lab room. If the latter, make certain that the hub is active/functioning.
- 2.) Turn on the Tektronix scope – the square, on/off button is located near the bottom LHS corner of the scope. Take note of the scope’s IP Address when it boots up.
- 3.) Connect whatever your input signal is to the scope, e.g. on Channel 1 and then adjust the scope’s vertical, horizontal and scope triggering controls until you obtain the desired display of the input waveform. We assume here that students are already familiar with the functioning of an oscilloscope – if not, don’t hesitate to ask the instructor and/or the lab TA for help – we’ll be glad to show you!!!
- 4.) Log into one of the nearby PC’s in the room with your UIUC NetID, Active Directory (AD) Password, and the UIUC Domain.
- 5.) Double-click with the mouse on the E-Scope Interface Icon on the desktop of the PC.
- 6.) A JavaScript-based web browser-like application window will open up on the computer monitor display.
- 7.) Right-mouse click on the information bar near the top right-hand corner of this browser-like window; a small pull-down menu will appear, and then select the “Allow Blocked Control” option.
- 8.) In the TDS 3000 IP Address Port of this browser-like window, enter the actual IP address of the Tektronix scope you want to use over the internet, for example, an IP address of “**192.168.8.132**” (n.b. you must include the dots too!). Note that the IP address of the scope is written on the scope. Note further that the scope’s IP address also appears on the screen of the scope when it first powers up.
- 9.) In the TDS 3000 Model # Port of this browser-like window, use the pull-down menu to select the Model # of the Tektronix scopy you want to use over the internet – we have several Tektronix Model # TDS-3012B scopes and one Tektronix Model # TDS-3052B scope in our lab with Ethernet capability.
- 10.) Then click on the “Go” button just to the right of these two ports in the browser-like window. Immediately upon doing this, a graphics display like that on the display of the actual oscilloscope will appear in the browser-like window.
- 11.) The default refresh rate of the graphics display of the scope panel in the browser-like window is initially set to once per minute – i.e. every 60 seconds. You can e.g. change the refresh rate by typing in the value you want (be reasonable – value of less than a second won’t work too well over the internet!) and then mouse-clicking on the “Apply” button next to the Refresh Rate Port located near the bottom of the browser-like window.

Instructions for Reading Out Waveform Data From Tektronix Scope and Outputting Data to a Text File

- 1.) Use the mouse and click on the “Data” tab located near the top of the browser-like window.
- 2.) On the first (left-most) pull-down menu, select e.g. Ch1 (if this is the channel # on the scope that you are using). On the 2nd pull-down output format menu, select Spreadsheet. Then use the mouse to click on the “Get” button. A text-format file with a default file name of **gtwfm.isf** will be created on the PC’s desktop when readout of the scope is complete. You can then use e.g. the Microsoft NotePad application (an icon for which should be on the desktop of the PC – if not, you can launch the NotePad application by going to the PC’s Start menu, go to the Programs menu, and the NotePad application is located in Accessories section of the Programs menu. Open the **gtwfm.isf** file with the NotePad application to look at the contents of this text file. The first column of data in the **gtwfm.isf** file is the time-base (i.e. x-axis, or horizontal axis) data, the second column of data in the **gtwfm.isf** file is the waveform (i.e. y-axis, or vertical axis) data.
- 3.) You can use e.g. the Microsoft Excel spreadsheet application to read in the **gtwfm.isf** file – n.b. as a comma-delimited text file and then e.g. make an Excel Chart of an X-Y scatterplot of the scope’s waveform data vs. time, which if done correctly, should then look exactly like the waveform you had on the Tektronix oscilloscope at the time that you copied over the data from the scope to the PC and created/output the **gtwfm.isf** file.
- 4.) If you additionally want to make e.g. a *.JPEG file of the waveform vs. time plot you have made in Excel, expand the Excel application to full-screen, and then hit the two Alt-PrintScreen keys together, simultaneously. This copies whatever image that is currently on an active application (Excel in this case) to the so-called Clipboard.
- 5.) You can then use Microsoft Paint application (which should have an icon on your desktop, or, if not, it too resides in the Accessories section of the Programs portion of the PC’s Start menu). Get the Paint application running, then on the Edit pull-down menu, select Paste and the image that was saved on the Clipboard will then appear in Paint.
- 6.) You can then use the Crop feature of Paint to select only the region of the plot. Cut this selected region of the plot by hitting the Control-X keys together simultaneously – the part you want will actually disappear (for the moment).
- 7.) Then go to the File pull-down menu in Paint and select New – Paint will then ask if you want to save the current image – say No. Then a completely blank white area will appear in Paint, then go again to the Edit pull-down menu and select Paste and the cropped image (the part you wanted) will then appear in Paint.
- 8.) Go to the File pull-down menu in Paint and select Save As, then save your file, naming it something meaningful, with the JPEG (or JPG) filename extension on the end, e.g. to the PC’s Desktop.
- 9.) Depending on which Physics of Music Class you are in, click on the Phyaplportal P199POM or Phyaplportal P498POM icon on the PC’s Desktop (whichever is appropriate for you) and copy your *.JPG file to your own personalized sub-folder of <\\Phyaplportal\P199POM\Common> or <\\Phyaplportal\P498POM\Common> areas on the Phyaplportal server – this server is backed up daily. Note that NO backups are ever done on ANY of the PC’s in the Physics of Music lab! So make certain to backup any/all of your work on the PC’s – copying it over to the Phyaplportal server!