

Tektronix Oscilloscope and Spectrum Analyzer Overview

This overview is intended to give a brief synopsis of some of the equipment you will be using in the lab. This overview is to simply help you get started and acquainted with some of the more un-user friendly instruments. In the end, this guide is not intended to make you an expert at using the equipment, but rather a brief tutorial on how to use some of the basic functions. The only way you will become comfortable with the equipment is to use it regularly (which you will be doing in the lab).

Tektronix Spectrum Analyzer

This particular model that we have in the lab, is NOT menu driven like the HP spectrum analyzers. The menu options are located under the heading “Menus (obviously).” Under this heading you will find the following options:

- SWP/TRIG – This option is where you can define the type of triggering you want (internal, external, free run, etc.) as well as change the sweep time (you can put in a desired time by using the keypad). The sweep time can also be changed under the “Sweep” heading. Here you simply push the up and down arrows.
- MRK/FRQ – This option will probably be the one that will be used the most. Here you can define where you want your start and stop frequencies. You can also define the function of the knob; you can set it to move the marker, or to change the frequency.
- The rest of the options you do not need to worry about at this time. When the time comes to use some of the other options, I will assist those that need help.
- To exit any of these menus, you can press the “BKSP” button located in the keypad. Or you can press any of the menu keys.

Some other useful keys are:

- FREQ, SPAN/DIV, & REF LEV – By pressing any of these keys you can manually change center frequency, reference level, and span (this will over ride start-stop settings) by entering in the desired number on the keypad. Or you can simply press the up and down arrows.
- RES BW/SWEEP (time)- Fairly self explanatory. If you leave these on “auto”, the spectrum analyzer will adjust these automatically. If you wish to change either of these manually, simply press the up and down arrows.

Lastly, be sure NOT to take any measurements when the “UNCAL” light is on. These measurements tend to be inaccurate. Changing the RES BW, SWEEP, REF LEV to

extremes will cause the spectrum analyzer to go into “UNCAL” mode. If this occurs, simply change RES BW, SWEEP, REF LEV to the value it was at before the analyzer became uncal-ed.

Tektronix Oscilloscope

Unlike the spectrum analyzer, this scope is menu driven. The bottom menu displays the **option you would like to change** and the right menu displays **what you can change that particular option to** (I know this sounds confusing, but you will understand what I am saying when you use it!). Here is an example:

1. Press the “Vert Menu” button.
2. This will bring up a bunch of options on the bottom menu. Each of these options usually have a word that is in normal type and one that is in italics. The word in normal type is the option while the word in italics is what that option has been set to.
3. Let’s look at the “Coupling” option. Below “Coupling” you should see a word in italics (either DC, AC, or GND). This tells you what the coupling for that particular channel has been set to.
4. To change the coupling, look at the menu on the right, this is where your choices are.

Before changing any options, be sure that the correct channel is selected. This is done by pressing on of the channel buttons (CH1, CH2, CH3, CH4). If the option you wish to change requires a number entry, you have two methods of changing this option.

1. You can enter the number in on the keypad.
2. You can use either the vertical or horizontal knob (the one you use will depend on what you are trying to change.....if you are trying to change the division you would use the vertical knob.....if you were trying to change sweep rate you would use the horizontal knob).

Two of the menus you will be using most often are the Measurement menu and the Cursor menu.

- The Measurement menu you can use to display a particular measurement (i.e. Peak-peak voltage, max voltage, min voltage, etc). The bottom menu is where you chose “Select Measure” to pick what you would like to measure. All the options are then shown in the right menu. To remove a measurement, press “Remove Measure” then look at the right menu to decide which measurement you would like to remove.
- The Cursor menu allows you to display vertical or horizontal cursors to aid in difficult measurements. Once you choose which type of cursors you desire, you can use the large dial to move the cursors (the “Select” button allows you to change which cursor you want to move).