Guide to Relevant Features of the Oscilloscope (Tetronix DPO2004B) v.1

By Harrison Wang

1. Turning on the Oscope.

1. The power button is on the lower left corner. The oscope takes like 2 minutes to turn on, and each time you turn it on and off, it reverts your settings. So turn it on and leave it on.
2. Press [Default Setup] button below the screen. This clears whatever settings may have been saved before. Then press the (Menu Off) button on the bottom right of the screen. If for whatever reason you messed up and don't know what to do, press the [Default Setup] again and readjust your settings.
3. To turn on the yellow channel 1, press the yellow (1) Menu button in the middle of the oscope. A menu should appear on the screen. Press the probe setup button (the button below the screen). Change the probe setup from 10x to 1x. You can also change the coupling between AC and DC and type in a name for your channel. Press the (Menu Off) button to turn off the menu.
4. Repeat this process for all three other channels.
5. Turn off channels you aren't going to use by pressing their channel number.

2. Selecting an Input. (Come back to this section if you don't know what something is.)

1. To select a channel, press its associated number. The selected channel will have its left cursor arrow filled in on the screen. All other channels will have black (empty) filling.
2. The channel settings are on the bottom of the screen. The first box (from the left) shows the amplitude scale of each channel. The second box (from the left) shows the time scale of all the channels (because you can't adjust this independently for each channel). The third box (from the left) shows the vertical position of the trigger and the frequency of the triggered signal. The last box (from the left) shows the amount of time the Oscope is on.

3. Plugging in an Input (or multiple inputs).

1. Plug a BNC cable from the signal generator (or some other input) to the oscope.
2. Press the [Autoset] button. This finds your signal and triggers it in a nice spot. The autoset will center your trigger at the origin. You can and will adjust it away from autoset later. Press the (Menu Off) button. (You can also find your signal manually but it'll take more time.)
3. At this point, you can do one of several things.
    a. Turn the (Position) dial in the Vertical section to adjust the vertical position of each individual signal.
    b. Turn the (Position) dial in the Horizontal section to adjust the horizontal position of all the signals simultaneously (you can't adjust them independently).

c. Turn the (Scale) dial in the Vertical section to change the amplitude scaling of individual signal.
d. Turn the (Scale) dial in the Horizontal section to adjust the horizontal scaling of all the signals simultaneously (you can't adjust them independently).

4. Make the waveform aesthetically pleasing.

4. Adjusting the Trigger.

1. Read page 84 of the Instruction Manual to inform yourself about "Triggering Concepts".
2. Turn the (Level) dial to reposition the trigger.
3. If the [Autoset] didn't trigger for you or you moved the trigger too far away and you can't find it, press on the (Level) dial to trigger at a 50% rising edge.
4. Press the trigger [Menu]. You can change the coupling and whether or not the trigger event is on a rising or falling edge in the menu. Press the (Menu Off) button.

5. Taking Automatic Measurements. (Up to four at a time.)

1. Press the [Measure] button on in the Wave Inspector section (above the Vertical section and to the left of the Horizontal section).
2. Press [Add Measurement] on the bottom left corner of the screen.
3. Use the Multipurpose (a) knob to select the type of measurement you want and Multipurpose (b) knob to select which channel you want the measurement on. The selected option appears on the top right corner of the screen. You can also press the button next to the selected option before turning the knob to see the available options.
4. Press [OK Add Measurement] to add the measurement. The measurement will now appear in a black box below the time scale and trigger boxes.
5. Since you can only choose four of these, choose wisely. For example, frequency and period measurements are redundant. Peak to peak is pretty useful.

6. Taking Manual (Cursor) Measurements. (Only one channel at a time.)

1. Press the (Cursor) button once. When the (Cursor) is on, it lights up green. You'll get two vertical cursors (lines), along with a box on the top right corner with the position (time or phase) of the cursors, voltage measurement where the vertical line intersects the waveform, and their difference (indicated by a Δ).
    a. "Cursors Linked" mode. To change the cursors, change the Multipurpose (a) knob (the main reference knob), then the Multipurpose (b) knob, in that order.

b. To remove the linking of the cursors, press the [Select] button next to the green [Fine] button. Now the Multipurpose (a) knob and the Multipurpose (b) knob will move independently.

2. To change between time and phase, press the [Measure] button. Then press the [Configure Cursors] button on the bottom right of the screen. Use the Multipurpose (a) button to change between time and phase.

3. If you push the (Cursor) button again, you'll also gain two horizontal cursors. The position (time or phase) measurements will stay as it was. Instead of taking voltage measurements at the intersection between the vertical cursor and the waveform it takes voltage measurements at the intersection between the vertical and horizontal cursors. You can adjust all four cursors independently and switch between vertical and horizontal by pressing the [Select] button.

7. Saving a Screenshot

1. Plug in a USB in the slot on the bottom left. Press Save. This creates a PNG image with whatever is on screen. You will use this a lot.