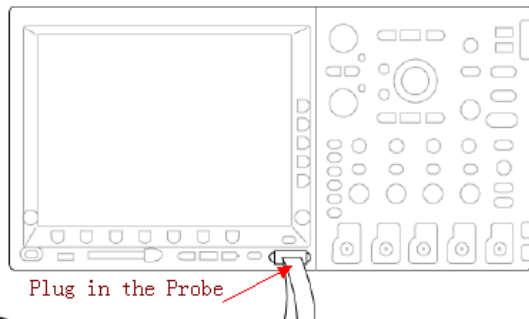


# Tutorial on Using MSO to Analyze Digital Signals

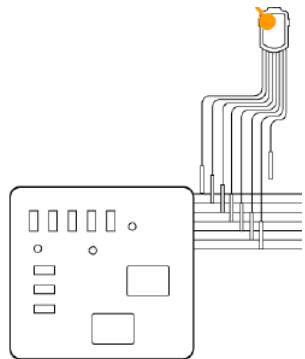
Tektronix MSO 4054 Mixed Signal Oscilloscope (MSO) has the capability not only to monitor analog signals, but also to analyze digital data of your design. This tutorial will give you a brief introduction on how to use MSO to analyze digital signals.

## Procedures:

1. Power the oscilloscope by pushing the **Power Switch**, and then plug in the PROBE into MSO;



2. Connect the desired logic probe tips to desired test points on your circuit, for example, CLK or DATA bus; Please remember to connect the **GROUND** pin;



3. Push **Default Setup**, then push channel **1** button (yellow) to remove the waveform from the display;

4. Push the **D15-D0** button;
5. Push **D15-D0 On/Off** button to select channels;
6. Turn the **Multipurpose a** knob to select desired channels, select them by pushing the **Display On/Off** button;



7. You can edit label for each channel by pushing **Edit Label**, push **Menu Off** when you finish;

8. Push **B1** if you want to monitor bus signals, then push **Define Inputs** and enter parameters for your bus for Clocked Data, Clock Edge, the Number of Bits, and Define Bits;

9. You can change display type by pushing the **Bus Display** button;

10. Turn the **Horizontal Scale** knob to adjust the timebase;

11. Turn **Zoom and Pan** knob to the areas of interest to analyze the results;

Tips:

- You can capture the screen of MSO by OpenChoice Desktop software installed on the PC in the lab.
- Use Autoset function by pushing **Autoset** button, this function can automatically setup the sampling;
- Push **Run/Stop** to start or stop the acquisition;

For further information, please refer to the following documents:

*MSO4000 and DPO4000 Series Digital Phosphor Oscilloscopes User Manual, Tektronix.*

For Virtual Demos, please visit:

<http://www.tek.com/products/oscilloscopes/mso4000/>