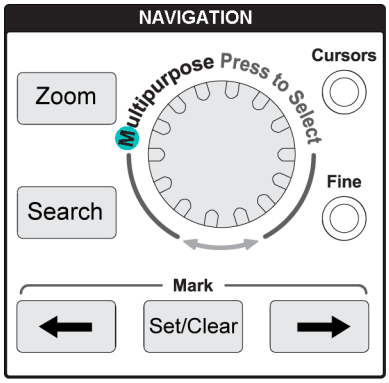
The oscilloscope controls

The front panel has menu buttons and control knobs for the functions that you use most often. The following sections provide a high-level description of the controls and what they do. Use the text links within these sections to go to sections that contain more information about that control.

The Navigation controls



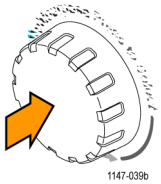
- The **Multipurpose** knob lets you select and click menu or other choices, to move a cursor, and to set a numerical parameter values for a menu item.

A blue (M) icon on a menu, message, or dialog box means to use the **Multipurpose** knob to interact with that item.

The arrow symbol below the knob will also light up when you can use the knob to control screen objects or interact with menu items.

Turn the knob to highlight a menu item or control a screen object (such as a cursor, or when entering file name characters).

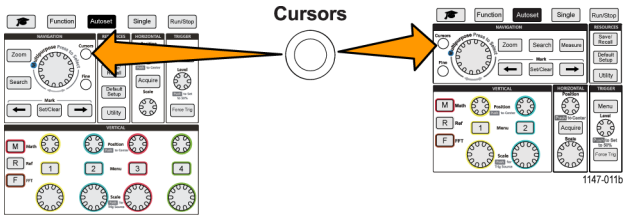
Push the knob to select or enter a highlighted menu item, switch between cursors, or activate a menu field to enable entering values.



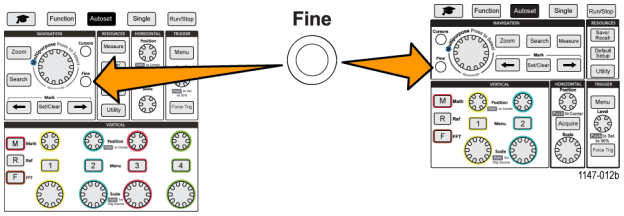
- The **Cursors** button toggles on and off displaying cursors on the screen.

  Turn the **Multipurpose** knob to change the position of the active cursor (solid line). Push the **Multipurpose** knob to change the active cursor.

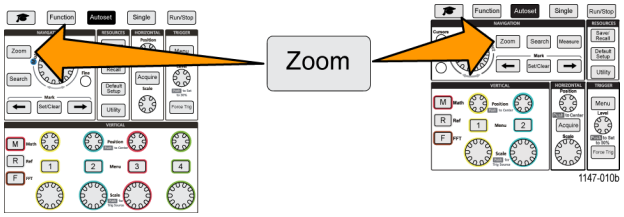
(See page 56, *Using cursors to take manual measurements*.)



- The **Fine** button enables making fine adjustments with the **Multipurpose** knob, vertical and horizontal **Position** knobs, vertical **Scale** knob, and the trigger **Level** knob.

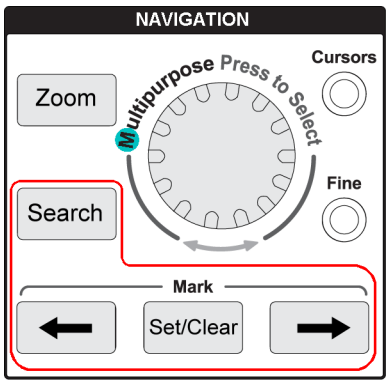


- The **Zoom** button displays a magnified waveform. (See page 65, *How to view long record length waveforms (Zoom)*.)

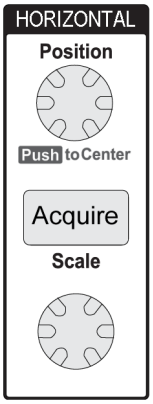


1. The **Search** and **Mark** buttons (← (Previous), → (Next), and **Set/Clear**), and the**Multipurpose** knob, let you add marks (tags) to points on a signal of interest waveform, and quickly jump to those marks. This is very useful when examining long record length waveforms.

NOTE. *The **Search** and **Mark** buttons are not currently enabled. They will be enabled in a future software update.*



The Horizontal controls



- The **Horizontal Position** knob adjusts the trigger point location left or right relative to the acquired waveform record.

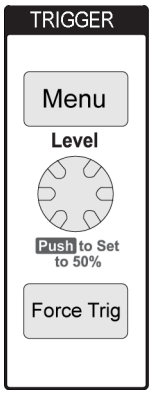
  Push the **Position** knob to return the trigger point to the center of the screen (center vertical graticule).

*NOTE. You can push the **Fine** button (**Navigation** controls) to enable smaller adjustments with the position knob.*

- The **Acquire** button opens the menu that you use to set the acquisition mode and adjust the record length.
- The **Horizontal Scale** knob adjusts the horizontal time base scale (time per horizontal graticule division, and samples per second).

The Trigger controls

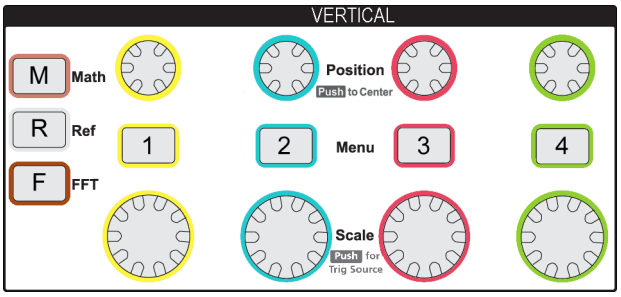
The Trigger controls set when the oscilloscope starts acquiring signal data to create a waveform record. (See page 26, *Trigger concepts*.) (See page 36, *Trigger setup*.)



- The Trigger **Menu** button opens the side menu for trigger settings.
- The **Trigger Level** knob adjusts the trigger level. Trigger level is shown with a horizontal line when using this control.

  Push the **Trigger Level** knob to set the trigger level to 50% (the vertical midpoint of the waveform).
- The **Force Trig** button forces an immediate trigger event.

The Vertical controls



The Vertical controls set the vertical settings (position and scale) for each channel, and enable turning on or off individual waveforms.

- The **Vertical Position** knob adjusts the vertical position for each channel's waveform.

  Push the **Position** knob to move the waveform so that the ground reference level is on the center graticule of the screen.

NOTE. *Push the **Fine** button (in **Navigation** controls) to let you make smaller adjustments with the knob.*

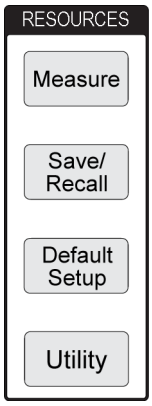
- The Channel **1**, **2**, **3**, or **4 Menu** buttons open (signal coupling, bandwidth, probe attenuation and type) the side menu where you can set the vertical parameters for each channel (including signal coupling, bandwidth, probe attenuation, and probe type), or to display or remove that channel's waveform from the display. (See page 30, *Setting channel input parameters*.) (See page 47, *Displaying and removing a waveform*.)
- The Vertical **Scale** knob sets the vertical scale (volts or units per vertical graticule division) for each channel.

NOTE. *Push the **Fine** button (in **Navigation** controls) to let you make smaller adjustments with the knob.*

- The **M** (**Math**) button opens the side menu where you can set the parameters to create and display a math waveform, or to display or remove the Math channel waveform from the display.(See page 58, *Creating math waveforms*.)
- The **R** (Ref) button opens the side menu with controls to display or remove a reference waveform from the screen. (See page 64, *Displaying reference waveforms*.) (See page 72, *Recalling waveform data*.)
- The **F** (**FFT**) button opens the FFT screen and shows side menu where you can set the **FFT** display parameters. (See page 59, *Using FFT to see signal frequency information*.)

The Resources controls

The **Resources** controls contain the menus to select automatic measurements, save and recall files from internal memory and external USB drive, reset the oscilloscope to a default setting, and configure system parameters such as the oscilloscope user interface language, time and date, network settings, and much more.



- The **Measure** button opens a menu of automated measurements from which to select and display. (See page 50, *Taking automatic measurements*.)
- The **Save/Recall** button opens the side menu where you can set how to save and recall data. You can save screen images to external files, and save and recall waveform data and oscilloscope settings, t and from internal memory or external files. (See page 71, *Recalling data*.)
- The **Default Setup** button immediately restores the oscilloscope settings (horizontal, vertical, scale, position, and so on) to the factory default settings. You can use the side menu item to undo the default setting action. (See page 46, *Setting the oscilloscope to factory default values (Default Setup)*.)
- The **Utility** button opens the side menu where you can configure system settings such as user oscilloscope language, date and time, and connectivity (Wi-Fi, LAN, Ethernet), load new oscilloscope software, and so on. The **Utility** button also provides controls to access and manage files on a connected USB drive. (See page 73, *Using the USB File Utility functions*.)

Other front-panel controls

- The **Courseware** (graduation cap) button opens a side menu where you can access the Tektronix Courseware lab exercise functions (See page 93, *Courseware; on-instrument education and training*.).
- The **Function** button opens a side menu where you can select optional analysis functions (when available with future software), the **Scope Intro** oscilloscope theory and feature tour (See page 23, *The Scope Intro function*.), and **Help Everywhere** on-screen settings and measurements help (See page 21, *Getting on-screen help for settings: Help Everywhere*.).
- The **Autoset** button automatically sets the vertical, horizontal, and trigger controls to acquire and display a usable, stable waveform.
- The **Single** button takes a single waveform acquisition record.

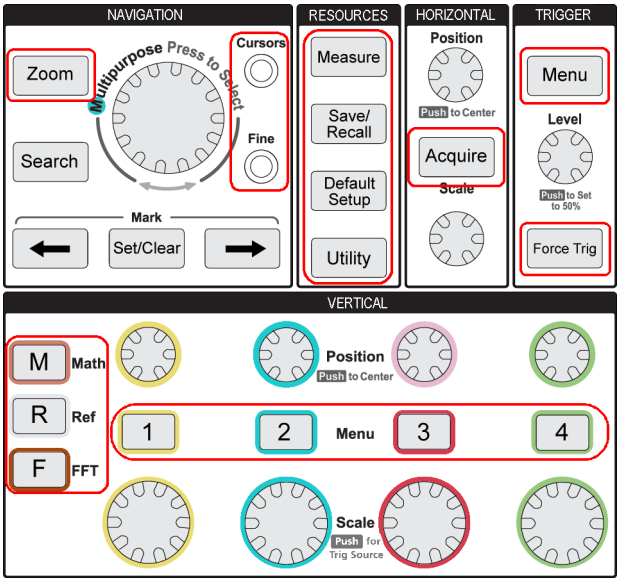
NOTE. *Pushing* ***Single*** *stops the oscilloscope continuous signal acquisition mode.*

- The **Run/Stop** button toggles the oscilloscope between continuously acquiring waveforms (**Run**) and stopping all waveform acquisitions (**Stop**).
- The **File Save** button (located above the side menu buttons) performs an immediate preset save operation. Use the **Save/Recall** menu to set the save action to perform when the save button is pushed
- The **Menu On/Off** button (located below the side menu buttons) clears displayed menus from the screen. This button also turns on and off the display of the measurements readouts and the FFT signal settings.

Using the menu system

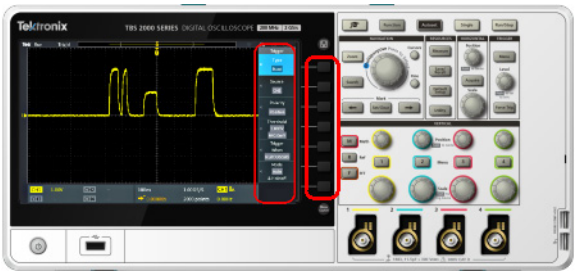
This topic introduces you to the TBS2000 menu system.

1. Push a front-panel menu button to display the menu that you want to use.



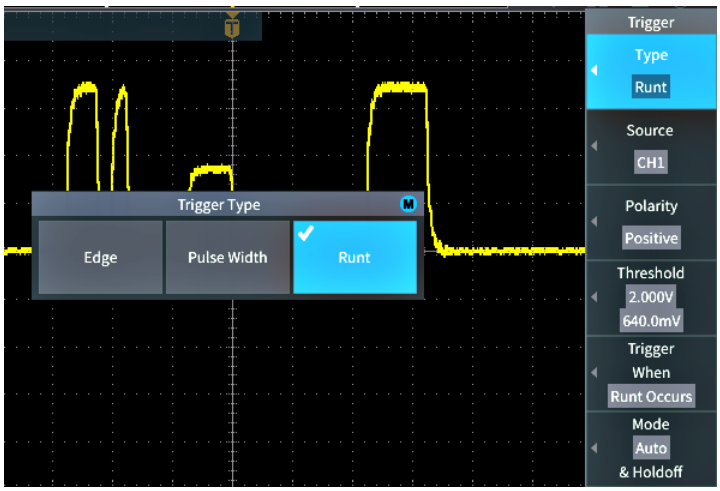
The oscilloscope opens the side menu list for that button on the right side of the screen.

2. Push a side-menu button to select the on-screen menu item that is next to that button.

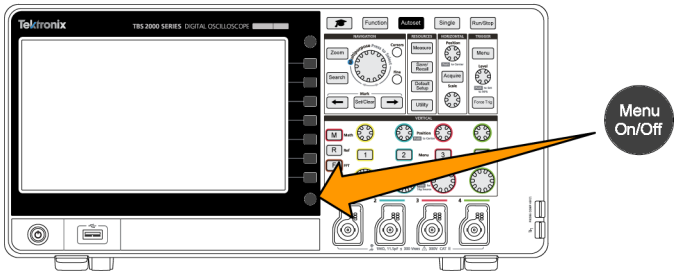


3. If the selected side menu item opens another menu, use the **Multipurpose** knob to highlight an item in the pop-out menu.

4. When the item is highlighted, click the **Multipurpose** knob to enter that item and set the oscilloscope.



5. Push the **Menu On/Off** to close menus, messages, and other on-screen items.



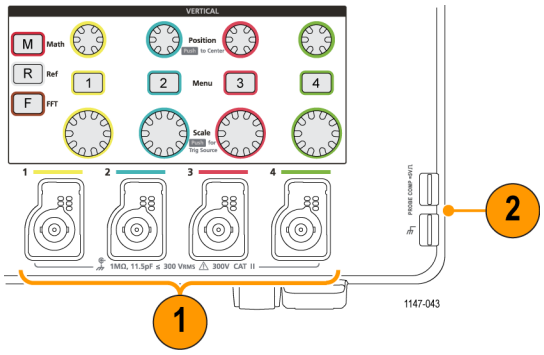
6. Certain menu choices require you to set a numeric value to complete the setup. Use the **Multipurpose** knob and side-menu buttons to highlight, select, and adjust those settings.

7. Push **Fine** to turn off or on the ability to make smaller adjustments with the **Multipurpose** knob. **Fine** works with the **Multipurpose** knob, Horizontal and Vertical **Position** knobs, Vertical **Scale** knob, and the Trigger **Level** knob.

The following topics provide hands-on experience with using the menu system. (See page 8, *Changing the user interface language*.) (See page 11, *Changing the date and time*.) (See page 14, *Doing a functional check*.)

Front-panel connectors

1. Channel **1**, **2**, (**3**, **4**). Channel inputs with TekVPI Versatile Probe Interface.



2. **PROBE COMP**. A square wave signal source and ground connection used to compensate probes.

   Output voltage: ~ 5 V at ~1 kHz

   Ground reference to which to connect the probe ground lead.

(See page 17, *Compensating a passive voltage probe*.)

3. USB 2.0 Host port.