

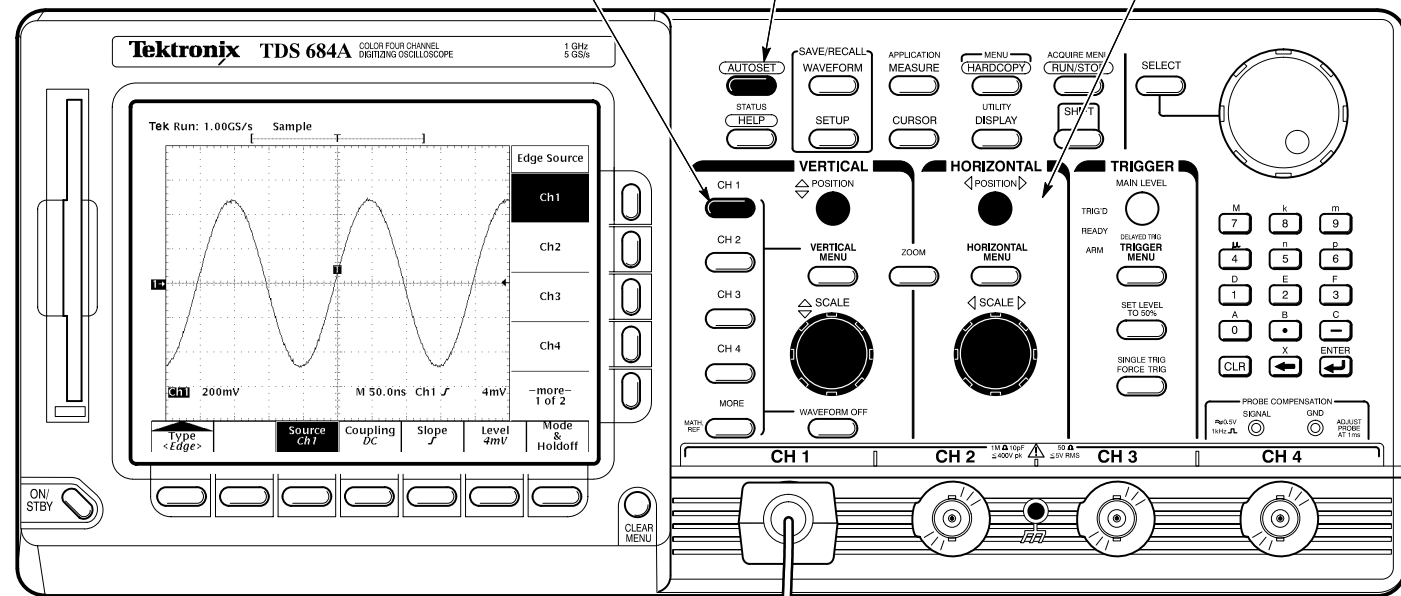
## **Reference**

**TDS 684A, TDS 744A & TDS 784A  
Digitizing Oscilloscopes**

**070-8999-02**

## To Display a Waveform:

- 1 Attach a probe to CH 1 and hook it up to your signal.
- 2 Press CH 1 button.
- 3 Press AUTOSET.
- 4 Adjust VERTICAL POSITION and HORIZONTAL POSITION and SCALE as desired.

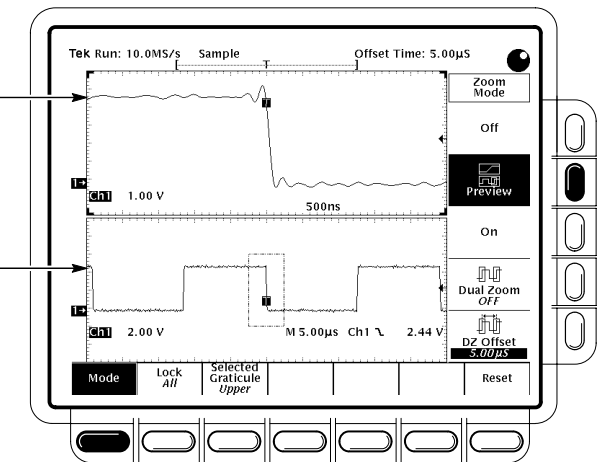
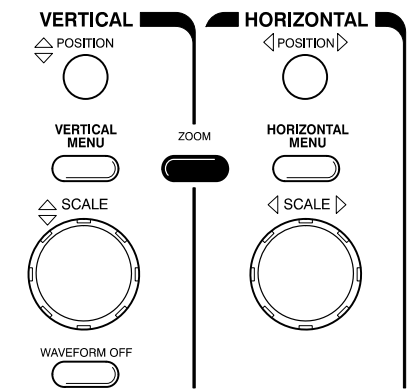


## To Preview a Waveform (TDS 700A Models):

- 1 Press the ZOOM button.
- 2 Press Mode in the main menu. Then press Preview in the side menu to turn on Dual Window Zoom.

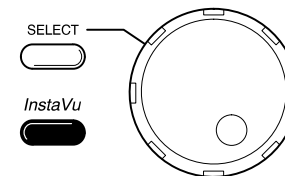
Upper graticule zooms the boxed area on the selected waveform.

Lower graticule displays the selected waveform unzoomed with the zoomed area in box.



- 3 Use the Selected Graticule menu to select the upper or lower waveform. Use the vertical and horizontal knobs to adjust the waveform in the graticule you select.

## To Capture Infrequent Events (TDS 700A Models):



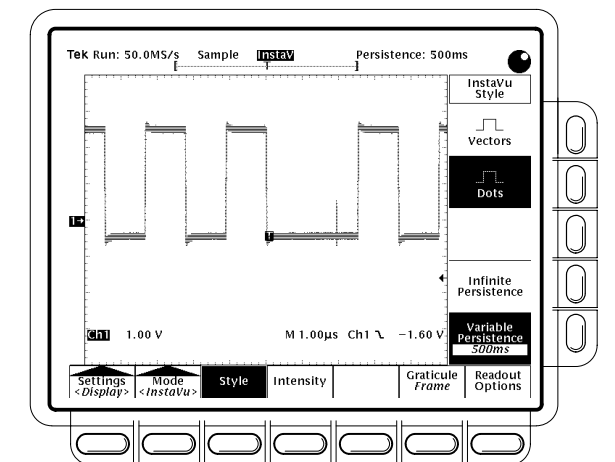
Press the InstaVu button to toggle between InstaVu and Normal waveform capture rates.

When in InstaVu mode:

Waveforms displayed are updated thousands of times faster than normal.

Very brief changes in waveforms are captured.

Certain features, such as Limit Testing, Math Waveforms, Zoom, and record lengths longer than 500 points, are not available.



## To Save a Hardcopy to the File System:

**1** Press **SHIFT**, and then press **HARDCOPY**.

**2** Press **Format** in the main menu, and select a hardcopy format from the side menu.

**3** Press **Port** in the main menu, press **File** in the side menu, and then press **CLEAR MENU**.

**4** Press **HARDCOPY** anytime to save a copy of the current screen to a unique file in the oscilloscope file system.

## To Perform Other File System Operations:

- Press **SAVE/RECALL WAVEFORM**, and use the menu buttons to save a waveform to a file or recall it from a file.
- Press **SAVE/RECALL SETUP**, and use the menu buttons to save a setup to a file or recall it from a file.
- Press **File Utilities** in the Save/Recall Waveform, Save/Recall Setup, or Hardcopy menus to access utilities that create directories, copy files, and do other operations in the oscilloscope file system.

## To Set Up Using a Menu:

**1** Press any of the front panel menu buttons.

Use **SHIFT** Button for Alternate (Blue) Menus

**2** Select an item from the main (bottom) menu.

**3** Select an item from the side menu, if displayed.

Readout Indicates Value That You Can Adjust with the General Purpose Knob or Keypad

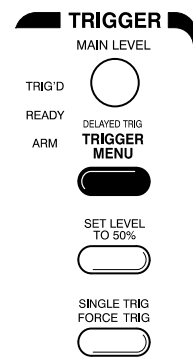
Adjustable Menu Item Value

**4** Adjust menu item values using the general purpose knob or by entering numbers on the keypad.

End Your Entry by Pressing **ENTER** (↵)

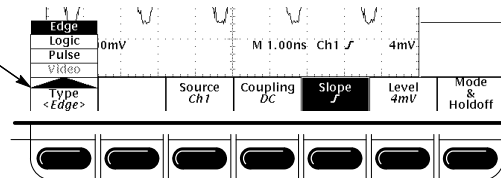
# To Select a Trigger:

1 Press TRIGGER MENU button.

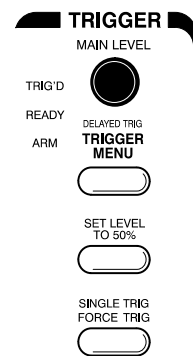


2 Select trigger type or parameter from main menu.

This Symbol Indicates Pop-Up Menu



3 Set TRIGGER MAIN LEVEL.

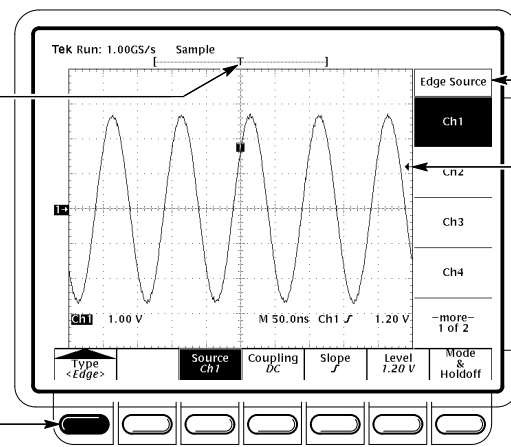


"T" Shows Trigger Position

Press to Display Pop-Up Menus

Press Again to Make Selection

A Pop-Up Selection Changes the Other Main Menu Items



Title of Side Menu

Arrow Shows Trigger Level

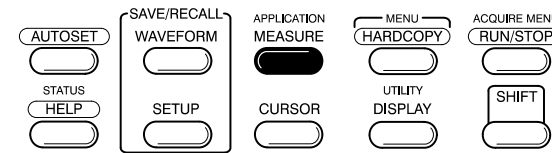
Removes Menus From Screen

## Trigger Selections

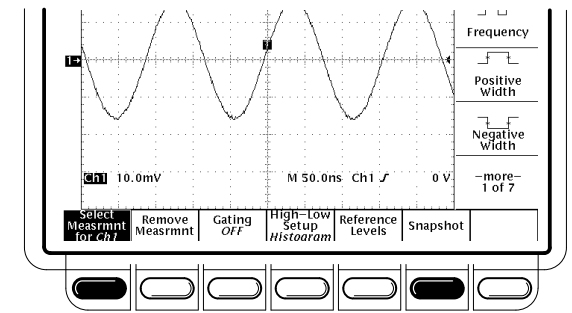
TYPE <Edge>	CLASS <Pattern>		
	Source	Select any one of Ch 1 thru Ch 4, Line, or DC Aux	Define Inputs Define levels High, Low, or Don't Care for Ch 1 thru Ch 4
Slope	Positive	Define Logic AND	
	Negative	OR	
		NAND	
		NOR	
Level	Level	Set Thresholds Set a threshold level for each of Ch 1 thru Ch 4	
Coupling	DC	DC	Trigger When Goes TRUE
	AC	AC	Goes FALSE
	HF Reject		TRUE for less than <sup>1</sup>
	LF Reject		TRUE for more than <sup>1</sup>
	Noise Rej (DC Low Sensitivity)		
			<sup>1</sup> Qualification by time

# To Take Measurements Automatically:

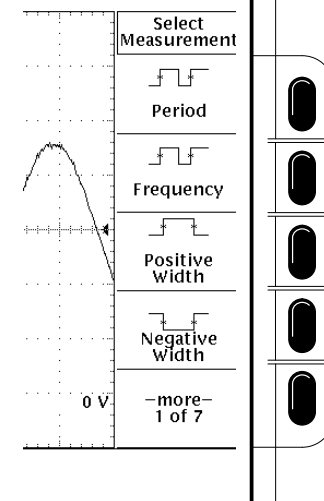
1 Press MEASURE button.



2 Press Select Measrmt or Snapshot in main menu.



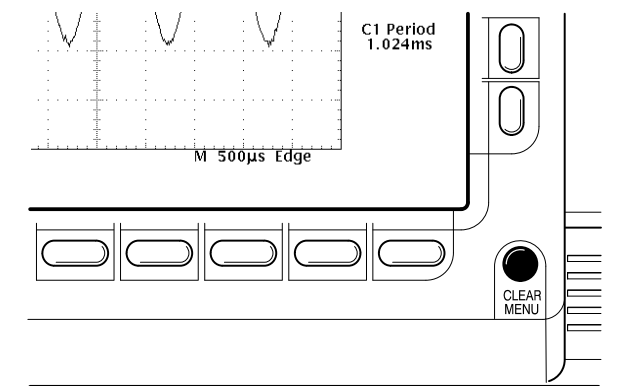
3 Select up to four measurements.



## Automated Measurement Selections

Select Measurement						
Period	Rise Time	Delay	High	Pk-Pk	Mean	Area
Frequency	Fall Time	Phase	Low	Amplitude	Cycle Mean	Cycle Area
Positive Width	Positive Duty Cycle	Burst Width	Max	Positive Overshoot	RMS	To 1 of 7
Negative Width	Negative Duty Cycle		Min	Negative Overshoot	Cycle RMS	
—more— 1 of 7	—more— 2 of 7	—more— 3 of 7	—more— 4 of 7	—more— 5 of 7	—more— 6 of 7	

4 Press CLEAR MENU button to move measurement readouts away from graticule.



# To Take Measurements With Cursors:

**1** Press **CURSOR** button.

**2** Press **Function** in main menu.

**3** Select from side menu.

**4** Move cursor with general purpose knob. Press **SELECT** to switch between cursors. Press **SHIFT** to speed up/slow down cursor movement.

# To Display Help On Screen:

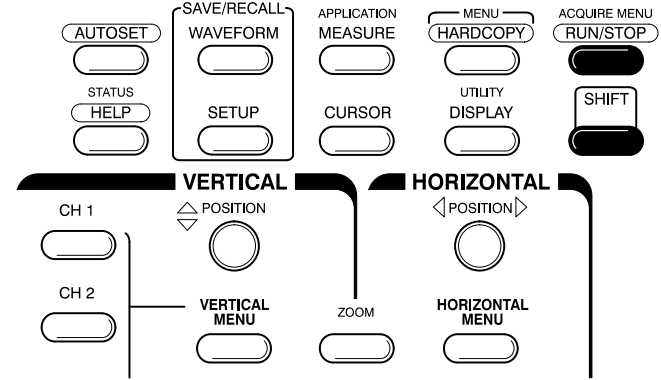
**1** Press **HELP** button.

**2** Now turn any knob or press any button and read a description of it on the display. Press **HELP** button again to exit help.

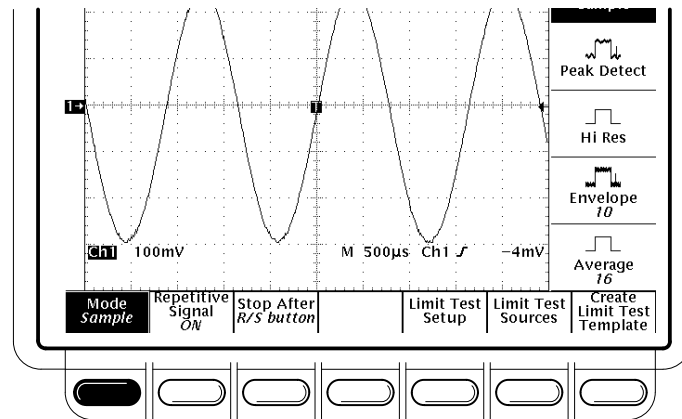
TYPE <Logic>		TYPE <Pulse>					TYPE <Video> (Optional)
CLASS <State>	CLASS <Setup/Hold>	CLASS <Glitch>	CLASS <Runt>	CLASS <Width>	CLASS <Slew Rate>		
<b>Define Inputs</b> Define levels High, Low, or Don't Care for Ch 1 thru Ch 3 Select edge for the clock (always Ch 4)	<b>Data Source</b> Select one of Ch 1 thru Ch 4 as the data source Do not select the same channel used as the clock source	<b>Source</b> Select any one of Ch 1 thru Ch 4	<b>Source</b> Select any one of Ch 1 thru Ch 4	<b>Source</b> Select any one of Ch 1 thru Ch 4	<b>Source</b> Select any one of Ch 1 thru Ch 4	<b>Source</b> Select any one of Ch 1 thru Ch 4	
<b>Define Logic</b> AND OR NAND NOR	<b>Clock Source</b> Select one of Ch 1 thru Ch 4 as the clock source Select the clock edge Do not select the same channel used as the data source	<b>Polarity &amp; Width</b> Positive Negative Either Width	<b>Polarity</b> Positive Negative Either	<b>Polarity</b> Positive Negative	<b>Polarity</b> Positive Negative	<b>Sync Polarity</b> Negative Sync Positive Sync	
<b>Set Thresholds</b> Set a threshold level for each of the pattern channels, Ch 1 thru Ch 3, and the clock, Ch 4.	<b>Levels</b> Clock Data Set levels or select preset levels based on TTL or ECL logic	<b>Level</b> Level <b>Thresholds</b> Runt Upper Runt Lower Set levels or select preset levels based on TTL or ECL logic	<b>Level</b> Level <b>Thresholds</b> High Low Set levels or select preset levels based on TTL or ECL logic	<b>Field/Line</b> Set video field and line number			
<b>Trigger When</b> Goes TRUE Goes FALSE	<b>Setup/Hold Times</b> Select and set the Setup Time Select and set the Hold Time	<b>Glitch (Filter)</b> OFF Accept Glitch ON Reject Glitch	<b>Trigger When</b> Select trigger when any runt occurs or ... Select triggering when a runt wider than specified occurs <sup>2</sup>	<b>Trigger When</b> Within Limits Out of Limits Set Lower and Upper Limits	<b>Trigger When</b> Faster Slower Delta Time Select faster than or slower than and set delta time The oscilloscope computes the slew rate readout from the delta time and thresholds settings	<b>Standard</b> NTSC PAL HDTV FlexFmt	

<sup>2</sup>Qualification by width

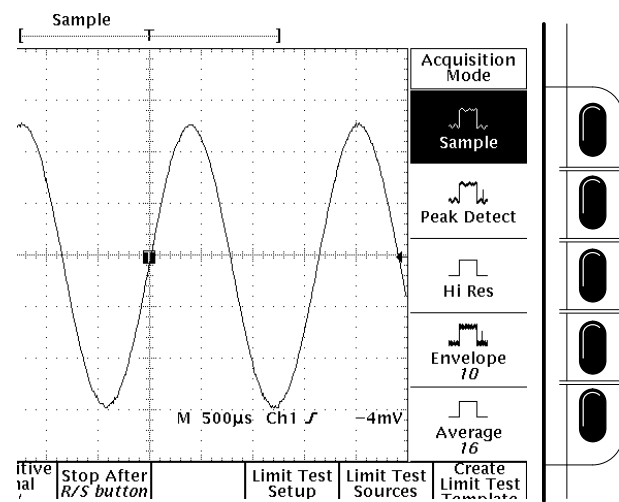
# To Choose an Acquisition Mode:



**1** Press **SHIFT**, and then press **ACQUIRE MENU**.



**2** Press **Mode** in main menu.



**3** From side menu, select an acquisition mode that will serve your application.

# How the Acquisition Modes Work:

