

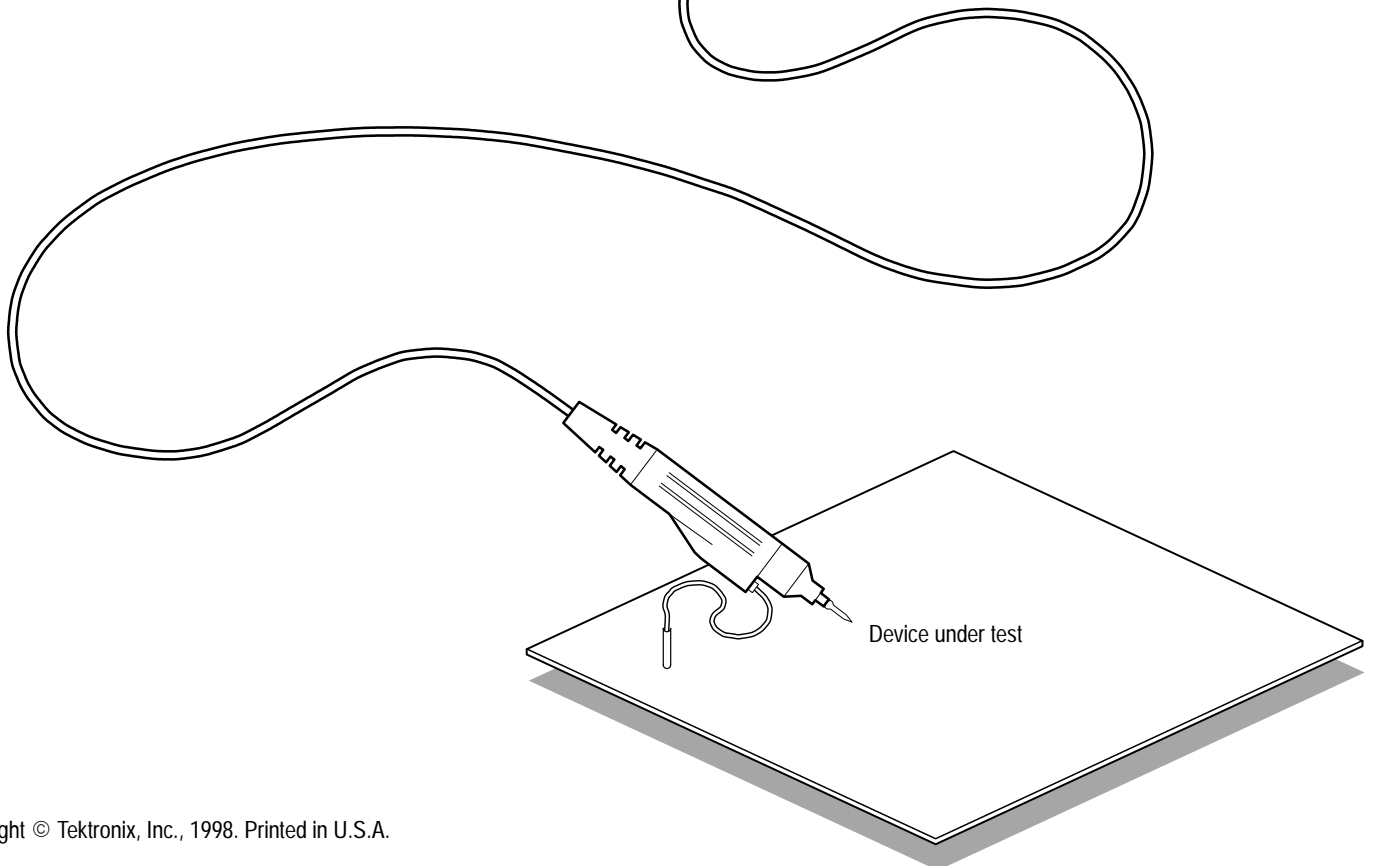
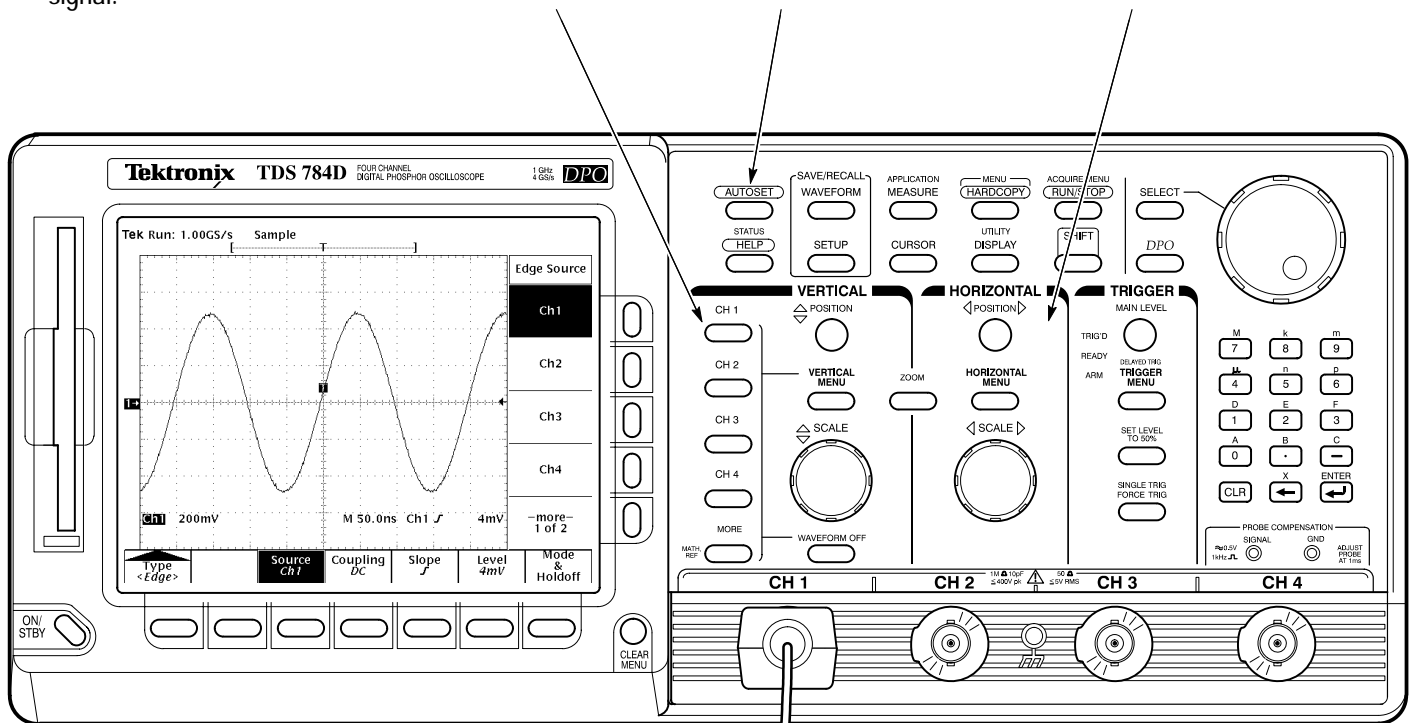
## **Reference**

**TDS 500D, TDS 600C & TDS 700D  
Digitizing Oscilloscopes**

**071-0504-00**

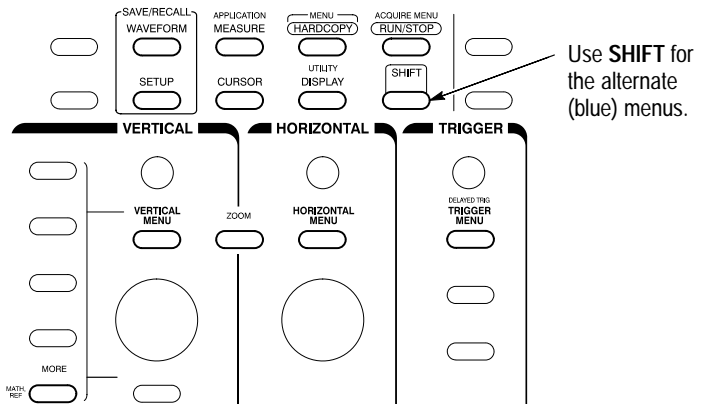
# To Display a Waveform:

- 1 Attach a probe to CH 1 and hook the probe to your signal.
- 2 Press CH 1.
- 3 Press AUTOSET.
- 4 Adjust VERTICAL and HORIZONTAL POSITION and SCALE.

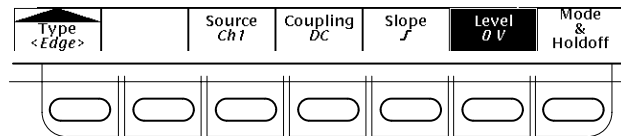


# To Set Up Using a Menu:

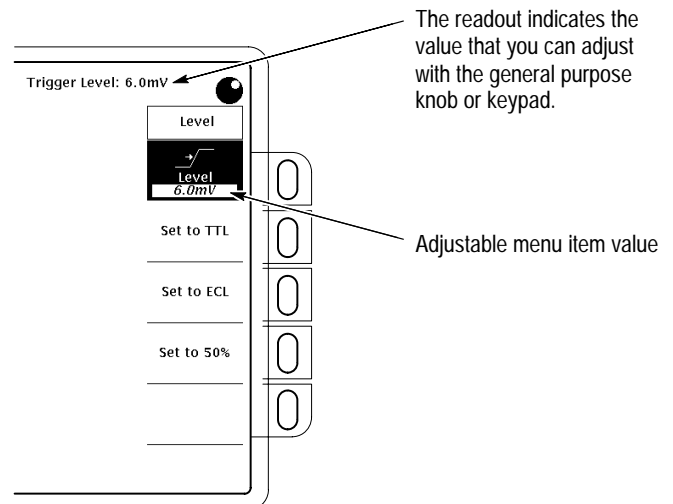
1 Press any of the front panel menu buttons.



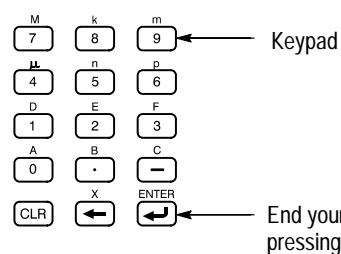
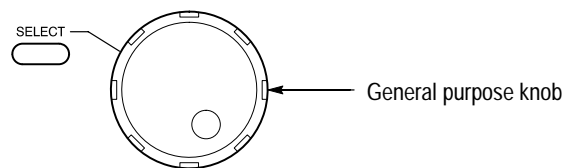
2 Select an item from the main (bottom) menu.



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



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

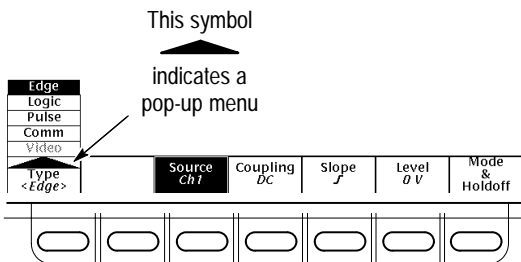


# To Select a Trigger:

**1** Press TRIGGER MENU.



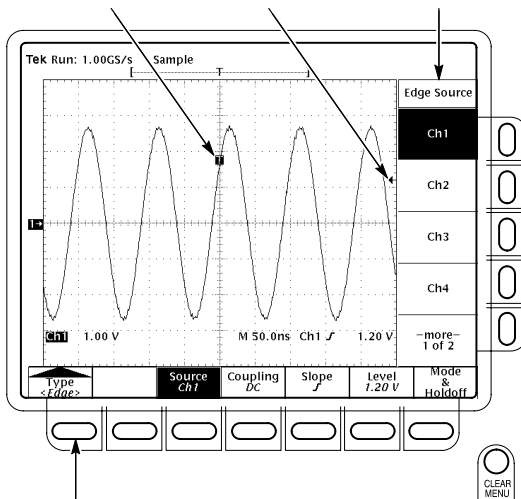
**2** Select a trigger type or parameter from the main menu.



**3** Set TRIGGER MAIN LEVEL.



"T" shows the trigger position      Arrow shows the trigger level      Title of the side menu































Press to display the pop-up menus  
Press again to make a selection  
A pop-up selection changes the other main menu items

Removes the menus from the screen

## Trigger Selections (On some models, Ax 1 & Ax 2 replace Ch 3 & Ch 4)

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

<sup>1</sup>Qualification by time

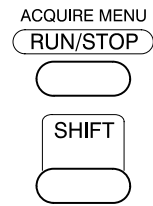
TYPE <Pulse>					TYPE <Video> (Optional)	TYPE <Comm> (Optional)
CLASS <Glitch>	CLASS <Runt>	CLASS <Width>	CLASS <Slew Rate>	CLASS <Time Out>		
<b>Source</b> Select any one of Ch 1 thru Ch 4	<b>Source</b> Select any one of Ch 1 thru Ch 4	<b>Source</b> Select any one of Ch 1 thru Ch 4	<b>Source</b> Select any one of Ch 1 thru Ch 4	<b>Source</b> Select any one of Ch 1 thru Ch 4	<b>Source</b> Select any one of Ch 1 thru Ch 4	<b>Source</b> Select any one of Ch 1 thru Ch 4
<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  Either 	<b>Polarity</b> Stays High  Stays Low  Either 	<b>Sync Polarity</b> Negative Sync Positive Sync	<b>Code</b> AMI CMI NRZ
<b>Level</b> Level   Set level or select preset level based on TTL or ECL logic	<b>Thresholds</b> Runt Upper  Runt Lower   Set levels or select preset levels based on TTL or ECL logic	<b>Level</b> Level   Set level or select preset level based on TTL or ECL logic	<b>Thresholds</b> High  Low   Set levels or select preset levels based on TTL or ECL logic	<b>Level</b> Level   Set level or select preset level based on TTL or ECL logic	<b>Field/Line</b> Set video field and line number	<b>Level/Threshold</b> Level  High Low  Set level or select preset levels
<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>Time</b> Select and set the Timeout Time	<b>Standard</b> NTSC PAL HDTV FlexFmt	<b>Standard</b> DS<x> E<x> FC<x> OC<x> STS<x> STM<x> FDDI 4:2:2 4fsc NTSC <x>Base-T Gigabit Ethernet Custom

<sup>2</sup>Qualification by width

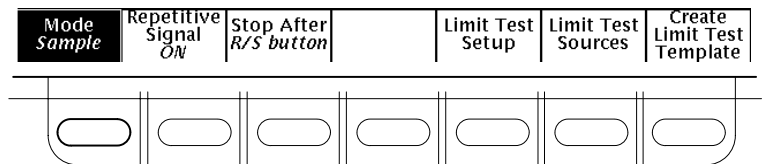
# To Choose an Acquisition Mode:

---

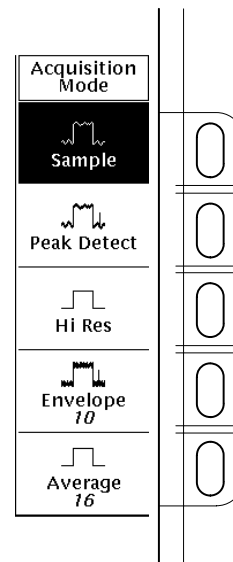
**1** Press **SHIFT**, and then press **ACQUIRE MENU**.



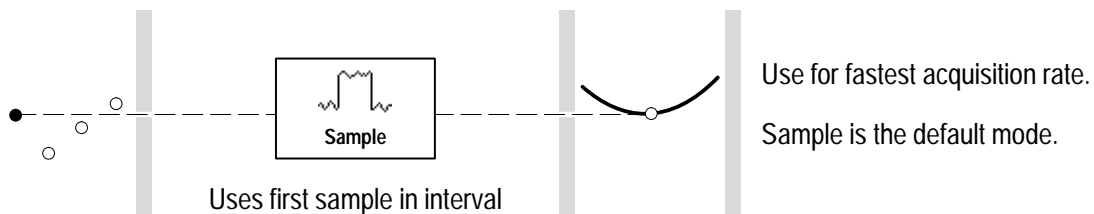
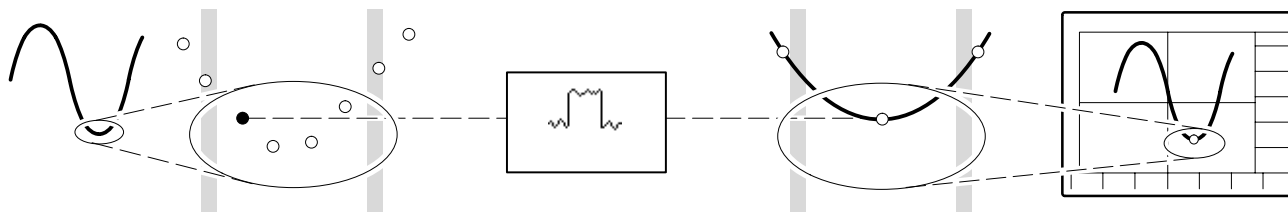
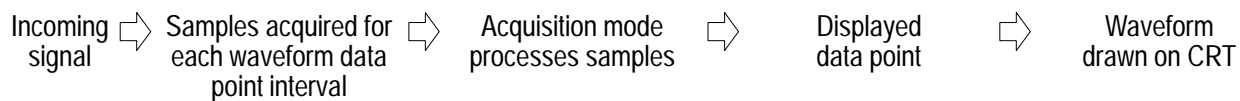
**2** Press **Mode** in the main menu.



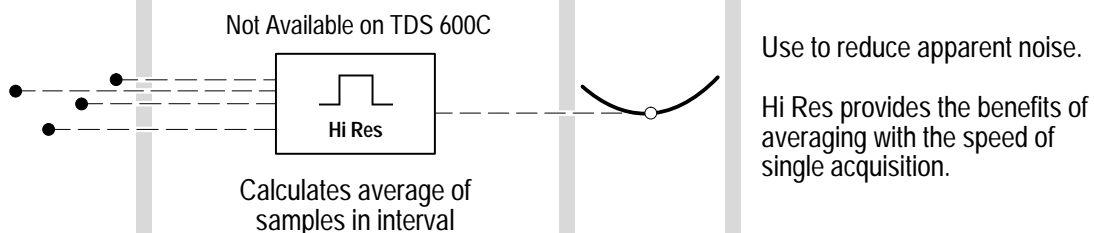
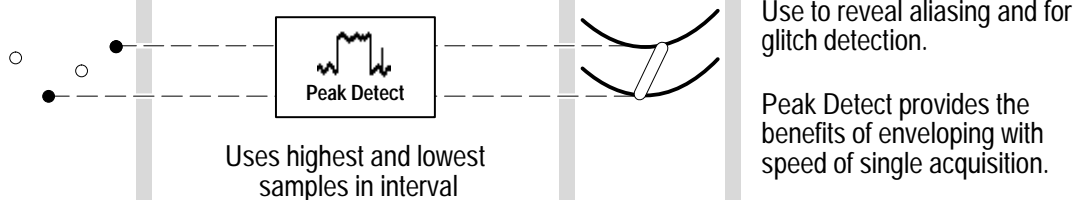
**3** From the side menu, select an acquisition mode that will serve your application.



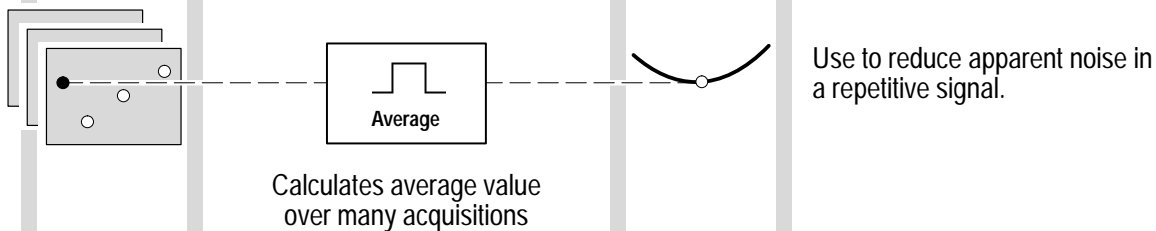
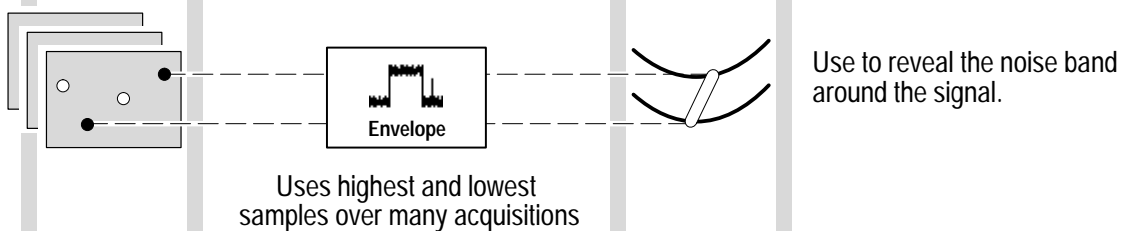
# How the Acquisition Modes Work:



Single waveform acquisition



Multiple waveform acquisitions

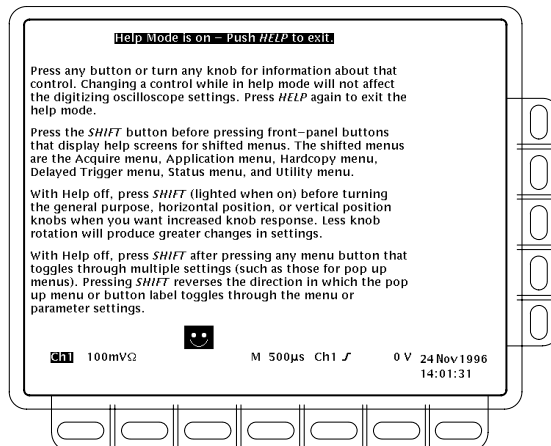


# To Display Help On Screen:

1 Press **HELP**.

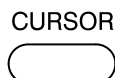


2 Now turn any knob or press any button and read a description of it on the display. Press **HELP** again to exit help.

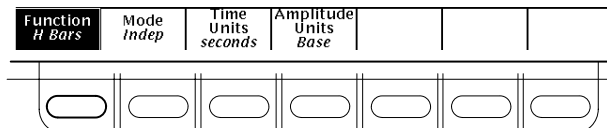


# To Take Measurements With Cursors:

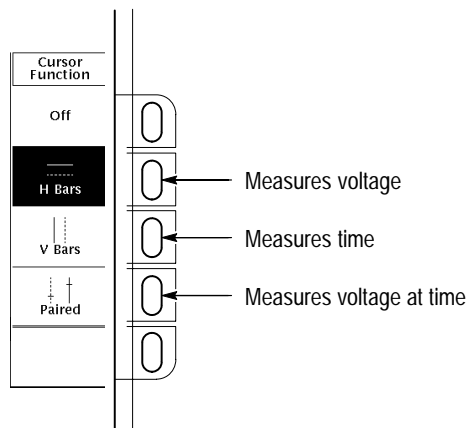
1 Press **CURSOR**.



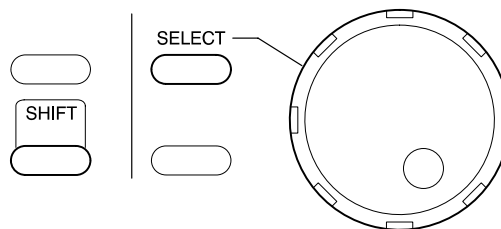
2 Press **Function** in the main menu.



3 Select from the side menu.



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



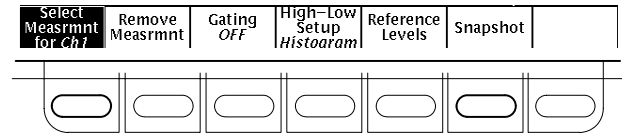


# To Take Measurements Automatically:

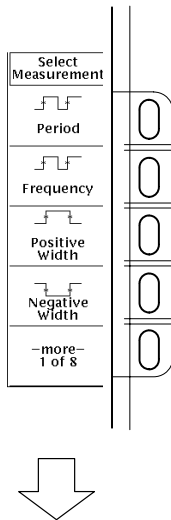
1 Press **MEASURE**.



2 Press **Select Measrmt** or **Snapshot** in the main menu.



3 Select up to four measurements.



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

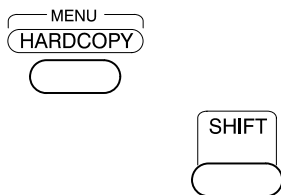


## Automated Measurement Selections

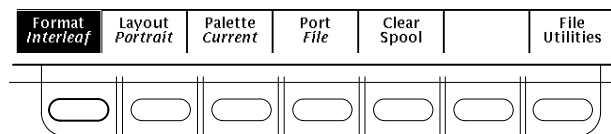
Select Measurement							
Period	Rise Time	Delay	High	Pk-Pk	Mean	Area	Extinction Ratio
Frequency	Fall Time	Phase	Low	Amplitude	Cycle Mean	Cycle Area	Extinction % (FDDI)
Positive Width	Positive Duty Cycle	Burst Width	Max	Positive Overshoot	RMS		Extinction dB (SONET)
Negative Width	Negative Duty Cycle		Min	Negative Overshoot	Cycle RMS		Mean dBm (Average Optical Power)
--more-- 1 of 8	--more-- 2 of 8	--more-- 3 of 8	--more-- 4 of 8	--more-- 5 of 8	--more-- 6 of 8	--more-- 7 of 8	--more-- 8 of 8

# To Save a Hardcopy to the File System:

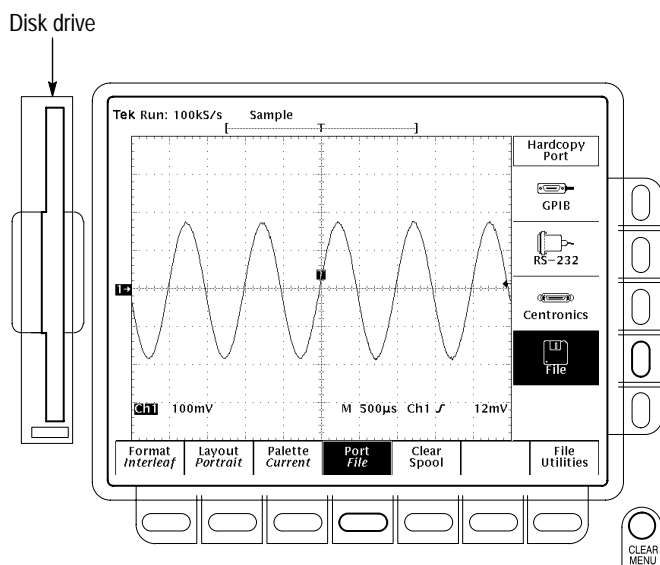
1 Press **SHIFT**, and then press **HARDCOPY**.



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.

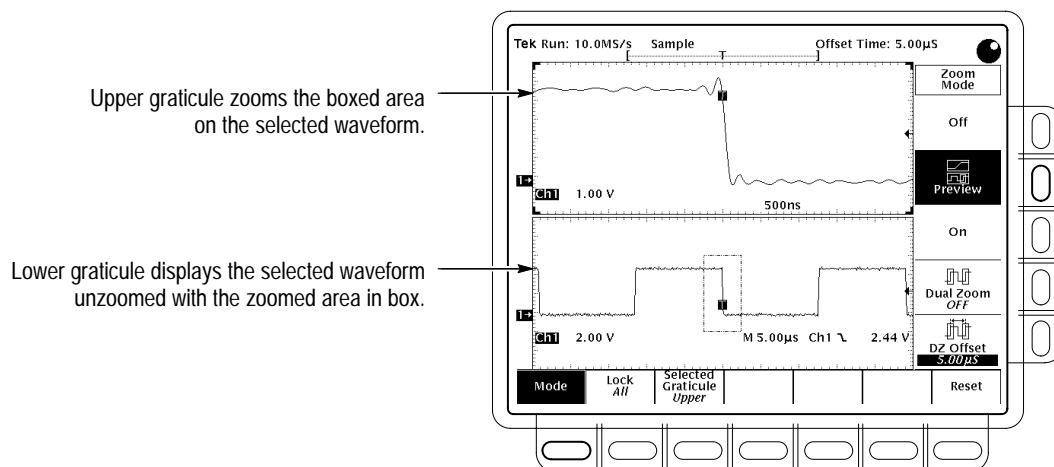
## To Preview a Waveform:

1 Press **ZOOM**.

ZOOM



2 Press **Mode** in the main menu. Then press **Preview** in the side menu to turn on Dual Window Zoom.



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 500D & 700D Models):

Press **DPO** to toggle between **DPO** and **Normal** waveform capture rates.

DPO



When in **DPO** 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.

