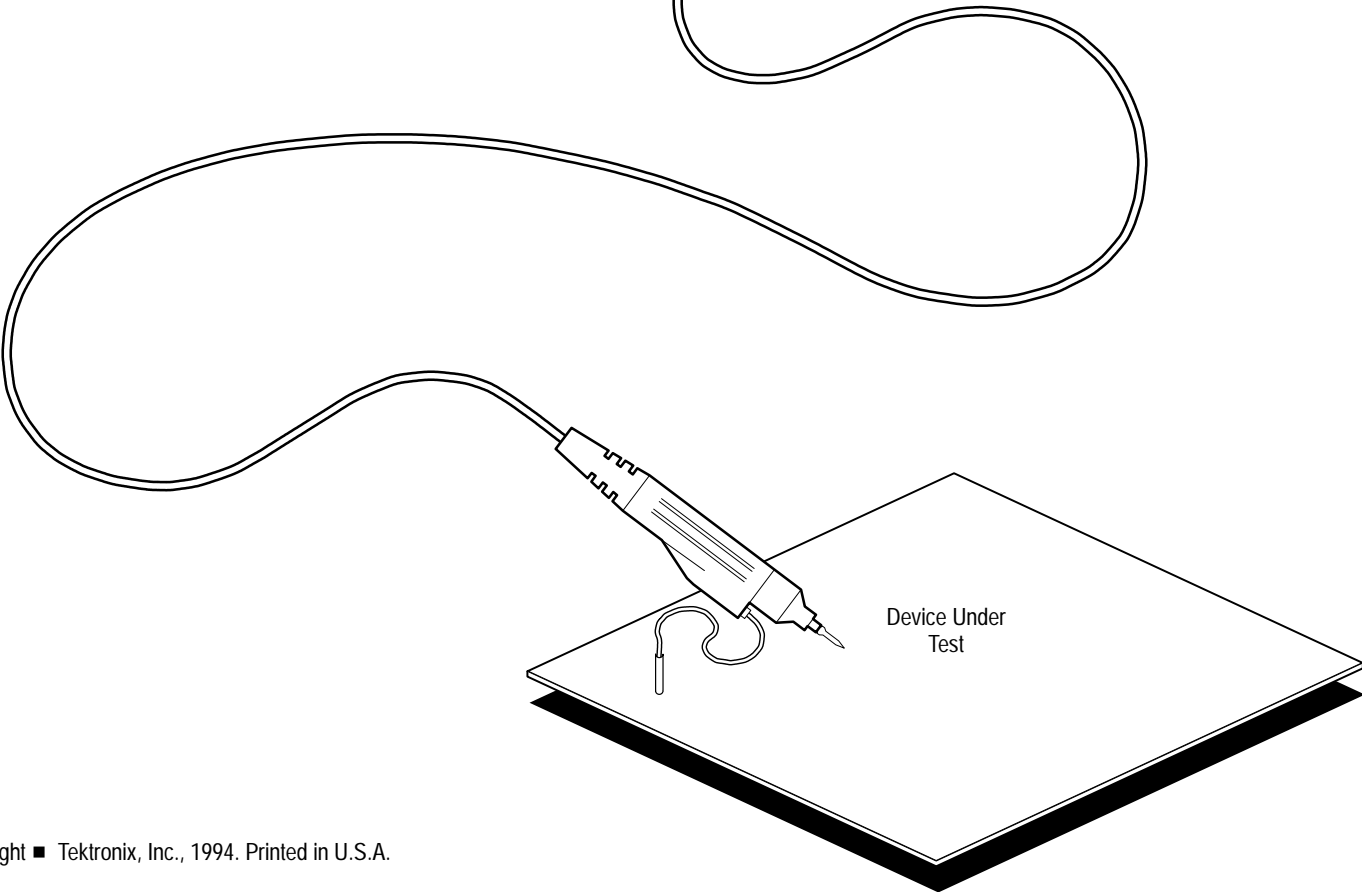
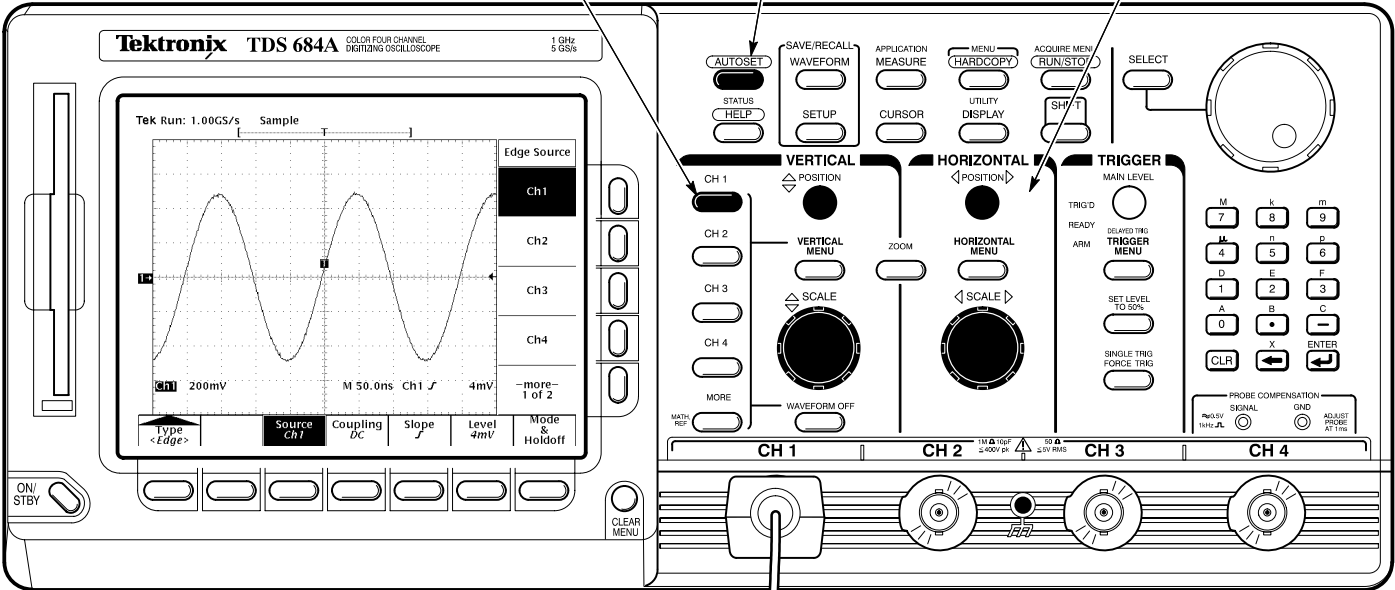


Reference

**TDS 684A, TDS 744A & TDS 784A
Digitizing Oscilloscopes
070-8999-02**

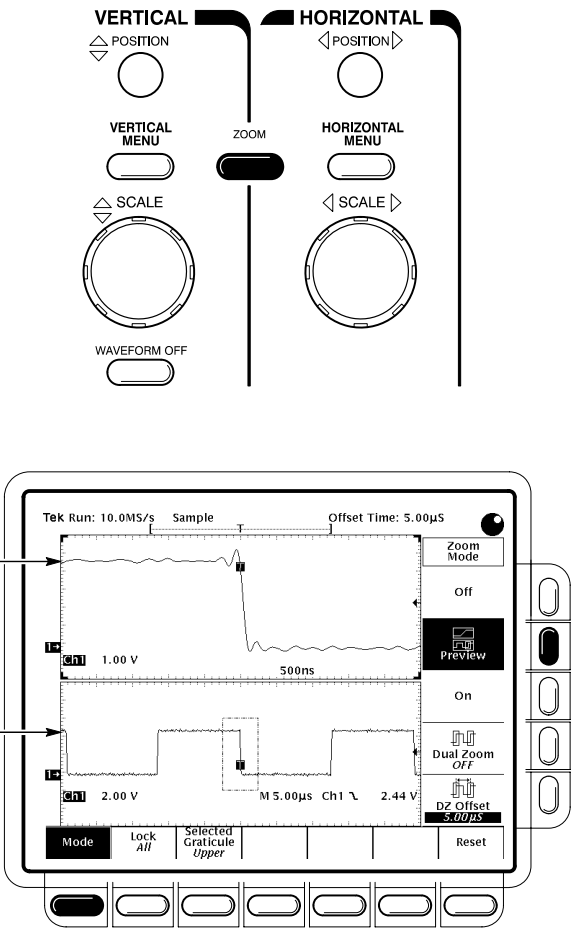
To Display a Waveform:

- 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.



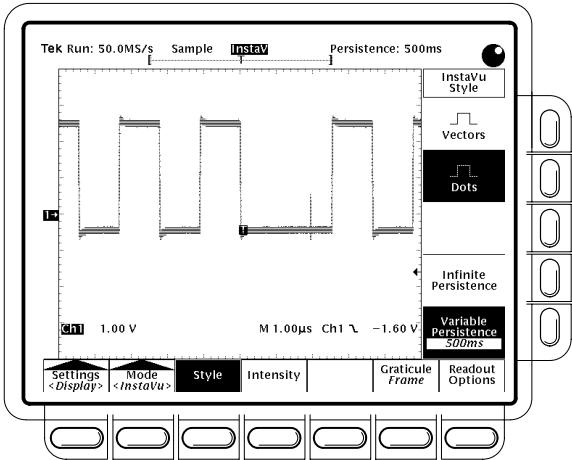
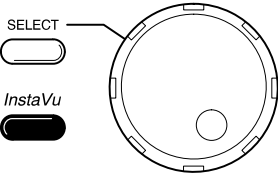
To Preview a Waveform (TDS 700A Models):

- 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.
- 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 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.

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.

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 button.

TRIGGER

MAIN LEVEL

TRIG'D

READY

ARM

DELATED TRIG

TRIGGER MENU

SET LEVEL TO 50%

SINGLE TRIG

FORCE TRIG

This Symbol Indicates Pop-Up Menu

Edge

Logic

Pulse

Video

Type <Edge>

Source Ch1

Coupling DC

Slope

Level 4mV

Mode & Holdoff

2 Select trigger type or parameter from main menu.

TRIGGER

MAIN LEVEL

TRIG'D

READY

ARM

DELATED TRIG

TRIGGER MENU

SET LEVEL TO 50%

SINGLE TRIG

FORCE TRIG

3 Set TRIGGER MAIN LEVEL.

Tek Run: 1.00GS/s Sample

"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

Ch1

1.00 V

M 50.0ns

Ch1

1.20 V

—more—

1 of 2

Type <Edge>

Source Ch1

Coupling DC

Slope

Level 1.20 V

Mode & Holdoff

Edge Source

Ch1

Ch2

Ch3

Ch4

Removes Menus From Screen

CLEAR MENU

Title of Side Menu

Arrow Shows Trigger Level

Trigger Selections				
TYPE <Edge>		CLASS <Pattern>		
Source	Select any one of Ch 1 thru Ch 4, Line, or DC Aux	Define Inputs		
		Define Logic		
Slope	Positive	Define Logic	AND	
	Negative		OR	
			NAND	
			NOR	
Level	Level	Set Thresholds		
		Set Trigger When		
Coupling	DC	DC	Goes TRUE	
	AC	AC	Goes FALSE	
	HF Reject		TRUE for less than ¹	
	LF Reject		TRUE for more than ¹	
	Noise Rej (DC Low Sensitivity)			
¹ Qualification by time				

To Take Measurements Automatically:

1 Press MEASURE button.

AUTOSAVE

STATUS

HELP

SAVE/RECALL

WAVEFORM

SETUP

APPLICATION

MEASURE

CURSOR

MENU

HARDCOPY

UTILITY

DISPLAY

ACQUIRE MENU

RUN/STOP

SHIFT

2 Press Select Measrmt or Snapshot in main menu.

Select Measrmt for Ch1

Remove Measrmt

Gating Off

High-Low Setup Histogram

Reference Levels

Snapshot

3 Select up to four measurements.

Select Measurement

Period

Frequency

Positive Width

Negative Width

—more—

1 of 7

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

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

To 1 of 7

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

C1 Period 1.024ms

M 500µs Edge

CLEAR MENU

To Take Measurements With Cursors:

AUTOSET

STATUS

HELP

SAVE/RECALL

WAVEFORM

SETUP

APPLICATION

MEASURE

CURSOR

MENU

HARDCOPY

UTILITY

DISPLAY

ACQUIRE MENU

RUN/STOP

SHIFT

Function

H Bars

Mode

Indep

Time

Units

seconds

Amplitude

Units

Base

200mV

M 50.0ns

Ch1

4mV

H Bars

V Bars

Paired

1

Press **CURSOR** button.

2

Press **Function** in main menu.

Δ: 31.8mV

@: -15.8mV

Cursor

Function

Off

H Bars

V Bars

Paired

Measures Voltage

Measures Time

Measures Voltage at Time

SHIFT

SELECT

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:

AUTOSET

STATUS

HELP

SAVE/RECALL

WAVEFORM

SETUP

APPLICATION

MEASURE

CURSOR

MENU

HARDCOPY

UTILITY

DISPLAY

ACQUIRE MENU

RUN/STOP

SHIFT

Help Mode is on - Push **HELP** to exit.

Press any button or turn any knob for information about that control. Changing a control while in help mode will not affect the digitizing oscilloscope settings. Press **HELP** again to exit the help mode.

Press the **SHIFT** button before pressing front-panel buttons that bring up help screens for shifted menus. The shifted menus are the Acquire menu, Application menu, Hardcopy menu, Delayed Trigger menu, Status menu, and Utility menu.

With Help off, press **SHIFT** (lighted when on) before turning the general purpose, horizontal position, or vertical position knobs when you want increased knob response. Less knob rotation will produce greater changes in settings.

With Help off, press **SHIFT** after pressing any menu button that toggles through multiple settings (such as those for pop up menus). Pressing **SHIFT** reverses the direction in which the pop up menu or button label toggles through the menu or parameter settings.

500mV

M 20.0ns

Ch1

0 V

22 Jan 1994

13:02:53

1

Press **HELP** button.

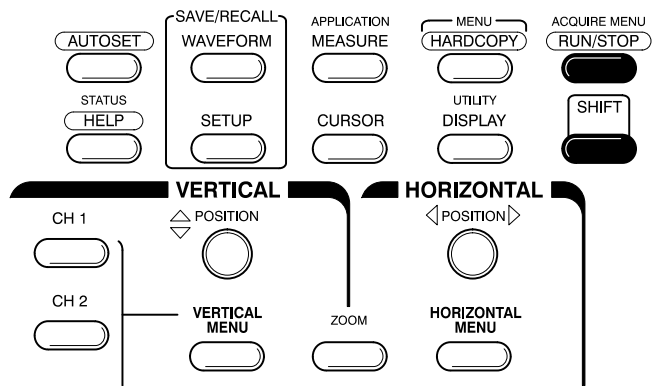
2

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

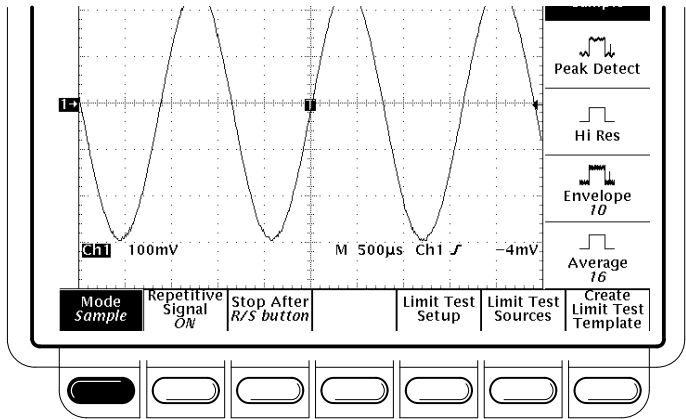
TYPE <Logic>		TYPE <Pulse>						TYPE <Video> (Optional)	
CLASS <State>		CLASS <Setup/Hold>	CLASS <Glitch>	CLASS <Runt>	CLASS <Width>	CLASS <Slew Rate>			
Define Inputs	Define levels High, Low, or Don't Care for Ch 1 thru Ch 3	Data Source	Source	Source	Source	Source	Source	Source	Select any one of Ch 1 thru Ch 4
	Select edge for the clock (always Ch 4)								
Define Logic	AND	Clock Source	Polarity & Width	Polarity	Polarity	Polarity	Polarity	Sync Polarity	Negative Sync Positive Sync
	OR								
	NAND								
	NOR								
Set Thresholds	Set a threshold level for each of the pattern channels, Ch 1 thru Ch 3, and the clock, Ch 4.	Levels	Level	Thresholds	Level	Level	Thresholds	Field/Line	Set video field and line number
Trigger When	Goes TRUE	Setup/Hold Times	Glitch (Filter)	Trigger When	Trigger When	Trigger When	Trigger When	Standard	NTSC PAL HDTV FlexFmt
	Goes FALSE								

²Qualification by width

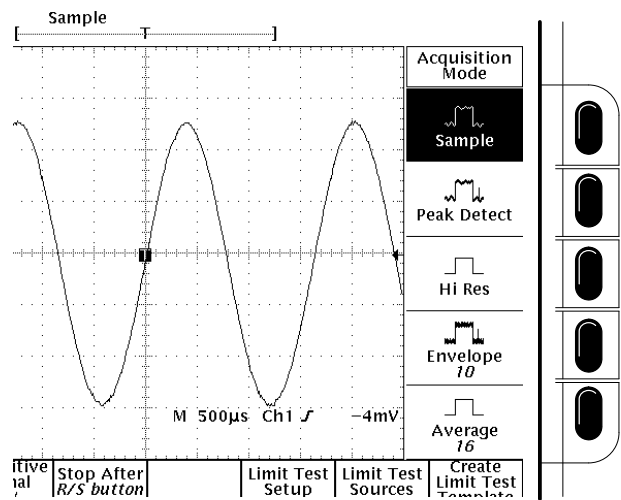
To Choose an Acquisition Mode:



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

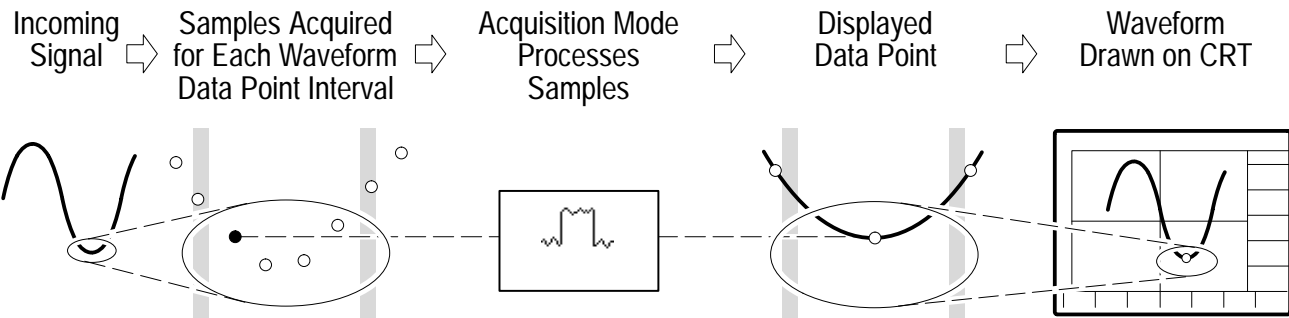


2 Press **Mode** in main menu.



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

How the Acquisition Modes Work:



Single Waveform Acquisition		Sample	Uses first sample in interval	Use for fastest acquisition rate. Sample is the default mode.
		Peak Detect	Available on TDS 700A Only Uses highest and lowest samples in interval	Use to reveal aliasing and for glitch detection. Peak Detect provides the benefits of enveloping with speed of single acquisition.
		Hi Res	Available on TDS 700A Only Calculates average of samples in interval	Use to reduce apparent noise. Hi Res provides the benefits of averaging with the speed of single acquisition.
Multiple Waveform Acquisitions		Envelope	Uses highest and lowest samples over many acquisitions	Use to reveal the noise band around the signal.
		Average	Calculates average value over many acquisitions	Use to reduce apparent noise in a repetitive signal.