

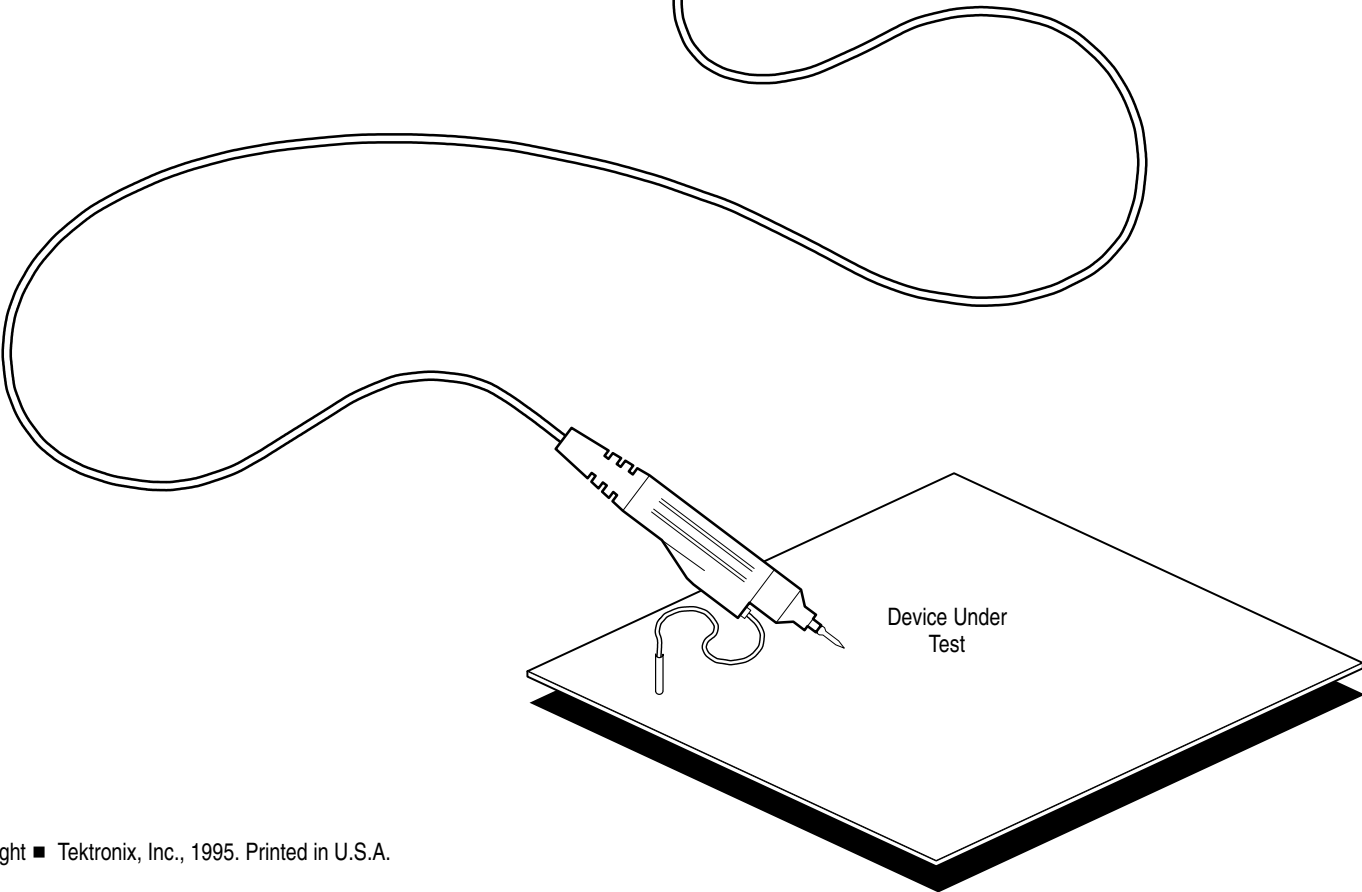
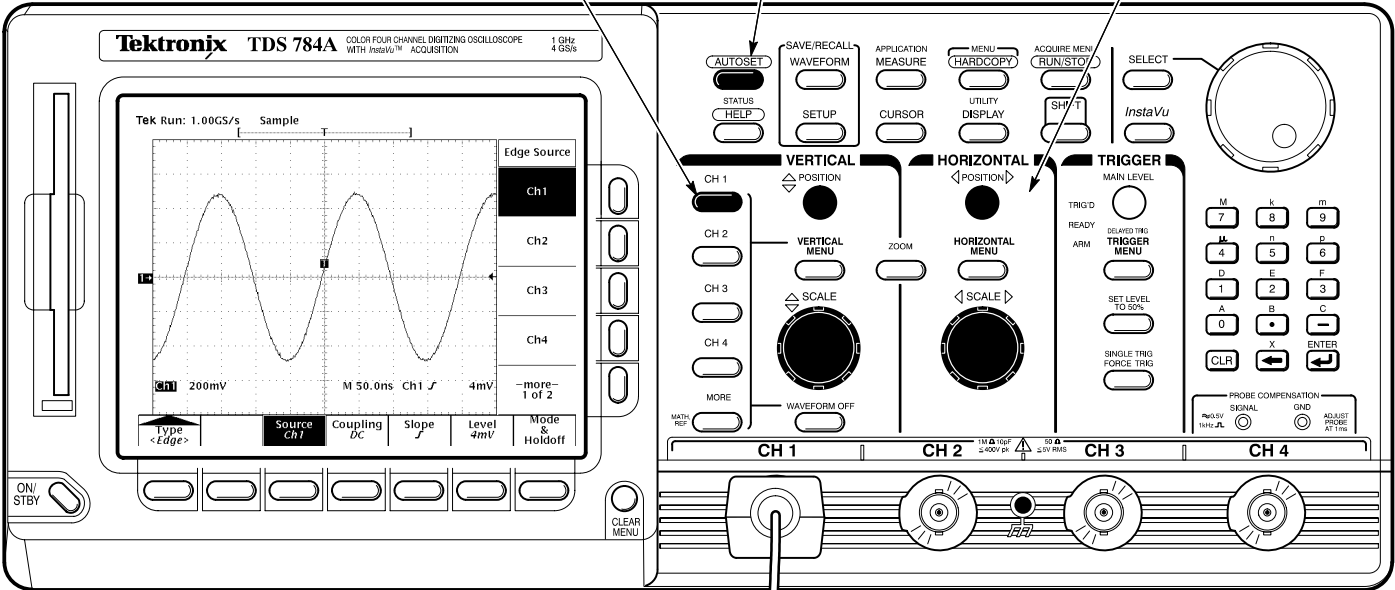
Reference

**TDS 500B, TDS 600B & TDS 700A
Digitizing Oscilloscopes**

070-9382-01

To Display a Waveform:

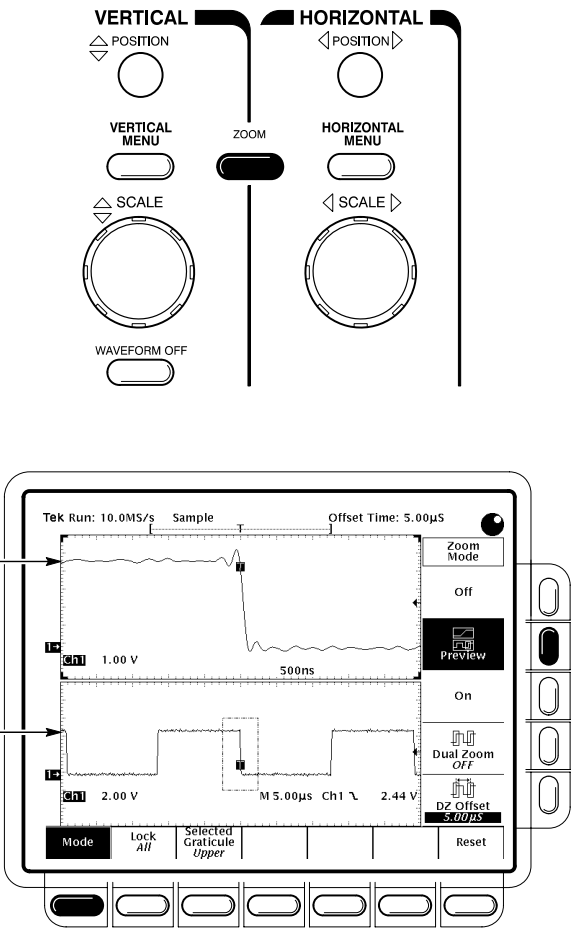
- 1 Attach a probe to CH 1 and hook the probe to your signal.
- 2 Press CH 1.
- 3 Press AUTOSET.
- 4 Adjust VERTICAL and HORIZONTAL POSITION and SCALE.



To Preview a Waveform:

- 1 Press 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.



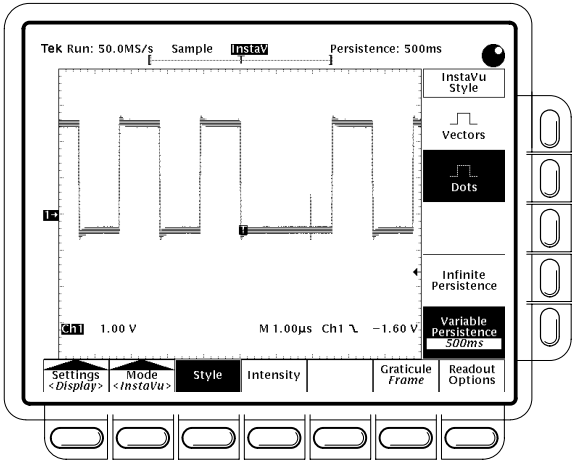
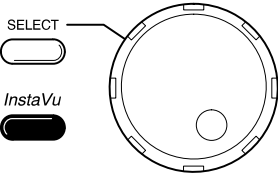
To Capture Infrequent Events (TDS 500B & 700A Models):

- Press InstaVu 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.

TRIGGER MAIN LEVEL

TRIG'D

READY

ARM

DELAYED TRIG

TRIGGER MENU

SET LEVEL TO 50%

This Symbol Indicates a Pop-Up Menu

Edge

Logic

Pulse

Video

Type <Edge>

Source Ch1

Coupling DC

Slope

Level 4mV

Mode & Holdoff

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

TRIGGER MAIN LEVEL

TRIG'D

READY

ARM

DELAYED TRIG

TRIGGER MENU

SET LEVEL TO 50%

“T” Shows the Trigger Position

Tek Run: 1.00GS/s

Sample

Edge Source

Ch1

Ch2

Ch3

Ch4

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

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)					
TYPE <Edge>		TYPE <Logic>			
		CLASS <Pattern>		CLASS <State>	
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	Define Inputs	Define levels High, Low, or Don't Care for Ch 1 thru Ch 3 Select edge for the clock (always Ch 4)
Slope	Positive	Define Logic	AND	Define Logic	AND
	Negative	Define Logic	OR	Define Logic	OR
		Define Logic	NAND	Define Logic	NAND
		Define Logic	NOR	Define Logic	NOR
Level	Level	Set Thresholds	Set a threshold level for each of Ch 1 thru Ch 4	Set Thresholds	Set a threshold level for each of the pattern channels, Ch 1 thru Ch 3, and the clock, Ch 4.
	Set level or select preset level based on TTL or ECL logic				
Coupling	DC DC	Trigger When	Goes TRUE	Trigger When	Goes TRUE
	AC AC	Trigger When	Goes FALSE	Trigger When	Goes FALSE
	HF Reject		TRUE for less than ¹		
	LF Reject		TRUE for more than ¹		
	Noise Rej (DC Low Sensitivity)				

¹Qualification by time

To Take Measurements Automatically:

1 Press MEASURE.

AUTOSAVE/RECALL WAVEFORM

STATUS HELP

APPLICATION MEASURE

CURSOR

MENU HARD COPY

UTILITY DISPLAY

ACQUIRE MENU RUN/STOP

SHIFT

2 Press Select Measrmt or Snapshot in the 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 to move the measurement readouts away from the graticule.

C1 Period 1.024ms

M 500µs Edge

CLEAR MENU

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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**.

2

Press **Function** in the 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 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 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 display 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.

100mV

M 500μs

Ch1

0 V

24 Jul 1995

14:01:31

1

Press **HELP**.

2

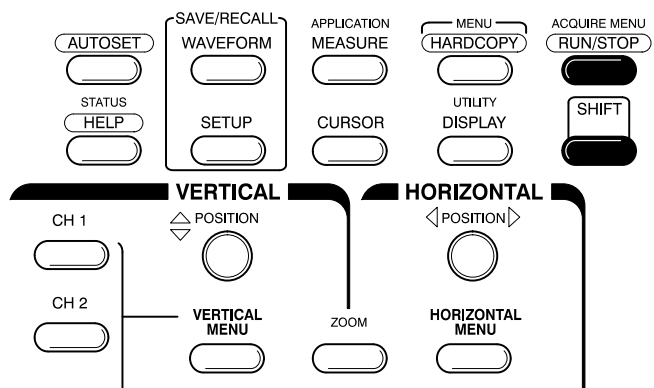
Now turn any knob or press any button and read a description of it on the display. Press **HELP** again to exit help.

replace Ch 3 & Ch 4)

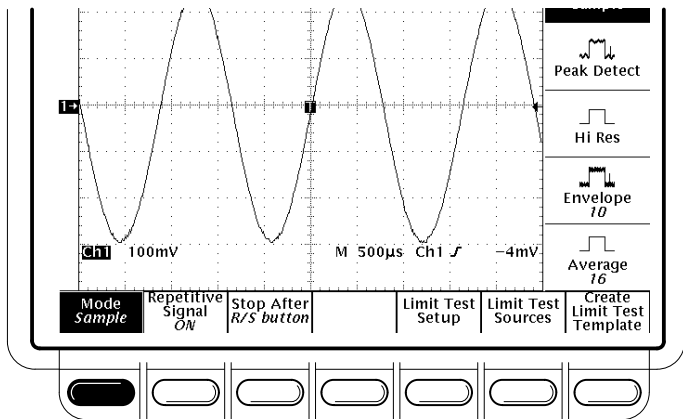
		TYPE <Pulse>						TYPE <Video> (Optional)	
CLASS <Setup/Hold>		CLASS <Glitch>	CLASS <Runt>	CLASS <Width>	CLASS <Slew Rate>	CLASS <Time Out>			
Data Source	Select one of Ch 1 thru Ch 4 as the data source Do not select the same channel used as the clock source	Source Select any one of Ch 1 thru Ch 4	Source Select any one of Ch 1 thru Ch 4	Source Select any one of Ch 1 thru Ch 4	Source Select any one of Ch 1 thru Ch 4	Source Select any one of Ch 1 thru Ch 4	Source Select any one of Ch 1 thru Ch 4	Source Select any one of Ch 1 thru Ch 4	Select any one of Ch 1 thru Ch 4
Clock Source	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	Polarity & Width Positive Negative Either Width	Polarity Positive Negative Either	Polarity Positive Negative	Polarity Positive Negative Either	Polarity Positive Negative Either	Polarity Stays High Stays Low Either	Sync Polarity Negative Sync Positive Sync	
Levels	Clock Data Set levels or select preset levels based on TTL or ECL logic	Level Level Set level or select preset level based on TTL or ECL logic	Thresholds Runt Upper Runt Lower Set levels or select preset levels based on TTL or ECL logic	Level Level Set level or select preset level based on TTL or ECL logic	Thresholds High Low Set levels or select preset levels based on TTL or ECL logic	Level Level Set level or select preset level based on TTL or ECL logic	Field/Line Set video field and line number		
Setup/Hold Times	Select and set the Setup Time Select and set the Hold Time	Glitch (Filter) OFF Accept Glitch ON Reject Glitch	Trigger When Select trigger when any runt occurs or ... Select triggering when a runt wider than specified occurs ²	Trigger When Within Limits Out of Limits Set Lower and Upper Limits	Trigger When 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	Time Select and set the Timeout Time	Standard NTSC PAL HDTV FlexFmt		

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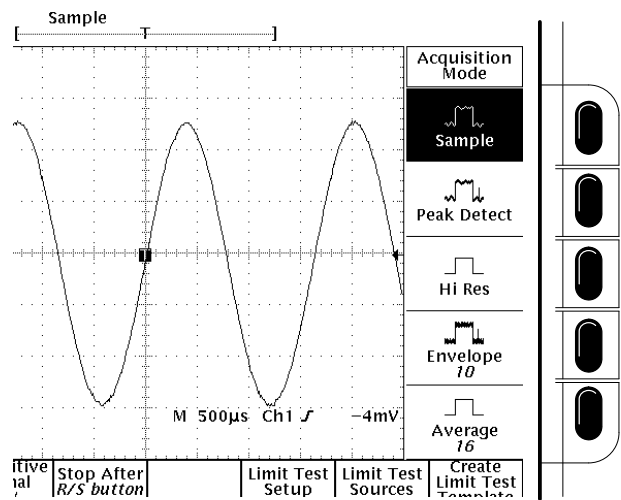
To Choose an Acquisition Mode:



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

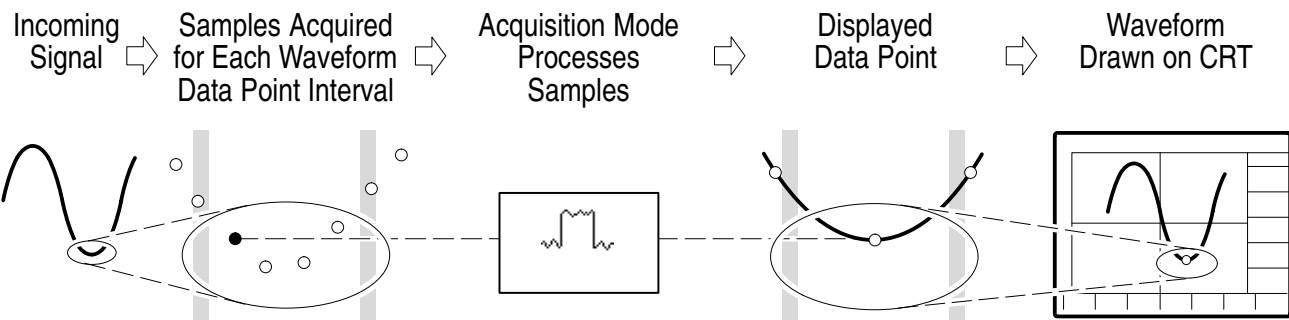


2 Press **Mode** in the main menu.



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

How the Acquisition Modes Work:



Single Waveform Acquisition			Sample	Uses first sample in interval		Use for fastest acquisition rate. Sample is the default mode.
			Peak Detect	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	Not Available on TDS 600B 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.