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## Test & Measurement

- sales
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## Complimentary Reference Material

This PDF has been made available as a complimentary service for you to assist in evaluating this model for your testing requirements.

TMG offers a wide range of test equipment solutions, from renting short to long term, buying refurbished and purchasing new. Financing options, such as Financial Rental, and Leasing are also available on application.

TMG will assist if you are unsure whether this model will suit your requirements.

Call TMG if you need to organise repair and/or calibrate your unit.

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# Digital Storage Oscilloscope

► TDS6604 • TDS6404



## ► Features & Benefits

Down to 70 ps Rise Time

Up to 6 GHz Bandwidth to Capture the Fastest Signals in Leading-edge Digital Designs

20 GS/s Sample Rate on 1 or 2 Channels

Jitter Measurements to 0.7 ps<sub>RMS</sub>

Compliance Mask Tests Supporting a Wide Range of Computer and Datacom Standards

32-Bit Serial Trigger for Isolation of Pattern-dependent Effects

Analysis and Networking Functionality

MultiView Zoom for Rapid Navigation of the Record

Control Via Classic Direct Controls, Touch-sensitive Color Display or Mouse

Open Windows Environment

Built-in Networking

## ► Applications

Validation and Characterization of High-speed Digital Designs

Jitter and Timing Analysis

Investigation of Transient Phenomena

## The TDS6000 Series Takes You to a Higher Level of Signal Integrity for Next-generation Digital Designs

The TDS6000 Series oscilloscopes are high-performance solutions for verification, debug and characterization of sophisticated electronic designs. They feature exceptional signal acquisition performance, operational ease and open connectivity to the design environment. Classic analog-style controls, a large touch-sensitive display and graphical menus provide intuitive control. Open access to the Windows operating system enables unprecedented customization and extensibility.

### Superior Performance

With up to 6 GHz bandwidth and 20 GS/s sample rate on 2 channels or 10 GS/s sample rate on 4 channels simultaneously, the TDS6000 Series provides unmatched signal integrity measurements. High-performance jitter analysis down to 0.7 ps<sub>RMS</sub> is achieved through exceptional trigger and acquisition performance and applied software.

The TDS6000 Series' high bandwidth is fully supported by a suite of compatible probes. The P7260 6 GHz active probe provides full bandwidth at the probe tip. It has two attenuation settings to cover a wide dynamic range. The P7350 5 GHz differential probe is an excellent choice for low-voltage differential signaling (LVDS) applications. Both probes have very low loading for maximum signal fidelity. Small form-factors and a wide array of tip accessories ensure effectiveness in a variety of applications. The TekConnect™ signal interconnect system replaces traditional BNC input connectors with a convenient positive-locking interface for higher system bandwidths. P7000 Series probes are directly compatible with the TekConnect system along with adapters that provide SMA, BNC and N connections as well as 75  $\Omega$  to 50  $\Omega$  conversion. The TCA-1MEG buffer amplifier offers high-impedance

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# Digital Storage Oscilloscope

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connection, built-in bandwidth limits and a P6139A 500 MHz passive probe that extends the capabilities of the TDS6000 to cover general purpose needs.

**Note:** Probes are not included in the price and should be ordered separately.

## Application-specific Extensions

### Mask Testing with Clock Recovery

(Option SM)

Includes clock recovery for serial data streams from 1.5 MBaud to 2.5 GBaud. Easily and reliably perform mask testing and parametric analysis with a single connection.

Provides a portfolio of masks for verifying compliance to computer, communication and datacom standards. Engineers can verify circuit design performance and perform interface compliance testing with one real-time instrument, even when developing multi-standard and multi-rate designs.

Standard masks include:

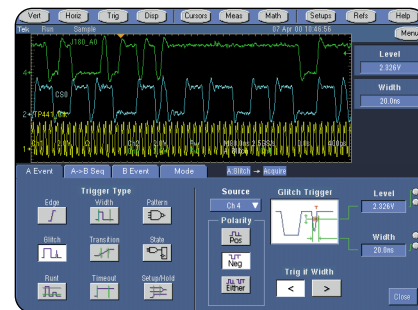
- Ethernet IEEE Std 802.3, ANSI X3.263 (125 Mbps to 3.125 Gbps)
- Fibre Channel Electrical (132.8 Mbps to 2.125 Gbps)
- InfiniBand (2.5 Gbps)
- USB (12 Mbps, 480 Mbps)
- Serial ATA (1.5 Gbps)
- IEEE 1394b (393 Mbps to 1.5729 Gbps)
- Rapid I/O (500 Mbps to 2 Gbps)
- SPI-5 (2.488 Gbps)
- SFI-5 (2.488 Gbps)
- TFI-5 (2.488 Gbps)
- PCI Express (2.5 Gbps)
- VSR (1.24466 Gbps)

Several powerful features allow users to easily tailor mask testing for specific requirements:

- One-button Autoset matches instrument settings to signal characteristics and specific mask requirements
- Auto-fit process optimizes signal position within the mask to minimize hits
- Mask Margin control adjusts tolerance during testing
- Hit-counting identifies location and degree of failures
- Test-related actions including notification, logging and hardcopy
- Built-in mask editing allowing users to copy and adjust mask values from a standard, or create new masks

### Serial Pattern Trigger (Option ST)

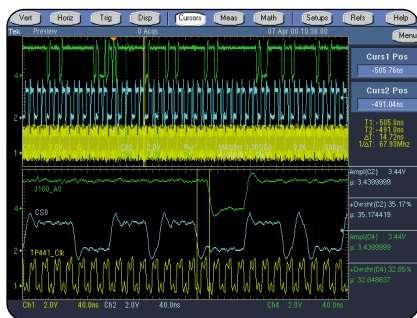
Includes hardware-based serial pattern trigger to isolate data patterns. Serial trigger provides a direct means to analyze pattern dependent issues, even on a single-shot basis. The combination of serial trigger and signal averaging reduces random noise, enhancing acquisition of low level signals. Users can specify patterns with up to 32 bits, including "don't care" bits. The serial trigger system can be clocked from an external source or internal clock recovery can be applied, providing single-connection convenience.



► **Figure 1.** Extensive use of icons helps users locate advanced features quickly and apply them with confidence.

## Ease of Use

The TDS6000 Series' graphical user interface delivers sophisticated capability to advanced users without intimidating occasional users. The front panel includes a complete set of classic analog-style controls for most commonly used features. For advanced use, the combination of a large 10.4 inch touch-sensitive display and graphical interface creates a highly visual environment with explicit illustration of instrument features. The waveform display area remains visible even when displaying control windows so changes in the waveform are not missed when making selections or adjustments. A context-sensitive help program supplements graphic control windows and encourages users to apply advanced capabilities to solve their problem.



► **Figure 2.** Sophisticated analysis capabilities allow users to fully characterize and document design performance.

The adaptable TDS6000 Series human interface readily supports any operating style and environment. Select traditional instrument-style buttons for navigation or switch to a Windows menu bar. Classic analog-style controls provide instant access to the most frequently used functions while the large touch sensitivity display provides intuitive menu operation. Directly drag waveform positions, cursor locations and trigger level using the touch screen or a mouse. Use a graphical drag-box to select a waveform area for zooming, histogram analysis or measurement gating. Use the MultiView zoom to rapidly navigate and compare multiple waveform regions without losing the “big picture.” The USB interface allows a mouse, keyboard and other peripherals to be added without powering off the instrument. With this flexibility, the oscilloscopes readily adapt to a cart, cluttered bench top, shelf, floor and other locations that frequently make operation awkward.

Optional applications include:

- Advanced Jitter Analysis including Rj/Dj separation and BER estimation
- USB2.0 compliance test software
- VocalLink™ voice control software

These applications build on the precision signal acquisition performance of the TDS6000 Series to address the need for application specific measurements to quickly quantify device performance.

#### Parametric Measurements

The TDS6000 Series includes a complete parametric measurement system for signal characterization. Direct selection from a graphical palette makes locating choices simple. Quickly reassign measurements to a different waveform, simplifying verification tasks. Split cursors and screen cursors make it easy to measure trace-to-trace timing characteristics. Gather measurement statistics for deeper insight. Easily extract measurement results for inclusion in a document or analysis in a spreadsheet using the Windows clipboard or export function.

#### Powerful Math Capabilities

The TDS6000 Series allows users to define math expressions to be performed on waveform data, giving on-screen results in terms they need. Access common waveform math functions at the touch of a button. For advanced applications, easily create wave

forms with algebraic expressions consisting of waveform sources, math functions, measurement values and scalars using a calculator-style editor. This allows users to quickly transform raw waveform data into powerful information that is readily interpreted.

#### Enhanced Spectral Analysis

The TDS6000 Series includes a unique spectrum-analyzer style interface for performing frequency domain analysis. Controls such as center frequency, frequency span, resolution bandwidth and reference level provide access to wide- or narrow-band frequency, phase and group delay information. A gating function allows selection of only a portion of the time-domain signal for analysis. These controls allow users to focus on extracting spectral information instead of confronting the idiosyncrasies of FFTs typically found in DSOs.

#### Analysis and Networking

The TDS6000 Series combines a high-performance oscilloscope with a separate PC processor in a self-contained unit. With an open Windows desktop and application programming interfaces (APIs) for Windows and UNIX, the TDS6000 Series is the industry leader in fast data acquisition, analysis and network accessibility. By using the embedded PCI bus, waveform data can be moved directly from the acquisition probes to analysis applications on the Windows desktop at much faster speeds than cable connections to externally attached PCs.

# Digital Storage Oscilloscope

► TDS6604 • TDS6404

The analysis and networking functionality of the Tektronix TDS6000 Series oscilloscopes provide a comprehensive software infrastructure for faster, more versatile operations. Industry-standard protocols, such as VISA and ActiveX Controls, are included for using and enhancing Windows applications such as Excel for data analysis and documentation. Or, create custom software to automate multi-step processes in waveform collection and analysis with Visual BASIC, C, C++, MATLAB, Mathcad and other common APIs.

Integration of the oscilloscopes with external PCs and non-Windows hosts is also supported by the TDS6000 Series software solutions. Plug-and-play drivers are included to enable fast and easy communication with LabVIEW and Lab Windows programs using GPIB, Serial and LAN connections. UNIX applications and other LAN resources can connect directly using the VXI 11.2 server included on the TDS6000 Series.

## View the Windows Desktop on a Separate Monitor

The TDS6000 Series can also be expanded with the addition of an external monitor. With dual-monitor mode enabled, the instruments retain live oscilloscope displays while other applications such as publishing, analysis or browsing tools reside on the external monitor. Users can easily transfer images and waveform data from the oscilloscope to the locally running application or view web-based reference information while using the oscilloscope for design work.

## Choice of User Interfaces

The TDS6000 Series includes standard interfaces for control and peripheral expansion. The GPIB command set shares a high degree of commonality with the TDS6000/7000-class instruments while increasing hardware and software performance. Both USB and PS-2 interfaces are included for mouse, keyboard and other peripheral expansion. USB offers the advantage of hot-insertion and removal so devices can be added or removed without cycling power. The TDS6000 Series also includes a LAN interface for network connection.

## ► Characteristics

### Vertical System

**Rise Time (typical)** – 70 ps (TDS6604); 100 ps (TDS6404).

**Input Channels** – 4.

### Analog Bandwidth (-3 dB) –

TDS6604: 6 GHz.

TDS6404: 4 GHz.

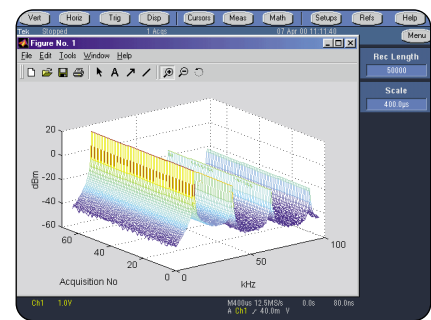
**Input Impedance** – 50  $\Omega$   $\pm$ 2.5%.

**Input Sensitivity, 50  $\Omega$**  – 10 mV/div to 1 V/div.

**Vertical Resolution** – 8-Bit (>11-Bit w/ averaging).

**Max. Input Voltage, 50  $\Omega$**  – Determined by TekConnect™ accessory.

**DC Gain Accuracy** – 2.5%.



► **Figure 3.** Open access to the Windows desktop allows users to leverage standard tools for documentation, analysis, information browsing and communications.

### Offset Range –

10 mV to 50 mV/div  $\pm$ 0.5 V.

50.5 mV to 100 mV  $\pm$ 0.25 V.

101 mV to 500 mV  $\pm$ 5 V.

505 mV to 1 V/div  $\pm$ 2.5 V.

### Channel Isolation –

$\geq$ 20:1 at 6 GHz (TDS6604); 4 GHz (TDS6404).

$\geq$ 80:1 at 1.5 GHz.

### Timebase System

**Timebase Range** – 50 ps to 10 s/div.

**Timebase Delay Time Range** – 16 ns to 250 s.

**Channel-to-Channel Deskew Range** –  $\pm$ 25 ns.

### $\Delta$ Time Measurement Accuracy –

(0.06/sample rate) + (2.5 ppm \* |reading|)<sub>RMS</sub>.

**Trigger Jitter (RMS)** – 7 ps<sub>RMS</sub>.

### Long Term Sample Rate and Delay Time

**Accuracy** –  $\pm$ 2.5 ppm over  $\geq$ 100 ms interval.

### Acquisition System

**Equivalent Time Sample Rate (max.)** –

1,000 GS/s.

## ► Real-time Sample Rates and Maximum Record Length per Channel with Standard Memory

Number of Channels	Sample Rates	Record Length
1	20 GS/s	250 k
2 (channel 1 with 3, channel 1 with 4, channel 2 with 3 or channel 2 with 4)	20 GS/s	250 k
2 (channel 1 with 2 or channel 3 with 4)	10 GS/s	125 k
3 or 4	10 GS/s	125 k



**Acquisition Modes**

**Sample** – Acquire sampled values.

**Peak Detect** – Captures narrow glitches at all real-time sampling rates.

**Minimum Peak Detect Pulse Width** – 50 ps.

**Averaging** – From 2 to 10,000 waveforms included in average.

**Envelope** – From 2 to  $2 \times 10^9$  waveforms included in min-max envelope.

**Hi-res** – Real-time boxcar averaging reduces random noise and increases resolution.

**Trigger System****Sensitivity****Internal DC Coupled** –

0.35 div DC to 50 MHz increasing to 1.5 div at 3 GHz (guaranteed).  
2.5 div at 4 GHz (typical).

**External (auxiliary input)** – 250 mV from DC to 50 MHz increasing to 350 mV at 500 MHz.

**Main Trigger Modes** – Auto, Normal and Single.

**Trigger Sequences** – Main, Delayed by Time, Delayed by Events. All sequences can include separate horizontal delay after the trigger event to position the acquisition window in time.

**Trigger Level Range**

**Internal** –  $\pm 12$  divisions from center of screen.

**External (auxiliary input)** –  $\pm 8$  V.

**Line** – Fixed at 0 V.

**Trigger Coupling** – DC, AC (attenuate <60 Hz), HF Rej (attenuate >30 kHz), LF Rej (attenuates <80 kHz), Noise Reject (reduce sensitivity).

**Trigger Holdoff Range** – 250 ns minimum to 12 seconds maximum.

**Trigger Modes**

**Edge** – Positive or negative slope on any channel or front panel auxiliary input. Coupling includes DC, AC, noise reject, HF reject and LF reject.

**Glitch** – Trigger on or reject glitches of positive, negative, or either polarity. Minimum glitch width is 1.0 ns with 200 ps resolution.

**Width** – Trigger on width of positive or negative pulse either within or out of selectable time limits (1 ns to 1 s).

**Runt** – Trigger on a pulse that crosses one threshold but fails to cross a second threshold before crossing the first again. Optional time qualification.

**Timeout** – Trigger on an event that remains high, low, or either, for a specified time period, selectable from 1 ns to 1 s with 200 ps resolution.

**Transition** – Trigger on pulse edge rates that are faster or slower than specified. Slope may be positive, negative or either.

**Setup/Hold** – Trigger on violations of both setup time and hold time between clock and data present on any two input channels.

**Pattern** – Trigger when pattern goes false or stays true for specified period of time. Pattern (AND, OR, NAND, NOR) specified for four input channels defined as HIGH, LOW or Don't Care.

**State** – Any logical pattern of channels (1, 2, 3) clocked by edge on channel 4. Trigger on rising or falling clock edge.

**Optional Communications** – Support for AMI, HDB3, BnZS, CMI, MLT3, and NRZ encoded communications signals. Select among isolated positive or negative one, zero pulse form or eye patterns as applicable to standard.

**Optional Serial Pattern** – 32-Bit serial word recognizer to 1.5 GBaud.

**Trigger Delay by Time** – 16 ns to 250 seconds.

**Trigger Delay by Events** – 1 to 10,000,000 Events.

**Waveform Measurements**

**Amplitude** – Amplitude, High, Low, Maximum, Minimum, Peak-to-peak, Mean, Cycle Mean, RMS, Cycle RMS, Positive Overshoot, Negative Overshoot.

**Time** – Rise time, Fall time, Positive Width, Negative Width, Positive Duty Cycle, Negative Duty Cycle, Period, Frequency, Delay.

**Combination** – Area, Cycle Area, Phase, Burst Width.

**Histogram-related** – Waveform count, Hits in box, Peak hits, Median, Maximum, Minimum, Peak-to-peak, Mean ( $\mu$ ), Standard Deviation ( $\sigma$ ),  $\mu + 1\sigma$ ,  $\mu + 2\sigma$ ,  $\mu + 3\sigma$ .

**Eye-pattern Related** – Extinction Ratio (absolute, %, and dB), Eye Height, Eye Top, Eye Base, Eye Width, Crossing %, Jitter (peak-to-peak, RMS, and  $6\sigma$ ), Noise (peak-to-peak and RMS), S/N ratio, Cycle distortion, Q-factor.

**Waveform Processing/Math**

**Algebraic Expressions** – Define extensive algebraic expressions including waveforms, scalars and results of parametric measurements e.g., (Integral (Ch1-Mean(Ch1))\*1.414).

**Arithmetic** – Add, subtract, multiply, divide waveforms and scalars.

**Calculus** – Integrate, differentiate.

**Frequency Domain Functions** – Spectral magnitude and phase, real and imaginary spectra.

**Vertical Units** – Magnitude: Linear, dB, dBm; Phase: degrees, radians.

**Window Functions** – Rectangular, Hamming, Hanning, Kaiser-Bessel, Blackman-Harris, Gaussian, Flattop2, Tek Exponential.

**Waveform Definition** – As arbitrary math expressions.

**Display Characteristics**

**Display Type** – Liquid crystal active-matrix color display.

**Display Size** – 211.2 mm (W) x 158.4 mm (H), 264 mm (10.4 in.) diagonal.

**Display Resolution** – 640 horizontal x 480 vertical pixels.

**Waveform Styles** – Vectors, Dots, Intensified Samples, Variable Persistence, Infinite Persistence.

# Digital Storage Oscilloscope

► TDS6604 • TDS6404

## Computer System and Peripherals

**CPU** – Intel Celeron Processor, 850 MHz.

**PC System RAM** – 512 MB.

**Hard Disk Drive** – Rear-panel, removable hard disk drive, 20 GB capacity.

**Floppy Disk Drive** – Front-panel 3.5 in. floppy disk drive, 1.44 MB capacity.

**CD-R/W Drive** – Rear-panel CD-ROM R/W drive.

**Mouse** – Logitech thumb wheel model included, USB interface.

## Keyboard –

Order 118-9404-xx for small keyboard (fits in pouch); PS-2 interface.

Order 119-6297-xx for full-size keyboard; USB interface and hub.

## Input/Output Ports

**Probe Compensator Output** – Front-panel BNC connector, requires Probe Cal-Deskew Fixture (included) for probe attachment.

**Analog Signal Output Amplitude** – Front-panel BNC connector, provides a buffered version of the signal that is attached to the Channel 3 input when Ch. 3 is selected as trigger source. 20 mV/div  $\pm 20\%$  into a 1 M $\Omega$  load, 10 mV/div  $\pm 20\%$  into a 50  $\Omega$  load.

**Analog Signal Output Bandwidth, Typical** – 1.8 GHz into a 50  $\Omega$  load.

**Auxiliary Output Levels** – Front-panel BNC connector, provides a TTL-compatible, polarity switchable pulse when the oscilloscope triggers.

**Parallel Port** – IEEE1284, DB-25 connector.

**Audio Ports** – Miniature phone jacks for stereo microphone input and stereo line output.

**USB Port** – Allows connection or disconnection of USB keyboard and/or mouse while oscilloscope power is on.

**Keyboard Port** – PS-2 compatible.

**Mouse Port** – PS-2 compatible.

**LAN Port** – RJ-45 connector, supports 10Base-T and 100Base-T.

**Serial Port** – DB-9 COM1 port.

**SVGA Video Port (windows display)** – DB-15 female connector; connect a second monitor to use dual-monitor display mode. Supports Basic requirements of PC99 specifications.

**GPIO Port** – IEEE488.2 standard.

**Scope VGA Video Port (oscilloscope display)** – DB-15 female connector, 31.6 kHz sync, EIA RS-343A compliant, connect to show the oscilloscope display, including live waveforms on an external monitor or projector.

## Power Source

**Power** – 100 to 240 V<sub>RMS</sub>  $\pm 10\%$ , 50/60 Hz; 115 V<sub>RMS</sub>  $\pm 10\%$ , 400 Hz; CAT II, <300 W (450 VA).

## Physical Characteristics

### BENCHTOP CONFIGURATION

Dimensions	mm	in.
Width	455	17.9
Height	277	10.9
Depth	425	16.75
Weight	kg	lbs.
Net	18	39
Shipping	37	80

### RACKMOUNT CONFIGURATION

Dimensions	mm	in.
Width	502	19.75
Height	277	10.5
Depth	486	19.125
Weight	kg	lbs.
Net	19	41
Kit	5.6	12.25

## Mechanical

### Cooling – Required

Clearance	mm	in.
Top	0 or >76	0 or >3
Bottom	0	0
Left side	76	3
Right side	76	3
Front	0	0
Rear	0	0

## Environmental

### Temperature –

Operating: 0 °C to +50 °C, excluding floppy disk and CD-ROM drives.

+10 °C to +45 °C, including floppy disk and CD-ROM drives.

Nonoperating: –22 °C to +60 °C.

### Humidity –

Operating: 20% to 80% relative humidity with a maximum wet bulb temperature of +29 °C at or below +50 °C, noncondensing. Upper limit derated to 25% relative humidity at +50 °C.

Nonoperating: With no diskette in floppy disk drive. 5% to 90% relative humidity with a maximum wet bulb temperature of +29 °C at or below +60 °C, noncondensing. Upper limit derated to 20% relative humidity at +60 °C.

### Altitude –

Operating: 10,000 ft. (3,048 m).

Nonoperating: 40,000 ft. (12,190 m).

### Random Vibration –

Operating: 0.00015 g<sup>2</sup>/Hz from 5 to 350 Hz, –3 dB/octave from 350 to 500 Hz, 0.000105 g<sup>2</sup>/Hz at 500 Hz. Overall level of 0.27 G<sub>RMS</sub>.

Nonoperating: 0.0175 g<sup>2</sup>/Hz from 5 to 100 Hz, –3 dB/octave from 100 to 200 Hz, 0.00875 g<sup>2</sup>/Hz from 200 to 350 Hz, –3 dB/octave from 350 to 500 Hz, 0.006132 g<sup>2</sup>/Hz at 500 Hz. Overall level of 2.28 G<sub>RMS</sub>.

**Electromagnetic Compatibility** – 89/336/EEC.

**Safety** – UL 3111-1, CSA-22.2 No. 1010.1, EN61010-1, IEC 61010-1.

## ► Ordering Information

**TDS6604**

6 GHz Digital Storage Oscilloscope.

**TDS6404**

4 GHz Digital Storage Oscilloscope.

**Includes:** Accessory pouch, front cover, mouse, quick reference, user reference, GPIB programmer's reference, TDS6000 Series product software CD-ROM, TDS6000 Series operating system restoration CD-ROM, performance verification procedure PDF file, NIST, MIL-STD-45662A and ISO9000 calibration certificate and power cord. Please specify power plug when ordering.

**Also Included:** (4) TekConnect™ to SMA adapters (TCA-SMA).

**TDS6604 Also Includes:** Probe calibration and deskew fixture (067-0484-xx).

**TDS6404 Also Includes:** Probe calibration and deskew fixture (067-0405-xx).

## Recommended Accessories

**Probes –**

P7260: 6 GHz active probe.

P7240: 4 GHz active probe.

P6150: 9 GHz passive  $Z_0$  probe.

P7330: 3.5 GHz differential probe.

P7350: 5 GHz differential probe.

**Service Manual** – Order: 071-7021-00.**Transit Case** – Order: 016-1522-00.**Software –**

VCLNKP: VocalLink™ voice controlled software.

WSTRO: WaveStar™ waveform capture and documentation software.

**TekConnect Adapters –**TCA75: 4 GHz precision TekConnect 75  $\Omega$  to 50  $\Omega$  adapter with 75  $\Omega$  BNC input connector.

TCA-SMA: TekConnect-to-SMA Adapter.

TCA-N: TekConnect-to-N Adapter.

TCA-BNC: TekConnect-to-BNC Adapter.

TCA-1MEG: TekConnect 1 M $\Omega$  buffer amplifier; includes P6139A 500 MHz passive probe.**Test Fixtures –**

TDSUSBF: Test fixture for use with USB2.0 software.

**Mounting Options**

1K – K4000 scope cart.

1R – Rackmount kit.

**Miscellaneous****Keyboard–**

Order 118-9404-xx for small keyboard (fits in pouch); PS-2 interface.

Order 119-6297-xx for full-size keyboard; USB interface and hub.

## ► Instrument Options and Upgrades

		For New TDS6000 Series Oscilloscopes	After Purchase Upgrades for TDS6000 Series Oscilloscopes
		To order with your new oscilloscope, order option as noted	To upgrade your oscilloscope, order option as noted
<b>Serial Mask Testing/Serial Trigger Features</b>			
Serial Comm Mask Testing		Opt. SM	TDS6UP Opt. SM
Serial Pattern Trigger		Opt. ST	TDS6UP Opt. ST
<b>Software</b>			
Jitter/Timing Analysis		Opt. JT3	TDS76UP Opt. JT3
USB2.0 Compliance, used with USB test fixture		Opt. USB	TDS6UP Opt. USB
Ethernet Compliance		Opt. ET2	TDS6UP Opt. ET2
Power Measurement/Analysis* <sup>1</sup>		Opt. PW2	TDS6UP Opt. PW2
Optical Storage Analysis		Opt. DVD	TDS6UP Opt. DVD
<b>Windows PC System</b>			
Memory	Add 256 MB to S/N Listed	512 MB Standard	<b>TDS6UP Opt. MU for:</b> TDS6604: S/N <B010194
Processor	Upgrade to 850 MHz Processor and PC RAM	850 MHz Standard	TDS6UP Opt. CPU
Operating System	Upgrade to Windows 2000	Windows 2000 Standard	TDS6UP Opt. W2K

\*<sup>1</sup>A TCA-1MEG TekConnect 1 M $\Omega$  buffer amplifier is recommended for use with this software.



# Digital Storage Oscilloscope

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## Cables

**GPIB Cable (1 m)** – Order: 012-0991-01.

**GPIB Cable (2 m)** – Order: 012-0991-00.

**RS-232 Cable** – Order: 012-1298-00.

**Centronics Cable** – Order: 012-1250-00.

## Power Plug Options

**Opt. A0** – US Plug, 115 V, 60 Hz.

**Opt. A1** – Euro Plug, 220 V, 50 Hz.

**Opt. A2** – UK Plug, 240 V, 50 Hz.

**Opt. A3** – Australian Plug, 240 V, 50 Hz.

**Opt. A5** – Swiss Plug, 220 V, 50 Hz.

**Opt. A99** – No Power Cord.

**Opt. AC** – China Plug, 50 Hz.

## Service

**Opt. C3** – Calibration Service 3 Years.

**Opt. D1** – Calibration Data Report.

**Opt. D3** – Calibration Data Report 3 Years  
(requires Option C3).

**Opt. R3** – Repair Service 3 Years.

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**Belgium** +32 (2) 715 89 70

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**Finland** +358 (9) 4783 400

**France & North Africa** +33 (0) 1 69 86 80 34

**Germany** +49 (221) 94 77 400

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**India** (91) 80-2275577

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**Japan** 81 (3) 3448-3010

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**Taiwan** 886 (2) 2722-9622

**United Kingdom & Eire** +44 (0) 1344 392400

**USA** 1 (800) 426-2200

**USA (Export Sales)** 1 (503) 627-1916

For other areas contact Tektronix, Inc. at: 1 (503) 627-7111

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Our most up-to-date product information is available at:  
**www.tektronix.com**

Product(s) are manufactured  
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