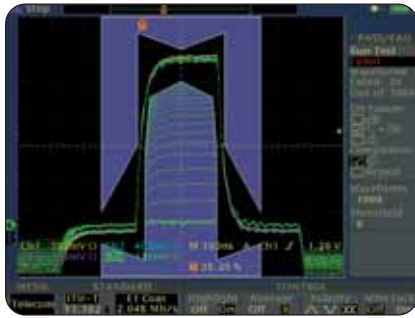


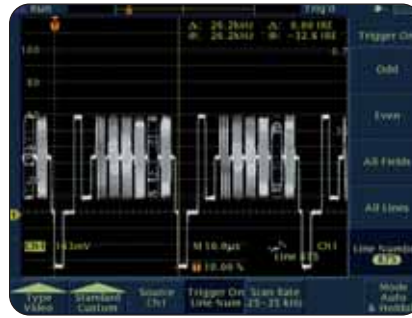
## ► Characteristics

### ► TDS3000B Series Electrical Characteristics

	TDS3012B	TDS3014B	TDS3024B	TDS3032B	TDS3034B	TDS3044B	TDS3052B	TDS3054B
Bandwidth	100 MHz	100 MHz	200 MHz	300 MHz	300 MHz	400 MHz	500 MHz	500 MHz
Channels	2	4	4	2	4	4	2	4
Sample rate on Each Channel	1.25 GS/s	1.25 GS/s	2.5 GS/s	2.5 GS/s	2.5 GS/s	5 GS/s	5 GS/s	5 GS/s
Maximum Record Length	10 K points on all models							
Vertical Resolution	9-Bits on all models							
Vertical Sensitivity (/div)	1 mV to 10 V on all models							
Vertical Accuracy	±2% on all models							
Max Input Voltage (1 MΩ)	150 V <sub>RMS</sub> CAT I on all models (300 V CAT II with standard 10X probe)							
Position Range	± 5 div on all models							
BW Limit	20 MHz	20 MHz	20, 150 MHz	20, 150 MHz	20, 150 MHz	20, 150 MHz	20, 150 MHz	20, 150 MHz
Input Coupling	AC, DC, GND on all models							
Input Impedance Selections	1 MΩ in parallel with 13 pF or 50 Ω on all models							
Time Base Range	4 ns to 10 s/div	4 ns to 10 s/div	2 ns to 10 s/div	2 ns to 10 s/div	2 ns to 10 s/div	1 ns to 10 s/div	1 ns to 10 s/div	1 ns to 10 s/div
Time Base Accuracy	20 ppm on all models							
Display (VGA)	Color active matrix LCD on all models							



- TDS3000B DPO provides breakthrough test speeds for telecommunications line card testing. The telecom QUICKMENU puts all the commonly used telecom testing functions on a single menu.



- Custom video trigger allows the TDS3000B to trigger on standards such as RS343 (26.2 kHz scan rate).



- Trace and identify ITU-R BT.601 video signals with the TDS3SDI 601 Serial Digital Video Module.

### Acquisition Modes

**DPO** – Captures and displays complex waveforms, random events and subtle patterns in actual signal behavior. DPOs are able to provide 3 dimensions of signal information in real time: Amplitude, time and the distribution of amplitude over time.

**Peak Detect** – High frequency and random glitch capture. Captures glitches as narrow as 1 ns.

**WaveAlert®** – Monitors the incoming signals on all channels and alerts the user to any waveform that deviates from the normal waveform being acquired.

**Sample** – Sample data only.

**Envelope** – Max/Min values acquired over one or more acquisitions.

**Average** – Waveform data from 2 to 512 (selectable) acquisitions is averaged.

**Single Sequence** – Use the Single Sequence button to capture a single triggered acquisition sequence at a time.

### Trigger System

**Main Trigger Modes** – Auto (supports Roll Mode for 40 ms/div and slower), Normal.

**B Trigger** – Trigger after time or events.

**Trigger After Time Range** – 13.2 ns to 50 s.

**Trigger After Events Range** – 1 to 9,999,999 events.

**External Trigger Input** – >1 MΩ in parallel with 17 pF; Max input voltage is 150 V<sub>RMS</sub>.

### Trigger Types

**Edge** – Conventional level-driven trigger. Positive or negative slope on any channel. Coupling selections: DC, noise reject, HF reject, LF reject.

**Video** – Trigger on all lines, odd, even or all fields. With TDS3VID or TDS3SDI, trigger on individual lines and on analog HDTV formats (1080i, 1080p, 720p, 480p).

### Logic

**PATTERN:** Specifies AND, OR, NAND, NOR when true or false for a specific time.

**STATE:** Any logic state. Triggerable on rising or falling edge of a clock. Logic triggers can be used on combinations of 2 inputs (not 4).

### Pulse –

**WIDTH (or GLITCH):** Trigger on pulse width less than, greater than, equal to or not equal to a selectable time limit ranging from 39.6 ns to 50 s.

**RUNT:** Trigger on a pulse that crosses one threshold but fails to cross a second threshold before crossing the first again.

**SLEW RATE:** Trigger on pulse edge rates that are either faster or slower than a set rate. Edges can be rising, falling or either.

**Comm (requires TDS3TMT)** – Provides isolated pulse triggering required to perform DS1/DS3 telecommunications mask testing per ANSI T1.102 standard.

**Alternate** – Sequentially uses each active channel as a trigger source.

### Measurement System

#### Automatic Waveform Measurements –

Period, Frequency, +Width, –Width, Rise Time, Fall Time, +Duty Cycle, –Duty Cycle, +Overshoot, –Overshoot, High, Low, Max, Min, Peak-to-Peak, Amplitude, Mean, Cycle Mean, RMS, Cycle RMS, Burst Width, Delay, Phase, Area,<sup>1</sup> Cycle Area.<sup>1</sup> Display any four measurements from any combination of waveforms. Or display all measurements with measurement snapshot feature. Measurement statistics.<sup>1</sup>

**Thresholds** – Settable in percentage or voltage.

**Gating** – Measurements can be gated using the screen or vertical cursors.

<sup>1</sup> Requires TDS3AAM module.

# Digital Phosphor Oscilloscopes

► TDS3000B Series



## Waveform Processing

**Deskew** – Channel-to-channel deskew  $\pm 10$  ns may be manually entered for better timing measurements and more accurate math waveforms.

**Arithmetic Operators** – Add, subtract, multiply, divide, arbitrary math expressions.<sup>1</sup>

**Autoset** – Single-button, automatic setup on selected input signal for vertical, horizontal and trigger systems.

## Display Characteristics

### Waveform Style –

Dots, vectors and variable persistence.

**Graticules** – Full, grid, cross-hair and frame. NTSC, PAL, SECAM and vectorscope (100% and 75% color bars) with optional TDS3VID and TDS3SDI video application modules.

**Format** – YT, XY and Gated XYZ (XY with Z-axis blanking available on TDS30X4B only).

## I/O Interface

### Hard Copy Port (Standard) –

Centronics-type parallel.

### Ethernet Port (Standard) –

10Base-T LAN, RJ-45 female.

### TDS3GV Communications Module – GPIB

(IEEE 488.2) programmability: Full talk/listen modes; control of all modes, settings and measurements.

VGA: Monitor output for direct display on large VGA-equipped monitors. DB-15 female connector, 31.6 kHz sync rate, EIA RS-343A compliant.

RS-232-C interface programmability: Full talk/listen modes; control of all modes, settings and measurements. Baud Rate up to 38,400. DB-9 male connector. Programmer manual: 071-0381-02.

<sup>1</sup> Requires TDS3AAM module.

## Hard Copy Capability

**Graphics File Formats** – Interleaf (.img), TIF, PCX (PC Paintbrush), BMP (Microsoft Windows) and Encapsulated Postscript (EPS).

**Printer Formats** – Bubblejet, DPU-3445, Thinkjet, Deskjet, Laserjet, Epson (9- and 24-Pin).

## Environmental and Safety

**Temperature** – +5 °C to +50 °C (operating), –20 °C to +60 °C (nonoperating).

**Humidity** – 20% to 80% RH below 32 °C, derate to 30% RH at 45 °C (operating), 5% to 90% RH below 41 °C, derate to 30% RH at 60 °C (nonoperating).

### Altitude –

To 3,000 m (operating), 15,000 m (nonoperating).

**Electromagnetic Compatibility** – Meets or exceeds EN55011 Class A radiated and conducted emissions: EN50082-1; FCC 47 CFR, Part 15, Subpart B, Class A; Australian EMC framework; Russian GOST EMC regulations.

### Safety –

UL3111-1, CSA1010.1, EN61010-1, IEC61010-1.

## Physical Characteristics

### Instrument

Dimensions	mm	in.
Width	375.0	14.8
Height	176.0	6.9
Depth	149.0	5.9
Weight	kg	lbs.
Instrument only	3.2	7.0
with battery installed	4.5	9.8

### Instrument Shipping

Package Dimensions	mm	in.
Width	502.0	19.8
Height	375.0	14.8
Depth	369.0	14.5

### Rackmount

Dimensions	mm	in.
Width	484.0	19.0
Height	178.0	7.0
Depth	152.0	6.0