TLS216

P6240

Logic Scope

TLS216

This product is discontinued.

Characteristics
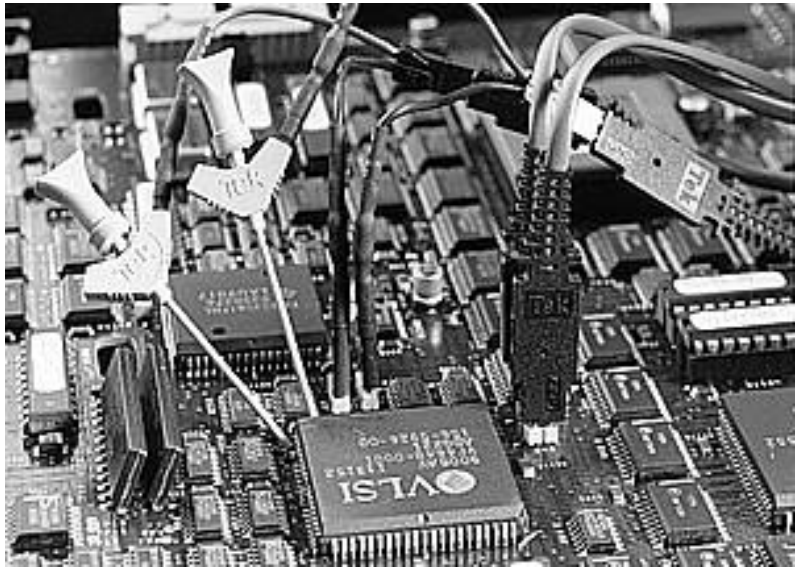
Accessories

Signal Acquisition System

Sample Rate	2 GS/s
Bandwidth	500 MHz
Channels	16
Samplers	16
Sensitivity	50 mV to 10 V/div*1
Position Range	±5 Div

Offset	±1 V from 1 to 99.5 mV/div

*[1] Magnification used above 2 V/div range.

Vertical System

DC Gain Accuracy - ±1.5% after probe calibration.

Vertical Resolution - 8-Bits (256 levels over 10.24 vertical divisions), 11-Bits with averaging.

Analog Bandwidth Selection - 20 MHz and full.

Input Coupling - DC.

Input Impedance - 50 Ohm with coax adapter, 1 megaohm with probe.

Maximum Input Voltage - Max nondestructive input ±25 V (DC + Peak AC).

Dynamic Range - +15 V to -12 V with probe.

Time Base System

Time Bases	Main, Delayed
Time/Division Range	500 ps to 5 s/div
Time Base Accuracy	0.01% over any interval ≤1ms
Record Length	500 to 2,000 pts
Pre-trigger Position	20% to 80% of record

Acquisition Modes

Sample - Sample data only.

Envelope - Max/min values acquired over one or more acquisitions.

Average - Waveform averages selectable from 2 to 10,000.

Display

Mixed-mode Data Display - Logic Scope offers Analog, Timing and BusForm[TM] display formats that simplify recognition of digital timing faults and signal anomalies. BusForm display compresses many input signals into the least amount of display area. The acquired data can be displayed in any of the three display modes without re-acquiring.

Waveform Style - Dots, vectors, variable persistence selectable from 250 ms to 10 s, infinite persistence and intensified samples.

Color - Standard palettes and user definable colors for waveforms, text, graticules and cursors. Measurement text and cursor colors matched to waveform. Waveform collision areas highlighted with different color. Statistical waveform distribution shown with color grading through variable persistence.

Color Grading - With variable persistence selected, historical timing information is represented by temperature or spectral color scheme providing "z-axis" information about rapidly changing waveforms.

Graticules - Full, grid, cross hair, frame.

Format - YT.

Fit to Screen - Entire acquisition memory displayed on screen.

Triggering System

Triggers - Main, Delayed.

Main Trigger Modes - Auto, Normal, Single.

Delayed Trigger - Delayed by time and/or events.

Time Delay Range - 16 ns to 250 s (time/div $\leq$10 μs); 15.1 ns to 250 s (time/div $\leq$25 μs).

Events Delay Range - 1 to 9,999,999 events.

AUX Trigger Input - TTL compatible; Max input voltage is -1 V to +6 V.

Measurement System

The Logic Scope provides a comprehensive suite of automatic measurements specifically designed to improve efficiency when troubleshooting digital hardware. Twenty-eight on-board measurements, including setup time, hold time and skew, speed identification of common digital problems. Whereas traditional DSOs confine waveform measurements to establishing the relationship of a single channel to a clock, the Logic Scope simultaneously samples on all channels, so you can see the relationships between multiple channels.

Automatic Waveform Measurements

Period	Frequency
High	Low
+ Width	- Width
Maximum	Minimum
Rise	Fall
Peak to Peak	Amplitude
+ Duty Cycle	- Duty Cycle
+ Overshoot	- Overshoot
Propagation Delay	Burst Width
Mean	Cycle Mean
rms	Cycle rms
Area	Cycle Area
Phase	Setup Time
Hold Time	Skew

Continuous update of up to four measurements on any combination of waveforms.

Gated - Any region of the record may be isolated for measurement using vertical bars.

Snapshot - Performs all measurements on any one waveform, showing results from one instant in time.

Cursor Measurements - Absolute, Delta; Volts, Time, Frequency, Binary Readout.

Cursor Types - Horizontal bars (volts); Vertical bars (time); operated independently or in tracking mode.

Computer Interface

GPIB (IEEE 488.2) Programmability - Full talk/listen modes. Control of all modes, settings, and measurements.

Hard Copy/Desktop Publishing

Printer - HP ThinkJet, Epson, PostScript, DeskJet, LaserJet, DPU 411/412.

Export File Formats - EPS (Encapsulated PostScript), Interleaf, TIFF, PCX, BMP, RLE.

Plotter Support - HPGL.

I/O Ports - GPIB, Centronics, RS-232 (Talk only).

Floppy Disk Drive - 3.5 in., 1.44 MB DOS format.

VGA Output - 15-Pin analog output (Color).

Storage

Waveforms - 16 full 2,000 pt waveforms. 119,008 500 pt waveforms on 1.44 MB floppy disk.

Setups - 10 front-panel setups. 78,947 setups on 1.44 MB floppy disk.

Trigger Types (Main and Delayed)

Edge	Trigger when either a rising or falling edge (positive or negative slope) is detected.
Pulse	The pulse may be positive or negative and defined by a duration.
Width (<Time, >Time)	Trigger when the duration of either a positive or negative pulse is less than or greater than the user-defined input.
Range (In Range, Out of Range)	Trigger when the duration of either a positive or negative pulse is either between the upper and lower limits or outside the limits.
Time-out	Trigger at the end of a user-defined time period if the trailing edge of either a positive or negative pulse is not detected.
Pattern	Each input may be defined as a low (logic 0), high (logic 1), or don't care (X). Inputs can be ANDed or ORed. The pattern may be positive true or positive false.
Width (<Time, >Time)	Trigger when the duration of a user-defined logical pattern is less than or greater than the user-defined input.

Range (In Range, Out of Range)	Trigger when the duration of a user-defined logical pattern is either between the upper and lower limits or outside the limits.
Time-out	Trigger at the end of a user-defined time period if the user-defined logical pattern of a specified duration does not occur.
Sequence	The sequence is defined by a set of start and end events. The start or end event can be either a pattern or an edge (positive or negative slope).
Width (<Time, >Time)	Trigger when the duration between the user-defined start and end events is less than or greater than the user-defined input.
Range (In Range, Out of Range)	Trigger when the duration between the user-defined start and end events is either between the upper and lower limits or outside the limits.
Time-out	Trigger at the end of a user-defined time period if the user-defined end event does not occur within the specified time after the start event.
State	Trigger when a user-specified logical pattern is detected and the input defined as the clock goes true or goes false. Each input may be specified as a low (logic 0), high (logic 1), or don't care (X). Inputs can be ANDed or ORed.

Power Requirements

Line Voltage Range - 90 to 250 V_{RMS}.

Line Frequency - 47 to 63 Hz.

Power Consumption - 300 W max.

Environmental and Safety

Temperature - Operating: +4°C to +50°C. Nonoperating: -22°C to +60°C.

Humidity - Operating and Nonoperating: Operating to 80% at or below 29°C, to 20% from +30°C to +50°C. Nonoperating to 90% at or below 41°C, to 5% from +41°C to 50°C.

Altitude - Operating: 15,000 ft., Nonoperating: 40,000 ft.

Electromagnetic Compatibility - Meets 89/336/EEC.

Safety - UL 3111, CSA 1010.1, EN61010-1, IEC61010-1.

Probes

Active Probes - 2.5 pF, 1 megaohm FET.

Physical Characteristics

Dimensions	mm	in.
Height with feet	236	9.3
without feet	193	7.6
Width with handle	445	17.5
Depth with front cover installed	432	17
Weight	**kg**	**lbs.**
Net approximately	12.3	27
Shipping approximately	20	44

GPIB IEEE-488 — Product(s) complies with IEEE Standard 488.1-1987, RS-232-C, and with Tektronix Standard Codes and Formats.

ISO 9001 — Tektronix Measurement products are manufactured in ISO registered facilities.

CE

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