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Find the *Tektronix 80E02* at our website: *Click HERE*

Digital Sampling Oscilloscope

TDS8000



Features

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Print Data Sheet (229kB)

Request a Quote

Characteristics

Signal Acquisition

Acquisition Modes - Sample (normal), envelope, and average.

Number of Sampling Modules Accommodated - Up to four dual-channel electrical and two single-channel optical sampling modules.

Number of Simultaneously Acquired Inputs - 8 channels maximum (8 electrical or 2 optical and 6 electrical).

Vertical Systems

Rise Time/Bandwidth - Determined by the sampling modules used.

Vertical Resolution - 14 bits over the sampling module's dynamic range.

Horizontal System

Main and Magnification View Timebases - 1 ps/div to 5 ms/div in 1-2-5 sequence or 1 ps increments.

Time Interval Accuracy -
Horizontal sensitivity < 21 ps: 1 ps + 1% of interval.
Horizontal sensitivity ≥21 ps:

8 ps + 0.1% of interval (short-term optimized mode).

8 ps + 0.01% of interval (locked to 10 MHz mode).

Horizontal deskew range : -500 ps to + 100 ns on any individual channel in 1 ps increments.

Record Length - 20, 50, 100, 500, 1000, 2000 or 4000 samples.

Magnification Views - In addition to the main timebase, the TDS8000 supports two magnification views. These magnifications are independently acquired using separate timebase settings.

Maximum Trigger Rate - 200 kHz.

Trigger System

Trigger Sources -
External direct trigger.
External pre-scaled trigger.
Internal clock trigger: internally connected to direct trigger.
Clock recovery triggers (from optical sampling modules): internally connected to pre-scaled trigger.

Trigger Sensitivity -
External direct trigger input:

50 mV, DC - 4 GHz (typical).

100 mV, DC - 3 GHz (guaranteed).

Pre-scaled trigger input:

800 mV, 2-3 GHz (guaranteed).

600 mV, 3-10 GHz (guaranteed).

1000 mV, 10-12.5 GHz (typical).

Jitter -
Short-term Jitter Optimized Mode:

1.0 ps + 5 PPM of position (typical).

< 1.5 ps + 10 PPM of position (max.).

Locked to 10 MHz Reference:

1.6 ps + 0.05 PPM of position (typical).

≤2.5 ps + 0.10 PPM of position (max.).

Internal Clock - Adjustable from 25 to 200 kHz (drives TDR, internal clock output and calibrator).

Trigger Level Range - ±1.0 V.

Trigger Input Range - ±1.5 V.

Trigger Holdoff - Adjustable 5 µs to 100 ms in 2 ns increments.

Display Features

Touchscreen Display - 10.4 in. diagonal, color.

Colors - 16,777,216 (24 bits).

Video Resolution - 640 horizontal by 480 vertical displayed pixels.

Math/Measurement System Measurements

The TDS8000 supports up to eight simultaneous measurements, updated 3 times per second with optional display of per measurement statistics (min, max, mean and standard deviation).

Measurement Set -
Amplitude Measurements: High, Low, Amplitude, Max, Mid, Min, Peak-to-Peak, + Overshoot, - Overshoot, Mean, Cycle Mean, RMS, Cycle RMS, AC RMS, Gain.
Timing Measurements: Rise, Fall, Period, Frequency, + Cross, - Cross, + Width, - Width, + Duty Cycle, - Duty Cycle, Burst Width, Delay, Phase.
Area Measurements: Area, Cycle Area.
Eye Pattern/Optical Measurements: Extinction Ratio (Ratio, %, dB), Eye Width, Eye Height, Crossing %, Duty Cycle Distortion, Jitter (pk-pk, RMS), Noise (pk-pk, RMS), Q-Factor, SNR, Average Optical Power.

Cursors - Dot, vertical bar and horizontal bar cursors.

Waveform Processing

Up to eight math waveforms can be defined and displayed using the following math functions: Add, Subtract, Multiply, Divide, Average, Differentiate, Exponentiate, Integrate, Natural Log, Log, Magnitude, Min, Max, Square Root and Filter.
In addition, measurement values can be utilized as scalars in math waveform definitions.

TDR System (TDS8000 with 80E04 Electrical Module)

TDR Channels - 2 per 80E04.

TDR Amplitude - 250 mV.

TDR System Rise Time - < 35 ps.

Time Coincidence Between TDR Steps - < 1 ps.

Source Resistance - 50 + 0.5 Ohm.

Typical Aberrations (at + 250 mV amplitude) -
10 ns to 20 ps before step: +3% or less.
< 400 ps after step: +10%, -5%.
400 ps to 5 ns after step: +3%.
Elsewhere: +1%.

Power Requirements

Line-voltage Ranges - 90 to 132 V_{RMS}, 180 to 250 V_{RMS}.

Line Frequency - 48 to 440 Hz.

Environmental

Temperature -
Operating: +10°C to +40°C.

Nonoperating: -22°C to +60°C.

Relative Humidity -
Operating: Floppy disk and CD ROM not installed: 20% to 80% at or below 40°C (upper limit de-rates to 45% relative humidity at 40°C).
Nonoperating: 5% to 90% at or below 60°C (upper limit de-rates to 20% relative humidity at +60°C).

Altitude - Operating: 3048 m (10,000 ft.); nonoperating: 12190 m (40,000 ft.).

Safety - UL 3111-1, CSA-22.2 No. 1010.1, EN 61010-1.

Physical Characteristics

	Cabinet	Cabinet
Dimensions	**mm**	**in.**
Width	457	18.0
Height	343	13.5
Depth	419	16.5
Weights	**kg**	**lbs.**
Net	20.8	46
Shipping	36.7	81

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