TEKTRONIX

TDS3054

The Tektronix TDS3054 is a 4-channel, 500 MHz Digital Phosphor Oscilloscope (DPO) from the TDS3000 series, combining a high sample rate of 5 GS/s with real-time three-dimensional signal viewing (amplitude, time, and distribution over time). Extremely portable and designed for efficient benchtop troubleshooting, it features a built-in floppy disk drive, comprehensive advanced triggers, and standard FFT analysis.

SPECIFICATIONS

General

Interfaces	Centronics parallel port (standard); GPIB, RS-232, VGA, LAN (optional via communication modules)
Display	6.4 in (162.6 mm) active-matrix color TFT LCD, 640 x 480 pixels (VGA)
Warm-up Time	20 minutes
Calibration Interval	1 year

Physical

Power Supply	100 V to 240 V AC RMS ±10% (47 Hz to 440 Hz), 75 W maximum; optional battery operation
Operating Temperature	0 °C to 50 °C °C
Dimensions (W×H×D)	375 mm × 176 mm × 149 mm mm
Weight	3.2 kg kg

Vertical System

Number of Channels	4
Analog Bandwidth (-3 dB)	500 MHz
Calculated Rise Time	700 ps
Hardware Bandwidth Limits	20 MHz, 150 MHz
Vertical Resolution	9-bit
Input Coupling	AC, DC, GND
Input Impedance	1 MΩ ±1% in parallel with 13 pF ±2 pF, or 50 Ω ±1%
Input Sensitivity Range	1 mV/div to 10 V/div
Maximum Input Voltage (1 MΩ)	150 V RMS CAT I
Maximum Input Voltage (50 Ω)	5 V RMS
DC Gain Accuracy	±2%
Channel-to-Channel Isolation	≥ 100:1 at 100 MHz
Input Capacitance (1 MΩ)	13 pF ± 2 pF

Horizontal System

Timebase Range	1 ns/div to 10 s/div
Timebase Accuracy	±20 ppm

Acquisition System

Maximum Real-Time Sample Rate	5 GS/s
Maximum Record Length	10K points
Waveform Capture Rate	Up to 3,600 wfm/s
Peak Detect Pulse Width	Down to 1 ns

Trigger System

Trigger Coupling	AC, DC, HF Reject, LF Reject, Noise Reject
Trigger Sources	CH1, CH2, CH3, CH4, Line
Edge Triggering	Rising or falling edge on any channel
Video Triggering	NTSC, PAL, SECAM
Trigger Level Range (Internal)	±8 divisions from screen center
Trigger Level Range (External)	Not applicable
Trigger Sensitivity, Edge-Type, Internal (DC Coupled)	0.35 div from DC to 50 MHz, increasing to 1 div at 500 MHz
Trigger Sensitivity, Edge-Type, External (50 Ω, DC Coupled)	Not applicable
Trigger Sensitivity, Edge-Type, External (1 MΩ, DC Coupled)	Not applicable

Display and User Interface

Waveform Display Formats	YT, XY
Graticule Options	Full, Grid, Crosshair, Frame

Connectivity and I/O Interfaces

Centronics Parallel Port	Standard (DB-25 female connector)
External Trigger Input	Not applicable

Storage

Internal Storage	3.5-inch 1.44 MB floppy disk drive
Floppy Disk Drive	3.5 in., 1.44 MB
Reference Waveform Storage	4 waveforms
Front-Panel Setup Storage	10 setups

Power Specifications

Battery Operation Capability	Optional (via TDS3BAT / TDS3BATB battery pack)
Power Consumption	75 W maximum

Environmental and Safety Compliance

Operating Altitude Limit	3,000 m

Standard Accessories and Options

Included Passive Probes	4× P6139A 500 MHz 10X passive probes
Application Module Slots	4 slots

Storage & Connectivity

Removable Storage	3.5-inch, 1.44 MB floppy disk drive

Environmental

Non-operating Shock	50 g, 11 ms, half-sine
Operating Vibration	0.31 g RMS, 5 Hz to 500 Hz, 10 min per axis
Non-operating Vibration	2.46 g RMS, 5 Hz to 500 Hz, 10 min per axis

Triggering

External Trigger Input Maximum Input Voltage	Not applicable
Video Triggering Formats	NTSC, PAL, SECAM
Custom Video Triggering	Yes (with Option TV3 / TDS3VID)
Advanced Triggering	Runt, Slew Rate, Pattern, State, Setup/Hold (with Option TRG / TDS3TRG)

Display

Display Resolution	640 × 480 pixels
Display Size	6.5 in. (165 mm) diagonal

Signal Outputs

Probe Compensator Output	5.0 V into ≥1 MΩ, 1 kHz

TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

APPLICATIONS

Electronic design, debugging, power supply testing, and telecommunication mask testing