

TEKTRONIX

DPO4054

The Tektronix DPO4054 is a 4-channel, 500 MHz Digital Phosphor Oscilloscope in the DPO4000 Series. It features 2.5 GS/s real-time sampling across all channels, a 10 Mpoint standard record length, and a 10.4-inch XGA color display. Equipped with Wave Inspector controls, TekVPI probe interface, and serial bus trigger and analysis options, the DPO4054 provides efficient waveform navigation, acquisition, and analysis.

SPECIFICATIONS

General

Interfaces	USB 2.0 Host (Front/Rear), USB 2.0 Device, 10/100Base-T Ethernet (LAN), XGA Video Out, CompactFlash Slot
Display	10.4 in. (264 mm) XGA Color TFT-LCD (1024 x 768)

Physical

Power Supply	100-240 V AC $\pm 10\%$ (47-66 Hz) / 100-132 V AC (366-440 Hz), 250 W max
Operating Temperature	0 to +50 °C °C
Dimensions (W×H×D)	439 mm x 229 mm x 137 mm mm
Weight	5.0 kg kg

Vertical System - Analog Channels

Analog Input Channels	4
Analog Bandwidth (-3 dB)	500 MHz
Calculated Rise Time	700 ps
Hardware Bandwidth Limits	20 MHz, 250 MHz
Input Coupling	AC, DC, GND
Input Impedance	1 M Ω $\pm 1\%$ in parallel with 13 pF ± 2 pF, or 50 Ω $\pm 1\%$
Input Sensitivity Range (1 M Ω)	1 mV/div to 10 V/div
Input Sensitivity Range (50 Ω)	1 mV/div to 1 V/div
Vertical Resolution	8 bits
DC Gain Accuracy	$\pm 1.5\%$ with offset set to 0 V
Max Input Voltage (1 M Ω)	300 V RMS with peaks $\leq \pm 425$ V
Max Input Voltage (50 Ω)	5 V RMS with peaks $\leq \pm 20$ V
Channel-to-Channel Isolation	$\geq 100:1$ at ≤ 100 MHz, $\geq 30:1$ at > 100 MHz up to rated bandwidth
TekVPI Probe Interface Support	Yes (supports active, differential, and current probes)

Horizontal System - Timebase

Timebase Range	1 ns/div to 1000 s/div
Timebase Accuracy	± 5 ppm over any ≥ 1 ms interval

Acquisition System

Real-Time Sample Rate (All Channels)	2.5 GS/s
Maximum Record Length (All Channels)	10 Mpoints
Maximum Waveform Capture Rate	50,000 wfms/s
Acquisition Modes - Peak Detect	Captures glitches as narrow as 400 ps at all sweep speeds
Acquisition Modes - Averaging	From 2 to 512 waveforms
Acquisition Modes - Hi Res	Real-time boxcar averaging reduces random noise and increases resolution to 11 bits
Acquisition Modes - Roll Mode	Scrolls waveforms right to left across screen at sweep speeds slower than 40 ms/div

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Coupling	DC, AC, HF Reject, LF Reject, Noise Reject
Trigger Holdoff Range	20 ns to 8 s
Edge Triggering	Positive or negative slope on any channel or auxiliary input
Pulse Width Triggering	Trigger on width of positive or negative pulses that are >, <, =, or ≠ a specified time period
Runt Triggering	Trigger on a pulse that crosses one threshold but fails to cross a second threshold before crossing the first again
Timeout Triggering	Trigger on an event that remains high, low, or either for a specified time period
Logic Triggering	Trigger when any logical combination of channels goes High, Low, or Don't Care
Setup and Hold Triggering	Trigger on setup time and hold time violations between clock and data
Rise/Fall Time Triggering	Trigger on pulse edge rates that are faster or slower than specified
Video Triggering	Trigger on all lines, specific line numbers, odd/even fields on NTSC, PAL, and SECAM video signals
Trigger Level Range	±8 divisions from center screen

Serial Bus Triggering and Decode

Serial Bus Triggering and Analysis	Optional modules for I2C, SPI, CAN, LIN, RS-232/422/485/UART, FlexRay, I2S/Audio
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Waveform Measurements and Analysis

Automatic Waveform Measurements	29 automatic measurements
Measurement Statistics	Mean, Min, Max, Standard Deviation
FFT Window Functions	Rectangular, Hamming, Hanning, Blackman-Harris

Display and User Interface

Display Type	XGA Color TFT-LCD
Display Size (Diagonal)	10.4 in. (264 mm)
Display Resolution	1024 x 768 pixels
Display Persistence Modes	Off, Variable, Infinite

Connectivity and Storage

USB 2.0 Host Ports	2 ports (1 front panel, 1 rear panel)
USB 2.0 Device Port	1 rear panel port (USBTMC compliance)
LAN (Ethernet) Port	1 RJ-45 connector (10/100Base-T)
Video Output Port	DB-15 female connector, XGA output
Auxiliary Out / Trigger Out	Rear panel BNC connector

Software and Remote Control

e*Scope Web-Based Control	Built-in web server for browser-based remote viewing and control
SCPI Command Set Compatibility	Supported via USB, LAN, and optional GPIB
PC Software Integration	OpenChoice Desktop, NI SignalExpress Tektronix Edition

Physical Characteristics

Dimensions (Height x Width x Depth)	229 mm x 439 mm x 137 mm
Weight (Without Accessories)	5.0 kg (11 lbs)
Kensington Lock Slot	Rear-panel security slot

Environmental and Safety

Operating Temperature Range	0 °C to +50 °C
Non-Operating Temperature Range	-20 °C to +60 °C

Accessories and Modules

Application Module Expansion Slots	4 slots
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Power

Max Power Consumption	250 W
AC Input Voltage	100 V to 240 V ±10%
AC Input Frequency	47 Hz to 66 Hz (100 V to 240 V), 360 Hz to 440 Hz (100 V to 132 V)

Environmental

Operating Altitude	3,000 m (9,843 ft)
Non-Operating Altitude	12,000 m (39,370 ft)

Storage & Memory

Reference Waveform Storage	4 reference waveforms
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Horizontal System

Timebase Delay Range	-10 divisions to 5000 s
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Navigation & Search

WaveInspector Navigation Controls	Dedicated front-panel pan, zoom, play/pause, mark, and search controls
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Compliance & Safety

Safety Standards Compliance	UL61010-1, CSA61010-1, EN61010-1, IEC 61010-1
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TECHNOLOGY

Digital Phosphor Oscilloscope (DPO)

APPLICATIONS

Electronic Test & Measurement

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