

LECROY (TELEDYNE LECROY)

HDO4054

The Teledyne LeCroy HDO4054 is a 500 MHz, 4-channel digital oscilloscope featuring HD4096 high-definition technology. With its native 12-bit ADC resolution (extendable to 15-bit via ERES), a real-time sample rate of 2.5 GS/s, and a 12.1" multi-touch screen display, it delivers exceptional signal fidelity and comprehensive analytical tools for debug and validation.

SPECIFICATIONS

General

Interfaces	USB (host), USB (device), Ethernet port, External monitor port, GPIB port (optional), remote control via Windows automation or Teledyne LeCroy Remote Command Set
Display	12.1" Color TFT LCD Touch Screen, 1280 x 800 (WXGA) resolution, YT and XY grid styles

Physical

Power Supply	100 - 240 VAC ($\pm 10\%$) at 50/60 Hz, 100 - 120 VAC ($\pm 10\%$) at 400 Hz; Max 200 W (250 W with options)
Operating Temperature	5 to 40 °C
Dimensions (W×H×D)	382 mm × 290 mm × 152 mm mm
Weight	5.86 kg

Vertical System

Analog Bandwidth	500 MHz
Calculated Rise Time (typical)	700 ps
Number of Input Channels	4
Hardware Bandwidth Limits	20 MHz, 200 MHz
Input Impedance	1 M Ω $\pm 2.0\%$ 16 pF, 50 Ω $\pm 2.0\%$
Input Coupling	1 M Ω : AC, DC, GND; 50 Ω : DC
Maximum Input Voltage	1 M Ω : 400 V max (DC + Peak AC $\leq$ 10 kHz), 50 Ω : 5 VRMS
Channel-to-Channel Isolation	$\geq$ 30 dB
Vertical Resolution	12-bit ADC (up to 15-bit with ERES)
Effective Number of Bits (ENOB)	8.8 bits (typical)
Vertical Sensitivity Range (50 Ω)	1 mV/div - 1 V/div
Vertical Sensitivity Range (1 M Ω)	1 mV/div - 10 V/div

Horizontal & Acquisition System

Single-Shot Sample Rate (per channel)	2.5 GS/s
Standard Memory Depth (Interleaved)	25 Mpts/Ch
Standard Memory Depth (2 Channels active)	12.5 Mpts/Ch
Optional Memory Depth (Interleaved)	50 Mpts/Ch
Optional Memory Depth (2 Channels active)	25 Mpts/Ch

Trigger System

Trigger Modes	Normal, Auto, Single, Stop
Trigger Sources	Ch 1 - Ch 4, EXT, EXT/10, AC Line
Trigger Coupling	AC, DC, LF Rej, HF Rej
Trigger Holdoff Range	2 ns to 20 s, or 1 to 1,000,000,000 events
Standard Trigger Types	Edge, Glitch, Width, Logic (Pattern), TV (NTSC, PAL, SECAM, HDTV-720p, 1080i, 1080pi), Runt, Slew Rate, Interval (signal or pattern), Dropout, Qualified (State or Edge)
Optional Serial Data Triggers	I2C, SPI, UART/RS-232, CAN, LIN, FlexRay, SENT, MIL-STD-1553, ARINC 429, Audio (I2S, LJ, RJ, TDM), USB, USB-HSIC, MIPI D-PHY, DigRF3G
Trigger Jitter	< 2.8 ps rms (typical)

Processor & Storage

Waveform Storage	4 memory waveforms plus internal HDD
Setup Storage	6 setups

Waveform Measurements & Analysis

Math Traces	1 Math trace
Math Functions	Add, Subtract, Multiply, Divide, FFT, Absolute Value, Averaging (summed and continuous), Derivative, Envelope, Enhanced Resolution, Floor, Integral, Invert, Reciprocal, Rescale, Roof, Square, Square Root, Trend, Zoom
Automatic Measurements	Up to 8 displayed simultaneously
Displayed Measurement Parameters	Amplitude, Area, Base, Delay, Delta Period @ Level, Delta Time @ Level, Duty Cycle, Duty @ Level, Edge @ Level, Fall Time (90% - 10%), Fall Time (80% - 20%), Frequency, Frequency @ Level, Maximum, Mean, Minimum, Overshoot+, Overshoot-, Period, Peak-Peak, Period @ Level, Phase, Rise Time (10% - 90%), Rise Time (20% - 80%), RMS, Skew, Standard Deviation, Time @ Level, Top, Width+, Width-
WaveScan Advanced Search and Find	Supported
LabNotebook Documentation	Supported
History Mode (Playback)	Supported
Power Analysis Software	Optional

System

Operating System	Windows Embedded Standard 7 (64-bit)
Standard System Memory	4 GB

Triggering

External Trigger Input	1 MΩ 16 pF; Max input 400 Vpk
------------------------	----------------------------------

Environmental

Operating Humidity	5% to 90% RH (non-condensing) up to +31 °C, derating linearly to 50% RH at +40 °C
Operating Altitude	Up to 3,000 m (10,000 ft) at or below +30 °C
Storage Temperature	-20 °C to +60 °C

Outputs

Calibration Output	1 kHz, 1 V square wave
--------------------	------------------------

Horizontal System

Timebase Accuracy	±1.5 ppm + (aging of 0.5 ppm/yr from last calibration)
Timebase Range	100 ps/div - 1000 s/div

Connectivity

LXI Compliance	LXI Class C Compliant
----------------	-----------------------

Acquisition System

Random Interleaved Sampling (RIS) Rate	125 GS/s
Waveform Interpolation	Linear, Sin(x)/x

Display

Grid Styles	Auto, Single, Dual, Quad, Octal, XY, Single+XY, Dual+XY
-------------	---

Inputs & Outputs

Auxiliary Output	Rear-panel BNC, provides AUX Trigger Out, Pass/Fail, or Calibration Out
------------------	---

Standard Accessories

Included Probes	4 x PP018 (500 MHz, 10:1, 10 MΩ)
-----------------	----------------------------------

TECHNOLOGY

HD4096 High Definition Technology

APPLICATIONS

Electronic Test & Measurement, Serial Data Debugging, Power Analysis

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.