

LECROY (TELEDYNE LECROY)

WAVESURFER 3024

The Teledyne LeCroy WaveSurfer 3024 is a 200 MHz, 4-channel digital storage oscilloscope designed to provide advanced waveform analysis and troubleshooting capabilities. Featuring a large 10.1-inch capacitive touch-screen interface, the WaveSurfer 3024 combines high-performance analog channels with advanced digital debugging tools, offering powerful math, measurement, and optional multi-instrument functionalities like mixed-signal capability and protocol analysis.

SPECIFICATIONS

General

Interfaces	LAN (10/100Base-T), 4 x USB 2.0 Host (2 front, 2 rear), 1 x USBTMC Device, GPIB (via optional adapter), VGA Out
Display	10.1-inch widescreen TFT-LCD capacitive touch screen with 1024 x 600 resolution
Calibration Interval	1 year

Physical

Power Supply	100–240 VAC (±10%) at 50/60 Hz (±10%) or 100–120 VAC at 400 Hz (±10%); Max consumption 80 W (150 VA)
Operating Temperature	0 °C to +50 °C °C
Dimensions (W×H×D)	380 mm x 290 mm x 152 mm mm
Weight	4.81 kg

Vertical System

Analog Bandwidth	200 MHz
Number of Input Channels	4
Calculated Rise Time (10% to 90%)	1.75 ns (typical)
Input Coupling	AC, DC, GND
Input Impedance	50 Ω ±1.5% or 1 MΩ ±1.0% 16 pF
Vertical Resolution	8 bits (up to 11 bits with Enhanced Resolution)
Vertical Sensitivity Range (1 MΩ)	1 mV/div - 10 V/div
Vertical Sensitivity Range (50 Ω)	1 mV/div - 1 V/div
DC Vertical Gain Accuracy	±1.5% full scale (typical), ±2.0% (warranted)
Maximum Input Voltage (1 MΩ)	300 Vrms
Maximum Input Voltage (50 Ω)	5 Vrms
Channel-to-Channel Isolation	100:1 from DC to 100 MHz, 70:1 from 100 MHz to 200 MHz

Horizontal System

Timebase Range	1.0 ns/div - 1000 s/div
Timebase Accuracy	±10 ppm (typical)
Channel-to-Channel Deskew Range	±9 ns
Interpolation	Linear, Sin(x)/x

Acquisition System

Max Real-Time Sampling Rate (Single Channel)	2 GS/s (interleaved)
Max Real-Time Sampling Rate (Multi-Channel)	1 GS/s
Max Memory Depth (Single Channel)	20 Mpts (interleaved)
Max Memory Depth (Multi-Channel)	10 Mpts/ch
Acquisition Modes	Real-time, Roll, Random Interleaved Sampling (RIS), Single, Sequence (Segmented Memory)
Sequence Mode Max Segments	1,000
Waveform Update Rate	130,000 wfm/s (maximum)

Trigger System

Trigger Modes	Auto, Normal, Single, Stop
Trigger Coupling	AC, DC, LF Rej, HF Rej
Trigger Holdoff Range	8.06 ns to 10.0 s
Trigger Types	Edge, Width, Glitch, Logic, Runt, Slew Rate, Interval, Dropout, Pattern, TV (NTSC, PAL, SECAM, HDTV)
Trigger Jitter	16 ps RMS (typical)
Trigger Level Range	±4.1 divisions from center (Internal)
Trigger Sensitivity	0.9 div (≤ 10 MHz), 1.0 div (≤ 200 MHz)

Mixed Signal (MSO)

Digital Channels	16 (with optional WS3K-MSO logic probe option)
Max Digital Sampling Rate	500 MS/s (with WS3K-MSO)
Max Digital Memory Depth	10 Mpts (with WS3K-MSO)

Waveform Measurements & Analysis

Automatic Measurements	Up to 6 displayed simultaneously with statistical measurements (Min, Max, Mean, Std Dev, Count)
FFT Window Types	von Hann, Hamming, Flat Top, Blackman-Harris

Environmental & Compliance

Operating Humidity Range	5% to 90% RH (non-condensing) up to +30 °C; up to 50% RH at +50 °C
Operating Altitude	Up to 3,000 m (+25 °C)
Non-Operating Altitude	Up to 12,192 m

WaveSource Function Generator (Option)

WaveSource AWG Bandwidth	25 MHz
WaveSource AWG Sample Rate	125 MS/s
WaveSource AWG Vertical Resolution	14 bits
WaveSource AWG Waveform Length	16 kpts

Digital Voltmeter (Option)

Digital Voltmeter Resolution	4-digit
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Hardware Counter

Frequency Counter Resolution	5-digit
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Probe System

Probe Interface	Teledyne LeCroy ProBus
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Digital Channels (Option)

MSO Digital Channels	16
MSO Input Impedance	100 kohms 8 pF
MSO Minimum Detectable Pulse Width	4 ns
MSO Maximum Input Frequency	125 MHz

Power & Electrical

Power Consumption (Typical)	80 W
Power Consumption (Max)	100 W

Environmental

Storage Temperature Range	-20 °C to +60 °C
Storage Humidity Range	5% to 95% RH (non-condensing) up to +30 °C
Vibration and Shock Standards	MIL-PRF-28800F Class 3

WaveSource AWG Options

WaveSource AWG Waveforms	Sine, Square, Pulse, Triangle, Ramp, Noise, DC
WaveSource AWG Frequency Range (Sine)	0.1 Hz to 25 MHz
WaveSource AWG Frequency Range (Square/Pulse)	0.1 Hz to 10 MHz
WaveSource AWG Frequency Range (Triangle/Ramp)	0.1 Hz to 1 MHz
WaveSource AWG Amplitude Range (50 Ω)	2 mVpp to 1.6 Vpp
WaveSource AWG Amplitude Range (1 M Ω)	4 mVpp to 3.2 Vpp
WaveSource AWG Output Impedance	50 Ω $\pm$ 2%
WaveSource AWG Offset Range	$\pm$ 800 mV (50 Ω), $\pm$ 1.6 V (1 M Ω)

Digital Voltmeter

Digital Voltmeter Measurements	DC, AC rms, DC+AC rms
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Frequency Counter

Frequency Counter Range	0.1 Hz to 200 MHz
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Interfaces

Front Panel USB Ports	2 x USB 2.0 Host
Rear Panel USB Ports	1 x USB 2.0 Host, 1 x USB 2.0 Device
Ethernet Interface	10/100Base-T, RJ-45 connector
External Trigger Input Port	Front panel BNC
Auxiliary Output Port	BNC connector on rear panel

Compliance

Safety Compliance	UL 61010-1, CAN/CSA-C22.2 No. 61010-1-12, EN 61010-1:2010
EMC Compliance	EN 61326-1:2013, EN 61326-2-1:2013

TECHNOLOGY

Digital Storage Oscilloscope

APPLICATIONS

Electronic design, debug, power analysis, automotive diagnostics, and education

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