

LECROY (TELEDYNE LECROY)

WaveRunner 640Zi

The Teledyne LeCroy WaveRunner 640Zi is a high-performance 4-channel digital oscilloscope featuring 4 GHz analog bandwidth, sampling rates up to 40 GS/s, and a uniquely versatile 12.1-inch pivoting touch screen. Built on the X-Stream II streaming architecture, it provides deep analysis memory, pristine signal fidelity, and extensive hardware-accelerated serial data triggering and decoding capabilities.

SPECIFICATIONS

General

Operating System	Windows 7 Professional (64-bit)
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Physical

Power Supply	100-240 VAC $\pm 10\%$ at 45-66 Hz; 100-120 VAC $\pm 10\%$ at 380-420 Hz
Operating Temperature	+5 °C to +40 °C °C

Vertical System

Input Channels	4
Maximum Input Voltage	50 Ω : 5 Vrms ± 10 V peak; 1 M Ω : 400 Vmax (DC + peak AC < 10 kHz)
Vertical Resolution	8 bits (up to 11 bits with ERES)
Vertical Sensitivity (50 Ω)	1 mV/div to 1 V/div
Vertical Sensitivity (1 M Ω)	1 mV/div to 10 V/div
DC Gain Accuracy	$\pm 1.0\%$ of full scale
Input Coupling	50 Ω : DC, GND; 1 M Ω : AC, DC, GND

Horizontal System

Timebase Range	20 ps/div to 1000 s/div
Timebase Accuracy	± 1.5 ppm + (aging)

Acquisition System

Maximum Sample Rate (Single-Shot)	20 GS/s (4 channels)
Maximum Sample Rate (Interleaved)	40 GS/s (2 channels)
Standard Record Length (Memory Depth)	16 Mpts/ch (4 ch), 32 Mpts/ch (2 ch / 1 ch)
High-Resolution Mode	Enhanced Resolution (ERES) from 8.5 to 11 bits

Triggering System

Serial Protocol Triggers	I2C, SPI, UART, RS-232, Audio (I2S, LJ, RJ, TDM), CAN, LIN, FlexRay, MIL-STD-1553, SATA, PCIe, 8b/10b, USB2
Auxiliary Input Maximum Voltage	50 Ω : 5 Vrms; 1 M Ω : 250 Vmax (DC + Peak AC $\leq$ 10 kHz)
Trigger Coupling	DC, AC, HF Rej, LF Rej
Standard Trigger Types	Edge, Glitch, Width, Pattern, TV, Runt, Slew Rate, Interval, Dropout, Qualified

Measurements, Math, and Analysis

Data Link Layer Decoding	ProtoSync (simultaneous oscilloscope view and data link layer decode)
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Display System

Display Size	12.1 inch
Display Resolution	WXGA (1280 x 800 equivalent)
Display Type	Widescreen color touch screen, 90° rotating (landscape to portrait) and tilting

Connectivity and Interfaces

Mixed Signal Capability	Up to 36 digital channels via LBus (optional)
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Physical Characteristics

Instrument Depth	8.1 in (206 mm)
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Environmental

Storage Temperature	-20 °C to +60 °C
Maximum Operating Altitude	Up to 3000 m (10,000 ft) at or below 30 °C

Inputs & Outputs

Probe Interface	ProBus
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Processing & Math

Math Traces	Up to 8 math functions (F1–F8)
Reference Waveform Memories	Up to 4 reference traces (M1–M4)
Interpolation	Sinx/x and Linear

Trigger System

Trigger Level Range (Internal)	± 4.1 divisions from center
Trigger Level Range (External)	EXT: ± 400 mV; EXT/10: ± 4 V

TECHNOLOGY

Digital Oscilloscope

APPLICATIONS

Test & Measurement, Serial Data Analysis, Electronics Debugging

