



GPS-2000XE Series

Digital Storage Oscilloscopes



Two Channels. 350 MHz. 28 Mpts.

The GPS-2000XE series is a two-channel digital storage oscilloscope with 200 or 350 MHz of bandwidth, 2 GSa/s real-time sampling and a 28 Mpts record length, on a 7" 800 × 480 display.

Super-Phosphor acquisition captures up to 110,000 waveforms per second, rising to 400,000 in sequence mode, with 256-level intensity grading and a colour temperature display. Vertical scale reaches 500 $\mu\text{V}/\text{div}$, and a digital trigger system gives high sensitivity with under 100 ps of jitter.

Ten trigger types and serial decoding for I²C, SPI, UART, CAN and LIN are standard, alongside 38 automatic measurements, a 1 Mpts FFT and history and segmented acquisition. A 16-channel MSO module, a 25 MHz USB arbitrary waveform generator and Wi-Fi control are available as options.

KEY FEATURES

- 200 or 350 MHz bandwidth · 2 GSa/s real-time sampling
- 28 Mpts record length · 500 $\mu\text{V}/\text{div}$ vertical scale
- 110,000 wfm/s normal · 400,000 wfm/s in sequence mode
- Ten trigger types · serial decode for I²C, SPI, UART, CAN, LIN
- 7" 800 × 480 display · 38 automatic measurements

IDEAL FOR

- Embedded and digital design
- Power supply and control loop analysis
- Serial bus debug and validation
- Production test and pass / fail
- Education and training laboratories

TECHNICAL SPECIFICATIONS

GPS-2000XE Series Digital Storage Oscilloscope	
Bandwidth (–3 dB)	200 MHz (GPS-2202XE) · 350 MHz (GPS-2352XE)
Channels	2 + EXT · DC, AC and GND coupling
Sampling Rate	2 GSa/s single channel · 1 GSa/s two channels
Record Length	28 Mpts/channel interleaved · 14 Mpts/channel non-interleaved
Vertical Resolution	8-bit · ERES enhancement to 0.5, 1.5, 2, 2.5 or 3 additional bits
Vertical Scale	500 μ V/div to 10 V/div in 1-2-5 steps (1 $\times$ probe)
Offset Range	± 2 V from 500 μ V to 100 mV/div · ± 20 V to 1 V/div · ± 200 V to 10 V/div
Input	1 M Ω $\pm 2\%$ 18 pF ± 2 pF, or 50 Ω $\pm 2\%$ · maximum 400 Vpk at 1 M Ω , 5 Vrms at 50 Ω · bandwidth limit 20 MHz $\pm 40\%$ · channel isolation >40 dB
Accuracy & Noise	DC gain $\leq \pm 3.0\%$ from 5 mV/div to 10 V/div, $\leq \pm 4.0\%$ at or below 2 mV/div · noise ST-DEV ≤ 0.1 division at or above 2 mV/div · SFDR ≥ 35 dB
Rise Time	1.0 ns typical (GPS-2352XE) · 1.8 ns typical (GPS-2202XE) · overshoot <10%
Timebase	500 ps/div to 100 s/div · accuracy ± 25 ppm · channel skew <100 ps · roll mode 50 ms/div to 100 s/div
Waveform Capture Rate	110,000 wfm/s normal · 400,000 wfm/s sequence mode · 256-level intensity grading and colour temperature display
Acquisition Modes	Normal, peak detect (1 ns), average (4 to 1024), ERES · sin(x)/x or linear interpolation · sequence mode to 80,000 segments · history playback of 80,000 frames
Trigger Types	Edge, slope, pulse width, window, runt, interval, dropout, pattern and video (NTSC, PAL and HDTV to 1080p)
Trigger System	Auto, normal and single · level ± 4.5 divisions internal, ± 0.6 V EXT · holdoff 80 ns to 1.5 s · jitter <100 ps · DC, AC, LF reject, HF reject and noise reject coupling
Serial Decode	I ² C, SPI, UART/RS-232, CAN and LIN · triggering and decoding, both standard
Measurements	38 automatic parameters · 4 displayed at once, 5 in the statistics table · screen or gated region · current, mean, min, max, standard deviation and count
Maths & FFT	Addition, subtraction, multiplication, division, differential, integral and square root · 1 Mpts FFT with peaks and markers · rectangular, Blackman, Hanning, Hamming and Flatop windows
Analysis Tools	Hardware pass/fail to 40,000 decisions per second with a user-defined mask · Bode plot from 10 Hz, 500 Hz to 120 MHz scan, 500 points, needs the USB AWG module or an external generator · search and navigate
Display & Interfaces	7" TFT-LCD, 800 $\times$ 480 · USB Host, USB Device (USBTMC), LAN (VXI-11), pass/fail and trigger out · SCPI, Telnet and socket control · web browser control
Options	16-channel MSO · 25 MHz USB arbitrary waveform generator (SAG1021I) · USB Wi-Fi adaptor · rack mount kit
Power	100 to 240 Vrms, 50/60 Hz · 100 to 120 Vrms at 400 Hz · 50 W maximum



WHAT'S IN THE BOX

- GPS-2000XE series main unit
- Power cord
- Two passive probes, bandwidth matched
- USB cable and calibration certificate
- Quick start guide · EasyScopeX software

INTERFACES · USB Host, USB Device (USBTMC), LAN (VXI-11), pass/fail, trigger out

POWER · 100 to 240 Vrms, 50/60 Hz · 50 W maximum

GENERAL SPECIFICATIONS

Code	Item	Part Number
GPS-2202XE	200 MHz, 2+EXT channels, 2 GSa/s, 28 Mpts · PP215 probes	212202
GPS-2352XE	350 MHz, 2+EXT channels, 2 GSa/s, 28 Mpts · SP2035 probes	212352

Both models differ only in bandwidth and supplied probes. Options: 16-channel MSO, 25 MHz USB AWG (SAG1021I), Wi-Fi adaptor and rack mount. Contact us for pricing and lead times.

MASS

2.6 kg net · 3.8 kg gross

OPERATING

0°C to 40°C · storage -20°C to 60°C · to 3000 m

WARRANTY

1 year (subject to product registration)

DIMENSIONS

312 × 151 × 132.6 mm (l × h × w)

HUMIDITY

85% RH at 40°C, 24 hours

CERTIFICATION

EMC 2014/30/EU, IEC 61326-1:2012 · Safety UL 61010-1:2012/R:2018-11

Probes & Accessories

Passive probes	100 MHz, 200 MHz and 350 MHz · 1×/10× switchable · 1 MΩ/10 MΩ · 300 V to 600 V CAT rating
Current probes, clamp	100 kHz to 150 kHz · 20 to 70 Arms continuous, 60 to 200 A peak · 5 mV/A and 50 mV/A ranges
Current probes, active	5 MHz to 100 MHz · 30 to 500 Arms continuous, to 750 A peak · 10 mV/A to 1 V/A · mains adaptor
Differential probes	50 MHz to 100 MHz · 800 V, 1500 V and 7000 V ranges (DC + peak AC) · 50× to 1000× attenuation · ±1% to ±2%
High-voltage probe	40 MHz · 10 kV DC, 7 kV AC rms, 20 kVpp pulse · 1000× · ≤3%
Isolated front end	Isolates channels from each other and from ground · USB powered · ±600 Vpk maximum input
USB AWG module	25 MHz, one channel · 125 MSa/s, 14-bit · sine, square, ramp, pulse, noise, DC and 45 built-in waveforms · isolated output
MSO module	16 digital channels · up to 1 GSa/s and 14 Mpts per channel
Demo board	Square, sine, AM, fast edge, pulse, PWM, I ² C, CAN and LIN outputs for teaching and demonstration
Rack mount kit	4U