



GPS-2000HD

Digital Storage Oscilloscope Series



KEY FEATURES

- 12-bit ADC with up to 2 GSa/s sample rate
- Low-noise front end (~70 μ Vrms @ 200 MHz)
- Serial decode standard: I2C, SPI, UART, CAN, LIN
- SPO tech, up to 120,000 wfms/s capture rate
- Optional 16-ch digital input & AWG module

12-Bit Resolution. Zero Compromise.

The GPS-2000HD series brings 12-bit ADCs and a low-noise front end (~70 μ Vrms @ 200 MHz) to reveal signal detail that 8-bit scopes miss – ideal for power supply testing and engine control unit diagnostics. Sampling up to 2 GSa/s and record length up to 100 Mpts give headroom for long-duration, low-frequency signals.

SPO technology delivers up to 120,000 wfms/s in normal mode and 500,000 wfms/s in sequence mode, with 256-level intensity grading and colour temperature display. A built-in 2 Mpts FFT, Bode plot, and power analysis (optional software, with suitable voltage and current probes) turn the scope into a genuine multi-instrument bench.

An optional 16-channel digital input and AWG module extend mixed-signal work further, suiting power design, embedded, automotive, and high-precision lab applications.

Fourteen trigger types, with I²C, SPI, UART, CAN and LIN triggered and decoded as standard, isolate the events that matter, while history and sequence modes keep up to 80,000 earlier frames to look back through. A 7" capacitive touch screen and full web control over LAN make it as quick to use at the bench as from a desk

IDEAL FOR

- Power supply & ripple testing
- Automotive & engine control unit diagnostics
- Embedded design & circuit debug
- Educational & high-precision lab work
- Production test & quality inspection

TECHNICAL SPECIFICATIONS

GPS-2000HD Series Digital Storage Oscilloscope	
Bandwidth	100 MHz (GPS-2104HD) · 200 MHz (GPS-2202HD / GPS-2204HD), -3 dB
Channels	4 (GPS-2104HD / GPS-2204HD) · 2 (GPS-2202HD) · DC, AC, GND coupling
Vertical Resolution	12-bit · ENOB 8.4-bit typical · noise floor 70 μ Vrms at full bandwidth
Sample Rate	2 GSa/s (one channel) · 1 GSa/s (two channels) · 500 MSa/s (four channels)
Memory Depth	GPS-2104HD: 50 / 25 / 10 Mpts/ch · GPS-2202HD and GPS-2204HD: 100 / 50 / 25 Mpts/ch (1 / 2 / 4 channels on; four-channel mode on the GPS-2204HD only)
Waveform Capture Rate	80,000 wfm/s GPS-2104HD · 120,000 wfm/s GPS-2202HD and GPS-2204HD · 500,000 wfm/s sequence, all models
Acquisition Modes	Normal, peak detect (2 ns) · sin(x)/x and linear interpolation · 256-level intensity grading
Vertical Scale	1 M Ω : 0.5 mV/div – 10 V/div · 8 vertical divisions
DC Gain Accuracy	$\pm 0.5\%$ typical, $\pm 1\%$ max (5 mV/div – 10 V/div) · $\pm 1.5\%$ (0.5 – 4.95 mV/div)
Rise Time	3.5 ns typical at 100 MHz · 1.8 ns typical at 200 MHz · overshoot 10% typical
Input	1 M Ω $\pm 2\%$ 17 pF ± 2 pF · max. ≤ 400 Vpk (DC + AC to 10 kHz) · bandwidth limit 20 MHz or full bandwidth
Time Base	2 ns/div – 1000 s/div (GPS-2104HD) · 1 ns/div – 1000 s/div (200 MHz models) · ± 25 ppm · skew <100 ps
Trigger Types	Edge, Slope, Pulse Width, Window, Runt, Interval, Dropout, Pattern, Video (HDTV), Qualified, Nth Edge, Delay, Setup/Hold, Serial
Trigger System	Auto, Normal, Single · level ± 4.1 div · hold-off 8 ns – 30 s · jitter <100 ps · DC, AC, LF reject, HF reject, noise reject
Serial Trigger & Decode	I ² C, SPI, UART, CAN, LIN · triggering and decoding both standard · 2 decoders, full duplex
Sequence & History	Up to 80,000 segments, 2 μ s minimum interval · history playback of up to 80,000 frames
Measurements	50+ parameters across vertical, horizontal, miscellaneous and delay · statistics with histogram, trend and track · gated measurement
Math	4 traces · FFT to 2 Mpts with peaks and markers · filter, +, -, $\times$, $\div$, $\int$ dt, d/dt, V, ERES, average · formula editor
Mask Test	Hardware-based, up to 80,000 frames/s · auto or custom masks via the built-in Mask Editor
Analysis	Search and navigate · counter with 7-digit resolution and totaliser · Bode plot 10 Hz – 120 MHz with variable PSRR
Display	7" TFT-LCD, 1024 $\times$ 600, capacitive multi-touch · 500:1 contrast · 500 nits · 8 $\times$ 10 grid
Standard I/O	Front: USB 2.0 Host, SBUS, 1 kHz 3 V calibration output · Rear: USB 2.0 Host, USB 2.0 Device, 10/100 LAN, auxiliary output (trigger out, or pass/fail with mask test on)
Remote Control	SCPI · VXI-11, Telnet and socket over LAN · built-in web server · external mouse and keyboard · NTP
Options	16 digital channels (1 GSa/s, 10 Mpts/ch) · 25 MHz USB AWG module (125 MSa/s, 16 kpts, isolated) · power analysis software



WHAT'S IN THE BOX

- GPS-2000HD main unit
- Passive probes, 1 per channel (PP510 at 100 MHz, PP215 at 200 MHz)
- USB cable
- Power cord
- Certificate of calibration & quick start guide

STANDARDS · EMC: IEC 61326-1 / EN 55011 Class A · Safety: UL 61010-1 · RoHS

POWER · 100–240 Vrms 50/60 Hz · 80 W max, 40 W typical

GENERAL SPECIFICATIONS

Code	Item	Part Number
GPS-2104HD	4Ch, 100MHz, 2GSa/s, 12 Bit, HD high resolution oscilloscope	302104
GPS-2202HD	2Ch, 200MHz, 2GSa/s, 12 Bit, HD high resolution oscilloscope	302202
GPS-2204HD	4Ch, 200MHz, 2GSa/s, 12 Bit, HD high resolution oscilloscope	312204

Choose bandwidth and channel count above. Optional 16-channel digital input and USB AWG module available – please enquire. Not for measurements on mains circuits. Inputs are 1 M Ω only, with no internal 50 Ω : bandwidth and rise time assume an external 50 Ω termination.

MASS

2.6 kg (main unit) / 3.8 kg (with packaging)

OPERATING

0°C to 40°C, $\leq 90\%$ RH at 30°C, ≤ 3000 m altitude

WARRANTY

1 year (subject to product registration)

DIMENSIONS

312 $\times$ 132.6 $\times$ 151 mm (l $\times$ w $\times$ h), including knobs and feet

STORAGE

-30°C to 70°C, ≤ 15000 m altitude (non-operating)

CERTIFICATION

EMC: IEC 61326-1 / EN 55011 Class A · Safety: UL 61010-1 · RoHS