



GPS-2100X Series

Function / Arbitrary Waveform Generators



Every Point, Exactly As Defined.

The GPS-2100X series is a dual-channel function / arbitrary waveform generator with a 1.2 GSa/s sampling rate, 16-bit vertical resolution and up to 8 Mpts of arbitrary waveform memory, operated from a 4.3" colour touch screen.

Arbitrary waveforms are generated point by point rather than by phase accumulation, so no defined point is skipped or repeated, at any length from 8 points to 8 Mpts and a sample rate set anywhere from 1 μ Sa/s to 75 MSa/s. A dedicated pulse architecture holds square and pulse jitter to 150 ps, with pulse widths from 16.3 ns and independently adjustable edges from 8.4 ns.

Eight modulation types, sweep, burst, a harmonics generator and a 200 MHz frequency counter are built in. USB Host, USB Device and LAN are standard, with GPIB available as an option. Available in 40, 80 and 120 MHz models.

KEY FEATURES

- Dual-channel, 40 / 80 / 120 MHz bandwidth, up to 20 Vpp output
- 1.2 GSa/s sampling, 16-bit resolution, 8 Mpts arbitrary memory
- Point-by-point arbitrary playback from 8 pts to 8 Mpts
- Low-jitter square and pulse · 16.3 ns widths, 8.4 ns edges
- Eight modulation types · 200 MHz counter · 4.3" touch screen

IDEAL FOR

- MEMS and sensor simulation
- Sonar and multi-tone audio
- Medical device testing
- Communications and R&D
- Education and training

TECHNICAL SPECIFICATIONS

GPS-2100X Series Function / Arbitrary Waveform Generator	
Bandwidth	40 MHz (GPS-2040X) · 80 MHz (GPS-2180X) · 120 MHz (GPS-21120X)
Channels	2 · identical, independently configurable
Sampling Rate	1.2 GSa/s with 4× interpolation · 300 MSa/s DDS mode · 1 μ Sa/s to 75 MSa/s point-by-point
Vertical Resolution	16-bit
Waveform Length	8 pts to 8 Mpts
Waveforms	Sine, square, ramp, pulse, DC and arbitrary · noise to 120 MHz (–3 dB) · 196 built-in arbitrary waveforms
Frequency Resolution	1 μ Hz · initial accuracy ± 2 ppm, 0–40°C
Sine	1 μ Hz to model bandwidth · THD 0.075% (0 dBm, 10 Hz–20 kHz) · harmonics –65 dBc to 10 MHz
Square	1 μ Hz to 25 MHz · rise / fall 9 ns · overshoot 3% · duty cycle 0.001 to 99.999% · jitter 150 ps
Pulse	1 μ Hz to 25 MHz · width from 16.3 ns · edges 8.4 ns to 22.4 s in 100 ps steps
Ramp	1 μ Hz to 1 MHz · symmetry 0 to 100% · linearity 1%
Arbitrary	1 μ Hz to 20 MHz · point-by-point playback, no point skipped or repeated · jitter 150 ps
Amplitude Range	2 mVpp to 20 Vpp at or below 20 MHz · to 10 Vpp above · halved into 50 Ω · flatness ± 0.3 dB to 100 MHz
Output	50 Ω impedance · DC offset ± 10 V (HiZ) or ± 5 V (50 Ω) · current ± 200 mA · crosstalk –60 dBc
Modulation	AM, DSB-AM, FM, PM, ASK, FSK, PSK and PWM · internal or external source · modulating wave sine, square, ramp, noise or arbitrary at 1 mHz to 1 MHz
Sweep & Burst	Sweep linear or logarithmic, up or down, 1 ms to 500 s · burst 1 to 1,000,000 cycles, infinite or gated · harmonics generator built in
Frequency Counter	0.1 Hz to 200 MHz · frequency, period, pulse width and duty cycle · AC, DC or HF-reject coupling
Display & Interfaces	4.3" touch screen, 480 × 272 · USB Host, USB Device (USBTMC) and LAN (VXI-11) · GPIB optional



WHAT'S IN THE BOX

- GPS-2100X series main unit
- Power cord
- USB cable and BNC coaxial cable
- Calibration certificate
- Quick start guide · GPIB adaptor optional

INTERFACES · USB Host, USB Device (USBTMC), LAN (VXI-11) · GPIB optional

POWER · 100–240 Vrms $\pm 10\%$, 50/60 Hz (100–120 Vrms at 400 Hz) · 25.5 W typical

GENERAL SPECIFICATIONS

Code	Item	Part Number
GPS-2040X	2 channel touch-screen function / arbitrary waveform generator, 40 MHz, 1.2 GSa/s, 16-bit	223142
GPS-2180X	2 channel touch-screen function / arbitrary waveform generator, 80 MHz, 1.2 GSa/s, 16-bit	224082
GPS-21120X	2 channel touch-screen function / arbitrary waveform generator, 120 MHz, 1.2 GSa/s, 16-bit	224122

Sine output reaches the full model bandwidth. Square and pulse reach 25 MHz, arbitrary 20 MHz and ramp 1 MHz on all three models. Please contact us for pricing and lead times.

MASS

3.43 kg (main unit) · 4.42 kg (with packaging)

OPERATING

0°C to 40°C · storage –20°C to 60°C · altitude to 3048 m

WARRANTY

1 year (subject to product registration)

DIMENSIONS

260.3 × 107.2 × 295.7 mm (w × h × d)

HUMIDITY

≤90% RH (≤30°C) · ≤50% RH (40°C)

CERTIFICATION

LVD IEC 61010-1:2010 · EMC EN 61326-1:2013