

GPS-

800X/1000X



A range of handheld oscilloscopes that deliver benchtop performance in palms of your hands

The series utilises a new generation of SPO (Super-Phosphor Oscilloscope) technology that provides excellent signal fidelity and performance. It comes with a vertical input range from 2 mV/div to 100 V/div, and a max offset range up-to to 400 V. The innovative digital trigger system delivers high sensitivity and low jitter, and a waveform capture rate of up-to 400,000 frames/sec. The scope also employs a 256-level intensity grading display function and a colour temperature display mode for clarity and fast fault identification. multiple powerful triggering modes including serial bus triggering as well as free decoding for IIC, SPI, UART, CAN, LIN bus types.

These models also include History waveform recording, and sequential triggering that enable extended waveform recording and analysis. Another powerful addition is the new 1-million-point FFT math function that gives very high frequency resolution when observing signal spectra. The new digital design also includes a hardware co-processor that delivers measurements quickly and accurately without slowing acquisition and front panel response. The GPS-1000X series features full isolation between the two oscilloscope channels, one multimeter channel, power adapter and the USB host/device port. The full isolation makes it ideal for both laboratory and floating signal measurement because it reduces the risk of accidental short-circuits.

Key Features

- Integrated oscilloscope, serial trigger and decoder, spectrum analysis, data logger, and multimeter functions into a convenient and portable design
- 100 MHz or 200 MHz bandwidth models
- Sample rate of 1 GSa/s (single-channel)/500 MSa/s (two-channels)
- Record length up to 12 Mpts.
- Isolation voltage: CATIII 600 Vrms, CATII 1000 Vrms (GPS-1000X series only)
- Waveform recording up to 22 hours
- Hardware-based true RMS multimeter
- IP51 dust/water resistance certified

Ideal for

- Outdoor applications like wind power measurement
- Emerging energy equipment testing
- Automotive electron and electric automobile measuring
- and electrical system debugging

www.gpslimited.com/800x
For all enquiries, Tel: +44 (0) 208 964 3600
Email: info@gpslimited.com

HANDHELD OSCILLOSCOPE 800X/1000X Series

Specifications

Model	GPS-810X	GPS-820X	GPS-1102X	GPS-1202X
Bandwidth	100 MHz	200 MHz	100 MHz	200 MHz
Sample rate (Max.)	Two-channel share a single 1 GSa/s ADC. When two channels are enabled, each channel has a maximum sample rate of 500 MSa/s. When a single channel is active, that channel has a sample rate of 1 GSa/s			
Channels	2 analog oscilloscope channels, 1 multimeter channel			
Memory depth (Max.)	6 Mpts/CH (dual-channel mode) 12 Mpts/CH (single channel mode)			
Waveform capture rate (Max.)	100,000 wfm/s (normal mode), 400,000 wfm/s (sequence mode)			
Trigger type	Edge, Slope, Pulse Width, Window, Runt, Interval, Dropout, Pattern, Video			
Serial Trigger and decoder	IIC, SPI, UART, CAN, LIN			
Data Logger (Recorder)	Sample Logger: The Max sample rate is 25 kSa/s, the Min sample rate is 1 Sa/s Measurement Logger: The Max interval is 10 minutes; the Min interval is 0.1second. Max items of logging are 4			
I/O	USB Host, USB Device			
Max input Voltage (Scope)	CAT II 300 Vrms Between BNC Signal and Protecting Earth CAT II 30 Vrms Between BNC GND and Protecting Earth CAT II 300 Vrms Between BNC Signal and BNC GND		CAT III 600 Vrms, CAT II 1000 Vrms Between BNC Signal and Protecting Earth CAT III 600 Vrms, CAT II 1000 Vrms Between BNC GND and Protecting Earth CAT III 300 Vrms Between BNC Signal and BNC GND	
Max input Voltage (Meter)	CAT III 300 Vrms, CAT II 600 Vrms		CAT III 600 Vrms, CAT II 1000 Vrms	
Probe	PP510	PP215	PB925	
Display	5.6-inch TFT-LCD (640x480)			



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Functions & Characteristics

- Front and back panel



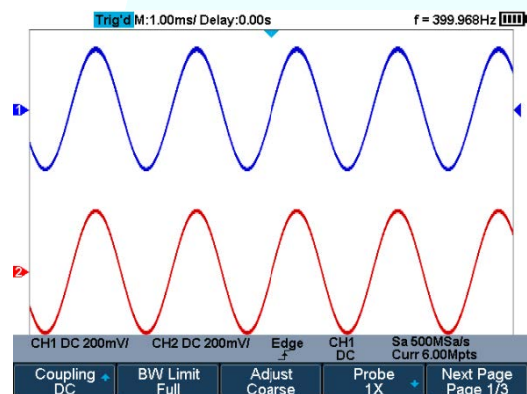
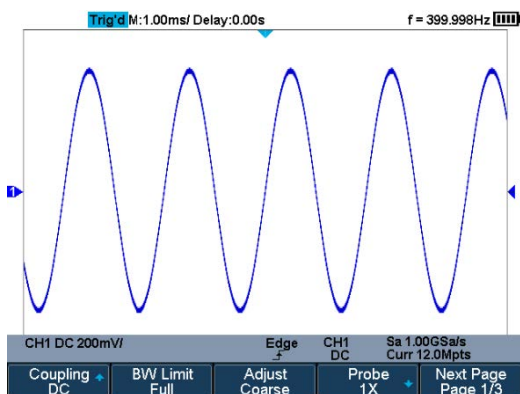
Front of the GPS-800X



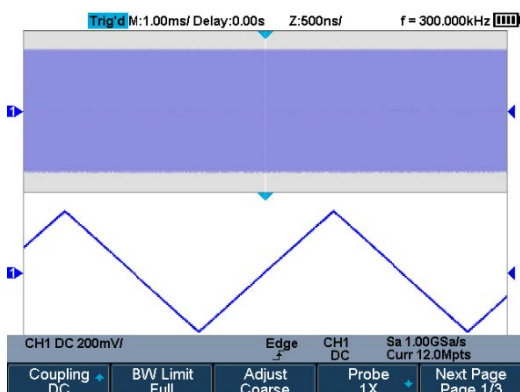
Rear of the GPS-800X

Large bright 5.6-inch TFT -LCD display with 640 * 480 resolution. The most commonly used functions are accessible using 8 different one-button operation keys: Run/Stop, Auto Setup, Default, Cursor, Measure, Display/Persist, Clear Sweep, and Print. More function shortcuts are available combined with the shift button.

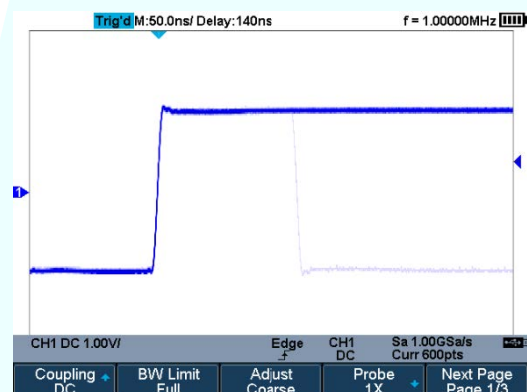
- When two channels are enabled, each channel has a maximum sample rate of 500 MSa/s. When a single channel is active, that channel has a sample rate of 1 GSa/s



- Record Length of up to 12 Mpts



- Waveform Capture Rate up to 400,000 wfms/s

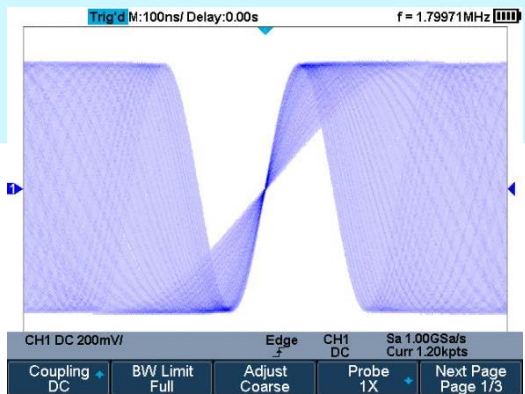


Using hardware-based Zoom technologies and max record length up to 12 Mpts, users can oversample to capture for longer periods at higher resolution and use the zoom feature to see more details within each signal.

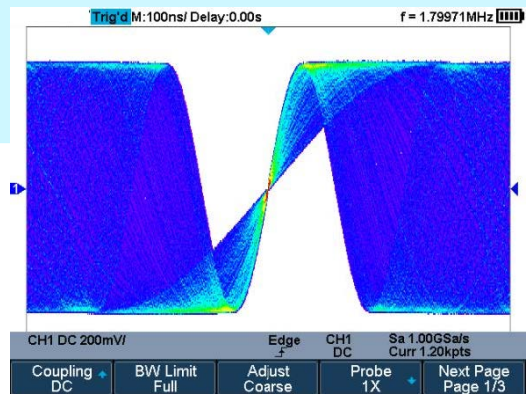
With a waveform capture rate of up to 400,000 wfms/s (sequence mode), the oscilloscope can easily capture unusual or low-probability events.

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256-Level Intensity Grading and Color Temperature Display

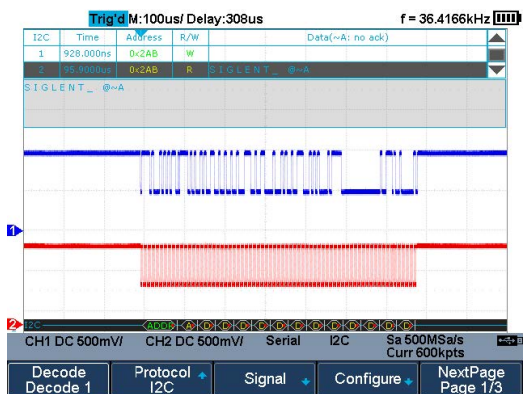


SPO display technology provides fast refresh rates. The resulting intensity-graded trace is brighter for events that occur with more frequency and dims when the events occur with less frequency.



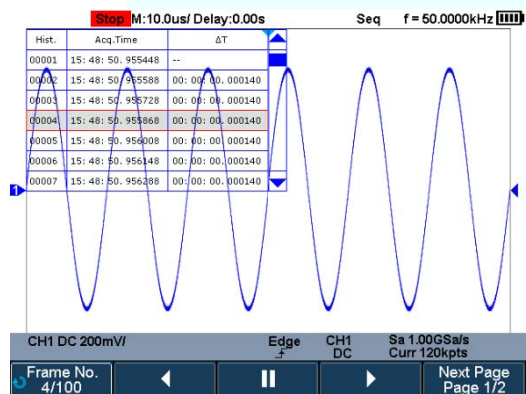
The color temperature display is similar to the intensity-graded trace function, but the trace occurrence is represented by different colors (color "temperature") as opposed to changes in the intensity of one color. Red colors represent events that occur more frequently, while blue is used to mark points that occur less frequently.

Serial BUS Decoding Function



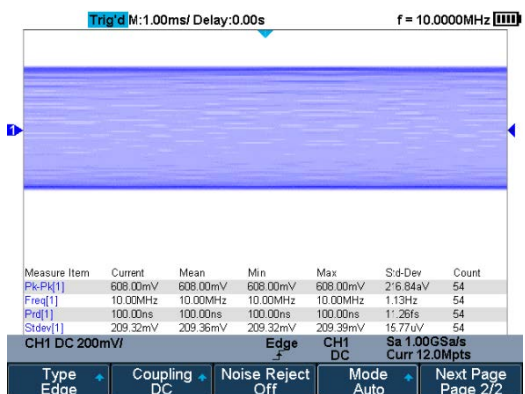
Displays the decoding through the events list. Bus protocol information can be quickly and intuitively displayed in a tabular format.

History Waveforms (History) Mode and Segmented Acquisition (Sequence)



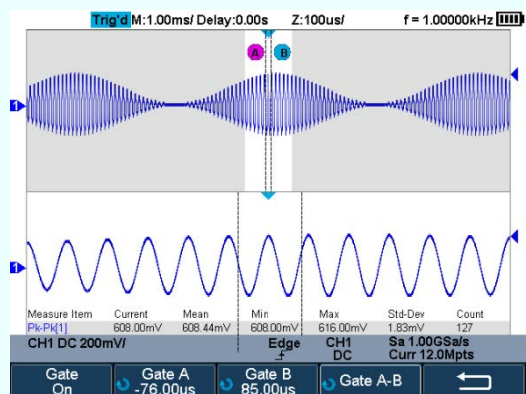
Playback the latest triggered events using the history function. Segmented memory collection will store trigger events into multiple (Up to 80,000) memory segments, each segment will store triggered waveforms and timestamps for each frame.

True measurement to 12 M points



GPS800X/GPS1000X series can measure all sampled data points up to 12 Mpts. This ensures the accuracy of measurements while the math co-processor decreases measurement time and increases ease-of-use.

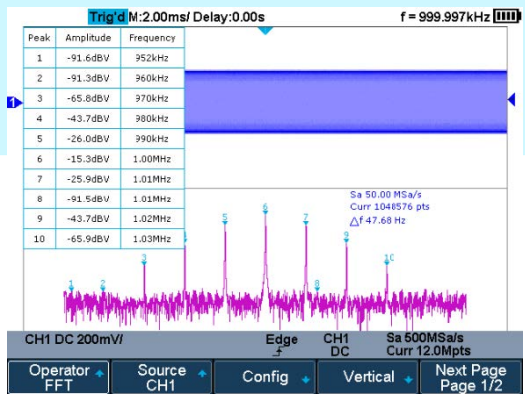
Gate and Zoom Measurement



Through Gate and Zoom measurement, the user can specify an arbitrary interval of waveform data analysis and statistics. This helps avoid measurement errors that can be caused by invalid or extraneous data, greatly enhancing the measurements' validity and flexibility.

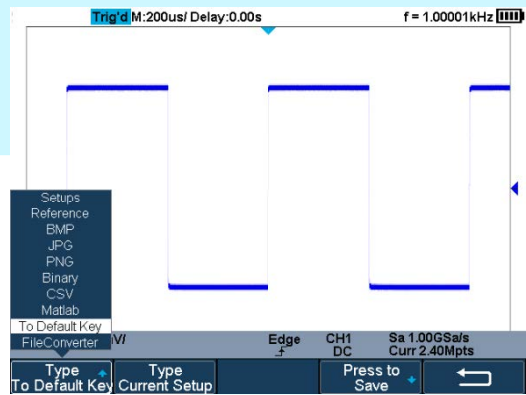
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1M points used to calculate the FFT



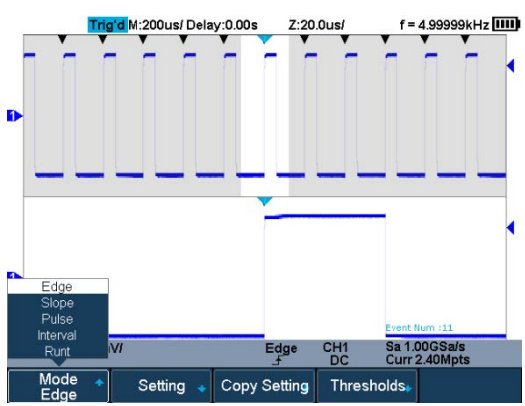
The new math co-processor enables FFT analysis of incoming signals using up to 1 M samples per waveform. This provides high-frequency resolution with a fast refresh rate. The FFT function also supports a variety of window functions so that it can adapt to different spectrum measurement needs. Support Peaks, Markers, a variety of numbers.

Customisable Default Key



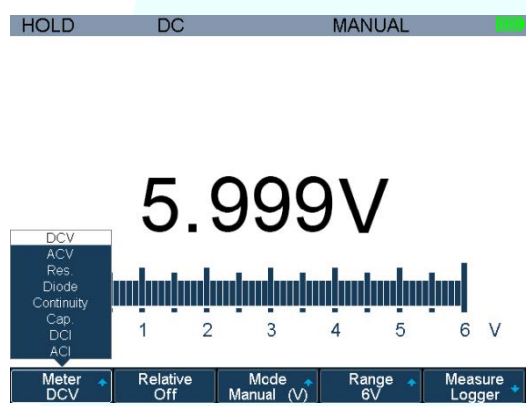
The current parameters of the oscilloscope can be preset to Default Key through the Save menu.

Search and Navigate



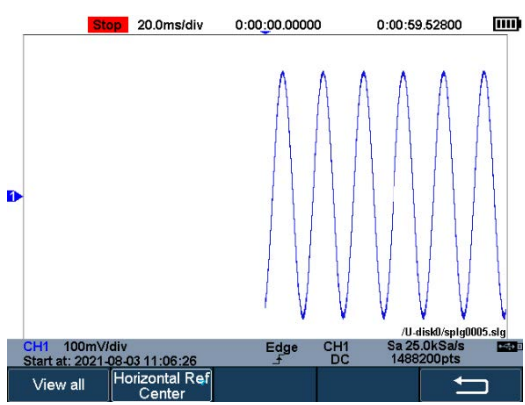
The GPS800X/GPS1000X series can search events specified by the user in a frame. It can also navigate by time (delay position) and historical frames.

6000 Count Digital Multimeter



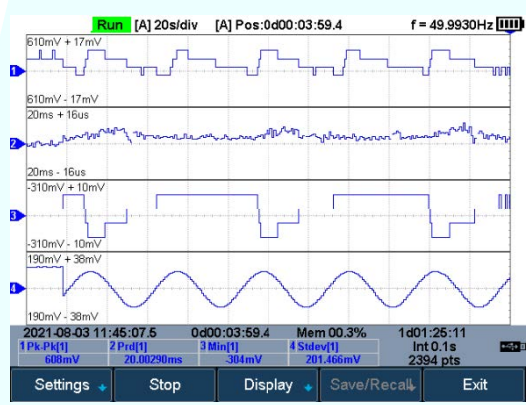
6000 count digital multimeter featured function of DCV, true RMS ACV, DCI, ACI, Diode, Resistance, Capacitance, and Continuity.

Sample Logger



The Sample Logger is the mode of logging the sampling points for a long time. For there are many sampling points to log, they are logged into the internal flash or external U disk in real-time. After stopping logging, the user can recall the sampling points on the oscilloscope, or analyze the saved data on the computer.

Measurement Logger



The measurement Logger is the mode of logging the measurement value for a long time. For the amount of measurement data is relatively small, to process quickly, the data is logged in memory. After stopping logging, the data can be saved into the internal flash or external U disk.

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■ Adapter / Battery



Wall power using the supplied adaptor



Battery powered

GPS800X/GPS1000X supports adapter power supply and battery power supply. After connecting the adapter, the battery enters into charging mode. The adapter provides a maximum 4 A output current.

GPS800X/GPS1000X uses a UL2054 certified lithium battery package. The battery capacity of 6900 mAh can guarantee long-term operation without an external power supply for up-to 5.5 hours (GPS800X) and 4 hours (GPS1000X). The battery supports an external charger to further meet the requirements of portability.

■ Connectivity



Right side of the GPS-800X series



Left side of the GPS-800X series

GPS800X/GPS1000X supports USB Host, USB Device (Micro USB -TMC).

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Specifications

Oscilloscope		
Acquisition System		
Series	GPS-800X	GPS-1000X
Sampling Rate (Max.)	1 GSa/s (single channel), 500 MSa/s (two channels)	
Memory Depth (Max.)	Max 12 Mpts/Ch (single channel), 6 Mpts/Ch (two channels)	
Peak Detect	2 ns	
Average	Averages:4,16, 32,64,128,256,512,1024	
ERES	Enhance bits:0.5, 1.5, 2, 2.5, 3	
Waveform interpolation	Sin(x)/x, Linear	

Input		
Series	GPS-800X	GPS-1000X
Channels	2 channels	
Coupling	DC, AC, GND	
Impedance	DC: (1 MΩ±2%) (14 pF ±2 pF)	
Max. Input voltage	CAT II 300 Vrms Between BNC Signal and Protecting Earth CAT II 30 Vrms Between BNC GND and Protecting Earth CAT II 300 Vrms Between BNC Signal and BNC GND	CAT III 600 Vrms, CAT II 1000 Vrms Between BNC Signal and Protecting Earth CAT III 600 Vrms, CAT II 1000 Vrms Between BNC GND and Protecting Earth CAT III 300 Vrms Between BNC Signal and BNC GND
CH to CH Isolation	DC-Max BW: >40 dB	
Probe attenuation	0.1X,0.2X,0.5X,1X,2X,5X,10X.....1000X,2000X,5000X,10000X, Custom	

Vertical System		
Series	GPS-800X	GPS-1000X
Bandwidth (-3 dB)	≥ 200 MHz (GPS-820X) ≥ 100 MHz (GPS-810X)	≥ 200 MHz (GPS-1202X) ≥ 100 MHz (GPS-1102X)
Vertical Resolution	8-bit	
Vertical Scale (Probe 1X)	2 mV/div-100 V/div (1-2-5 sequence)	
Offset Range (Probe 1X)	2 mV- 296 mV: ± 5 V 302 mV- 7.5 V: ± 80 V 7.6 V- 100 V: ± 400 V	
Bandwidth limit	20 MHz ± 40%	
Bandwidth Flatness	DC- 10% (BW): ± 1 dB 10%- 50% (BW): ± 2 dB 50%- 100% (BW): + 2 dB/-3 dB	
Low-frequency response (AC coupling -3 dB)	≤ 2 Hz (at input BNC)	
Noise / SNR	2 mV/div: > 24 dB 5 mV/div: >25 dB ≥ 10 mV/div: > 35 dB P-P Noise ≤ 15 SDEV Spec	
SFDR including harmonics	≥ 30 dB	≥ 28 dB
CMRR		> 100 dB DC > 50 dB to AC 1 MHz
DC Gain Accuracy	≤ ± 3%: ≥ 10 mV/div ≤ ± 4%: < 10 mV/div	
Offset Accuracy	± [1.5% * Offset+1.5%*8*div+5 mV]	
Rise time	Typical 1.7 ns (GPS-820X) Typical 3.5 ns (GPS-810X)	Typical 2.0 ns (GPS-1202X) Typical 3.5 ns (GPS-1102X)
Overshoot (500 ps Pulse)	Typical 12%	Typical 18%

Horizontal System	
Timebase Scale	1.0 ns/div-100 s/div
Channel Skew	< 300 ps
Waveform Capture Rate	Up to 100,000 wfm/s (normal mode), 400,000 wfm/s (sequence mode)
Intensity grading	256 Levels
Display Format	Y -T, X -Y, Roll
Timebase Accuracy	±25 ppm
Roll Mode	50 ms/div-100 s/div (1-2-5 sequence)

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Trigger System	
Mode	Auto, Normal, Single
Level	Internal: ± 4.5 div from the centre of the screen
Hold off range	80 ns- 1.5 s
Coupling	AC DC LFRJ HFRJ Noise RJ
Coupling Frequency Response	DC: Passes all components of the signal AC: Blocks DC components and attenuates signals below 8 Hz LFRJ: Blocks the DC component and attenuates the low-frequency components below 2 MHz HFRJ: Attenuates the high-frequency components above 1.2 MHz
Time base Accuracy	± 25 ppm
Roll Mode	50 ms/div-100 s/div (1-2-5 sequence)
Accuracy (typical)	Internal: ± 0.2 div
Sensitivity	DC - Max BW: 0.8 div
Jitter	< 100 ps
Displacement	Pre-Trigger: 0 - 100% Memory Delay Trigger: 0 to 10,000 div
Edge Trigger	
Slope	Rising, Falling, Rising & Falling
Source	All channels
Slope Trigger	
Slope	Rising, Falling
Limit Range	<, >, <>, ><
Source	All channels
Time Range	2 ns - 4.2 s
Resolution	1 ns
Pulse Width Trigger	
Polarity	+wid, -wid
Limit Range	<, >, <>, ><
Source	All channels
Pulse Range	2 ns - 4.2 s
Resolution	1 ns
Video Trigger	
Signal Standard	NTSC, PAL, 720p/50, 720p/60, 1080p/50, 1080p/60, 1080i/50, 1080i/60, Custom
Source	All channels
Sync	Any, Select
Trigger condition	Line, Field
Window Trigger	
Window Type	Absolute, Relative
Source	All channels
Interval Trigger	
Slope	Rising, Falling
Limit Range	<, >, <>, ><
Source	All channels
Time Range	2 ns - 4.2 s
Resolution	1 ns
Dropout Trigger	
Timeout Type	Edge, State
Source	All channels
Slope	Rising, Falling
Time Range	2 ns - 4.2 s
Resolution	1 ns
Runt Trigger	
Polarity	+wid, -wid
Limit Range	<, >, <>, ><
Source	All channels
Time Range	2 ns - 4.2 s
Resolution	1 ns
Pattern Trigger	
Pattern Setting	Invalid, Low, High
Logic	AND, OR, NAND, NOR
Source	All channels
Limit Range	<, >, <>, ><
Time Range	2 ns - 4.2 s
Resolution	1 ns

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Serial Trigger	
I2C Trigger	
Condition	Start, Stop, Restart, No Ack, EEPROM, 7-bits Address & Data, 10-bits Address & Data, Data Length
Source (SDA/SCL)	All channels
Data format	Hex
Limit Range	EEPROM: =, >, <
Data Length	EEPROM: 1 byte
	Addr & Data: 1-2 byte
	Data Length: 1-12 byte
R/W bit	Addr & Data: Read, Write, do not care
SPI Trigger	
Condition	Data
Source (CS/CL/Data)	All channels
Data format	Binary
Data Length	4-96-bit
Bit Value	0, 1, X
Bit Order	LSB, MSB
UART Trigger	
Condition	Start, Stop, Data, Parity Error
Source (RX/TX)	All channels
Data format	Hex
Limit Range	=, >, <
Data Length	1 byte
Data Width	5, 6, 7, 8-bits
Parity Check	None, Odd, Even, Space, Mark
Stop Bit	1, 1.5, 2-bits
Idle Level	High, Low
Baud Rate (Selectable)	600/1200/2400/4800/9600/19200/38400/57600/115200/Custom bit/s
Baud Rate (Custom)	300-5000000 bit/s
CAN Trigger	
Condition	Start, Remote, ID, ID + Data, Error
Source	All channels
ID	STD (11-bits), EXT (29-bit)
Data Format	Hex
Data Length	1 -2 byte
Baud Rate	5k/10k/20k/50k/100k/125k/250k/500k/800k/1M/Custom bit/s
LIN Trigger	
Condition	Break, Frame ID, ID+Data, Error
Source	All channels
ID	1 byte
Data Format	Hex
Data Length	1-2 byte
Baud Rate (Selectable)	600/1200/2400/4800/9600/19200/Custom bit/s
Baud Rate (Custom)	300 bit/s -20 Mbit/s

Search	
Mode	Auto, Normal, Single
Level	Internal: ± 4.5 div from the centre of the screen

Serial Decoder	
Decoders	2
I²C	
Signal	SCL, SDA
Address	7, 10 bits
Threshold	-4.5 - 4.5 div
List	1- 7 lines
SPI	
Signal	SCL, MISO, MOSI, CS (2 channel scopes can only use 2 signal) identifiers
Edge Select	Rising, Falling
Idle Level	Low, High
Bit Order	MSB, LSB
Threshold	-4.5 - 4.5 div
List	1- 7 lines

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UART	
Signal	RX, TX
Data Width	5,6,7,8 bits
Parity Check	None, Odd, Even, Space, Mark
Stop Bit	1, 1.5, 2 bits
Idle Level	Low, High
Threshold	-4.5 - 4.5 div
List	1- 7 lines
CAN	
Signal	CAN_H, CAN_L
Source	CAN_H, CAN_L, CAN_H-CAN_L
Threshold	-4.5 - 4.5 div
List	1- 7 lines
LIN	
LIN Specification Package Revision	Ver1.3, Ver2.0
Threshold	-4.5 - 4.5 div
List	1- 7 lines

Measurement			
Source	All channels, All channels in Zoom, Math, All References, History		
Number of Measurements	Display 4 measurements at the same time. 5 measurements are displayed in the statistics table.		
Measurement Range	Screen or Gate region		
Measurement Parameters	38 Types		
Vertical	Max	Highest value in input waveform	
	Min	The lowest value of the input waveform	
	Pk-Pk	Difference between maximum and minimum data values	
	Ampl	Difference between top and base in a bimodal signal, or between max and min in a unimodal signal	
	Top	Value of most probable higher state in a bimodal waveform	
	Base	Value of most probable lower state in a bimodal waveform	
	Mean	Average of all data values	
	Cmean	Average of data values in the first cycle	
	Stdev	Standard deviation of all data values	
	Cstd	Standard deviation of all data values in the first cycle	
	VRMS	Root mean square of all data values	
	Crms	Root mean square of all data values in the first cycle	
	FOV	Overshoot after a falling edge;(base -min)/Amplitude	
	FPRE	Overshoot before a falling edge;(max -top)/Amplitude	
	ROV	Overshoot after a rising edge;(max -top)/Amplitude	
RPRE	Overshoot before a rising edge;(base -min)/Amplitude		
Level@X	the voltage value of the trigger point		
Horizontal	Period	Time between the middle threshold points of two consecutive, like-polarity edges	
	Freq	Reciprocal of period	
	+Wid	Width measured at 50% level and positive slope	
	-Wid	Width measured at 50% level and negative slope	
	Rise Time	Duration of rising edge from 10 -90%	
	Fall Time	Duration of falling edge from 90 -10%	
	Bwid	Time from the first rising edge to the last falling edge, or the first falling edge to the last rising edge at the 50% crossing	
	+Duty	Time difference between the 50% threshold of a rising edge to the 50% threshold of the next falling edge of the pulse	
	-Duty	Time difference between the 50% threshold of a falling edge to the 50% threshold of the next rising edge of the pulse	
	Delay	Time from the trigger to the first transition at the 50% crossing	
	Time@Level	Time from the trigger to each rising edge at the 50% crossing. When Statistics is Off, it shows the time from the trigger to the last rising edge at the 50% crossing. When Statistics is On, it shows the Mean, Min, Max, Standard Deviation of time from the trigger to each rising edge at the 50% crossing in multiple frames (number = Count). The Current shows the time of the current frame from the trigger to the last rising edge at the 50% crossing.	

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Delay	Phase	Phase difference between two edges
	FRFR	Time from the first rising edge of channel A to the following first rising edge of channel B
	FRFF	Time from the first rising edge of channel A to the following first falling edge of channel B
	FFFR	Time from the first falling edge of channel A to the following first rising edge of channel B
	FFFF	Time from the first falling edge of channel A to the following first falling edge of channel B
	FRLR	Time from the first rising edge of channel A to the last rising edge of channel B
	FRLF	Time from the first rising edge of channel A to the last falling edge of channel B
	FFLR	Time from the first falling edge of channel A to the last rising edge of channel B
	FFLF	Time from the first falling edge of channel A to the last falling edge of channel B
	Skew	Time of source A edge minus time of nearest source B edge
Cursors	Manual: Time X1, X2, (X1-X2), (1/ T) Voltage Y1, Y2, (Y1 -Y2) Track: Time X1, X2, (X1 -X2)	
Statistics	Current, Mean, Min, Max, Stdev, Count	
Counter	Hardware 6-digit counter (channels are selectable)	

Math	
Operation	+, -, *, /, FFT, d/dt, ∫dt,
FFT window	Rectangular, Blackman, Hanning, Hamming, Flattop
FFT display	Full Screen, Split, Exclusive

Recorder	
Sample Logger	
Source	CH1, CH2, CH1 & CH2
Sample Rate	1 Sa/s- 25 kSa/s (1-2-5 sequence)
Memory Depth	Internal memory 50 MB, Support External memory to 2 GB
Log Time with Max sample rate	Approx. 23 mins in single-channel mode, 11 mins in two channels mode with internal memory Approx. 22 hours in single-channel mode, 11 hours in two-channel mode with external memory
Data Format	Binary
Measurement Logger	
Source	Measurement, Meter, Measurement & Meter
Log Interval	0.1 s- 10min
Number of simultaneous logging channels	4
Memory Depth	Approx. 3.6 MSa in single-channel mode, 900 ksa in four-channel mode
Log Time with Minimum Interval	Approx. 100 hours
Data Format	Binary
Export Data Format	Binary, csv, MATLAB

Multimeter	
Maximum Resolution	6000 Counts
Maximum Input Voltage (GPS800X series)	CAT III 300 Vrms CAT II 600 Vrms
Maximum Input Voltage (GPS1000X series)	CAT III 600 Vrms CAT II 1000 Vrms
Maximum Input Voltage (For adapter SCD10A, SCD600MA)	CAT III 60 Vrms

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Multimeter (cont.)			
Function	Range	Resolution	Accuracy
Dc voltage	60.00 mV	10 uV	(± 1% ± 15 digit)
	600.0 mV	100 uV	(± 1% ± 5 digit)
	6.000 V	1 mV	
	60.00 V	10 mV	
	600.0 V	100 mV	
	1000 V	1 V	(± 1.5% ± 5 digit)
AC Voltage (45 Hz~400 Hz)	60.00 mV	10 uV	(± 1% ± 15 digit)
	600.0 mV	100 uV	(± 1% ± 5 digit)
	6.000 V	1 mV	
	60.00 V	10 mV	
	600.0 V	100 mV	
	750 V	1 V	(± 1.5% ± 5 digit)
DC Current	60.00 mA	10 uA	(± 4% ± 10 digit)
	600.0 mA	100 uA	
	6.000 A	1 mA	(± 5% ± 5 digit)
	10.00 A	10 mA	
AC Current (45Hz~400Hz)	60.00 mA	10 uA	(± 4% ± 10 digit)
	600.0mA	100 uA	(± 5% ± 5 digit)
	6.000 A	1 mA	
	10.00 A	10 mA	
Resistance	600.0	0.1	(± 1% ± 5 digit)
	6.000 k	1	
	60.00 k	10	
	600.0 k	100	
	6.000 M	1 k	(± 4% ± 5 digit)
	60.00 M	10 k	
Capacitance	40.00 nF	0.01 nF	(± 5% ± 50 digit)
	400.0 nF	0.1 nF	(± 5% ± 5 digit)
	4.000 uF	1 nF	
	40.00 uF	10 nF	
	400.0 uF	100 nF	
Diode	0~2 V		
Continuity	Continuous beep when resistance < 50 Ω		

I/O	
USB Host	1 port, isolated type A plug, Full/Low speed, memory sticks only
USB device	1 port, Micro USB-B, remote control only
Probe compensation output	1 kHz, 0~5 V Square wave output

Display (screen)	
Display Type	5.6-inch TFT LCD
Display Resolution	640 480 pixels
Display Colour	24-bit
Contrast (Typical)	500:1
Backlight	200 nits

Environmental	
Temperature	Operating: 0°C - +40°C Non-operating: -20°C - + 60°C
Humidity	Operating: 85% RH, 40 °C, 24 hours Non-operating: 85% RH, 65 °C, 24 hours
Height	Operating: ≤ 2000m non-operating: ≤ 5000m

HANDHELD OSCILLOSCOPE

800X/1000X Series

Standards			
Electromagnetic compatibility	Meets EMC directive (2014/30/EU), meets or exceeds IEC 61326-1:2012/EN61326-1:2013 (Basic)		
	Conducted disturbance	CISPR 11/EN 55011	CLASS A group 1, 150 kHz-30 MHz
	Radiated disturbance	CISPR 11/EN 55011	CLASS A group 1, 30 MHz-1 GHz
	Electrostatic discharge (ESD)	IEC 61000-4-2/EN 61000-4-2	4.0 kV (Contact) ,8.0 kV (Air)
	Radio-frequency electromagnetic field Immunity	IEC 61000-4-3/EN 61000-4-3	10 V/m (80 MHz to 1 GHz) ; 3 V/m (1.4 GHz to 2 GHz) ; 1 V/m (2.0 GHz to 2.7 GHz)
	Electrical fast transients (EFT)	IEC 61000-4-4/EN 61000-4-4	2 kV (Input AC Power Ports)
	Surges	IEC 61000-4-5/EN 61000-4-5	1 kV (Line to line)
	Radio-frequency continuous conducted Immunity	IEC 61000-4-6/EN 61000-4-6	3 V, 0.15-80 MHz
	Voltage dips and interruptions	IEC 61000-4-11/EN 61000-4-11	Voltage Dips: 0% UT during 1 cycle 40% UT during 10/12 cycles 70% UT during 25/30 cycles Voltage interruptions:0% UT during 250/300 cycles
Safety	UL 61010-1:2012/R:2018-11; CAN/CSA-C22.2 No. 61010-1:2012/A1:2018-11. UL 61010-2-030:2018; CAN/CSA-C22.2 No. 61010-2-030:2018. UL 61010-2-033:2020		

Power Supply / Battery		
Series	GPS-800X	GPS-1000X
Power Adapter		
Input	100 ~ 240 Vrms 50/60 Hz, 1.2 A	100 ~ 240 Vrms 50/60 Hz, 1.1 A
Output	9 V, 4 A	12 V, 4 A
Battery		
Operating time	5.5 hours	4 hours
Charging time	4 hours while the instrument is switched off	4 hours while the instrument is switched off
Capacity	6900 mAh	
Charging Protection	≥ 55°C at Battery	
Power Consumption		
Battery Mode	9 W	11 W

Mechanical	
IP Rating	IP51
Dimensions	Length: 276 mm
	Width: 168 mm
	Height (Depth): 68 mm
Weight with Battery	Without package 1.75 Kg, With package 3.5 Kg

Ordering Information				
Model	GPS-810X	GPS-820X	GPS-1102X (isolated input)	GPS-1202 (isolated input)
Bandwidth	100 MHz	200 MHz	100MHz	200MHz
Order Code	180810	180820	180860	180890