www.gpslimited.com

GPS-806 & GPS-810 DIGITAL HANDHELD OSCILLOSCOPE

GPS-806/ 810 Handheld Digital Oscilloscope

DataSheet

Application Domain

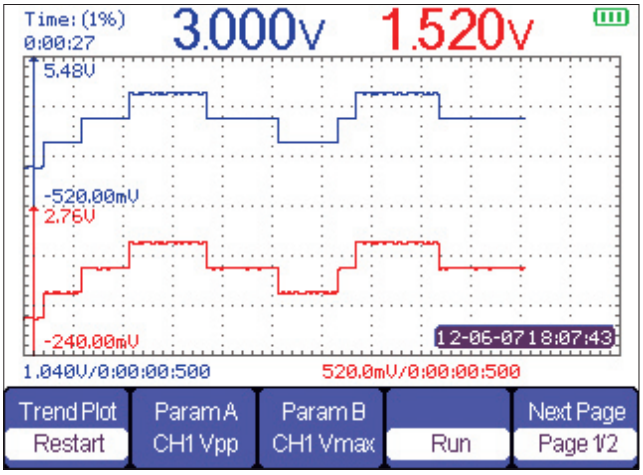
- Outdoor measure
- Circuit measure
- Wind power, PV power and other new energy equipment test
- Automotive electron, electric automobile test
- Electric power system strong electricity test
  Industry scenes electric debug test
- Education and science research
- Product quality control

Features & Benefits

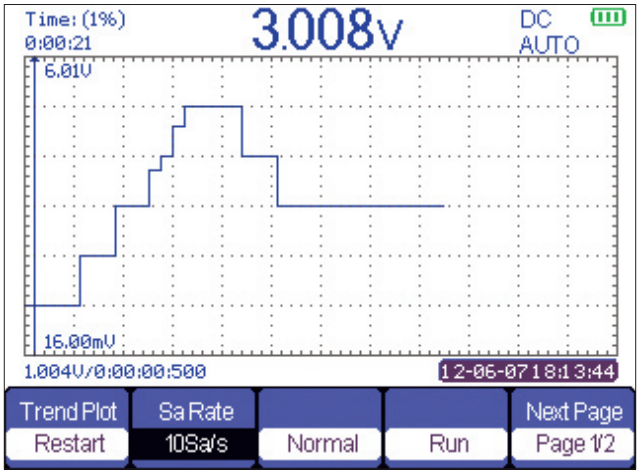
- Series have 2 channels with three functions such as Oscilloscope, Multimeter and Recorder (includes TrendPlot and waveform Recorder).
- Oscilloscope channels input voltage grade: voltage inputs directly through a BNC probe is as high as CAT Ⅱ 300V and CAT Ⅲ 150v.
  Standard probe: 10X CAT Ⅱ 400
  Optional probe: 10X CAT Ⅱ 1000V and 10X CAT Ⅲ 600V
  Oscilloscope and multimeter safety grade is up to CAT Ⅱ 600V and CAT Ⅲ 300V
- 5.7 inch TFT color LCD display
- Max. 100MHz Bandwidth, 1GSa/s real–time sampling rate single channel, up to 50GSa/s equivalent sampling rate, 2Mpts memory depth
- Multimeter with 6000 dots display resolution and provides measurements of DCV, ACV, DCI, ACI, Resistance, Diode, Capacitance and Continuity
- Support Scope TrendPlot, Meter TrendPlot and Scope Recorder
- Trigger modes :Automatic , Normal and Single, Trigger types: Edge, Pulse, Video，Slope and Alternative
- 32 types of automatic waveform measurements, 3 types of cursor measure modes
- 4 kinds of digital filter mode: Low pass filter, High pass filter, Band pass filter, Band limit filter
- Math functions: +, – , ×, ÷, FFT operations
- Multiple Language User Interface
- Standard configuration interface: USB Device, USB Host
- Support USB storage and update; support PC remote control and PictBridge print
- Because of its rechargeable build–in LI battery and small volume, it is convenient to carry and work outside

TrendPlot

- Scope TrendPlot records scope measurement data, 800K points capacity, more than 24 hours recording time
- Meter TrendPlot records multimeter measurement data, 1.6M points recording depth, at 0.5GSa/s, recording time as long as 8120 hours
- Recording results export available, convenient for father analysis
- Two kinds of display mode, 'ALL' and 'NORMAL'; support zoom and cursor
- Support recording real time



Scope TrendPlot



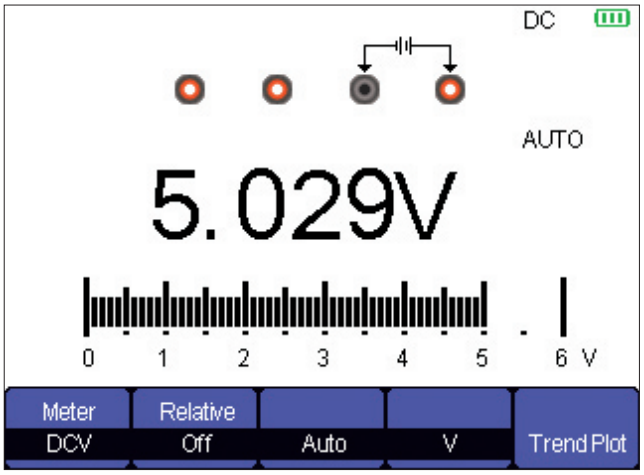
Meter TrendPlot

Scope Recorder

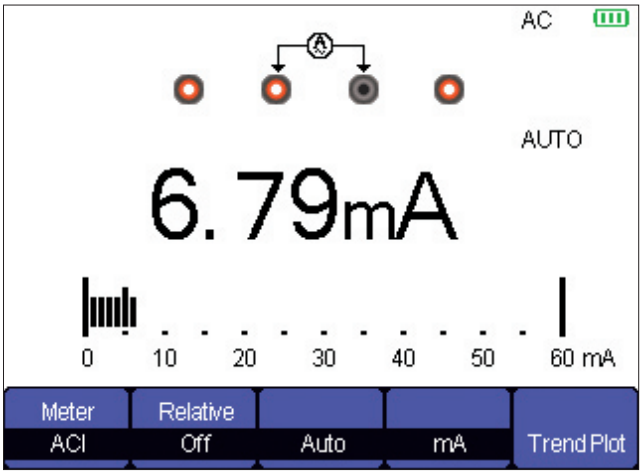
- Recording scope waveform continually in scan mode
- Support recording, replay and zoom function
- 7M points memory depth,18 hours recording time
- 4GB in USB storage mode, 3000hours recording time

Multimeter

- 6000 counts high performance Multimeter
- Providing measurements of DCV, ACV, DCI, ACI, Resistance, Diode, Capacitance, Continuity



DCV measurement



ACI measurement

Specification

Scope

Type	GPS-806	GPS-810
Bandwidth	60 M	100 M
Rise Time	≤ 5.8 ns	≤ 3.5 ns
Input Impedance	1 MΩ ± 2 % , 18 pf± 3 pf	
Real Time Sampling Rate	Single Channel: 1GSa/s,Double Channels: 500MSa/s	
Equivalent Sampling Rate	50 GS/s	
Memory Depth	2Mpts	
Time Base Range	5 nS/DIV ~ 50 S/DIV	2.5 nS/DIV ~ 50 S/DIV
Scan Range	100 mS/DIV ~ 50 S/DIV	
Vertical Sensitivity	2 mV/DIV ~ 100 V/DIV (1–2–5order)	
Vertical Resolution	8 bits	
Trigger Types	Edge, Pulse, Video, Slope, Alternative	
Frequency Counter	6bits	
Connection	USB Device, USB Host	
Math	+,–,*,/,FFT	
Oscilloscope Trend Plot	800K points	

Meter

Maximum Resolution	6000	
DC Voltage	60 mV	± (1% + 15 digit)
	600 mV ~ 1000 V	± (1% + 5 digit)
AC Voltage	60 mV	± (1% + 15 digit)
	600 mV ~ 750 V	± (1% + 5 digit)
DC Current	60.00 mA ~ 600 mA	± (1% + 5 digit)
	6 A ~ 10 A	± (1.5% + 5 digit)
AC Current	60.00 mV ~ 600 mA	± (1% + 5 digit)
	6 A ~ 10 A	± (1.5% + 5 digit)
Resistance	600Ω ~ 60 MΩ	± (1% + 5 digit)
Capacitance	40 nF	± (3% + 10 digit)
	400 nF ~ 400 μF	± (4% + 5 digit)
Diode	0 ~ 2 V	
Continuity	<50 Ω Buzzer sounds	
Multimeter Trend Plot	1.6M points	

Input Channel Voltage

BNC Directly	CAT Ⅱ 300V
With 10:1 Probe	CAT Ⅱ 1000V, CAT Ⅲ 600V
Max. Input Voltage of MultimeterDC	DC 1000V, AC 750V
Max. Float voltage between Multimeter Reference and Earth Ground	CAT Ⅱ 600V, CAT Ⅲ 300V

General Specification

Display	5.7 inch TFT color LCD, 320x234 Display
Power SupplyBuilt–in	rechargeable lithium battery: 7.4V 5000mAh
	With DC adapter, 100–240V 50/60Hz input, 9V 4A output
Weight	1.5Kg
Size	63.2 x 259.5 x 53.3 mm
Accessories	Two Passive Probes, Line Power Adapter, Multimeter Test Leads

Technical Specifications

Oscilloscope

Acquisition System

Sampling Types	Real time, Equivalent
Sampling Mode	Sampling, Peak detection, Average
Average Times	4, 16, 32, 64, 128, 256

Input System

Input Coupling	AC, DC, GND	
Input Impedance	1MΩ ±2%, 18pf±3pf	
Probe Attenuation Factor	1X, 10X	
Probe Attenuation Factors Set(V)	1X, 5X , 10X, 50X , 100X, 500X , 1000X	
Probe Attenuation Factors Set(A)	1X, 5X , 10X, 50X , 100X, 500X , 1000X	
Max. Voltage From BNC (Reference BNC Hull)	Overvoltage Category	Maximum Voltage
	CAT Ⅱ	300 Vrms
	CAT Ⅲ	150 Vrms
Probe	Overvoltage Category	Maximum Voltage
Standard Probe 10X	CAT Ⅱ	400 Vrms
Optional Probe 10X	CAT Ⅱ	1000 Vrms
Max. Floating Voltage From Multimeter Reference to Earth Ground	Overvoltage Category	Maximum Voltage
	CAT Ⅱ	600 Vrms
	CAT Ⅲ	300 Vrms
Single Channel Common Mode Rejection Ratio	>100:1 50MHz	
Channel–to–Channel Isolation	>35 dB	

Horizontal System

Real time Sample Rate	Single Channel :50Sa/s ~ 1GSa/s, Double Channels: 50Sa/s ~ 500MSa/s			
Equivalent Sample Rate	50 GSa/s			
Interaction Mode	Sinx, x			
Memory Depth	Channel Mode	Sample Rate	Normal	Long Deep
	Single Channel	1Gsa/s	40kpt	snonsupport
	Single Channel	≤ 500MSa/s	20Kpts	2 Mpts
	Double Channels	≤ 500MSa/s	20Kpts	1Mpts
Display Mode	MAIN, WINDOW ZOOM, SCAN, X–Y			
Time Base Accuracy	±50ppm (measured over 1ms interval)			
Horizontal Scan Range	2.5ns/div-50s/div(GPS-810)	5ns/div-50s/div(GPS-806)		
	Scan mode: 100ms/div ~ 50s/div (1–2.5–5 order)			

Vertical System

Vertical Sensitivity	2mV/div – 100V/div(1–2–5 order)		
Channel Voltage Offset Range	2mV–200mV: ±1.6V	206mV–10V: ±40V	20.6V–100V: ±400V
Vertical Resolution	8 bit		
Channels	2		
Analog Bandwidth	100MHz / 60MHz		
Single Bandwidth	100MHz / 60MHz		
Lower Frequency(AC–3dB)	≤10Hz (through BNC)		
DC Gain Accuracy	5mv/div–100v/div:≤ ±3%	2mv/div:≤ ±4%	

DC Measurement Accuracy ≤200mv/div	±[3.0%X(| reading |+| offset |)+1% X |offset|+0.2div+5mV]
DC Measurement Accuracy >200mv/div	±[3.0%X(| reading |+| offset |)+1% X |offset|+0.2div+100mV]
Rise Time	<3.5ns <5.8ns
Vertical Input Coupling	AC, DC, GND
Math Operation	+, –, * ,/, FFT
FFT	Window Mode: Hanning, Hamming, Blackman, Rectangular
	Sampling: 1024 points
Bandwidth Limiter	20MHz (–3dB)

Trigger System

Trigger Types	Edge, Pulse Width, Video, Slope, Alternative
Trigger Source	CH1、CH2
Trigger Modes	Auto, Normal, Single
Trigger Coupling	AC, DC, LF Reject, HF Reject
Trigger Level Range	CH1, CH2: ±6 divisions from center of screen
Trigger Displacement	Pre–trigger: (Memory depth/(2*sampling)), Delay Trigger: 260div
Holdoff Range	100ns - 1.5s
Edge Trigger	Edge Type: Rising, Falling, Rising and Falling
Pulse Width Trigger	Trigger Modes: (>, <, =) Positive Pulse Width, (>, <, =)Negative Pulse Width
	Pulse Width Range: 20ns - 10s
Video Trigger	Support Signal Formats: PAL/SECAM, NTSC
	Trigger Condition : Odd Field, Even Field, All Lines, Line Num
Slope Trigger	(>, <, =) Positive slope, (>, <, =) Negative slope
	Time: 20ns–10s
Alternative Trigger	CH 1 Trigger Type: Edge, Pulse, Video, Slope
	CH 2 Trigger Type: Edge, Pulse, Video, Slope

X-Y Mode

X–Pole Input /Y–Pole Input	Channel 1 (CH1) / Channel 2 (CH2)
Phase Error	±3 degrees
Sample Frequency	supports 25KSa/s ~ 500MSa/s (1–2.5–5 order)

Measure System

Auto Measure (32 Types)	Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROVShoot, FOVShoot, RPREShoot, FPREShoot, Rise time, Fall time, Freq, Period, + Wid, – Wid, + Dut, – Dut, Bwid, Phase, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF
Cursor Measure	Manual, Track and Auto

Control Panel Function

Auto Set	Auto adjusting the Vertical system, Horizontal system and Trigger Position
Save/RecallSupport	2 groups of referenced waveforms, 20 groups of setups,10 groups of captured waveforms internal storage/recall function and USB flash driver storage function.

Hard Ware Frequency Counter

Reading Resolution	6 bits
Range	DC Couple, 10Hz to MAX Bandwidth
Signal Types	Satisfying with all Trigger signals(Except Pulse width trigger and Video Trigger)

Multimeter

Maximum Resolution	6000 counts
Measure Function	DCV, ACV, DCI, ACI, Resistance, Diode, Capacitance, Continuity
Max Input Voltage	AC(Vrms): 750V (AC frequency :20Hz~1kHz)DC :1000V
Max Input Current	AC (Vrms) : 10A (AC frequency :20Hz~1kHz)DC : 10A
Impedance	10MΩ

Recorder

Scope TrendPlot

Display	All, Normal
Record Size	800K points, more than 24 hours
Record Channel	2 channels
Cursor, Zoom	Support
Manual Mode	Support

Meter TrendPlot

Display	All, Normal
Record Size	1.6M points
Record Channel	1 channel
Cursor, Zoom	Support
Manual Mode	Support

Scope Record

Function	Record scope waveforms, Replay recorded waveforms
Acquisition Mode	Scan Mode
Time	Record mode: recording time
	Replay mode: replay time
Sets	Viewer: full screen, split screen
	Record mode: continuous, single
	Replay mode: point, frame
	Save mode: Internal memory
Default	Viewer: split screen
	Record mode: continuous
	Replay mode: point
	Save mode: Internal memory
Record Size	Total: 7M points
	Single channel: 7M points single channel
	Double channels: 3.5M points per channel
	At different time base, get max record time , e.g. time base 100ms, each point counts 0.04ms, Total Time = 7000000*0.04ms = 4.6min
Record Manual	Start, Pause, Stop, Continue
Replay Manual	Start, Pause, Stop, Continue, Previous, Next

Generic Specification

Display System	
Display Mode	5.7 inch TFT color LCD
Resolution	320 horizontal by 234 vertical pixels
Display Color	64K color
Display Contrast (Typical state)	150:1
Backlight Intensity (Typical state)	300nit
Waveform Display Range	8 x 12 div
Waveform Display Mode	Point, Vector
Persist	Off, 1 sec, 2 sec, 5 sec, Infinite
Menu Display	2 sec, 5 sec, 10 sec, 20 sec, Infinite
Screen–Saver	Off, 1min, 2min, 5min, 10min, 15min, 30min, 1hour, 2hour, 5hour
Skin	Classical, Modern, Tradition, Succinct
Waveform Interpolation	Sin(x), x
Color model	Normal , Invert
Language	Simplified Chinese, Traditional Chinese, English, Arabic, French, German, Russian, Spanish, Portuguese, Japanese, Korean, Italian
Power	
Line Power Adapter	Input voltage100V–240V 50/60Hz
	Output voltage9V 4A
Battery	7.4VDC, 5000mAh, persisting 5 hours
Charge time	About 4 hours
Environments	
TemperatureOperating	0 ~ 40℃
Storage	–20℃ ~ 70℃
Cooling	Natural Cool
Humidity	85%RH, 40℃
Height	3000m
Mechanical	
Size	length259.5mm
	width163.2mm
	height53.3mm
Weight	1.5Kg

Type Selections

Product Type	Bandwidth	Real Time Sampling Rate
GPS-810	100MHz	1GSa/s
GPS-806	60MHz	1GSa/s

Standard accessories:

- A 9V, 4A, power adapter
- Two 1:1, 1:10 oscilloscope probes
- Two test leads for multimeter
- Probe calibration accessory
- A USB data transmitting cable
- User Manual
- Service Warranting Card
- A CD of Easyscope used for PC control

Optional probe

100MHz high–voltage safety probe CAT II 1000V, CAT III 600V

GENERAL POLYTRONIC SYSTEMS LIMITED.
14 Regents St. London NW10 5LG, UK Tel: 0044 20 8964 3600 Email: sales@gpslimited.com www.gpslimited.com