

## DataSheet

### SHS1000 Series Handheld Digital Oscilloscope

SH1102/SHS1062



### Features & Benefits

- ◆ SHS1000 Series have 2 channels; provide functions as Oscilloscope, Multimeter and Recorder (TrendPlot and waveform Recorder).
- ◆ SHS1000 Series with patent IsolatedChannel technology provide isolation from ground and isolation between channels
- ◆ CATII1000V and CATIII600V between two channels references, between channels reference and earth ground  
CATII600V and CATIII300V between channels reference and Multimeter input reference
- ◆ CATII300V and CATIII150V input direct  
CATII1000V and CATIII600V input with 10: 1 probe
- ◆ 5.7 inch TFT color LCD display
- ◆ 100MHz Bandwidth, 1GS/s real-time sampling per channel, up to 50GSa/s equivalent sampling rate, 2Mpts memory depth
- ◆ 6000 counts Multimeter, provides measurements of DCV, ACV, DCI, ACI, Resistance, Diode, Capacitance, Continuity
- ◆ Support Scope TrendPlot, Meter TrendPlot and Scope Recorder
- ◆ Automatic and manual trigger modes  
Trigger types: Edge, Pulse, Video, Slope and Alternative
- ◆ 32 automatic waveform measurements, 3 cursor measure modes
- ◆ Digital Filter functions:  
Low pass filter, High pass filter, Band pass filter, Band limit filter

- ◆ Math functions: +, -, ×, ÷, FFT operations
- ◆ Multiple Language User Interface
- ◆ Standard setup interface: USB Device, USB Host  
USB storage update, PC communication and PictBridge print are available
- ◆ Rechargeable battery and battery charger / line power adapter included

## Applications

- ◆ Power electronics test, such as Switch mode power supply, Inverter, Converter and Lighting electronics.
- ◆ Wind power, PV power and other new energy equipment test
- ◆ Automotive electronic, electric vehicles test
- ◆ Industrial Power systems strong power test
- ◆ Electrical industrial site commissioning and test
- ◆ Field test
- ◆ Applications from microelectronic circuits to power electronics, in fields floating measurements or locale site measurements needed
- ◆ Education

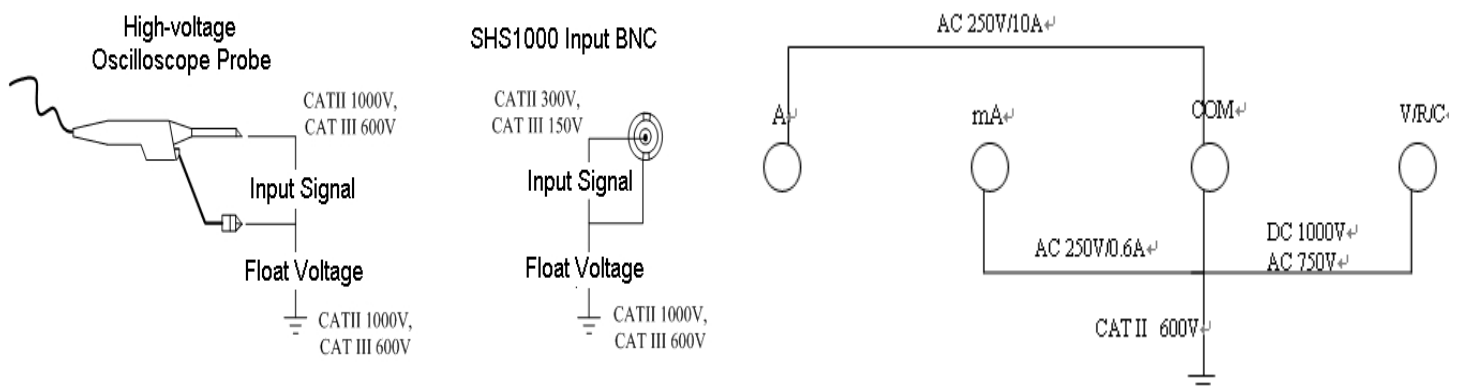
## Introduction

SHS1000 series are dual isolated channel handheld oscilloscopes with patent IsolatedChannel technology. SHS1000 series integrate functions as Oscilloscope, Multimeter and Recorder.

SHS1000 Series provides isolation from ground and isolation between channels allowing you to take floating measurements without worrying about damaging circuitry.

100 MHz Bandwidths, 1GS/s real-time sampling per channel, up to 50GSa/s equivalent sampling rate, 2Mpts memory depth. Support Scope TrendPlot, Meter TrendPlot and Scope Waveform Record, record length up to 7Mpts. 5.7 inch TFT color LCD display. Support USB storage and internal memory. Battery included, handheld available, convenient for outdoor measurement.

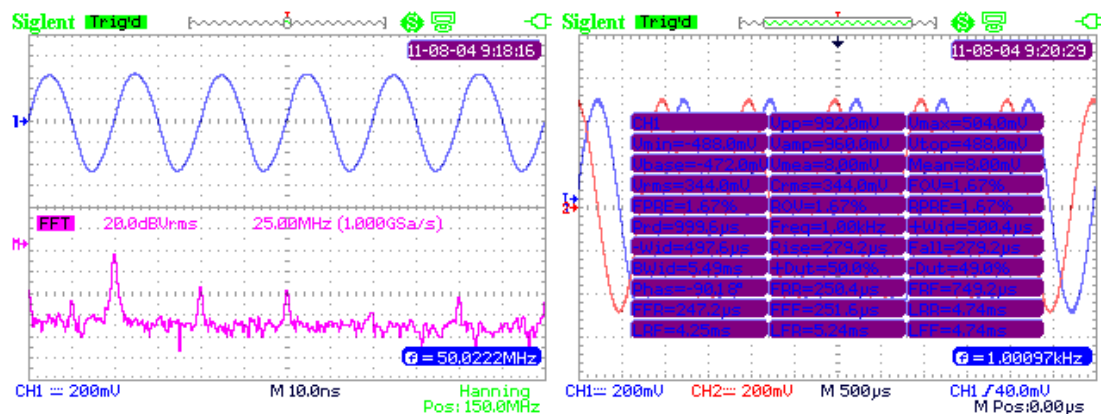
## Isolated input, make measurements in security



- ◆ Patent IsolatedChannel technology used in SHS1000 series oscilloscopes, dual channel, and 100MHz bandwidth.
- ◆ CATII300V and CATIII150V maximum BNC input voltage direct, CATII1000V and CATIII600V with standard 10:1 probe.
- ◆ CATII1000V and CATIII600V maximum voltage between two channels references.
- ◆ CATII600V and CATIII300V maximum voltage between Multimeter input reference and the ground.

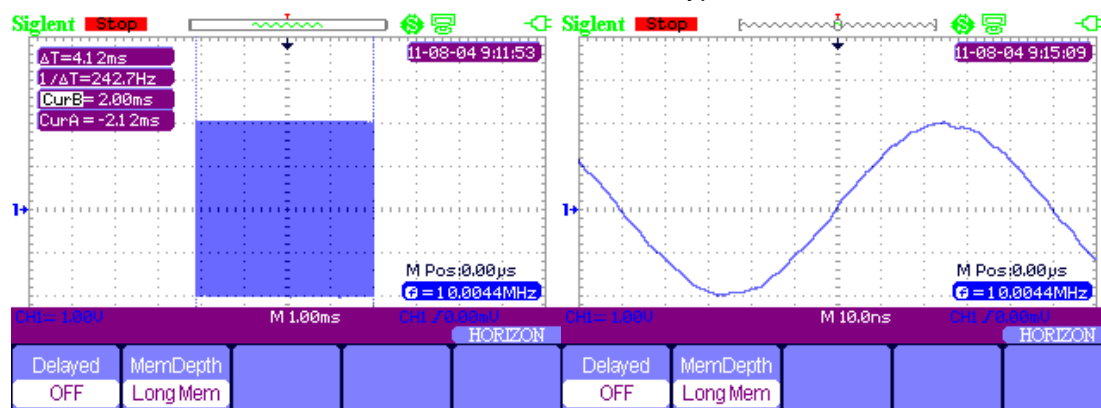
## High-performance oscilloscope

- ◆ The SHS1000 series channels are isolated from each other; real-time sampling rate is up to 1GSa/s per channel, equivalent sampling rate up to 50GSa/s
- ◆ 2Mpts memory depth
- ◆ Dynamic and broad input voltage range, 5mV/div~100V/div direct input
- ◆ Math functions: +, -, ×, ÷, and FFT
- ◆ Digital Filter functions:  
Low pass filter, High pass filter, Band pass filter, Band limit filter
- ◆ 32 types of automatic waveform measurements, 3 cursor measure modes
- ◆ Automatic and manual trigger modes  
Trigger types: Edge, Pulse, Video, Slope and Alternative
- ◆ Support EasyScope software
- ◆ Standard SPC1 command collections, support telecommuting
- ◆ Multiple Language User Interface, support Multilingual help system online



FFT

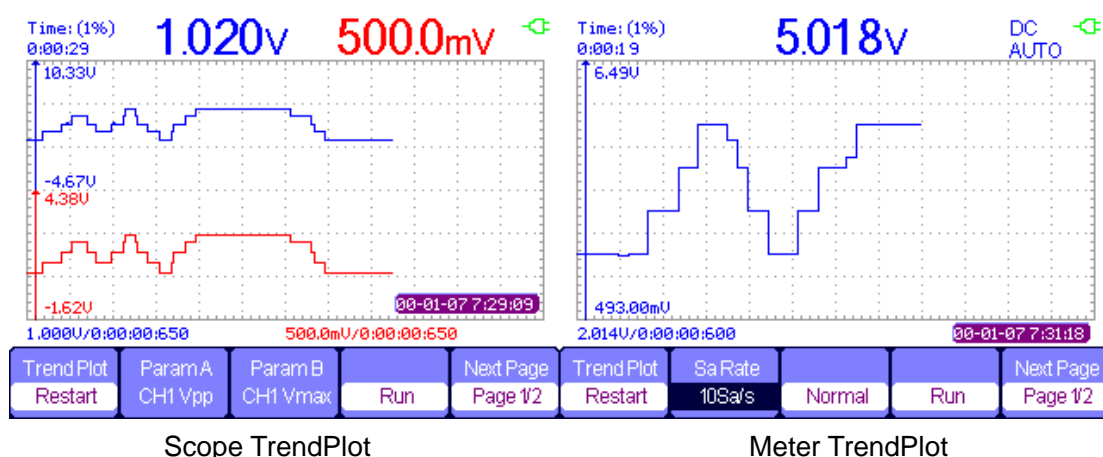
32 types of measurements



Long Memory

## TrendPlot

- ◆ Scope TrendPlot records scope measurement data in scan mode, 800K points capacity, more than 24 hours recording time
- ◆ Meter TrendPlot records multimeter measurement data, 1.2M points recording depth, at 0.5GSa/s, recording time 8120 hours
- ◆ Recording results export available, convenient for further analysis
- ◆ Two kinds of display mode, 'ALL' and 'NORMAL'; support zoom and cursor
- ◆ Support recording real time

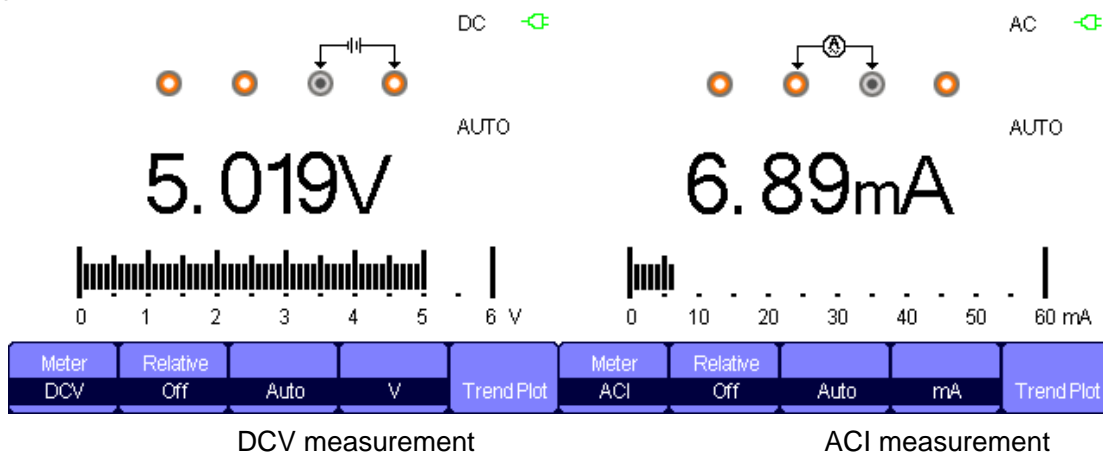


## Scope Recorder

- ◆ 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, 3000 hours recording time

## Multimeter

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



## Specification

Scope			
Type	SHS1062		SHS1102
Bandwidth	60MHz		100MHz
Rise Time	≤5.8ns		≤3.5ns
Real Time Sampling Rate	Single Channel: 1GSa/s, Double Channels: 500MSa/s		Single Channel: 1GSa/s, Double Channels: 500MSa/s
Equivalent Sampling Rate	50GSa/s		50GSa/s
Memory Depth	2Mpts		2Mpts
Time Base Range	5 ns/ div – 50s/ div		2.5ns/ div – 50s/ div
Scan Range	100ms/ div ~ 50s/ div		100ms/ div ~ 50s/ div
Vertical Sensitivity	5mV/div – 100V/div(1-2-5 order)		5mV/div – 100V/div(1-2-5 order)
Vertical Resolution	8 bits		8 bits
Trigger Types	Edge, Pulse, Video, Slope, Alternative		Edge, Pulse, Video, Slope, Alternative
Frequency Counter	6 bits		6 bits
Connection	USB Device, USB Host		USB Device, USB Host
Math	+, -, * , /, FFT		+, -, * , /, FFT
Oscilloscope Trend Plot	800K points		
Meter <sup>[3]</sup>			
Maximum Resolution	6000		
Function	Range	Resolution	accuracy
DC Voltage	60.00 mV	10uV	(±1%±15digit)
	600.0mV	100uV	(±1%±5digit)
	6.000V	1mV	
	60.00V	10mV	
	600.0V	100mV	
	1000 V	1V	
AC Voltage (20Hz～400Hz)	60.00 mV	10uV	(±1%±15digit)
	600.0mV	100uV	(±1%±5digit)
	6.000V	1mV	
	60.00V	10mV	
	600.0V	100mV	
	750 V	1V	(±1.5%±5digit)
DC Current <sup>[1]</sup>	60.00 mA	10uA	(±1.5%±5digit)
	600.0mA	100uA	
	6.000 A	1mA	(±2%±5digit)
	10.00 A	10mA	
AC Current <sup>[2]</sup> (20Hz～400Hz)	60.00 mA	10uA	(±1.5%±5digit)
	600.0mA	100uA	(±2%±5digit)
	6.000 A	1mA	(±3%±5digit)
	10.00 A	10mA	

Resistance	600.0Ω	0.1Ω	(±1%±5digit)
	6.000KΩ	1Ω	
	60.00KΩ	10Ω	
	600.0KΩ	100Ω	
	6.000MΩ	1kΩ	(±3%±5digit)
	60.00MΩ	10kΩ	
Capacitance	40.00nF	0.01nF	(±3%±10digit)
	400.0nF	0.1nF	(±4%±5digit)
	4.000uF	1nF	
	40.00uF	10nF	
	400.0uF	100nF	
Diode	0~2V		
Continuity	<50Ω Buzzer sounds		

**Note:** [1],[2] For rank A range, the measurement time should be less than 10s, the interval time should be more than 15 minutes.

[3] All tests were performed with DC battery power.

## 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	10X	
Probe Attenuation Factors Set(V)	1X, 5X, 10X, 50X, 100X, 500X, 1000X	
channels from earth ground, between two channels references	Overvoltage Category	Maximum Voltage
	CAT I&CAT II	1000Vrms
	CAT III	600Vrms
between Multimeter input reference and the ground	Overvoltage Category	Maximum Voltage
	CAT I&CAT II	600Vrms
	CAT III	300Vrms
Max. input Voltage for BNC	Overvoltage Category	Maximum Voltage
	1x CAT I&CAT II	300Vrms
	1x CAT III	150Vrms
	10x CAT I&CAT II	1000Vrms
	10x CAT III	600Vrms
Max. input Voltage for Multimeter input port	Voltage port	DC 1000V, AC 750V
	Current port(mA)	AC 250V/10A
	Current port(A)	AC 250V/600mA

Single Channel Common Mode Rejection, typical	>100:1 50MHz
Channel-to-Channel Isolation	>35dB

Horizontal System				
Real time Sample Rate	Single Channel :50Sa/s~1GSa/s Double Channels: 500MSa/s			
Equivalent Sample Rate	50GSa/s			
Interaction Mode	Line, (Sinx)/x			
Memory Depth	Channel Mode	Sample Rate	Normal	Deep
	Single Channel	1Gsa/s	40kpts	nonsupport
	Single Channel	≤ 500MSa/s	20kpts	2Mpts
	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(SHS1000) Scan mode: 100ms/div ~ 50s/div (1-2.5-5 order )			

Vertical System				
Vertical Sensitivity	5mV/div – 100V/div(1-2-5 order )			
Channel Voltage Offset Range	5mV-200mV: ±1.6V 206mV-10V: ±40V 10.2V-100V: ±400V			
Vertical Resolution	8 bit			
Channels	2			
Analog Bandwidth	100MHz (SHS1102) 60MHz(SHS1062)			
Single Bandwidth	100MHz (SHS1102) 60MHz(SHS1062)			
Lower Frequency(AC-3dB)	≤10Hz (at input BNC)			
DC Gain Accuracy	5mv/div-100v/div:±3%			
DC Measurement Accuracy≤100mv/div	±[3.0%X(  reading  +  offset  )+1% X  offset +0.2div+2mV]			
DC Measurement Accuracy > 100mv/div	±[3.0%X(  reading  +  offset  )+1% X  offset +0.2div+100mV]			
Rise Time	3.5ns Typical (SHS1102) 5.8ns Typical (SHS1062)			
Vertical Input Coupling	AC, DC, GND			
Math Operation	+, -, *, /, FFT			
FFT	Window Mode: Hanning, Hamming, Blackman, Rectangular			
	Sampling: 1024 points			
Bandwidth Limiter	20MHz (-3dB)			



<b>Trigger System</b>	
Trigger Types	Edge, Pulse Width, Video, Slope, Alternative
Trigger Source	CH1, CH2
Trigger Modes	Auto, Normal, Single
Trigger Coupling	AC, DC, LF rej, HF rej
Trigger Level Range	CH1, CH2: $\pm 6$ divisions from center of screen
Trigger Displacement	Pre-trigger: (Memory depth/(2*sampling)), Delay Trigger: 268.04div
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	CH1 Trigger Type: Edge, Pulse, Video, Slope
	CH2 Trigger Type: Edge, Pulse, Video, Slope

<b>X-Y Mode</b>	
X-Pole Input /Y-Pole Input	Channel 1 (CH1) / Channel 2 (CH2)
Sample Frequency	XY mode has a breakthrough that trad oscilloscopes restrict sampling rate at 1MSa/s and supports 5KSa/s~500MSa/s:

<b>Measure System</b>	
Auto Measure (32 Types)	Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROVShoot, FOVShoot, RPRESshoot, FPRESshoot, Rise time, Fall time, Freq, Period, + Wid, –Wid, +Dut, –Dut, BWid, Phase, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF
Cursor Measure	Manual mode, Track mode and Auto mode

<b>Control Panel Function</b>	
Auto Set	Auto adjusting the Vertical, Horizontal system and Trigger Position
Save/Recall	Support 2 group referenced waveforms, 20 group setups, 10 group captured waveforms internal storage/recall function and USB flash driver storage function.

<b>Hard Ware Frequency Counter</b>	
Reading Resolution	1Hz
Range	DC Couple, 10Hz to MAX Bandwidth
Signal Types	Satisfying 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~400Hz)DC :1000V
Max Input Current	AC (Vrms) : 10A (AC frequency :20Hz~400Hz)DC : 10A
Impedance	10MΩ

## Recorder

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

Meter TrendPlot	
Display	All, Normal
Record Size	1.2M points
Record Channel	1 channel
Cursor, Zoom	Yes
Manual Mode	Yes

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	24 bit
Display Contrast	150:1
Backlight Intensity	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	Sinx, 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 voltage	100V-240V 50/60Hz
	Output voltage	9V 4A
Battery	7.4VDC, 5000mAh, persisting about 4 hours	
Charge time	About 4 hours	

Environments		
Temperature	Operating	0~45℃
	Storage	-20℃~70℃
Cooling	Internal fan used	
Humidity	85%RH, 40℃	
Height	3000m	
Electromagnetic Compatibility	2004/108/EC Directive	
	Applicable standards EN 61326-1:2006	
	EN 61000-3-2:2006 + A2:2009/ EN 61000-3-3:2008	
Safety	2006/95/EC Low Voltage Directive	
	EN 61010-1:2010/EN 61010-031:2002+A1:2008	

Mechanical		
Size	length	259.5mm
	width	163.2mm
	height	53.3mm
Weight	1.5Kg	

## Type Selections:

### NAME:

SHS1000 series Handheld Digital Oscilloscope

### TYPE:

SHS1102 100MHz

SHS1062 60MHz

### Standard accessories:

A 9V, 3A, power adapter

Two special 10: 1, CATII 1000V, CATIII 600V, 100MHz oscilloscope probes

Two test leads for multimeter

A USB data transmitting cable

Quick Start

A service warranting card

## Contact us

If you need any technical support or other help, you can contact SIGLENT service department directly.

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# DataSheet

## SHS800 Series Handheld Digital Oscilloscope

SHS820/SHS815/SHS810/SHS806



## Application Domain

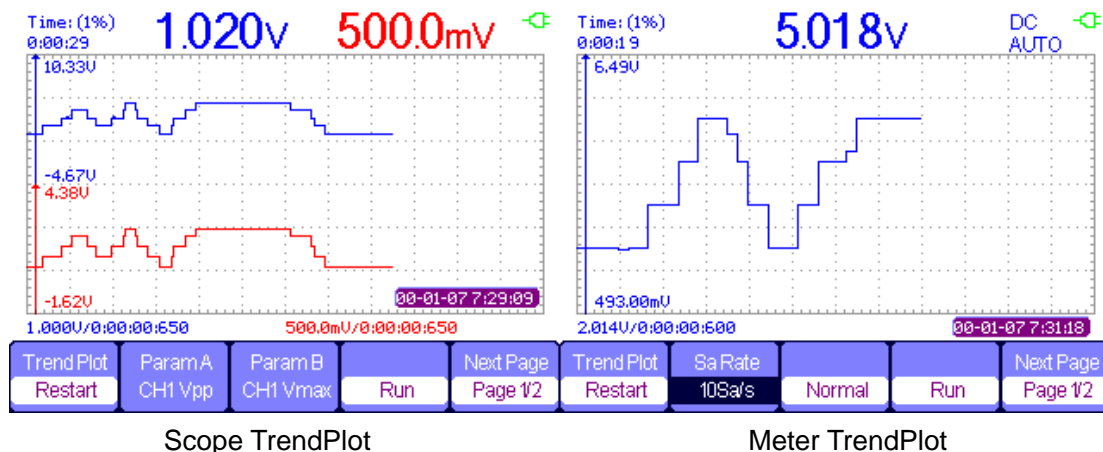
- ◆ Outdoor measure
- ◆ Circuit measure
- ◆ Wind power, PV power and other new energy equipment test
- ◆ Automotive electron, electric automobile test
- ◆ Electric power system, strong electricity test
- ◆ Industry scenes electric debug testing and measuring
- ◆ Education and science research
- ◆ Quality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

## Features & Benefits

- ◆ Dual-input, combine oscilloscope, Multimeter and recorder (including TrendPlot and waveform Recorder) in one unit
- ◆ Input voltage: input voltage through BNC is up to CAT II 300V and CAT III 150V  
Standard probe: 10X CAT II 400V  
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. 200MHz Bandwidth, 1GSa/s real-time sampling rate single channel, up to 50GSa/s equivalent sampling rate
- ◆ With 6000 dots display resolution Multimeter 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 automatic measurements, 3 cursor measure modes
- ◆ 4 digital filter mode: Low pass, High pass, Band pass, Band limit
- ◆ 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
- ◆ Rechargeable Li battery pack, compact, portable, fit for outdoor operation

## TrendPlot

- ◆ Scope TrendPlot records scope measurement data, 800K points capacity, more than 18 hours recording time
- ◆ Meter TrendPlot records multimeter measurement data, 1.2M points recording length, recording time as long as 6000 hours at 0.05Sa/s
- ◆ Real-time saving measuring data, which can be outputted to U memory, used for second research and analyzing
- ◆ Two display modes, 'ALL' and 'NORMAL'; support zoom and cursor
- ◆ Support recording real time

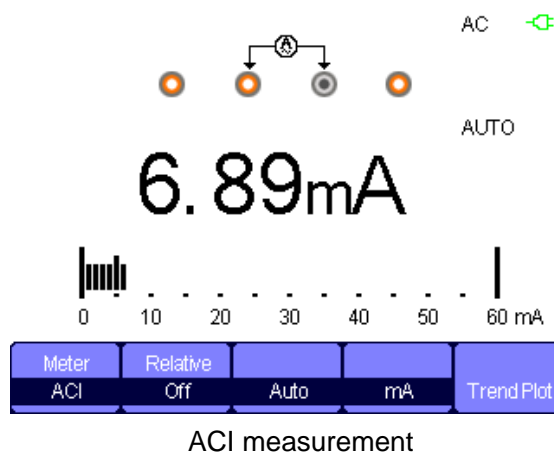
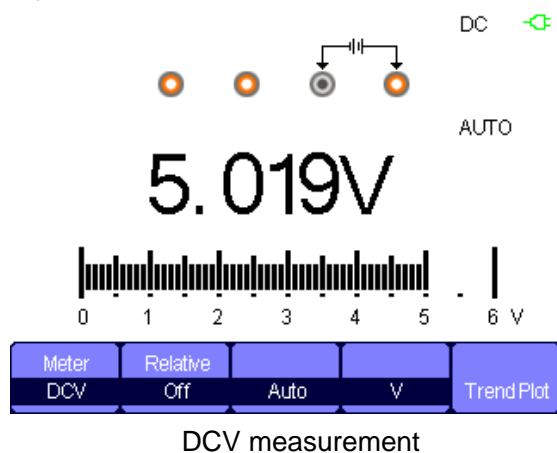


## Scope Recorder

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

## Multimeter

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



## Specification

Scope				
Type	SHS806	SHS810	SHS815	SHS820
Bandwidth	60MHz	100MHz	150MHz	200MHz
Rise Time	≤5.8ns	≤3.5ns	≤2.3ns	≤1.7ns
Input Impedance	1MΩ±2%, 18pf±3pf			
Real Time Sampling Rate	Single Channel: 1GSa/s, Double Channels: 500MSa/s			500MSa/s
Equivalent Sampling Rate	50GSa/s			
Time Base Range	5 ns/ div ~ 50s/ div	2.5 ns/ div ~ 50s/ div		
Scan Range	100ms/ div ~ 50s/ div			
Vertical Sensitivity	2mV/div ~ 100V/div(1-2-5 step)			
Vertical Resolution	8 bits			
Trigger Types	Edge, Pulse, Video, Slope, Alternative			
Frequency Counter	6 bits			
Connection	USB Device, USB Host			
Math	+, -, *, /, FFT			
Oscilloscope Trend Plot	800K points			

**Meter<sup>[3]</sup>**

Maximum Resolution	6000 counts		
Function	Range	Resolution	accuracy
DC Voltage	60.00 mV	10uV	(±1%±15digit)
	600.0mV	100uV	(±1%±5digit)
	6.000V	1mV	
	60.00V	10mV	
	600.0V	100mV	
	1000 V	1V	
AC Voltage (20Hz～400Hz)	60.00 mV	10uV	(±1%±15digit)
	600.0mV	100uV	(±1%±5digit)
	6.000V	1mV	
	60.00V	10mV	
	600.0V	100mV	
	750 V	1V	(±1.5%±5digit)
DC Current <sup>[1]</sup>	60.00 mA	10uA	(±1.5%±5digit)
	600.0mA	100uA	(±2%±5digit)
	6.000 A	1mA	
	10.00 A	10mA	
AC Current <sup>[2]</sup> (20Hz～400Hz)	60.00 mA	10uA	(±1.5%±5digit)
	600.0mA	100uA	(±2%±5digit)
	6.000 A	1mA	(±3%±5digit)
	10.00 A	10mA	
Resistance	600.0Ω	0.1Ω	(±1%±5digit)
	6.000KΩ	1Ω	
	60.00KΩ	10Ω	
	600.0KΩ	100Ω	
	6.000MΩ	1kΩ	
	60.00MΩ	10kΩ	(±3%±5digit)
Capacitance	40.00nF	0.01nF	(±3%±10digit)
	400.0nF	0.1nF	(±4%±5digit)
	4.000uF	1nF	
	40.00uF	10nF	
	400.0uF	100nF	
Diode	0～2V		
Continuity	<50Ω Buzzer sounds		

**Note: [1],[2] For rank A range, the measurement time should be less than 10s, the interval time should be more than 15 minutes.**

**[3] All tests were performed with DC battery power.**



# 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	1X, 5X, 10X, 50X, 100X, 500X, 1000X	
Max. Voltage From BNC ( Reference BNC Cover )	CAT II	300Vrms
	CAT III	150Vrms
Standard Probe 10X	CAT II	400Vrms
Optional Probe 10X	CAT II	1000Vrms
Max. Floating Voltage From Multimeter Reference to Earth Ground	CAT II	600Vrms
	CAT III	300Vrms
Single Channel Common Mode Rejection Ratio	>100:1 50MHz	
Channel-to-Channel Isolation	>35dB	

Horizontal System					
Real time Sample Rate		Single Channel :50Sa/s~1GSa/s Double Channels: 50Sa/s~500MSa/s			
Interaction Mode		x, Sinx			
Memory Depth	SHS806 SHS810 SHS815	Channel Mode	Sample Rate	Normal	Long Memory
		Single Channel	1GSa/s	40kpts	Non-support
		Single Channel	≤ 500MSa/s	20kpts	2 Mpts
		Double Channels	≤ 500MSa/s	20kpts	1 Mpts
	SHS820	Single Channel:32Kpts; Double Channel:16Kpts			
Display Mode		MAIN, WINDOW ZOOM, SCAN, X-Y			
Time Base Accuracy		±50ppm (measured over 1ms interval)			
Horizontal Scan Range		2.5ns/div ~ 50s/div (SHS820) 2.5ns/div ~ 50s/div (SHS815) 2.5ns/div ~ 50s/div (SHS810) 5.0ns/div ~ 50s/div (SHS806) Scan mode: 100ms/div ~ 50s/div (1-2.5-5 step )			

<b>Vertical System</b>	
Vertical Sensitivity	2mV/div – 100V/div(1-2-5 step )
Channel Voltage Offset Range	2mV-200mV: $\pm 1.6V$ 206mV-10V: $\pm 40V$ 10.2V-100V: $\pm 400V$
Vertical Resolution	8 bit
Channels	2
Analog Bandwidth	200MHz (SHS820)    150MHz(SHS815)    100MHz (SHS810)    60MHz(SHS806)
Lower Frequency(AC-3dB)	$\leq 10Hz$
DC Gain Accuracy	5mv/div-100v/div: $\leq \pm 3\%$ 2mv/div: $\leq \pm 4\%$
DC Measurement Accuracy $\leq 200mv/div$	$\pm [3.0\% * (  \text{reading}   +   \text{offset}  ) + 1\% *   \text{offset}   + 0.2div + 2mV]$
DC Measurement Accuracy $> 200mv/div$	$\pm [3.0\% * (  \text{reading}   +   \text{offset}  ) + 1\% *   \text{offset}   + 0.2div + 100mV]$
Rise Time	1.7ns Typical (SHS820) 2.3ns Typical (SHS815) 3.5ns Typical (SHS810) 5.8ns Typical (SHS806)
Vertical Input Coupling	AC, DC, GND
Math Operation	+, -, *, /, FFT
FFT	Window Mode: Hanning, Hamming, Blackman, Rectangular
	Sampling: 1024 points
Bandwidth Limit	20MHz (-3dB)

<b>Trigger System</b>	
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: $\pm 6$ divisions from center of screen
Trigger Displacement	Pre-trigger: Memory depth/(2*sampling) Delay Trigger: 268.04div
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	CH1 Trigger Type: Edge, Pulse, Video, Slope
	CH2 Trigger Type: Edge, Pulse, Video, Slope

<b>X-Y Mode</b>	
X-Pole Input /Y-Pole Input	Channel 1 (CH1) / Channel 2 (CH2)
Sample Frequency	25KSa/s~250MSa/s (1-2.5-5 step)

<b>Measurement System</b>	
Auto Measure (32 Types)	Vpp, Vmax, Vmin, Vamp, Vtop, Vbase, Vavg, Mean, Crms, Vrms, ROVShoot, FOVShoot, RPRESshoot, FPRESshoot, 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

<b>Control Panel Function</b>	
Auto Set	Auto adjusting the Vertical system, Horizontal system and Trigger Position
Save/Recall	2 groups of referenced waveforms, 20 groups of setups, 10 groups of captured waveforms internal save/recall function and USB flash driver storage function.

<b>Hard Ware Frequency Counter</b>	
Reading Resolution	1Hz
Range	DC Couple, 10Hz to MAX Bandwidth
Signal Types	Applying to all Trigger signals(Except 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~400Hz)DC :1000V
Max Input Current	AC (Vrms) : 10A (AC frequency :20Hz~400Hz)DC : 10A
Impedance	10MΩ

## Recorder

<b>Scope TrendPlot</b>	
Display	All, Normal
Record Size	800K points, more than 18 hours
Record Channel	2 channels
Cursor, Zoom	Support
Manual Mode	Support

<b>Meter TrendPlot</b>	
Display	All, Normal
Record Size	1.2M 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 ; Replay mode: point, frame ; Record mode: continuous, single Save mode: Internal memory
Default	Viewer: split screen; Replay mode: point ; Record mode: continuous Save mode: Internal memory
Record Size	Total: 7M points Single channel: 7M points single channel Double channels: 3.5M points per channel
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	24 bits
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
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 voltage	100V-240V 50/60Hz
	Output voltage	9V 4A
Battery	7.4VDC, 5000mAh, persisting 5 hours	
Charge time	About 4 hours	

Environments		
Temperature	Operating	0~40℃
	Storage	-20℃~70℃
Cooling	Natural Cool	
Humidity	85%RH, 40℃	
Height	3000m	
Electromagnetic Compatibility	2004/108/EC Directive	
	Applicable standards EN 61326-1:2006	
	EN 61000-3-2:2006 + A2:2009/ EN 61000-3-3:2008	
Safety	2006/95/EC Low Voltage Directive	
	EN 61010-1:2010/EN 61010-031:2002+A1:2008	

Mechanical		
Size	length	259.5mm
	width	163.2mm
	height	53.3mm
Weight	1.5Kg	

## Type Selections:

Product Type	Bandwidth	Real Time Sampling Rate
<b>SHS820</b>	<b>200MHz</b>	<b>500MSa/s</b>
<b>SHS815</b>	<b>150MHz</b>	<b>1GSa/s</b>
<b>SHS810</b>	<b>100MHz</b>	<b>1GSa/s</b>
<b>SHS806</b>	<b>60MHz</b>	<b>1GSa/s</b>

### Standard accessories:

A 9V, 4A, power adapter

Two 1X/10X oscilloscope probes

Two test leads for multimeter

Probe calibration accessory

A USB data transmitting cable

User Manual

Warranty Card

### Optional probe



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

200MHz high-voltage safety probe CAT II 1000V,CAT III 600V

## Contact us

To obtain service,warranty or technical assistance,please contact us directly:

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