## SIGLENT TECHNOLOGIES

The Best Value in Electronic Test & Measurement



### SHS800X/SHS1000X Handheld Oscilloscope







## • SHS1000X

SHS1102X - 100 MHz SHS1202X - 200 MHz

• SHS800X

SHS810X- 100 MHz SHS820X - 200 MHz

SHS800X



#### SHS800X/SHS1000X Handheld Oscilloscope

#### Five in One

- Long battery life of **5.5** hours
- True RMS Multimeter
- IP51 waterproof and dustproof
- Standard protocol analysis
- Waveform recording up to **22** hours





#### PART ONE



# **Basic Parameters**

The Best Value In Electronic Test & Measurement

### SHS800X/SHS1000X Handheld Oscilloscope







#### **SHS800X-Parameters**



		SHS810X	SHS820X			
	Bandwidth	100 MHz 200 MHz				
	Sample Rate	1 GSa/s				
	Channels	2 CH				
	Memory Depth	12 Mpts				
	Waveform capture rate	100,000 wfm/s, 400,000 wfm/s (sequence mode)				
Oscilloscope	Trigger type	Edge, Slope, Pulse Width, Window, F	Runt, Interval, Dropout, Pattern, Video			
Comocopo	Serial Trigger and decoder	r IIC, SPI, UART, CAN, LIN				
	Max input Voltage	CATII 300Vrms Between BNC Signal and Protecting Earth CATII 30Vrms Between BNC GND and Protecting Earth CATII 300Vrms Between BNC Signal and BNC GND				
	Probe	PP510	PP215			
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 0.1 second. The Max items of logging is 4				
	Max input Voltage	CAT III 300Vrms, CAT II 600Vrms				
	Measurement type	DCV, ACV, DC, AC, Resistance, Capacitance, Diode, Continuity				
Multimeter	Features	measurement value recorder, hardware based True RMS AC Voltage/Current measurement multimeter				

#### **SHS1000X-Parameters**

		SHS1102X	SHS1202X			
	Bandwidth	100 MHz	200 MHz			
	Sample Rate	1 GSa/s				
	Channels	2 CH				
	Memory Depth	12 Mpts				
	Waveform capture rate	100,000 wfm/s, 400,000 wfm/s (sequence mode)				
Oscilloscope	Trigger type	, Runt, Interval, Dropout, Pattern, Video				
	Serial Trigger and decoder	IIC, SPI, UART, CAN, LIN				
	Max input Voltage	CAT III 600Vrms, CAT II 1000Vrms Between BNC Signal and Protecting Earth CAT III 600Vrms, CAT II 1000Vrms Between BNC GND and Protecting Earth CAT III 300Vrms Between BNC Signal and BNC GND				
	Probe	PB925				
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 0.1 second. The Max items of logging i				
	Max input Voltage	CAT III 600Vrm	s, CAT II 1000Vrms			
	Measurement type	DCV, ACV, DC, AC, Resistance, Capacitance, Diode, Continuity				
Multimeter	Features	measurement value recorder, hardware based True RMS AC Voltage/Current measure multimeter				







### **Packing List**











#### Five in one



#### 2-CH Oscilloscope

- True RMS Multimeter
- Recorder
  - Sample Logger
  - Measurement Logger
- Serial Trigger and decode
- FFT spectrum analysis





### Higher protection level, longer battery life

- It is dust and waterproof certified to IP51, proving it is capable of testing in a variety of harsh environments.
- The rechargeable 6900 mA high-capacity lithium battery is UL certified and delivers up to 5.5 hours of work without a charge, greatly improving safety and battery life. The battery can be charged in the cabin or removed and charged with an external charger.
- The included carrying case has ample room for the instrument, probes and other accessories. Perfect for field work and carrying on business trips.







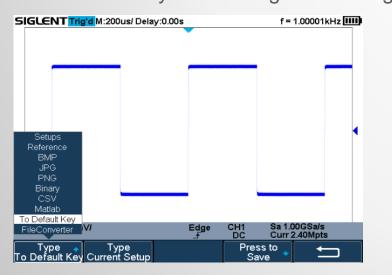
#### **Quick data storage**







The customizable Default button saves the settings of the oscilloscope as the default settings, and you can quickly recall the settings when you press the Default button. There is no need to spend time debugging instrument every time during field testing.

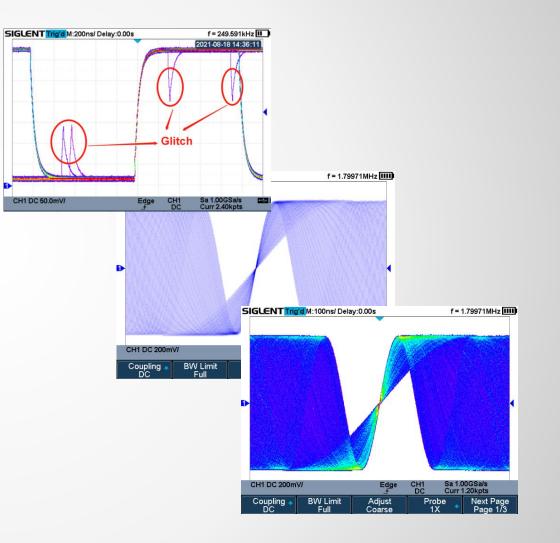


### **New platform – based on SPO technology**



#### SPO technology

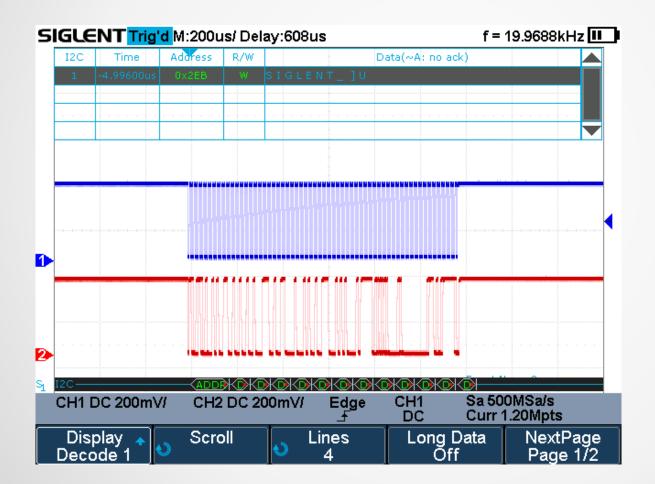
- Waveform capture rates up to 100,000 wfm/s (normal mode) and 400,000 wfm/s (sequence mode)
- Easily capture unusual or low-probability events.
- Digital trigger system, more stable trigger
- Supports 256-level intensity grading and color temperature display modes



### **Standard Serial trigger and decode**

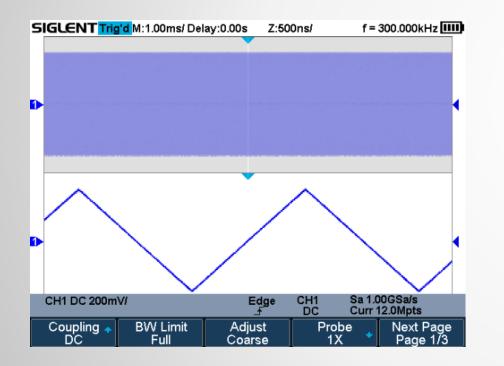


Standard Serial trigger and decode: IIC, SPI, UART, CAN, LIN, widely used in automotive and embedded industries



### **Deep Memory**

 12 Mpts storage depth enable users to oversample to capture for longer periods at higher resolution and use the zoom feature to see more details within each signal.



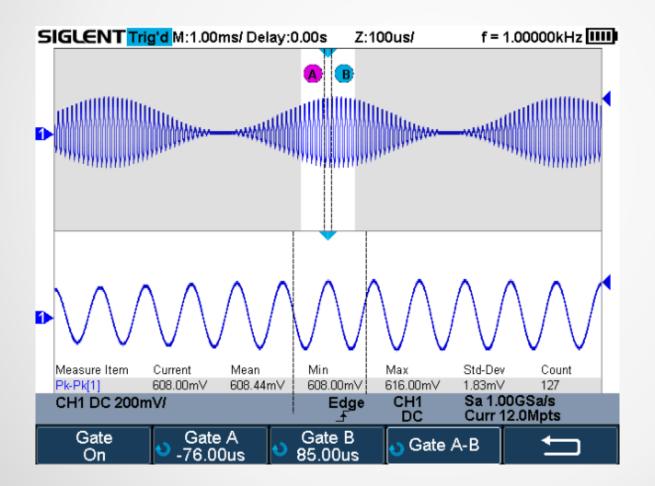
 12 Mpts full storage point measurement to improve measurement accuracy. Math co-processor reduces measurement time and increases ease of use.

	rig'd <mark>M:1.00</mark>	ms/ Delay	(:0.00s		f = 10.0	0000MHz
			•			
Contract of the second s						
Construction of the local division of the lo						
Measure Item	Current	Mean	Min	Max	Std-Dev	Count
Measure Item Pk-Pk[1]	608.00mV	608.00m\	/ 608.00m∨	608.00mV	216.84aV	54
		mean	/ 608.00m∨		0.0 0 0.	ooun
Pk-Pk[1]	608.00mV	608.00m\	/ 608.00m∨	608.00mV	216.84aV	54
Pk-Pk[1] Freq[1]	608.00m∨ 10.00MHz	608.00m\ 10.00MH;	/ 608.00m∨ z 10.00MHz 100.00ns	608.00mV 10.00MHz	216.84a∨ 1.13Hz	54 54
Pk-Pk[1] Freq[1] Prd[1]	608.00mV 10.00MHz 100.00ns 209.32mV	608.00m\ 10.00MH; 100.00ns	/ 608.00mV z 10.00MHz 100.00ns / 209.32mV	608.00m∨ 10.00MHz 100.00ns	216.84a∨ 1.13Hz 11.26fs	54 54 54 54 54
Pk-Pk[1] Freq[1] Prd[1] Stdev[1]	608.00mV 10.00MHz 100.00ns 209.32mV	608.00m\ 10.00MH; 100.00ns	/ 608.00m∨ z 10.00MHz 100.00ns	608.00m∨ 10.00MHz 100.00ns 209.39m∨	216.84a∨ 1.13Hz 11.26fs 15.77u∨	54 54 54 54 54 54
Pk-Pk[1] Freq[1] Prd[1] Stdev[1]	608.00mV 10.00MHz 100.00ns 209.32mV	608.00m\ 10.00MH; 100.00ns 209.36m\	/ 608.00mV z 10.00MHz 100.00ns / 209.32mV	608.00m∨ 10.00MHz 100.00ns 209.39m∨ CH1 DC	216.84aV 1.13Hz 11.26fs 15.77uV Sa 1.00G Curr 12.0	54 54 54 54 54 54

#### **Gate and Zoom**



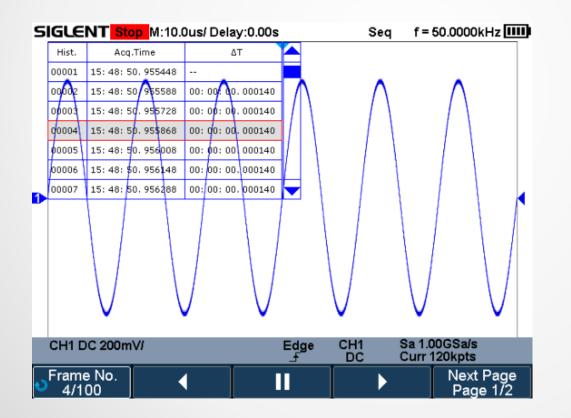
Gate and Zoom measurements allow users to select any waveform for measurement and data statistics. It is beneficial to eliminate invalid and redundant data and ensure the validity and flexibility of measurement.



### **History and Sequence**



- Sequential mode ignores long time intervals that are not of interest and stores only the waveform frames of interest. The dead time is greatly reduced and storage space is saved.
- With the history mode that is resident in the background, you can easily observe the time point of each captured waveform for easy analysis.



### **Powerful 1 Mpts FFT operation capability**



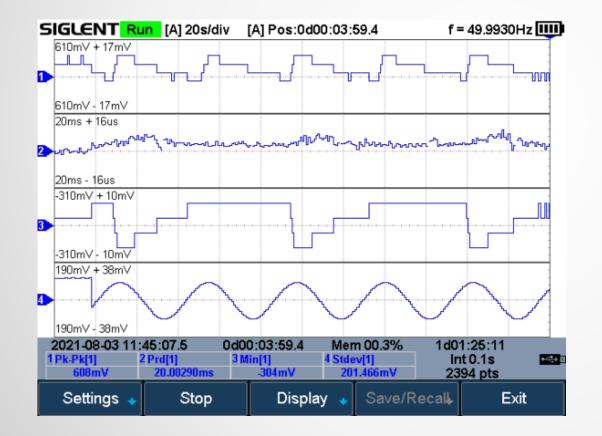
- SHS800X not only provides time domain analysis capabilities, but also provides frequency domain analysis capabilities.
- Up to 1M point FFT, greatly improving the frequency resolution. When analyzing harmonics, the unique Peaks, Markers marking function can also directly display the amplitude of the corresponding frequency point.

S	IGLE	ENT Trig'o	M:2.00ms	s/ Delay:0.00s f = 999.997kHz
	Peak	Amplitude	Frequency	
	1	-91.6dBV	952kHz	
	2	-91.3dBV	960kHz	
1	3	-65.8dBV	970kHz	la de la companya de
	4	-43.7dBV	980kHz	
	5	-26.0dBV	990kHz	
	6	-15.3dBV	1.00MHz	
	7	-25.9dBV	1.01MHz	
	8	-91.5dBV	1.01MHz	Sa 50.00 MSa/s 6 Curr 1048576 pts
	9	-43.7dBV	1.02MHz	5 7 △f 47.68 Hz
	10	-65.9dBV	1.03MHz	2
			3	10 <u>1</u> 0
		1 2		
			الانا تعادهن	WARAS MADE HARAN MARINE MARA ALANSA MARAN
		1.1.1.1.1.1.1.1	illa olui auto	blane he dankadi. A falsal is at dala it dalam he di tat da da
	CH1	DC 200mV	l	Edge CH1 Sa 500MSa/s _∱ DC Curr 12.0Mpts
	Ope F	erator 🛧 FT	Source CH1	e ◆ Config ↓ Vertical ↓ Next Page Page 1/2

#### Hardware-based True RMS multimeter



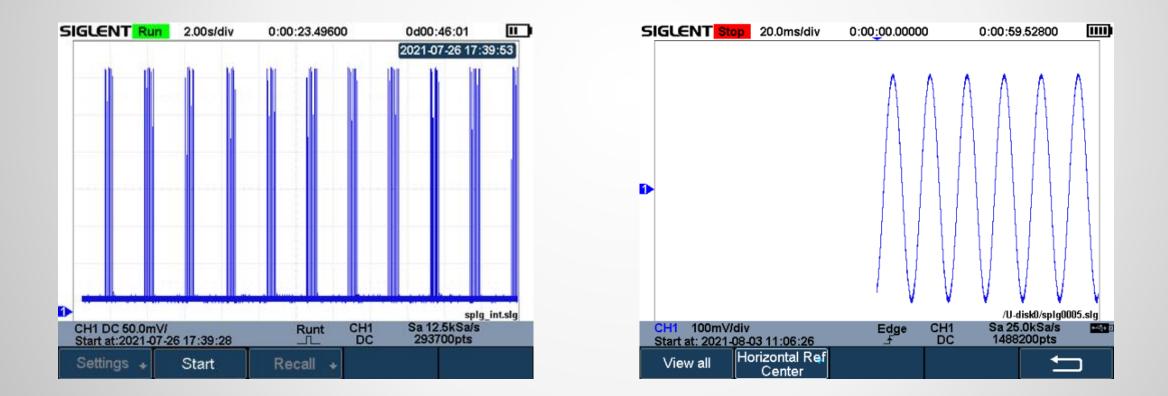
- Integrated 6000 counts (~ 3.5 digit) digital multimeter
- Hardware-Based True RMS Measurement
- Support to draw up to 4-channel measurement value trend graph, and can store 3.5M measurement points



#### **Record waveforms for up to 22 hours**



- Sampling rate 1 Sa/s ~ 25 kSa/s
- Internal storage 50 MB, external 2 GB
- Waveform recorder function continuously records waveforms for up to 22 hours at a sampling rate of 25 kSa/s.



### **Full Isolation- only SHS1000X**



- The SHS1000X series features full isolation between the two oscilloscope channels, one multimeter channel, power adapter and the USB host/device port.
- The max voltage input to the analog scope inputs is CATIII 600Vrms, CATII 1000Vrms.
- The max input for the multimeter is CATIII 600Vrms, CATII 1000Vrms.







Model	Siglent SHS800X		Siglent SHS800		
Bandwidth	200/100 MHz	$\checkmark$	200/150/100/60 MHz	√	
Bandwidth Limit	20 MHz	$\checkmark$	20 MHz	√	
Scope Channel	2	$\checkmark$	2	√	
CH to CH isolation	DC-Max BW: >40 dB	$\checkmark$	>35 dB	X	
Sampling rate	1 Gsa/s	$\checkmark$	1 Gsa/s; 500MSa/s	√	
Memory Depth	12 Mpts in total	$\checkmark$	2 Mpts/1 Mpts/32 kpts/16 kpts	X	
Wavefrom Capture Rate	100,000 wfm/s (normal mode), 400,000 wfm/s (sequence mode)	$\checkmark$	-	x	
ERES	Enhance bits:0.5, 1.5, 2, 2.5, 3	$\checkmark$	-	X	
Vertical Scale	2mV/div–100 V/div	$\checkmark$	2mV/div ~ 100V/div	$\checkmark$	
DC Gain Accuracy	≤±2%: ≥10 mV/div ≤±3%: <10 mV/div	$\checkmark$	$5mv/div-100v/div: \le \pm 3\%;$ $2mv/div: \le \pm 4\%$	x	
Timebase Scale	1.0 ns/div-100 s/div	$\checkmark$	2.5ns/div ~ 50s/div; 5.0ns/div ~ 50s/div	x	
Trigger Types	Edge, Slope, Pulse Width, Window, Runt, Interval, Dropout, Pattern, Video	$\checkmark$	Edge, Pulse Width, Video, Slope, Alternative	x	
Serial Trigger and decoder	IIC, SPI, UART, CAN, LIN	$\checkmark$	-	X	
Measurement Statistics	Current, Mean, Min, Max, Stdev, Count	$\checkmark$	-	X	
DMM Counts	6,000 counts	$\checkmark$	6,000 counts	√	
True RMS	Hardware implemented	$\checkmark$	Support		
Sample/Waveform Recorder	Up to 22 hours at 25 kSa/s, internal 50 MB, external 2 GB	$\checkmark$	800k points	x	
Measurement Logger	3.5 Mpts, 4 channels	$\checkmark$	1.2 Mpts, 1 channel	X	
Data Transfer	PC	$\checkmark$	PC	√	
Other functions	Sequence, Search, Intensity and color temperature diaplay, History, 1 Mpts FFT	$\checkmark$	-	x	
IP Rating	IP51	$\checkmark$	-	X	
Battery	6900 mA 5.5 hours	$\checkmark$	5000 mA, 7.4 VDC, 5 hours	x	
Interface	USB Host(Isolation), USB Device	$\checkmark$	USB Device,USB Host	√	
Size	276*168*68 mm	$\checkmark$	259.5*163.2*53.3 mm	√	
Weight	1.75 kg	X	1.5 kg	√	
Display	5.6" 640*480 LCD Screen		5.7" LCD	√	





		5		
200/100 MHz	<	100/60 MHz	X	
20 MHz	$\checkmark$	20 MHz	$\checkmark$	
2	$\checkmark$	2	$\checkmark$	
DC-Max BW: >40 dB	$\checkmark$	>35 dB	X	
CATIII 600 Vrms, CATII 1000 Vrms	$\checkmark$	CATIII 600 Vrms, CATII 1000 Vrms	√	
1 Gsa/s	$\checkmark$	1 Gsa/s	$\checkmark$	
12 Mpts in total	$\checkmark$	2 Mpts	X	
100,000 wfm/s (normal mode), 400,000 wfm/s (sequence mode)	√	-	x	
Enhance bits:0.5, 1.5, 2, 2.5, 3	$\checkmark$	-	X	
5 mV/div–100 V/div	$\checkmark$	5 mV/div – 100 V/div	√	
≤±2%: ≥10 mV/div ≤±3%: <10 mV/div	√	5 mv/div-100 v/div: ≤ ±3%	x	
1.0 ns/div-100 s/div	√	2.5ns/div ~ 50s/div	X	
Edge, Slope, Pulse Width, Window, Runt, Interval, Dropout, Pattern, Video	1	Edge, Pulse Width, Video, Slope, Alternative	x	
IIC, SPI, UART, CAN, LIN	$\checkmark$	-	X	
Current, Mean, Min, Max, Stdev, Count	$\checkmark$	-	X	
6,000 counts	<	6,000 counts	$\checkmark$	
Hardware implemented	$\checkmark$	Support	$\checkmark$	
Up to 22 hours at 25 kSa/s, internal 50 MB, external 2 GB	~	800k points	x	
3.5 Mpts, 4 channels	$\checkmark$	1.2 Mpts, 1 channel	X	
PC	$\checkmark$	PC	√	
Sequence, Search, Intensity and color temperature diaplay, History, 1 Mpts FFT	~	-	x	
IP51	$\checkmark$	-	X	
6900mA,4 hours	√	5000 mAh, 4 hours	√	
USB Host(Isolation), USB Device	$\checkmark$	USB Device, USB Host	$\checkmark$	
276*168*68 mm	$\checkmark$	259.5*163.2*53.3 mm	$\checkmark$	
1.75 kg	X	1.5 kg	√	
5.6" 640*480 LCD Screen	Χ	5.7" LCD	$\checkmark$	
	20 MHz 2 DC-Max BW: >40 dB CATIII 600 Vrms, CATII 1000 Vrms 1 Gsa/s 12 Mpts in total 100,000 wfm/s (normal mode), 400,000 wfm/s (sequence mode) Enhance bits:0.5, 1.5, 2, 2.5, 3 5 mV/div–100 V/div $\leq \pm 2\%$ : >10 mV/div $\leq \pm 2\%$ : >10 mV/div $\leq \pm 3\%$ : <10 mV/div 1.0 ns/div-100 s/div Edge, Slope, Pulse Width, Window, Runt, Interval, Dropout, Pattern, Video IIC, SPI, UART, CAN, LIN Current, Mean, Min, Max, Stdev, Count 6,000 counts Hardware implemented Up to 22 hours at 25 kSa/s, internal 50 MB, external 2 GB 3.5 Mpts, 4 channels PC Sequence, Search, Intensity and color temperature diaplay, History, 1 Mpts FFT IP51 6900mA, 4 hours USB Host(Isolation), USB Device 276*168*68 mm 1.75 kg	200/100 MHz $\checkmark$ 20 MHz $\checkmark$ 2 $\checkmark$ DC-Max BW: >40 dB $\checkmark$ CATIII 600 Vrms, CATII 1000 Vrms $\checkmark$ 1 Gsa/s $\checkmark$ 1 Casa/s $\checkmark$ 12 Mpts in total $\checkmark$ 100,000 wfm/s (normal mode), 400,000 wfm/s (sequence mode) $\checkmark$ Enhance bits:0.5, 1.5, 2, 2.5, 3 $\checkmark$ 5 mV/div-100 V/div $\checkmark$ $\leq \pm 2\%$ : >10 mV/div $\checkmark$ $\leq \pm 2\%$ : >10 mV/div $\checkmark$ $\leq \pm 2\%$ : >10 mV/div $\checkmark$ $<$ $\checkmark$ 1.0 ns/div-100 s/div $\checkmark$ Edge, Slope, Pulse Width, Window, Runt, Interval, Dropout, Pattern, Video $\checkmark$ IIC, SPI, UART, CAN, LIN $\checkmark$ Current, Mean, Min, Max, Stdev, Count $\checkmark$ $\phi$ $\bigcirc$ Hardware implemented $\checkmark$ Up to 22 hours at 25 kSa/s, internal 50 MB, external 2 GB $\checkmark$ $3.5$ Mpts, 4 channels $\checkmark$ $PC$ $\checkmark$ Sequence, Search, Intensity and color temperature diaplay, History, 1 Mpts FFT $\checkmark$ $IP51$ $\checkmark$ $6900mA$ , 4 hours $\checkmark$ USB Host(Isolation), USB Device $\checkmark$ $276*168*68$ mm $\checkmark$ $1.75$ kg $×$	200/100 MHz     √     100/60 MHz       20 MHz     √     20 MHz       2     √     2       DC-Max BW: >40 dB     √     >35 dB       CATIII 600 Vrms, CATII 1000 Vrms     √     CATIII 600 Vrms, CATII 1000 Vrms       1 Gsa/s     √     1 Gsa/s       1 Gsa/s     √     1 Gsa/s       1 Gsa/s     √     2 Mpts       100,000 wfm/s (normal mode),     √     -       400,000 wfm/s (sequence mode)     √     -       Enhance bits:0.5, 1.5, 2, 2.5, 3     √     -       5 mV/div–100 V/div     √     5 mV/div – 100 V/div       ≤±2%: ≥10 mV/div     √     5 mV/div-100 V/div       ≤±2%: ≥10 mV/div     √     2.5ns/div ~ 50s/div       Edge, Slope, Pulse Width, Window, Runt, Interval, Dropout, Pattern, Video     √     2.5ns/div ~ 50s/div       IIC, SPI, UART, CAN, LIN     √     -     -       Current, Mean, Min, Max, Stdev, Count     √     6,000 counts       Hardware implemented     √     Support       Up to 22 hours at 25 kSa/s, internal 50 MB, external 2 GB     800k points <t< td=""></t<>	





## Thank You



#### https://thelabeshop.com/collections/oscilloscopes-portable

#### The Best Value in Electronic Test & Measurement

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