# SDS1000X Series

Super Phosphor Oscilloscope





DataSheet-2015.7

SDS1102X SDS1102X-S SDS1202X SDS1202X-S

#### **Overview**

SIGLENT's new SDS1000X Series Super Phosphor Oscilloscopes are available in four bandwidths, 100 MHz and 200 MHz, a sample rate of 1 GSa/s, and a standard record length of 14 Mpts. The most commonly used functions can be accessed with its user-friendly one-button design.

The SDS1000X series employs a new generation of SPO technology. With excellent signal fidelity, background noise is lower than similar products in the industry. The SDS1000X has a minimum vertical input range of 500uV/div, an innovative digital trigger system with high sensitivity and low jitter, and a waveform capture rate of 60,000 frames/sec. It also employs not only the common 256-level intensity grading display function but also a color temperature display mode not found in other models in this class. Siglent's new oscilloscope offering supports multiple powerful triggering modes including serial bus triggering and decoding. History waveform recording and sequential triggering allow for extended waveform records to be captured, stored, and analyzed. Add an impressive array of measurement and math capabilities, options for an integrated 25 MHz arbitrary waveform generator, as well as serial decoding, and the features and high-performance of the SDS1000X oscilloscopes cannot be matched at anywhere at this price.



#### **Key Features**

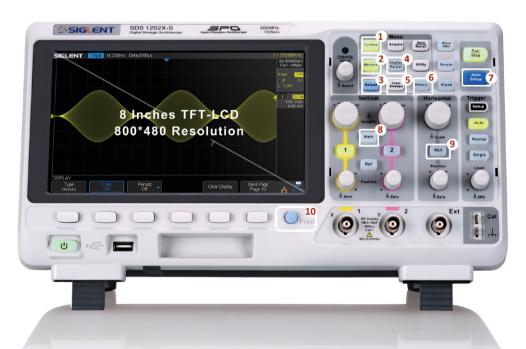
- 200MHz, 100MHz, bandwidth models
- Real-time sampling rate up to 1GSa/s
- Record length of 14Mpts
- Waveform capture rate up to 60,000 wfs/s
- New generation of SPO technology
- Supports 256-level intensity grading and color temperature display
- Intelligent trigger: Edge, Slope, Pulse, Window, Runt, Interval, Time out (Dropout), Pattern
- Serial bus triggering and decode, supports protocols I<sup>2</sup>C, SPI, UART/RS232, CAN, LIN
- Video trigger, supports HDTV
- Low background noise, supports 500μV / div to 10V / div voltage scales
- 10 types of one-button shortcuts, supports Auto Setup, Default Setup, Cursor, Measure, Roll, History, Persistence, Clear Sweep, Zoom and Print
- Segmented acquisition (Sequence) mode, the maximum record length can be divided into 1000 segments, according to trigger conditions set by the user, with a very small dead time segments to capture qualifying event
- History waveform record (History) function, the maximum recorded waveform length is 80,000 frames
- 36 automatic measurement function, supports statistics calculations, Gating measurement, Math measurement, History measuring, Ref measurement
- Waveform math function (FFT, addition, subtraction, multiplication, division, integration, differentiation, square root)
- № 25MHz DDS arbitrary waveform generator, built-in 10 kinds of waveforms (SDS1000X-S models)
- Large 8 inch TFT-LCD display with 800 \* 480 resolution, Abundant interfaces: USB Host, USB Device (USBTMC), LAN (VXI-11), Pass / Fail, Trigger Out
- Supports Multi-language display and embedded online help

### **Models and Key Specifications**

Model	SDS1102X	SDS1102X-S	SDS1202X	SDS1202X-S
Bandwidth	100MHz 200MHz			
Sample Rate(Max)	1GSa/s			
Channels	2+EXT			
Memory Depth(Max)	7Mpts/CH (Dual-Channel); 14Mpt	s/CH (Single-Channel)		
Waveform Capture Rate	60,000 wfms/s			
Trigger Type	Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video			
Serial Trigger (Optional)	I <sup>2</sup> C, SPI, UART/RS232, CAN, LIN			
Decode Type (Optional)	1 <sup>2</sup> C, SPI, UART/RS232, CAN, LIN			
DDS Waveform Generator	No	Yes	No	Yes
	Single Channel, Max Frequency up to 25MHz, 125 MS/s waveform generation Capabilities, wave length 16Kpts			
I/O	USB Host, USB Device, LAN, Pass/Fail, Trigger Out, 1KHz Cal			
Probe(Std)	2 pcs passive probe PP510 2 pcs passive probe PP215			
Display	8 inch TFT LCD (800x480)			
Weight	Net weight 3.26 Kg, Gross weight 4.25Kg			

#### **Characteristics**

#### 8 inch TFT-LCD display and 10 one-button menus

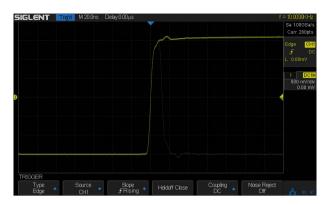


SDS1000X Equipped with 8" TFT-LCD display with a resolution of 800 \* 480  $\,$ 

SDS1000X Most commonly used functions are accessible using 10 different one-button operation keys: Auto Setup, Default Setup, Cursor, Measure, Roll, History, Persist, Clear Sweep, Zoom, Print

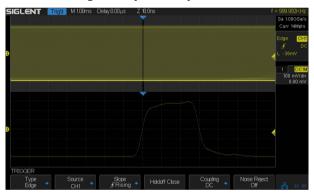
#### **Characteristics**

#### ■ Waveform capture rate up to 60,000 wfms/s



Up to 60,000 frames / second waveform capture rate, the oscilloscope can easily capture the unusual event or low-probability event

#### Record length of up to 14Mpts



Using hardware-based Zoom technologies and record length of up to 14Mpts, users are able to use a higher sampling rate to capture more of the signal, and then quickly zoom in to focus on the area of interest

#### Abundant trigger function



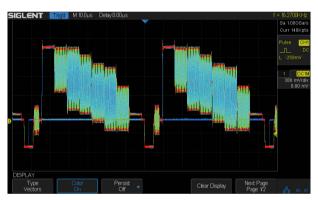
SDS1000X has a wealth of trigger modes, including Edge, Slope, Pulse, Video, Windows, Runt, Interval, Time out (Dropout), Pattern, IIC, SPI, UART/RS232, LIN, CAN

## 256-level intensity grading and color temperature display



SPO display technology provides for fast refresh rates. The resulting intensity-graded trace is brighter for more often-occurring display points and dimmer in less-often-occurring points





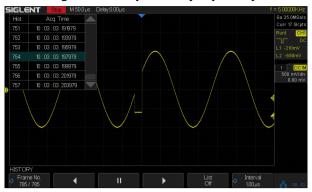
The color temperature display is similar to the intensity-graded trace except that the trace occurrence is represented by different colors (color "temperature") as opposed to changes in the intensity of one color. Red represents the most common occurrences or probabilities while blue are the least common points.

#### Serial bus decoding Function (optional)



SDS1000X displays the decoding through the events list. Bus protocol information can be quickly and intuitively displayed in table form

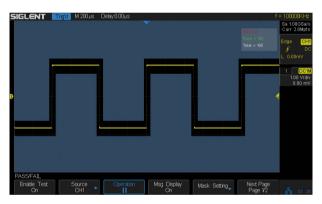
#### History Waveforms (History) mode and segmented acquisition (Sequence)



Playback history waveform to observe unusual events and locate the source quickly through the cursor or measurements, Located on the keyboard panel, this function is easily enabled.

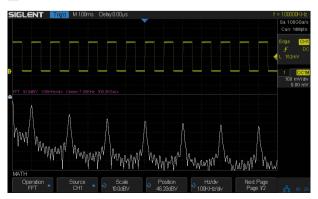
Segmented memory collection will store the waveform into multiple (1000) memory segments, each segment will store a triggered waveform and dead time information

#### Hardware-Based High Speed Pass/Fail Function



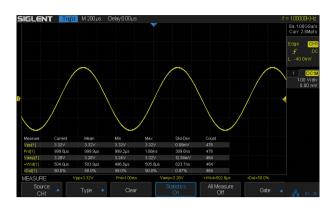
The SDS1000X utilizes a hardware-based Pass / Fail function, performing up to 60,000 Pass / Fail decisions each second. With easy to generate user-defined test templates, the SDS1000X compares the current measured trace to the template mask trace making it suitable for long-term signal monitoring or automated production line testing.

#### Advanced Math Function



In addition to the traditional (+, -, \*, /) operation, SDS1000X oscilloscopes supports FFT, integration, differentiation, and square root operations

#### Comprehensive statistical functions



Parametric statistical functions to display any parameters of the five measurements: current, average, Minimum value, Maximum value, and the standard deviation. The measurement count is also displayed. The maximum number of parameters that can be measured and simultaneously analyzed statistically is five. Support Gating measurements, Math measurement, History measurement, Ref measurement.

# Built-in 25MHz function/arbitrary waveform generator (SDS1000X-S model)



The SDS1000X-S has a built-in 25MHz function / arbitrary waveform generator, including 10 built-in waveforms plus 4 ARBs. The EasyWave PC software (included) to enter and edit arbitrary waveforms

#### Complete connectivity



SDS1000X supports USB Host, USB Device (USBTMC), LAN (VXI-11), Pass/Fail and Trigger Out

### **SDS1000X Probes**

Probe	Picture	Model	Specification & Description
Passive		PB470 PP510 PP215 PP430	PP510, 100 MHz Bandwidth (for SDS1102X and SDS1102X-S) PP215, 200 MHz Bandwidth (for SDS1202X and SDS1202X-S) PP430, 300 MHz Bandwidth 1X/10X, 1M/10Mohm, 300V/600V
High Voltage Probe	-	HPB4015	Bandwidth: 50 MHz Max Working voltage, DC: 0~15 KV; AC rms: 0~10KV (Sine Wave); AC peak: 0~30KV (Pulse). S/N:>60dB (1KHz), >50dB (1MHz); Division Ratio: 1/1000 Rise time: about 7ns
Current Probe		CP4060	Bandwidth: 100 KHz Current Range: 400mA ~ 60A Switch Ratio: 50mV/A, 5mV/A, 50mA~10A peak and 1A~60A peak output signal error Operating Voltage: 600Vrms Battery source
		CP4200	Bandwidth: 150KHz Current Range: 400mA~200A Switch Ratio: 50mV/A, 5mV/A, 50mA~10A peak and 1A~200A peak output signal error Operating Voltage: 600Vrms Battery source
Differential Probe		CP5050	Bandwidth: 40MHz Max continual current: 30Arms Max Peak current: 50A Accuracy (DC, 45-66Hz, Max continual current): $5A \rightarrow \pm 1\% \pm 1$ mA; $30A \rightarrow \pm 1\% \pm 1$ 0mA Power adapter
		CP5300	Bandwidth: 12MHz Max continual current: 150Arms Max Peak current: 300A Accuracy (DC, 45-66 Hz, Max continual current): 30A→±1%±10mA; 150A→±1%±100mA, Accuracy 1%, Power adapter
		DPB4050	Bandwidth: 50MHz Accuracy: 2% Differential Range: 6500V, 100X, 200X, 500X, 1000X attenuation Power adapter
	O Part Sec	DPB3050	Bandwidth: 50MHz Attenuation Ratio: 100:1/10:1 Max input differential Voltage: ±800Vpp; Max input and ground potential difference Voltage: 800Vpp

### **Specifications**

Acquire System	n
Sample Rate	1GSa/s (Single-Channel), 500MSa/s(Dual-Channel)
Memory Depth	Max 14Mpts/Ch (Single-Channel), 7Mpts/Ch (Dual-Channel)
Peak Detect	1ns
Average	Averages: 4,16, 32,64,128,256,512,1024
Eres	Enhance bits: 0.5, 1, 1.5, 2, 2.5, 3 Selectable
Waveform interpolation	Sinx/x, Linear

Input	
Channel	2
Coupling	DC, AC, GND
	DC: (1MΩ±2%)    (18pF ±2pF)
Impedance	AC: (1.2MΩ±2%)    (18pF ±2pF)
	50Ω: 50Ω±2%
Max Input voltage	1MΩ ≤ 400Vpk(DC + Peak AC <= 10kHz),
Max Input Voltage	50Ω ≤5Vrms
CH to CH Isolation	DC~Max BW >40dB
Probe attenuator	0.1X, 0.2X, 0.5X, 1X, 2X, 5X, 10X, 20X, 50X, 100X, 200X, 500X, 1000X

Vertical System	
Bandwidth (-3dB)	200MHz (SDS1202X) 100MHz (SDS1102X)
Vertical Resolution	8 bit
Vertical Scale (Probe 1X)	500μV/div - 10V/div (1-2-5 )
Offset Range (Probe 1X)	$500\mu V \sim 150mV: \pm 1V$ $152mV \sim 1.5V: \pm 10V$ $1.52V \sim 10V: \pm 100V$
Bandwidth Limit	20MHz ±40%
Bandwidth Flatness	DC ~ 10%(BW): ± 1dB 10% ~ 50%(BW): ± 2dB 50% ~ 100%(BW): + 2dB/-3dB
Low Frequency Response (AC-3dB)	≤10Hz (at input BNC)
Noise	ST-DEV ≤0.7 division (<1mV/div) ST-DEV ≤0.4 division (<2mV/div) ST-DEV ≤0.2 division (≥2mV/div)
SFDR including harmonics	≥35dB;
DC Gain Accuracy	≤±3.0%: 5mV/div ~10V/div ≤±4.0%: ≤2mV/div
Offset Accuracy	$ \pm (1\% * Offset + 1.5\% * 8*div + 2mV): \ge 2mV/div $ $ \pm (1\% * Offset + 1.5\% * 8*div + 500uV): \le 1mv/div $
Rise time	<1.8ns (SDS1202X) <3.5ns (SDS1102X)
Overshoot(500ps Pulse)	<10%

Horizontal System	
Time base Scale	2.0ns/div ~ 50s/div
Channel Skew	<100ps
Waveform Capture Rate	60,000 wfm/s
Intensity grading	256 Levels
Display Format	Y-T, X-Y, Roll
Time base Accuracy	±25ppm
Roll Mode	50ms/div ~ 50s/div (1-2-5 step)
Trigger System	
Trigger Mode	Auto, Normal, Single
	Internal: ±4.5 div from the center of the screen
Trigger Level	EXT: ±0.6 V
	EXT/5: ±3V
Hold-off Range	80ns ~ 1.5s
Trigger Coupling	AC , DC, LFRJ, HFRJ , Noise RJ (CH1~CH2)
	DC: Passes all components of the signal
Counting Frequency Recogness	AC: Blocks DC components and attenuates signals below 5.8Hz
Coupling Frequency Response (CH1~CH2)	LFRJ: Blocks the DC component and attenuates the low-frequency components below 2 MHz
,	HFRJ: Attenuates the high-frequency components above 1.2MHz
	DC: Passes all components of the signal
Coupling Frequency Response	AC: Blocks DC components and attenuates signals below 30Hz
Coupling Frequency Response (EXT)	LFRJ: Blocks the DC component and attenuates the low-frequency components below 300Hz
	HFRJ: Attenuates the high-frequency components above 7 MHz
Trigger Accuracy(Typical)	Internal: ±0.2div EXT: ±0.4div
Trigger Sensitivity	CH1~CH2: DC~ Max BW 0.6div EXT: 200mVpp DC ~ 10MHz 300mVpp 10MHz ~ BW frequency EXT/5: 1Vpp DC ~ 10MHz 1.5Vpp 10MHz ~ BW frequency
Trigger Jitter	<100ps(CH1~CH2)
Trigger Displacement	Pre-Trigger: 0~100% Memory Delay Trigger: 0 to 10,000 div

Slope Trigger		Serial Trigger		
Slope	Rising, Falling	I <sup>2</sup> C Trigger		
Limit Range	<,>,<>,><	Condition	Start, Stop, Restart, No Ack, EEPROM, 7bits Address	
Source	CH1/CH2		& Data,	
Time Range	2ns ~ 4.2s	C (CD A (CCL)	10bits Adress & Data, Data Length	
Resolution	1ns	Source(SDA/SCL)	CH1, CH2	
Edge Trigger		Data format	Hex	
Slope	Rising, Falling, Rising & Falling	Limit Range	EEPROM: =, >, <	
Source	CH1/CH2 /EXT/(EXT/5)/AC Line	Data Length	EEPROM: 1byte	
Pulse Trigger			Addr & Data: 1~2byte	
Polarity	+wid , -wid	DAM I:	Data Length: 1~12byte	
Limit Range	<,>,<>,><	R/W bit	Addr & Data: Read, Write, Do not care	
Source	CH1/CH2	SPI Trigger		
Pulse Range	2ns ~ 4.2s	Condition	Data	
Resolution	1ns	Source(CS/CL/Data)	CH1, CH2	
Video Trigger		Data format	Binary	
Signal Standard	NTSC, PAL, 720p/50, 720p/60, 1080p/50, 1080p/60,	Data Length	4 ~ 96 bit	
Orginal Ocalidata	1080i/50,	Bit Value	0, 1, X	
Source	1080i/60, Custom	Bit Order	LSB, MSB	
Source	CH1/CH2	<b>UART/ RS232</b> 1	<b>Frigger</b>	
Sync	Any, Select	Condition	Start, Stop, Data, Parity Error	
Trigger condition	Line, Field	Source (RX/TX)	CH1, CH2	
Interval Trigge	er	Data format	Hex	
Slope	Rising, Falling	Limit Range	=, >, <	
Limit Range	<, >, <>, ><	Data Length	1byte	
Source	CH1/CH2	Data Width	5 bit, 6 bit, 7 bit, 8 bit	
Time Range	2ns ~ 4.2s	Parity Check	None, Odd, Even	
Resolution	1ns	Stop Bit	1 bit, 1.5 bit, 2 bit	
Dropout Trigge		Idle Level	High, Low	
-		Baud(Selectable)	600/1200/2400/4800/9600/19200/38400/57600/115	
Timeout Type Source	Edge, State CH1/CH2	(a · )	200bit/s	
Slope	Rising, Falling	(Custom)	300bit/s ~ 334000 bit/s	
Time Range	2ns ~ 4.2s	Serial Decode		
Resolution	1ns	I <sup>2</sup> C		
	1113	Signal	CL, SDA	
Runt Trigger		Address	7bit, 10bit	
Polarity	+wid , -wid	Threshold Level	-4.5~4.5div	
Limit Range	<, >, <>, ><	List	1~7 lines	
Source	CH1/CH2	SPI		
Time Range	2ns ~ 4.2s	Signal	SCL, MISO, MOSI	
Resolution	1ns	Edge Select	Rising, Falling	
Pattern Trigge	r	Idle Level	Low, High	
Pattern Setting	Invalid, Low, High	Bit Order	MSB, LSB	
Logic	AND, OR, NAND, NOR	Threshold Level	-4.5~4.5 div	
Source	CH1/CH2	List	1~7 lines	
Limit Range	<, >, <>, ><	UART/ RS232		
Time Range	2ns ~ 4.2s	Signal	RX, TX	
Resolution	1ns	Data Width	5 bit, 6 bit, 7 bit, 8 bit	
Window Trigge	er	Parity Check	None, Odd, Even	
Window Type	Absolute, Relative	Stop Bit	1 bit, 1.5 bit, 2 bit	
Source	CH1/CH2	Idle Level	Low, High	
		Threshold Level	-4.5~4.5 div	
		List	1~7 lines	
		LISC	1 / IIICO	

Measure Syster	n		
Source	CH1, CH2, Math, Ref, History		
Number of Measurements	Display 5 measurements at the same time		
Measurement Range	Screen region	, Gate region	
<b>Measurement Parar</b>	neters (36 Typ	pes)	
Vertical (Voltage)	Vmax	Highest value in input waveform	
	Vmin	Lowest value in input waveform	
	Vpp	Difference between maximum and minimum data values	
	Vamp	Difference between top and base in a bimodal signal ,or between max and min in an unimodal signal	
	Vtop	Value of most probable higher state in a bimodal waveform	
	Vbase	Value of most probable lower state in a bimodal waveform	
	Mean	Average of all data values	
	Vmean	Average of data values in the first cycle	
	stdev	Standard deviation of all data values	
	Vstd	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	
Horizontal (Time)	Period	Period for every cycle in waveform at the 50% level ,and positive slope	
	Freq	Frequency for every cycle in waveform at the 50% level ,and positive slope	
	+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	
	+Dut	Ratio of positive width to period	
	-Dut	Ratio of negative width to period	
	Delay	Time from the trigger to the first transition at the 50% crossing	
	Time@Level	Time from trigger of each transition at a specific level and slope, include: Current, Max, Min, Mean, Std-dev	
Delay	Phase	Calculate the phase difference between two edges	
	FRR	Time between the first rising edges of the two channels	
	FRF	Time from the first rising edge of channel A ,to the first falling edge of channel B	
	FFR	Time from the first falling edge of channel A ,to the first rising edge of channel B	
	FFF	Time from the first falling edge of channel A ,to the first falling edge of channel B	
	LRR	Time from the first rising edge of channel A ,to the last rising edge of channel B	
	LRF	Time from the first rising edge of channel A ,to the last falling edge of channel B	
	LFF	Time from the first falling edge of channel A ,to the last rising edge of channel B	
Cursors	Voltage Y1, Y	e X1, X2, (X1-X2), (1/ΔT) 2, (Y1-Y2) 1, X2, (X1-X2)	
Statistics	Current, Mear	n, Min, Max, Std-Dev, Count	
Counter	Hardware 6 b	its counter (channels are selectable)	

, - , * , / , FFT , d/dt , ∫dt , √			
Rectangular, Blackman, Hanning, Hamming			
ll Screen, Split			
Generator ( SDS1000X-S )			
•			
MHz			
5 MSa/s			
ıHz			
50 ppm			
bits			
.5 ~ +1.5V ( 50Ω)			
~ +3V (High-Z)			
ne, Square, Ramp, Pulse, DC, Noise, Cardiac, Gaus Ise, Exp Rise, Exp Fall, Arb			
Ω±2%			
ort-Circuit Protection			
Hz ~ 25MHz			
0.3dB*Offset Setting Value +1mVpp)			
0.3 dB			
C ~ 1 MHz -60dBc			
MHz ~ 5 MHz -55dBc			
MHz ~ 25 MHz -50dBc			
C-5 MHz -50dBc			
MHz - 25MHz -45dBc			
Hz ~ 10MHz			
Hz ~ 10MHz			
Hz ~ 10MHz % ~ 80%			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%)			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 3%			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 3%			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 3%			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 3% 50ns 500ps + 10ppm			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 33% 50ns 500ps + 10ppm Hz ~ 300kHz 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 100%			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 3% 50ns 500ps + 10ppm Hz ~ 300kHz 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 100% mmetry)			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 3% 50ns 500ps + 10ppm Hz ~ 300kHz 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 100% mmetry)			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 33%  50ns 500ps + 10ppm  Hz ~ 300kHz 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 100% mmetry) 6 ~ 100%( Adjustable)			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 33%  50ns 500ps + 10ppm  Hz ~ 300kHz 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 100% mmetry) 6 ~ 100%( Adjustable)  1.5 V(50Ω) 8 V(High-Z)			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 3%  50ns  500ps + 10ppm  Hz ~ 300kHz 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 100% mmetry) 6 ~ 100%( Adjustable)  1.5 V(50Ω) 8 V(High-Z)  offset *1%+3 mV)			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 33%  50ns 500ps + 10ppm  Hz ~ 300kHz 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 100% mmetry) 6 ~ 100%( Adjustable)  1.5 V(50Ω) 8 V(High-Z)			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 3%  50ns  500ps + 10ppm  Hz ~ 300kHz 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 100% mmetry) 6 ~ 100%( Adjustable)  1.5 V(50Ω) 8 V(High-Z)  offset *1%+3 mV)			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 3%  50ns  500ps + 10ppm  Hz ~ 300kHz 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 100% mmetry) 6 ~ 100%( Adjustable) 5 V(50Ω) 8 V(High-Z)  offset *1%+3 mV)			
Hz ~ 10MHz % ~ 80% 24 ns (10% ~ 90%) 3% 50ns 500ps + 10ppm  Hz ~ 300kHz 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 100% mmetry) 6 ~ 100%( Adjustable) 3.5 V(50Ω) 3 V(High-Z)  offset *1%+3 mV)  25MHz (-3dB)  Hz ~ 5MHz			

I/O			
Standard	USB Host, USB Device, LAN, Pass/Fail, Trigger Out		
Pass/Fail	3.3V TTL Output		
Display(Screen)			
Display Type	8 inches TFT LCD		
Display Resolution	800×480		
Display Color	24 bit		
Contrast(Typical)	500:1		
Backlight	300nit		
Range	8 x 14 divisions		
<b>Display(Wavefo</b>	rm)		
Display Mode	Dot, Vector		
Persist Time	Off, 1 Sec, 5 Sec, 10 Sec, 30 Sec, Infinite		
Color Display	Normal, Color		
Screen Saver	1min, 5min, 10min, 30min, 1hour, Off		
Language	Simplified Chinese, Traditional Chinese, English, French, Japanese, Korean, German, Russian, Italian, Portuguese		
<b>Environments</b>			
Temperature	Operating: 10°C∼ +40°C		
	Non-operating:-20°C $\sim$ +60°C		
Humidity	Operating: 85%RH, 40°C , 24hours		
	Non-operating: 85%RH, $65^{\circ}\text{C}$ , 24 hours		
Height	Operating: ≤3000m		
	Non-operating: ≤15,266m		
Electromagnetic	2004/108/EC),		
Compatibility	Execution Standard EN 61326-1:2006		
	EN 61000-3-2:2006 + A2:2009, EN 61000-3-3:2008		
Safety	2006/95/EC Execution Standard EN 61010-1:2010/EN 61010-2- 030:2010		
Mechanical			
Dimensions	Length 340mm		
	Width 123mm		
	Height 184mm		
Weight	N.W: 3.26 Kg; G.W:4.25Kg		
Power Supply			
Input Voltage	100 ~ 240 VAC, CAT II, Auto selection		
Frequency	50/60 /400Hz		
Power	50W Max		

### **Ordering information**

Product Description	Product Name
100MHz Two Channels	SDS1102X
200MHz Two Channels	SDS1202X
100MHz Two Channels Built-In Waveform Generator	SDS1102X-S
200MHz Two Channels Built-In Waveform Generator	SDS1202X-S

tandard Accessories		
SB Cable -1		
uick Start-1		
ertification-1		
assive Probe-2		
ower Cord -1		
CD (Included User Manual and EasyScopeX software-1)		

Optional Accessories	
I <sup>2</sup> C,SPI,UART/RS232,CAN,LIN Decode key	SDS-1000X-DC
Power analyze Software	SDS-1000X -PA
USB-GPIB Adapter	USB-GPIB
16 Channels MSO	SDS-1000X-LA
Isolated Front End	ISFE
High Voltage Probe	HPB4015
Current Probe	CP4060/CP4020/CP5050/CP5300
Differential Probe	DPB4050/DPB3050



# SDS1000X Series

# Super Phosphor Oscilloscope

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#### About SIGLENT

SIGLENT is an international high-tech company, concentrating on R&D, sales, production and services of test &measurement Instruments.

SIGLENT began to research and develop the Digital Oscilloscope independently in 2002. After a decade of development products have included digital oscilloscopes, isolated handheld oscilloscopes, function/arbitrary waveform generators, digital multimeters, DC power supplies, spectrum analyzers, and other general purpose test instrumentation. Since SIGLENTs first oscilloscope, the ADS 7000 series produced in 2005, SIGLENT has maintained the highest annual growth rate and has been the fastest developing DSO manufacturer over the past 10 years. Nowadays, SIGLENT Technologies is the leading manufacturer of oscilloscopes by shipments in China.

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