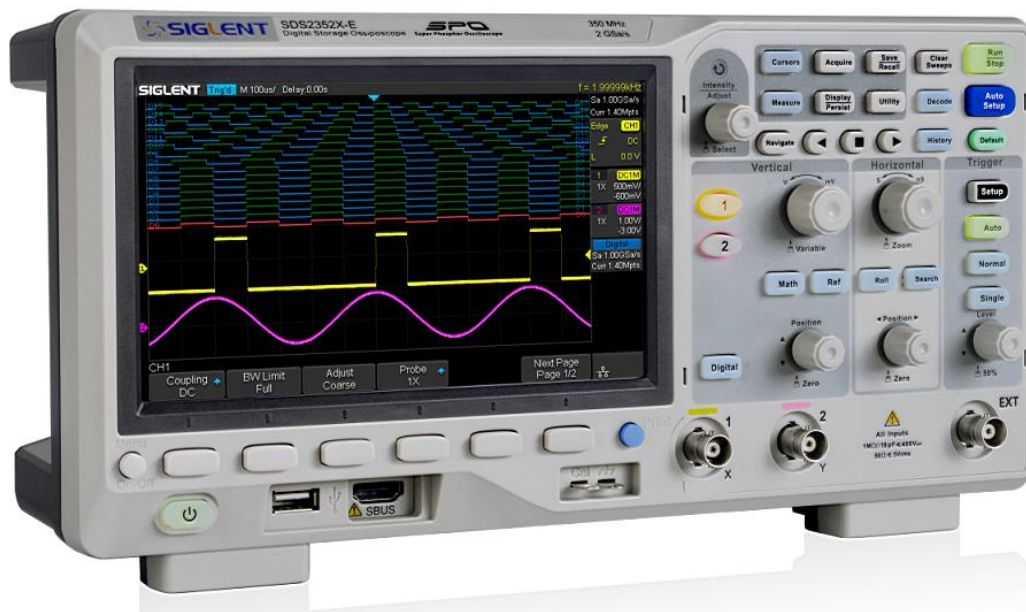# SDS2000X-E

Digital Oscilloscope

Data Sheet

Rev. 02B

SDS2202X-E
SDS2352X-E

Product Overview

SIGLENT's SDS2000X-E Series Super Phosphor Oscilloscopes are available in three bandwidths, 100 MHz, 200 MHz and 350 MHz, have a sampling rate of 2 GSa/s and a standard record length of 28 Mpts. The most commonly used functions can be accessed with its user-friendly one-button design.

The SDS2000X-E series employs a new generation of SPO technology. With its excellent signal fidelity, background noise is lower than similar products in the industry. It has a minimum vertical input range of 500 uV/div, an innovative digital trigger system with high sensitivity and low jitter, and a waveform capture rate of 400,000 frames/sec (sequence mode). 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 oscilloscopes 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. With 1M points of FFT, SDS2000X-E has very high spectrum resolution. With hardware coprocessor, it executes true fast measurement and math to all of 28M sample points so that there is no any distortion on analysis. It also supports searching and navigating, on-screen Bode plot, 16 digital channels(Option), an external USB powered 25 MHz AWG module(Option), a USB WIFI adapter(Option), and an embedded application that allows remote control via web browser. The features and high-performance of the SDS2000X-E oscilloscopes cannot be matched else anywhere at this price.

Key Features

- 200 MHz, 350 MHz bandwidth models
- Real-time sampling rate up to 2 GSa/s
- The Siglent SPO technology
  - Waveform capture rates up to 110,000 wfm/s (normal mode) and 400,000 wfm/s (sequence mode)
  - Supports 256-level intensity grading and color temperature display modes
  - Record length up to 28 Mpts
  - Digital trigger system
- Intelligent trigger: Edge, Slope, Pulse Width, Window, Runt, Interval, Time out (Dropout), Pattern
- Serial bus triggering and decoding (Standard), supports protocols IIC, SPI, UART, CAN, LIN
- Video trigger, supports HDTV
- Low background noise with voltage scales from 500 µV/div to 10 V/div
- 10 types of one-button shortcuts, supports Auto Setup, Default, Cursors, Measure, Roll, History, Display/Persist, Clear Sweep, Zoom and Print
- Segmented acquisition (Sequence) mode, divides the maximum record length into multiple segments (up to 80,000), according to trigger conditions set by the user, with a very small dead time segment to capture the qualifying event
- History waveform record (History) function (maximum recorded waveform length is 80,000 frames)
- Automatic measurement function for 38 parameters as well as Measurement Statistics, Zoom, Gating, Math, History and Reference functions
- 1 Mpts FFT with Peaks and Markers
- Math and measurement functions use all sampled data points (up to 28 Mpts)
- Math functions (FFT, addition, subtraction, multiplication, division, integration, differential, square root)
- Preset key can be customized for user settings or factory "defaults"
- Security Erase mode
- High Speed hardware-based Pass/ Fail function
- MSO, 16 digital channels (option)
- Bode plot, Measuring Power Supply Control Loop Response
- Search and navigate
- USB AWG module (option)
- USB WIFI adapter (option)
- Web Browser based control
- Large 7-inch TFT-LCD display with 800 * 480 resolution
- Multiple interface types: USB Host, USB Device (USB -TMC), LAN, Pass / Fail, Trigger Out
- Supports SCPI remote control commands
- VXI-11+SCPI, Telnet (Port 5024) +SCPI and Socket (Port 5025) +SCPI programming over LAN
- Supports web control and virtual instrument control panel for both PC and mobile terminals
- Supports Multi-language display and embedded online help

Models and Key Specifications

Model	SDS2202X-E	SDS2352X-E
Bandwidth	200 MHz	350 MHz
Sample rate (Max.)	2 GSa/s	
Channels	2+EXT	
Memory depth (Max.)	14Mpts/CH(not interleave mode); 28Mpts/CH(interleave mode)	
Waveform capture rate (Max.)	110,000 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 (Std)	IIC, SPI, UART, CAN, LIN	
16 Digital Channels (option)	Maximum waveform capture rate up to 1 GSa/s, Record length up to 14 Mpts/CH	
USB AWG module (option)	One channel, 25 MHz, sample rate of 125 MHz, wave length of 16 kpts, isolated output (SAG1021I only)	
Bode plot	Minimum start frequency of 10 Hz, minimum scan bandwith of 500 Hz, maximum scan bandwidth of 120 MHz (dependent on Oscilloscope and AWG bandwidth), 500 maximum scan frequency points	
USB WIFI adapter (option)	802.11b/g/n, WPA-PSK, the adapter must be supplied by Siglent to ensure working	
I/O	USB Host, USB Device, LAN, Pass/Fail, Trigger Out, Sbus (Siglent MSO)	
Probe (Std)	2 pcs passive probe PP215	2 pcs passive probe SP2035
Display	7-inch TFT-LCD (800x480)	
Weight	Without package 2.6Kg; With package 3.8Kg	

Functions & Characteristics

7 Inch TFT-LCD Display and 10 One-button Menus
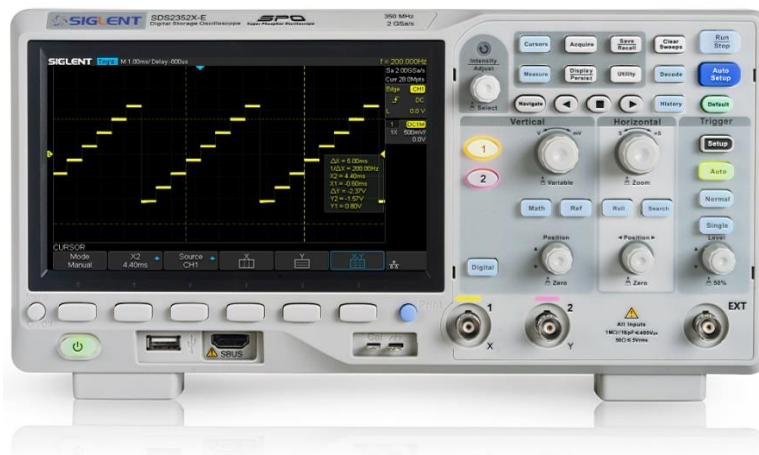

Front panel

7-inch TFT -LCD display with 800 * 480 resolution. Most commonly used functions are accessible using 10 different one-button operation keys: Auto Setup, Default, Cursor, Measure, Roll, History, Persist, Clear Sweep, Zoom, Print.

**Maximum sample rate of 2 GSa/s，record Length of up to 28Mpts**

Using hardware-based Zoom technologies and max record length of up to 28 Mpts, users are able to oversample to capture for longer time periods at higher resolution and use the zoom feature to see more details within each signal.

Serial Bus Decoding Function (Standard)
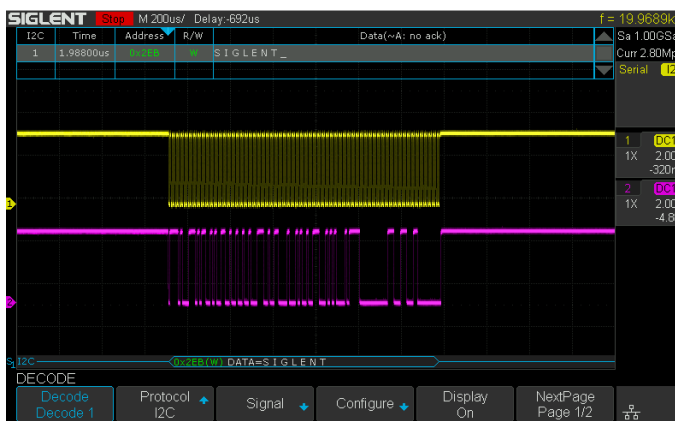
SDS2000X-E displays the decoding through the events list. Bus protocol information can be quickly and intuitively displayed in a tabular format.

**True measurement to 28 M points**
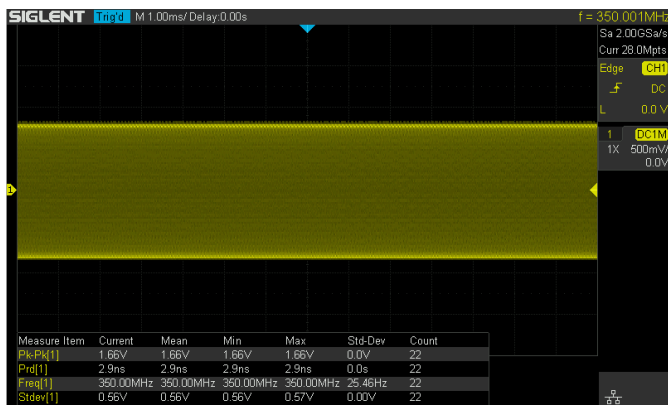
SDS2000X-E can measure all sampled data points up to 28 Mpts. This ensures the accuracy of measurements while the math co-processor

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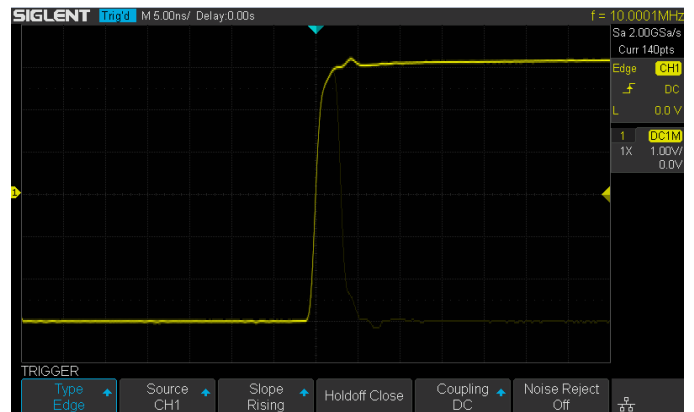
With a waveform capture rate of up to 400,000 wfm/s (sequence mode), the oscilloscope can easily capture the unusual or low-probability events.

History Waveforms (History) Mode and Segmented Acquisition (Sequence)
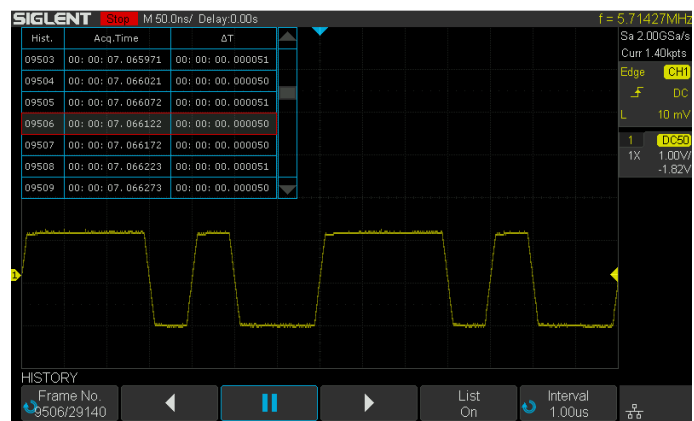
Playback the latest triggered events using the history function. Segmented memory collection will store trigger events into multiple (Up to 80,000) memory segments, each segment will store triggered waveforms and timestamp of each frame.
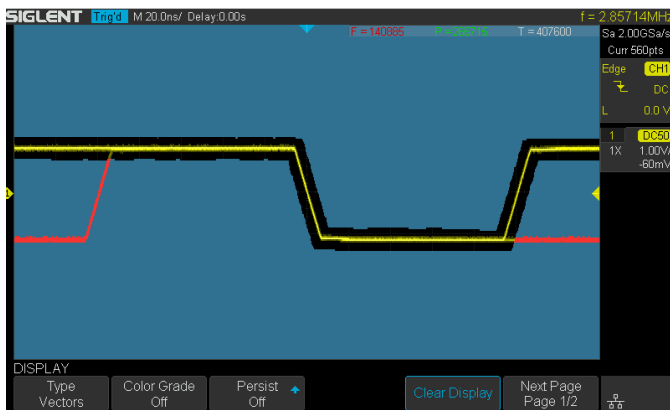
1M points used to calculate the FFT
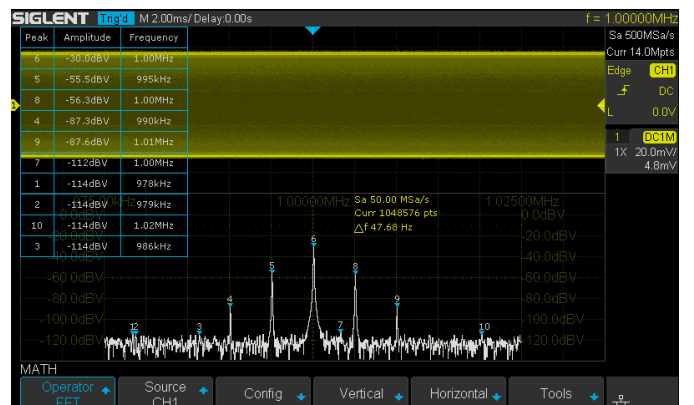
The new math co-processor enables FFT analysis of incoming signals using up to 1 M samples per waveform. This provides high frequency
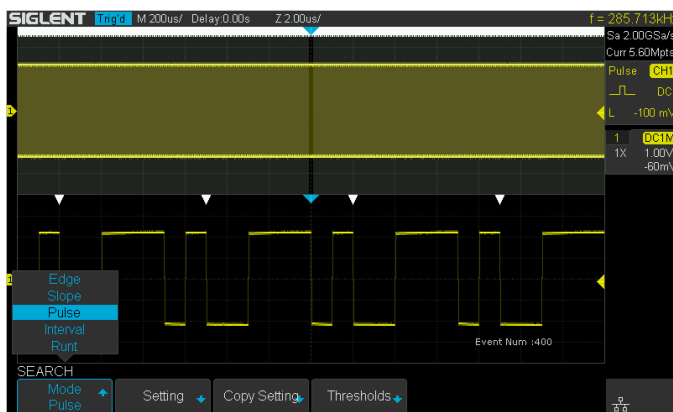
decreases measurement time and increases ease-of-use.

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. It supports Peaks, Markers, a variety of numbers.
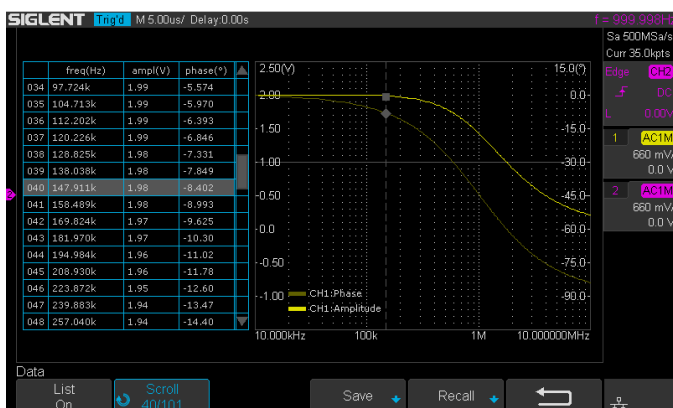
Hardware-Based High-Speed Pass/Fail

The SDS2000X-E utilizes a hardware-based Pass/Fail function, performing up to 40,000 Pass / Fail decisions each second. Easily generate user defined test templates provide trace mask comparison making it suitable for long-term signal monitoring or automated production line testing.

16 Digital Channels/MSO (option)

16 digital channels enables users to acquire and trigger on the waveforms then analyze the pattern, simultaneously with one instrument.

Search and Navigate
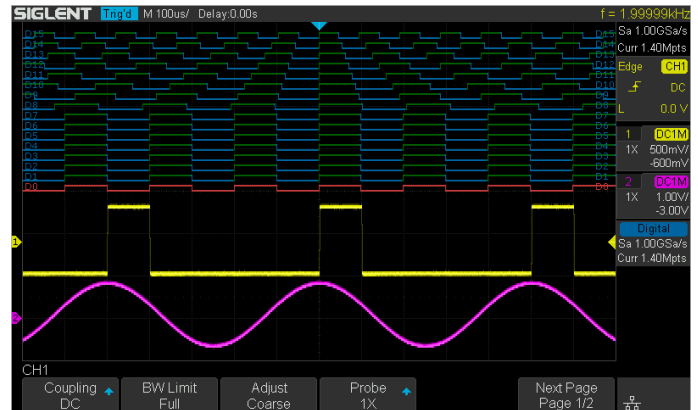

The SDS2000X-E can search events specified by the user in a frame. It can also navigate by time (delay position) and historical frames.

USB 25MHz AWG Module (option)

The SDS2000X-E supports a USB 25 MHz function/arbitrary waveform generator that is operated from the USB host connection. Functions include Sine, Square, Ramp, Pulse, Noise, DC and 45 built-in waveforms. The arbitrary waveforms can be accessed and edited by the SIGLENT EasyWave PC software.

Bode Plot

SDS2000X-E can control the USB AWG module or control an independent SIGLENT SDG instrument, scan a devices amplitude and phase frequency response, and display the data as a Bode Plot. There is also a Vari-level Mode for accurately measuring Power Supply Control Loop Response (PSRR). It can also show the result lists, and export the data to a USB disk.

USB WIFI Adapter (option)

Web control

WiFi control of instrumentation can provide a convenient and safe method of configuring and collecting data. This new feature works with a SIGLENT approved WiFi adapter to provide wireless control and communications with SIGLENT SDS2000X-E scopes. The adapter must be supplied by Siglent to ensure working.

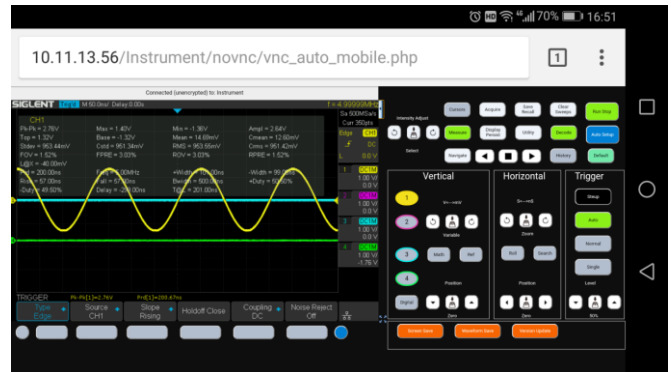With the new embedded web server, users can control the SDS2000X-E from a simple web page. This provides wonderful remote troubleshooting and monitoring capabilities. The web page has PC and mobile styles that include an embedded virtual control panel.

Complete Connectivity

Back panel

SDS2000X-E supports USB Host, USB Device (USB -TMC), LAN (VXI -11), Pass/Fail and Trigger Out.

Specifications

Acquisition System	
Sampling Rate (Max.)	2GSa/s(single channel), 1GSa/s(two channels)
Memory Depth (Max.)	Max 28Mpts/Ch(single channel), 7Mpts/Ch(two channels)
Peak Detect	1 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	
Channels	2+EXT
Coupling	DC, AC, GND

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Impedance	DC1MΩ: (1MΩ±2%) ‖ (18pF ±2pF)
	DC50Ω: 50Ω±2%
Max. Input voltage	1MΩ: ≤400Vpk(DC + Peak AC <=10kHz)
	50Ω: ≤5Vrms
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

Bandwidth (-3dB)	350MHz (SDS2352X-E)
	200MHz (SDS2202X-E)
Vertical Resolution	8-bit
Vertical Scale (Probe 1X)	500 µV/div-10 V/div (1-2-5 sequence)
	500 µV- 118 mV: ± 2 V
Offset Range (Probe 1X)	500µV- 100mV: ± 2V
	102mV- 1V: ± 20V
	1.02V- 10V: ± 200V
Bandwidth limit	20 MHz ± 40%
Channel Flatness	DC- 60%(BW): ± 1dB
(Inner 50Ω)	60%- 100%(BW): + 1dB/-3dB
Low frequency response	≤2 Hz (at input BNC)
(AC coupling -3 dB)	
Noise	ST-DEV ≤0.5 division (<1 mV/div)
	ST-DEV ≤0.2 division (<2 mV/div)
	ST-DEV ≤0.1 division(≥ 2 mV/div)
SFDR including harmonics	≥ 35 dB
DC Gain Accuracy	≤±3.0%: 5 mV/div-10 V/div
	≤±4.0%: ≤2 mV/div
Offset Accuracy	±(1%* Offset+1.5%*8*div+2 mV): ≥2 mV/div
	±(1%* Offset+1.5%*8*div+500 uV): ≤1 mv/div
Rise time	Typical 1.0ns(SDS2352X-E)
	Typical 1.8ns(SDS2202X-E)
Overshoot (500 ps Pulse)	< 10%

Horizontal System

Timebase Scale	500ps/div-100s/div
Channel Skew	<100 ps
Waveform Capture Rate	Up to 110,000 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)

Trigger System

Mode	Auto, Normal, Single
Level	Internal: ±4.5 div from the center of the screen
	EXT: ±0.6 V
	EXT/5: ±3V
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 8Hz LFRJ: Blocks the DC component and attenuates the low-frequency components below 2 MHz HFRJ: Attenuates the high-frequency components above 1.2 MHz
Coupling Frequency Response	DC: Passes all components of the signal AC: Blocks DC components and attenuates signals below 10Hz LFRJ: Blocks the DC component and attenuates the low-frequency components below 6 KHz HFRJ: Attenuates the high-frequency components above 200 KHz
Accuracy (typical)	Internal: ±0.2 div EXT: ±0.4 div

Sensitivity	DC - Max BW 0.6div
	EXT: 200mVpp DC– 10MHz
	    300mVpp 10MHz - BW frequency(External 50Ω)
	EXT/5: 1Vpp DC – 10MHz;
	    1.5Vpp 10MHz -BW frequency(External 50Ω)

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/EXT/(EXT/5)/AC Line

Slope Trigger

Slope	Rising, Falling
Limit Range	＜, ＞, ＜＞, ＞＜
Source	All channels
Time Range	2ns- 4.2s
Resolution	1ns

Pulse Width Trigger

Polarity	+wid , -wid
Limit Range	＜, ＞, ＜＞, ＞＜
Source	All channels
Pulse Range	2 ns - 4.2s
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	1ns

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

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: 1byte
	Addr & Data: 1-2byte
	Data Length: 1-12byte
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)	600/1200/2400/4800/960019200/38400/57600/115200/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	1byte
Data Format	Hex
Data Length	1-2byte
Baud Rate (Selectable)	600/1200/2400/4800/9600/19200/Custom bit/s
Baud Rate (Custom)	300 bit/s -20 kbit/s

Search	
Event	Edge, Slope, Pulse, Interval, Runt
Event Number	Y-T: 700 ROLL: No limitation Stop After ROLL: 700

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
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	Ver1.3, Ver2.0

Revision	
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 displayed in statistics table.
Measurement Range	Screen or Gate region
Measurement Parameters	38 Types
Vertical	Max	Highest value in input waveform
	Min	Lowest value in 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 an 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
	+Dut	Time difference between the 50% threshold of a rising edge to the 50% threshold of the next falling edge of the pulse
	-Dut	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 current frame from the trigger to the last rising edge at the 50% crossing.
Delay	Phase	Phase difference between two edges
	FRR	Time from the first rising edge of channel A to the following first rising edge of channel B
	FRF	Time from the first rising edge of channel A to the following first falling edge of channel

		B
	FFR	Time from the first falling edge of channel A to the following first rising edge of channel B
	FFF	Time from the first falling edge of channel A to the following 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
	LFR	Time from the first falling edge of channel A to the last rising edge of channel B
	LFF	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/ΔT) 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

USB AWG Module (option)

Channel	1
Max. Output Frequency	25 MHz
Sampling Rate	125 MSa/s
Frequency Resolution	1 μHz
Frequency Accuracy	±50 ppm
Vertical Resolution	14-bits
Amplitude Range	-1.5 ~ +1.5 V (50Ω load)
	-3 ~ +3 V (High-Z load)
Waveform Type	Sine, Square, Ramp, Pulse, Noise, DC and 45 built-in waveforms
Output impedance	50Ω ± 2%
Protection	Over-Voltage Protection, Current-Limiting Protection
Insulation Voltage	±42 Vpk (for SAG2021I only)

Sine

Frequency	1 μHz ~ 25 MHz	
Offset Accuracy(10 kHz)	±(1%*Offset Setting Value +3 mVpp)	
Amplitude flatness (10 kHz, 5Vpp)	±0.3 dB	
SFDR	DC ~ 1 MHz	-60dBc
	1 MHz ~ 5 MHz	-55dBc
	5 MHz ~ 25 MHz	-50dBc
HD	DC ~ 5 MHz	-50dBc
	5 MHz ~ 25 MHz	-45dBc

Square/Pulse

Frequency	1 μHz ~ 1 0MHz
Duty Cycle	1% ~99%
Rise/Fall time	< 24 ns (10% ~ 90%)
Overshoot(1kHz,1Vpp, Typical)	< 3% (typical 1kHz, 1 Vpp)

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Pulse Width	> 50 ns
Jitter	< 500 ps + 10 ppm
Ram	
Frequency	1 µHz ~ 300 kHz
Linearity(Typical)	< 0.1% of Pk-Pk (Typical, 1 kHz, 1 Vpp, 50% Symmetry)
Symmetry	0% ~ 100%
DC	
Offset range	±1.5 V (50Ω load)
	±3 V (High-Z load)
Accuracy	±(|offset|*1%+3 mV)
Noise	
Bandwidth	>25 MHz (-3dB)
Arbitrary Wave	
Frequency	1 µHz ~ 5 MHz
Wave Length	16 kpts
Sampling Rate	125MSa/s
Lead in	EasyWave and U-Disk

Digital Channels (option)	
No. of Channels	16
Max. Sampling Rate	1 GSa/s
Memory Depth	14 Mpts/CH
Min. Detectable Pulse Width	4 ns
Level Group	D0~D7, D8~D15
Level Range	-8 V ~ 8 V
Logic Type	TTL, CMOS, LVCMOS3.3, LVCMOS2.5, Custom
Skew	D0~D15: ±1 sampling interval Digital to Analog: ± (1 sampling interval +1ns)

I/O	
Standard	USB Host*2, USB Device, LAN, Pass/Fail, Trigger Out
Pass/Fail	3.3V TTL Output

Display(Screen)	
Display Type	7-inch TFT LCD
Display Resolution	800×480 pixels
Display Color	24-bit
Contrast(Typical)	500:1
Backlight	300 nits

Display(Waveform)	
Range	8 x 14 divisions
Display Mode	Dot, Vector
Persist Time	Off, 1 Sec, 5 Sec, 10 Sec, 30 Sec, Infinite
Color Display	Normal, Color
Screen Saver	1 min, 5 min, 10 min, 30 min, 1 hour, Off
Language	Simplified Chinese, Traditional Chinese, English, French, Japanese, Korean, German, Russian, Italian, Portuguese

Environments

Temperature	Operating: 0℃ - +40℃
	Non-operating: -20℃ - + 60℃
Humidity	Operating: 85% RH, 40 ℃, 24 hours
	Non-operating: 85% RH, 65 ℃, 24 hours
Height	Operating: ≤ 3000 m
	Non-operating: ≤ 15,000 m

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 1，150kHz-30MHz
	Radiated disturbance	CISPR 11/EN 55011	CLASS A group 1， 30MHz-1GHz
	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 2.7GHz）
	Electrical fast transients (EFT)	IEC 61000-4-4/EN 61000-4-4	2kV （Input AC Power Ports）
	Surges	IEC 61000-4-5/EN 61000-4-5	1kV （Line to line） 2kV （Line to ground）
	Radio-frequency continuous conducted Immunity	IEC 61000-4-6/EN 61000-4-6	3 V, 0.15-80MHz
	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.		
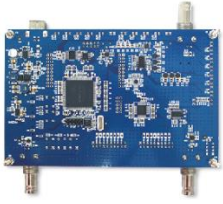
Power Supply

Input Voltage	100 ~ 240 Vrms 50/60Hz
	100 ~ 120 Vrms 400Hz
Power	50 W Max

Mechanical

Dimensions	Length: 312 mm
	Width: 132.6 mm
	Height: 151 mm
Weight	N.W: 2.6 kg; G.W: 3.8 kg

Probes and Accessories

Probe	Picture	Model	Specifications &Description

		PP510	Bandwidth: 100MHz, 1X/10X, 1M/10Mohm,300V/600V
Passive		PP215	Bandwidth: 200MHz, 1X/10X, 1M/10Mohm, 300V/600V
		SP2035	Bandwidth: 350MHz, 1X/10X, 1M/10Mohm, 150V/300V
Current Probe		CP4020	Bandwidth: 100 KHz, Max. continuous current: 20Arms Peak current: 60A Switch Ratio: 50mV/A, 5mV/A, Accuracy: 50mV/A (0.4A -10Apk)±2%, 5mV/A (1A-60Apk) ±2%, 9V battery source
		CP4050	Bandwidth: 1MHz, Max. continuous current: 50Arms, Peak current: 140A Switch Ratio: 500mV/A, 50mV/A Accuracy: 500mV/A (20mA -14ApK)±3%±20mA , 50mV/A (200mA -100ApK) ±4%±200mA, 50mV/A (100A -140ApK) ±15%max, 9V battery source
		CP4070	Bandwidth: 150kHz, Max. continuous current: 70Arms, Peak current: 200A Switch Ratio: 50mV/A, 5mV/A, Accuracy: 50mV/A (0.4A -10ApK)±2% , 5mV/A(1A -200ApK) ±2%, 9V battery source
		CP5030	Bandwidth: 50 MHz, Max. continuous current: 30Arms, Peak current: 50A Switch Ratio: 100mV/A, 1V/A, Accuracy: 1V/A (±1%±1mA), 100mV/A (±1%±10mA), DC12V/1.2A power adapter
		CP5030A	Bandwidth: 100 MHz, Max. continuous current: 30Arms, Peak current: 50A Switch Ratio: 100mV/A, 1V/A, Accuracy: 1V/A (±1%±1mA), 100mV/A (±1%±10mA), DC12V/1.2A power adapter
		CP5150	Bandwidth: 12 MHz, Max. continuous current: 150Arms, Peak current: 300A Switch Ratio: 100mV/A, 10mV/A, Accuracy: 100mV/A (±1%±10mA), 10mV/A (±1%±100mA), DC12V/1.2A power adapter
		CP5500	Bandwidth: 5 MHz, Max. continuous current: 500Arms, Peak current: 750A Switch Ratio: 100mV/A, 10mV/A, Accuracy: 100mV/A (±1%±10mA), 10mV/A(±1%±100mA), DC12V/1.2A power adapter
Differential Probe		DPB4080	Bandwidth: 50MHz, Differential Range: 800V (DC + Peak AC), 100X/200X/500X/1000X, Accuracy: ±1%, DC 9V/1A power adapter

		DPB5150	Bandwidth: 70MHz, Differential Range: 1500V (DC + Peak AC),50X/500X Accuracy: ±2%, DC 5V/1A USB adapter
		DPB5150A	Bandwidth: 100MHz, Differential Range: 1500V (DC + Peak AC), 50X/500X , Accuracy: ±2% DC 5V/1A USB adapter
		DPB5700	Bandwidth: 70MHz, Differential Range: 7000V (DC + Peak AC), 100X/1000X , Accuracy: ±2%, DC 5V/1A USB adapter
		DPB5700A	Bandwidth: 100MHz Differential Range: 7000V (DC + Peak AC), 100X/1000X Accuracy: ±2% DC 5V/1A USB adapter
High Voltage		HPB4010	Bandwidth: 40MHz Differential Range: DC 10kV, AC (rms): 7kV (sine), AC (Vpp): 20kV (Pulse) 1000X Accuracy: ≤3%
Isolated front end		ISFE	Provides isolation between standard oscilloscope channels, isolation between the measured signal and ground. Uses USB 5V power supply, plug and play. The maximum input voltage allowed is up to ± 600Vpk.
Demo Board		STB-3 Test Board	Output signals including square, sine, AM, fast edge, pulse, PWM, I2C, CAN, LIN etc. Used in teaching and demonstrations.
USB Isolated AWG Module		SAG1021I	Output Sine, Square, Ramp, pulse, Noise, DC and 45 built-in waveforms. The arbitrary waveforms can be accessed and edited by the EasyWave PC software.
Rack Mount		SDS1X-E-RMK	The height is 4U.

Ordering Information

Ordering information		
Product Name	SDS2202X-E 200MHz Two Channels	
	SDS2352X-E 350MHz Two Channels	
Standard Accessories	USB Cable -1	
	Quick Start -1	
	Passive Probe -2	
	Certification -1	
	Power Cord -1	
Optional Accessories	16 Channels Logic Analyzer	SLA1016
	USB Isolated AWG Module Hardware	SAG1021I
	Isolated Front End	ISFE
	STB Demo Source	STB-3
	High Voltage Probe	HPB4010
	Current Probes	CP4020/CP4050/CP4070/ CP4070A/CP5030/CP5030A/ CP5150/CP5500
	Differential Probes	DPB4080/DPB5150/DPB5150A /DPB5700/DPB5700A
	Rack Mount	SDS1X-E-RMK

About SIGLENT

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

SIGLENT first began developing digital oscilloscopes independently in 2002. After more than a decade of continuous development, SIGLENT has extended its product line to include digital oscilloscopes, isolated handheld oscilloscopes, function/arbitrary waveform generators, RF/MW signal generators, spectrum analyzers, vector network analyzers, digital multimeters, DC power supplies, electronic loads and other general purpose test instrumentation. Since its first oscilloscope was launched in 2005, SIGLENT has become the fastest growing manufacturer of digital oscilloscopes. We firmly believe that today SIGLENT is the best value in electronic test & measurement.

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