SIGLENT®

CALTRON PTE LTD

# DIGITAL OSCILLOSCOPES PRODUCT CATALOG

## SIGLENT TECHNOLOGIES

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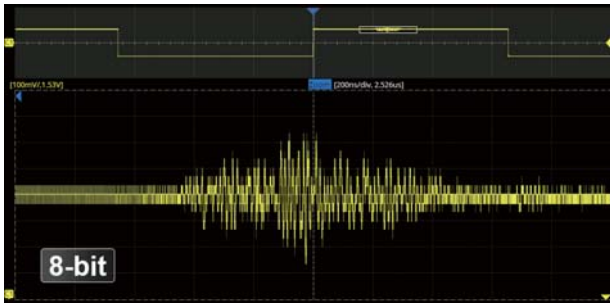
# SDS7000A
# Super Phosphor Oscilloscope

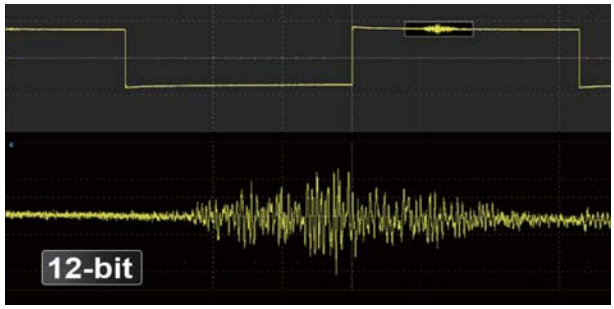
## Key Features

- 4 analog channels, up to 8 GHz bandwidth with up to 20 GSa/s sample rate
- 12-bit ADC
- Low background noise: 300 µVrms @ 8 GHz bandwidth, 220 µVrms @ 4 GHz bandwidth
- Waveform capture rates up to 1,000,000 wfm/s
- Up to 2 Gpts/ch waveform length (optional, AP models)
- Serial bus triggering and decoder, supports protocols I2C, SPI, UART, CAN, LIN, CAN FD, CAN XL, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester, ARINC429 and USB 2.0
- Abundant data analysis functions such as Search, Navigate, SignalScan, Digital Voltmeter, Counter, Waveform Histogram, Bode plot, Power Analysis, Eye/Jitter Analysis and Compliance Test
- Spectrum Analyzer mode (A models only)
- 16 digital channels
- Built-in 50 MHz waveform generator

## Characteristics

- **12-bit High Resolution**



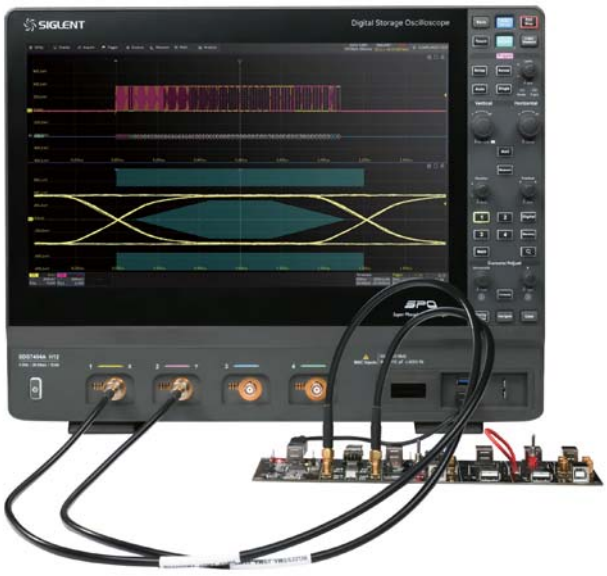

12-bit resolution shows you more details and less noise on the waveform.


### Upgraded processor system

Processor fully upgraded from the embedded ARM processor to the X86 processor, has greatly improved the system response speed and the speed of measurement, calculation, and analysis, presenting more possibilities for the expansion of software analysis functions in the future.


### Excellent User Interface and User Experience

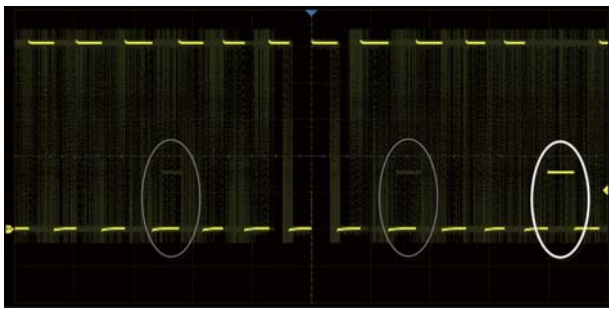
- 15.6” HD display with 1920*1080 resolution
- Capacitive touch screen, supporting multi-touch gestures, can move or scale the waveform traces quickly by finger-touch movements, which greatly improves the operational efficiency
- Built-in WebServer supports remote control on a web page over LAN
- Supports external mouse and keyboard




### Compliance Test (Optional)

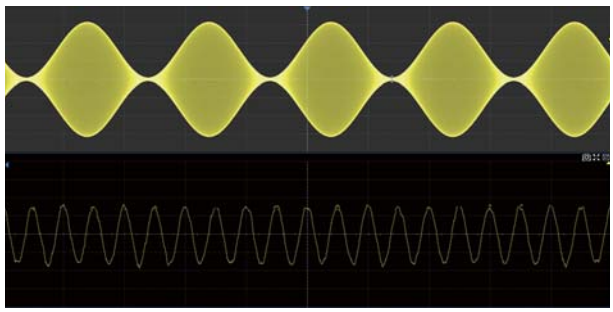
USB 2.0, 100Base-TX, 1000Base-T, 100Base-T1, 1000BaseT1, MIPI-DPHY protocol conformance testing are available. When the user sets up the environment according to the prompts, by using the related test fixture, the oscilloscope and related instruments can be automatically set up and related measurement, calculation, decoding and other functions will be used for testing, helping the user to complete each test project quickly and efficiently, and reports are generated automatically.

## • High Waveform Update Rate



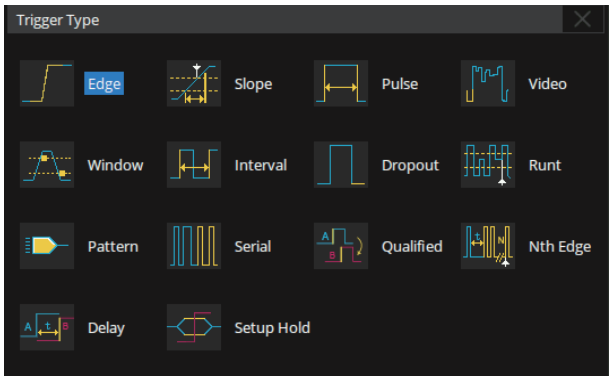
With a waveform update rate of up to 1,000,000 wfm/s, the oscilloscope can easily capture unusual or low-probability events. In Sequence mode, the waveform capture rate can reach 1,100,000 wfm/s

## • Deep Record Length



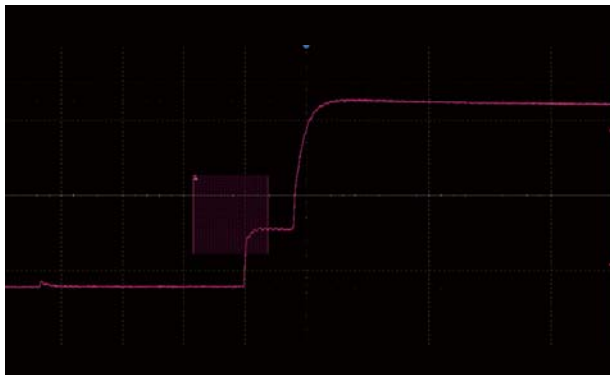
Using hardware-based Zoom technique and record length of up to 1 Gpts, users can select a slower timebase without compromising the sample rate, and then quickly zoom in to focus on the area of interest

## • Multiple Trigger Functions




Edge, Slope, Pulse, Video, Windows, Runt, Interval, Dropout, Pattern, Qualified, Nth edge, Setup/hold, Delay and serial trigger

## • Zone Trigger



Zone Trigger is available for advanced triggering. Combine spatial triggering with common trigger modes to isolate signals of interest

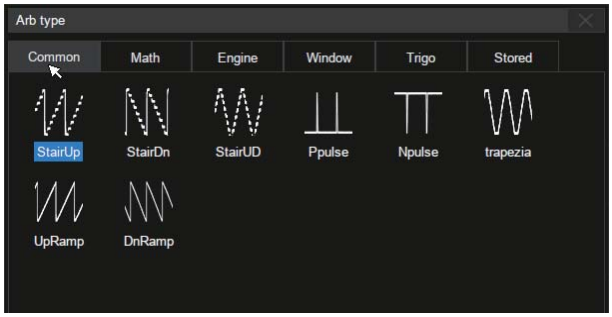
## • Eye/Jitter Analysis

Supports eye diagram and jitter analysis/measurement. It can automatically extract the embedded reference clock from serial data and create the eye diagram. Measurement on multiple eye/jitter parameters is provided. Mask test on eye diagrams is supported

## • Bode Plot

The oscilloscope can control the Built-in waveform generator, SIGLENT isolated USB AWG module or a stand-alone SIGLENT SDG generator, to scan the amplitude and phase-frequency response of the DUT, and display the data as a Bode Plot. This makes it possible to replace expensive network analyzers in some applications

## • Builit-in 50 MHz Function/Arbitrary Waveform Generator (Optional)

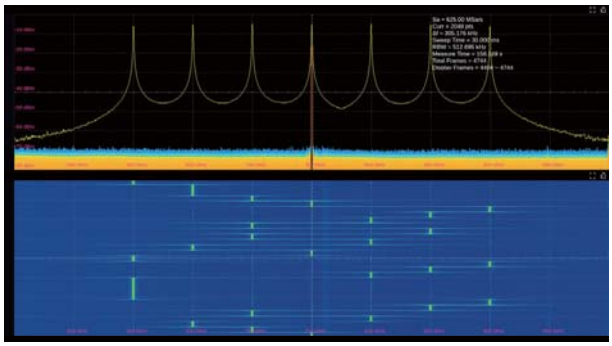



The oscilloscope can control the built-in waveform generator to output waveform with up to 50 MHz frequency and ±3 V amplitude. Six basic waveforms plus multiple types of arbitrary waveforms are built-in

## • Power Analysis (Optional)

The Power Analysis option provides a full suite of power measurements and analysis, which greatly improve the measurement efficiency in switching power supplies and power devices design

## • Spectrum Analyzer mode (Optional, for A models only)



In the Spectrum Analyzer mode, it supports the functions of a Real-Time Spectrum Analyzer (RTSA) and Digital Down Conversion (DDC). The built-in signal analysis software SigVSA enables direct signal analysis of the output data of the DDC. The supported signal types range from simple Binary Phase Shift Keying (BPSK) to complex broadband signals, such as 4G LTE, 5G NR, IEEE802.11b/a/g/n/ac/ax/be and 4096QAM, and it also has rich measurement functions.

### 5 GHz Active Differential Probe

The SAP5000D differential probe is provided with 5GHz bandwidth, 80 ps rise time, 400 fF differential input capacitance, and 10:1 attenuation ratio

## Specifications

| Bandwidth / Sample rate | 8 GHz | 6 GHz | 4 GHz | 3 GHz |
|---|---|---|---|---|
| 20 GSa/s (dual-channel)<br>10 GSa/s (3 or 4 channels) | SDS7804A H12 | SDS7604A H12 | SDS7404A H12 | SDS7304A H12 |
| 20 GSa/s @ all channels | SDS7804AP | SDS7604AP | | |

| Model | A models | AP models |
|---|---|---|
| Analog channels | 4 + EXT | |
| Bandwidth | 8 GHz, 6 GHz, 4 GHz, 3 GHz<br>8 GHz / 6GHz models limited to 4 GHz in 3 or 4 channels modes | 8 GHz, 6 GHz @ all channels |
| Sample rate (Max.) | 20 GSa/s (2 channels); 10 GSa/s (3 or 4 channels) | 20 GSa/s @ all channels |
| Vertical Resolution | 12-bit<br>Up to 16-bit in ERES mode | |
| Memory depth (Max.) | Standard: 500 Mpts/ch<br>Optional: 1 Gpts/ch in dual-channel mode | Standard:<br>1 Gpts/ch (1 or 2 channels); 500 Mpts/ch (3 or 4 channels)<br>Optional:<br>2 Gpts/ch (1 channel); 1 Gpts/ch (2 channels);<br>500 Mpts/ch (3 or 4 channels) |
| Waveform capture rate (Max.) | 1,000,000 wfm/s | |
| Trigger type | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Setup/hold, Delay, Serial | |
| Serial trigger and decode | Standard: $I^2C$, SPI, UART, CAN, LIN<br>Optional: CAN FD, CAN XL(decode only), FlexRay, $I^2S$, MIL-STD-1553B, SENT, Manchester (decode only), ARINC429, USB 2.0 (decode only) | |
| Measurement | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Setup/hold, Delay, Serial | |
| Serial trigger and decode | Standard: I2C, SPI, UART, CAN, LIN<br>Optional: CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester (decode only) | |
| Measurement | 60+ parameters, statistics, histogram, trend, and track supported | |
| Math | 4 traces<br>32 Mpts FFT, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, Absolute, Sign, $e^x$, $10^x$, ln, lg, Interpolation, MaxHold, MinHold, ERES, Average, Filter. Supports formula editor | |
| Data analysis | Search, Navigate, History, Mask Test, Digital Voltmeter, Counter, Waveform Histogram, Bode plot, Power Analysis, Eye/Jitter Analysis, SignalScan, Compliance Test (USB 2.0, 100Base-TX, 1000Base-T, 2.5G/5G/10GBase-T, 100Base-T1, 1000Base-T1, MIPI-DPHY), Spectrum Analyzer mode (RTSA/DDC/Sigal analysis, for A models only) | |
| Digital channel | 16-channel; maximum sample rate up to 1 GSa/s; record length up to 50 Mpts | |
| Waveform generator (optional) | Builit-in, frequency up to 50 MHz, 125 MSa/s sample rate, 16 kpts waveform memory | |
| Processor System | Intel Core i3-8100 or better, 32 GB memory, 250 GB storage, Linux operating system | |
| I/O | I/O: 4x USB Host 3.1 Gen 1, 2x USB 3.0 Host, USB 2.0 Device (USBTMC), 2x 1000M LAN (VXI-11+SCPI, Telnet (5024)+SCPI, Socket (5025)+SCPI, LXI, WebServer)<br>Display: 1x DVI-D: up to 1920x1200 @ 60Hz; 1x DP 1.2: up to 4096x2304 @ 60Hz; 1x HDMI 1.4: up to 4096x2160 @ 60Hz<br>Audio: Mic input, Audio Output<br>Others: External Trigger In, Aux Out (TRIG OUT, PASS/FAIL), 10 MHz In, 10 MHz Out | |
| Probe (Standard) | 500 MHz, 1 probe supplied for each channel | |
| Display | 15.6" HD TFT-LCD with capacitive touch screen (1920*1080) | |

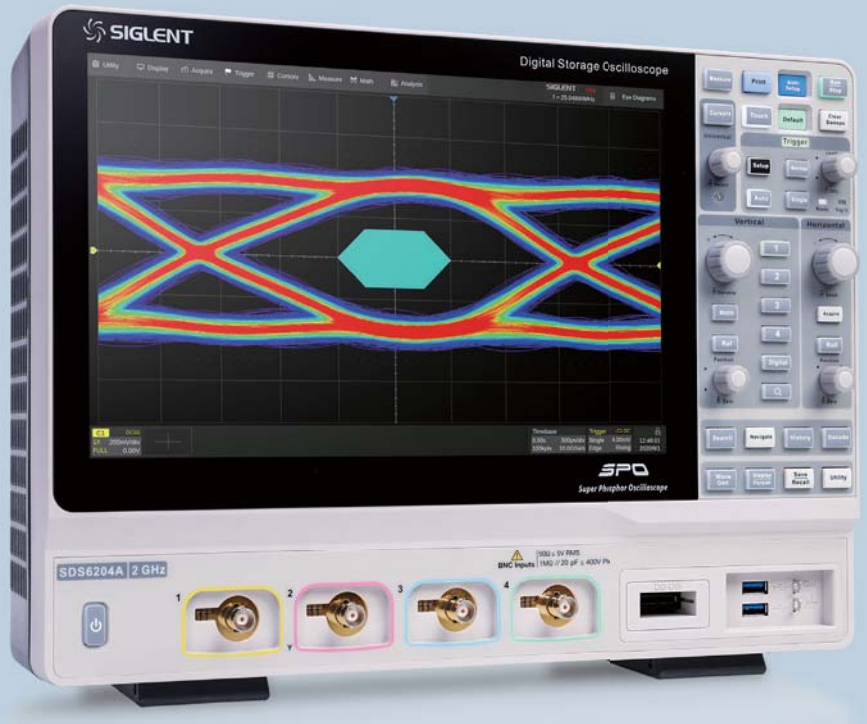
## Ordering Information

| Model | Description |
|---|---|
| SDS7804AP | 8 GHz, 20 GSa/s @ all channels, 4-CH, 12-bit, standard 1 Gpts/ch memory depth, 15.6" capacitive touch screen |
| SDS7604AP | 6 GHz, 20 GSa/s @ all channels, 4-CH, 12-bit, standard 1 Gpts/ch memory depth, 15.6" capacitive touch screen |
| SDS7804A H12 | 8 GHz, 20 GSa/s, 4-CH, 12-bit, standard 500 Mpts/ch memory depth, 15.6" capacitive touch screen |
| SDS7604A H12 | 6 GHz, 20 GSa/s, 4-CH, 12-bit, standard 500 Mpts/ch memory depth, 15.6" capacitive touch screen |
| SDS7404A H12 | 4 GHz, 20 GSa/s, 4-CH, 12-bit, standard 500 Mpts/ch memory depth, 15.6" capacitive touch screen |
| SDS7304A H12 | 3 GHz, 20 GSa/s, 4-CH, 12-bit, standard 500 Mpts/ch memory depth, 15.6" capacitive touch screen |
| **Standard Accessories** | **Quantity** |
| USB cable | 1 |
| Quick start | 1 |
| Passive probe (SP3150A) | 1/channel |
| Certificate of calibration | 1 |
| Wireless mouse | 1 |
| Power cord | 1 |
| Protective Cover | 1 |
| **Optional Accessories** | **Description** |
| SPL2016 | 16-channel logic probe: input impedance 100 kΩ \|\| 18 pF, input range ±20 V, min. input swing 800 mVpp, max. data rate 300 Mbps (with leadset), 100 Mbps (without leadset) |
| DF2001A | Power Analysis deskew fixture |
| FX-USB2 | USB 2.0 test fixture |
| FX-ETH | 100M/1000M Ethernet test fixture |
| FX-MGETH | 2.5G/5G/10G Ethernet test fixture |
| FX-AMETH | Automotive Ethernet test fixture |
| STB3 | STB3 demo signal source |
| USB-GPIB | USB-GPIB adapter |
| SP6150A | High-speed passive probe: 1.5 GHz, 10X, input impedance 1.8 pF \|\| 500 Ω |
| SAP5000D | High-speed differential probe: 5 GHz, 10X, differential input impedance 400 fF \|\| 20 kΩ, input range ±2.5 V, offset range ±12 V, SAPBus interface |
| SAP2500D | High-speed differential probe: 2.5 GHz, 10X, differential input impedance 1 pF \|\| 200 kΩ, input range ±4 V, offset range ±8 V, SAPBus interface |
| SAP2500 | High-speed active probe: 2.5 GHz, 10X, input impedance 1.1 pF \|\| 1 MΩ, input range ±8 V, offset range ±12 V, SAPBus interface |
| SAP1000 | High-speed active probe: 1 GHz, 10X, input impedance 1.2 pF \|\| 1 MΩ, input range ±8 V, offset range ±12 V, SAPBus interface |
| HPB4010 | High voltage passive probe: DC-40MHz, 1000X, input impedance 3.0 pF \|\| 100 MΩ, Max. input differential voltage DC: 0~10 kVDC, AC: ≤ 7 kVrms (Sinewave), 20 kVp-p (Pulse) |
| DPB1300 | High voltage differential probe: 50 MHz, 50X/500X, Max. Differential Test Voltage (DC + Peak AC) ±1300 V, CATIII 600 V/CATII 1000 V, DC 12 V Power supply |
| DPB5150 | High voltage differential probe: 70 MHz, 50X/500X, Max. Differential Test Voltage (DC + Peak AC) ±1500 V, CATIII 600 V/CATII 1000 V, USB 5 V Power supply |
| DPB5150A | High voltage differential probe: 100 MHz, 50X/500X, Max. Differential Test Voltage (DC + Peak AC) ±1500 V, CATIII 600 V/CATII 1000 V, USB 5 V Power supply |
| DPB5700 | High voltage differential probe: 70 MHz, 100X/1000X, Max. Differential Test Voltage (DC + Peak AC) ±7000 V, CATIII 1000V, USB 5 V Power supply |
| DPB5700A | High voltage differential probe: 100 MHz, 100X/1000X, Max. Differential Test Voltage (DC + Peak AC) ±7000 V, CATIII 1000V, USB 5 V Power supply |
| SCP5030 | Current probe: DC-50 MHz, 1 V/A and 0.1 V/A, Max. current 30 Arms/50 Apk, 300V, SAPBus interface |
| SCP5030A | Current probe: DC-100 MHz, 1 V/A and 0.1 V/A, Max. current 30 Arms/50 Apk, 300V, SAPBus interface |
| SCP5150 | Current probe: DC-12 MHz, 0.1 V/A and 0.01 V/A, Max. current 150 Arms/300 Apk, CAT III 300 V/CAT II 600 V, SAPBus interface |
| SCP5500 | Current probe: DC-2 MHz, 0.1 V/A and 0.01 V/A, Max. current 500 Arms/750 Apk, CAT III 300 V/CAT II 600 V, SAPBus interface |
| CPL5100 | Current probe: DC-600 kHz, 0.1 V/A and 0.01 V/A, current range 50 mA~100 A pk, DC 12 V Power supply |
| CP4020 | Current probe: DC-200 kHz, 50 mV/A and 5 mV/A, Max. current 20 Arms/60 Ap-p, CAT III 600 V/CAT II 600 V, DC 9 V Power supply |
| CP4050 | Current probe: DC-1 MHz, 500 mV/A and 50 mV/A, Max. current 50 Arms/140 Ap-p, CAT III 300 V/CAT II 600 V, DC 9 V Power supply |
| CP4070 | Current probe: DC-300 kHz, 50 mV/A and 5 mV/A, Max. current 70 Arms/200 Ap-p, CAT III 600 V/CAT II 600 V, DC 9 V Power supply |

| Optional Accessories | Description |
|---|---|
| CP4070A | Current probe: DC-300 kHz, 100 mV/A and 10 mV/A, Max. current 70 Arms/200 Ap-p, CAT III 600 V/CAT II 600 V, DC 9 V Power supply |
| CP6030 | Current probe: DC-50 MHz, 1 V/A and 0.1 V/A, Max. current 30 Arms/50 Apk, 300V, DC 12 V Power supply |
| CP6030A | Current probe: DC-100 MHz, 1 V/A and 0.1 V/A, Max. current 30 Arms/50 Apk, 300V, DC 12 V Power supply |
| CP6150 | Current probe: DC-12 MHz, 0.1 V/A and 0.01 V/A, Max. current 150 Arms/300 Apk, CAT III 300 V/CAT II 600 V, DC 12 V Power supply |
| CP6500 | Current probe: DC-5 MHz, 0.1 V/A and 0.01 V/A, Max. current 500 Arms/750 Apk, CAT III 300 V/CAT II 600 V, DC 12 V Power supply |
| SAP4000P | Power rail probe: DC - 4 GHz, 1.1X, input impedance 50 kΩ@low frequency, 50 Ω@high frequency, input range ± 600 mV, offset range ± 24 V, SAPBus interface |
| CASE-S2 | Transit case |
| SDS7000A-RMK | Rack Mount Kit |

| Options | Description |
|---|---|
| SDS7000A-FG | Waveform generator (software) |
| SDS7000A-PA | Power Analysis (software) |
| SDS7000A-EJ | Eye Diagram/Jitter Analysis (software) |
| SDS7000A-I2S | I2S trigger & decode (software) |
| SDS7000A-1553B | MIL-STD-1553B trigger & decode (software) |
| SDS7000A-FlexRay | FlexRay trigger & decode (software) |
| SDS7000A-CANFD | CAN FD trigger & decode (software) |
| SDS7000A-CANXL | CAN XL decode (software) |
| SDS7000A-SENT | SENT trigger & decode (software) |
| SDS7000A-Manch | Manchester decode (software) |
| SDS7000A-USB2 | USB 2.0 decode (software) |
| SDS7000A-ARINC | ARINC429 trigger & decode (software) |
| SDS7000A-CT-USB2 | USB 2.0 compliance test (software) |
| SDS7000A-CT-100BASE-T | 100Base-TX compliance test (software) |
| SDS7000A-CT-1000BASE-T | 1000Base-T compliance test (software) |
| SDS7000A-CT-2.5/5/10GBASE-T | 2.5G/5G/10G Base-T compliance test (software) |
| SDS7000A-CT-100BASE-T1 | 100Base-T1 compliance test (software) |
| SDS7000A-CT-1000BASE-T1 | 1000Base-T1 compliance test (software) |
| SDS7000A-CT-DP | MIPI-DPHY compliance test (software) |
| SDS7000A-CT-DDR | DDR2/DDR3 compliance test (software) |
| SDS7000A-RFA | RTSA / DDC / Signal Analysis (software), A models |
| SDS7000A-1GPTS | 1Gpts memory depth (software), A models |
| SDS7000AP-2GPTS | 2Gpts memory depth (software), AP models |
| SDS7000A-BW3T4 | 3 GHz to 4 GHz bandwidth upgrade (software), A models |
| SDS7000A-BW6T8 | 6 GHz to 8 GHz bandwidth upgrade (software), A models |
| SDS7000AP-BW6T8 | 6 GHz to 8 GHz bandwidth upgrade (software), AP models |
| 10M_OCXO_L | OCXO timebase (Assembled and calibrated in factory only) |

Note: SDS7000 family oscilloscopes include 3 distinct hardware platforms: 3-4 GHz SDS7000A, 6-8 GHz SDS7000A, and SDS7000AP. It is not possible to upgrade between platforms. Bandwidth upgrades are available within the same platform only.



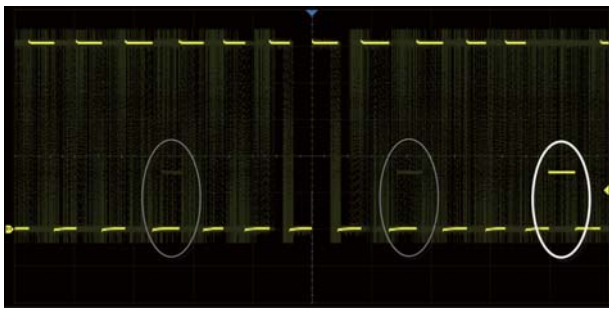

# SDS6000A
# Super Phosphor Oscilloscope

## Key Features

- 4 analog channels, up to 2 GHz bandwidth with 5 GSa/s (10 GSa/s ESR) sample rate at each channel
- SPO technology
  - Waveform capture rates up to 170,000 wfm/s (normal mode), and 750,000 wfm/s (sequence mode)
  - Supports 256-level intensity grading and color temperature display modes
  - 500 Mpts Record length in total for all 4 channels
  - Digital trigger system
- Serial bus triggering and decoder, supports protocols I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester and ARINC429
- Abundant data analysis functions such as Search, Navigate, Digital Voltmeter, Counter, Waveform Histogram, Bode plot, Power Analysis, SignalScan and Eye/Jitter Analysis

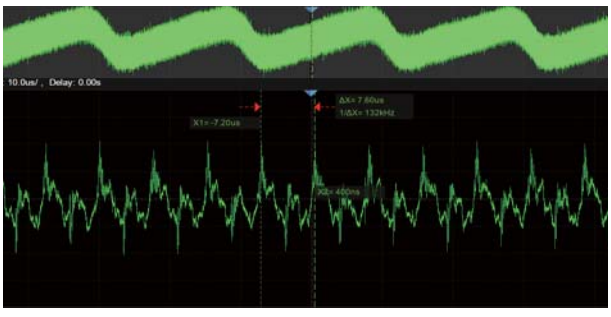
## Characteristics

**• High Waveform Update Rate**



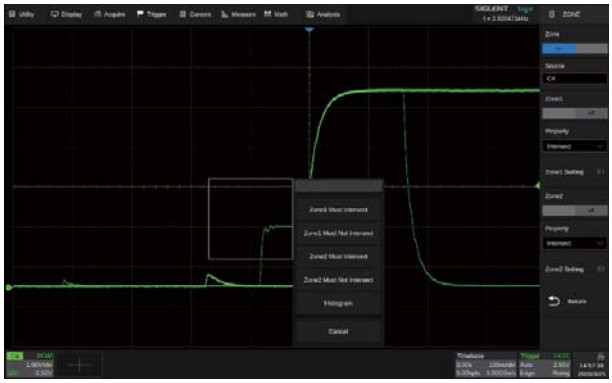
With a waveform update rate of up to 170,000 wfm/s, the oscilloscope can easily capture unusual or low-probability events. In Sequence mode, the waveform capture rate can reach 750,000 wfm/s

**• Deep Record Length**




Using hardware-based Zoom technique and record length of up to 500 Mpts, users can select a slower timebase without compromising the sample rate, and then quickly zoom in to focus on the area of interest

## • Trigger Zone



Trigger Zone is available for advanced triggering

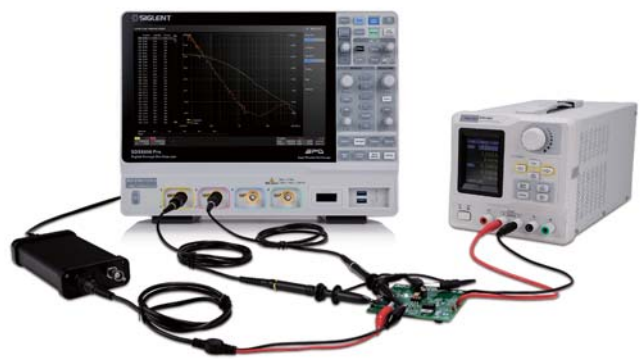
## • Serial Bus Decode

Display the decoded characters through the events list. Bus protocol information can be quickly and intuitively displayed in tabular form. I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, and Manchester are supported

## • Eye/Jitter Analysis

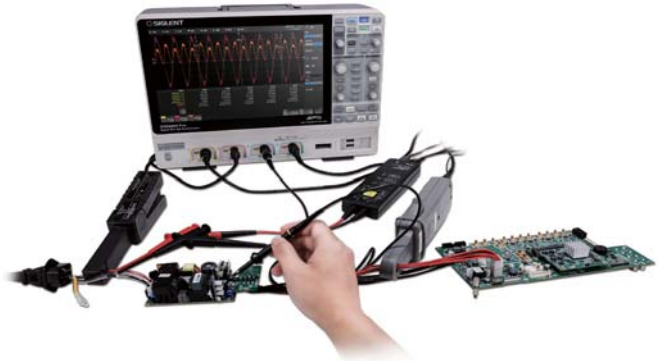
Supports eye diagram and jitter analysis/measurement. It can automatically extract the embedded reference clock from serial data and create the eye diagram. Measurement on multiple eye/jitter parameters is provided. Mask test on eye diagrams is supported

## • Bode Plot



The oscilloscope can control the isolated USB AWG module or a stand-alone SIGLENT SDG generator, to scan the amplitude and phase-frequency response of the DUT, and display the data as a Bode Plot. This makes it possible to replace expensive network analyzers in some applications

## • Power Analysis (Optional)



The Power Analysis option provides a full suite of power measurements and analysis, which greatly improve the measurement efficiency in switching power supplies and power devices design

## Specifications

| Model | SDS6204A | SDS6104A | SDS6054A |
|---|---|---|---|
| Analog channels | 4 + EXT | | |
| Bandwidth | 2 GHz | 1 GHz | 500 MHz |
| Sampling rate (Max.) | 5 GSa/s (10 GSa/s ESR) @ each channel | | |
| Memory depth (Max.) | 500 Mpts/ch (single-channel), 250 Mpts/ch (dual-channel) , 125 Mpts/ch (3 or 4 channels) | | |
| Waveform capture rate (Max.) | Normal mode: 170,000 wfm/s; Sequence mode: 750,000 wfm/s | | |
| Vertical resolution | 8-bit, up to 16-bit in Hi-Res mode | | |
| Trigger type | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Setup/hold, Delay, Serial | | |
| Serial trigger and decode | Standard: $I^2C$, SPI, UART, CAN, LIN<br>Optional: CAN FD, FlexRay, $I^3S$, MIL-STD-1553B, SENT, Manchester (decode only), ARINC429 (decode only) | | |
| Measurement | 50+ parameters, statistics, histogram, trend, and track supported | | |
| Math | 4 traces<br>8 Mpts FFT, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, Absolute, Sign, ex, 10x, ln, lg, Interpolation, MaxHold, MinHold, ERES, Average, Filter. Supports formula editor | | |
| Data analysis | Search, Navigate, History, Mask Test, Digital Voltmeter, Counter, Waveform Histogram, Bode plot and Power Analysis, Eye/Jitter Analysis, SignalScan | | |
| Digital channel | 16-channel; maximum sample rate up to 1 GSa/s; record length up to 50 Mpts | | |
| Waveform generator | Single-channel external USB isolated waveform generator, frequency up to 25 MHz, 125 MSa/s sample rate, 16 kpts waveform memory | | |
| I/O | USB 3.0 Host x2, USB 2.0 Host x2, USB 2.0 Device, LAN, micro SD card, HDMI, External trigger, Auxiliary output (TRIG OUT, PASS/FAIL) | | |
| Probe (Standard) | SP3150A, 500 MHz, 1 probe supplied for each channel | | |
| Display | 12.1 TFT-LCD with capacitive touch screen (1280*800) | | |

## Ordering Information

| Model | Description |
|---|---|
| SDS6204A | 2 GHz, 5 GSa/s, 4-CH, 500 Mpts/ch memory depth, 12.1" capacitive touch screen |
| SDS6104A | 1 GHz, 5 GSa/s, 4-CH, 500 Mpts/ch memory depth, 12.1" capacitive touch screen |
| SDS6054A | 500 MHz, 5 GSa/s, 4-CH, 500 Mpts/ch memory depth, 12.1" capacitive touch screen |
| **Standard Accessories** | **Quantity** |
| USB cable | 1 |
| Quick start | 1 |
| Passive probe (SP3150A) | 1/channel |
| Certificate of calibration | 1 |
| Wireless mouse | 1 |
| Power cord | 1 |
| Protective Cover | 1 |
| **Optional Accessories** | **Description** |
| SP6150A | High-speed passive probe: 1.5 GHz, 10X, Input impedance 1.8 pF \|\| 500 Ω |
| SAP1000 | High-speed active probe: 1 GHz, 10X, Input impedance 1.2 pF \|\| 1 MΩ, Input dynamic range ±8 V, Offset range ±12 V, SAPBus interface |
| SAP2500 | High-speed active probe: 2.5 GHz, 10X, Input impedance 1.1 pF \|\| 1 MΩ, Input dynamic range ±8 V, Offset range ±12 V, SAPBus interface |
| SAP2500D | High-speed differential probe: 2.5 GHz, 10X, Input impedance (differential) 1 pF \|\| 200 kΩ, Input dynamic range ±4 V, Offset range ±8 V, SAPBus interface |
| HPB4010 | High voltage passive probe: DC-40MHz, 1000X, Input impedance 3.0 pF \|\| 100 MΩ, Max. measurement voltage DC: 0~10 kVDC, AC: ≤ 7 kVrms (Sinewave), 20 kVp-p (Pulse) |
| DPB1300 | High voltage differential probe: 50 MHz, 50X/500X, Max differential test voltage (DC + Peak AC) ±1300 V, Max input common mode voltage CATIII 600 V / CATII 1000 V, 12 V adapter power supply |
| DPB5150 | High voltage differential probe: 70 MHz, 50X/500X, Max differential test voltage (DC + Peak AC) ±1500 V, Max input common mode voltage CATIII 600 V / CATII 1000 V, USB 5V adapter power supply |
| DPB5150A | High voltage differential probe: 100 MHz, 50X/500X, Max differential test voltage (DC + Peak AC) ±1500 V, Max input common mode voltage CATIII 600 V / CATII 1000 V, USB 5V adapter power supply |

| Optional Accessories | Description |
|---|---|
| DPB5700 | High voltage differential probe: 70 MHz, 100X/1000X, Max differential test voltage (DC + Peak AC) ±7000 V, Max input common mode voltage CATIII 1000 V, USB 5V adapter power supply |
| DPB5700A | High voltage differential probe: 100 MHz, 100X/1000X, Max differential test voltage (DC + Peak AC) ±7000 V, Max input common mode voltage CATIII 1000 V, USB 5V adapter power supply |
| SCP5030 | Current probe: DC-50 MHz, Conversion factor 1 V/A, 0.1 V/A, Max current 30 Arms/50 Apk, 300V, SAPBus interface |
| SCP5030A | Current probe: DC-100 MHz, Conversion factor 1 V/A, 0.1 V/A, Max current 30 Arms/50 Apk, 300V, SAPBus interface |
| SCP5150 | Current probe: DC-12 MHz, Conversion factor 0.1 V/A, 0.01 V/A, Max current 150 Arms/300 Apk, CAT III 300 V/CAT II 600 V, SAPBus interface |
| SCP5500 | Current probe: DC-2 MHz, Conversion factor 0.1 V/A, 0.01 V/A, Max current 500 Arms/750 Apk, CAT III 300 V/CAT II 600 V, SAPBus interface |
| CPL5100 | Current probe: DC-600 kHz, Conversion factor 0.1 V/A, 0.01 V/A, Current range 50 mA -100 Apk, 12 V adapter power supply |
| CP4020 | Current probe: DC-200 kHz, Conversion factor 5 mV/A, 50 mV/A, Max current 20 Arms/60 Ap-p, CAT III 600 V/CAT II 600 V, 9 V adapter power supply |
| CP4050 | Current probe: DC-1 MHz, Conversion factor 50 mV/A, 500 mV/A, Max current 50 Arms/140 Ap-p, CAT III 300 V/CAT II 600 V, 9 V adapter power supply |
| CP4070 | Current probe: DC-300 kHz, Conversion factor 5 mV/A, 50 mV/A, Max current 70 Arms/200 Ap-p, CAT III 300 V/CAT II 600 V, 9 V adapter power supply |
| CP4070A | Current probe: DC-300 kHz, Conversion factor 10 mV/A, 100 mV/A, Max current 70 Arms/200 Ap-p, CAT III 600 V/CAT II 600 V, 9 V adapter power supply |
| CP6030 | Current probe: DC-50 MHz, Conversion factor 1 V/A, 0.1 V/A, Max current 30 Arms/50 Apk, 300V, 12 V adapter power supply |
| CP6030A | Current probe: DC-100 MHz, Conversion factor 1 V/A, 0.1 V/A, Max current 30 Arms/50 Apk, 300V, 12 V adapter power supply |
| CP6150 | Current probe: DC-12 MHz, Conversion factor 0.1 V/A, 0.01 V/A, Max current 150 Arms/300 Apk, CAT III 300 V/CAT II 600 V, 12 V adapter power supply |
| CP6500 | Current probe: DC-5 MHz, Conversion factor 0.1 V/A, 0.01 V/A, Max current 500 Arms/750 Apk, CAT III 300 V/CAT II 600 V, 12 V adapter power supply |
| SAP4000P | Power rail probe: DC - 4 GHz, 1.1X, Input impedance: 50 kΩ @ low frequency, 50 Ω @ high frequency, Input dynamic range ± 600 mV, Offset range ± 24 V, SAPBus interface |
| SPL2016 | 16-channel logic probe: Input impedance 100 kΩ \|\| 18 pF, Input dynamic range ±20 V, Min. input swing 800 mVpp, Max. data rate 300 Mbps (without lead), 100 Mbps (with lead) |
| SAG1021I | 50 MHz isolated USB function/arbitrary waveform generator |
| DF2001A | Power Analysis deskew fixture |
| STB3 | STB3 demo signal source |
| USB-GPIB | USB-GPIB adapter |
| SDS6000-RMK | Rack Mount Kit |
| BAG-S2 | Bag |
| **Options** | **Description** |
| SDS6000Pro-PA | Power Analysis (software) |
| SDS6000Pro-EJ | Eye Diagram/Jitter Analysis (software) |
| SDS6000Pro-I2S | I2S trigger & decode (software) |
| SDS6000Pro-1553B | MIL-STD-1553B trigger & decode (software) |
| SDS6000Pro-FlexRay | FlexRay trigger & decode (software) |
| SDS6000Pro-CANFD | CAN FD trigger & decode (software) |
| SDS6000Pro-SENT | SENT trigger & decode (software) |
| SDS6000Pro-Manch | Manchester decode (software) |
| SDS6000Pro-ARINC | ARINC429 decode (software) |
| SDS6000-4BW10 | 500 MHz to 1 GHz bandwidth upgrade (software) |
| SDS6000-4BW20 | 1 GHz to 2 GHz bandwidth upgrade (software) |

# SDS6000L
# Low Profile Digital Storage Oscilloscope

## Key Features

- 8/4 analog channels + 1 external trigger. Designed for expansion. Combine multiple units for a high-speed acquisition system with up to 512 channels.
- Up to 2 GHz bandwidth with 5 GSa/s (10 GSa/s ESR) sample rate at each channel
- Serial bus triggering and decoder, supports protocols I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT and Manchester
- Abundant data analysis functions such as Search, Navigate, Digital Voltmeter, Counter, Waveform Histogram, Power Analysis and Eye/Jitter Analysis

## Characteristics

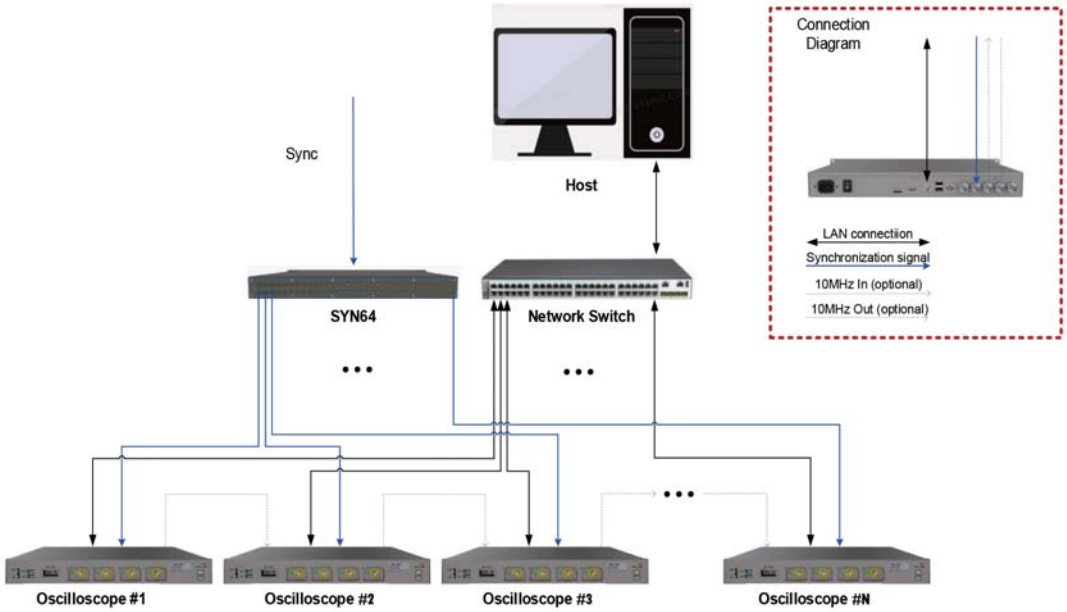
### • Eye / Jitter Analysis

Supports eye diagram and jitter analysis / measurement. It can automatically extract the embedded reference clock from serial data and create an eye diagram. Measurement on multiple eye / jitter parameters is provided and mask testing of eye diagrams is supported

### • Power Analysis (Optional)

The Power Analysis option provides a full suite of power measurements and analysis, which greatly improves the measurement efficiency in switching power supplies and power devices design

### Flexible Multi-channel High-speed Acquisition System




- Standard sizes: 4 - channel models – 1U,8-channel models – 2U
- Multiple units are combined to create a high-speed acquisition system with up to 512 channels by being triggered with low-skew synchronization signals from the 64-channel synchronization distributor SYN64
- The host can access each unit over 1000M LAN. A complete SCPI command set as well as LabVIEW and IVI drivers are provided for easy data acquisition. The LAN port is LXI compliant.
- Sample clocks are synchronized between all units in the test system by cascading the 10 MHz In and 10 MHz Out clocks in a daisy chain

## Specifications

| Model / Channel | 2 GHz | 1 GHz | 500 MHz |
|---|---|---|---|
| 8 | SDS6208L | SDS6108L | SDS6058L |
| 4 | SDS6204L | SDS6104L | SDS6054L |

| Model | SDS6208L<br>SDS6204L | SDS6108L<br>SDS6104L | SDS6058L<br>SDS6054L |
|---|---|---|---|
| Channel | 8/4 + EXT | | |
| Bandwidth | 2 GHz | 1 GHz | 500 MHz |
| Sample rate (Max.) | 5 GSa/s (10 GSa/s ESR) @ each channel | | |
| Memory depth (Max.) | 500 Mpts/ch (single-channel); 250 Mpts/ch (dual-channel); 125 Mpts/ch (3 or 4 channels) | | |
| Waveform capture rate (Max.) | Normal mode: 170,000 wfm/s; Sequence mode: 750,000 wfm/s | | |
| Vertical resolution | 8-bit<br>Up to 12-bit in ERES mode, equivalent to 16-bit Hi-Res mode | | |
| Trigger type | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Setup/hold, Delay, Serial | | |
| Serial trigger and decode | Standard: I2C, SPI, UART, CAN, LIN<br>Optional: CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester (decode only) | | |
| Measurement | 50+ parameters, statistics, histogram, trend, and tracking supported | | |
| Math | 4 traces<br>8 Mpts FFT, +, -, x, ÷, ∫dt, d/dt, √ , Identity, Negation, Absolute, Sign, ex, 10x, ln, lg, Interpolation, MaxHold, MinHold, ERES, Average. Supports formula editor | | |
| Data analysis | Search, Navigate, History, Mask Test, Digital Voltmeter, Counter, Waveform Histogram, Power Analysis, Eye / Jitter Analysis | | |
| Digital channel | 16-channel; maximum sample rate up to 1 GSa/s; record length up to 50 Mpts | | |
| Waveform generator (optional) | Built-in single-channel waveform generator, frequency up to 25 MHz, 125 MSa/s sample rate, 16 kpts waveform memory | | |
| I/O | HDMI (1280*800), USB 3.0 Host x2, USB 2.0 Host x2, USB 2.0 Device (USBTMC), 1000M LAN (SCPI over VXI-11, SCPI over Telnet (port:5024), SCPI over Socket (port:5025), micro SD card, External trigger, Auxiliary output (TRIG OUT,PASS / FAIL), 10 MHz In, 10 MHz Out | | |
| Probe (Standard) | 1x 500 MHz passive probe supplied for each channel | | |

| Multiple-channel Acquisition System | |
|---|---|
| Channel | Up to 512 |
| Jitter | Within a unit: < 100 ps,rms Between units:< 250 ps,rms |
| Skew | Without skew calibration, within a unit: < 100 ps Between units: < 500 ps<br>With skew calibration, within a unit: < 100 ps Between units: < 150 ps |

## Ordering Information

| Model | Description |
|---|---|
| SDS6208L | 2 GHz bandwidth, 5 GSa/s sample rate, 8-bit, 500 Mpts memory depth, 8-channel |
| SDS6204L | 2 GHz bandwidth, 5 GSa/s sample rate, 8-bit, 500 Mpts memory depth, 4-channel |
| SDS6108L | 1 GHz bandwidth, 5 GSa/s sample rate, 8-bit, 500 Mpts memory depth, 8-channel |
| SDS6104L | 1 GHz bandwidth, 5 GSa/s sample rate, 8-bit, 500 Mpts memory depth, 4-channel |
| SDS6058L | 500 MHz bandwidth, 5 GSa/s sample rate, 8-bit, 500 Mpts memory depth, 8-channel |
| SDS6054L | 500 MHz bandwidth, 5 GSa/s sample rate, 8-bit, 500 Mpts memory depth, 4-channel |
| **Standard Accessories** | **Quantity** |
| USB cable | 1 |
| Quick start | 1 |
| Passive probe | 1/channel |
| Certificate of calibration | 1 |
| Wireless mouse | 1 |
| Power cord | 1 |
| **Optional Accessories** | **Part No.** |
| 16-channel logic probe | SPL2016 |
| Power Analysis deskew fixture | DF2001A |
| STB3 demo signal source | STB3 |
| High-speed passive probe | SP6150A |
| High-speed active probe | SAP1000, SAP2500 |
| High voltage probe | HPB4010 |
| High-speed differential probe | SAP2500D |
| High voltage differential probe | DPB1300 / DPB4080 / DPB5150 / DPB5150A / DPB5700 / DPB5700A |
| Current probe | CPL5100/CP4020/CP4050/CP4070/CP4070A CP6030/CP6030A/CP6150/CP6500<br>SCP5030/SCP5030A/SCP5150/SCP5150A |
| Power rail probe | SAP4000P |
| 64-channel synchronization distributor | SYN64 |
| **Options** | **Part No.** |
| Waveform generator (software) | SDS6000L-FG |
| Power Analysis (software) | SDS6000L-PA |
| Eye Diagram/Jitter Analysis (software) | SDS6000L-EJ |
| I2S trigger & decode (software) | SDS6000L-I2S |
| MIL-STD-1553B trigger & decode (software) | SDS6000L-1553B |
| FlexRay trigger & decode (software) | SDS6000L-FlexRay |
| CAN FD trigger & decode (software) | SDS6000L-CANFD |
| SENT trigger & decode (software) | SDS6000L-SENT |
| Manchester decode (software) | SDS6000L-Manch |

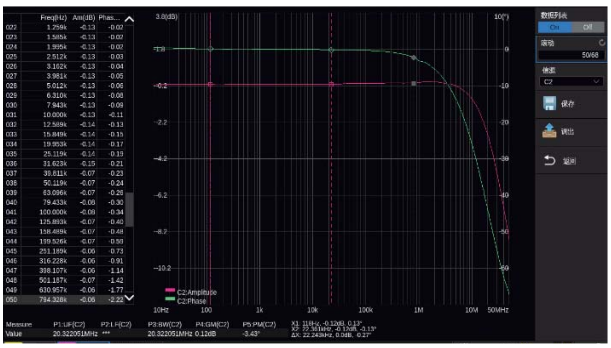

# SDS5000X HD & SDS5000L
# Super Phosphor Oscilloscope

## Key Features

- 8/6/4 analog channels for SDS5000X HD and 8 channels for SDS5000L
- Up to 1 GHz bandwidth with up to 5 GSa/s sample rate
- Low noise floor: 140 μVrms @ 1 GHz bandwidth (typical)
- Serial bus triggering and decoder, supports protocols including I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester and ARINC429
- 16 digital channels (only for SDS5000X HD)
- Typical ENOB at 1 GHz of 8.2 bits
- SYNC-64 to Synchronize 64 x SDS5000L

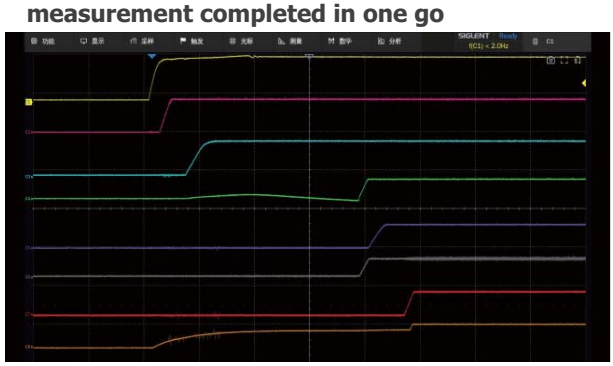
## Characteristics

- **Bode Plot**



The oscilloscope can control the SIGLENT isolated USB AWG module or a stand-alone SIGLENT SDG generator, to scan the amplitude and phase-frequency response of the DUT, and display the data as a Bode Plot. This makes it possible to replace expensive network analyzers in some applications

- **Multi-channel timing test, power rail measurement completed in one go**

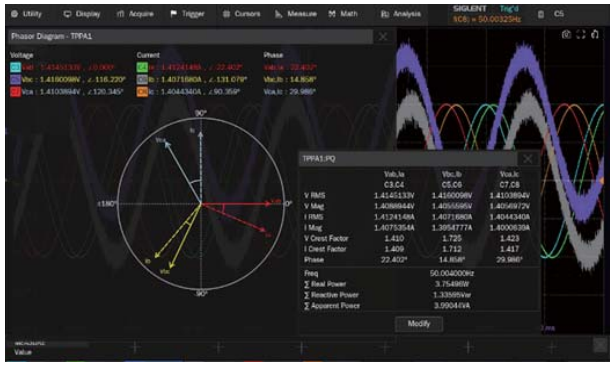


The oscilloscopes can capture the power-on process of up to 8 signals at one time, saving measurement time, improving work efficiency, reducing errors introduced by multiple measurements

## • Complete Wide Bandgap Semiconductor Test Solution

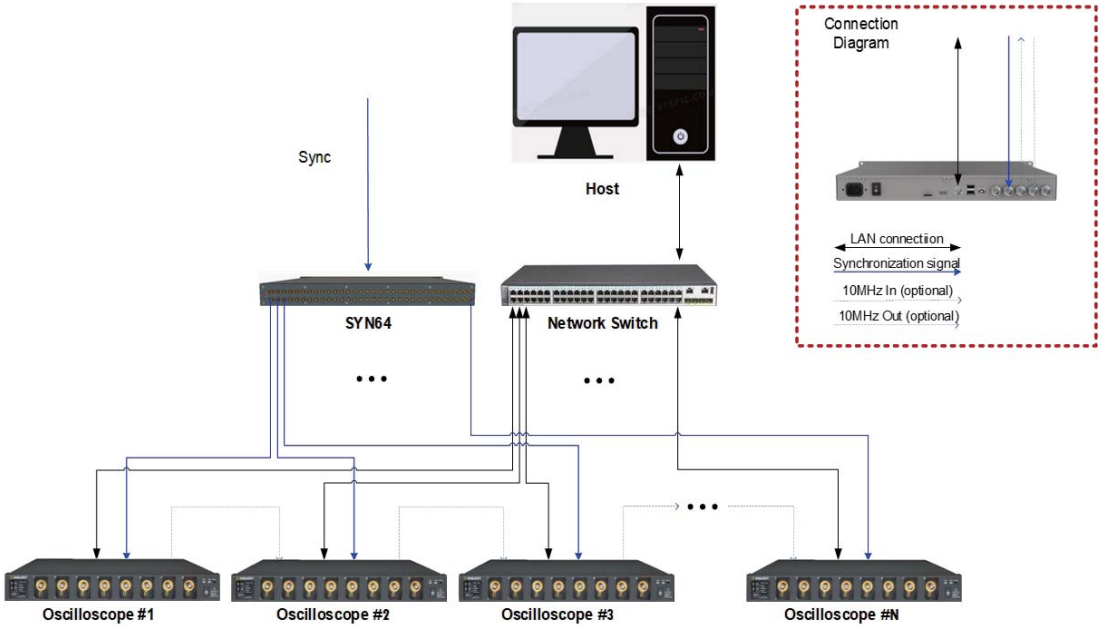
The 6/8 channels oscilloscopes and optical isolation probes complete the last piece of the puzzle for wide bandgap semiconductor testing. The rise time of the oscilloscopes reaches the picosecond (ps) level, enabling it to capture the fast waveforms of SiC and GaN, and analyze the transient in voltage and current as well as the switching characteristics. By observing the shape of the signal, overshoot, ringing and other conditions, the integrity of the signal can be analyzed to optimize the circuit design.

## • Power Analysis (Optional)



The Power Analysis and TPPA (3-phase Power Analysis) options provides a full suite of power measurements and analysis, which greatly improve the measurement efficiency in switching power supplies and power devices design. Combining the TPPA option with the 6/8 channels oscilloscope, high-voltage differential probes and current probes, we provide a complete solution of 3-phase power analysis

## Flexible Multi-channel High-speed Acquisition System with the SDS5000L




- Standard sizes: 1U height
- Multiple units are combined to create a high-speed acquisition system with up to 512 channels by being triggered with low-skew synchronization signals from the 64-channel synchronization distributor SYN64
- The host can access each unit over 1000M LAN. A complete SCPI command set as well as LabVIEW and IVI drivers are provided for easy data acquisition. The LAN port is LXI compliant
- Sample clocks are synchronized between all units in the test system by cascading the 10 MHz In and 10 MHz Out clocks in a daisy chain

## Specifications

| Model / Channel | 1 GHz | 500 MHz | 350 MHz |
|---|---|---|---|
| 8 | SDS5108X HD, SDS5108L | SDS5058X HD, SDS5058L | SDS5038X HD, SDS5038L |
| 6 | SDS5106X HD | SDS5056X HD | SDS5036X HD |
| 4 | SDS5104X HD | SDS5054X HD | SDS5034X HD |
| **Model** | **SDS5108X HD<br>SDS5106X HD<br>SDS5104X HD<br>SDS5108L** | **SDS5058X HD<br>SDS5056X HD<br>SDS5054X HD<br>SDS5058L** | **SDS5038X HD<br>SDS5036X HD<br>SDS5034X HD<br>SDS5038L** |
| Analog channels | 8/6/4 + EXT | | |
| Bandwidth | 1 GHz | 500 MHz | 350 MHz |
| Sample rate (Max.) | 5 GSa/s (quarter channel/half channel mode); 2.5 GSa/s (full channel mode) | | |
| Vertical Resolution | 12-bit<br>Up to 16-bit in HiRes mode | | |
| Memory depth (Max.) | 2.5 Gpts/ch (quarter channel mode); 1 Gpts/ch (half channel mode); 500 Mpts/ch (full channel mode) | | |
| Waveform capture rate (Max.) | Normal mode: Up to 160,000 wfm/s; Sequence mode: Up to 650,000 wfm/s | | |
| Trigger type | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Setup/hold, Delay, Serial | | |
| Serial trigger and decode | Standard: $I^2C$, SPI, UART, CAN, LIN<br>Optional: CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester (decode only), ARINC429 | | |
| Measurement | 60+ parameters. Statistics, histogram, trend, and track supported | | |
| Math | 8 traces<br>8 Mpts FFT, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, Absolute, Sign, ex, 10x, ln, lg, Interpolation, MaxHold, MinHold, ERES, Average, Filter. Supports formula editor | | |
| Data analysis | Search, Navigate, History, Mask Test, Digital Voltmeter, Counter, Waveform Histogram, Bode plot , Power Analysis, Double Pulse Test | | |
| Waveform generator (optional) | SAG1021I USB isolated waveform generator module, frequency up to 50 MHz, 125 MSa/s sample rate, 16 kpts waveform memory | | |
| Probe (Standard) | 500 MHz, 1 probe supplied for each channel | | |
| **Series** | **SDS5000X HD** | **SDS5000L** | |
| Display | 12.1" TFT-LCD with capacitive touch screen (1280*800) | None | |
| Digital channel | 16-channel; maximum sample rate up to 1.25 GSa/s; record length up to 250 Mpts | None | |
| I/O | I/O: 2x USB 3.0 Host, USB 2.0 Host, USB 3.0 Device (USBTMC), 1000M LAN (VXI-11+SCPI, Telnet (5024)+SCPI, Socket (5025)+SCPI, LXI, WebServer)<br>Display: HDMI<br>Others: External Trigger In, Aux Out (TRIG OUT, PASS/FAIL), 10 MHz In, 10 MHz Out | I/O: USB 3.0 Host, USB 2.0 Host, USB 3.0 Device (USBTMC), 1000M LAN (VXI-11+SCPI, Telnet (5024)+SCPI, Socket (5025)+SCPI, LXI, WebServer)<br>Display: HDMI<br>Others: External Trigger In, Aux Out (TRIG OUT, PASS/FAIL), 10 MHz In, 10 MHz Out | |

## Ordering Information

| Model | Description |
|---|---|
| SDS5108X HD | 8-ch, 1 GHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, 12.1" capacitive touch screen |
| SDS5058X HD | 8-ch, 500 MHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, 12.1" capacitive touch screen |
| SDS5038X HD | 8-ch, 350 MHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, 12.1" capacitive touch screen |
| SDS5106X HD | 6-ch, 1 GHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, 12.1" capacitive touch screen |
| SDS5056X HD | 6-ch, 500 MHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, 12.1" capacitive touch screen |
| SDS5036X HD | 6-ch, 350 MHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, 12.1" capacitive touch screen |
| SDS5104X HD | 4-ch, 1 GHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, 12.1" capacitive touch screen |
| SDS5054X HD | 4-ch, 500 MHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, 12.1" capacitive touch screen |
| SDS5034X HD | 4-ch, 350 MHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, 12.1" capacitive touch screen |
| SDS5108L | 8-ch, 1 GHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, low profile, 1u height |
| SDS5058L | 8-ch, 500 MHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, low profile, 1u height |
| SDS5038L | 8-ch, 350 MHz, 5 GSa/s, 12-bit, 2.5 Gpts/ch memory depth, low profile, 1u height |

| Standard Accessories | Quantity |
|---|---|
| USB cable | 1 |
| Quick start | 1 |
| Passive probe | 1/channel, 500 MHz |
| Certificate of calibration | 1 |
| Wireless mouse | 1 |
| Power cord | 1 |

| Optional Accessories | Description |
|---|---|
| SPL2016 | 16-channel logic probe: input impedance 100 kΩ \|\| 18 pF, input range ±20 V, min. input swing 800 mVpp, max. data rate 300 Mbps (with leadset), 100 Mbps (without leadset) |
| DF2001A | Power Analysis deskew fixture |
| STB3 | STB3 demo signal source |
| USB-GPIB | USB-GPIB adapter |
| SAG1021I | 50 MHz isolated USB function/arbitrary waveform generator |
| SP6150A | High-speed passive probe: 1.5 GHz, 10X, input impedance 1.8 pF \|\| 500 Ω |
| SAP2500D | High-speed differential probe: 2.5 GHz, 10X, differential input impedance 1 pF \|\| 200 kΩ, input range ±4 V, offset range ±8 V, SAPBus interface |
| SAP2500 | High-speed active probe: 2.5 GHz, 10X, input impedance 1.1 pF \|\| 1 MΩ, input range ±8 V, offset range ±12 V, SAPBus interface |
| SAP1000 | High-speed active probe: 1 GHz, 10X, input impedance 1.2 pF \|\| 1 MΩ, input range ±8 V, offset range ±12 V, SAPBus interface |
| HPB4010 | High voltage passive probe: DC-40MHz, 1000X, input impedance 3.0 pF \|\| 100 MΩ, Max. input differential voltage DC: 0~10 kVDC, AC: ≤ 7 kVrms (Sinewave) , 20 kVp-p (Pulse) |
| SDP6150A | High voltage differential probe: 100 MHz, 50X/500X, Max. Differential Test Voltage (DC + Peak AC) ±1500 V, CATIII 600 V/CATII 1000 V, DC 5 V Power supply |
| SDP6150D | High voltage differential probe: 400 MHz, 100X/1000X, Max. Differential Test Voltage (DC + Peak AC) ±1500 V, CATIII 600 V/ CATII 1000 V, DC 5 V Power supply |
| SAP1000H | High voltage differential probe: 1 GHz, 5X/50X, Differential Input Impedance 1 pF \|\| 200 kΩ, Input range (DC + Peak AC) ±42 V, offset range ±42 V, SAPBus interface |
| DPB1300 | High voltage differential probe: 50 MHz, 50X/500X, Max. Differential Test Voltage (DC + Peak AC) ±1300 V, CATIII 600 V/CATII 1000 V, DC 12 V Power supply |
| DPB5150 | High voltage differential probe: 70 MHz, 50X/500X, Max. Differential Test Voltage (DC + Peak AC) ±1500 V, CATIII 600 V/CATII 1000 V, USB 5 V Power supply |
| DPB5150A | High voltage differential probe: 100 MHz, 50X/500X, Max. Differential Test Voltage (DC + Peak AC) ±1500 V, CATIII 600 V/CATII 1000 V, USB 5 V Power supply |
| DPB5700 | High voltage differential probe: 70 MHz, 100X/1000X, Max. Differential Test Voltage (DC + Peak AC) ±7000 V, CATIII 1000V, USB 5 V Power supply |
| DPB5700A | High voltage differential probe: 100 MHz, 100X/1000X, Max. Differential Test Voltage (DC + Peak AC) ±7000 V, CATIII 1000V, USB 5 V Power supply |
| SCP5030 | Current probe: DC-50 MHz, 1 V/A and 0.1 V/A, Max. current 30 Arms/50 Apk, 300V, SAPBus interface |
| SCP5030A | Current probe: DC-100 MHz, 1 V/A and 0.1 V/A, Max. current 30 Arms/50 Apk, 300V, SAPBus interface |
| SCP5150 | Current probe: DC-12 MHz, 0.1 V/A and 0.01 V/A, Max. current 150 Arms/300 Apk, CAT III 300 V/CAT II 600 V, SAPBus interface |
| SCP5500 | Current probe: DC-2 MHz, 0.1 V/A and 0.01 V/A, Max. current 500 Arms/750 Apk, CAT III 300 V/CAT II 600 V, SAPBus interface |
| CPL5100 | Current probe: DC-600 kHz, 0.1 V/A and 0.01 V/A, current range 50 mA~100 A pk, DC 12 V Power supply |
| CP4020 | Current probe: DC-200 kHz, 50 mV/A and 5 mV/A, Max. current 20 Arms/60 Ap-p, CAT III 600 V/CAT II 600 V, DC 9 V Power supply |
| CP4050 | Current probe: DC-1 MHz, 500 mV/A and 50 mV/A, Max. current 50 Arms/140 Ap-p, CAT III 300 V/CAT II 600 V, DC 9 V Power supply |
| CP4070 | Current probe: DC-300 kHz, 50 mV/A and 5 mV/A, Max. current 70 Arms/200 Ap-p, CAT III 600 V/CAT II 600 V, DC 9 V Power supply |
| CP4070A | Current probe: DC-300 kHz, 100 mV/A and 10 mV/A, Max. current 70 Arms/200 Ap-p, CAT III 600 V/CAT II 600 V, DC 9 V Power supply |
| CP6030 | Current probe: DC-50 MHz, 1 V/A and 0.1 V/A, Max. current 30 Arms/50 Apk, 300V, DC 12 V Power supply |
| CP6030A | Current probe: DC-100 MHz, 1 V/A and 0.1 V/A, Max. current 30 Arms/50 Apk, 300V, DC 12 V Power supply |
| CP6150 | Current probe: DC-12 MHz, 0.1 V/A and 0.01 V/A, Max. current 150 Arms/300 Apk, CAT III 300 V/CAT II 600 V, DC 12 V Power supply |
| CP6500 | Current probe: DC-5 MHz, 0.1 V/A and 0.01 V/A, Max. current 500 Arms/750 Apk, CAT III 300 V/CAT II 600 V, DC 12 V Power supply |

| Optional Accessories | Description |
|---|---|
| SAP4000P | Power rail probe: DC - 4 GHz, 1.1X, input impedance 50 kΩ@low frequency, 50 Ω@high frequency, input range +/- 600 mV, offset range +/- 24 V, SAPBus interface |
| ODP6050B | Optical isolated probe: 500 MHz, 50X, Max. Differential Test Voltage (DC + Peak AC) +/-25 V, Isolated Voltage +/-60 kV, DC 5 V adapter or 7.4 V battery Power supply |
| ODP6100B | Optical isolated probe: 1 GHz, 50X, Max. Differential Test Voltage (DC + Peak AC) +/-25 V, Isolated Voltage +/-60 kV, DC 5 V adapter or 7.4 V battery Power supply |
| BAG-S2 | Bag |
| SYN64 | 64-channel synchronization distributor |

| Options (SDS5000X HD) | Description |
|---|---|
| SDS5000HD-PA | Power Analysis (software) |
| SDS5000HD-PA3 | 3-Phase Power Analysis (software) |
| SDS5000HD-$I^2S$ | $I^2S$ trigger & decode (software) |
| SDS5000HD-1553B | MIL-STD-1553B trigger & decode (software) |
| SDS5000HD-FlexRay | FlexRay trigger & decode (software) |
| SDS5000HD-CANFD | CAN FD trigger & decode (software) |
| SDS5000HD-SENT | SENT trigger & decode (software) |
| SDS5000HD-Manch | Manchester decode (software) |
| SDS5000HD-ARINC | ARINC429 trigger & decode (software) |
| SDS5000HD-8BW3T5 | 8-ch, 350 MHz to 500 MHz bandwidth upgrade (software) |
| SDS5000HD-8BW3TA | 8-ch, 350 MHz to 1 GHz bandwidth upgrade (software) |
| SDS5000HD-8BW5TA | 8-ch, 500 MHz to 1 GHz bandwidth upgrade (software) |
| SDS5000HD-6BW3T5 | 6-ch, 350 MHz to 500 MHz bandwidth upgrade (software) |
| SDS5000HD-6BW3TA | 6-ch, 350 MHz to 1 GHz bandwidth upgrade (software) |
| SDS5000HD-6BW5TA | 6-ch, 500 MHz to 1 GHz bandwidth upgrade (software) |
| SDS5000HD-4BW3T5 | 4-ch, 350 MHz to 500 MHz bandwidth upgrade (software) |
| SDS5000HD-4BW3TA | 4-ch, 350 MHz to 1 GHz bandwidth upgrade (software) |
| SDS5000HD-4BW5TA | 4-ch, 500 MHz to 1 GHz bandwidth upgrade (software) |

| Options (SDS5000L) | Description |
|---|---|
| SDS5000L-PA | Power Analysis (software) |
| SDS5000L-PA3 | 3-Phase Power Analysis (software) |
| SDS5000L-$I^2S$ | $I^2S$ trigger & decode (software) |
| SDS5000L-1553B | MIL-STD-1553B trigger & decode (software) |
| SDS5000L-FlexRay | FlexRay trigger & decode (software) |
| SDS5000L-CANFD | CAN FD trigger & decode (software) |
| SDS5000L-SENT | SENT trigger & decode (software) |
| SDS5000L-Manch | Manchester decode (software) |
| SDS5000L-ARINC | ARINC429 trigger & decode (software) |
| SDS5000L-8BW3T5 | 350 MHz to 500 MHz bandwidth upgrade (software) |
| SDS5000L-8BW3TA | 350 MHz to 1 GHz bandwidth upgrade (software) |
| SDS5000L-8BW5TA | 500 MHz to 1 GHz bandwidth upgrade (software) |

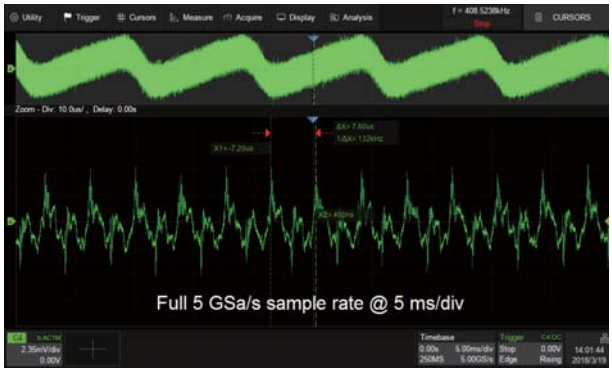

# SDS5000X
# Super Phosphor Oscilloscope

## Key Features

- 1 GHz, 500 MHz, 350 MHz models with real-time sampling rate up to 5 GSa/s
- Intelligent trigger: Edge, Slope, Pulse, Window, Runt, Interval, Dropout, Pattern, Qualified, Nth edge, Setup/hold, Delay and Video (HDTV supported). Trigger zone helps to simplify advanced triggering
- Large 10.1" TFT-LCD display with 1024 * 600 resolution; Capacitive touch screen supports multi-touch gestures
- Built-in web server supports remote control by the LAN port using a web browser; Supports SCPI remote control commands; Supports external mouse and keyboard

## Characteristics

### • Record Length of up to 250 Mpts/ch




Using hardware-based Zoom technique and record length of up to 250 Mpts, users are able to select a slower timebase without compromising the sampling rate, and then quickly zoom in to focus on the area of interest

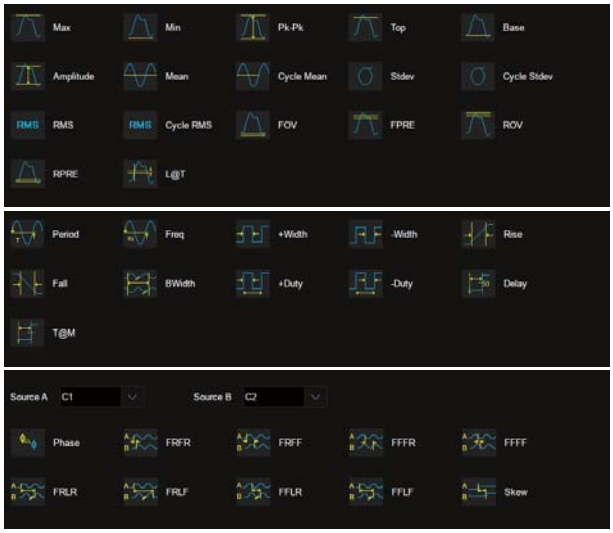
### • Digital Voltmeter Function


4-digit voltmeter and 7-digit frequency counter. Any analog channel can be selected as a source. Bar, Histogram and Trend diagrams are supported

## • Serial Bus Decode

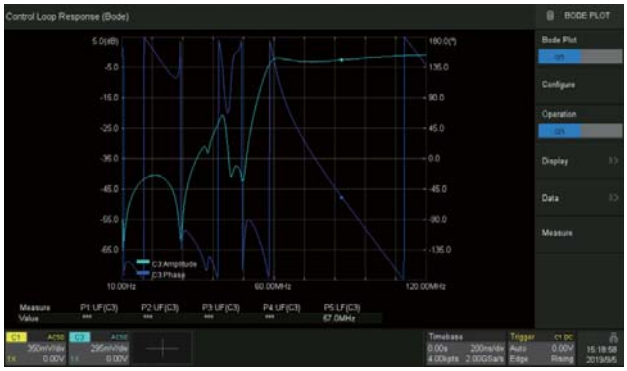
Display the decoded characters through the events list. Bus protocol information can be quickly and intuitively displayed in tabular form. I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay and I2S and MIL-STD-1553B are supported

## • Measurements of a Variety of Parameters




Parameter measurements includes 3 categories: horizontal, vertical and CH delay providing more than 70 different types of measurements. Measurements can be performed within a specified gate period. Measurements on Math, Reference and History frames are supported

## • Bode Plot



The SDS5000X can control the USB AWG module or a stand-alone SIGLENT SDG generator, to scan the amplitude and phase frequency response of the DUT, and display the data as a Bode Plot. This makes it possible to replace expensive network analyzer in some applications.

## • Power Analysis (Optional)

The Power Analysis option provides a full suite of power measurements and analysis, which greatly improve the measurement efficiency in switching power supplies and power devices design.

## • Digital Channels / MSO

Four analog channels plus 16 digital channels enable users to acquire and trigger on the waveforms then analyze the pattern, simultaneously with one instrument

## • Built -in 25 MHz Function / Arbitrary Waveform Generator (Optional)

the SDS5000X can control the SAG1021I USB Function / Arbitrary waveform generator to output waveform with up to 25 MHz frequency and ±3 V amplitude. Six basic waveforms plus multiple types of arbitrary waveforms are built-in.

## Specifications

| Model | SDS5034X | SDS5054X | SDS5104X |
|---|---|---|---|
| Analog channels | 4 + EXT | | |
| Bandwidth | 350 MHz | 500 MHz | 1 GHz |
| Sample rate (Max.) | 5 GSa/s (interleaving mode*); 2.5 GSa/s (non-interleaving mode**) | | |
| Memory depth (Max.) | 250 Mpts/ch (interleaving mode); 125 Mpts/ch (non-interleaving mode) | | |
| Waveform capture rate (Max.) | 110,000 wfm/s (Normal mode); 500,000 wfm/s (Sequence mode) | | |
| Trigger type | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Setup/hold, Delay | | |
| Serial trigger and decode | Standard: I2C, SPI, UART, CAN, LIN<br>Optional: CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester (decode only), ARINC429 (decode only) | | |
| Measurement | 50+ parameters, statistics, histogram, trend supported | | |
| Math | 2 traces<br>2 Mpts FFT, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, Absolute, Sign, ex, 10x, ln, lg, Interpolation, etc.; supports formula editor | | |
| Data analysis | Search, Navigate, History, Mask Test, Digital Voltmeter, Counter, Waveform Histogram, Bode plot and Power Analysis | | |
| Digital channel | 16-channel; maximum sample rate up to 1.25 GSa/s; record length up to 62.5 Mpts | | |
| Waveform generator | Single channel external USB waveform generator, frequency up to 25 MHz, 125 MSa/s sample rate, 16 kpts waveform memory | | |
| I/O | USB 2.0 Host, USB 2.0 Device, LAN 10M/100M, Pass/Fail, Trigger Out, 10 MHz In, 10 MHz Out, VGA Output | | |
| Probe (standard) | SP3050A, 500 MHz, 1 probe supplied for each channel | | |
| Display | 10.1" TFT-LCD with capacitive touch screen (1024*600) | | |

* Interleaving mode: only one of C1/C2 and/or only one of C3/C4 activated

** Non-interleaving mode: both C1/C2 and/or both C3/C4 activated

## Ordering Information

| Model | Description |
|---|---|
| SDS5104X | 1 GHz, 4 CH, 5 GSa/s (Max.) |
| SDS5054X | 500 MHz, 4 CH, 5 GSa/s (Max.) |
| SDS5034X | 350 MHz, 4 CH, 5 GSa/s (Max.) |
| **Standard Accessories** | **Quantity** |
| USB cable | 1 |
| Quick start | 1 |
| Passive probe (SP3050A) | 1/channel |
| Certificate of calibration | 1 |
| Power cord | 1 |
| **Optional Accessories** | **Part No.** |
| 25 MHz isolated USB function/arbitrary waveform generator | SAG1021I |
| 16-channel logic probe | SPL2016 |
| Power Analysis deskew fixture | DF2001A |
| STB3 demo signal source | STB3 |
| 1.5 GHz high-speed passive probe | SP6150A |
| 1 GHz active probe | SAP1000 |
| High voltage probe | HPB4010 |
| High voltage differential probe | DPB1300/DPB4080/DPB5150/DPB5150A/DPB5700/DPB5700A |
| Current probe | CPL5100/CP4020/CP4050/CP4070/CP4070A CP6030/CP6030A/CP6150/CP6500 SCP5030/SCP5030A/SCP5150/SCP5150A |
| Power rail probe | SAP4000P |
| Bag | BAG-S2 |
| **Options** | **Part No.** |
| 350 MHz to 500 MHz bandwidth upgrade (4-ch model) * (software) | SDS-5000X-4BW05 |
| 500 MHz to 1 GHz bandwidth upgrade (4-ch model) (software) | SDS-5000X-4BW10 |
| Power Analysis (software) | SDS-5000X-PA |
| I2S trigger & decode (software) | SDS-5000X-I2S |
| MIL-STD-1553B trigger & decode (software) | SDS-5000X-1553B |
| FlexRay trigger & decode (software) | SDS-5000X-FlexRay |
| CAN FD trigger & decode (software) | SDS-5000X-CANFD |
| SENT trigger & decode (software) | SDS-5000X-SENT |
| Manchester decode (software) | SDS-5000X-Manch |
| ARINC429 decode (software) | SDS-5000X-ARINC |

* SDS5034X cannot be upgraded to SDS5104X

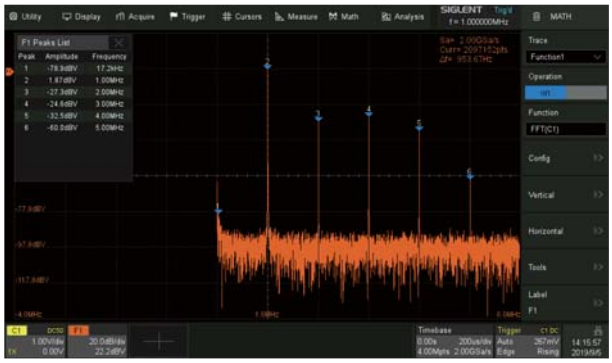

# SDS3000X HD
# Super Phosphor Oscilloscope

## Key Features

- 4 analog channels, up to 1 GHz bandwidth with up to 4 GSa/s sample rate
- 12-bit ADC
- Low background noise: 125 μVrms @ 1 GHz bandwidth
- Serial bus triggering and decoder, supports protocols I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester and ARINC429
- Large 10.1" TFT-LCD display with 1024 * 600 resolution; Capacitive touch screen supports multi-touch gestures

## Characteristics

### • Deep Memory FFT

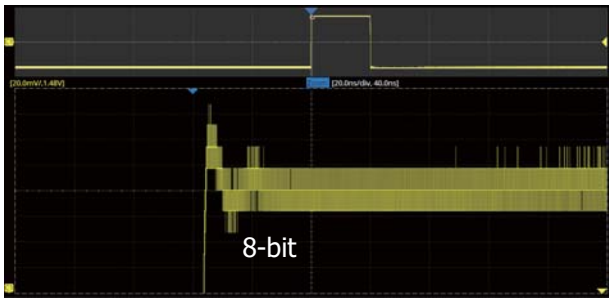


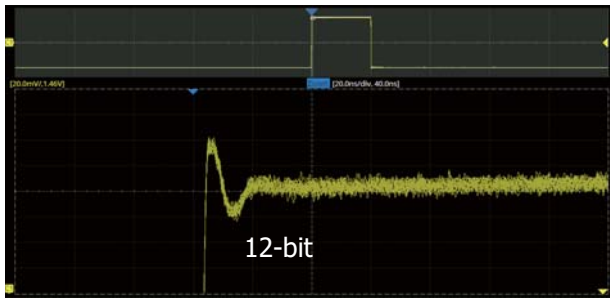
FFT supports up to 4 Mpts operation. This provides high-frequency resolution with a fast refresh rate. The FFT function also supports a variety of window functions so that it can adapt to different spectrum measurement needs. Three modes (Normal, Average, and Max hold) can satisfy different requirements for observing the power spectrum. Auto peak detection and markers are supported.

### • Serial Bus Decode

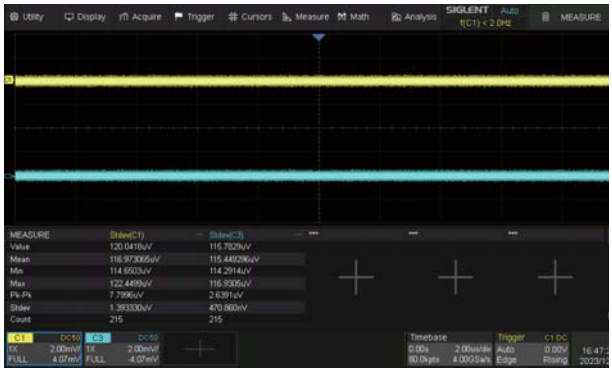
Display the decoded characters through the events list. Bus protocol information can be quickly and intuitively displayed in tabular form. I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester and ARINC429 are supported

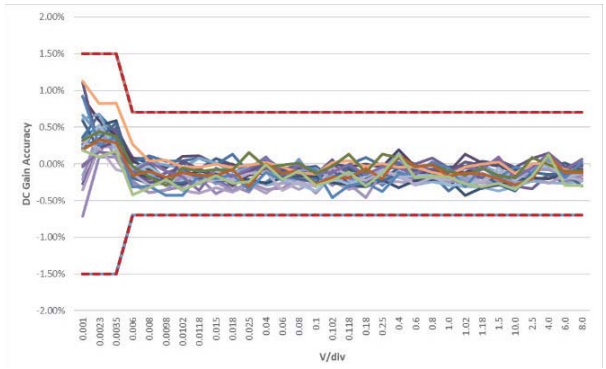
## • 12-bit High Resolution




12-bit resolution shows you more details and less noise on the waveform

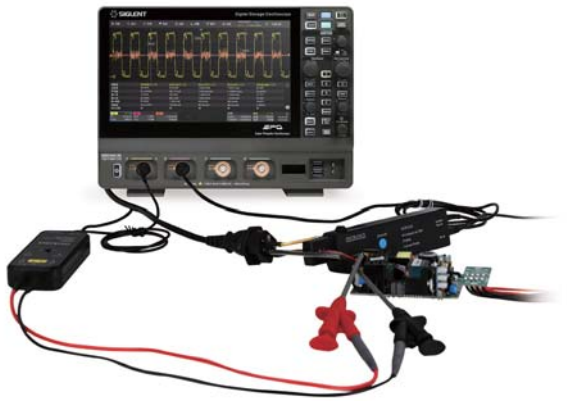





## • Bode Plot

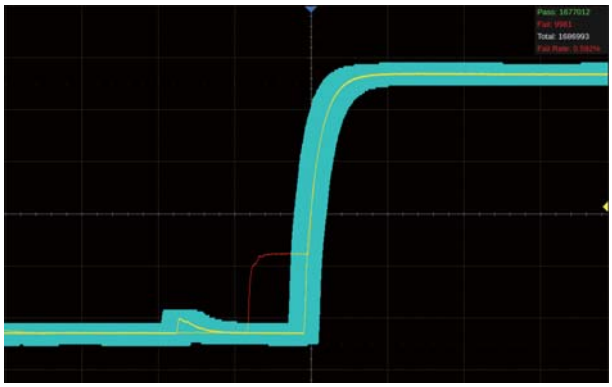
The oscilloscope can control the SIGLENT isolated USB AWG module or a stand-alone SIGLENT SDG generator, to scan the amplitude and phase-frequency response of the DUT, and display the data as a Bode Plot. This makes it possible to replace expensive network analyzers in some applications

## • Power Analysis (Optional)



The Power Analysis option provides a full suite of power measurements and analysis, which greatly improve the measurement efficiency in switching power supplies and power devices design

### • Hardware-based High Speed Mask Test Function



The oscilloscope utilizes a hardware-based Mask Test function, performing up to 28,000 Pass / Fail decisions each second. It is easy to generate user-defined test templates to provide trace mask comparisons, making it suitable for long-term signal monitoring or automated production line testing

## Specifications

| Model | SDS3104X HD | SDS3054X HD | SDS3034X HD |
|---|---|---|---|
| Analog channels | 4 + EXT | | |
| Bandwidth | 1 GHz<br>(800 MHz in non-interleaving mode) | 500 MHz | 350 MHz |
| Sample rate (Max.) | 4 GSa/s (interleaving mode), 2 GSa/s (non-interleaving mode) | | |
| Memory depth (Max.) | 400 Mpts/ch (interleaving mode: single-channel), 200 Mpts/ch (interleaving mode: dual-channel),<br>100 Mpts/ch (non-interleaving mode) | | |
| Waveform capture rate (Max.) | Normal mode: 200,000 wfm/s;<br>Sequence mode: 890,000 wfm/s | | |
| Vertical resolution | 12-bit. Up to 16-bit in ERES mode | | |
| Trigger type | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Setup/hold, Delay, Serial | | |
| Serial trigger and decode | Standard: I2C, SPI, UART, CAN, LIN<br>Optional: CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester (decode only), ARINC429 | | |
| Measurement | 50+ parameters, statistics, histogram, trend, and track supported | | |
| Math | 4 traces<br>4 Mpts FFT, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, Absolute, Sign, ex, 10x, ln, lg, Interpolation, MaxHold, MinHold, ERES, Average, Filter. Supports formula editor | | |
| Data analysis | Search, Navigate, History, Mask Test, Digital Voltmeter, Counter, Waveform Histogram, Bode plot, and Power Analysis | | |
| Digital channel | 16-channel; maximum sample rate up to 1 GSa/s; record length up to 100 Mpts | | |
| Waveform generator | Single-channel SAG1021I, frequency up to 50 MHz, 125 MSa/s sample rate, 16 kpts waveform memory | | |
| I/O | USB 3.0 Host x2, USB 2.0 Host x1, USB 3.0 Device, 10M/100M/1000M LAN, External trigger, Auxiliary output (TRIG OUT, PASS/FAIL) | | |
| Probe (Standard) | One 500 MHz passive probe supplied for each channel | | |
| Display | 10.1 TFT-LCD with capacitive touch screen (1024*600) | | |

## Ordering Information

| Model | Description |
|---|---|
| SDS3104X HD | 1 GHz, 4 GSa/s, 4-CH, 12-bit, 400 Mpts/ch memory depth, 10.1" capacitive touch screen |
| SDS3054X HD | 500 MHz, 4 GSa/s, 4-CH, 12-bit, 400 Mpts/ch memory depth, 10.1" capacitive touch screen |
| SDS3034X HD | 350 MHz, 4 GSa/s, 4-CH, 12-bit, 400 Mpts/ch memory depth, 10.1" capacitive touch screen |
| **Standard Accessories** | **Quantity** |
| USB cable | 1 |
| Quick start | 1 |
| Passive probe (500 MHz) | 1/channel |
| Certificate of calibration | 1 |
| Wireless mouse | 1 |
| Power cord | 1 |
| **Optional Accessories** | **Part No.** |
| USB isolated waveform generator | SAG1021I |
| 16-channel logic probe | SPL2016 |
| Power Analysis deskew fixture | DF2001A |
| STB3 demo signal source | STB3 |
| USB-GPIB adapter | USB-GPIB |
| High-speed passive probe | SP6150A |
| High-speed active probe | SAP1000, SAP2500 |
| High voltage probe | HPB4010 |
| High-speed differential probe | SAP2500D |
| High voltage differential probe | DPB1300/DPB4080/DPB5150/ DPB5150A/DPB5700/DPB5700A |
| Current probe | CPL5100/CP4020/CP4050/CP4070/CP4070A CP6030/CP6030A/CP6150/CP6500/SCP5030/SCP5030A/ SCP5150/SCP5150A |
| Power rail probe | SAP4000P |
| Bag | BAG-S2 |
| **Options** | **Part No.** |
| Power Analysis (software) | SDS3000HD-PA |
| I2S trigger & decode (software) | SDS3000HD-I2S |
| MIL-STD-1553B trigger & decode (software) | SDS3000HD-1553B |
| FlexRay trigger & decode (software) | SDS3000HD-FlexRay |
| CAN FD trigger & decode (software) | SDS3000HD-CANFD |
| SENT trigger & decode (software) | SDS3000HD-SENT |
| Manchester decode (software) | SDS3000HD-Manch |
| ARINC429 trigger & decode (software) | SDS3000HD-ARINC |
| 350 MHz to 500 MHz bandwidth upgrade (software) | SDS3000HD-BW3T5 |
| 350 MHz to 1 GHz bandwidth upgrade (software) | SDS3000HD-BW3TA |
| 500 MHz to 1 GHz bandwidth upgrade (software) | SDS3000HD-BW5TA |

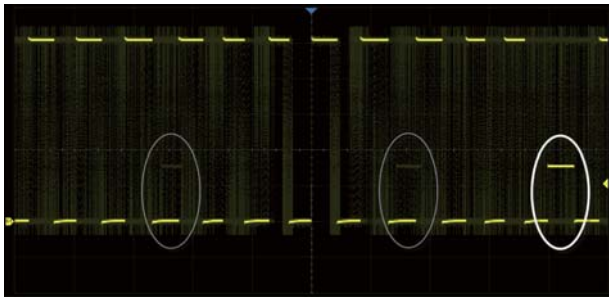

# SDS2000X HD
# Super Phosphor Oscilloscope

## Key Features

- 12-bit High Resolution
  - 12-bit Analog-Digital Convertors with sample rate up to 2 GSa/s
  - Front ends with 70 μVrms noise floor @ 500 MHz bandwidth and 0.5% DC gain accuracy
- 4 analog channels, up to 350 MHz bandwidth (upgradable to 500 MHz)
- Serial bus triggering and decoder, supports protocols I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester and ARINC429
- Large 10.1" TFT-LCD display with 1024 * 600 resolution; Capacitive touch screen supports multi-touch gestures

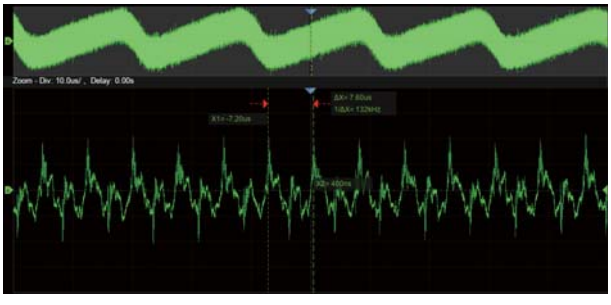
## Characteristics

### • High Waveform Update Rate



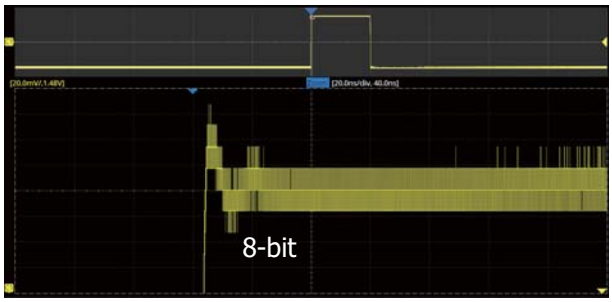
With a waveform update rate of up to 100,000 wfm/s, the oscilloscope can easily capture unusual or low-probability events. In Sequence mode, the waveform capture rate can reach 500,000 wfm/s

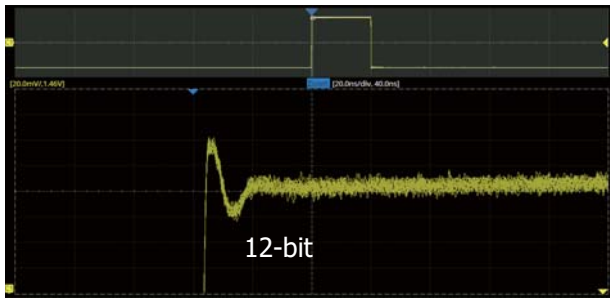
### • Deep Record Length



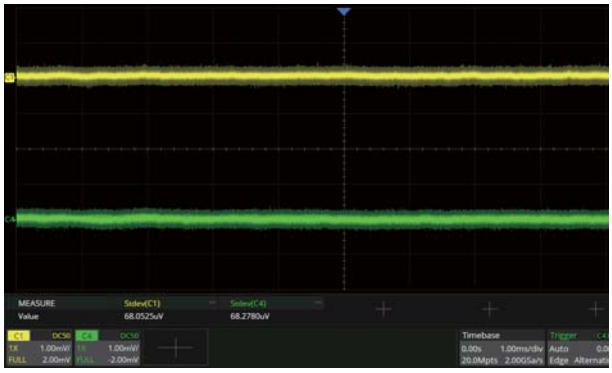
Using hardware-based Zoom technique and record length of up to 200 Mpts, users can select a slower timebase without compromising the sample rate, and then quickly zoom in to focus on the area of interest

## • 12-bit High Resolution

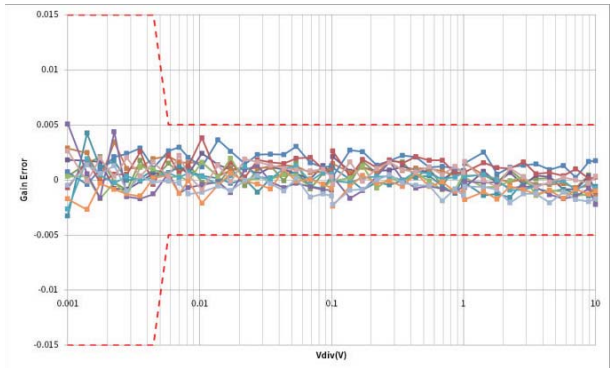



12-bit resolution shows you more details and less noise on the waveform

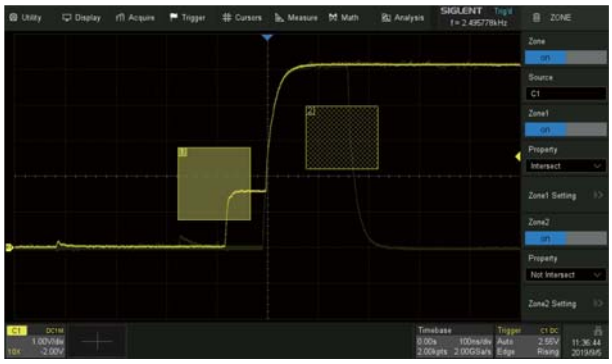


Low noise floor: Only 70 μVrms at 500 MHz bandwidth



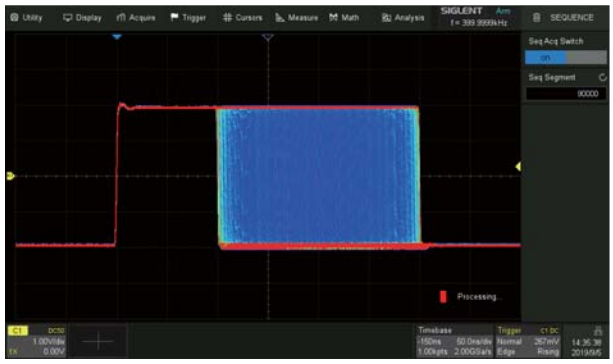

0.5% DC gain accuracy

## • Trigger Zone



Trigger Zone is available for advanced triggering

## • Sequence Mode



Segmented memory collection will store the waveform into multiple memory segments (up to 80,000) and each segment will store a triggered waveform as well the dead time information. The interval between segments can be as small as 2 μs. All of the segments can be played back using the History function

### • Bode Plot

The oscilloscope can control the built-in waveform generator or a stand-alone SIGLENT generator, to scan the amplitude and phase-frequency response of the DUT, and display the data as a Bode Plot. This makes it possible to replace expensive network analyzers in some applications

### • Power Analysis (Optional)

The Power Analysis option provides a full suite of power measurements and analysis, which greatly improve the measurement efficiency in switching power supplies and power devices design

## Specifications

| Model | SDS2354X HD | SDS2204X HD |
|---|---|---|
| Analog channels | 4 + EXT | |
| Bandwidth | 350 MHz,<br>(upgradable to 500 MHz) | 200 MHz<br>(upgradable to 500 MHz) |
| Vertical resolution | 12-bit | |
| Sample rate (Max.) | 2 GSa/s (interleaving mode), 1 GSa/s (non-interleaving mode) | |
| Memory depth (Max.) | 200 Mpts/ch (interleaving mode), 100 Mpts/ch (non-interleaving mode) | |
| Waveform capture rate (Max.) | Normal mode: 100,000 wfm/s;<br>Sequence mode: 500,000 wfm/s | |
| Trigger type | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Setup/hold, Delay, Serial | |
| Serial trigger and decode | Standard: I2C, SPI, UART, CAN, LIN<br>Optional: CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester (decode only), ARINC429 (decode only) | |
| Measurement | 50+ parameters, statistics, histogram, trend, and track supported | |
| Math | 4 traces<br>2 Mpts FFT, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, Absolute, Sign, ex, 10x, ln, lg, Interpolation, MaxHold, MinHold, ERES, Average, Filter. Supports formula editor | |
| Data analysis | Search, Navigate, History, Mask Test, Digital Voltmeter, Counter, Waveform Histogram, Bode plot, and Power Analysis | |
| Digital channel (optional) | 16-channel; maximum sample rate up to 500 MSa/s; record length up to 50 Mpts | |
| Waveform generator (optional) | Single-channel built-in waveform generator, frequency up to 25 MHz, 125 MSa/s sample rate, 16 kpts waveform memory | |
| I/O | USB 2.0 Host x3, USB 2.0 Device, 10 M / 100 M LAN, External trigger, Auxiliary output (TRIG OUT, PASS/FAIL) | |
| Probe (Standard) | One 500 MHz passive probe supplied for each channel | |
| Display | 10.1 TFT-LCD with capacitive touch screen (1024*600) | |

## Ordering Information

| Model | Description |
|---|---|
| SDS2354X HD | 12-bit, 350 MHz, 2 GSa/s, 4-CH, 200 Mpts/ch memory depth, 10.1" capacitive touch screen |
| SDS2204X HD | 12-bit, 200 MHz, 2 GSa/s, 4-CH, 200 Mpts/ch memory depth, 10.1" capacitive touch screen |

| Standard Accessories | Quantity |
|---|---|
| USB cable | 1 |
| Quick start | 1 |
| Passive probe ( 500 MHz) | 1/channel |
| Certificate of calibration | 1 |
| Wireless mouse | 1 |
| Power cord | 1 |

| Optional Accessories | Part No. |
|---|---|
| 16-channel logic probe | SPL2016 |
| Power Analysis deskew fixture | DF2001A |
| STB3 demo signal source | STB3 |
| USB-GPIB adapter | USB-GPIB |
| High voltage probe | HPB4010 |
| High voltage differential probe | DPB1300/DPB4080/DPB5150/DPB5150A/DPB5700/DPB5700A |
| Current probe | CPL5100/CP4020/CP4050/CP4070/CP4070A/CP6030/CP6030A/CP6150/CP6500 |
| Rack Mount Kit | SDS2000HD-RMK |
| Bag | BAG-S2 |

| Options | Part No. |
|---|---|
| Waveform generator (software) | SDS2000HD-FG |
| Power Analysis (software) | SDS2000HD-PA |
| I2S trigger & decode (software) | SDS2000HD-I2S |
| MIL-STD-1553B trigger & decode (software) | SDS2000HD-1553B |
| FlexRay trigger & decode (software) | SDS2000HD-FlexRay |
| CAN FD trigger & decode (software) | SDS2000HD-CANFD |
| SENT trigger & decode (software) | SDS2000HD-SENT |
| Manchester decode (software) | SDS2000HD-Manch |
| ARINC429 decode (software) | SDS2000HD-ARINC |
| 200 MHz to 350 MHz bandwidth upgrade (software) | SDS2000HD-BW2T3 |
| 200 MHz to 500 MHz bandwidth upgrade (software) | SDS2000HD-BW2T5 |
| 350 MHz to 500 MHz bandwidth upgrade (software) | SDS2000HD-BW3T5 |

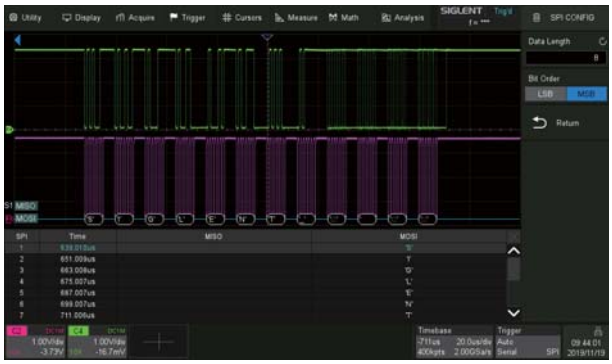

# SDS2000X Plus
# Super Phosphor Oscilloscope

## Key Features

- 350 MHz, 200 MHz, 100 MHz models with real-time sample rate up to 2 GSa/s. A 500 MHz bandwidth upgrade option is available for 350 MHz models.
- 10-bit mode provides higher resolution and lower noise
- Abundant data processing and analysis functions such as Search, Navigate, Mask Test, Bode plot, Power Analysis (optional) and Counter
- Large 10.1" TFT-LCD display with 1024x600 resolution; Capacitive touch screen supports multi-touch gestures

## Characteristics

### • Serial Bus Decode

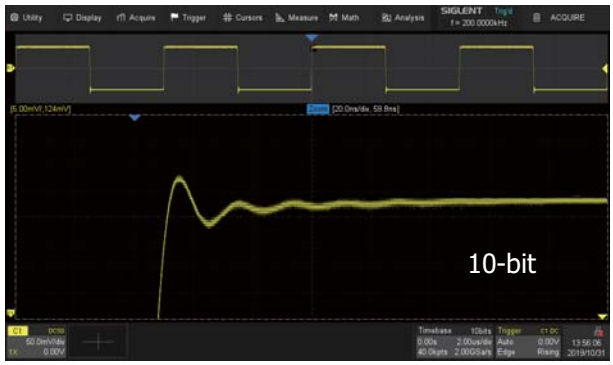


In addition to the decoder lanes correlated to the waveform, bus protocol information can be displayed in tabular form. I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S and MIL-STD-1553B are supported.

### • Power Analysis (Optional)

The Power Analysis option provides a full suite of power measurements and analysis, thus improving the efficiency of measurement in switching power supplies and power device designs.

### • 10-bit Mode


10-bit mode combined with Zoom shows you more details and less noise on the waveform.

### • Bode Plot

The SDS2000X Plus can control the built-in waveform generator or any stand-alone SIGLENT SDG device to scan the amplitude and phase response over frequency of passive or active circuits. The data is presented as Bode Plot. This makes it possible to replace expensive network analyzers in less demanding applications.

### • Digital Channels / MSO

Four analog channels plus 16 digital channels allow the acquisition and triggering of mixed waveforms with one instrument.

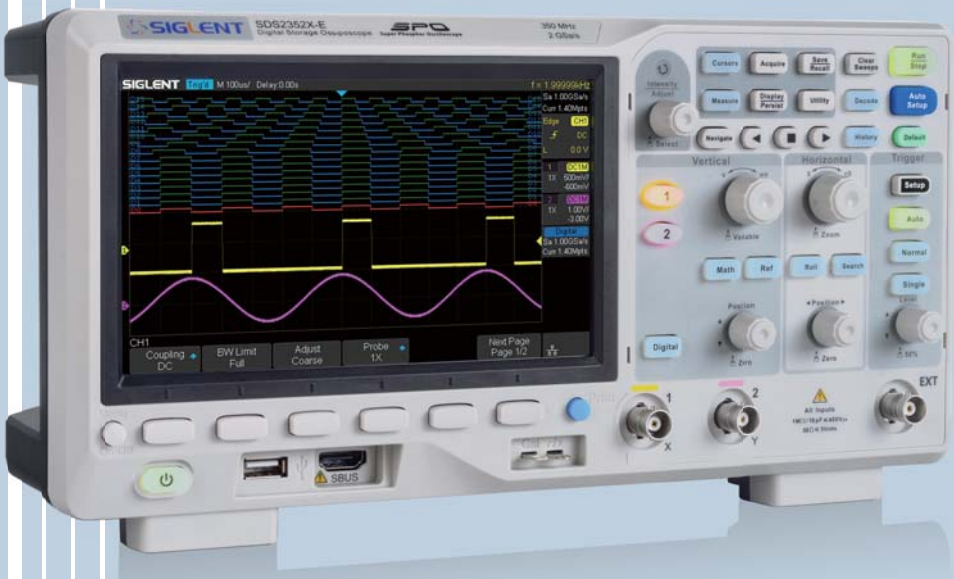
## Specifications

| Model | SDS2354X Plus | SDS2204X Plus | SDS2104X Plus<br>SDS2102X Plus |
|---|---|---|---|
| Analog channels | 4 + EXT | | 2/4 + EXT |
| Bandwidth | 350 MHz,<br>(upgradable to 500 MHz) | 200 MHz | 100 MHz |
| Sample rate (Max.) | 2 GSa/s (interleaving mode), 1 GSa/s (non-interleaving mode) | | |
| Memory depth (Max.) | 200 Mpts/ch (interleaving mode), 100 Mpts/ch (non-interleaving mode) | | |
| Waveform capture rate (Max.) | Normal mode: 120,000 wfm/s;<br>Sequence mode: 500,000 wfm/s | | |
| Vertical resolution | 8-bit. 10-bit mode (with typical 100 MHz bandwidth) | | |
| Trigger type | Edge, Slope, Pulse, Window, Runt, Interval, Dropout, Pattern, Video and Serial | | |
| Serial trigger and decode | Standard: I2C, SPI, UART, CAN, LIN<br>Optional: CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester (decode only) | | |
| Measurement | More than 50 parameters, supports statistics with histogram and trend | | |
| Math | 2 traces<br>2 Mpts FFT, +, -, x, ÷, d/dt, ∫dt, √, Identity, Negation, \|x\|, Sign, ex, 10x, ln, lg, Interpolation, average, ERES, and formula editor | | |
| Data processing and analysis tools | Search, Navigate, History, Mask test, Bode plot, Power Analysis (optional) and Counter | | |

| | | |
|---|---|---|
| Digital channel | 16-channel; maximum sample rate up to 500 MSa/s; record length up to 50 Mpts/ch | |
| Waveform generator (optional) | Single channel, frequency up to 50 MHz, 125 MSa/s sample rate, 16 kpts waveform memory | |
| Interface | USB 2.0 Host x2, USB 2.0 Device, 10M/100M LAN, External trigger, Auxiliary output (TRIG OUT, PASS/FAIL) | |
| Probe (standard) | SP2035A, 350 MHz, 1 probe supplied for each channel | PP215, 200 MHz, 1 probe supplied for each channel |
| Display | 10.1" TFT-LCD with capacitive touch screen (1024x600) | |

## Ordering Information

| **Model** | **Description** |
|---|---|
| SDS2354X Plus | 350 MHz, 4-ch, 2 GSa/s (Max.), 200 Mpts, 10.1"touch screen |
| SDS2204X Plus | 200 MHz, 4-ch, 2 GSa/s (Max.), 200 Mpts, 10.1"touch screen |
| SDS2104X Plus | 100 MHz, 4-ch, 2 GSa/s (Max.), 200 Mpts, 10.1"touch screen |
| SDS2102X Plus | 100 MHz, 2-ch, 2 GSa/s (Max.), 200 Mpts, 10.1"touch screen |
| **Standard Accessories** | **Quantity** |
| USB cable | 1 |
| Quick start | 1 |
| Passive probe | x2 (2-ch model); x4 (4-ch model) |
| Certificate of calibration | 1 |
| Power cord | 1 |
| **Optional Accessories** | **Part Number** |
| 16-channel logic probe | SPL2016 |
| Power Analysis deskew fixture | DF2001A |
| STB3 demo signal source | STB3 |
| High voltage probe | HPB4010 |
| High voltage differential probe | DPB1300/DPB4080/DPB5150/DPB5150A/DPB5700/DPB5700A |
| Current probe | CPL5100/CP4020/CP4050/CP4070/CP4070A/CP6030/CP6030A/CP6150/CP6500 |
| Bag | BAG-S2 |
| **Options** | **Part Number** |
| Waveform generator option (software) | SDS2000XP-FG |
| Power Analysis (software) | SDS2000XP-PA |
| I2S trigger & decode (software) | SDS2000XP-I2S |
| MIL-STD-1553B trigger & decode (software) | SDS2000XP-1553B |
| FlexRay trigger & decode (software) | SDS2000XP-FlexRay |
| CAN FD trigger & decode (software) | SDS2000XP-CANFD |
| SENT trigger & decode (software) | SDS2000XP-SENT |
| Manchester decode (software) | SDS2000XP-Manch |
| 100 MHz to 200 MHz bandwidth upgrade (4-ch model) (software) | SDS2000XP-4BW02 |
| 200 MHz to 350 MHz bandwidth upgrade (4-ch model) (software) | SDS2000XP-4BW03 |
| 350 MHz to 500 MHz bandwidth upgrade (4-ch model) (software) | SDS2000XP-4BW05 |
| 100 MHz to 350 MHz bandwidth upgrade (2-ch model) (software) | SDS2000XP-2BW03 |



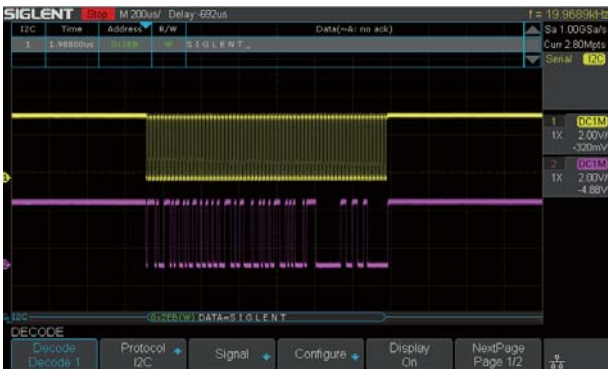
# SDS2000X-E
# Super Phosphor Oscilloscope

## Key Features

- 200 MHz, 350 MHz bandwidth models
- Real-time sampling rate up to 2 GSa/s (1 GSa/s per channel, if both channels active)
- Record length up to 28 Mpts
- Serial bus triggering and decoding (Standard), supports protocols IIC, SPI, UART, CAN, LIN
- Large 7 inch TFT -LCD display with 800 * 480 resolution

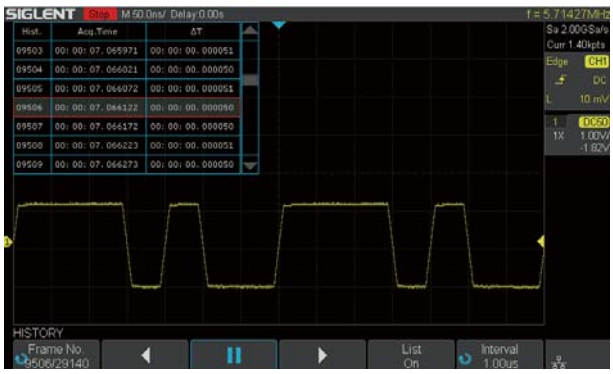
## Characteristics

### • Serial Bus Decoding Function (Standard)



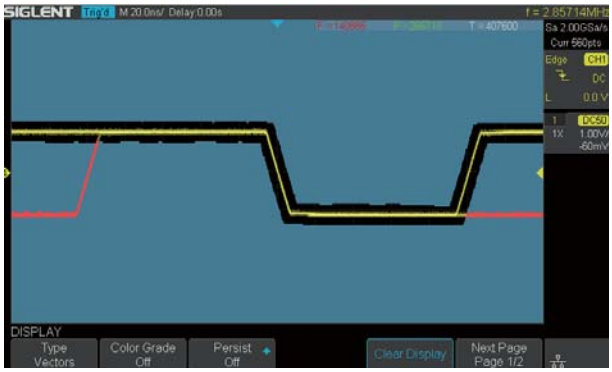
SDS2000X-E displays the decoding through the events list. Bus protocol information can be quickly and intuitively displayed in a tabular format.

### • History Waveforms (History) Mode and Segmented Acquisition (Sequence)



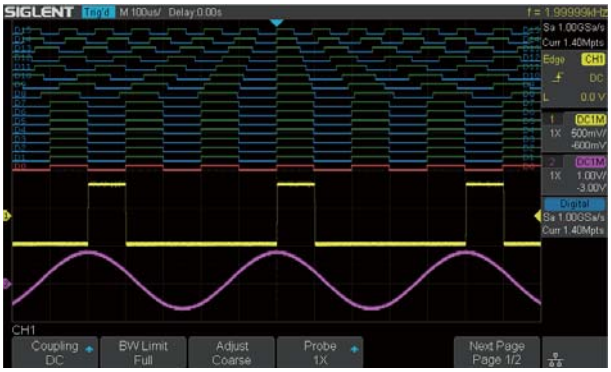
Playback the latest triggered events using the history function. Segmented memory collection will store trigger events into multiple (Up to 80,000) memory segments, each segment will store triggered waveforms and timestamp of each frame.

## • Hardware-Based High Speed Pass/Fail function




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




16 digital channels enables users to acquire and trigger on digital input channels and view both digital and analog waveforms simultaneously with one instrument.

## • USB 25 MHz AWG Module (option)

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

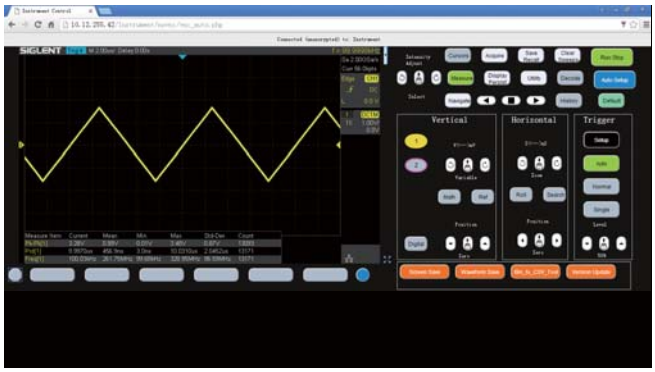
## • Maximum sample rate of 2 GSa/s, record Length of up to 28 Mpts


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.

## • Bode Plot


SDS2000X-E can control the USB AWG module or an independent SIGLENT SDG instrument, scan a circuits amplitude and phase frequency response, and display the data as a Bode Plot. It can also show the result lists, and export the data to a USB disk.

## • Web control




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.

## Models and key Specification

| Model | SDS2202X-E | SDS2352X-E |
|---|---|---|
| Bandwidth | 200 MHz | 350 MHz |
| Sample Rate (Max.) | 2 GSa/s | |
| Channels | 2+EXT | |
| Memory Depth (Max.) | 14 Mpts/CH (not interleave mode)<br>28 Mpts/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 | 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 (800 x 480 pixels) | |
| Weight | Without package 2.6 Kg; With package 3.8 Kg | |

## 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/<br>CP4070A/CP5030/CP5030A/ CP5150/CP5500 |
| | Differential Probes | DPB4080/DPB5150/DPB5150A/DPB5700/DPB5700A |
| | Rack Mount | SDS1X-E-RMK |

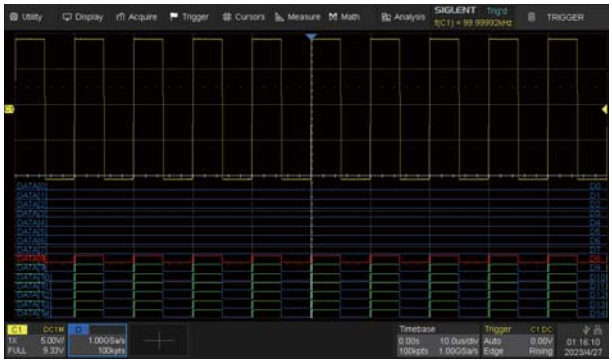

# SDS1000X HD
# Super Phosphor Oscilloscope

## Key Features

- 12-bit High Resolution
  - 12-bit Analog-Digital Convertors with sample rate up to 2 GSa/s
  - Front ends with 70 μVrms noise floor @ 200 MHz bandwidth
- 2/4 analog channels, up to 200 MHz bandwidth
- Waveform capture rate up to 120,000 wfm/s (normal mode), and 500,000 wfm/s (sequence mode)
- Serial bus triggering and decoder, supports protocols I2C, SPI, UART, CAN, LIN, CAN FD(decode only), FlexRay(decode only)
- Large 10.1" TFT-LCD display with 1024 * 600 resolution; Capacitive touch screen supports multi-touch gestures

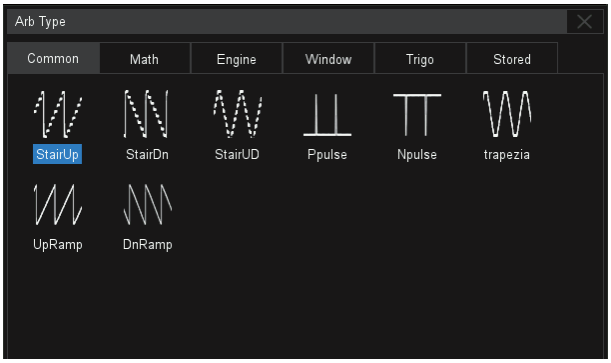
## Characteristics

### • Digital Channels / MSO



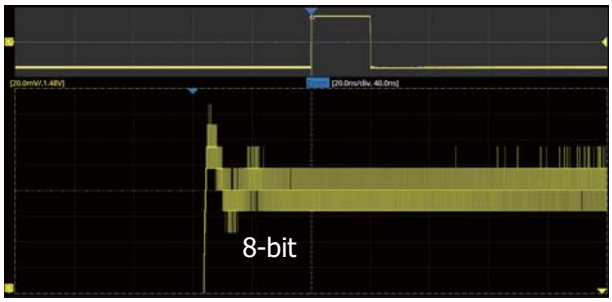
Four analog channels plus 16 digital channels enable users to acquire and trigger the waveforms then analyze the pattern, simultaneously with one instrument

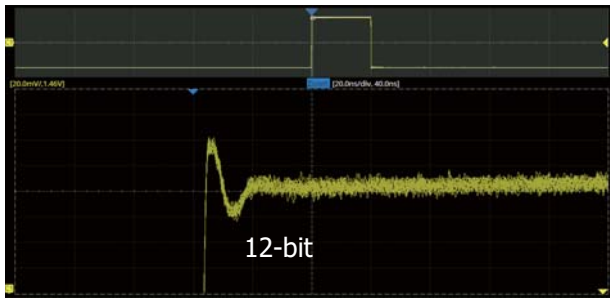
### • USB AWG module (Optional)




The USB waveform generator can output waveforms with up to 25 MHz frequency and ±3 V amplitude. Six basic waveforms together with multiple types of predefined waveforms and as user-defined arbitrary waveforms are supported

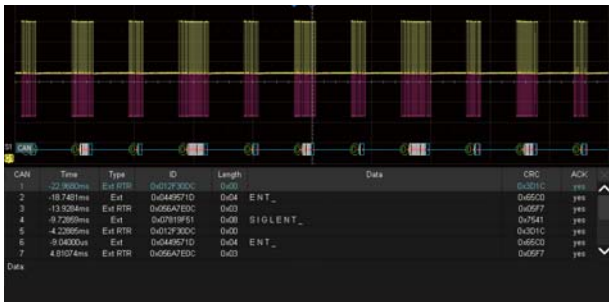
## • 12-bit High Resolution



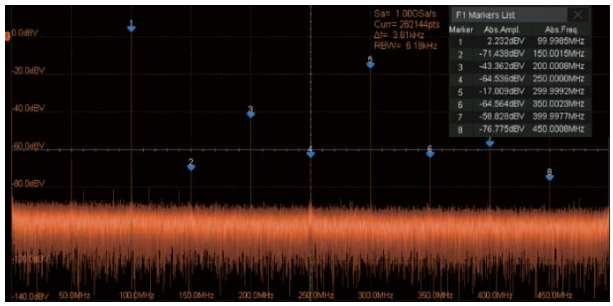

Vertical & Horizontal Zoom along with a large memory depth make the most out of 12-bit ADC resolution. Engineers can observe waveform overall and details simultaneously.

## • Serial Bus Decode



Display the decoded characters through the events list. Bus protocol information can be quickly and intuitively displayed in tabular form. I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay are supported

## • Advanced Math Function



Hardware-accelerated FFT supports up to 2 Mpts operation. This provides high-frequency 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. Three modes (Normal, Average, and Max hold) can satisfy different requirements for observing the power spectrum. Auto peak detection and markers are supported.

## • Bode Plot

SDS1000X HD 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)

## • Power Analysis (Optional)

The Power Analysis option provides a full suite of power measurements and analysis, which greatly improve the measurement efficiency in switching power supplies and power devices design

## Specifications

| Model | SDS1104X HD<br>SDS1102X HD | SDS1204X HD<br>SDS1202X HD |
|---|---|---|
| Analog channels | 4 + EXT(4CH Series: SDSxxx4X HD), 2 + EXT(2CH Series: SDSxxx2X HD) | |
| Bandwidth | 100 MHz | 200 MHz |
| Vertical resolution | 12-bit | |
| Sample rate (Max.) | One channel mode: 2 GSa/s, Two channel mode: 1 GSa/s, Four channel mode: 500 MSa/s | |
| Memory depth (Max.) | One channel mode: 100 Mpts/ch, Two channel mode: 50 Mpts/ch, Four channel mode: 25 Mpts/ch | |
| Waveform capture rate (Max.) | Normal mode: 120,000 wfm/s; Sequence mode: 500,000 wfm/s | |
| Trigger type | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Delay, Setup/Hold time, Serial | |
| Serial trigger and decode(Standard) | I2C, SPI, UART, CAN, LIN, CAN FD (Decode Only), FlexRay (Decode Only) | |
| Measurement | 50+ parameters, statistics, histogram, trend, and track supported | |
| Math | 4 traces<br>2 Mpts FFT, Filter, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, Absolute, Sign, ex, 10x, ln, lg, Interpolation, MaxHold, MinHold, ERES, Average. Supports formula editor | |
| Data analysis | Search, Navigate, History, Mask Test, Counter, Bode plot, and Power Analysis | |
| Digital channel (optional) | 16-channel; maximum sample rate up to 1 GSa/s; record length up to 10 Mpts | |
| USB AWG module (option) | One channel, 25 MHz, sample rate of 125 MHz, wave length of 16 kpts, isolated output | |
| I/O | USB 2.0 Host x3, USB 2.0 Device, 10 M / 100 M LAN, External trigger, Auxiliary output (TRIG OUT, PASS/FAIL),<br>SBUS (Siglent MSO) | |
| Probe (Standard) | Passive probe PP510 for each channel | Passive probe PP215 for each channel |
| Display | 10.1 TFT-LCD with capacitive touch screen (1024*600) | |

## Ordering Information

| Model | Description |
|---|---|
| SDS1204X HD | 200 MHz, 2 GSa/s, 4CH |
| SDS1104X HD | 100 MHz, 2 GSa/s, 4CH |
| SDS1202X HD | 200 MHz, 2 GSa/s, 2CH |
| SDS1102X HD | 100 MHz, 2 GSa/s, 2CH |
| **Standard Accessories** | **Quantity** |
| USB cable | 1 |
| Quick start | 1 |
| Passive probe | 1/channel |
| Certificate of calibration | 1 |
| Power cord | 1 |
| **Optional Accessories** | **Part No.** |
| USB Isolated AWG Module Hardware | SAG1021I |
| 16 Channels Logic Analyzer | SLA1016 |
| Power Analysis Software | SDS1000XHD-PA |
| Power Analysis Deskew Fixture | DF2001A |

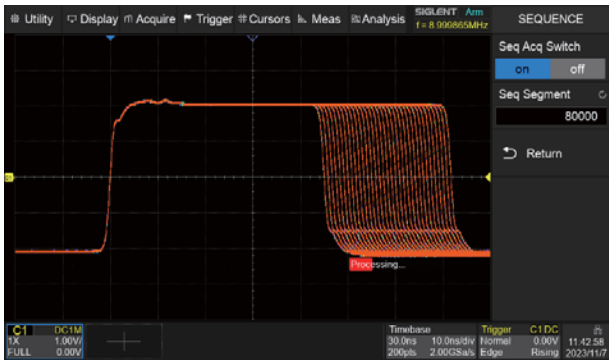

# SDS800X HD
# Super Phosphor Oscilloscope

## Key Features

- 12-bit High Resolution
  - 12-bit Analog-Digital Convertors with sample rate up to 2 GSa/s
  - Front ends with 70 µVrms noise floor @ 200 MHz bandwidth
- 2/4 analog channels, up to 200 MHz bandwidth
- Waveform capture rate up to 120,000 wfm/s (normal mode), and 500,000 wfm/s (sequence mode)
- Abundant data analysis functions such as Search, Navigate, Counter, Bode plot and Power Analysis
- 7" TFT-LCD display with 1024 * 600 resolution; Capacitive touch screen supports multi-touch gestures

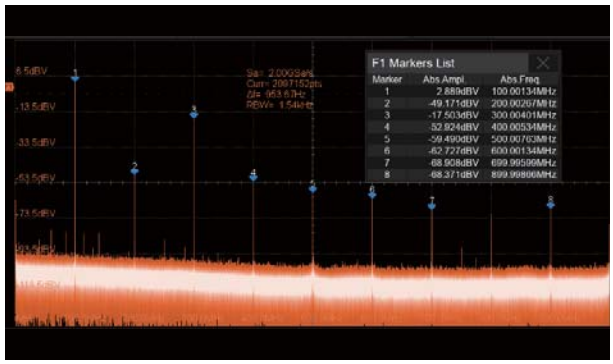
## Characteristics

### • Sequence Mode



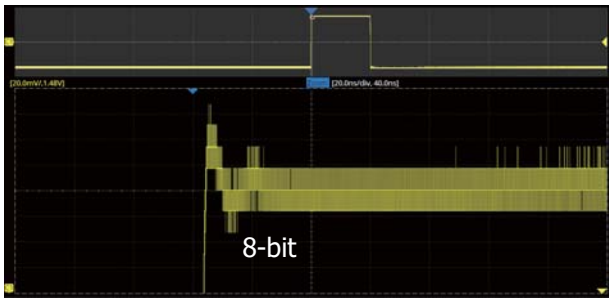

Segmented memory collection will store the waveform into multiple memory segments (up to 80,000) and each segment will store a triggered waveform as well the dead time information. The interval between segments can be as small as 2 µs. All of the segments can be played back using the History function

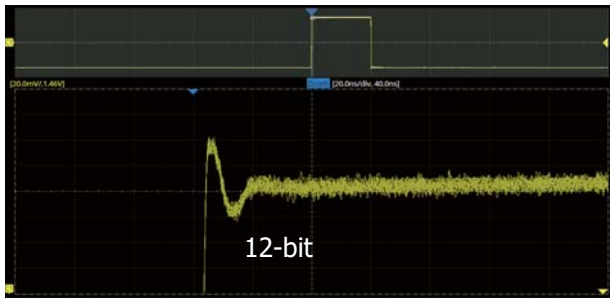
### • Advanced Math Function




Hardware-accelerated FFT supports up to 2 Mpts operation. This provides high-frequency 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. Three modes (Normal, Average, and Max hold) can satisfy different requirements for observing the power spectrum. Auto peak detection and markers are supported

## • 12-bit High Resolution




Vertical & Horizontal Zoom along with a large memory depth make the most out of 12-bit ADC resolution. Engineers can observe waveform overall and details simultaneously.

### Excellent User Interface and User Experience

- 7" display with 1024x600 resolution
- Capacitive touch screen, supporting multi-touch gestures,can move or scale the waveform traces quickly by finger-touch movements, which greatly improves the operation efficiency
- Built-in WebServer supports remote control on a web page over LAN
- Supports external mouse and keyboard

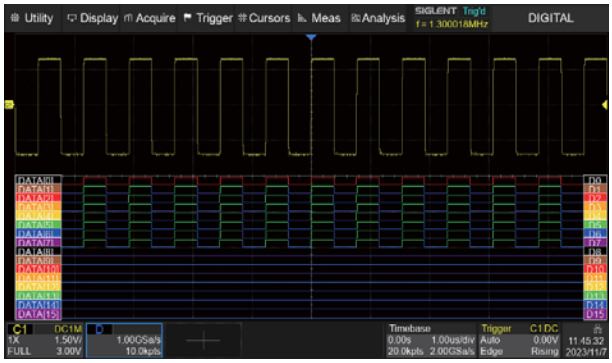
## • Bode Plot

SDS800X HD 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)

## • Power Analysis (Optional)

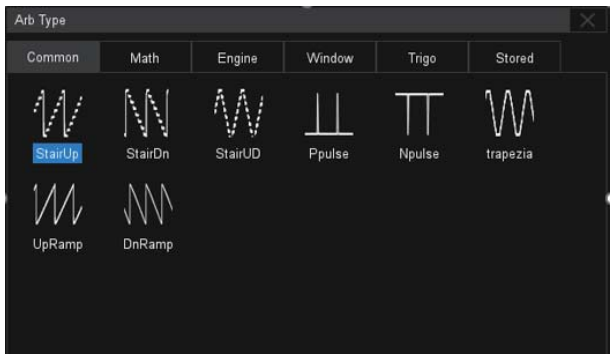
The Power Analysis option provides a full suite of power measurements and analysis, which greatly improve the measurement efficiency in switching power supplies and power devices design

## • Digital Channels / MSO




Four analog channels plus 16 digital channels enable users to acquire and trigger the waveforms then analyze the pattern, simultaneously with one instrument

## • USB AWG module (Optional)




The USB waveform generator can output waveforms with up to 25 MHz frequency and ±3 V amplitude. Six basic waveforms together with multiple types of predefined waveforms and as user-defined arbitrary waveforms are supported

## Specifications

| Model | SDS804X HD<br>SDS802X HD | SDS814X HD<br>SDS812X HD | SDS824X HD<br>SDS822X HD |
|---|---|---|---|
| Analog channels | 4 (4CH Series: SDS804X HD, SDS814X HD, SDS824X HD), 2 (2CH Series: SDS802X HD, SDS812X HD, SDS822X HD) | | |
| Bandwidth | 70 MHz | 100 MHz | 200 MHz |
| Vertical resolution | 12-bit | | |
| Sample rate (Max.) | One channel mode: 2 GSa/s, Two channel mode: 1 GSa/s, Four channel mode: 500 MSa/s | | |
| Memory depth (Max.) | One channel mode: 50 Mpts/ch,<br>Two channel mode: 25 Mpts/ch,<br>Four channel mode: 10 Mpts/ch | | One channel mode: 100 Mpts/ch,<br>Two channel mode: 50 Mpts/ch,<br>Four channel mode: 25 Mpts/ch |
| Waveform capture rate (Max.) | Normal mode: 80,000 wfm/s;<br>Sequence mode: 500,000 wfm/s | | Normal mode: 120,000 wfm/s;<br>Sequence mode: 500,000 wfm/s |
| Trigger type | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Delay, Setup/Hold time, Serial | | |
| Serial trigger and decode(Standard) | I2C, SPI, UART, CAN, LIN | | |
| Measurement | 50+ parameters, statistics, histogram, trend, and track supported | | |
| Math | 4 traces<br>2 Mpts FFT, Filter, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, Absolute, Sign, ex, 10x, ln, lg, Interpolation, MaxHold, MinHold, ERES, Average. Supports formula editor | | |
| Data analysis | Search, Navigate, History, Mask Test, Counter, Bode plot, and Power Analysis | | |
| Digital channel (optional) | 16-channel; maximum sample rate up to 1 GSa/s; record length up to 10 Mpts | | |
| USB AWG module (option) | One channel, 25 MHz, sample rate of 125 MHz, wave length of 16 kpts, isolated output | | |
| I/O | USB 2.0 Host x2, USB 2.0 Device, 10 M / 100 M LAN, Auxiliary output (TRIG OUT, PASS/FAIL), SBUS (Siglent MSO) | | |
| Probe (Standard) | Passive probe PB470 for each channel | Passive probe PP510 for each channel | Passive probe PP215 for each channel |
| Display | 7 TFT-LCD with capacitive touch screen (1024*600) | | |

## Ordering Information

| Model | Description |
|---|---|
| SDS824X HD | 200 MHz, 2 GSa/s, 4CH |
| SDS814X HD | 100 MHz, 2 GSa/s, 4CH |
| SDS804X HD | 70 MHz, 2 GSa/s, 4CH |
| SDS822X HD | 200 MHz, 2 GSa/s, 2CH |
| SDS812X HD | 100 MHz, 2 GSa/s, 2CH |
| SDS802X HD | 70 MHz, 2 GSa/s, 2CH |

| Standard Accessories | Quantity |
|---|---|
| USB cable | 1 |
| Quick start | 1 |
| Passive probe | 1/channel |
| Certificate of calibration | 1 |
| Power cord | 1 |

| Optional Accessories | Part No. |
|---|---|
| USB Isolated AWG Module Hardware | SAG1021I |
| 16 Channels Logic Analyzer | SLA1016 |
| Power Analysis Software | SDS800XHD-PA |
| Power Analysis Deskew Fixture | DF2001A |

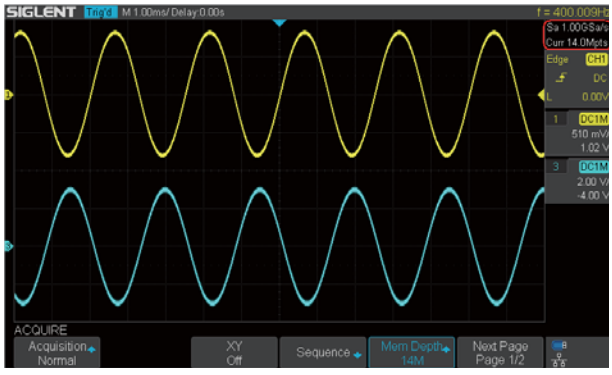
# SDS1000X-E Super Phosphor Oscilloscope

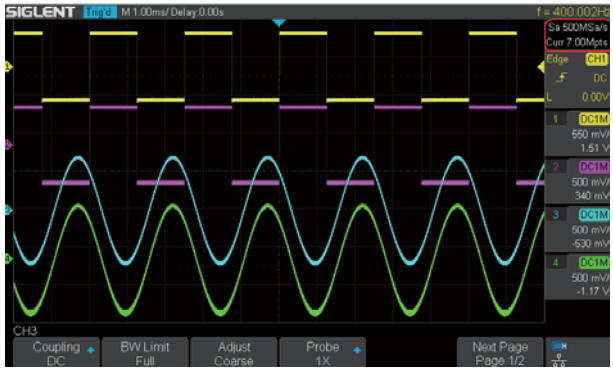
## Key Features

- 100 MHz, 200 MHz bandwidth models
- Two channel series have one 1 GSa/s ADC, four channel series have two 1 GSa/s ADCs. When all channels are enabled, each channel has a maximum sample rate of 500 MSa/s. When a single channel per ADC is active, it has sample rate of 1 GSa/s
- Waveform capture rate up to 100,000 wfm/s (normal mode), and 400,000 wfm/s (sequence mode)
- Serial bus triggering and decoding (Standard), supports protocols IIC, SPI, UART, CAN, LIN
- Math and measurement functions use all sampled data points (up to 14 Mpts)

## Function & Characteristics

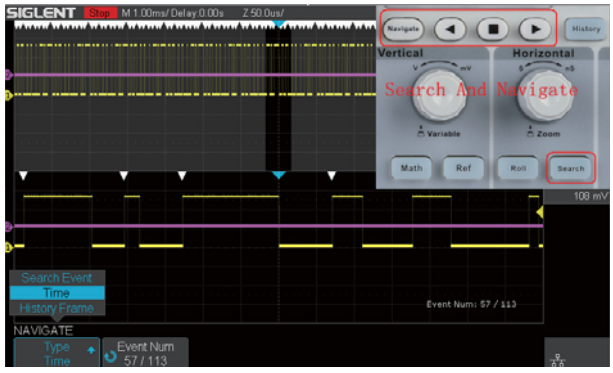
- **When all channels are enabled, each channel has a maximum sample rate of 500 MSa/s. When a single channel per pair is active, that channel has sample rate of 1 GSa/s**




The four channel series has two 1 GSa/s ADC chips (channel 1 and 2 share one, channel 3 and 4 share another), so that each channel can achieve sample rates up to 500 MSa/s and work on bandwidths of 200 MHz when all channels are enabled.

## • Search and Navigate (four channel series only)


The SDS1000X-E can search events specified by the user in a frame. It can also navigate by time (delay position) and historical frames.

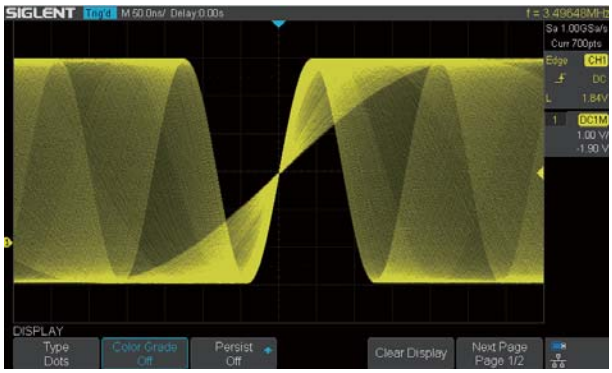
## • 16 Digital Channels/MSO (four channel series only, optional)


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

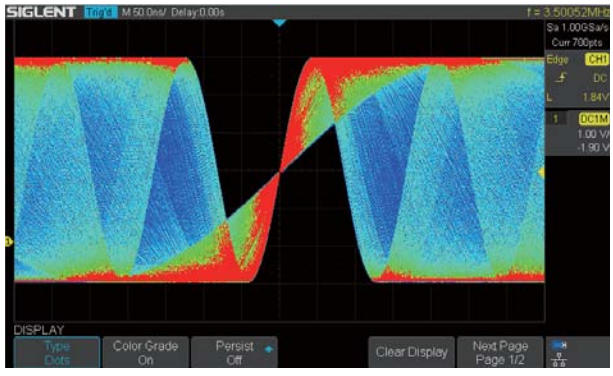
## • USB 25 MHz AWG Module (four channel series only, optional)

The four channel series 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.

## • 256 -Level Intensity Grading and Color Temperature Display




SPO display technology provides for fast refresh rates. The resulting intensity-graded trace is brighter for events that occur with more frequency and dims when the events occur with less frequency.

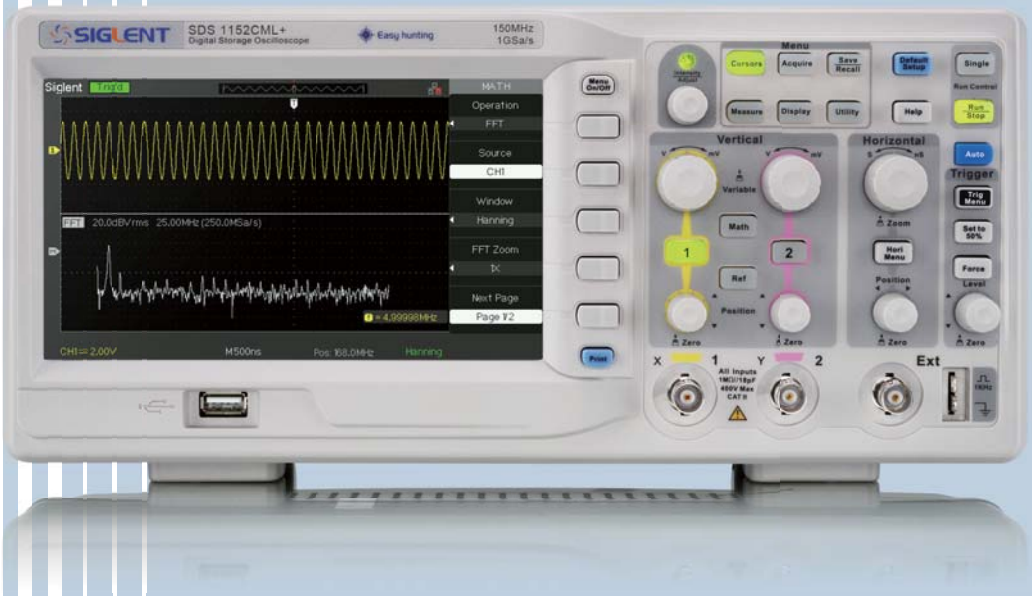



The color temperature display is similar to the intensity-graded trace function, but the trace occurrence is represented by different colors (color "temperature") as opposed to changes in the intensity of one color. Red colors represents the more frequent events, while blue is used to mark points that occur less frequently.

## Models and key Specification

| Model | SDS1104X-E | SDS1204X -E<br>SDS1202X-E |
|---|---|---|
| Bandwidth | 100 MHz | 200 MHz |
| Sampling Rate (Max.) | Two channel series have a single 1 GSa/s ADC, four channel series have two 1 GSa/s ADCs. When all channels are enabled, each channel has a maximum sample rate of 500 MSa/s. When a single channel per pair is active, that channel has sample rate of 1 GSa/s | |
| Channels | 4 (four channel series)<br>2+EXT (two channel series) | |
| Memory Depth (Max.) | 7 Mpts/CH (not interleave mode);<br>14 Mpts/CH (interleave mode) | |
| Waveform Capture Rate (Max.) | 100,000 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 (four channel series only, optional) | Maximum waveform capture rate up to 1 GSa/s, Record length up to 14 Mpts/CH | |
| USB AWG module (four channel series only, optional) | One channel, 25 MHz, sample rate of 125 MHz, wave length of 16 kpts, isolated output (SAG1021I only) | |
| Bode plot ( four channel series only) | 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 | |
| Data Logger(four channel series only) | Sample Logger. The Max sample rate is 25kSa/s, the Min sample rate is 1 GSa/s | |
| | Measure Logger. The Max interval is 10 minutes, the Min interval is 0.1s. The Max number of measurements that can be logged is 4 | |
| I/O | USB Host, USB Device, LAN, Pass/Fail, Trigger Out, Sbus (Siglent MSO) | |
| Probe (Std) | 4 pcs passive probe PP510 | 4/2 pcs passive probe PP215 |
| Display | 7 inch TFT -LCD (800x480) | |
| Weight | Four channel series: Without package 2.6 Kg; With package 3.8 Kg<br>Two channel series: Without package 2.5 Kg; With package 3.5 Kg | |

| Ordering information | | |
|---|---|---|
| Product Name | SDS1104X-E 100 MHz Four Channels | |
| | SDS1204X-E 200 MHz Four Channels | |
| | SDS1202X-E 200 MHz Two Channels | |
| Standard Accessories | USB Cable -1 | |
| | Quick Start -1 | |
| | Passive Probe -2/4 | |
| | Certification -1 | |
| | Power Cord -1 | |
| Optional Accessories | 16 Channels Logic Analyzer (four-channel series only) | SLA1016 |
| | USB Isolated AWG Module Hardware (four channel series only) | 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 |




# SDS1000DL+/CML+ Series Digital Oscilloscope

## Application

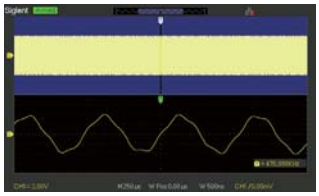
- Electronic circuit design and debugging
- Electrical circuit function test
- Inspect instantaneous signal
- Industrial control and measuring
- Products quality control
- Education and training

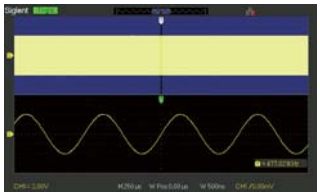
## Key Features

- 50 MHz to 150 MHz Bandwidth
- 500 MSa/s~1 GSa/s sampling rate,32 Kpts~2 Mpts memory depth
- 7 inch (8*18 div) color TFT-LCD display
- 6 digits hardware frequency counter, real time counting display
- Waveform record and play back function
- Unique digital filter and data recorder function
- Embedded 12 languages, online help, one key storing and one key printing
- Interface: USB Device, USB Host, LAN, Pass/Fail
- Supports USB-TMC protocol and SCPI programming command control

## Specifications

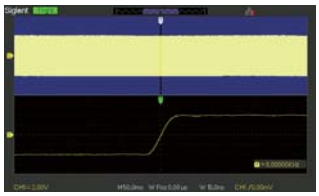
| Model | SDS1052DL+ | SDS1072CML+ | SDS1102CML+ | SDS1152CML+ |
|---|---|---|---|---|
| Bandwidth | 50 MHz | 70 MHz | 100 MHz | 150 MHz |
| Channels | 2 CH +1 EXT | | | |
| Real time sampling rate | 500 MSa/s | 1 GSa/s | 1 GSa/s | 1 GSa/s |
| Equivalent sampling rate | 50 GSa/s | | | |
| Memory depth | 32 Kpts | 2 Mpts | 2 Mpts | 2 Mpts |
| Input impedance | 1 MΩ||17 pF | 1 MΩ||17 pF | 1 MΩ||17 pF | 1 MΩ||17 pF |
| Vertical sensitivity | 2 mv~10 v/div | 2 mv~10 v/div | 2 mv~10 v/div | 2 mv~10 v/div |
| Vertical resolution | 8 bit | | | |
| Trigger source | CH1, CH2, Ext, Ext/5, AC Line | | | |
| Trigger types | Edge, Pulse, Video, Slope, Alternative | | | |
| Math operation | +, -, *, /, FFT | | | |
| Digital filter | High pass, Low pass, Band pass, Band stop | | | |
| Data recorder function | √ | √ | √ | √ |
| Max input voltage | ± 400 V (DC+AC Pk-Pk) | | | |
| Internal storage | 2 groups of reference waveform, 20 groups of setting,10 groups of waveform | | | |
| External storage | Bitmap save, CSV save, Waveform save, Setting save | | | |
| Lasting | Turn off, 1 s, 2 s, 5 s, infinite | | | |
| Language | English, French, German, Russian, Spanish, Simplified Chinese, Traditional Chinese, Portuguese, Japanese, Korean, Italian, Arabic | | | |
| Interface | USB Host, USB Device, LAN, Pass/Fail | | | |
| Display | 7 inch color TFT-LCD | | | |
| Power | AC 100-240 V, 45 Hz-440 Hz, 50 VA Max | | | |


Normal Memory (40 kpts)

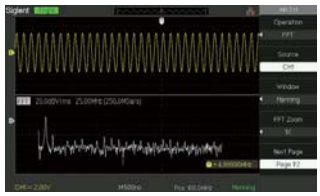

Long Memory (2 Mpts)


32 types of auto measurements


5 parameters display


Zoom Function


Pass/Fail Function


Math Function


Embedded Online Help

## Standard Accessories

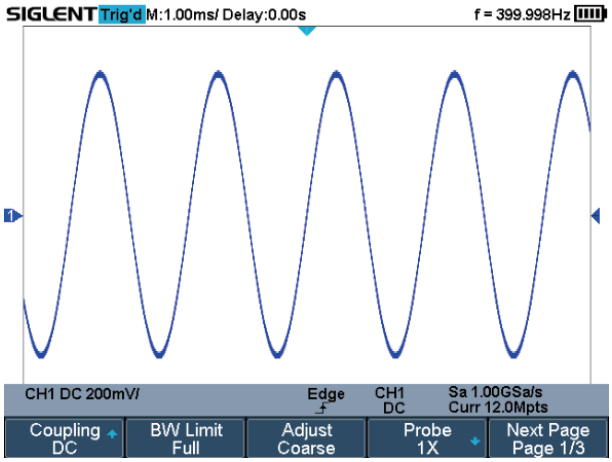
# SHS1000X/SHS800X Handheld Oscilloscope

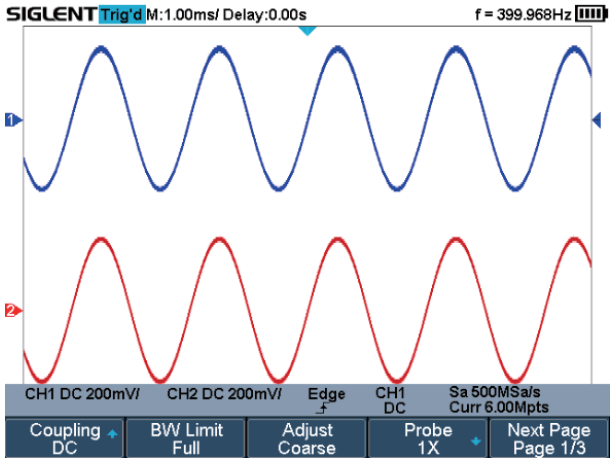
## Application

- 200 MHz, 100 MHz bandwidth models
- Sample rate of 1 GSa/s (single-channel), Sample rate of 500 MSa/s (two-channels)
- The Siglent SPO technology
  - Waveform capture rates up to 100,000 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 12 Mpts
- Intelligent trigger: Edge, Slope, Pulse Width, Window, Runt, Interval, Time out (Dropout), Pattern
- Serial bus triggering and decoding (Standard) for IIC, SPI, UART, CAN, and LIN protocols
- Low background noise with voltage scales from 2 mV/div to 100 V/div
- Interface types: Isolated USB Host, USB Device (MicroUSB -TMC)
- UL2054 certified lithium battery pack, 6900 mAh capacity, external charger
- IP Rating: IP51
- Compliance with UL61010-1, UL61010-2-030, UL61010-2-033

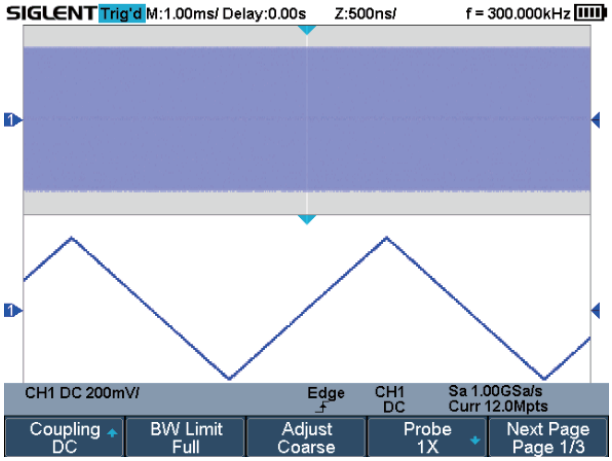
## Characteristics

- **When two channels are enabled, each channel has a maximum sample rate of 500 MSa/s. When a single channel is active, that channel has a sample rate of 1 GSa/s**



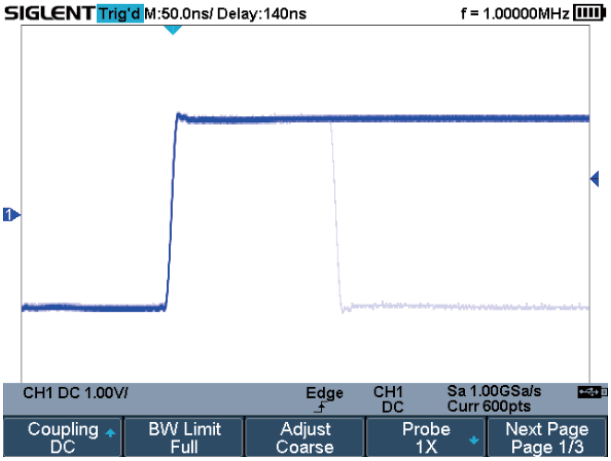



## • Record Length of up to 12 Mpts




Using hardware-based Zoom technologies and max record length up to 12 Mpts, users can oversample to capture for longer periods at higher resolution and use the zoom feature to see more details within each signal.

## • 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 unusual or low-probability events.

## • Adapter/Battery

Wall power using the supplied adapter

SHS800X/SHS1000X supports adapter power supply and battery power supply. After connecting the adapter, the battery enters into charging mode. The adapter provides a maximum 4 A output current.

Battery powered

SHS800X/SHS1000X uses a UL2054 certified lithium battery package. The battery capacity of 6900 mAh can guarantee long-term operation without an external power supply for up-to 5.5 hours (SHS800X) and 4 hours (SHS1000X). The battery supports an external charger to further meet the requirements of portability.

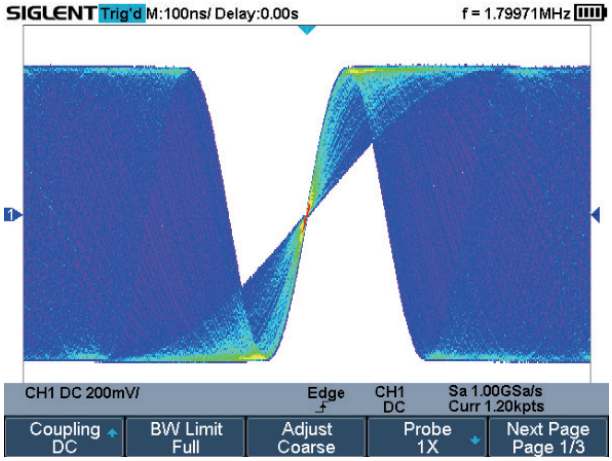
## • Connectivity

Right side of the SHS800X series

Left side of the SHS1000X series

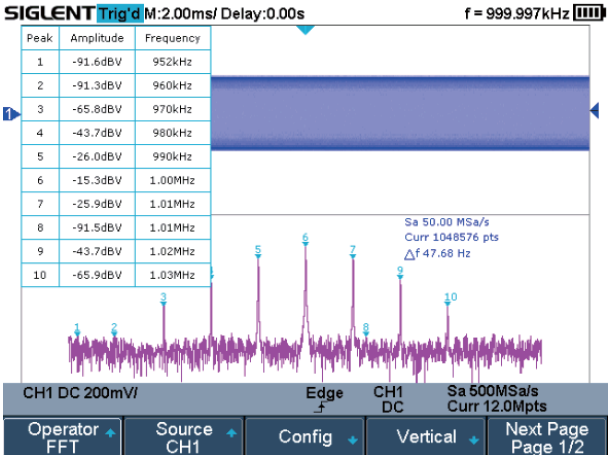
SHS800X/SHS1000X supports USB Host, USB Device (Micro USB -TMC)

## • 256-Level Intensity Grading and Color Temperature Display



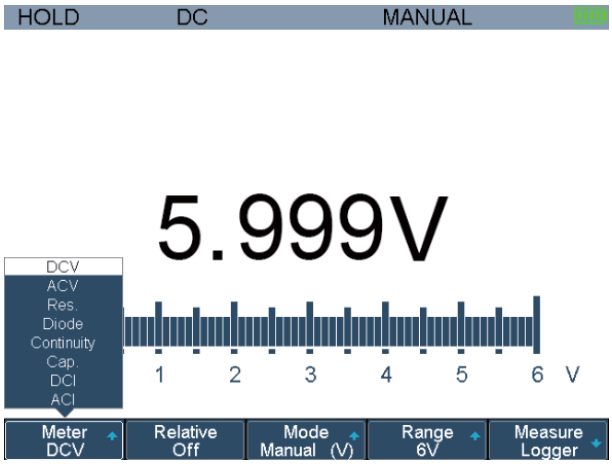

The color temperature display is similar to the intensity-graded trace function, but the trace occurrence is represented by different colors (color "temperature") as opposed to changes in the intensity of one color. Red colors represent events that occur more frequently, while blue is used to mark points that occur less frequently.

## • 1M points used to calculate the FFT

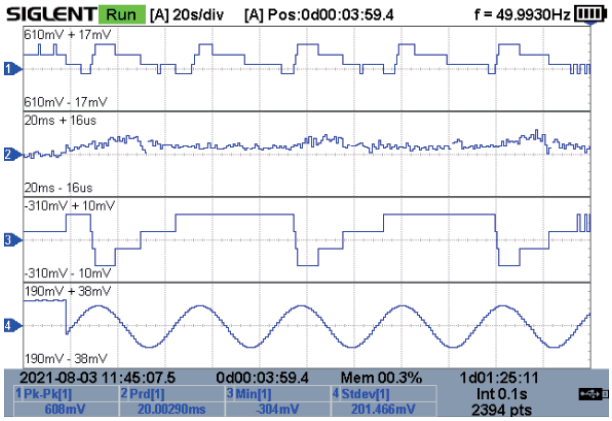



The new math co-processor enables FFT analysis of incoming signals using up to 1 M samples per waveform. This provides high-frequency resolution with a fast refresh rate. The FFT function also supports a variety of window functions so that it can adapt to different spectrum measurement needs. Support Peaks, Markers, a variety of numbers.

## • 6000 Counts Digital Multimeter



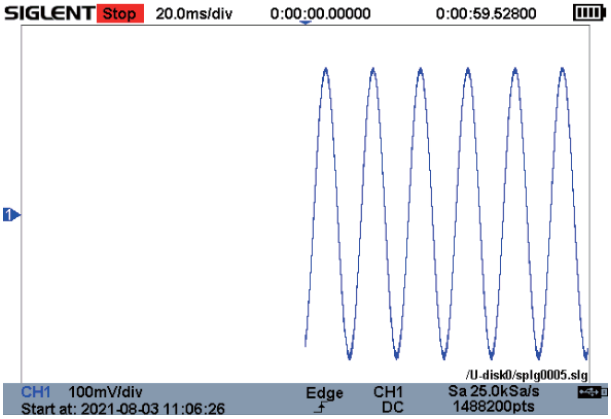

## • Measurement Logger




The measurement Logger is the mode of logging the measurement value for a long time. For the amount of measurement data is relatively small, to process quickly, the data is logged in memory. After stopping logging, the data can be saved into the internal flash or external U disk.

## • Sample Logger

6000 count digital multimeter featured function of DCV, true RMS ACV, DCI, ACI, Diode, Resistance, Capacitance, and Continuity.




The Sample Logger is the mode of logging the sampling points for a long time. For there are many sampling points to log, they are logged into the internal flash or external U disk in real-time. After stopping logging, the user can recall the sampling points on the oscilloscope, or analyze the saved data on the computer.

## Specifications

| Model | SHS810X | SHS820X | SHS1102X | SHS1202X |
|---|---|---|---|---|
| Bandwidth | 100 MHz | 200 MHz | 100 MHz | 200 MHz |
| Sample rate (Max.) | Two-channel share a single 1 GSa/s ADC. When two channels are enabled, each channel has a maximum sample rate of 500 MSa/s. When a single channel is active, that channel has a sample rate of 1 GSa/s | | | |
| Channels | 2 analog oscilloscope channels, 1 multimeter channel | | | |
| Memory depth (Max.) | 6 Mpts/CH (dual-channel mode)<br>12 Mpts/CH (single channel mode) | | | |
| Waveform capture rate (Max.) | 100,000 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 | IIC, SPI, UART, CAN, LIN | | | |
| Data Logger(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 0.1second. The Max items of logging is 4 | | | |
| I/O | USB Host, USB Device | | | |
| Max input Voltage (Scope) | CAT II 300 Vrms Between BNC Signal and Protecting Earth<br>CAT II 30 Vrms Between BNC GND and Protecting Earth<br>CAT II 300 Vrms Between BNC Signal and BNC GND | | CAT III 600 Vrms, CAT II 1000 Vrms Between BNC Signal and Protecting Earth<br>CAT III 600 Vrms, CAT II 1000 Vrms Between BNC GND and Protecting Earth<br>CAT III 300 Vrms Between BNC Signal and BNC GND | |
| Max input Voltage (Meter) | CAT III 300 Vrms, CAT II 600 Vrms | | CAT III 600 Vrms, CAT II 1000 Vrms | |
| Probe | PP510 | PP215 | PB925 | |
| Display | 5.6-inch TFT-LCD (640x480) | | | |
| Weight | Without package 1.75 kg. With package 3.5 kg | | | |

## Ordering Information

| Ordering information | | |
|---|---|---|
| Product Name | SHS820X 200 MHz | |
| | SHS810X 100 MHz | |
| | SHS1202X 200 MHz Isolated Input | |
| | SHS1102X 100 MHz Isolated Input | |
| Standard Accessories | USB Cable -1 | |
| | Quick Start -1 | |
| | Passive Probe -2 | |
| | Multimeter Test Lead -2 | |
| | Certification -1 | |
| | Power Adapter -1 | |
| | Battery -1 | |
| | SCD600MA Current Measurement Adapter -1 | |
| | SCD10A Current Measurement Adapter -1 | |
| | Carrying Bag -1 | |
| Optional Accessories | STB Demo Source | STB-3 |
| | High Voltage Probe | HPB4010 |
| | Current Probes | CP4020/CP4050/CP4070/CP4070A/CP5030/CP5030A/CP5150/CP5500/CPL5100 |
| | Differential Probes | DPB1300/DPB4080/DPB5150/DPB5150A/DPB5700/DPB5700A |
| | Smart Battery Charger | GSCH4000A |

## 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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