SDS7000A Series

Digital Storage Oscilloscope

Data Sheet EN02A







SDS7604A H12 SDS7404A H12 SDS7304A H12

Product Overview

SIGLENT's SDS7000A series Digital Storage Oscilloscopes are available in bandwidths of 6 GHz, 4 GHz and 3 GHz, have 12-bit ADCs with sample rate up to 20 GSa/s, maximum record length of 1Gpts/ch, and display up to 4 analog channels + 16 digital channels for high performance mixed signal analysis.

The SDS7000A series employs Siglent's SPO technology with a maximum waveform capture rate of up to 1,000,000 wfm/s, 256-level intensity grading display function plus a color temperature display mode. It also employs an innovative digital trigger system with high sensitivity and low jitter. The trigger system supports multiple powerful triggering modes including serial bus triggering. Tools such as History waveform recording, Search and Navigate functions, Signal Scan, Mask Test, Bode Plot, Power Analysis, Eye/Jitter Analysis and Compliance Test allow for extended waveform records to be captured, stored, and analyzed. An impressive array of measurement and math capabilities, options for a 50 MHz arbitrary waveform generator, as well as serial decoding are also features of the SDS7000A.

The large 15.6" HD display capacitive touch screen supports multi-touch gestures, with the addition of user-friendly UI design, can greatly improve the operational efficiency. It also supports mouse control, and remote web control over LAN.



Key Features

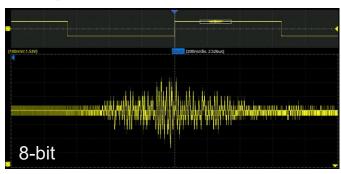
- 4 analog channels, up to 6 GHz bandwidth with up to 20GSa/s sample rate
- 12-bit ADC
- Low background noise: 260 μVrms @ 6 GHz bandwidth
- SPO technology
 - Waveform capture rates up to 1,000,000 wfm/s
 - Supports 256-level intensity grading and color temperature display modes
 - 500 Mpts/ch standard, 1 Gpts/ch optional
 - Digital trigger system
- Intelligent trigger: Edge, Slope, Pulse, Window, Runt, Interval, Dropout, Pattern, Qualified, Nth edge, Setup/hold, Delay and Video (HDTV supported). Zone Trigger simplifies advanced triggering
- Serial bus triggering and decoder, supports protocols I²C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I²S, MIL-STD-1553B, SENT, Manchester, ARINC429 and USB 2.0
- Segmented acquisition (Sequence) mode, dividing the maximum record length into multiple segments (up to 124,000), according to trigger conditions set by the user, with a very small dead time between segments to capture the qualifying event
- History waveform record (History) function, the maximum recorded waveform length is 124,000 frames
- Automatic measurements on 50+ parameters, supports statistics with histogram, track, trend, Gating measurement, and measurements on Math, History and Memory traces
- 4 Math traces (32 Mpts FFT, Filter, addition, subtraction, multiplication, division, integration, differential, square root, etc.), supports formula editor
- Abundant data analysis functions such as Search, Navigate, SignalScan, Digital Voltmeter, Counter, Waveform Histogram, Bode plot, Power Analysis, Eye/Jitter Analysis and Compliance Test
- High Speed hardware-based Average, Hi-Res; High Speed hardware-based Mask Test function, with Mask Editor tool for creating user-defined masks
- 16 digital channels
- Built-in 50 MHz waveform generator
- Large 15.6" HD TFT-LCD display with 1920 * 1080 resolution; Capacitive touch screen supports multi-touch gestures
- Interfaces include: 4x USB Host 3.1 Gen 1, 2x USB 3.0 Host, USB 2.0 Device, 2x 1000M LAN, DVI-D, DP 1.2, HDMI 1.4, Audio, External Triger In, Aux Out (Pass/Fail, Trigger Out), 10 MHz In, 10 MHz Out
- Built-in web server supports remote control over the LAN port using a web browser. Supports SCPI remote control commands. Supports external mouse and keyboard

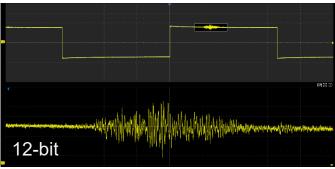
Models and Key Specifications

Model	SDS7604A H12	SDS7404A H12	SDS7304A H12	
Analog channels	4 + EXT			
Bandwidth	6 GHz	4 GHz	3 GHz	
Sample rate (Max.)	20 GSa/s (dual-channel) 10 GSa/s (3 or 4 channels)			
Vertical Resolution	12-bit Up to 16-bit in ERES mode			
Memory depth (Max.)	Standard: 500 Mpts/ch Optional: 1 Gpts/ch in dual-channe	el mode		
Waveform capture rate (Max.)	1,000,000 wfm/s			
Trigger type	Edge, Slope, Pulse width, Window Setup/hold, Delay, Serial	, Runt, Interval, Dropout, Pa	attern, Video, Qualified, Nth edge,	
Serial trigger and	Standard: I2C, SPI, UART, CAN, L	IN		
decode	Optional: CAN FD, FlexRay, I ² S, M (decode only)	MIL-STD-1553B, SENT, Mar	schester (decode only), ARINC429, USB 2.0	
Measurement	50+ parameters, statistics, histogr	am, trend, and track support	ed	
	4 traces			
Math	32 Mpts FFT, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, Absolute, Sign, e ^x , 10 ^x , In, Ig, 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, Compliance Test (USB 2.0, 100Base-TX, 1000Base-T, 1000Base-T1, 1000Base-T1, MIPI-DPHY)			
Digital channel	16-channel; maximum sample rate		th 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 GE	B memory, 250 GB storage,	Linux operating system	
	I/O: 4x USB Host 3.1 Gen 1, 2x U	SB 3.0 Host, USB 2.0 Devic	e (USBTMC), 2x 1000M LAN (VXI-11+SCPI,	
	Telnet (5024)+SCPI, Socket (5025)+SCPI, LXI, WebServer)			
I/O	Display: 1x DVI-D: up to 1920x1200 @ 60Hz; 1x DP 1.2: up to 4096x2304 @ 60Hz; 1x HDMI 1.4: up to			
1/0	4096x2160 @ 60Hz			
	Audio: Mic input, Audio Output			
	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)			

Functions & Characteristics

12-bit High Resolution





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

Upgraded processor system



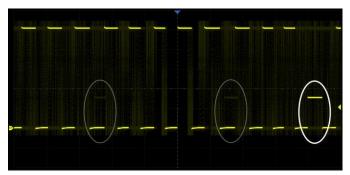
Processor fully upgraded from the embedded ARM processor to the X86 processor, has greatly improved the system response speed and the speed of measurement, calculation, and analysis, presenting more possibilities for the expansion of software analysis functions in the future.

Excellent User Interface and User Experience



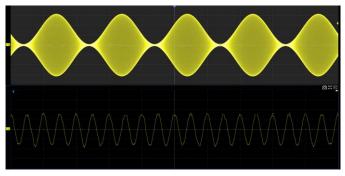
- 15.6" HD display with 1920*1080 resolution
- Capacitive touch screen, supporting multi-touch gestures, can move or scale the waveform traces quickly by finger-touch movements, which greatly improves the operational efficiency
- Built-in WebServer supports remote control on a web page over LAN
- · Supports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

High Waveform Update Rate



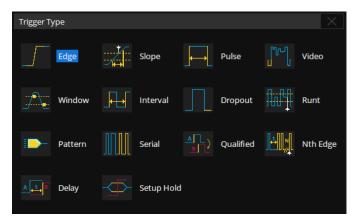
With a waveform update rate of up to 1,000,000 wfm/s, the oscilloscope can easily capture unusual or low-probability events. In Sequence mode, the waveform capture rate can reach 1,100,000 wfm/s

Deep Record Length



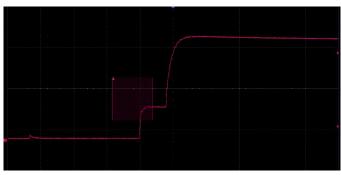
Using hardware-based Zoom technique and record length of up to 1 Gpts, users can select a slower timebase without compromising the sample rate, and then quickly zoom in to focus on the area of interest

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

Advanced Math Function



In addition to the traditional (+, -, X, /) operations, FFT, Filter, integration, differential, square root, and more are supported. Formula Editor is available for more complex operations. 4 math traces are available.

Measurements of a Variety of Parameters



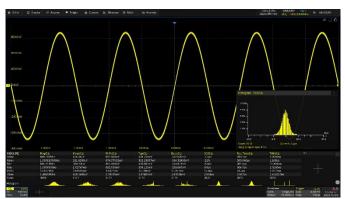
Parameter measurements include 4 categories: horizontal, vertical, miscellaneous, and CH delay providing a total of 50+ different types of measurements. Measurements can be performed within a specified gate period. Measurements on Math, Reference, and History frames are supported

Deep Memory FFT



FFT supports up to 32 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.

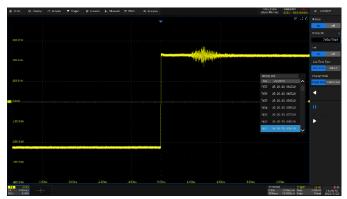
Parameter Statistics Function



Statistics show the current value, maximum value, minimum value, standard deviation, and mean value of up to 12 parameters simultaneously. A histogram is available to show the probability distribution of a parameter. Trend and Track are available to show the parameter value vs. time.

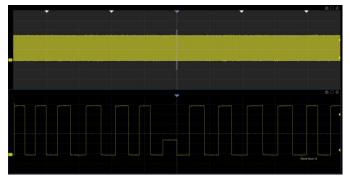
For horizontal parameters such as period, all results are extracted from a frame, instead of just calculating the first one. This accelerates statistics on horizontal measurements and enables distribution observation in a frame using Histogram and Track

History Mode



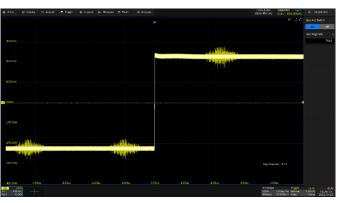
History function can record up to 124,000 frames of waveforms. The recording is executed automatically so that the customer can playback the history waveforms at any time to observe unusual events and quickly locate the area of interest using the cursors or measurements. The failed frames of the Mask Test can be stored as history

Search and Navigate



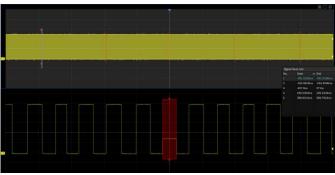
The oscilloscope can search events specified by the user in a frame based on hardware. Events flagged by the Search can be recalled automatically using Navigate. It can also navigate by time (delay position) and history frames

Sequence Mode



Segmented memory collection will store the waveform into multiple memory segments (up to 124,000) and each segment will store a triggered waveform as well the dead time information. The interval between segments can be as small as 0.9 μs . All of the segments can be played back using the History function

SignalScan



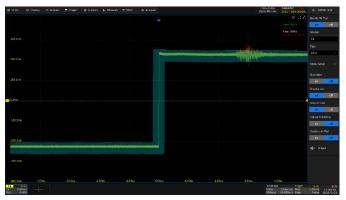
SignalScan automatically searches events by software according to the search conditions set by users, and marks them. Different from hardware search, in SignalScan the supported search conditions are richer, while the scan speed is relatively slower

Serial Bus Decode

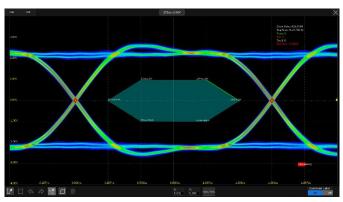


Display the decoded characters through the events list. Bus protocol information can be quickly and intuitively displayed in tabular form. I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester, ARINC429 and USB 2.0 are supported

Hardware-based High Speed Mask Test Function

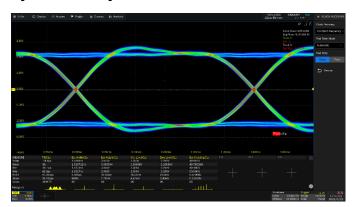


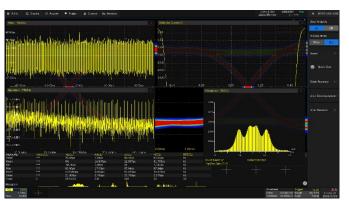
The oscilloscope utilizes a hardware-based Mask Test function, performing up to 80,000 Pass / Fail decisions each second. It is easy to generate user-defined test templates to provide trace mask comparisons, making it suitable for long-term signal monitoring or automated production line testing



Built-in Mask Editor application helps to create custom masks

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

Compliance Test (Optional)

USB 2.0, 100Base-TX, 1000Base-T, 100Base-T1, 1000Base-T1, 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.



Bode Plot



Power Analysis (Optional)



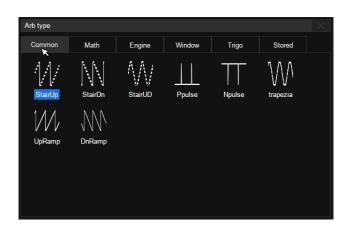
The oscilloscope can control the Built-in waveform generator, SIGLENT isolated USB AWG module or a stand-alone SIGLENT SDG generator, to scan the amplitude and phase-frequency response of the DUT, and display the data as a Bode Plot. This makes it possible to replace expensive network analyzers in some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

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



Built-in 50 MHz Function/Arbitrary Waveform Generator (Optional)



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

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

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

Complete Connectivity

- 2x USB 3.0 Host, 4x USB Host 3.1 Gen 1, USB 2.0 Device (USBTMC), 2x 1000M LAN
 (VXI-11+SCPI, Telnet (5024) +SCPI, Socket (5025) +SCPI, LXI, WebServer),
- 1x DVI-D: up to 1920x1200 @ 60Hz, 1x DP 1.2: up to 4096x2304 @ 60Hz, 1x HDMI 1.4: up to 4096x2160 @ 60Hz
- Mic input, Audio Output
- External Trigger In, Aux Out (TRIG OUT, PASS/FAIL), 10 MHz In, 10 MHz Out



Specifications

All specifications are not guaranteed unless the following conditions are met:

- The oscilloscope calibration period is current
- The oscilloscope has been working continuously for at least 30 minutes at the specified temperature ($18^{\circ}\text{C} \sim 28^{\circ}\text{C}$)

Acquire (analog	
Sample rate	20 GSa/s (dual-channel) *1 10 GSa/s (3 or 4 channels) *1
Memory depth *2*3	Standard: 500 Mpts/ch Optional: 1 Gpts/ch in dual-channel mode
Real time signal processing depth	Measure, math, decode, analysis: 100 Mpts/ch max.
Waveform update rate	1,000,000 wfm/s, 1,100,000 wfm/s in sequence mode
Intensity grading	256-level
Peak detect	100 ps
Average	4, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192
ERES	Enhanced bit: 0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4 bit
Sequence	Up to 124,000 segments, interval between triggers = 0.9 μs min.
History	Up to 124,000 frames
Interpolation	sinx/x, x

^{* 1:} dual-channel: C1/C2 are not both active, and C3/C4 are not both active

^{* 3:} When digital channels are active, the memory depth is 50 Mpts/ch

Vertical (analog)	SDS7604A H12	SDS7404A H12	SDS7304A H12
Channel	4 + EXT		
Bandwidth ^{*1} (-3dB) @ 50Ω	6 GHz*2	4 GHz	3 GHz
Rise time@50Ω	68 ps typical < 75 ps	116 ps typical < 125 ps	130 ps typical < 150 ps
Bandwidth (-3dB) @ 1 $M\Omega$, with probe	500 MHz		
Bandwidth (-3dB) @ 1 M Ω , with external 50 Ω	300 MHz		
Resolution	12-bit		
Bandwidth in ERES mode (typical)	Enhanced bits: 0.5: 0.25*Sample rate, up to the analog bandwidth 1: 0.115*Sample rate, up to 2.3 GHz, limited by the analog bandwidth 1.5: 0.055*Sample rate, up to 1.1 GHz, limited by the analog bandwidth 2: 0.028*Sample rate, up to 560 MHz 2.5: 0.014*Sample rate, up to 280 MHz 3: 0.007*Sample rate, up to 140 MHz 3.5: 0.0035*Sample rate, up to 70 MHz 4: 0.0017*Sample rate, up to 34 MHz		
Noise floor (rms,	50Ω,typical)		
≤ 5 mV/div	260 μV	220 μV	200 μV
10 mV/div	300 μV	237 μV	214 μV
20 mV/div	430 μV	280 μV	255 μV
50 mV/div	900 μV	635 µV	564 μV
100 mV/div	1.7 mV	1.01 mV	935 μV
200 mV/div	4.2 mV	3.06 mV	2.68 mV
500 mV/div	8.9 mV	6.84 mV	5.89 mV
1 V/div	16 mV	10.65 mV	9.58 mV
ENOB*3 (typical)	7.1-bit	7.3-bit	7.5-bit
Range	8 divisions		

^{* 2:} In Average and Hi-Res modes, the memory depth is 25 Mpts/ch

Vertical scale	1 MΩ: 1 mV/div – 10 V/div		
(probe 1X)	50 Ω: 1 mV/div – 1 V/div		
	1 mV/div ~ 4.95 mV/div: ±2.0% FS	1 mV/div ~ 4.95 mV/div: ±1.5% FS	
DC gain accuracy	5 mV/div ~ 10 V/div: ±1.5% FS		
	max. ±0.5% FS typical	5 mV/div ~ 10 V/div: ±1% FS max. ±0.5% FS typical	
Offset accuracy	± (1% of the offset setting + 0.5% o	f full scale + 0.02% of max offset + 1mV)	
	1M Ω : 1 mV/div ~ 5 mV/div: ±1.6 V;	5.1 mV/div ~ 10 mV/div: ±4 V; 10.2 mV/div ~ 20 mV/div:±8 V; 20.5	
Offset range	$mV/div \sim 100 mV/div: \pm 16 V; 102 r$	mV/div ~ 200 mV/div: ±80 V; 205 mV/div ~ 1 V/div: ±160 V; 1.02 V/div ~	
(probe 1X)	10 V/div: ±400 V 50Ω: 1 mV/div ~ 5 mV/div: ±1.6 V; 5.1 mV/div ~ 10 mV/div: ±4 V; 10.2 mV/div ~ 20 mV/div:±8 V; 20.5		
	mV/div ~ 1 V/div: ±10 V		
Bandwidth limit	30 MHz±40%, 200 MHz±20%, Cust	rom	
Low frequency response (AC coupling -3 dB)	6 Hz (typical)		
Coupling	DC, AC, GND		
Impedance	$(1 M\Omega \pm 2\%) (15 pF \pm 3 pF)$		
Impedance	50 Ω: 50 Ω ± 2%		
Max. Input	1 M Ω ≤ 400 Vpk(DC + AC), DC ~ 1	0 kHz	
voltage	50 Ω ≤ 5 Vrms, ± 10V Peak		
SFDR	≥ 45dBc		
CH to CH	60 dB up to 500 MHz		
Isolation (@50Ω)	40 dB up to 6 GHz		
Probe Attenuation	1X, 10X, 100X, custom		

Horizontal	SDS7604A H12	SDS7404A H12	SDS7304A H12
Time scale	0.05 ns/div – 1000 s/div		
Range	10 divisions		
Display mode	Y-T, X-Y, Roll		
Roll mode	≥ 50 ms/div		
Skew (C1~C4)	± 50 ps	± 100 ps	± 100 ps
Time base	Standard (TCXO): ±2 ppm initial (0-	~50°C); ±0.5 ppm 1st year aging; ±3 p	opm 20-year aging
Accuracy	Optional (OCXO): ±100 ppb initial (25°C); ±1 ppb over temperature (0~50°C); ±50 ppb 1st year aging		

Trigger				
Mode	Auto, Normal, Single			
	Internal: ±4.5 div from the center of the screen			
Level	EXT: ± 0.61 V			
	EXT/5: ± 3.05 V			
Ext Trigger Channel	1 MΩ ≤ 42 Vpk			
input voltage	50 Ω ≤ 5 Vrms			
Hold off range	By time: 4 ns ~ 30 s (4 ns	step)		
Troid on range	By event: 1 ~ 108			
Coupling	LFRJ: Attenuates the freq HFRJ: Attenuates the freq Noise RJ: Increases the tr EXT DC: Passes all componen AC: Blocks DC componen LFRJ: Attenuates the freq	ts and attenuates signals but the signals to the signals of the signal o	2.4 MHz 1.3 MHz pelow 10 Hz 500 kHz	
Accuracy (typical)	C1 ~ C4: ±0.2 div EXT: ±0.3 div			
Sensitivity	C1 ~ C4 (50Ω):		Noise RJ = OFF	Noise RJ = ON
Solisiavity	01 (0032).	> 10 mV/div	0.8 div	1.0 div

^{*1:} Enhanced Bandwidth = ON, and Type = Best Flatness
*2: In 3 or 4 channels mode the bandwidth is limited to 4 GHz because the sample rate is limited to 10 GSa/s
*3: 50 Ω, 50 mV/div, 20 GSa/s, -1dBFS/47.999 MHz input

		≤ 10 mV/div	2.4 div	2.6 div
	C1 ~ C4 (1MΩ):	> 5 mV/div	0.5 div	0.7 div
	O1 ** O4 (111122).	≤ 5 mV/div	1.5 div	1.7 div
		200 mVpp, DC ~ 10 N	ИHz	
	EXT:	300 mVpp, 10 MHz ~	bandwidth (300 MHz)	
			, , , , , , , , , , , , , , , , , , , ,	
	EXT/5:	1 Vpp, DC ~ 10 MHz		
		1.5 Vpp, 10 MHz ~ ba	indwidth (300 MHz)	
	C1 ~ C4:			
Jitter	from 2.5 mV/div to 10 V/d	liv 500 MHz sine and ≥ 6 divi:	sions peak to peak amplitud	
Displacement	Pre-Trigger: 0 ~ 100% me Delay-Trigger: 0 ~ 10,000	-		
	Up to 2 zones	, aiv		
Zone	•			
Zone	Source: C1~C4			
	Property: Intersect, Not Ir	ntersect		
Edge Trigger				
Source	C1~C4/EXT/(EXT/5)/AC			
Slope	Rising, Falling, Rising & F	alling		
Slope Trigger Source	C1~C4			
Slope	Rising, Falling			
Limit range	<, >, in range, out of rang			
	2 ns ~ 20 s, Resolution			
Time range	Z IIS ~ ZU S, Resolution	= 0.2 115		
Pulse Width Trigger	C4 C4/D0 D45			
Source Polarity	C1~C4/D0~D15 +wid, -wid			
Limit range	<, >, in range, out of rang			
Time range	2 ns ~ 20 s, Resolution			
-	2113 15 20 3, Resolution	= 0.2 113		
Video Trigger Source	C1~C4			
Standard		n/60 1080n/50 1080n/6	0, 1080i/50, 1080i/60, Cust	tom
Synchronization	Any, Select	5p/00, 1000p/00, 1000p/0	5, 1000i/30, 1000i/00, 0d3	tom
Trigger Condition	Line, Field			
Window Trigger				
Source	C1~C4			
Window type	Absolute, Relative			
Interval Trigger				
Source	C1~C4/D0~D15			
Slope	Rising, Falling			
Limit range	<, >, in range, out of rang	е		
Time range	2 ns ~ 20 s, Resolution	= 0.2 ns		
Dropout Trigger				
Source	C1~C4/D0~D15			
Timeout type	Edge, State			
Slope	Rising, Falling			
Time range	2 ns ~ 20 s, Resolution	= 0.2 ns		
Runt Trigger				
Source	C1~C4			
Polarity	Positive, Negative			
Limit range	<, >, in range, out of rang	е		
Time range	2 ns ~ 20 s, Resolution			
Pattern Trigger	,			
Source	C1~C4/D0~D15			
Pattern Setting	Don't Care, Low, High			
Logic	AND, OR, NAND, NOR			
Limit range	<, >, in range, out of rang	е		
3	, , , , , , , , , , , , , , , , , , , ,			

Time range	2 ns ~ 20 s, Resolution = 0.2 ns
Qualified Trigger	
Type	State, State with Delay, Edge, Edge with Delay
Qualified Source	C1~C4/D0~D15
Edge Trigger Source	C1~C4/D0~D15
Nth Edge Trigger	
Source	C1~C4/D0~D15
Slope	Rising, Falling
Idle time	8 ns ~ 20 s, Resolution = 0.2 ns
Edge Number	1 ~ 65535
Delay Trigger	
Source A	C1~C4/D0~D15
Source B	C1~C4/D0~D15
Slope	Rising, Falling
Limit range	<, >, in range, out of range
Time range	2 ns ~ 20 s, Resolution = 0.2 ns
Serial Trigger	
Source	C1~C4/D0~D15
Protocol	Standard: I ² C, SPI, UART, CAN, LIN Optional: CAN FD, FlexRay, I ² S, MIL-STD-1553B, SENT, ARINC429
I ² C	Type: Start, Stop, Restart, No Ack, EEPROM, Address & Data, Data Length
SPI	Type: Data
UART	Type: Start, Stop, Data, Parity Error
CAN	Type: All, Remote, ID, ID+Data, Error
LIN	Type: Break, Frame ID, ID+Data, Error
CAN FD (Optional)	Type: Start, Remote, ID, ID+Data, Error
FlexRay (Optional)	Type: TSS, Frame, Symbol, Errors
I ² S (Optional)	Type: Data, Mute, Clip, Glitch, Rising Edge, Falling Edge
MIL-STD-1553B (Optional)	Type: Transfer, Word, Error, Timing
SENT (Optional)	Type: Start, Slow channel, Fast channel, Error
ARINC429 (Optional)	Type: Word Start, Word End, Label, Label+Data, Error, Any Bit, Any Bit of 0, Any Bit of 1

List 1 ~ 7 lines Decoder type Full duplex Full duplex	O. dal Danasia	
Threshold		
List 1 ~ 7 lines Decoder type Full duplex Full duplex	Decoders	2
Pecoder type Full duplex PC	Threshold	-4.1 ~ 4.1 div
IPC Source C1~C4/D0~D15 Signal SCL, SDA Address 7-bit, 10-bit SPI Source C1~C4/D0~D15 Signal CLK, MISO, MOSI, CS Edge Select Rising, Falling Chip select Active high, Active low, Clock timeout Bit Order LSB, MSB UART Source Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	List	1 ~ 7 lines
IPC Source C1~C4/D0~D15 Signal SCL, SDA Address 7-bit, 10-bit SPI Source C1~C4/D0~D15 Signal CLK, MISO, MOSI, CS Edge Select Rising, Falling Chip select Active high, Active low, Clock timeout Bit Order LSB, MSB UART Source Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Decoder type	Full duplex
Signal SCL, SDA Address 7-bit, 10-bit SPI Source C1~C4/D0~D15 Signal CLK, MISO, MOSI, CS Edge Select Rising, Falling Chip select Active high, Active low, Clock timeout Bit Order LSB, MSB UART Source C1~C4/D0~D15 Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	I ² C	
Address 7-bit, 10-bit SPI Source C1~C4/D0~D15 Signal CLK, MISO, MOSI, CS Edge Select Rising, Falling Chip select Active high, Active low, Clock timeout Bit Order LSB, MSB UART Source C1~C4/D0~D15 Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Source	C1~C4/D0~D15
Source C1~C4/D0~D15 Signal CLK, MISO, MOSI, CS Edge Select Rising, Falling Chip select Active high, Active low, Clock timeout Bit Order LSB, MSB UART Source C1~C4/D0~D15 Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Signal	SCL, SDA
Source C1~C4/D0~D15 Signal CLK, MISO, MOSI, CS Edge Select Rising, Falling Chip select Active high, Active low, Clock timeout Bit Order LSB, MSB UART Source C1~C4/D0~D15 Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Address	7-bit, 10-bit
Signal CLK, MISO, MOSI, CS Edge Select Rising, Falling Chip select Active high, Active low, Clock timeout Bit Order LSB, MSB UART Source C1~C4/D0~D15 Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	SPI	
Edge Select Rising, Falling Chip select Active high, Active low, Clock timeout Bit Order LSB, MSB UART Source C1~C4/D0~D15 Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Source	C1~C4/D0~D15
Chip select Active high, Active low, Clock timeout Bit Order LSB, MSB UART Source C1~C4/D0~D15 Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Signal	CLK, MISO, MOSI, CS
Bit Order LSB, MSB UART Source C1~C4/D0~D15 Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Edge Select	Rising, Falling
UART Source C1~C4/D0~D15 Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Chip select	Active high, Active low, Clock timeout
Source C1~C4/D0~D15 Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Bit Order	LSB, MSB
Signal RX, TX Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	UART	
Data Width 5-bit, 6-bit, 7-bit, 8-bit Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Source	C1~C4/D0~D15
Parity Check None, Odd, Even, Mark, Space Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Signal	RX, TX
Stop Bit 1-bit, 1.5-bit, 2-bit Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Data Width	5-bit, 6-bit, 7-bit, 8-bit
Idle Level Low, High Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Parity Check	None, Odd, Even, Mark, Space
Bit Order LSB, MSB CAN Source C1~C4/D0~D15	Stop Bit	1-bit, 1.5-bit, 2-bit
CAN Source C1~C4/D0~D15	Idle Level	Low, High
Source C1~C4/D0~D15	Bit Order	LSB, MSB
	CAN	
1 151	Source	C1~C4/D0~D15
LIN	LIN	

3	
LIN Version	Ver 1.3, Ver 2.0
Source	C1~C4/D0~D15
Baud Rate	600 bps, 1200 bps, 2400 bps, 4800 bps, 9600 bps, 19200 bps, Custom
CAN FD (Optional)	
Source	C1~C4/D0~D15
Nominal Baud Rate	10 kbps, 25 kbps, 50 kbps, 100 kbps, 250 kbps, 1 Mbps, Custom
Data Baud Rate	500 kbps, 1 Mbps, 2 Mbps, 5 Mbps, 8 Mbps, 10 Mbps, Custom
FlexRay (Optional)	
Source	C1~C4/D0~D15
Baud Rate	2.5 Mbps, 5 Mbps, 10 Mbps, Custom
I ² S (Optional)	
Source	C1~C4/D0~D15
Signal	BCLK, WS, DATA
Audio Variant	Audio-I2S, Audio-LJ, Audio-RJ
Start Bits	0~31
Data Bits	1~32
MIL-STD-1553B (Opti	onal)
Source	C1~C4
SENT (Optional)	
Source	C1~C4/D0~D15
Manchester (Optiona	1)
Source	C1~C4
Baud Rate	500 bps~5 Mbps
ARINC429 (Optional)	
Source	C1~C4
Baud Rate	12.5 kbps~100 kbps, tolerance 1%~20%
Word format	L/SDI/D/SSM, L/D/SSM, L/D
USB 2.0 (Optional)	
Source	Full speed/Low speed: C1~C4/D0~D15 High speed: C1~C4
Data type	Low speed (1.5 Mbps), Full speed (12 Mbps), High speed (480Mbps)

Measurement		
Automatic Measuremer	nt	
Source	C1~C4, D0~D15, Z1~Z4, F1~F4, M1~M4, History	
Mode	Simple, Advanced	
Range	Screen Gated: inside screen, definable with separate Gate cursors	
Custom Threshold	Upper, Middle, Lower	
No. of Measurements	Display 12 measurements at the same time (Display mode = M2)	
Vertical Parameters	Max, Min, Pk-Pk, Top, Base, Amplitude, Mean, Cycle Mean, Stdev, Cycle Stdev, RMS, Cycle RMS, Median, Cycle Median, FOV, FPRE, ROV, RPRE, Level@Trigger, UpperLower	
Horizontal Parameters	Period, Frequency, Time@max, Time@min, +Width, -Width, 10-90%Rise time, 90-10%Fall time, Rise time, Fall time, +Burst Width, -Burst Width, +Duty Cycle, -Duty Cycle, Delay, Time@Middle, Cycle-Cycle jitter	
Miscellaneous Parameters	+Area@DC, -Area@DC, Area@DC, Absolute Area@DC, +Area@AC, -Area@AC, Area@AC, Absolute Area@AC, Cycles, Rising Edges, Falling Edges, Edges, Positive pulses, Negative pulses, Positive Slope, Negative Slope	
Delay Parameters	Phase, FRFR, FRFF, FFFR, FFFF, FRLR, FRLF, FFLR, FFLF, Skew, tsu@R, tsu@F, th@R, th@F, ∆time1~4	
Statistics	Current, Mean, Min, Max, Sdev, Count; Histogram, Trend, Track	
Statistics Count	Unlimited, 1~1024	
Statistics Count in one frame	Up to 100,000	
Cursors		
Source	C1~C4, Z1~Z4, D0~D15, F1~F4, M1~M4, Histogram	
Туре	Manual : Time X1, X2, (X1-X2), (1/ΔT); Vertical Y1, Y2, (Y1-Y2) Track: Time X1, X2, (X1-X2) Measure: indicates the measurement on specific parameter	

Math	
Trace	F1, F2, F3, F4
Source	C1~C4, F1~F4, M1~M4
Operation	FFT, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, x , Sign, e ^x , 10 ^x , In, Ig, Interpolation, Max hold, Min hold, Delay, Envelope, ERES, Average, Filter, Formula Editor
FFT	Length: 32 Mpts, 16 Mpts, 8 Mpts, 4 Mpts, 2 Mpts, 1 Mpts, 512 kpts, 256 kpts, 128 kpts, 64 kpts, 32 kpts, 16 kpts, 8 kpts, 4 kpts, 2 kpts Window: Rectangular, Blackman, Hanning, Hamming, Flattop Mode: Normal, Max hold, Average Tools: Peaks, Markers

Analysis			
Search			
	C4 C4 Ulatam		
Source	C1~C4, History		
Mode	Edge, Slope, Pulse, Interval, Runt		
Copy setting	Copy from trigger, Copy to trigger		
SignalScan	To. 0		
Source	C1~C4, F1~F4, M1~M4, D0~D15		
Mode	Edge, Non-monotonic, Runt, Measure, Serial pattern, Bus pattern		
Copy setting			
Navigate			
Туре	Search event, Time, History frame		
Mask Test			
Source	C1~C4, Z1~Z4		
Mask creating	Auto (Create mask), Customized (Mask Editor)		
Mask test speed	Up to 80,000 frames/s		
DVM			
Source	C1~C4		
Mode	DC mean, DC RMS, AC RMS, Peak-peak, Amplitude		
Plot	Bar, Histogram, Trend		
Gate	20 ms		
Bode Plot			
Source	C1~C4		
	Built-in waveform generator,		
Supported signal	SAG1021I (Connection: USB),		
sources	SDG series waveform generators (Connection: USB, LAN)		
Sweep type	Simple, Vari-level		
	Mode: Linear, Logarithmic		
Frequency	Range: 10 Hz ~ 120 MHz		
Measure	Upper cutoff frequency, Lower cutoff frequency, Bandwidth, Gain margin, Phase margin		
Power Analysis (optio	nal)		
Measure	Power quality, Current Harmonics, Inrush current, Switching loss, Slew rate, Modulation, Output		
11!-1	ripple, Turn on/turn off, Transient response, PSRR, Efficiency, SOA		
Histogram			
Source	C1~C4		
Туре	Horizontal, Vertical, Both		
Counter			
Source	C1~C4		
Frequency resolution	7 digits		
Totalizer	Counter on edges, supports Gate and Trigger		
Eye Diagram (optional			
Source	C1~C4		
Clock recovery	Constant frequency, PLL		
Measure	Eye height, "1"level, "0"level, Eye amplitude, Eye width, Eye crossing, Average power, Q factor, TIE		
Mask Test	Supported		
Jitter Analysis (option	al)		
Source	C1~C4		
Clock recovery	Constant frequency, PLL		
Measure	Period, Frequency, +Width, -Width, +Duty cycle, -Duty cycle, Cycle-cycle jitter, Cycle-cycle +width, Cycle-cycle -Width, Cycle-cycle +Duty cycle, Cycle-cycle -Duty cycle, Bit Rate, Unit interval		
Jitter decomposition	TIE, RJ, DJ, DCD, DDJ, PJ, TJ@BER Statistics: Histogram, Track, Spectrum		

Compliance Tes	st (Optional)	
USB2.0		
Specification	USB 2.0 Electrical Compliance Test Specification, Version 1.07	
Items	EL_1, EL_2, EL_3, EL_4, EL_5, EL_6, EL_7, EL_9, EL_21, EL_22, EL_23, EL_25, EL_27, EL_28, EL_29, EL_31, EL_33, EL_34, EL_35, EL_38, EL_39, EL_40, EL_41, EL_42, EL_43, EL_44, EL_45, EL_46, EL_47, EL_48, EL_55	
Ethernet		
Specification	100Base-TX	
Items	AOI Template, Peak Voltage (POS, NEG, Signal Amplitude Symmetry), Overshoot (POS, NEG), Rise/Fall Times (POS Rise Time, Pos Fall Time, POS Rise/Fall Symmetry, NEG Rise Time, NEG Fall Time, NEG Rise/Fall Symmetry, Overall Rise/Fall Symmetry), Duty Cycle Distortion, Peak to Peak Transmit Jitter, Return Loss (Transmitter Return Loss, Receiver Return Loss)	
Specification	1000Base-T	
Items	No Disturber Peak Output Voltage (Point A, Point B, Difference A and B, Point C, Point D), No Disturber Droop(Point G, Point J), No Disturber Templates(Point A, Point B, Point C, Point D, Point F, Point H), No Disturber Transmitter Distortion(no TX_TCLK, with TX_TCLK), With Disturber Peak Output Voltage (Point A, Point B, Difference A and B, Point C, Point D), With Disturber Droop (Point G, Point J), With Disturber Templates (Point A, Point B, Point C, Point D, Point F, Point H), With Disturber Transmitter Distortion (no TX_TCLK, with TX_TCLK), No TX_TCLK Master Jitter (Filtered, Unfiltered), No TX_TCLK Slave Jitter (Filtered, Unfiltered), Master JTXOUT, With TX_TCLK Master Jitter (Filtered, Unfiltered), Slave JTXOUT, With TX_TCLK Slave Jitter (Filtered, Unfiltered), Return Loss, Common-mode Output Voltage	
Specification	100Base-T1	
Items	Transmitter Output Droop (Transmitter Output Droop(POS)/Transmitter Output Droop(NEG)), Master Transmitter Clock Frequency And Timing Jitter (Master Transmitter Clock Frequency/Master Transmitter Timing Jitter), TX_TCLK Frequency And Timing Jitter (TX_TCLK Frequency/TX_TCLK Timing Jitter), Transmitter Distortion, MDI Return Loss, MDI Mode Conversion Loss, Transmitter Power Spectral Density And Peak Differential Output (Transmitter Power Spectral Density/Transmitter Peak Differential Output), MDI Common Mode Emission	
Specification	1000Base-T1	
Items	TX_TCLK125 Tests (TX_TCLK125 Frequency/Master TX_TCLK125 RMS Jitter/ Master TX_TCLK125 Peak-to-Peak Jitter/Slave TX_TCLK125 RMS Jitter/ Slave TX_TCLK125 Peak-to-Peak Jitter), Transmit Clock Frequency And MDI Jitter (Transmit Clock Frequency(Master)/MDI Output RMS Jitter(Master)/MDI Output Peak-to-Peak Jitter(Master)), Transmitter Distortion, MDI Return Loss, MDI Mode Conversion Loss, Transmitter Power Spectral Density And Peak Differential Output (Transmitter Power Spectral Density/Transmitter Peak Differential Output), Transmitter Output Droop(POS)/Transmitter Output Droop(NEG))	
Specification	MIPI-DPHY (CTS Version 1.0)	
Items	GROUP 1: Data Lane LP-TX Signaling Requirements GROUP 2: Clock Lane LP-TX Signaling Requirements GROUP 3: Data Lane HS-TX Signaling Requirements GROUP 4: Clock Lane HS-TX Signaling Requirements GROUP 5: HS-TX Clock-To-Data Lane Timing Requirements GROUP 6: Eye Test	

Digital Channels	
Max. Sampling Rate	1 GSa/s
Memory Depth	50 Mpts/ch
Min. Detectable Pulse Width	3.3 ns
Level Group	D0~D7, D8~D15
Level Range	-10 V~10 V
Logic Type	TTL, CMOS, LVCMOS3.3, LVCMOS2.5, Custom
Skew	D0~D15: ±1 sampling interval Digital to Analog: ± (1 sampling interval +1 ns)

Waveform Generator (optional)		
Channels	1	
Max. Output Frequency	50 MHz	
Sampling Rate	125 MSa/s	
Frequency Resolution	1 μHz	
Frequency Accuracy	±50 ppm	
Vertical Resolution	14 bit	
Amplitude Range	-1.5 V \sim +1.5 V (into 50 Ω) -3 V \sim +3 V (into High-Z)	
Waveforms	Sine, Square, Ramp, Pulse, DC, Noise, 45 Arbitrary	

Output Impedance	50 Ω ± 2%		
Protection	Over voltage protection, Current limit		
Sine	J. T. J.		
Frequency	1 μHz ~ 25 MHz		
Offset accuracy (10 kHz)	±(1%*offset setting value +3 mVpp)		
Amplitude flatness	± 0.3 dB, compare to 10 kHz, 2.5 Vpp into 50 Ω		
SFDR	DC ~ 1 MHz -60 dBc 1 MHz ~ 5 MHz -55 dBc 5 MHz ~ 25 MHz -50 dBc		
Harmonic distortion	DC ~ 5 MHz -50 dBc 5 MHz ~ 25 MHz -45 dBc		
Square/Pulse			
Frequency	1 μHz ~ 10 MHz		
Duty cycle	1% ~ 99%		
Edge	< 24 ns (10% ~ 90%)		
Overshoot	< 3% (typical, 1 kHz, 1 Vpp)		
Pulse width	> 50 ns		
Jitter (cycle-cycle)	< 500 ps + 10 ppm		
Ramp			
Frequency	1 μHz ~ 300 kHz		
Linearity	< 0.1% of Pk-Pk (typical, 1 kHz, 1 Vpp, 50% symmetry)		
Channels	0% ~ 100%		
DC			
Offset range	±1.5 V (into 50 Ω) ±3 V (into Hi-Z)		
Accuracy	±(setting value *1% + 3 mV)		
Noise			
Bandwidth (-3 dB)	>25 MHz		
Arb			
Frequency	1 μHz ~ 5 MHz		
Waveform memory	16 kpts		
Sample rate	125 MSa/s		
Wave import	From EasyWaveX, from U-disk, directly from waveform data of analog channels		

Processor system	
CPU	Intel Core i3-8100 or better
Memory	32 GB DDR4
Storage	250 GB SSD or better
Operating system	Linux

1/0		
Front	2x USB 3.0 Host, Calibration signal for passive probe: 1 kHz, 3 V Square	
Side	4x USB Host 3.1 Gen 1, 2x 1000M LAN (VXI-11+SCPI, Telnet (5024) +SCPI, Socket (5025) +SCPI, LXI, WebServer) 1x DVI-D: up to 1920x1200 @ 60Hz, 1x DP 1.2: up to 4096x2304 @ 60Hz, 1x HDMI 1.4: up to 4096x2160 @ 60Hz Mic input, Audio Output	
Rear	USB 2.0 Device (USBTMC) External trigger in, EXT: ≤1.5 Vrms, EXT/5: ≤ 7.5Vrms, Aux out: TRIG OUT(3.3 V LVCMOS), PASS/FAIL OUT(3.3 V TTL), 10 MHz In, 10 MHz Out AWG	

Display	
Display Type	15.6 HD TFT LCD with capacitive touch screen
Resolution	1920×1080

Display Setting	
Range	8 x 10 grid
Multiple-window	1x1, 2x1, 4x1, 1x2, 2x2, 4x2, 3x3
Display Type	Dot, Vector
Persistence Time	OFF, 0.1 s, 0.2 s, 0.5 s, 1 s, 5 s, 10 s, 30 s, infinite
Color Display	Normal, Color; Supports customer trace color
Language	Simplified Chinese, Traditional Chinese, English, French, Japanese, German, Spanish, Russian, Italian, Portuguese
Built-in Help System	Simplified Chinese, English

Environmental			
Temperature	Operating: 0 °C ~ 50 °C Non-operating: -30 °C ~ 60 °C		
Humidity	Operating: 5% ~ 90%RH, 30°C, d Non-operating: 5% ~ 95%	legraded to 50%RH at 40 ℃	
Altitude	Operating: ≤ 3,048 m, 25 °C Non-operating: ≤12,192 m		
	Meets EMC directive (2014/30/E	U), meets or exceeds IEC 61326-1:	2012/EN61326-1:2013 (Basic)
	Conducted disturbance	CISPR 11/EN 55011	CLASS A group 1 150 kHz-30 MHz
	Radiated disturbance	CISPR 11/EN 55011	CLASS A group 1 30 MHz-1 GHz
	Electrostatic discharge (ESD)	IEC 61000-4-2/EN 61000-4-2	4.0 kV (Contact),8.0 kV (Air)
	Radio-frequency electromagnetic field Immunity	IEC 61000-4-3/EN 61000-4-3	10 V/m (80 MHz to 1 GHz); 3 V/m (1.4 GHz to 2 GHz); 1 V/m (2.0 GHz to 2.7GHz)
Electromagnetic	Electrical fast transients (EFT)	IEC 61000-4-4/EN 61000-4-4	2kV (Input AC Power Ports)
Compatibility	Surges	IEC 61000-4-5/EN 61000-4-5	1kV (Line to line) 2kV (Line to ground)
	Radio-frequency continuous conducted Immunity	IEC 61000-4-6/EN 61000-4-6	3 V, 0.15-80MHz
	Voltage dips and interruptions	IEC 61000-4-11/EN 61000-4-11	Voltage Dips: 0% UT during 1 cycle; 40% UT during 10/12 cycles; 70% UT during 25/30 cycles Voltage interruptions: 0% UT during 250/300 cycles
Safety	UL 61010-1:2012/R: 2018-11; CAN/CSA-C22.2 No. 61010-1:2012/A1:2018-11. UL 61010-2-030:2018; CAN/CSA-C22.2 No. 61010-2-030:2018.		
RoHS	EU 2015/863	·	

Power Supply		
Input Voltage & Frequency	100 ~ 240 Vrms 50/60Hz	
Power consumption	400 W max., 210 W typical, 4 W typical in standby mode	

Mechanical	
	Width × Height × Depth
Dimensions	Without feet: 444.5mm × 334mm × 176.4mm
	With feet: 444.5mm×367mm×176.4mm
Weight	Net Weight 10.6 kg,
	Gross Weight 17.0 kg

Ordering Information

Model	Description
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	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 \parallel 200 k Ω , 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 M Ω , 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
	High voltage passive probe: DC-40MHz, 1000X, input impedance 3.0 pF 100 MΩ, Max.
HPB4010	
	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
	High voltage differential probe: 70 MHz, 50X/500X, Max. Differential Test Voltage (DC + Peak
DPB5150	AC) ±1500 V, CATIII 600 V/CATII 1000 V, USB 5 V Power supply
DDDC450A	High voltage differential probe: 100 MHz, 50X/500X, Max. Differential Test Voltage (DC +
DPB5150A	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

SDS7000A Series Digital Storage Oscilloscope

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
0.5	Power rail probe: DC - 4 GHz, 1.1X, input impedance 50 kΩ@low frequency, 50 Ω@high
SAP4000P	frequency, input range ± 600 mV, offset range ± 24 V, SAPBus interface
CASE-S2	Transit case
Options	Description
SDS7000A-FG	Waveform generator (software)
SDS7000A-PA	Power Analysis (software)
SDS7000A-EJ	Eye Diagram/Jitter Analysis (software)
SDS7000A-I2S	I ² S 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-SENT	SENT trigger & decode (software)
SDS7000A-Manch	Manchester decode (software)
SDS7000A-ARINC	ARINC429 trigger & decode (software)
SDS7000A-USB2	USB 2.0 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-100BASE-T1	100Base-T1 compliance test (software)
SDS7000A-CT-1000BASE-T1	1000Base-T1 compliance test (software)
SDS7000A-1GPTS	1Gpts memory depth (software)
SDS7000A-BW3T4	3 GHz to 4 GHz bandwidth upgrade (software)
SDS7000A-BW6T8	6 GHz to 8 GHz bandwidth upgrade (software)
10M_OCXO_L	OCXO timebase (Assembled and calibrated in factory only)



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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