

## Specifications



<b>Acquisition</b>		
Sampling Modes	Real-Time	Equivalent-time
Sampling Rate	2 GSa/s (half channel <sup>[1]</sup> ) 1 GSa/s (each channel)	50 GSa/s <sup>[2]</sup>
Averages	N time acquisitions, all channels simultaneously, N is selectable from 2, 4, 8, 16, 32, 64, 128 and 256	

<b>Inputs</b>	
Input Coupling	DC, AC, GND
Input Impedance	1MΩ±2%, in parallel with 18pF±3pF
Probe Attenuation Factors	0.001X, 0.01X, 0.1X, 1X, 2X, 5X, 10X, 20X, 50X, 100X, 200X, 500X, 1000X
Maximum Input Voltage	Maximum Input Voltage of the analog channel: CAT I 300Vrms, 1000Vpk; transient overvoltage 1000Vpk CAT II 100Vrms, 1000Vpk RP2200 10:1, CAT II 300Vrms RP3200 10:1, CAT II 300Vrms RP3300 10:1, CAT II 300Vrms
Time delay between channel (typical)	500ps

<b>Horizontal</b>	
Sample Rate Range	3.65Sa/s-2GSa/s (Real-Time), 3.65Sa/s-50GSa/s (Equivalent-time)
Waveform interpolation	Sin(x)/x
Record Length	16k samples for half channel <sup>[1]</sup> 8k samples for each channel
Scan speed Range (Sec/div)	1ns/div~50s/div, DS1202/4B 2ns/div~50s/div, DS1102/4B 5ns/div~50s/div, DS1062/4B 1-2-5 Sequence
Sample Rate and Delay Time Accuracy	±50ppm (over any≥1ms time interval)

Delta Time Measurement Accuracy (Full Bandwidth)	Single-shot: $\pm(1 \text{ sample interval} + 50\text{ppm} \times \text{reading} + 0.6 \text{ ns})$ >16 averages: $\pm(1\text{sample interval} + 50\text{ppm} \times \text{reading} + 0.4 \text{ ns})$
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<b>Vertical</b>	
A/D converter	8-bit resolution, each channel samples simultaneously
Volts/div Range	2mV/div-10V/div at input BNC
Offset Range	$\pm 40\text{V}(500\text{mV}\sim 10\text{V})$ $\pm 2\text{V}(2\text{mV}\sim 200\text{mV})$
Analog Bandwidth	60MHz(DS1062/4B) 100MHz(DS1102/4B) 200MHz(DS1202/4B)
Single-shot Bandwidth	60MHz(DS1062/4B) 100MHz(DS1102/4B) 200MHz(DS1202/4B)
Selectable Analog Bandwidth Limit (typical)	20MHz
Lower Frequency Limit (AC -3dB)	$\leq 5\text{Hz}$ (at input BNC)
Rise Time at BNC, typical	$<1.75\text{ns}$ , $<3.5\text{ns}$ , $<5.8\text{ns}$ , On 200MHz, 100MHz, 60MHz respectively
DC Gain Accuracy	2mV/div~5mV/div: $\pm 4\%$ (Sample or Average acquisition mode) 10mV/div~10V/div: $\pm 3\%$ (Sample or Average acquisition mode)
DC Measurement Accuracy, Average Acquisition Mode	Average of $\geq 16$ Waveforms with vertical position at zero: $\pm(\text{DC Gain Accuracy} \times \text{reading} + 0.1\text{div} + 1\text{mV})$ Average of $\geq 16$ Waveforms with vertical position not at zero: $\pm[\text{DC Gain Accuracy} \times (\text{reading} + \text{vertical position}) + (1\% \text{ of vertical position}) + 0.2\text{div}]$ Add 2mV for settings from 1mV/div to 200 mV/div Add 50mV for settings from >200mV/div to 10V/div
Delta Volts Measurement Accuracy (Average Acquisition Mode)	Delta Volts between any two averages of 16 waveforms acquired under same setup and ambient conditions: $\pm(\text{DC Gain Accuracy} \times \text{reading} + 0.05 \text{ div})$

<b>Trigger</b>		
Trigger Sensitivity	0.1div-1.0div (adjustable)	
Trigger Level Range	Internal	±6 divisions from center of screen
	EXT	±0.6V
	EXT/5	±3V
Trigger Level Accuracy (typical) applicable for the signal of rising and falling time ≥20ns	Internal	±(0.3div × V/div)(±4 divisions from center of screen)
	EXT	±(6% of setting + 40 mV)
	EXT/5	±(6% of setting + 200 mV)
Trigger Offset	Normal mode: pre-trigger(storage depth/(2×sampling) rate), delayed trigger 1s	
	Slow Scan mode: pre-trigger 6div, delayed trigger 6div	
Trigger Holdoff range	100ns~1.5s	
HF Rejection	100kHz ±20%	
LF Rejection	10kHz ±20%	
Set Level to 50% (typical)	Input signal frequency ≥50Hz	
<b>Edge Trigger</b>		
Edge trigger slope	Rising, Falling, Rising + Falling	
<b>Pulse Trigger</b>		
Trigger condition	(>, <, =) Positive pulse, (>, <, =) negative pulse	
Pulse Width range	20ns ~10s	
<b>Video Trigger</b>		
Video standard & line frequency	Support standard NTSC, PAL and SECAM broadcast systems. Line number range: 1~525 (NTSC) and 1~625 (PAL/SECAM)	
<b>Pattern Trigger</b>		
Pattern setup	H, L, X,  , 	
<b>Alternate Trigger</b>		
Trigger on CH1, CH2, CH3, CH4	Edge, Pulse, Video	

<b>Measurements</b>		
Cursor	Manual	Voltage difference between cursors ( $\Delta V$ ) Time difference between cursors ( $\Delta T$ )

		Reciprocal of $\Delta T$ in Hertz ( $1/\Delta T$ )
	Track	Voltage value for Y-axis waveform Time value for X-axis waveform
	Auto	Cursors are visible for Automatic Measurement
Auto Measure	Vpp, Vamp, Vmax, Vmin, Vtop, Vbase, Vavg, Vrms, Overshoot, Preshoot, Freq, Period, Rise Time, Fall Time, +Width, -Width, +Duty, -Duty, Delay A→B <sub>f</sub> , Delay A→B <sub>t</sub> , Phase A→B <sub>f</sub> , Phase A→B <sub>t</sub>	

- [1] Half channel indicates selecting one of the channels in CH1 and CH2, or in CH3 and CH4.
- [2] This is the highest specification, the specific specifications are as follows:  
 DS1202/4B: 50GSa/s  
 DS1102/4B: 25GSa/s  
 DS1062/4B: 10GSa/s

## General Specifications

<b>Display</b>	
Display Type	5.7 inch. (145 mm) diagonal TFT Liquid Crystal Display
Display Resolution	320 horizontal ×RGB×240 vertical pixels
Display Color	64k color
Display Contrast (typical)	150:1
Backlight Brightness (typical)	300 nit

<b>Probe Compensator Output</b>	
Output Voltage (typical)	Amplitude, ~3Vpp
Frequency (typical)	1kHz

<b>Power</b>	
Supply Voltage	AC, 100~240 V, 45~440Hz, CAT II
Power Consumption	Less than 50VA
Fuse	2A, T rating, 250 V

<b>Environmental</b>	
Ambient Temperature	Operating 10°C ~ 40°C
	Non-operating -20°C ~ +60°C
Cooling Method	Fan force air flow
Humidity	+35°C or below: ≤90% relative humidity
	+35°C ~ +40°C: ≤60% relative humidity
Altitude	Operating 3,000 m or below
	Non-operating 15,000 m or below

<b>Mechanical</b>		
Size	Width	325mm
	Height	159mm
	Depth	133 mm
Heavy	Without package	3kg
	Packaged	4.3 kg

<b>IP Degree</b>
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IP2X
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<b>Calibration Interval</b>
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The recommended calibration interval is one year
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