DS 6000 Specifications

All the specifications are guaranteed except the parameters marked with "Typical" and the oscilloscope needs to operate for more than 30 minutes under the specified operation temperature.

Sample

Sample Mode	Real-time Sample, Equivalent Sample
Real Time Sample Rate	5 GSa/s (single-channel) 2.5 Gsa/s (dual-channel)
Equivalent Sample Rate	100 Gsa/s
Peak Detect	200 ps (single-channel) 400 ps (dual-channel)
Averaging	After all the channels finish N samples at the same time, N can be 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096 or 8192.
High Resolution	12 bits of resolution when ≥5 μs/div @ 5 GSa/s (or ≥10 μs/div @ 2.5 GSa/s).
Memory Depth	single-channel: Auto, 14k pts, 140k pts, 1.4M pts, 14M pts and 140M pts are available dual-channel: Auto, 7k pts, 70k pts, 700k pts, 7M pts and 70M pts are available

Input

Number of Channels	DS6XX4: four channels DS6XX2: two channels
Input Coupling	DC, AC or GND
Input Impedance	(1 MΩ±1%) || (14 pF±3 pF) or 50 Ω±1.5%

Probe Attenuation Coefficient	0.001X, 0.01X, 0.1X, 1X, 10X, 100X, 1000X
Maximum Input Voltage (1MΩ)	Maximum Input Voltage of the Analog Channel CAT I 300 Vrms, CAT II 100 Vrms, Transient Overvoltage 1000V pk with RP2200 10:1 probe: CAT II 300 Vrms with RP3300 10:1 probe: CAT II 300 Vrms with RP3500 10:1 probe: CAT II 300 Vrms with RP5600 10:1 probe: CAT II 300 Vrms

Horizontal

Timebase Scale	DS606X: 1 ns/div to 50 s/div DS610X: 500 ps/div to 50 s/div
Timebase Accuracy	≤ ±(15 + 2 ×instrument age in years) ppm
Delay Range	Pre-trigger (negative delay): ≥1 screen width Post-trigger (positive delay): 1 s to 1000 s
Timebase Mode	Y-T, X-Y, Roll, Time Delayed
Number of XYs	2 simultaneously
Waveform Capture Rate[1]	150,000 wfms (vector display); 180,000 wfms (dots display)

Vertical

Bandwidth (-3dB)	DS606X: DC to 600 MHz DS610X: DC to 1 GHz
Single-shot Bandwidth	DS606X: DC to 600 MHz DS610X: DC to 1 GHz (each channel)
Vertical Resolution	8bits, two channels sample at the same time
Vertical Scale	2 mV/div to 5 V/div (1 MΩ) 2 mV/div to 1 V/div (50 Ω)
Offset Range	2 mV/div to 120 mV/div: ± 1.2V (50 Ω) 125 mV/div to 1 V/div: ± 12V (50 Ω) 2 mV/div to 225 mV/div: ± 2V (1MΩ)

	230 mV/div to 5 V/div: ± 40V (1MΩ)
Bandwidth Limit[2]	20 MHz or 250 MHz
Low Frequency Response (AC Coupling -3dB)	≤5 Hz (on BNC)
Calculated Rise Time[2]	DS606X: 600 ps DS610X: 400 ps
DC Gain Accuracy	±2% full scale
DC Offset Accuracy	200 mV/div to 5 V/div: 0.1 div ± 2 mV±0.5% offset value 2 mV/div to 195 mV/div: 0.1 div ± 2 mV±1.5% offset value
ESD Tolerance	±2 kV
Channel to Channel Isolation	DC to maximum band width: >40 dB

Trigger

Trigger Level Range	Internal	±6 div from center screen
	EXT	± 0.8 V
Trigger Mode	Auto, Normal, Single	
Holdoff Range	100 ns to 10 s	
High Frequency Rejection[2]	50 kHz	
Low Frequency Rejection[2]	5 kHz	
Edge Trigger		
Edge Type	Rising, Falling, Rising&Falling	
Pulse Trigger		
Pulse Condition	Positive Pulse Width (greater than, lower than, within specific interval) Negative Pulse Width (greater than, lower than, within specific interval)	
Pulse Width Range	4 ns to 4 s	
Slope Trigger		
Slope Condition	Positive Slope (greater than, lower than, within specific interval)	

	Negative Slope (greater than, lower than, within specific interval)
Time Setting	10 ns to 1 s
Video Trigger	
Signal Standard Line Frequency Range	Support standard NTSC, PAL and SECAM broadcasting standards, the range of the number of lines is from 1 to 525 (NTSC) and 1 to 625 (PAL/SECAM)
Pattern Trigger	
Pattern Setting	H, L, X, Rising Edge, Falling Edge
RS232/UART Trigger	
Trigger Condition	Start, Error, Check Error, Data
Baud Rate	2400bps, 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps, User
Data Bits	5 bit, 6 bit, 7 bit, 8 bit
I2C Trigger	
Trigger Condition	Start, Restart, Stop, Missing ACK, Address, Data, A&D
Address Bits	7 bit, 10 bit
Address Range	0 to 119, 0 to 1023
Byte Length	1 to 5
Data Qualifier	Equal to, Greater than, Less than
SPI Trigger	
Trigger Condition	CS, Timeout
Timeout Value	100 ns to 1 s
Data Bits	4 bit to 32 bit
Data Line Setting	H, L, X
Clock Edge	Rising Edge, Falling Edge
Signal Type	Rx, Tx, CAN_H, CAN_L, Differential
CAN Trigger	
Trigger Condition	SOF, EOF, Frame Type
Baud Rate	10kbps, 20kbps, 33.3kbps, 50kbps, 62.5kbps, 83.3kbps, 100kbps, 125kbps, 250kbps, 500kbps, 800kbps, 1Mbps, User
Sample Point	5% to 95%
Frame Type	Data, Remote, Error, OverLoad
USB Trigger	
Signal Speed	Low Speed, Full Speed

Trigger condition	SOP, EOP, RC, Suspended, Exit Suspended

Measure

Cursor	Manual Mode	Voltage Deviation between Cursors (△ V) Time Deviation between Cursors (△ T) Reciprocal of △ T (Hz) (1/△ T)
	Track Mode	Voltage and Time Values of the Waveform Point
	Auto Mode	Allow to display cursors during auto measurement
Auto Measurement	Measurements of Maximum, Minimum, Peak-Peak Value, Top Value, Bottom Value, Amplitude, Average, Mean Square Root, Overshoot, Pre-shoot, Frequency, Period, Rise Time, Fall Time, Positive Pulse Width, Negative Pulse Width, Positive Duty Cycle, Negative Duty Cycle, Delay A→B↓, Delay A→B↑, Phase A→B↓, Phase A→B↑	
Number of Measurements	Display 5 measurements at the same time.	
Measurement Range	Screen or cursor.	
Measurement Statistic	Average, Max, Min, Standard Deviation, Number of Measurements	
Frequency Counter	Hardware 6 bits frequency counter (channels available: DS606x, CH1/CH2; DS610x, CH1/CH2/CH3/CH4)	

Math Operation

Waveform Operation	A+B, A-B, A×B, A/B, FFT, Editable Advanced Operation, Logic Operation
FFT Window Function	Rectangle, Hanning, Blackman, Hamming
FFT Display	Split, Full Screen

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