XDS2000 Dual-Channel Series Oscilloscope Technical Specifications

Unless otherwise specified, the technical specifications applied are for XDS2000 dual-channel series only, and Probes attenuation set as 10X. Only if the oscilloscope fulfills the following two conditions at first, these specification standards can be reached.

- This instrument should run for at least 30 minutes continuously under the specified operating temperature.
- If change of the operating temperature is up to or exceeds 5℃, do a "Self-calibration" procedure .

All specification standards can be fulfilled, except one(s) marked with the word "Typical".

Performance Characteristics		Instruction			
Bandwidth		XDS2102 XDS2102A	100 MHz		
		XDS2202	200 MHz		
Vertical Resolution (A/D)		XDS2102A	12 bits		
		XDS2102 XDS2202	8 bits		
Channel		2 + 1 (External)			
Waveform Refresh Rate		XDS2102A	55,000 wfmSa/s		
		XDS2102 XDS2202	75,000 wfmSa/s		
Acquisition	Mode	Normal, Peak detect, Averaging			
	Max sample rate (real time)	XDS2102A	Dual CH		500 MSa/s
			Single CH	8 bits mode	1 GSa/s
				12 bits mode	500 MSa/s
		XDS2102 XDS2202	1 GSa/s		
Input	Input coupling	DC, AC , Ground			
	Input impedance	1 MΩ±2%, in parallel with 15 pF±5 pF			
	Input coupling	0.001X - 1000X, step by 1 – 2 - 5			
	Max input voltage	1MΩ: ≤300 Vrms			
	Bandwidth limit	20 MHz, full bandwidth			
	Channel –channel isolation	50Hz: 100 : 1 10MHz: 40 : 1			
	Time delay between channel(typical)	150ps			
Horizontal System	Sampling rate range	XDS2102A	Dual CH	0.05 Sa/s～500 MSa/s	
			Single CH	8 bits mode	0.05 Sa/s - 1 GSa/s

Performance Characteristics		Instruction			
				12 bits mode	0.05 Sa/s - 500 MSa/s
		XDS2102 XDS2202	0.05 Sa/s - 1 GSa/s		
	Interpolation	(Sinx)/x, x			
	Max Record length	XDS2102A	20M		
		XDS2102 XDS2202	40M; 80M(Optional)		
	Scanning speed (S/div)	2ns/div - 1000s/div, step by 1 – 2 - 5			
	Sampling rate / relay time accuracy	XDS2102A	±1 ppm (Typical, Ta = +25℃)		
		XDS2102 XDS2202	±25 ppm (Typical, Ta = +25℃)		
	Interval(△T) accuracy (DC - 100MHz)	Single: ±(1 interval time+1 ppm×reading+0.6 ns); Average>16: ±(1 interval time +1 ppm×reading+0.4 ns)			
Vertical system	Sensitivity	1 mV/div～10 V/div			
	Displacement	XDS2102A	±2 V (1 mV/div – 50 mV/div); ±20 V (100 mV/div – 1 V/div); ±200 V (2 V/div – 10 V/div)		
		XDS2102 XDS2202	±2 V (1 mV/div – 100mV/div); ±200V (200 mV/div – 10 V/div)		
	Analog bandwidth	XDS2102 XDS2102A	100 MHz		
		XDS2202	200 MHz		
	Single bandwidth	Full bandwidth			
	Low Frequency	≥10 Hz (at input, AC coupling, -3 dB)			
	Rise time (at input, Typical)	XDS2102 XDS2102A	≤ 3.5 ns		
		XDS2202	≤ 1.75 ns		
	DC gain accuracy	XDS2102A	1 mV	3%	
			2 mV	2%	
			≥ 5 mV	1.5%	
		XDS2102 XDS2202	1 mV	4%	
			≥ 2 mV	3%	
	DC accuracy (average)	Delta Volts between any two averages of ≥16 waveforms acquired with the same scope setup and ambient conditions (△V): ±(3% rdg + 0.05 div)			

Performance Characteristics			Instruction
	Waveform inverted ON/OFF		
Measurement	Cursor		△V, △T, △T&△V between cursors, auto cursor
	Automatic		Max, Min, PK-PK, Top, Base, Amplitude, Mean, RMS, Cycle RMS, Cursor RMS, Overshoot, Preshoot, Period, Frequency, Rise Time, Fall Time, +PulseWidth, -PulseWidth, +Duty Cycle, -Duty Cycle, Screen Duty, FRR, FRF, FFR, FFF, LRR, LRF, LFR, LFF, Delay A→B 卐, Delay A→B 卍, Phase, +PulseCount, -PulseCount, RiseEdgeCnt, FallEdgeCnt, Area, Cycle Area.
	Waveform Math		＋, －, *, / ,FFT, FFTrms, Intg, Diff, Sqrt, User Defined Function, digital filter (low pass, high pass, band pass, band reject)
	Decoding Type		RS232/UART, I2C, SPI, CAN
	Waveform storage		50 waveforms
	Lissajous figure	Bandwidth	Full bandwidth
		Phase difference	±3 degrees
Communication port	Standard	USB, USB Host (USB storage)；Trig Out(P/F)；LAN port	
	Optional	VGA port and AV port	
Counter	Support		

Trigger

Performance Characteristics			Instruction
Trigger level range	XDS2102A	Internal	±5 div from the screen center
		EXT	±2 V
		EXT/5	±10 V
	XDS2102 XDS2202	Internal	±5 div from the screen center
		EXT	±1.5 V
		EXT/5	±7.5 V
Trigger level Accuracy (typical)	Internal		±0.3 div
	EXT		± (10 mV + 6% of Set Value)
	EXT/5		± (50 mV +6% of Set Value)
Trigger displacement	According to Record length and time base		
Trigger Holdoff range	100 ns – 10 s		

50% level setting (typical)	Input signal frequency ≥ 50 Hz	
Edge trigger	slope	Rising, Falling
Video Trigger	Modulation	Support standard NTSC, PAL and SECAM broadcast systems
	Line number range	1-525 (NTSC) and 1-625 (PAL/SECAM)
Pulse trigger	Trigger condition	Positive pulse: ＞, ＜, ＝ Negative pulse: ＞, ＜, ＝
	Pulse Width range	30 ns to 10 s
Slope Trigger	Trigger condition	Positive pulse: ＞, ＜, ＝ Negative pulse: ＞, ＜, ＝
	Time setting	30 ns to 10 s
Runt Trigger	Polarity	Positive, Negative
	Pulse Width Condition	>, =, <
	Pulse Width Range	30 ns to 10 s
Windows Trigger	Polarity	Positive, Negative
	Trigger Position	Enter, Exit, Time
	Windows Time	30 ns to 10 s
Timeout Trigger	Edge Type	Rising, Falling
	Idle Time	30 ns to 10 s
Nth Edge Trigger	Edge Type	Rising, Falling
	Idle Time	30 ns to 10 s
	Edge Number	1 to 128
Logic Trigger	Logic Mode	AND, OR, XNOR, XOR
	Input Mode	H, L, X, Rising, Falling
	Output Mode	Goes True, Goes False, Is True >, Is True <, Is True =
RS232/UART Trigger	Polarity	Normal, Inverted
	Trigger Condition	Start, Error, Check Error, Data
	Baud Rate	Common, Custom
	Data Bits	5 bit, 6 bit, 7 bit, 8 bit
I2C Trigger	Trigger Condition	Start, Restart, Stop, ACK Lost, Address, Data, Addr/Data
	Address Bits	7 bit, 8 bit, 10 bit
	Address Range	0 to 127, 0 to 255, 0 to 1023
	Byte Length	1 to 5
SPI Trigger	Trigger Condition	Timeout
	Timeout Value	30 ns to 10 s
	Data Bits	4 bit to 32 bit
	Data Line Setting	H, L, X
CAN Trigger	Signal Type	CAN_H, CAN_L, TX, RX

	Trigger Condition	Start of Frame, Type of Frame, Identifier, Data, ID & Data, End of Frame, Missing Ack, Bit Stuffing Error
	Baud Rate	Common, Custom
	Sample Point	5% to 95%
	Frame Type	Data, Remote, Error, Overload

General Technical Specifications

Display

Display Type	8" Colored LCD (Liquid Crystal Display)
Display Resolution	800 (Horizontal) × 600 (Vertical) Pixels
Display Colors	65536 colors, TFT screen

Output of the Probe Compensator

Output Voltage (Typical)	About 5 V, with the Peak-to-Peak voltage ≥1 MΩ
Frequency (Typical)	Square wave of 1 KHz

Power

Mains Voltage	100V - 240 VACRMS, 50/60 Hz, CAT Ⅱ
Power Consumption	< 15 W
Fuse	2 A, T class, 250 V

Environment

Temperature	Working temperature: 0 ℃ - 40 ℃ Storage temperature: -20 ℃ - 60 ℃
Relative Humidity	≤ 90%
Height	Operating: 3,000 m Non-operating: 15,000 m
Cooling Method	Natural cooling

Mechanical Specifications

Dimension	340 mm× 177 mm×90 mm (W*H*D)
Weight	Approx. 2.6 kg (without accessories)

Interval Period of Adjustment:

One year is recommended for the calibration interval period.

