

## DSO4004C Series

- 4CH oscilloscope+EXT+AFG+DVM+auto range function
- 80-250MHz bandwidth, minimum range 500 $\mu$ V /div, 1GS/s sample rate.
- Over 32 types of auto measurement function
- Advanced digital trigger system, high trigger sensitivity.
- Over 14 types of trigger function: edge, overtime, pulse, pattern, interval, etc.
- Serial bus triggering and decode, Bus protocol information can be quickly and intuitively displayed in table form.
- Function/arbitrary signal generator 25MHz, 12BitS resolution, 200MHz DDS, ARB/square wave/sine wave/triangular wave/trapezoidal wave/impulse wave/DC etc., easy to simulate the sensor.
- Integrated USB Host/Device, convenient to communicate with PC. Support U-stick storage/system update.
- Support a variety of SCPI remote control command
- Support optional RS232 port, LAN port. (Optional)
- Stable and reliable quality, sturdy and durable.

Model	DSO4254C	DSO4204C	DSO4104C	DSO4084C
Bandwidth	250MHz	200MHz	100MHz	80MHz
Horizontal				
Sample Rate Range	1GS/s			
Waveform Interpolation	(sin x)/x			
Record Length	Maximum 64K samples per single-channel; Maximum 32K samples per dual-channel (4K, 32K optional)			
SEC/DIV Range	2ns/div~100s/div 1, 2, 5 sequence			
Sample Rate and Delay Time Accuracy	$\pm 50$ ppm			
Delta Time Measurement Accuracy  (Full Bandwidth)	Single-shot, Normal mode  $\pm (1 \text{ sample interval} + 100\text{ppm} \times \text{reading} + 0.6\text{ns})$ >16 averages  $\pm (1 \text{ sample interval} + 100\text{ppm} \times \text{reading} + 0.4\text{ns})$ Sample interval = s/div $\div$ 200			
Vertical				
AD Converter	8-bit resolution, each channel sampled simultaneously			
VOLTS/DIV Range	500 $\mu$ V/div to 10V/div at input BNC			
Position Range	500 $\mu$ V/div~20mV/div, $\pm 400$ mV 50mV/div~200mV/div, $\pm 2$ V 500mV/div~2V/div, $\pm 40$ V 5V/div~10V/div, $\pm 50$ V			
Selectable Analog Bandwidth Limit, typical	20MHz			
Low Frequency Response (-3db)	$\leq 10$ Hz at BNC			
Rise Time at BNC, typical	DSO4254C <1.4ns	DSO4204C $\leq 1.8$ ns	DSO4104C <3.5ns	DSO4084C $\leq 4.4$ ns
DC Gain Accuracy	$\pm 3\%$ for Normal or Average acquisition mode, 10V/div to 10mV/div			

	±4% for Normal or Average acquisition mode, 5mV/div to 500µV/div	
	Note: Bandwidth reduced to 6MHz when using a 1X probe.	
<b>Acquisition</b>		
Acquisition Modes	Normal, Peak Detect, Average and HR	
Acquisition Rate, typical	Up to 2000 waveforms per second per channel (Normal acquisition mode, no measurement)	
Single Sequence	Acquisition Mode	Acquisition Stop Time
	Normal, Peak Detect	Upon single acquisition on all channels simultaneously
	Average	After N acquisitions on all channels simultaneously, N can be set to 4, 8, 16, 32, 64 or 128
<b>Trigger</b>		
Mode	Auto, Normal	
Level	CH1~CH4	±4 divisions from center of screen
	EXT	0~3.3V
Holdoff Range	20ns ~ 10s	
Trigger Level Accuracy	CH1~CH4	0.2div × volts/div within ±4 divisions from center of screen
	EXT	± (6% of setting + 40mV)
<b>Edge Trigger</b>		
Slope	Rising, Falling, Rising&Falling	
Source	CH1~CH4/EXT	
<b>Pulse Width</b>		
Polarity	Positive, Negative	
Condition(When)	<, >, ≠, =	
Source	CH1~CH4	
Width Range	8ns ~ 10s	
Resolution	8ns	
<b>Video Trigger</b>		
Signal Standard	NTSC, PAL	
Source	CH1~CH4	
Sync	ScanLine, LinrNum, OddField, EvenField and AllField	
<b>Slope Trigger</b>		
Slope	Rising, Falling	
Condition(When)	<, >, ≠, =	
Source	CH1 ~ CH4	
Time Range	8ns ~ 10s	
Resolution	8ns	
<b>Overtime Trigger</b>		
Source	CH1~CH4	
Polarity	Positive, Negative	
Time Range	8ns ~ 10s	
Resolution	8ns	
<b>Window Trigger</b>		
Source	CH1~CH4	
<b>Pattern Trigger</b>		

Pattern	0: Lower level; 1: High level;
Level	CH1~CH4
<b>Interval Trigger</b>	
Slope	Rising, Falling
Condition(When)	<, >, ≠, =
Source	CH1~CH4
Time Range	8ns ~ 10s
Resolution	8ns
<b>Under Amp</b>	
Polarity	Positive, Negative
Condition(When)	<, >, ≠, =
Source	CH1~CH4
Time Range	8ns ~ 10s
Resolution	8ns
<b>UART Trigger</b>	
Condition(When)	Start, Stop, Data, Parity Error, COM Error
Source(RX/TX)	CH1~CH4
Data format	Hex
Condition(When)	<, >, ≠, =
Data Length	1 byte
Data Length	5 bit, 6 bit, 7 bit, 8 bit
Parity Check	None, Odd, Even
Idle Level	High, Low
Baud Rate(Selectable)	110/300/600/1200/2400/4800/9600/14400/19200/38400/57600/115200/230400/380400/460400 bit/s
Baud Rate (Custom)	300bit/s~334000bit/s
<b>LIN Trigger</b>	
Condition(When)	Interval Field, Sync Field, Id field, Sync Id Error, Identifier, Id and Data
Source	CH1~CH4
Data format	Hex
Baud Rate (Selectable)	110/300/600/1200/2400/4800/9600/14400/19200/38400/57600/115200/230400/380400/460400 bit/s
Baud Rate (Custom)	300bit/s~334000bit/s
<b>CAN Trigger</b>	
Condition(When)	Start Bit, Remote Frame, Data Frame Id, Frame Id, Data Frame Id A, Error Frame, All Error, Ack Error, Overload Fram
Source	CH1~CH4
Data format	Hex
Baud Rate (Selectable)	10000, 20000, 33300, 500000, 62500, 83300, 100000, 125000, 250000, 500000, 800000, 1000000
Baud Rate (Custom)	5kbit/s~1Mbit/s
<b>SPI Trigger</b>	
Source (CS/CLK/Data)	CH1~CH4
Data format	Hex
Data Length	4, 8, 16, 24, 32

<b>IIC Trigger</b>		
Source (SDA/SCL)	CH1~CH4	
Data format	Hex	
Data Index	0~7	
When(Condition)	Start, Stop, No Ack, Address, Data, Restart	
<b>Inputs</b>		
Input Coupling	DC,AC or GND	
Input Impedance, DC coupled	20pF±3 pF, 1MΩ±2%	
Probe Attenuation	1X,10X	
Supported Probe Attenuation Factors	1X, 10X, 100X, 1000X	
Overvoltage Category	300V CAT II	
Maximum Input Voltage	300V <sub>RMS</sub> (10X)	
<b>Measurements</b>		
Cursors	Voltage difference between cursors: $\Delta V$	
	Time difference between cursors: $\Delta T$	
	Reciprocal of $\Delta T$ in Hertz ( $1/\Delta T$ )	
Automatic Measurements	Frequency, Period, Average, Pk-Pk, RMS, PeriodRms, Min, Max, RiseTime, FallTime, + Width, - Width, + Duty, - Duty, Vbase, Vtop, Vmid, Vamp, Overshoot, Preshoot, PeriodAvg, FOVShoot, RPREShoot, BWidth, FRR, FFF, FRF, FFR, LRR, LRF, LFR and LFF	
<b>General Specifications</b>		
Display		
Display Type	7 inch 64K color TFT (diagonal liquid crystal)	
Display Resolution	800 horizontal by 480 vertical pixels	
Display Contrast	Adjustable	
Probe Compensator Output		
Output Voltage, typical	About 2V <sub>pp</sub> into $\geq 1M\Omega$ load	
Frequency, typical	1kHz	
Power Supply		
Supply Voltage	100-120VAC <sub>RMS</sub> (±10%),45Hz to 440Hz, CAT II 120-240VAC <sub>RMS</sub> (±10%),45Hz to 66Hz, CAT II	
Power Consumption	<30W	
Fuse	T, 3.15A, 250V, 5x20mm	
Environmental		
Operating Temperature	0~50 °C (32~122 °F)	
Storage Temperature	-40~+71 °C (-40~159.8 °F)	
Humidity	$\leq +104^{\circ}\text{F}(\leq +40^{\circ}\text{C})$ : $\leq 90\%$ relative humidity	
	$106^{\circ}\text{F}\sim 122^{\circ}\text{F} (+41^{\circ}\text{C} \sim 50^{\circ}\text{C})$ : $\leq 60\%$ relative humidity	
Cooling Method	Convection	
Altitude	Operating and Nonoperating	3,000m (10,000 feet)
	Random Vibration	0.31g <sub>RMS</sub> from 50Hz to 500Hz, 10 minutes on each axis
	Nonoperating	2.46g <sub>RMS</sub> from 5Hz to 500Hz

<b>Arbitrary Waveform Generator Mode</b>		
Waveform Frequency	Sine:	0.1Hz~25MHz
	Square:	0.1Hz~10MHz
	Ramp:	0.1Hz~1MHz
	EXP:	0.1Hz~5MHz
Amplitude	5mV~3.5Vp-p(50Ω) 10mV~7Vp-p(High impedance)	
DAC	2K~200MHz adjustable	
Frequency Resolution	0.001	
Channel	1CH waveform output	
Waveform Depth	4KSa	
Vertical Resolution	12 bit	
Frequency Stability	<30ppm	
Output Impedance	50 Ω	
		10 minutes on each axis
Mechanical Shock	Operating	50g, 11ms, half sine
Mechanical		
Dimension	318 x 110 x 150mm(L x W x H)	
Weight	2900g	