

## DSO2000 Series ( DSO2C10 / DSO2D10 / DSO2D10 / DSO2D15 )

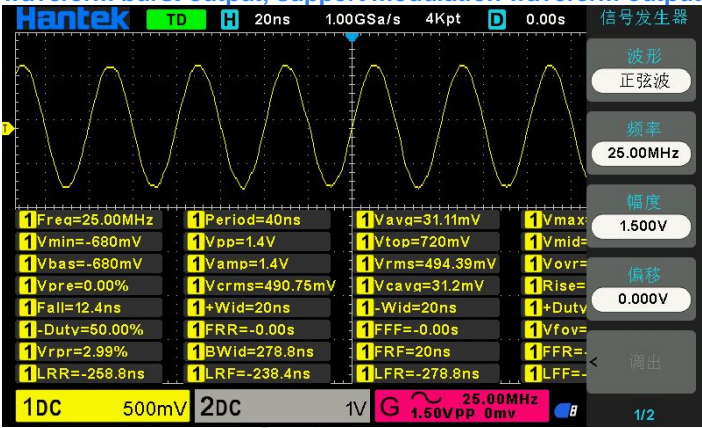
Cost-effective economy oscilloscope, 150MHz Bandwidth, 1GSa/s, 8M memory depth; with 1CH 25MHz waveform generator, support arbitrary waveform output; 14 kinds of trigger modes, standard with 5 kinds of serial protocol triggers and decodes; 32 kinds of auto measurements with statistics; 3-digit digital voltage meter and 6-digit hardware frequency indicator functions; 2 sets of DVM; Abundant SCPI remote command control. It is a useful commissioning instrument for various fields such as communication, aerospace, national defense, embedded systems, computers, research and education.

### Feature:

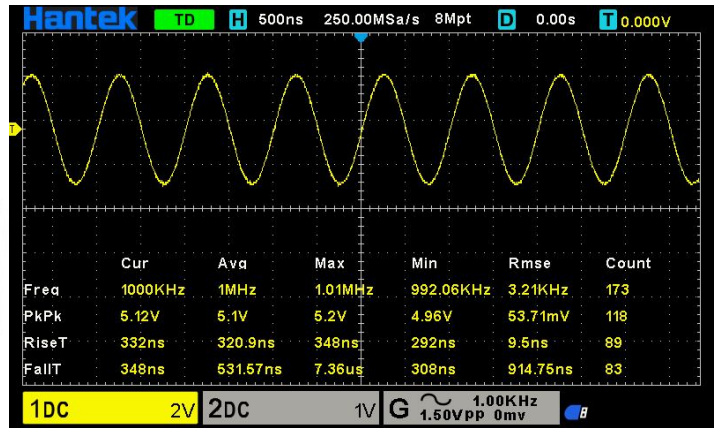
- 1) 2 channels which are respectively controlled by independent knobs
- 2) 100 MHz and 150MHz analog channel bandwidth
- 3) Sampling rate up to 1 GSa/s
- 4) 8M memory depth
- 5) Vertical range 2mV/div ~ 10V/div
- 6) Built-in 1 CH 25MHz waveform generator (DSO2D10, DSO2D15)
- 7) Vertical resolution: 8bit
- 8) Trigger: Edge, Pulse, Video, Slope, Overtime, Window, Pattern, Interval, Under Amp, UART, LIN, CAN, SPI, IIC
- 9) BUS decode and protocol analysis: RS232/UART, I2C, SPI, CAN, LIN
- 10) Can save multiple data formats, such as settings, waveforms, reference waveforms, CSV, pictures
- 11) A 3-digit digital voltage meter and a 6-digit hardware frequency indicator
- 12) 32 kinds of auto measurements with statistics, real-time statistics of maximum, minimum, standard deviation and etc.
- 13) 2 sets of digital voltmeters
- 14) Support threshold testing, free measurements within the screen
- 15) Abundant SCPI remote command control
- 16) USB Host/Device.

Model	Channel	Bandwidth	Sample rate	Memory depth	AWG
DSO2C10	2 CH	100 MHz	1GSa/S	8M	Without
DSO2C15	2 CH	150 MHz	1GSa/S	8M	Without
DSO2D10	2 CH+1CH	100 MHz	1GSa/S	8M	1CH
DSO2D15	2 CH+1CH	150 MHz	1GSa/S	8M	1CH

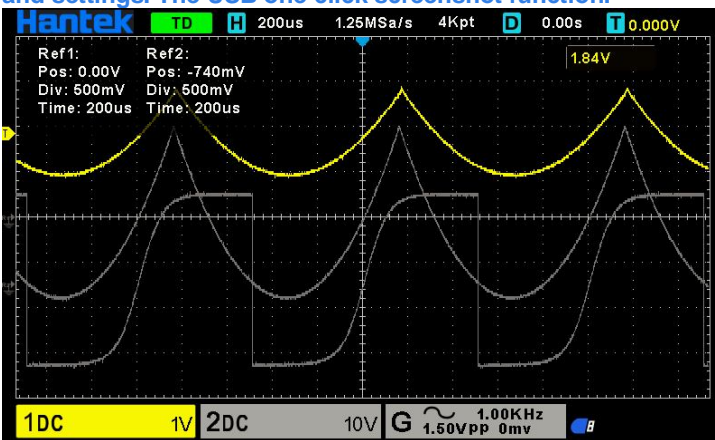
- ◆ 1CH 25MHz waveform generator, support arbitrary waveform burst output, support modulation waveform output



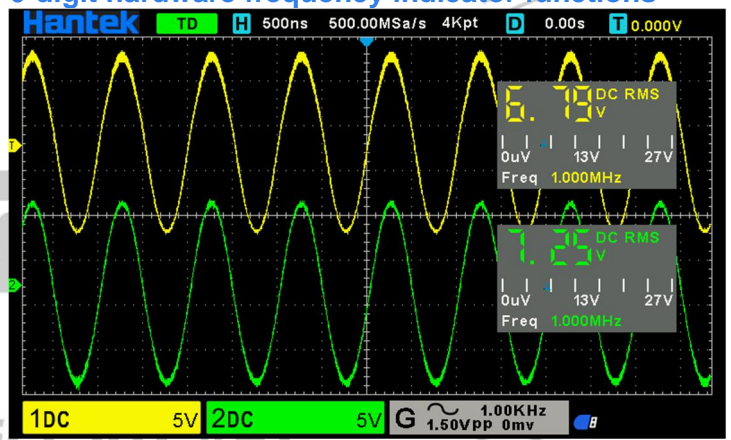
- ◆ 32 kinds of auto measurements with statistics



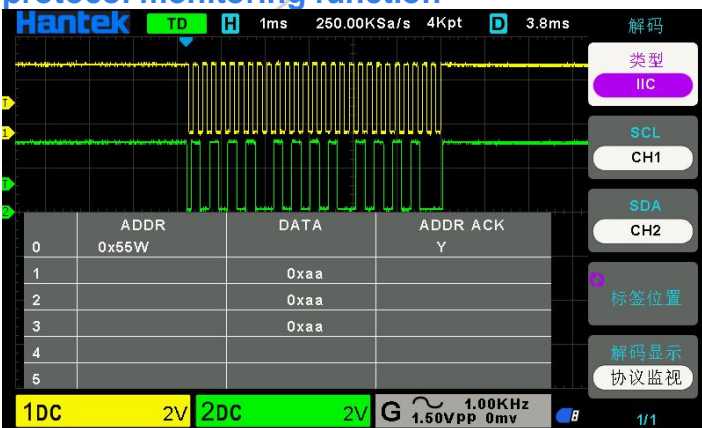
- ◆ Can save 10 sets of reference waveforms, CSV waveforms and settings. The USB one-click screenshot function.



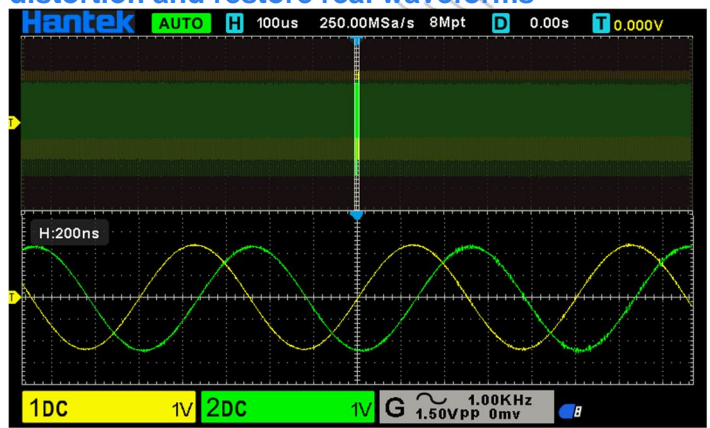
- ◆ 2 sets of DVM, 3-digit digital voltage meter and 6-digit hardware frequency indicator functions



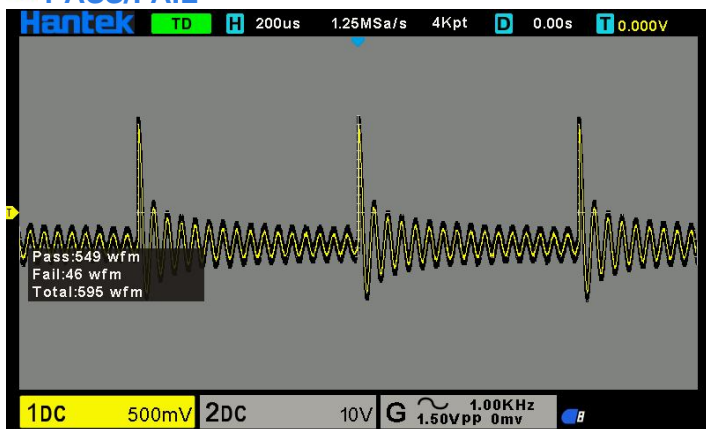
- ◆ Serial bus trigger and decode, with the protocol monitoring function



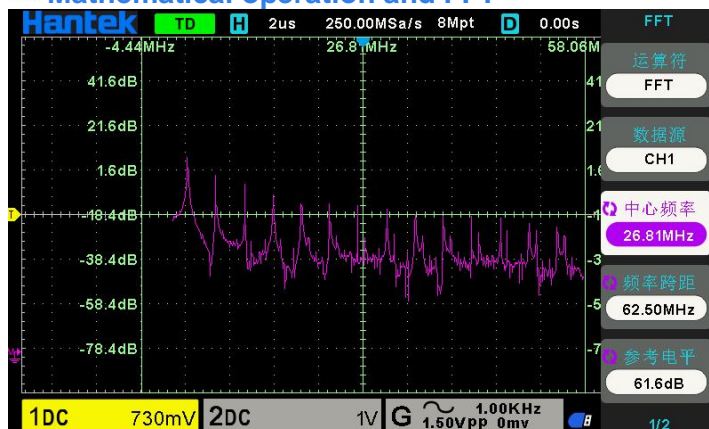
- ◆ 8M memory depth, reducing waveform distortion and restore real waveforms



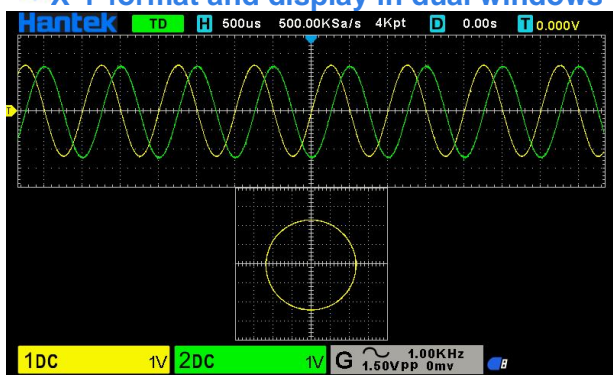
### PASS/FAIL



### Mathematical operation and FFT



### X-Y format and display in dual windows



### Parameters

Model	DSO2D15	DSO2D10	DSO2C15	DSO2C10
Bandwidth	150MHz	100MHz	150MHz	100MHz
Oscilloscope channels	2CH	2CH	2CH	2CH
Waveform generator	1CH	1CH	-	-
Oscilloscope				
Sample rate	1GSa/s (single channel) 500MSa/s (two channels)			
Acquisition				
Normal	Sample data			
Peak-to-peak value	Display high frequency and random burr			
Average	Average waveform, times: 4, 8, 16, 32, 64, 128			
High resolution	Up to 12bit			
Input				
Input coupling	DC, AC, GND			

Input impedance	1MΩ±2%   20pF±3pF			
Probe attenuation factor	1X, 10X, 100X, 1000X			
Voltage rating	300V CAT II			
Maximum input voltage	300VRMS (10X)			
Horizontal				
Waveform interpolation	(sin x)/x			
Maximum record length	Single channel maximum 8M			
	Two channels maximum 4M			
Horizontal scale range	2ns/div~100s/div 1, 2, 5 step by step			
Time base mode	Y-T, X-Y, Roll			
Zero offset	±0.5 div×minimum time base gear			
Sample Rate and Delay Time Accuracy	±25ppm			
Delta Time Measurement Accuracy (Full Bandwidth) Sample Rate and Delay Time Accuracy	single-shot, Normal mode ± (1 sample interval+100ppm×reading+0.6ns)			
	> 16 times averages ± (1 sample interval+100ppm×reading+0.4ns)			
	Sample interval=sec/div÷200			
Sample Rate and Delay Time Accuracy	±50ppm (at any interval greater than 1ms)			
Vertical				
Model	DSO2D15	DSO2D10	DSO2C15	DSO2C10
Bandwidth	150MHz	100MHz	150MHz	100MHz
Rising time in BNC position (typical)	2.4ns	3.5ns	2.4ns	3.5ns
Vertical resolution	8 bits resolution, each channel samples simultaneously			
Vertical sensitivity	2mV/div to 10V/div			
Offset range	≥ 200mV/div, ±1V;			
	<200mV/div ±50V			
Mathematical operation	+, -, ×, ÷, FFT			
FFT	Window: Rectangle, Hanning, Hamming, Blackman, Bartlett, Flatop			
Bandwidth Limit	20MHz			
Bass response (-3db)	In BNC position ≤ 10Hz			

Vertical gain accuracy	In "normal" or "average" acquisition mode, the accuracy of 10V/div to 10mV/div is $\pm 3\%$ ;	
	In "normal" or "average" acquisition mode, the accuracy of 5mV/div to 2mV/div is $\pm 4\%$	
Note: Bandwidth reduced to 6MHz when using a 1X probe		
Trigger		
Trigger type	Edge, Pulse width, Video, Slope, Overtime, Window, Pattern, Interval, Under Amp, UART, LIN, CAN, SPI, IIC	
Trigger level range	$\pm 5$ divisions from the center of the screen	
Trigger mode	Auto, Normal, single	
Level	CH1~CH2	$\pm 4$ divisions from the center of the screen
	EXT(Only With AWG Model)	0~3.3V
Holdoff range	8ns~10s	
Trigger level accuracy	CH1~CH2	0.2 divxvolts/div within $\pm 4$ divisions from the center of the screen
	EXT(Only With AWG Model)	$\pm$ (Set value $\times 6\%+40mV$ )
Edge trigger	Slope	Rising edge, falling edge, rising or falling edge
	Signal source	CH1, CH2, EXT(Only With AWG Model)
Pulse width trigger	Polarity	Positive polarity, negative polarity
	Condition(When)	<, >, !=, =
	Signal source	CH1~CH2,
	Pulse width range	8ns ~ 10s
Video trigger	Accuracy	8ns
	Signal standard	NTSC, PAL
	Signal source	CH1~CH2
Slope trigger	Synchronization	Scanning line, line number, odd field, even field, all field
	Slope	rising, falling
	Condition(When)	<, >, !=, =
	Signal source	CH1 ~ CH2
	Time range	8ns ~ 10s
Overtime trigger	Accuracy	8ns
	Signal source	CH1~CH2,
	Polarity	Positive polarity, negative polarity
	Time range	8ns ~ 10s
Window trigger	Accuracy	8ns
	Signal source	CH1~CH2
Pattern trigger	Pattern	0: low level; 1: high level; X: ignore
	Level (signal source)	CH1~CH2

Interval trigger	Slope	rising, falling
	Condition(When)	<, >, !=, =
	Signal source	CH1~CH2
	Time range	8ns ~ 10s
	Accuracy	8ns
Under Amp trigger	Polarity	Positive polarity, negative polarity
	Condition(When)	<, >, !=, =
	Signal source	CH1~CH2
	Time range	8ns ~ 10s
	Accuracy	8ns
UART trigger	Condition(When)	Start, Stop, data, Parity ERR, COM ERR
	Signal source(RX/TX)	CH1~CH2
	Data format	Hex (hexadecimal)
	Data length	1 byte
	Data bit width	5 bit, 6 bit, 7 bit, 8 bit
	Odd-even check	none, odd, even
	Idle level	high, low
	Baud rate (optional)	110/300/600/1200/2400/4800/9600/14400/19200/38400/57600/115200/230400/380400/460400 bit/s
Baud rate(user-defined)	300bit/s~334000bit/s	
LIN trigger	Condition(When)	Interval field, synchronization field, ID field, synchronization error, identifier, ID and data
	Signal source	CH1~CH2
	Data format	Hex (hexadecimal)
	Baud rate (optional)	110/300/600/1200/2400/4800/9600/14400/19200/38400/57600/115200/230400/380400/460400 bit/s
	Baud rate(user-defined)	300bit/s~334000bit/s
CAN trigger	Condition(When)	Start bit, remote frame ID, data frame ID, frame ID, data frame data, error frame, all errors, ACK Error, overload frame
	Signal source	CH1~CH2
	Data format	Hex (hexadecimal)
	Baud rate (optional)	10000, 20000, 33300, 500000, 62500, 83300, 100000, 125000, 250000, 500000, 800000, 1000000
	Baud rate(user-defined)	5kbit/s~1Mbit/s
SPI trigger	Signal source	CH1~CH2
	Data format	Hex (hexadecimal)
	Data bit width	4, 8, 16, 24, 32

IIC trigger	Signal source (SDA/SCL)	CH1~CH2
	Data format	Hex (hexadecimal)
	Data index	0~7
	When(condition)	Start bit, stop bit, No Ack, address, restart, address and data
Measurement		
Cursor	Voltage difference between cursors $\Delta V$	
	Time difference between cursors $\Delta T$	
	Reciprocal of $\Delta T$ , in Hertz ( $1/\Delta T$ )	
Auto measurement	frequency, period, mean, peak-to-peak, RMS, minimum, mixmum, rising time, falling time, + width, - width, base, top, middle, amplitude, overshoot, preshoot, rising edge phase difference, falling edge phase difference, + duty, - duty, period mean, PRMS, FOVshoot, ROVshoot, BWIDTH, FRF, FFR, LRR, LRF, LFR, LFF	
DVM	Data source	CH1, CH2
	Measurement type	DC RMS
		AC RMS
		DC
Frequency meter	hardware 6 bits frequency meter	
Arbitrary waveform generator		
Channel	1	
Sample rate	200MSa/s	
Vertical resolution	12 bits	
Maximum frequency	25 MHz	
Standard waveforms	sine, square, ramp, Exp, noise, DC	
Arbitrary waveform	Arb1, Arb2, Arb3, Arb4	
Sin	Frequency range	0.1Hz~25MHz
Square/pulse	Frequency range	0.1Hz~10MHz
Triangular wave	Frequency range	0.1Hz~1MHz
Sampling wave	Frequency range	0.1Hz~1MHz
Index	Frequency range	0.1Hz~5MHz
Noise		
Arb1	Frequency range	0.1 Hz to 10 MHz
Arb2	Frequency range	0.1 Hz to 10 MHz
Arb3	Frequency range	0.1 Hz to 10 MHz
Arb4	Frequency range	0.1 Hz to 10 MHz
Waveform length	4KSa	
Frequency	Accuracy	100 ppm (<10 kHz) 50 ppm (>10 kHz)
	Resolution	0.1 Hz or 4 bits, take the greater one
Amplitude	Output range	10mV~7Vp-p (high impedance)
		5mV~3.5Vp-p (50 $\Omega$ )
DC offset	Range	$\pm 3.5$ V, high impedance

		$\pm 1.75 \text{ V}$ , 50 $\Omega$	
	Resolution	100 $\mu\text{V}$ or 3 bits, take the greater one	
	Accuracy	2% (1 kHz)	
Output impedance	50 $\Omega$		
General specifications			
Display	Display type	7" diagonal TFT liquid crystal	
	Display resolution	800 (horizontal)*480 (vertical) pixels	
	Display colour	16 million colours (24 bits true colour)	
	Persistence time	minimum, 1 s, 5 s, 10 s, 30 s, infinite	
	Display type	dot, vector	
	Display brightness	adjustable	
	Grid type	adjustable	
	Grid brightness	adjustable	
Interface	Standard interface	USB Host, USB Device	
General specifications	Probe compensator output		
	Output voltage, typical	about 2Vpp input $\geq 1\text{M}\Omega$ load	
	Frequency, typical	1kHz	
	Power supply	100-120VAC <sub>RMS</sub> ( $\pm 10\%$ ), 45Hz to 440Hz, CAT II	
		120-240VAC <sub>RMS</sub> ( $\pm 10\%$ ), 45Hz to 66Hz, CAT II	
	Power consumption	<30W	
	Fuse	T, 3.15A, 250V, 5x20mm	
	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°F~122°F (+41°C ~50°C): $\leq 60\%$ relative humidity	
	Altitude	Operating and nonoperating	3, 000m (10, 000 feet)
		Mechanical shock	Random vibration
	Nonoperating		2.46g <sub>RMS</sub> from 5Hz to 500Hz, 10 minutes on each axis
			Operating
	Mechanical		Size
		Weight	1900g



◆ Accessories

DSO2D15, DSO2D10:



DSO2C10, DSO2C15:

