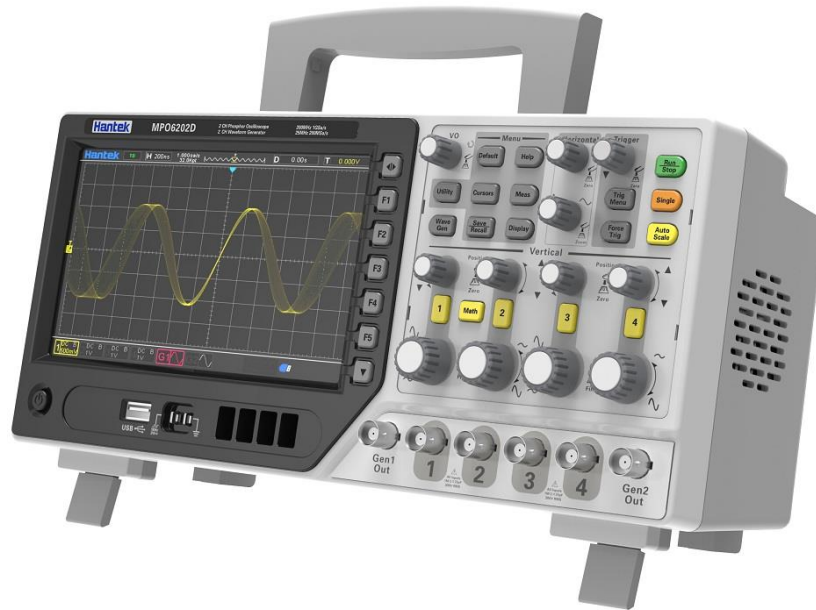


Oscilloscope DPO6004B(C)/MPO6004D Series



The waveform capture rate of DPO6000/MPO6000 Fluorescent oscilloscope is up to 400,000 FPS. It has 256 grade color and color temperature display. Standard equipped with up to 16 kinds of trigger functions, 5 kinds of serial decoding functions. It supplies 200 MHz, 100 MHz and 80 MHz bandwidth, its memory depth is up to 64M, 16 channels logic analyzer plug and use, all standard equipped with 2 channels waveform generator, standard equipped with touch screen. It is a useful commissioning instrument for various fields such as communication, aerospace, defense, embedded systems, computers, research and education.

★ Six in one oscilloscope: 4 channels oscilloscope + 16 channels logic analyzer + 2 channels waveform generator + digital voltmeter + serial protocol analyzer + FFT spectral analysis.

★ 60 000 wfms/s (dots display) / 400,000 wfms/s (dots display quick acquisition mode) waveform capture rate.

★ Segmented acquisition function, support to capture up to 80,000 sections. 256 grade color display.

★ Up to 16 kinds of trigger functions, including 5 kinds of protocol triggers. Supply 5 serial decoding option.

★ 1 GSa/s real-time sample rate of the analog channels; 64 Mpts standard memory depth.

★ 2-channel signal source, 13 kinds of waveforms inside, 4 sets of arbitrary waveforms, 200M sample rate, 8Kpts waveform length.

★ 1 GSa/s real-time sample rate of the digital channels.

★ 200 MHz, 100 MHz and 80 MHz analog channel bandwidth.

★ Low base noise, 500uV/div to 10 V/div ultra-wide vertical dynamic range.

★ 7 inch WVGA capacitive touch screen, (800*480) TFT, with ultra-wide screen, vivid picture, low power consumption and long service life.

★ Auto measurement of 42 kinds of waveform parameters (with statistics).

★Bode diagram function(the oscilloscopes with signal source function can use).

★Multiple waveform math operation functions 【MATH】 .Event search function.

★Standard interfaces: USB Device, USB Host, LAN,Optional interfaces: HDMI , UART

★Conform to LXI CORE 2011 DEVICE class instrument standards; enable quick,economic and efficient creation and reconfiguration of test system.Supports remote command control.

Parameters

Oscilloscope function		
Acquisition	Real-time sample rate	1 GSa/s (single channel) 500 MSa/s (two channels)
		250 MSa/s (three/four channels) ;
		Note : digital channel 12, 34 open at the same time,it is considered as one channel
	Peak detection	Analog channel 4ns
		Note : digital channels don't support
	Average mode	Analog channel
		All channels reach N time samples at the same time, N can be selected from
		2、4、8、16、32、64、128、256、512 and 1024.
High resolution	Note : digital channels don't support	
	Up to 12bit	
Minimum test pulse width	Note : digital channels don't support	
Memory depth	8ns	
	Single channel 64M	
	Two channels 32M	
Input	Channel quantity	Three, four channels 16M
		4 analog channels
		Note : data channels can't be opened
		3 analog channels
		Note : digital channel LA1/LA2/LA3/LA4/LA1LA2/LA3LA4
		2 analog channels
		Note : digital channels infinitize
		1 analog channel
Note : digital channels infinitize		
0 analog channel		

		Note : digital channels infinitize		
	Input coupling	DC、 AC or GND		
		Note : digital channels don't support		
	Input impedance, DC coupling	Analog channel		
		25pF±3 pF, 1MΩ±2%		
		Digital channel		
		(300KΩ±2%) , (8 pF±3 pF)		
	Supported probe attenuation factor	Analog channel 1X、 10X、 100X、 1000X		
	Voltage classes	300V CAT II		
	Maximum input voltage	Analog channel 300VRMS (10X)		
		Digital channel -25V~25V		
Horizontal	Waveform interpolation	(sin x)/x		
	Maximum record length	Single channel maximum 64M		
		Two channels maximum 32M		
		three/four channels maximum 16M		
	Horizontal scale range	DSO6084 DSO6104		
		2ns/div~100s/div 1, 2, 5 step by step		
	Time base mode	Y-T、 X-Y、 Roll		
	X-Y number	Channel 1,2 1 XY channel、 channel3 4 1 XY channel		
	Zero offset	±0.5 div× minimum time base gear		
	Sample Rate and	±25ppm		
	Delay Time Accuracy			
	Clock drifting	≤±5 ppm/year		
	Delta Time Measurement	single, "acquisition" mode		
	Accuracy			
	(Full Bandwidth)	± (1 sample interval+100ppm×reading+0.6ns)		
> 16 times averages				
± (1 sample interval+100ppm×reading+0.4ns)				
Sample interval=sec/div÷200				
Vertical	Bandwidth (-3db)	6084	6104	6204
		80MHz	100MHz	200MHz
	Vertical resolution	Analog channel 8bit		

		Digital channel 1bit		
	Vertical scale range	Input BNC position is 500 μ V/div~10V/div		
	Position range	500 μ V/div to 120mV/div, \pm 1V		
		122mV/div to 1.2V/div, \pm 10V		
		1.22V/div to 10V/div, \pm 50V		
	Optional analog bandwidth limitation	Typical 20MHz		
	Bass response (-3db)	In BNC position is \leq 10Hz		
	Rising time in BNC position, typical	6084	6104	6204
		\leq 4.4ns	\leq 3.5ns	\leq 1.8ns
	Vertical gain accuracy	In "normal" or "average" acquisition mode, the accuracy of		
		f 10V/div to 10mV/div is \pm 3%		
	DC offset accuracy	In "normal" or "average" acquisition mode, the accuracy of		
		5mV/div to 500 μ V/div is \pm 4%.		
	The isolation of channels	DC maximum bandwidth : >40 dB		

Note: Bandwidth reduced to 6MHz when using a 1X probe

Trigger	Trigger level range		\pm 5 divisions from the center of the screen			
	Trigger mode		auto, general, single			
	Level		CH1~CH4	\pm 4 divisions from the center of the screen		
	Holdoff range		8ns~10s			
	Trigger level accuracy		CH1~CH4	0.2 div \times volts/div within \pm 4 divisions from the center of the screen		
	Edge trigger	Slope	Signal source	Rising edge, falling edge, rising or falling edge		
				CH1~CH4,		
				D1.0~D1.3,		
				D2.0~D2.3,		
				D3.0~D3.3,		
	Pulse width trigger	Polarity	Condition(When)	Positive polarity, negative polarity		
				<, >, !=, =		
				Signal source	CH1~CH4,	
					D1.0~D1.3,	
D2.0~D2.3,						

			D3.0~D3.3,	
			D4.0~D4.3	
Video trigger	Pulse width range		8ns ~ 10s	
	Signal standard		NTSC, PAL	
	Signal source		CH1~CH4	
	Synchronization		Scanning line, line number, odd field, even field, all field	
Slope trigger	Slope		rise, fal	
	condition(When)		<, >, !=, =	
	Signal source		CH1 ~ CH4	
	Time range		8ns ~ 10s	
Overtime trigger	Signal source		CH1~CH4,	
			D1.0~D1.3,	
			D2.0~D2.3,	
			D3.0~D3.3,	
			D4.0~D4.3	
	Polarity		Positive polarity, negative polarity	
	Time range		8ns ~ 10s	
Window trigger	Signal source		CH1~CH4LA1~LA4	
Pattern trigger	Pattern		0:low level ; 1:high level ; X:ignore ;	
	Level (signal source)		CH1~CH4	
Interval trigger	Slope		rise, fall	
	condition(When)		<, >, !=, =	
	Signal source			CH1~CH4,
				D1.0~D1.3,
				D2.0~D2.3,
				D3.0~D3.3,
				D4.0~D4.3
Time range	Time range		8ns ~ 10s	
Delay trigger	Edge type		Rising edge, falling edge	
	Signal source		CH1~CH4	
	condition(When)		<, >, !=, =	

		Time range	8ns ~ 10s
Set up hold trigger		Edge type	Rising edge, falling edge
		Signal source	CH1~CH4
		condition(When)	<, >, !=, =
		Time range	8ns ~ 10s
Runt trigger		Polarity	Positive polarity, negative polarity
		Condition(When)	<, >, !=, =
		Signal source	CH1~CH4
		Time range	8ns ~ 10s
UART trigger		condition(When)	start, stop, data, odd-even check, reception error
	Signal source(RX/TX)		CH1~CH4,
			D1.0~D1.3,
			D2.0~D2.3,
			D3.0~D3.3,
			D4.0~D4.3
		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
		Free 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, IDand data
	Signal source		CH1~CH4,
			D1.0~D1.3,
			D2.0~D2.3,
			D3.0~D3.3,
			D4.0~D4.3
	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、 remote frame data、 data frame data、 wrong frame、 all errors、 answer error、 overload frame
		Signal source	CH1~CH4
		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~CH4,
			D1.0~D1.3,
			D2.0~D2.3,
			D3.0~D3.3,
			D4.0~D4.3
	Data format	Hex (hexadecimal)	
	Data bit width	4, 8, 16, 24, 32	
	IIC trigger	Signal source (SDA/SCL)	CH1~CH4,
			D1.0~D1.3,
			D2.0~D2.3,
			D3.0~D3.3,
			D4.0~D4.3
		Data format	Hex (hexadecimal)
Data index		0~7	
opportunity(condition)	Start bit、 stop bit、 no response、 address、 data、 restart		
Measurement	cursor		Voltage difference between cursors ΔV
			Time difference between cursors ΔT
			Reciprocal of ΔT , 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, CH3, CH4	
	Measurement type	DC effective value	
		AC effective value	
		DC	
Frequency meter	hardware 6 bits frequency meter		

Arbitrary waveform generator

Arbitrary waveform generator(for oscilloscopes with signal source channels)	Channel number	2channels	
	Sample rate	200MSa/s	
	Vertical resolution	12 bits	
	Maximum frequency	25 MHz	
	Standard waveforms	sin, square, pulse, triangular, noise, DC	
		Sinc, index, semi-distortion, lorentz, dual tone multiple frequency, gauss, ECG	
	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
	Semi-distortion	Frequency range	0.1Hz~1MHz
	lorentz	Frequency range	0.1Hz~1MHz
	Dual tone multiple frequency	Frequency range	0.1Hz~1MHz
	Gauss	Frequency range	0.1Hz~1MHz
	ECG	Frequency range	0.1Hz~1MHz
	Arbitrary wave	Frequency range	0.1 Hz to 10 MHz
	Waveform length	8KSa	
	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(50Ω)
DC offset		range	±3.5 V, high impedance
			±1.75 V, 50 Ω
		resolution	100 μV or 3 bits, take the greater one
		accuracy	2% (1 kHz)
Output impedance		50 Ω	

Logic analyzer

Logic analyzer	Input impedance,DC coupling	Digital channel
		(300KΩ±2%) , (8 pF±3 pF)
	Threshold value	4 channels in 1 group adjustable threshold value
	Threshold option	TTL (1.4 V)
		5.0 V CMOS (+2.5 V)
		3.3 V CMOS (+1.65 V)
		2.5 V CMOS (+1.25 V)
		1.8 V CMOS (+0.9 V)
		ECL (-1.3 V)
		PECL (+3.7 V)
		LVDS (+1.2 V)
		0V
	User-defined	
	Threshold range	±7.0V, 10mV step by step
	Threshold accuracy	±(100mV+3% threshold setting)
Dynamic range	±5.0V+ threshold	
Minimum voltage swing	500 mVpp	
Vertical resolution	1 bit	

General specifications

Display	Display type	7"TFT diagonal 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、30S、infinite		
	Display type	dot、vector		
	Display mode	Color temperature, gray scale		
	Display brightness	adjustable		
	Grid type	adjustable		
	Grid brightness	adjustable		
Interface	Standard interface	USB Host, USB Device, LAN, EDU signal WIFI		
		Aux (trigger output/PassFail) --only EDU with this interface		
	Optional interface	PassFail		
		UART		
		HDMI		
General specifications	Probe compensator output			
	Output voltage , typical	about 2Vpp input \geq 1M Ω load		
	frequency、typical	1kHz		
	Power supply	100-120VACRMS(\pm 10%), 45Hz to 440Hz, CAT II		
		120-240VACRMS(\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°F(\leq +40°C): \leq 90% relative humidity		
		106°F~122°F (+41°C ~50°C): \leq 60% relative humidity		
	Cooling method	convection		
	Altitude	Operating and nonoperating	3,000m (10,000 feet)	
	Mechanical shock	Random vibration	0.31 g _{RMS} from 50Hz to 500Hz,	
			10 minutes on each axis	
		Nonoperating	2.46g _{RMS} from 5Hz to 500Hz,	
			10 minutes on each axis	
Operating	50g, 11ms, half-sine wave			
Mechanical	Size	318 x 140 x 150mm(length x width x height)		

Weight

2900g

