

HDG2000B Series Function arbitrary Waveform generators



- 16Bit Resolution, 250MSa/s Sample Rate; 64M Memory Depth;
- 100/80/60/30/20/10MHz or 5MHz Max. Sine Output Frequency;
- 16 channels digital output, together with the analog channel can rebuild the more mixed signals in daily practice
- Support AM, FM, PM, ASK, FSK, PSK and PWM modulations
- TCXO timebase standard, OCXO optional for ultra-high stability
- 7 inch, 64K true color TFT display, WVGA(800X480)
- Plenty of interfaces: USB Host, USB Device, LAN
- 80M Frequency Counter;

Model	HDG2102B	HDG2082B	HDG2062B	HDG2032B	HDG2022B	HDG2012B	HDG2002B
Main Features							
Channel	2	2	2	2	2	2	2
Memory Depth	64M	64M	64M	64M	64M	64M	64M
Frequency	100MHz	80MHz	60MHz	30MHz	20MHz	10MHz	5MHz
Sample Rate	250MSa/s						
Voltage Resolution	16Bit						
Digital Output	16 Channels output						
Frequency Characteristic							
Standard Waveforms	Sine, Square, Ramp, Pulse, Noise, Sinc, Exponential Rise, Exponential Fall, ECG, Gauss, Haver Sine, Lorentz, Dual-Tone, DC						
Sine	1uHz~Max.						
Square	1uHz~30MHz				1uHz~Max.		
Pluse	1uHz~15MHz					1uHz~Max.	
Ramp/Triangle	1uHz~4MHz				1uHz~3MHz.		
White Noise	1uHz~Max.						
Arb.	1uHz~20MHz	1uHz~20MHz	1uHz~20MHz	1uHz~20MHz	1uHz~15MHz	1uHz~10MHz	1uHz~5MHz
Resolution	1uHz						
Accuracy	±50ppm, 18~28°C						
Sine Wave Spectrum Purity							

Harmonic Distortion	Typical (0dBm) DC-1MHz: <-60dBc; 1MHz-10MHz: <-55dBc; 10MHz-100MHz: <-50dBc						
Total Harmonic Distortion	<0.1% (10Hz-20kHz, 0dBm)						
Spurious signal	Typical(0dBm):≤10MHz: <-65dBc;						
(non-harmonic)	>10MHz <-65dBc+6dB/spectrum phase						
Phase Noise	Typical(0dBm,10kHz offset,) 10MHz: ≤-115dBc/Hz						
Square							
Rise/Down time	<10ns	<11ns	<12ns	<14ns	<16ns	<18ns	<18ns
Overshoot	<3%(100KHz, 1Vpp)						
Duty Cycle	≤10MHz: 20.0%~80.0%;			8.0%~92.0%			
	10MHz~40MHz: 40.0%~60.0%;						
	>40MHz: 50.0%						
Non-symmetry	1% of period+5ns						
Jitter (rms)	Typical (1MHz,1Vpp, 50Ω) ≤5MHz: 2ppm+500ps; > 5MHz: 500ps						
Ramp							
Linearity	≤1%(1KHz, 1Vpp)						
Symmetry	0%~100%						
Pluse							
Period	33.33ns~1Ms	40ns~1Ms	40ns~1Ms	50ns~1Ms	50ns~1Ms	100ns~1Ms	200ns~1Ms
Pulse	≥12ns	≥14ns	≥14ns	≥16ns	≥16ns	≥18ns	≥18ns
Leading Edge Time	≥8ns	≥9ns	≥10ns	≥10ns	≥11ns	≥11ns	≥12ns
Overshoot	<3%(1VPP)						
Jitter (rms)	Typical (1MHz, 1Vpp, 50Ω)						
	≤5MHz 2ppm+500ps						
	> 5MHz 500ps						
Arb. Waveform Generator							
Waveform Length	64M Point						
Vertical Resolution	16 Bit						
Sample Rate	250MSa/s						
Rise/Fall time	Typical(1Vpp):<6ns						
Jitter	Typical (1MHz, 1Vpp, 50Ω)						
	≤5MHz 2ppm+500ps;						
	> 5MHz 500ps						
Amplitude characteristic							
Amplitude Range	≤20MHz:2mVpp - 20Vpp;≤60MHz:2mVpp -15Vpp;≤80MHz:2mVpp -10Vpp;						
	≤90MHz:2mVpp - 5Vpp;≤100MHz:2mVpp - 2Vpp						
Accuracy	Typical (1kHz Sine, 0V deviation, >10mVpp, Auto); ±1% of setting ±2mVpp						
Amplitude Flatness	≤10MHz:±0.1dB;≤60MHz:±0.2dB;≤100MHz:±0.4dB						
Resolution	1mv or 4 digits						
Impedance	50Ω						
Offset Characteristic							

Range	$ V_{offset} < V_{max} - V_{pp}/2$
Accuracy	$\pm(1\% \text{ of setting} + 5\text{mV} + 0.5\% \text{ of amplitude})$
Modulation Characteristic	
Modulation Type	AM, FM, PM, 2ASK, 2FSK, 2PSK, PWM
AM	
Carrier Waveforms	Sine, Square, Ramp, Arb. (except DC)
Source	Internal/External
Modulating Waveforms	Sine, Square, Ramp, Noise, Arb
Frequency	1Hz~500KHz
Depth	0%~120%
FM	
Carrier Waveforms	Sine, Square, Ramp, Arb. (except DC)
Source	Internal/External
Modulating Waveforms	Sine, Square, Ramp, Noise, Arb
Frequency	1Hz~500KHz
Frequency Deviation	0~360
PM	
Carrier Waveforms	Sine, Square, Ramp, Arb. (except DC)
Source	Internal/External
Modulating Waveforms	Sine, Square, Ramp, Noise, Arb
Frequency	1Hz~500KHz
Frequency Deviation	0%~120%
2ASK	
Carrier Waveforms	Sine, Square, Ramp, Arb. (except DC)
Source	Internal/External
Modulating Waveforms	Square of 50% duty cycle
Code Rate	1Hz~500KHz
2FSK	
Carrier Waveforms	Sine, Square, Ramp, Arb. (except DC)
Source	Internal/External
Modulating Waveforms	Square of 50% duty cycle
Code Rate	1Hz~500KHz
2PSK	
Carrier Waveforms	Sine, Square, Ramp, Arb. (except DC)
Source	Internal/External
Modulating Waveforms	Square of 50% duty cycle
Code Rate	1Hz~500KHz
PWM	
Carrier Waveforms	Sine, Square, Ramp, Arb. (except DC)

Source	Internal/External
Modulating Waveforms	Sine, Square, Ramp, Noise, Arb.
Code Rate	1Hz~500KHz
Width Deviation	0% to 100% of Pulse Width
Burst Characteristic	
Burst Count	1~2000000000
Gated Source	External trigger
Trigger Source	Internal, External or Manual
Sweep Characteristics	
Type	linear
TypeDirection	Up
Sweep time	280 000s
Hold/Return time	280 000s
Trigger Source	Internal, External, Manual
Mark	Falling Edge of Sync signal(programmable)
General Specifications	
Interface	USB host, USB Device, LAN optional
Display	7" 64K Color TFT Display, 800*480
Power Voltage	100-120VACRMS($\pm 10\%$), 45Hz to 440Hz, CAT II ; 120-240VACRMS($\pm 10\%$), 45Hz to 66Hz, CAT II
Power Consumption	<60W
Output Current	0.15A
Size	305mm x 100mm x 130mm(L x W x H)
Weight	3KG