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DG1000Z Series Function/Arbitrary Waveform Generator

- SiFi (Signal Fidelity) for 100% waveform replication
- 8Mpts (standard) or 16Mpts (optional) arbitrary waveform memory length for each channel
- Standard 2 full functional independent channels
- ±1ppm frequency stability, -125dBc/Hz phase noise, 200ps low jitter
- Built-in 8 orders harmonics generator
- Built-in 7 digits/s counter up to 200MHz
- 160 built-in pre-edited waveforms
- Intuitive arbitrary waveform editing software.
- Full modulation supported: AM, FM, PM, ASK, FSK, PSK and PWM

DG1000Z series function/arbitrary waveform generator is a multifunctional generator that combines many functions in one, including Function Generator, Arbitrary Waveform Generator, Noise Generator, Pulse Generator, Harmonics Generator, Analog/Digital Modulator and Counter. As a multi-functional, high performance and portable generator, it will be a new selection in education, R&D, production, test and etc.



RIGOL TECHNOLOGIES, INC.

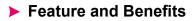
<u>Sifi</u>

DG1000Z Series Function/Arbitrary Waveform Generator





Dimensions: Width × Height × Depth=261.5mm × 112mm × 318.4mm Weight: 3.2kg (without package)



Standard 2 full functional channels

Freq	1,000,000,000 kHz 5,000,0 Vpp	-	Period
Offset Phase	0,000,0 VH 0,000 °		Ampl HiLove
	1,000,000,000 kHz		Offset LoLeve
	5,000,0 Vpp 0,000,0 V++ 0,000 °	2	Start
Sne		Hete	Align Phase
Sanet		1687	Sine -

<u>SiFi</u>

Arbitrary waveform function with innovative SiFi technology

Freq Ampl	1,000,000,000 kHz 5,000,0 ∀pp		0C
Offset Phase Wform	0,000,0 Ve 0,000 *	myhan	Builtin
	1,000,000,000 kHz		Stored
	° 000,0	myhun	Volatile Wlorm

Multiple analog and digital modulations

Up to 160 built-in waveforms



Burst function

	N_Cycle 0,0 no		NCYC
Cycles	1 10,000,000,0 ms	∕∖	Burst Period
	Internal 1,000,0 s	(i - i	Polant Pes
	0,0 ms 100,000,000 Hz 1,000,000,000 kHz		Trigge
Mark	OFF	Hanannan	Delay

Standard harmonic generator

Irder	* >	1,000,000,000 kHz 5,000,0 ∨pp	Freq Ampl
ype	li serie	0,000,0 Vie 0,000 ° 2,264,7 Vpp	Offset Phase Ampl
5N mor mpl		1,000,000,000 kHz 5,000,0 Vpp 0,000,0 Vw 0,000 V	Citizet
đ		0,000,0 VH	Ctfset

Channels and system setting

	Ubility	Channel
CH1 Sync	:On	Set
CHT Polarity	Normal	Coupling
CH1 Delay	0,0 ns	Set
CH1 Output	Normal	Channel
CH1 Resi	HighZ	Copy
CH1 Mode	Normal	Set To
CH1 Gated	Positive	Default
CH1 Range	Auto	
		Language



Waveform summing function

:Ott ce :Sine	01
re (Sine	
	Sum
-1,000,000,000 kHz	Saurce
100,0 %	Sum Freq
	Sum Ratio
	-1,000,000,000 kHz

In line with LXI Core Device 2011

	Ublity	DHCP
LAN Status	Disconnect	06
IP Configure		Autol
DHCP	:ON / 1/21	Ön
Auto IP	ON LAN	Manual
Manual IP	OFF	Off
MAC	:00-14-0E-42-12-CF	(Bitter
VISA	TCPIPO: 0.0	Defaul
	0.0 INSTR	Config
		Curren
and a	/ ON IS	tor Config

Sweep function

	1,000,0 s 0,0 ms 100,000,000 Hz 1,000,000,000 kHz 0FF	Type Linear Sweep Time
Sweep	1,000,0 =	 Return
Return Start Stop Mark	0.0 ms 100,000,000 Hz 1,000,000,000 kHz OFF	Start Center Stop

Standard 7 digits/s full function frequency counter with 200MHz bandwidth

1,310m	AC OFF 0.000.0 V	Gate Time
Freque	ncy:	Select Meas
Penod	99.996,250,0 Hz	Statist
Duty +Width	52,145 % 521,460,9 us	Displa
She	478.542,8 ut	Clear
	OFF NUM	Count

File Management Function

C: \		File
Disk	State File	Туре
No.	51:0.KSF 52:	Browse
	 S3:000.KSF S4:222.RSF S5:012.RSF S6: 	
	B 57:0.RSF B 58: B 59:	
	B 510:	Copy

Specifications

All the specifications can be guaranteed if the following two conditions are met unless where noted. \cdot The generator is within the calibration period and has performed self-calibration.

• The generator has been working continuously for at least 30 minutes under the specified temperature (18°C ~ 28°C).

All the specifications are guaranteed unless those marked with "typical".

Model	DG1032Z	DG1062Z
Channel	2	2
Max Frequency	30 MHz	60 MHz
Sample Rate	200 MSa/s	
Waveform		
Basic Waveform	Sine, Square, Ramp, Pulse, Noise	
Built-in Arbitrary Waveform		ise, Exponential Fall, ECG, Gauss, HaverSine, Lorentz,
Frequency Characteristics		
Sine	1 µHz to 30 MHz	1 µHz to 60MHz
Square	1 µHz to 15 MHz	1 µHz to 25 MHz
Ramp	1 µHz to 500kHz	1 µHz to 1MHz
Pulse	1 µHz to 15 MHz	1 µHz to 25 MHz
Harmonic	1uHz to 10MHz	1uHz to 20MHz
Noise (-3dB)	30 MHz bandwidth	60 MHz bandwidth
Arbitrary Waveform	1 µHz to 10 MHz	1 µHz to 20 MHz
Resolution	1 µHz	
Accuracy	±1 ppm of the setting value, 18°C to 28°C	>
Sine Wave Spectrum Purity		
	Typical (0 dBm)	
Harmonic Distortion	DC-10 MHz (included): <-65 dBc 10 MHz to 30 MHz (included): <-55 d	Be
	30 MHz to 60 MHz (included): <-50 d	
Total Harmonic Distortion	 <0.075% (10 Hz to 20 kHz, 0 dBm) 	
	Typical (0 dBm)	
Spurious (non-harmonic)	<pre>≤10 MHz <-70 dBc >10 MHz <-70 dBc + 6 dB/octave</pre>	
Phase Noise	Typical (0 dBm, 10 kHz offset) 10 MHz: <-125 dBc/Hz	
Signal Characteristics		
Square	Typical (1)(pp)	
Rise/Fall Time	Typical (1 Vpp) <10ns	
Overshoot	Typical (100 kHz, 1 Vpp) ≤5%	
Duty Cycle	0.01% to 99.99% (limited by the current	frequency setting)
Non-symmetry	1% of the period + 5 ns	
Jitter (rms)	Typical (1 Vpp) ≤5 MHz 2 ppm + 200 ps > 5 MHz 200 ps	
Ramp		
Linearity	≤1% of peak output (typical, 1 kHz, 1 VP	P, 100% symmetry)
Symmetry	0% to 100%	
Pulse		
Pulse Width	≥16 ns (limited by the current frequency	
Duty Cycle	0.001% to 99.999% (limited by the curre	
Rising/Falling Edge	≥10 ns (limited by the current frequency	setting and pulse width setting)
Overshoot	Typical (1 Vpp) ≤5%	
Jitter (rms)	Typical (1 Vpp) ≤5 MHz 2 ppm + 200 ps > 5 MHz 200 ps	
Arbitrary Waveform		
Waveform Length	8pts to 8Mpts (16Mpts optional)	
Vertical Resolution	14 bits	

Sample Rate	200MSa/s
•	Typical (1 Vpp)
Min Rise/Fall Time	<10 ns
	Typical (1 Vpp)
Jitter (rms)	≤5 MHz 2 ppm + 200 ps
Edition Mode	> 5 MHz 200 ps
Editing Mode	Point Edit, Block Edit, Insert Built-in Waveform
Harmonic Output	
Harmonic Order	<8
Harmonic Type	Even Harmonic, Odd harmonic, Order Harmonic, User
Harmonic Amplitude	The amplitude of each order of harmonic can be set
Harmonic Phase	The phase of each order of harmonic can be set
Output Characteristics	
Amplitude (into 50 Ω)	
	≤10 MHz: 2.5 mVpp to 10 Vpp
Range	≤30 MHz: 2.5 mVpp to 5.0 Vpp ≤60 MHz: 2.5 mVpp to 2.5 Vpp
	Typical (1 kHz sine, 0 V offset, >10 mVpp, auto)
Accuracy	±(1% of the setting value) ±1 mV
	Typical (sine, 2.5 Vpp)
Flatness	≤10 MHz ±0.1 dB
	≤60 MHz ±0.2 dB
Unit	Vpp, Vrms, dBm
Resolution	0.1mVpp or 4 digits
Offset (into 50 Ω)	
Range (Peak ac+dc)	±5 V
Accuracy	\pm (1% of the setting value + 5mV + 0.5% of the amplitude)
Waveform Output	
Output Impedance	50 Ω (typical)
Protection	Short-circuit protection, automatically disable the waveform output when overload occurs
Modulation Type AM	AM, FM, PM, ASK, FSK, PSK, PWM
Carrier Waveform	Sine, Square, Ramp, Arb (except DC)
Source	Internal/External
	Internal External
Modulating Waveform	Sine, Square, Ramp, Noise, Arb
Modulating Waveform	Sine, Square, Ramp, Noise, Arb
Modulating Waveform Modulation Depth	Sine, Square, Ramp, Noise, Arb 0% to 120%
Modulating Waveform Modulation Depth Modulating Frequency	Sine, Square, Ramp, Noise, Arb0% to 120%2 mHz to 1 MHz
Modulating Waveform Modulation Depth Modulating Frequency FM	Sine, Square, Ramp, Noise, Arb 0% to 120%
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC)
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Modulating Waveform Modulating Frequency PM Carrier Waveform Source	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform PM Carrier Waveform Source Modulating Waveform Phase Deviation	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360°
Modulating Waveform Modulating Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency ASK	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360°
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source Modulating Waveform Source Modulating Waveform Key Frequency	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source Modulating Waveform Source Modulating Waveform Key Frequency FSK	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source Modulating Waveform Key Frequency FSK Carrier Waveform	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC)
Modulating Waveform Modulating Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source Modulating Waveform Key Frequency FSK Carrier Waveform Source	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Phase Deviation Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source Modulating Waveform Key Frequency FSK Carrier Waveform Source Modulating Waveform	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Phase Deviation Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source Modulating Waveform Key Frequency FSK Carrier Waveform Source Modulating Waveform Source Modulating Waveform Source	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Phase Deviation Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source Modulating Waveform Key Frequency FSK Carrier Waveform Source Modulating Waveform	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Phase Deviation Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source Modulating Waveform Key Frequency FSK Carrier Waveform Source Modulating Waveform Source Modulating Waveform Source	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle
Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source Modulating Waveform Key Frequency FSK Carrier Waveform Source Modulating Waveform Key Frequency FSK	Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle 2 mHz to 1 MHz

Key Frequency	2 mHz to 1 MHz			
PWM				
Carrier Waveform	Pulse			
Source	Internal/External			
Modulating Waveform	Sine, Square, Ramp, Noise, Arb			
Width Deviation	0% to 100% of the pulse width			
Modulating Frequency	2 mHz to 1 MHz			
External Modulation Input				
Input Range	75 mVRMS to ±5 Vac + dc			
	50 kHz			
Input Bandwidth				
Input Impedance	10ΚΩ			
Durat Characteristics				
Burst Characteristics			、 、	
Carrier Waveform	Sine, Square, Ramp, Pulse, Noi	se, Arb (except DC		
Carrier Frequency	2 mHz to 30 MHz		2 mHz to 60 MHz	
Burst Count	1 to 1,000,000 or Infinite			
Start/Stop Phase	0° to 360°			
Internal Period	1 µs to 500 s			
Gated Source	External Trigger			
Trigger Source	Internal, External or Manual			
Trigger Delay	0 ns to 100 s			
Sweep Characteristics				
Carrier Waveform	Sine, Square, Ramp, Arb (excep	ot DC)		
Туре	Linear, Log or Step	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Direction	Up or Down			
		imit of the correct	nding corrier freque	
Start/Stop Frequency	The same with the upper/lower limit of the corresponding carrier frequency			
Sweep Time	1 ms to 500 s			
Hold/Return Time	0 ms to 500 s			
Trigger Source	Internal, External or Manual			
Marker	Falling edge of the sync signal (programmable)		
En		p g,		
Frequency Counter		· · ·		
Function	Frequency, Period, Positive/Neg	pative Pulse Width,	Duty Cycle	
Function Frequency Resolution	7 digits/second (Gate Time = 1s	pative Pulse Width,	Duty Cycle	
Function Frequency Resolution		pative Pulse Width,	Duty Cycle	
Function Frequency Resolution Frequency Range	7 digits/second (Gate Time = 1s	pative Pulse Width,		
Function Frequency Resolution Frequency Range Period Measurement	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range	pative Pulse Width,)		
Function Frequency Resolution Frequency Range Period Measurement	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal)	pative Pulse Width,)		
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc	;	
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz	jative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2	5 Vac + dc	
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz	5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±3	5 Vac + dc .2.5 Vac + dc	
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz	100 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2	2.5 Vac + dc 2.5 Vac + dc 2.5 Vac + dc	
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 100 MHz to 200 MHz	5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±3	2.5 Vac + dc 2.5 Vac + dc 2.5 Vac + dc	
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 100 MHz to 200 MHz	100 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2	2.5 Vac + dc 2.5 Vac + dc 2.5 Vac + dc	
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 100 MHz to 200 MHz	100 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2	.5 Vac + dc .2.5 Vac + dc .5 Vpp .2.5 Vpp .2.5 Vpp	
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz	50 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2 50 mVRMS to ±2	.5 Vac + dc .2.5 Vac + dc .5 Vpp .2.5 Vpp .2.5 Vpp	
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 50 mVRMS to ±2 20 ms	.5 Vac + dc .2.5 Vac + dc .5 Vpp .2.5 Vpp .2.5 Vpp	DC Coupling
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width Pulse Width Resolution	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 50 mVRMS to ±2 ≥20 ns 5 ns	.5 Vac + dc .2.5 Vac + dc .5 Vpp .2.5 Vpp .2.5 Vpp	DC Coupling
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 50 mVRMS to ±2 20 ms	.5 Vac + dc .2.5 Vac + dc .5 Vpp .2.5 Vpp .2.5 Vpp	DC Coupling
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width Pulse Width Resolution	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 50 mVRMS to ±2 ≥20 ns 5 ns	.5 Vac + dc .2.5 Vac + dc .5 Vpp .2.5 Vpp .2.5 Vpp	DC Coupling
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width Pulse Width Resolution	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 50 mVRMS to ±2 ≥20 ns 5 ns	.5 Vac + dc .2.5 Vac + dc .5 Vpp .2.5 Vpp .2.5 Vpp	
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display)	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100%	.5 Vac + dc .2.5 Vac + dc .5 Vpp .2.5 Vpp .2.5 Vpp	
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandw	:.5 Vac + dc :2.5 Vac + dc :.5 Vpp :2.5 Vpp :.5 Vac + dc	Input Impedance = 1 MΩ
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 100 MHz to 200 MHz 100 MHz to 200 MHz Ideasurement 1 μHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandw Off: Input Bandw	:.5 Vac + dc :2.5 Vac + dc :.5 Vpp :2.5 Vpp :.5 Vac + dc	Input Impedance = 1 MΩ
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection Trigger Level Range	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandw Off: Input Bandw -2.5V to +2.5V	:.5 Vac + dc :2.5 Vac + dc :.5 Vpp :2.5 Vpp :.5 Vac + dc :.5 Vac + dc idth = 250 kHz; idth = 200 MHz	Input Impedance = 1 MΩ DC
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 100 MHz to 200 MHz 100 MHz to 200 MHz Ideasurement 1 μHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandw Off: Input Bandw -2.5V to +2.5V	 i.5 Vac + dc i.2.5 Vac + dc i.5 Vpp i.2.5 Vpp i.5 Vac + dc i.5 Vac + dc iidth = 250 kHz; iidth = 200 MHz mV hysteresis vol 	Input Impedance = 1 MΩ DC
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection Trigger Level Range	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandw Off: Input Bandw -2.5V to +2.5V 0% (about 140	 i.5 Vac + dc i.2.5 Vac + dc i.5 Vpp i.2.5 Vpp i.5 Vac + dc i.5 Vac + dc iidth = 250 kHz; iidth = 200 MHz mV hysteresis vol 	Input Impedance = 1 MΩ DC
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 200 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection Trigger Level Range Trigger Sensitivity Range	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandw Off: Input Bandw -2.5V to +2.5V 0% (about 140 hysteresis voltag	 i.5 Vac + dc i.2.5 Vac + dc i.5 Vpp i.2.5 Vpp i.5 Vac + dc i.5 Vac + dc iidth = 250 kHz; iidth = 200 MHz mV hysteresis vol 	Input Impedance = 1 MΩ DC
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment Input Trigger	7 digits/second (Gate Time = 1s 1 μ Hz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1 μ Hz to 100 MHz 100 MHz to 200 MHz 1 μ Hz to 100 MHz 100 MHz to 200 MHz leasurement 1 μ Hz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection Trigger Level Range Trigger Sensitivity Range GateTime1 GateTime2	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandw Off: Input Bandw Off: Input Bandw -2.5V to +2.5V 0% (about 140 hysteresis voltag 1.310ms 10.48ms	 i.5 Vac + dc i.2.5 Vac + dc i.5 Vpp i.2.5 Vpp i.5 Vac + dc i.5 Vac + dc iidth = 250 kHz; iidth = 200 MHz mV hysteresis vol 	Input Impedance = 1 MΩ
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 100 MHz to 200 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 100 MHz to 200 MHz leasurement 1 μHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection Trigger Level Range Trigger Sensitivity Range GateTime1 GateTime3	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandw Off: Input Bandw Off: Input Bandw -2.5V to +2.5V 0% (about 140 hysteresis voltag 1.310ms 10.48ms 166.7ms	 i.5 Vac + dc i.2.5 Vac + dc i.5 Vpp i.2.5 Vpp i.5 Vac + dc i.5 Vac + dc iidth = 250 kHz; iidth = 200 MHz mV hysteresis vol 	Input Impedance = 1 MΩ DC
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment Input Trigger	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 100 MHz to 200 MHz 100 MHz to 200 MHz 100 MHz to 200 MHz Ieasurement 1 μHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection Trigger Level Range Trigger Sensitivity Range GateTime1 GateTime3 GateTime4	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandw Off: Input Bandw Off: Input Bandw Off: Input Bandw -2.5V to +2.5V 0% (about 140 hysteresis voltag 1.310ms 10.48ms 166.7ms 1.342s	 i.5 Vac + dc i.2.5 Vac + dc i.5 Vpp i.2.5 Vpp i.5 Vac + dc i.5 Vac + dc iidth = 250 kHz; iidth = 200 MHz mV hysteresis vol 	Input Impedance = 1 MΩ DC
Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensitivity DC Coupling AC Coupling Pulse Width and Duty Cycle M Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment Input Trigger	7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 100 MHz to 200 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 100 MHz to 200 MHz leasurement 1 μHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection Trigger Level Range Trigger Sensitivity Range GateTime1 GateTime3	ative Pulse Width,) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 100 mVRMS to ±2 20 mVRMS to ±2 ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandw Off: Input Bandw -2.5V to +2.5V 0% (about 140 hysteresis voltag 1.310ms 10.48ms 166.7ms	 i.5 Vac + dc i.2.5 Vac + dc i.5 Vpp i.2.5 Vpp i.5 Vac + dc i.5 Vac + dc iidth = 250 kHz; iidth = 200 MHz mV hysteresis vol 	Input Impedance = 1 MΩ DC

Trigger Characteristics	
Trigger Input	
Level	TTL-compatible
Slope	Rising or falling (selectable)
Pulse Width	>100ns
Latency	Sweep: <100 ns (typical) Burst: <300 ns (typical)
Trigger Output	
Level	TTL-compatible
Pulse Width	> 60 ns (typical)
Maximum Frequency	1 MHz

Reference Clock	
Phase Offset	
Range	0° to 360°
Resolution	0.03°
External Reference Input	
Lock Range	10 MHz ± 50 Hz
Level	250 mVpp to 5 Vpp
Lock Time	<2s
Input Impedance (Typical)	1 kΩ, AC coupling
Internal Reference Output	
Frequency	10 MHz ± 50 Hz
Level	3.3 Vpp
Input Impedance (Typical)	50 Ω, AC coupling

Sync Output	
Level	TTL-compatible
Impedance	50 Ω, nominal value

Overvoltage Protection

Occurred when:

- The instrument amplitude setting is greater than 2Vpp or the output offset is greater than |2Vpc| and the input voltage is greater than ±11.5 × (1 ± 5%)V (<10kHz).
- The instrument amplitude setting is lower than or equal to 2Vpp or the output offset is lower than or equal to |2Vpc| and the input voltage is greater than ±3.5 × (1 ± 5%)V (<10kHz).

General Specifications	
Power Supply	
Power Voltage	100 V to 240 V (45 Hz to 440 Hz)
Power Consumption	Lower than 40 W
Fuse	250 V, T3.15 A
Display	
Туре	3.5-inch TFT LCD
Resolution	320 horizontal × RGB × 240 vertical resolution
Color	16 M color
Environment	
Temperature Range	Operating: 0°C to 50°C Non-operating: -40°C to 70°C
Cooling Method	Fan cooling
Humidity Range	Lower than 30°C : ≤95% relative humidity 30°C to 40°C : ≤75% relative humidity 40°C to 50°C : ≤45% relative humidity
Altitude	Operating: below 3000 meters Non-operating: below 15,000 meters
Mechanical	
Dimensions (W×H×D)	261.5 mm × 112 mm × 318.4 mm
Weight	Without Package: 3.2 kg With Package: 4.5 kg
Interfaces	USB Host, USB Device, LAN
IP Protection	IP2X
Calibration Interval	1 year recommended calibration interval

Certification Information		
	in line with EN61326-1:2006	
	IEC 61000-3-2:2000	±4.0kV (contact discharge) ±4.0kV (air discharge)
	IEC 61000-4-3:2002	3 V/m (80 MHz to 1 GHz) 3 V/m (1.4 GHz to 2 GHz) 1 V/m (2.0 GHz to 2.7 GHz)
	IEC 61000-4-4:2004	1 kV power lines
EMC	IEC 61000-4-5:2001	0.5kV (Phase to Neutral) 0.5kV (Phase to PE) 1 kV (Neutral to PE)
	IEC 61000-4-6:2003	3V,0.15MHz-80MHz
	IEC 61000-4-11:2004	Voltage dip: 0 % UT during half cycle 0 % UT during 1 cycle 70 % UT during 25 cycles Short interruption: 0 % UT during 250 cycles
Electrical Safety	Electrical Safety in line with USA:UL 61010-1:2012, Canada: CAN/CSA-C22.2 No. 61010-1-2012 EN 61010-1:2010	

Ordering Information

	Description	Order Number
Model	DG1032Z (30MHz, Dual-channel)	DG1032Z
	DG1062Z (60MHz, Dual-channel)	DG1062Z
Standard Accessories	Power Cord	-
	USB Cable	CB-USBA-USBB-FF-150
	BNC Cable	CB-BNC-BNC-MM-100
	Quick Guide	-
	Resource CD (including User's Guide and etc.)	-
Options	16Mpts Memory for Arb	Arb16M-DG1000Z
	Rack Mount Kit (for single instrument)	RM-1-DG1000Z
	Rack Mount Kit (for dual instruments)	RM-2-DG1000Z
	40dB Attenuator	RA5040K
	10W Power Amplifier	PA1011
	USB-GPIB Converter	USB-GPIB

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