

DG1000Z Series Function/Arbitrary Waveform Generator



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- 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.

DG1000Z Series Function/Arbitrary Waveform Generator





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

Feature and Benefits

Sifi

Standard 2 full functional channels

RIGO	L CH1CH2	•4	
Freq Ampl	1.000,000,000 kHz 5.000,0 ∨pp	*	Freq Period
Offset Phase	0.000,0 ∨₀₀ 0.000 °	$\langle \rangle$	Ampl HiLevel
Freq	1,000,000,000 kHz		Offset LoLevel
Ampl Offset Phase	5.000,0 ∨pp 0.000,0 ∨₀₀ 0.000 °	\wedge	Start Phase
Sine		HighZ	Align Phase
Sine	/ ON	HighZ	Sine 🗘

Arbitrary waveform function with innovative SiFi technology

RIGO	L CH1CH2	•4	
Freq	1,000,000,000 kHz		DC
Ampl	5.000,0 Vpp	0	
Offset	0.000,0 ∨₀₀	1	BuiltIn
Phase	0,000 °	mallow	
Wform	Sinc		Stored
Freq	1,000,000,000 kHz		Wforms
Ampl	5.000,0 Vpp	0	Volatile
Offset	0,000,0 Vec	8	Wform
Phase	0.000 °	might	**101111
Wform	Sinc	4.4.	
Arb	ON	HighZ	
Arb	ON	HighZ	Arb ≑

Multiple analog and digital modulations

Up to 160 built-in waveforms



Burst function

RIGO	L CH1CH2	•	
Type Delay	N_Cycle 0.0 ns	_	Type NCycle,
Cycles Period	1 10.000,000,0 ms	\wedge	Burst Period
Source Sweep	Internal 1.000,0 s	I	Polarity Pos
Return Start Stop	0,0 ms 100,000,000 Hz 1,000,000,000 kHz		Trigger
Mark	OFF		Delay
)yole HighZ near HighZ	Burst ≑

Standard harmonic generator

RIGO	L CH1CH2	•4	
Freq Ampl	1,000,000,000 kHz 5,000,0 ∨pp	A	Order
Offset Phase Ampl	0,000,0 V₀c 0,000 ° 2,264,7 Vpp	2 4 6 8 F	Туре
Freq Ampl	1.000,000,000 kHz 5.000,0 Vpp		SN
Offset	0,000,0 Vm 0.000 °	$ \land$	Harmonic Ampl
			Harmonic Phase
Harm Sine	OFF	HighZ HighZ	Harm 🖨

Channels and system setting

RIGOL		€ ~*	
	Utility		Channel
CH1 Sync	:On		Set
CH1 Polarity	:Normal		Coupling
CH1 Delay	:0 . 0 ns		Set
CH1 Output	:Normal		Channel
CH1 Resi	:HighZ		Сору
CH1 Mode	:Normal		Set To
CH1 Gated	:Positive		Default
CH1 Range	:Auto		
Sine		HighZ	Language
Sine		HighZ	Util 🗘

MFreq Type	100,000,000 Hz AM		АМ
	Internal Sine 100.000 %		FM
	1,000,0 s		PM
Return Start Stop			ASK
Mark	OFF		FSK
Sine Ir Arb Ir		Sine HighZ Linear HighZ	Mod 🗘

Waveform summing function

RIGOL		•	
	Utility		Switch
CH1 Sum :	Off		Off -
CH1 Source :	Sine		Sum
CH1 Freq :	1.000,000,000 kHz		Source
CH1 Ratio :	100.0 %		Sum
			Freq
			Sum
			Ratio
Harm	ON	HighZ	
Sine /		HighZ	Util 🗘

In line with LXI Core Device 2011

RIGOL	Utility	€	DHCP
LAN Status IP Configur	:Disconnect e : :ON		On AutolP On
Auto IP Manual IP	:ON :OFF	XI	ManuallP Off
MAC VISA	:00-14-0E-42-12 :TCPIP0::0.0 .0.0::INSTR	-CF	Default Config
Sine Sine	ON	HighZ HighZ	Current Config Util 👻

Sweep function

RIGO	L CH1CH2	•	
Sweep	1,000,0 s		Type Linear_
Return Start Stop	100.000,000 Hz 1.000,000,000 kHz		Sweep Time
Mark Sweep	OFF 1.000,0 s	(Return Time
Return Start Stop	0.0 ms 100.000,000 Hz 1.000.000.000 kHz		Start Center
Mark	OFF	inear HighZ	Stop Span
			Sweep⊋

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

RIGOL	Counter	•	_
1.310ms 2 5.0 %	AC (DFF	Gate Time
Frequer	icy:		Select Meas
	9.996,250,0	HZ	Statist Off
Period Duty	1,000,003,7 ms 52,145 %		Display
+Width -Width	521.460,9 us 478.542,8 us		Digital
Sine Sine	ON	HighZ HighZ	Clear Count 🜩

File Management Function

RIGOL		•	
C:\			File
Disk	State File		Туре
C:	🖺 S1:0.RSF		Browser
D:	🖺 S2:		🛛 Dir 🖕
	■ S3:000.RSF ■ S4:222.RSF		
	E S5:012.RSF		
	₿ S6:		
	🖹 S7:0.RSF		Read
	₿ S8:		Reau
	탑 S9: 탑 S10:		
	E 0101		Сору
Sine	ON	HighZ	
Sine	OFF	HighZ	Store 🗘

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 ($18^{\circ}C \sim 28^{\circ}C$). 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	
10/		
Waveform Basic Waveform	Sino Squaro Domo Dulas Naiss	
Basic waveform	Sine, Square, Ramp, Pulse, Noise	Evenential Fell, FCC, Cause, HaverSize, Larente
Built-in Arbitrary Waveform	Dual-Tone, etc.	, 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	· p···· · · · · · · · · · · · · · · · ·
Accuracy	±1 ppm of the setting value, 18°C to 28°C	
	-	
Sine Wave Spectrum Purity		
	Typical (0 dBm) DC-10 MHz (included): <-65 dBc	
Harmonic Distortion	DC-10 MHz (included): <-65 dBc 10 MHz to 30 MHz (included): <-55 dBc	
	30 MHz to 60 MHz (included): <-50 dBc	
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		
Signal Characteristics Square		
oquale	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 free	quency setting)
Non-symmetry	1% of the period + 5 ns	, , ,
- , ,	Typical (1 Vpp)	
Jitter (rms)	≤5 MHz 2 ppm + 200 ps	
Ramp	> 5 MHz 200 ps	
Linearity	≤1% of peak output (typical, 1 kHz, 1 VPP,	100% symmetry)
Symmetry	0% to 100%	
Pulse	0701010070	
Pulse Width	≥16 ns (limited by the current frequency se	tting)
Duty Cycle	0.001% to 99.999% (limited by the current f	•
Rising/Falling Edge	≥10 ns (limited by the current frequency set	
Overshoot	Typical (1 Vpp)	
	≤5% Typical (1 Vpp)	
Jitter (rms)	≤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
Min Rise/Fall Time	Typical (1 Vpp)
	<10 ns
	Typical (1 Vpp)
Jitter (rms)	≤5 MHz 2 ppm + 200 ps
Editing Made	> 5 MHz 200 ps Point Edit, Block Edit, Insert Built-in Waveform
Editing Mode	Point Edit, Block Edit, Insert Built-In Waveform
Harmonic Output	
Harmonic Order	≤8 5
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 Obarratariation	
Output Characteristics	
Amplitude (into 50 Ω)	
Panga	≤10 MHz: 1.0 mVpp to 10 Vpp ≤30 MHz: 1.0 mVpp to 5.0 Vpp
Range	≤60 MHz: 1.0 mVpp to 5.0 Vpp ≤60 MHz: 1.0 mVpp to 2.5 Vpp
	Typical (1 kHz sine, 0 V offset, >10 mVpp, auto)
Accuracy	$\pm(1\% \text{ of the setting value}) \pm 1 \text{ mV}$
	Typical (sine, 2.5 Vpp)
Flatness	$\leq 10 \text{ MHz} \pm 0.1 \text{ dB}$
	$\leq 60 \text{ MHz} \pm 0.2 \text{ dB}$
Unit	Vpp, Vrms, dBm
Resolution	0.1mVpp or 4 digits
Offset (into 50 Ω)	
Range (Peak ac+dc)	±5 V
Accuracy	$\pm(1\% \text{ of the setting value } + 5\text{mV} + 0.5\% \text{ of the amplitude})$
Waveform Output	
Output Impedance	50 Ω (typical)
Protection	Short-circuit protection, automatically disable the waveform output when overload occurs
Trotection	Chon-circuit protection, automatically disable the wavelorm output when overload occurs
Modulation Characteristics	
	AM EM DM ASK ESK DSK DWA
Modulation Type	AM, FM, PM, ASK, FSK, PSK, PWM
AM	
AM Carrier Waveform	Sine, Square, Ramp, Arb (except DC)
AM Carrier Waveform Source	Sine, Square, Ramp, Arb (except DC) Internal/External
AM Carrier Waveform Source Modulating Waveform	Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb
AM Carrier Waveform Source Modulating Waveform Modulation Depth	Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0% to 120%
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency	Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM	Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform	Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC)
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source	Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform	Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0% to 120% 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
AM Carrier Waveform Source Modulating Waveform Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency	Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Noise, Arb 0% to 120% 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM	Sine, Square, Ramp, Arb (except DC) Internal/External 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
AM Carrier Waveform Source Modulating Waveform Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform	Sine, Square, Ramp, Arb (except DC) Internal/External 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, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC)
AM Carrier Waveform Source Modulating Waveform Modulating Frequency FM Carrier Waveform Source Modulating Waveform Modulating Frequency PM Carrier Waveform Source	Sine, Square, Ramp, Arb (except DC) Internal/External 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, Noise, Arb 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform	Sine, Square, Ramp, Arb (except DC) Internal/External 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, 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
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation	Sine, Square, Ramp, Arb (except DC) Internal/External 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, 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°
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency	Sine, Square, Ramp, Arb (except DC) Internal/External 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, 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
AM Carrier Waveform Source 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, Arb (except DC) Internal/External 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, Noise, Arb 0° to 360° 2 mHz to 1 MHz
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform	Sine, Square, Ramp, Arb (except DC) Internal/External 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, Noise, Arb 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, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Arb (except DC) Sine, Square, Ramp, Arb (except DC)
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Modulating Waveform Modulating Frequency PM Carrier Waveform Source Modulating Waveform Phase Deviation Modulating Frequency ASK Carrier Waveform Source	Sine, Square, Ramp, Arb (except DC) Internal/External 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° 2 mHz to 1 MHz 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
AM Carrier Waveform Source 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 Frequency ASK Carrier Waveform Source Modulating Waveform	Sine, Square, Ramp, Arb (except DC) Internal/External 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° 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 Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, with 50% duty cycle
AM Carrier Waveform Source 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 Source Modulating Waveform Source	Sine, Square, Ramp, Arb (except DC) Internal/External 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° 2 mHz to 1 MHz 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
AM Carrier Waveform Source 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 Source Modulating Waveform Key Frequency FSK	Sine, Square, Ramp, Arb (except DC) Internal/External 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, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz 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
AM Carrier Waveform Source 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	Sine, Square, Ramp, Arb (except DC) Internal/External 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° 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 Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, with 50% duty cycle
AM Carrier Waveform Source 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 Carrier Waveform	Sine, Square, Ramp, Arb (except DC) Internal/External 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, Noise, Arb 0° to 360° 2 mHz to 1 MHz Sine, Square, Ramp, Noise, Arb 0° to 360° 2 mHz to 1 MHz 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
AM Carrier Waveform Source 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 Carrier Waveform	Sine, Square, Ramp, Arb (except DC) Internal/External 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, Noise, Arb 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 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 Sine, Square, Ramp, Arb (except DC)
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform 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, Arb (except DC) Internal/External 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, Noise, Arb 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 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 Sine, Square, Ramp, Arb (except DC) Internal/External
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform 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 Carrier Waveform Source Modulating Waveform Kourier Waveform Source Modulating Waveform	Sine, Square, Ramp, Arb (except DC) Internal/External 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 0° to 360° 2 mHz to 1 MHz 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 Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform 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 Carrier Waveform Source Modulating Waveform Key Frequency	Sine, Square, Ramp, Arb (except DC) Internal/External 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 0° to 360° 2 mHz to 1 MHz 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 Sine, Square, Ramp, Arb (except DC) Internal/External Sine, Square, Ramp, Arb (except DC) Internal/External Square with 50% duty cycle
AM Carrier Waveform Source Modulating Waveform Modulation Depth Modulating Frequency FM Carrier Waveform Source Modulating Waveform 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 Carrier Waveform Source Modulating Waveform Key Frequency PSK	Sine, Square, Ramp, Arb (except DC) Internal/External 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, Noise, Arb 2 mHz to 1 MHz 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 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 Inpu	ıt		
Input Range	75 mVRMS to ±5 Vac + dc		
Input Bandwidth	50 kHz		
Input Impedance	10ΚΩ		
Burst Characteristics			
Carrier Waveform	Sine, Square, Ramp, Pulse, Noi	se, Arb (except DC)	
Carrier Frequency	2 mHz to 30 MHz	2 mHz to 60 MH	Ηz
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		
niggel Delay	0 115 10 100 5		
Sweep Characteristics			
Carrier Waveform	Sine, Square, Ramp, Arb (excer	at DC)	
Туре	Linear, Log or Step		
	Up or Down		
		line it a fitte a second second in a second second	
Start/Stop Frequency		limit of the corresponding carrier free	quency
Sweep Time	1 ms to 500 s		
Hold/Return Time	0 ms to 500 s		
	Internal, External or Manual		
	Falling edge of the sync signal (programmable)	
Trigger Source Marker		programmable)	
Marker Frequency Counter	Falling edge of the sync signal (
Marker Frequency Counter Function	Falling edge of the sync signal (Frequency, Period, Positive/Neg	gative Pulse Width, Duty Cycle	
Marker Frequency Counter Function Frequency Resolution	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s	gative Pulse Width, Duty Cycle	
Marker Frequency Counter Function Frequency Resolution Frequency Range	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz	gative Pulse Width, Duty Cycle	
Marker Frequency Counter Function Frequency Resolution Frequency Range	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s	gative Pulse Width, Duty Cycle	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz	gative Pulse Width, Duty Cycle	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range	gative Pulse Width, Duty Cycle	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (non-modulating signal)	pative Pulse Width, Duty Cycle) 5ns to 16 days	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range	pative Pulse Width, Duty Cycle) 5ns to 16 days ±1.5 Vdc	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1μHz to 100 MHz	 gative Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 1 μHz to 100 MHz 1 μHz to 100 MHz	gative Pulse Width, Duty Cycle) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (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	 pative Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz	gative Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (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	gative Pulse Width, Duty Cycle) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz 100 MHz to 25 MHz	stive Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp	DC Coupling
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz Min Pulse Width	gative Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp	DC Coupling
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz I00 MHz to 200 MHz 100 MHz to 200 MHz I00 MHz to 25 MHz Min Pulse Width Pulse Width Resolution	gative Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp	DC Coupling
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz Min Pulse Width	gative Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp	DC Coupling
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz I00 MHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display)	pative Pulse Width, Duty Cycle > 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vac + dc ≥20 ns 5 ns 0% to 100%	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz I00 MHz to 200 MHz 100 MHz to 200 MHz 100 MHz to 200 MHz Breakurement 1 µHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage	gative Pulse Width, Duty Cycle) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 00 mVRMS to ±2.5 Vac + dc ≥20 ns 5 ns 0% to 100% ±7Vac+dc	Input Impedance = 1 MΩ
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycle Frequency and Amplitude Ranges Pulse Width Duty Cycle nput Characteristics nput Signal Range	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz I00 MHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display)	gative Pulse Width, Duty Cycle) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 0 mVRMS to ±2.5 Vac + dc ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC	
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz I00 MHz to 200 MHz 100 MHz to 200 MHz 100 MHz to 200 MHz Breakurement 1 µHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage	jative Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vac + dc ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandwidth = 250 kHz;	Input Impedance = 1 MΩ
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz I00 MHz to 200 MHz I00 MHz to 200 MHz Breakurement 1 µHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection	jative Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 00 mVRMS to ±2.5 Vac + dc ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandwidth = 250 kHz; Off: Input Bandwidth = 200 MHz	Input Impedance = 1 MΩ
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz In Pulse Vidth Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode	gative Pulse Width, Duty Cycle) 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vac + dc ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandwidth = 250 kHz; Off: Input Bandwidth = 200 MHz -2.5V to +2.5V	Input Impedance = 1 MΩ DC
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz I00 MHz to 200 MHz I00 MHz to 200 MHz Breakurement 1 µHz to 25 MHz Min Pulse Width Pulse Width Resolution Measurement Range (display) Breakdown Voltage Coupling Mode High-frequency Rejection	jative Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 0 mVRMS to ±2.5 Vac + dc ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandwidth = 250 kHz; Off: Input Bandwidth = 200 MHz -2.5V to +2.5V 0% (about 140 mV hysteresis	Input Impedance = 1 MΩ DC
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz I00 MHz to 200 MHz Breasurement 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	jative Pulse Width, Duty Cycle 5ns to 16 days ±1.5 Vdc 50 mVRMS to ±2.5 Vac + dc 100 mVRMS to ±2.5 Vac + dc 50 mVRMS to ±2.5 Vpp 100 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 50 mVRMS to ±2.5 Vpp 0 mVRMS to ±2.5 Vac + dc ≥20 ns 5 ns 0% to 100% ±7Vac+dc AC On: Input Bandwidth = 250 kHz; Off: Input Bandwidth = 200 MHz -2.5V to +2.5V 0% (about 140 mV hysteresis hysteresis voltage)	Input Impedance = 1 MΩ DC
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 μHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1μHz to 100 MHz 100 MHz to 200 MHz Breasurement 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	pative Pulse Width, Duty Cycle) 5ns to 16 days $\pm 1.5 \text{ Vdc}$ 50 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ 100 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ 50 mVRMS to $\pm 2.5 \text{ Vpp}$ 100 mVRMS to $\pm 2.5 \text{ Vpp}$ 100 mVRMS to $\pm 2.5 \text{ Vpp}$ 50 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ $\geq 20 \text{ ns}$ 5 ns 0% to 100% $\pm 7 \text{Vac} + \text{dc}$ AC On: Input Bandwidth = 250 kHz; Off: Input Bandwidth = 200 MHz -2.5V to +2.5V 0% (about 140 mV hysteresis hysteresis voltage) 1.310ms	Input Impedance = 1 MΩ DC
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz Breakurement 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 GateTime2	pative Pulse Width, Duty Cycle) 5ns to 16 days $\pm 1.5 \text{ Vdc}$ 50 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ 100 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ 50 mVRMS to $\pm 2.5 \text{ Vpp}$ 100 mVRMS to $\pm 2.5 \text{ Vpp}$ 100 mVRMS to $\pm 2.5 \text{ Vpp}$ 50 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ $\geq 20 \text{ ns}$ 5 ns 0% to 100% $\pm 7 \text{Vac} + \text{dc}$ AC On: Input Bandwidth = 250 kHz; Off: Input Bandwidth = 200 MHz -2.5V to +2.5V 0% (about 140 mV hysteresis hysteresis voltage) 1.310ms 10.48ms	Input Impedance = 1 MΩ DC
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz Breakurement 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 GateTime2 GateTime3	pative Pulse Width, Duty Cycle) 5ns to 16 days $\pm 1.5 \text{ Vdc}$ 50 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ 100 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ 50 mVRMS to $\pm 2.5 \text{ Vpp}$ 100 mVRMS to $\pm 2.5 \text{ Vpp}$ 50 mVRMS to $\pm 2.5 \text{ Vpp}$ $50 \text{ mVRMS to } \pm 2.5 \text{ Vac} + \text{dc}$ $\geq 20 \text{ ns}$ 5 ns 0% to 100% $\pm 7 \text{Vac} + \text{dc}$ AC On: Input Bandwidth = 250 kHz; Off: Input Bandwidth = 200 MHz -2.5V to +2.5V 0% (about 140 mV hysteresis hysteresis voltage) 1.310ms 10.48ms 166.7ms	Input Impedance = 1 MΩ DC
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment Input Trigger	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz Breakdown Voltage Coupling Mode High-frequency Rejection Trigger Level Range Trigger Sensitivity Range GateTime1 GateTime3 GateTime4	pative Pulse Width, Duty Cycle) 5ns to 16 days $\pm 1.5 \text{ Vdc}$ 50 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ 100 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ 50 mVRMS to $\pm 2.5 \text{ Vpp}$ 100 mVRMS to $\pm 2.5 \text{ Vpp}$ 50 mVRMS to $\pm 2.5 \text{ Vpp}$ 50 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ $\geq 20 \text{ ns}$ 5 ns 0% to 100% $\pm 7\text{Vac+dc}$ AC On: Input Bandwidth = 250 kHz; Off: Input Bandwidth = 200 MHz -2.5V to $\pm 2.5\text{V}$ 0% (about 140 mV hysteresis hysteresis voltage) 1.310ms 10.48ms 166.7ms 1.342s	Input Impedance = 1 MΩ DC
Marker Frequency Counter Function Frequency Resolution Frequency Range Period Measurement Voltage Range and Sensiti DC Coupling AC Coupling Pulse Width and Duty Cycl Frequency and Amplitude Ranges Pulse Width Duty Cycle Input Characteristics Input Signal Range Input Adjustment Input Trigger	Falling edge of the sync signal (Frequency, Period, Positive/Neg 7 digits/second (Gate Time = 1s 1 µHz to 200 MHz Measurement Range vity (non-modulating signal) DC Offset Range 1µHz to 100 MHz 100 MHz to 200 MHz Breakurement 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 GateTime2 GateTime3	pative Pulse Width, Duty Cycle) 5ns to 16 days $\pm 1.5 \text{ Vdc}$ 50 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ 100 mVRMS to $\pm 2.5 \text{ Vac} + \text{dc}$ 50 mVRMS to $\pm 2.5 \text{ Vpp}$ 100 mVRMS to $\pm 2.5 \text{ Vpp}$ 50 mVRMS to $\pm 2.5 \text{ Vpp}$ $50 \text{ mVRMS to } \pm 2.5 \text{ Vac} + \text{dc}$ $\geq 20 \text{ ns}$ 5 ns 0% to 100% $\pm 7 \text{Vac} + \text{dc}$ AC On: Input Bandwidth = 250 kHz; Off: Input Bandwidth = 200 MHz -2.5V to +2.5V 0% (about 140 mV hysteresis hysteresis voltage) 1.310ms 10.48ms 166.7ms	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 $|2V_{DC}|$ and the input voltage is greater than $\pm 3.5 \times (1 \pm 5\%)V$ (<10kHz).

General	Specifications

Ocheral Opeomoutono	
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
Temperature Range	Non-operating: -40°C to 70°C
Cooling Method	Fan cooling
	Lower than 30°C : ≤95% relative humidity
Humidity Range	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
Weight	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
	Power Cord	-
	USB Cable	CB-USBA-USBB-FF-150
Standard Accessories	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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