

Technical Specifications

Frequency Characteristics				
MODEL	15M type	25M type	40M type	60M type
Sine	1 μ Hz ~ 15MHz	1 μ Hz ~ 25MHz	1 μ Hz ~ 40MHz	1 μ Hz ~ 60MHz
Square	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz
Triangle	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz	1 μ Hz ~ 15MHz
Pulse	100 μ Hz ~ 6MHz	100 μ Hz ~ 6MHz	100 μ Hz ~ 6MHz	100 μ Hz ~ 6MHz
Arbitrary	1 μ Hz ~ 6MHz	1 μ Hz ~ 6MHz	1 μ Hz ~ 6MHz	1 μ Hz ~ 6MHz
Noise (-3dB)	7MHz Bandwidth			
Frequency Resolution	1 μ Hz			
Frequency Accuracy	± 5 ppm			
Frequency Stability	± 1 ppm/3hour			
Frequency Characteristics				
Waveform Types	Sine, square, triangle, pulse, noise and arbitrary waves (including DC). There are 32 kinds of arbitrary waves and 50 kinds of user-defined waves.			
Waveform Length	8192 points			
Waveform Sampling Rate	200 MSa/s			
Waveform Vertical Resolution	13 bits			
Sine Wave Characteristics				
Sine Wave	Harmonic Distortion	≥ 45 dBc(<1MHz); ≥ 40 dBc(1MHz~20MHz)		
	Total Harmonic Distortion	<0.8%(20Hz ~ 20kHz, 0dBm)		
Square Wave Signal Characteristics				
Square Wave	Rise/Fall	<20ns		
	Overshoot	<5%		
	Duty Cycle	freq<100kHz: 1%~99%; 100kHz \leq freq<5MHz: 20% ~ 80%; 5MHz \leq freq: 40% ~ 60%(0.1% resolution)		
Pulse Wave Characteristics				
Pulse Wave	Pulse Width	Min 20ns; 1ns resolution		
	Edge Transition Time	Min 20ns;		
	Overshoot	<5%		
	Jitter	6ns+0.1% Period		
Ramp Wave Characteristics				
Ramp Wave	Linearity Degree	≥ 98 %(0.01Hz~10kHz)		
	Symmetry	0.0 ~ 100.0%(resolution 0.1%)		
Output Characteristics				
Amplitude				
Amplitude Range	freq < 10MHz	10MHz \leq freq < 30MHz	30MHz \leq freq	
	2mVpp ~ 20Vpp	2mVpp ~ 10Vpp	2mVpp ~ 5Vpp	
Amplitude Resolution	1mV			
Amplitude Stability	± 1 % set value ± 1 mVpp(1kHz Sine,0 offset,>10mVpp)			
Amplitude Flatness (relative to 1K Sine, 1 Vpp)	± 0.4 dB <10MHz ; ± 1.0 dB ≥ 10 MHz.			
Output Impedance	50 Ω ± 10 %(Typical)			
Protection	All the signal output terminal can be shorted within 60s			
DC Offset				
	Output Amplitude>0.1V	2mV<Output Amplitude \leq 0.1V		
Offset Adjusting Range	± 10 Vpk,ac + dc		± 0.250 Vpk,ac + dc	

Offset Resolution	1mV	
Phase characteristics		
Phase Adjusting Range	0~359.9°	
Phase Resolution	0.1°	
External Measurement Function		
Frequency Meter	Frequency measurement range	1Hz ~ 100MHz
	Measurement accuracy	Gate time continuously adjusted between 0.01s~10s
Counter Function	Counting region	0 ~ 4294967295
	Control mode	Manual operation
Input Signal Voltage Range	2Vpp~20Vpp	
Coupled Mode	AC or DC	
Pulse Width Measurement	1ns (resolution), 20s (MAX measuring time)	
Period Measurement	1ns (resolution), 20s (MAX measuring time)	
SYNC Output		
Output Channel	CH1 or CH2, default CH1	
Level	TTL	
Impedance	50Ω	
Rise/Fall Time	< 25ns	
Maximum Frequency	25MHz	
AM Modulation		
Output Channel	CH1 or CH2, default CH1	
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)	
Source	Internal/External	
Modulation Wave	Sine, square, triangle and ramp	
Modulation Frequency	2mHz~20kHz	
Modulation Depth	0%~120%	
FM Modulation		
Output Channel	CH1 or CH2, default CH1	
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)	
Source	Internal/External	
Modulation Wave	Sine, square, triangle and ramp	
Modulation Frequency	2mHz~20kHz	
Frequency Offset	0~Maximum carrier frequency	
PM Modulation		
Output Channel	CH1 or CH2, default CH1	
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)	
Source	Internal/External	
Modulation Wave	Sine, square, triangle and ramp	
Modulation Frequency	2mHz~20kHz	
Phase Offset	0°~ 360°	
ASK Modulation		
Output Channel	CH1 or CH2, default CH1	
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)	
Source	Internal/External	
Modulation Wave	Square wave of 50% duty ratio	
Keying Frequency	2mHz~1MHz	

Modulation Amplitude	0~Carrier Amplitude
FSK Modulation	
Output Channel	CH1 or CH2, default CH1
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)
Source	Internal/External
Modulation Wave	Square wave of 50% duty ratio
Keying Frequency	2mHz~1MHz
Hop Frequency	Carrier frequency range
PSK Modulation	
Output Channel	CH1 or CH2, default CH1
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)
Source	Internal/External
Modulation Wave	Square wave of 50% duty ratio
Keying Frequency	2mHz~1MHz
Modulation Phase	0°~ 360°
Frequency Sweep	
Output Channel	CH1 or CH2, default CH1
Types	Linearity/Logarithm
Sweep Frequency Time	1ms ~ 500.000s
Start/Stop Frequency	1μHz~Maximum carrier frequency
Sweep Direction	Forward, Backward
Trigger Source	Manual operating, internal, external
Burst Characteristics	
Output Channel	CH1 or CH2, default CH1
Carrier Wave	Sine, square, ramp, pulse and arbitrary waveforms (excluding DC)
Pulse Count	1~65535 or infinite, gated
Start/Stop Phase	0~360°
Internal Period	1μs~500s
Gating Source	External
Trigger Source	Internal, external, manual operating
Trigger Input	
Signal Range	2Vpp~20Vpp
Coupling	AC or DC
Pulse Width	>100ns
Reaction Time	<500ns(Burst) <10μs(Sweep)
Modulation Input	
Impedance	1MΩ
Signal range	±2.5V ac+dc