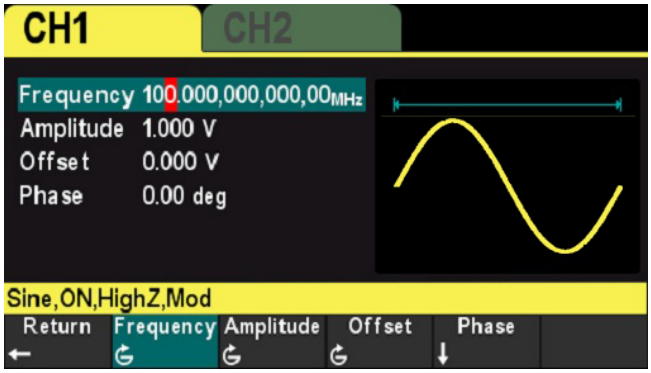
Arbitrary Waveform/Function Generator

Features

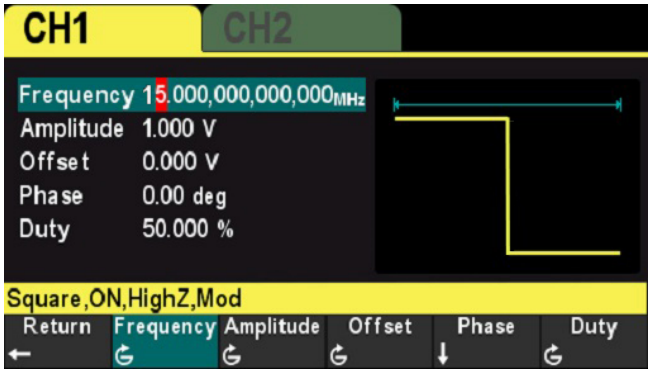
- ✓ Frequency range 1μHz~25MHz
- ✓ Sampling rate 300MSa/s, vertical resolution 16 bits, waveform length 2M points
- ✓ 2 independent output channels at same frequency range
- ✓ 4.3-inch TFT LCD display
- ✓ 7 standard waveforms, 160 built-in arbitrary waveforms
- ✓ 16-order Harmonic waveform output
- ✓ Modulations: AM, DSB-AM, FM, PM, ASK, FSK, PSK, BPSK, QPSK, 3FSK, 4FSK, OSK, PWM
- ✓ Synchronous output of CH1 and CH2
- ✓ Multiple I/O: waveform output, sync signal output, modulation input, 10MHz clock input/output and trigger input/output
- ✓ Powerful arbitrary waveform editing PC software, support SCPI commands
- ✓ 80MHz counter, support measurement of frequency, period, duty cycle, positive pulse width and negative pulse width
- ✓ Over voltage, over current, short circuit and reverse voltage protections
- ✓ Interface: USB device, USB Host
- ✓ SCPI commands

Product photo

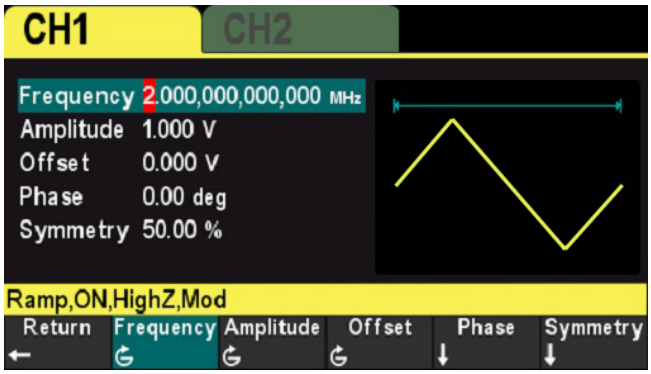
Display of Output Waveforms



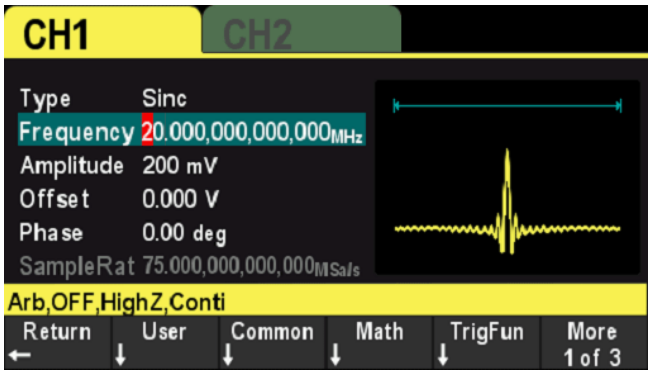
Sine



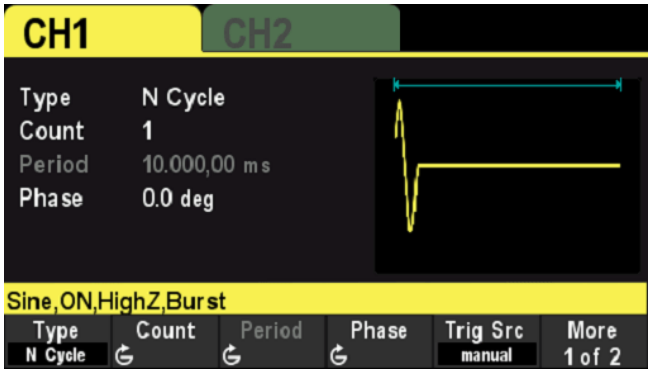
Square



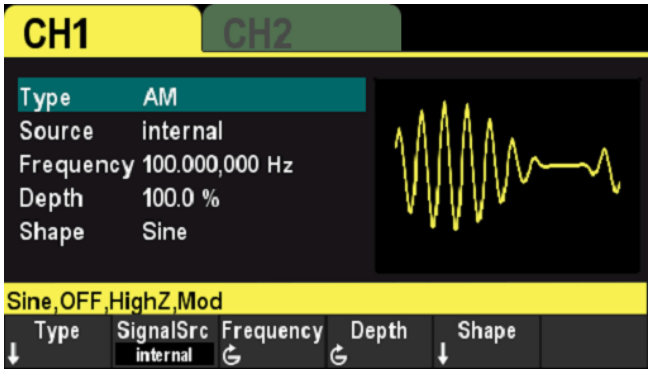
Triangle



Arbitrary



Burst



Modulation

Arbitrary Waveform/Function Generator

Specifications

Model	**TFG-3025**	
Output frequency	1μHz~25MHz	
Output channel	2	
Sampling rate	300MSa/s	
Voltage resolution	16 bit	
Waveforms		
Standard waveforms	Sine, Square, Ramp, Pulse, Noise, Harmonic, DC	
Arbitrary waveforms	More than 160 kinds, including Sinc, Exponential Rise, Exponential Fall, ECG, Gauss, Haver Sine, Lorentz, Dual-Tone, etc.	
Frequency Characteristics		
Sine	1uHz~25MHz	
Square	1uHz~15MHz	
Pulse	1uHz~15MHz	
Ramp	1uHz~2MHz	
Harmonic	1uHz~10MHz	
Noise (-3dB)	100MHz bandwidth	
Arbitrary	1uHz~15MHz	
Frequency resolution	1uHz	
Frequency accuracy	±1ppm, 18~28℃	
Square Characteristics		
Rise/fall time	≤9ns, typical (1kHz, 1Vpp)	
Overshoot	≤5%, typical (100kHz, 1Vpp)	
Duty cycle	0.001%~99.999%, range varies with frequency	
Non-symmetry	1% of the period + 4ns	
Ramp Characteristics		
Linearity	≤1% of peak output (typical, 1kHz, 1Vpp, symmetry 100%)	
Symmetry	0% ~ 100%	
Pulse Characteristics		
Period	67ns~1Ms	
Pulse	≥16ns	
Duty cycle	0.001%~99.999%, range varies with frequency	
Rise/fall time	≥9ns	
Overshoot	≤5%, typical (1kHz, 1Vpp)	
Harmonic Characteristics		
Harmonic order	≤16	
Harmonic type	Even, Odd, All	
Harmonic amplitude	Can be set for all harmonics	
Harmonic phase	Can be set for all harmonics	
Arbitrary Waveform Characteristics		
Waveform length	2Mpts	
Vertical resolution	16 bits	
Sampling rate	1uSa/s~75MSa/s, Resolution 1uSa/s	
Rise/fall time	≥9ns	
Overshoot	≤5%, typical (1kHz, 1Vpp)	
Amplitude Characteristics		
Amplitude range	50Ω impedance: ≤10MHz: 1mVpp ~ 10Vpp ≤55MHz: 1mVpp ~ 5Vpp	High impedance: ≤10MHz: 2mVpp ~ 20Vpp ≤55MHz: 2mVpp ~ 10Vpp
Accuracy	±1% of setting value ± 5mVpp, typical (1kHz Sine, 0V offset, >10mVpp)	
Flatness	≤5MHz: ±0.1dB; ≤15MHz: ±0.2dB; ≤25MHz: ±0.3dB (relative to 1kHz Sine, 3.5Vpp, 50Ω)	
Unit	Vpp, mVpp, Vrms, dBm (50Ω impedance)	
Resolution	1mVpp	
Offset Characteristics (50Ω)		
Range	±5Vpkac+dc	
Accuracy	±(1% of setting value + 5mV + 1% of amplitude)	
Amplitude Modulation (AM) and DSB-AM		
Carrier waveforms	Sine, Square, Ramp, Pulse, Harmonic, Arb. (except DC)	
Modulation source	Internal, External	

Modulation waveforms	Sine, Square, Ramp, Noise, Sinc, Exp Fall, Haver Sine, Lorentz, Gause, Dual Tone, ECG
Modulation frequency	2mHz~1MHz
Modulation depth	0%~120%
Frequency Modulation (FM)	
Carrier waveforms	Sine, Square, Ramp, Pulse, Harmonic, Arb. (except DC)
Modulation source	Internal, External
Modulation waveforms	Sine, Square, Ramp, Noise, Sinc, Exp Fall, Haver Sine, Lorentz, Gause, Dual Tone, ECG
Modulation frequency	2mHz~1MHz
Phase Modulation (PM)	
Carrier waveforms	Sine, Square, Ramp, Pulse, Harmonic, Arb. (except DC)
Modulation source	Internal, External
Modulation waveforms	Sine, Square, Ramp, Noise, Sinc, Exp Fall, Haver Sine, Lorentz, Gause, Dual Tone, ECG
Modulation frequency	2mHz~1MHz
Modulation range	0.0°~360.0°
ASK, FSK and PSK	
Carrier waveforms	Sine, Square, Ramp, Pulse, Harmonic, Arb. (except DC)
Modulation source	Internal, External
Modulation waveforms	Square with 50% duty cycle
Rate	2mHz~1MHz
BPSK	
Carrier waveforms	Sine, Square, Ramp, Pulse, Harmonic, Arb. (except DC)
Data source	PN15, PN21, 01, 10
Rate	2mHz~1MHz
QPSK	
Carrier waveforms	Sine, Square, Ramp, Pulse, Harmonic, Arb. (except DC)
Data source	PN15, PN21
Rate	2mHz~1MHz
3FSK and 4FSK	
Carrier waveforms	Sine, Square, Ramp, Pulse, Harmonic, Arb. (except DC)
Modulation source	Internal
Modulation waveforms	Square with 50% duty cycle
Rate	2mHz~1MHz
OSK	
Carrier waveforms	Sine
Modulation source	Internal, External
OSC time	8ns~4.99975ms
Rate	2mHz~1MHz
PWM	
Carrier waveform	Square
Modulation source	Internal, External
Modulation waveforms	Sine, Square, Ramp, Noise, Sinc, Exp Fall, Haver Sine, Lorentz, Gause, Dual Tone, ECG
Modulation frequency	2mHz~50kHz
Duty deviation	0.1%~49.9%
External Modulation Input	
Input range	AM, DSB-AM, FM, PM, OSK, PWM: 75MVrms ~ ± 5VAC + DC ASK, FSK, PSK: TTL level
Input bandwidth	50kHz
Input impedance	10kΩ
Sweep Characteristics	
Carrier waveforms	Sine, Square, Ramp, Pluse, Harmonic, Arb. (except DC)
Sweep type	Linear
Sweep direction	Up
Sweep time	1ms~50ks
Hold time	1ms~50ks
Return time	1ms~50ks
Trigger source	Internal, External, Manual
Mark	Falling edge of Sync signal
Burst Characteristics	
Carrier waveforms	Sine, Square, Ramp, Pluse, Harmonic, Arb. (except DC)
Carrier frequency	1uHz~25MHz
Bust count	1~ 2000 000 000

Start/stop phase		0°~360°
Internal period		2us~500s
Gated source		External trigger
Trigger source		Internal, External, Manual
Frequency Counter		
Measuring function		Frequency, Period, Positive/Negative Pulse Width, Duty Cycle
Frequency input		1uHz~80MHz
Gate time		10ms~16s
Level		0~3.3V
Trigger Characteristics		
Trigger input	Level	TTL compatible
	Slope	Rising or falling (selectable)
	Pulse width	>100ns
Trigger output	Level	TTL compatible
	Pulse width	>60ns
	Max rate	1MHz
Clock Reference		
External reference input	Frequency	10MHz+50Hz
	Level	Low level: 0~400mV, high level: 2.5V~ 5V
	Time	<2s
	Impedance	50Ω, DC coupling
Internal reference output	Frequency	10MHz+50Hz
	Level	3.3V
	Impedance	50Ω, DC coupling (typical)
Sync Output		
Level		TTL compatible
Impedance		50Ω, nominal value
General		
Interface		USB Host, USB Device
Display		4.3-inch TFT LCD
Language		English, Chinese (simplified)
Power source		100-240VACRMS(±10%),45Hz to 440Hz
Power consumption		<30W
Fuse		T, 0.5A, 250V, 5x20mm
Operating environment		0~40℃, <80%RH, Altidue 3,000 meters
Accessories		Power cord x1, Software CD x1, USB cable x1, BNC-BNC cable x1, BNC-Crocodile cable x1
Dimension		265Wx110Hx310D mm
Weight		2.5kg

Specifications are subject to change without prior notice.