

# Instek 15MHz Sweep Function Generator

Part No. 01GFG3015

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**GFG-3015**

## FEATURES

- \* Frequency Range 0.01Hz~15MHz
- \* Maximum Frequency Resolution 10mHz
- \* Frequency Accuracy 0.02%± 5 Count
- \* Dual Displays Indicate Frequency and Amplitude
- \* Built-in 6 Digit Counter With INT/EXT Function up to 150MHz/High Resolution
- \* Output Waveforms Sine, Square, Triangle, Ramp, Pulse, AM, FM, Sweep, TTL, Trigger and Gate or Burst
- \* INT/EXT AM/FM Modulation
- \* LIN/LOG Sweep Mode
- \* Variable DC Offset Control
- \* VCF for 100:1 EXT Frequency Control
- \* GCV Output for Synchronization
- \* SYNC Output
- \* Output Overload Protection
- \* RS-232C Interface Standard

## SPECIFICATIONS

<b>MAIN</b>	
<b>Output Waveforms</b>	Sine, Square, Triangle, Ramp, Pulse, AM, FM, Sweep, Trigger, Gate or Burst
<b>Frequency Range</b>	10mHz~15MHz in 8 frequency range(auto switch)
<b>Frequency Resolution</b>	15MHz~150kHz(100Hz); 1.5MHz~15kHz(10Hz) 150kHz~1.5kHz(1Hz); 15kHz~150Hz(0.1Hz) 1.5kHz~15Hz(10mHz); 150Hz~1.5Hz(10mHz) 15Hz~0.15Hz(10mHz); 1.5Hz~0.01Hz(10mHz)
<b>Frequency Accuracy</b>	0.02% ± 5 count
<b>Output Impedance</b>	50Ω ± 10%
<b>Amplitude Range</b>	10.00V ~ 0.01V(into 50Ω ) 4 amplitude rang  Vac peak  +  Vdc  = 5V Resolution : 10mV(10.00V ~ 0.01V)
<b>Amplitude Accuracy</b>	≤ 3% ± 5count at 10Hz ~ 1MHz ≤ 10% ± 5count at 1MHz ~ 15MHz
<b>Amplitude Unit</b>	Vpp , Vrms , dBm
<b>DC Offset</b>	-5V ~ 5V (into 50Ω); resolution 10mV
<b>DC Offset Accuracy</b>	≤ 3%±3count at amplitude min.
<b>Duty Control</b>	80% : 20%:80% ~ 1MHz; resolution 1%
<b>Duty Accuracy</b>	≤ 1% ~ 1MHz at 50% duty
<b>Display</b>	Dual display for frequency 6 digits and amplitude 4 digits
<b>SINE WAVE</b>	
<b>Distortion</b>	≤ 0.5%(-46dBc) THE from 10Hz~ 100kHz; ≤ -30dBc~15MHz;(spec. applied form 1Vpp~10Vpp)
<b>TRIANGLE WAVE</b>	
<b>Linearity Error</b>	<1% of full scale output at 100Hz
<b>SQUARE WAVE</b>	
<b>Asymmetry</b>	± 1% of period + 3nS
<b>Rise or Fall Time</b>	<18 nS
<b>SYNC OUTPUT</b>	
<b>Impedance</b>	50Ω ± 10%
<b>Level</b>	>1Vp-p open circuit
<b>MODULATION CHARACTERISTICS</b>	
<b>Types</b>	AM, FM, Sweep, Trigger(int/ext), Gate or Burst (implement by trigger type)
<b>Waveform</b>	Sine, Square, Triangle, Ramp or Variable Symmetry Pulse
<b>Rate Frequency Range</b>	10mHz~10kHz in 3 frequency range (auto switch)
<b>Rate Frequency Accuracy</b>	5% ± 1 count
<b>Rate Frequency Resolution</b>	10.0kHz~0.1kHz(100Hz); 99Hz~1Hz(1Hz); 0.99Hz ~ 0.01Hz(0.01Hz)
<b>Symmetry</b>	90% : 10% : 90%; resolution : 1%
<b>Symmetry Accuracy</b>	± 1 count(± 1%)
<b>Output Level</b>	≥ 1Vpp into 10kΩ load
<b>Sine Wave Distortion</b>	≤ 2% from 10Hz ~ 10kHz
<b>AMPLITUDE MODULATION</b>	
<b>Depth</b>	0 ~ 100%
<b>Modulation Frequency Rate</b>	0.01Hz ~ 10kHz(INT) ; DC ~ 1MHz(EXT)
<b>Carries -3dB Bandwidth</b>	<100Hz to >5MHz
<b>External Sensitivity</b>	≤ 10Vpp for 100% modulation
<b>FREQUENCY MODULATION</b>	
<b>Deviation</b>	0 ~ ± 15%
<b>Modulation Frequency Rate</b>	0.01Hz ~ 10kHz(INT) ; DC ~ 50kHz(EXT)
<b>External Sensitivity</b>	≤ 5Vpp for 15% deviation

## SWEEP CHARACTERISTICS

<b>Sweep Range</b>	15MHz ~ 150kHz; 1.5MHz ~ 15kHz; 150kHz ~ 1.5kHz; 15kHz ~ 150Hz; 1.5kHz ~ 15Hz; 150Hz ~ 1.5Hz; 15Hz ~ 0.15Hz; 1.5Hz ~ 0.01Hz
<b>Width Rate</b>	>100:1(in same frequency range) 0.01Hz ~ 10kHz
<b>Symmetry Control Mode</b>	90% 10% 90%; resolution:1% Linear /Log sweep
<b>Sweep Output</b>	0 ≥ -5Vpp into 10kΩ

## TRIGGER CHARACTERISTICS

<b>Start/Stop Phase Range</b>	80° ~ 90°
<b>Rate</b>	0.1Hz ~ 10kHz
<b>Frequency Range</b>	0.1Hz ~ 1MHz(Useful ~ 10MHz)
<b>Ext Trig Frequency Range</b>	DC ~ 1MHz, TTL compatible input level
<b>Gate or Burst</b>	Implement by trigger setting

## VCF

<b>Range</b>	100:1(0 ~ 10V ± 1V)
<b>Input Linearity</b>	<0.5% ~ 1MHz, <5% ~ 10MHz
<b>Input Impedance</b>	10 kΩ

## GCV OUTPUT

To set the voltage between 0.2V ~ 2V as per different frequency in same frequency range

## FREQUENCY COUNTER

<b>INT/EXT</b>	Switch selector
<b>Range</b>	5Hz ~ 150MHz EXT
<b>Accuracy</b>	Time base accuracy ± 1 count
<b>Time Base</b>	± 20ppm(23° C ± 5° C) after 30 minutes warm up
<b>Resolution</b>	The maximum resolution is 100nHz for 0.1Hz and 1Hz for 100MHz
<b>Input Impedance</b>	1MΩ // 150pF
<b>Sensitivity</b>	≤ 35mVrms(5 ~ 100MHz); ≤ 45mVrms(100MHz~150MHz)

## MEMORY

<b>Save/Recall</b>	10 sets of front panel setting memories
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## INTERFACE

<b>INTERFACE</b>	RS-232C
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## POWER SOURCE

<b>POWER SOURCE</b>	AC115V/230V ± 15%, 50/60Hz
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## ACCESSORIES

<b>ACCESSORIES</b>	Instruction manual x 1, Power cord x 1, GTL-101 x 2
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## DIMENSIONS & WEIGHT

<b>DIMENSIONS &amp; WEIGHT</b>	290(W) x 142(H) x 460(D)mm, Approx. 5kg
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## ORDERING INFORMATION

**GFG-3015** 15MHz Programmable Function Generator

Note : ① VCF : Voltage Controlled Frequency

② GCV : Generator Controlled Voltage