

# Programmable Function Generator



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, Trigger and Gate or Burst
- \* VCF for 100:1 EXT Frequency Control
- \* INT/EXT AM/FM Modulation
- \* GCV Output for Synchronization
- \* Output Overload Protection
- \* RS-232C Interface Standard
- \* Variable DC Offset Control
- \* SYNC Output
- \* LIN/LOG Sweep Mode

## SPECIFICATIONS

<b>MAIN</b>	<b>Output Waveforms</b> <b>Frequency Range</b> <b>Frequency Resolution</b> <b>Frequency Accuracy</b> <b>Output Impedance</b> <b>Amplitude Range</b> <b>Amplitude Accuracy</b> <b>Amplitude Unit</b> <b>DC Offset</b> <b>DC Offset Accuracy</b> <b>Duty Control</b> <b>Duty Accuracy</b> <b>Display</b>	Sine, Square, Triangle, Ramp, Pulse, AM, FM, Sweep, Trigger, Gate or Burst 10mHz~15MHz in 8 frequency range (auto switch) 15.0000MHz~1.5001MHz(100Hz);1.50000MHz~150.011CHz(10Hz);150.000kHz~15.001kHz(1Hz); 15.0000kHz~1.5001kHz(10mHz);1.50000kHz~150.01Hz(10mHz);15.00Hz~1.51Hz(10mHz); 1.50Hz~0.01Hz(10mHz) 0.02% ± 5 count 50Ω ±10% 10.00V ~ 0.01V(into 50 Ω) 4 amplitude rang;  Vac peak  +  Vdc  = 5V Resolution : 10mV(10.00V ~ 0.01V) ≤ 3% ± 5count at 10Hz ~ 1MHz; ≤ 10% ± 5count at 1MHz ~ 15MHz Vpp, Vrms, dBm -5V ~ 5V (into 50Ω); resolution 10mV ≤ 3% ± 3count at amplitude min. 80%: 20%:80% ~ 1MHz; resolution 1% ≤ 1% ~ 1MHz at 50% duty 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> <b>Rise or Fall Time</b>	±1% of period + 3nS <18 nS
<b>SYNC OUTPUT</b>	<b>Impedance</b> <b>Level</b>	50 Ω ±10% >1Vp-p open circuit
<b>MODULATION CHARACTERISTICS</b>	<b>Types</b> <b>Waveform</b> <b>Rate Frequency Range</b> <b>Rate Frequency Accuracy</b> <b>Rate Frequency Resolution</b> <b>Symmetry</b> <b>Symmetry Accuracy</b> <b>Output Level</b> <b>Sine Wave Distortion</b>	AM, FM, Sweep, Trigger(int/ext), Gate or Burst (implement by trigger type) Sine, Square, Triangle, Ramp or Variable Symmetry Pulse 10mHz~10kHz in 3 frequency range (auto switch) 5% ± 1 count 10.0kHz ~ 0.1kHz(100Hz); 99Hz ~ 1Hz(1Hz); 0.99Hz ~ 0.01Hz(0.01Hz) 90% : 10% : 90%; resolution : 1% ± 1 count (≤ ± 1%) ≥ 1Vpp into 10k Ω load ≤ 2% from 10Hz ~ 10kHz
<b>AMPLITUDE MODULATION</b>	<b>Depth</b> <b>Modulation Frequency Rate</b> <b>Carries -3dB Bandwidth</b> <b>External Sensitivity</b>	0 ~ 100% 0.01Hz ~ 10kHz(INT) ; DC ~ 1MHz(EXT) <100Hz to >5MHz ≤ 10Vpp for 100% modulation
<b>FREQUENCY MODULATION</b>	<b>Deviation</b> <b>Modulation Frequency Rate</b> <b>External Sensitivity</b>	0 ~ ± 15% 0.01Hz ~ 10kHz(INT) ; DC ~ 50kHz(EXT) ≤ 5Vpp for 15% deviation
<b>SWEEP CHARACTERISTICS</b>	<b>Sweep Range</b> <b>Width</b> <b>Rate</b> <b>Symmetry Control</b> <b>Mode</b> <b>Sweep Output</b>	15MHz ~ 150kHz; 1.5MHz ~ 15kHz; 150kHz ~ 1.5kHz; 15kHz ~ 150Hz; 1.5kHz ~ 15Hz; 150Hz ~ 1.5Hz; 15Hz ~ 0.15Hz; 1.5Hz ~ 0.01Hz >100:1(in same frequency range) 0.01Hz ~ 10kHz 90% 10% 90%; resolution:1% Linear /Log sweep 0 ≥ -5Vpp into 10k Ω
<b>TRIGGER CHARACTERISTICS</b>	<b>Start/Stop Phase Range</b> <b>Rate</b> <b>Frequency Range</b> <b>Ext Trig Frequency Range</b> <b>Gate or Burst</b>	80° ~ 90° 0.1Hz ~ 10kHz 0.1Hz ~ 1MHz(Useful ~ 10MHz) DC ~ 1MHz, TTL compatible input level Implement by trigger setting
<b>VCF</b>	<b>Range</b> <b>Input Linearity</b> <b>Input Impedance</b>	100:1(0 ~ 10V ± 1V) <0.5% ~ 1MHz,<5% ~ 10MHz 10 k Ω
<b>GVC OUTPUT</b>		To set the voltage between 0.2V ~ 2V as per different frequency in same frequency range
<b>FREQUENCY COUNTER</b>	<b>INT/EXT</b> <b>Range</b> <b>Accuracy</b> <b>Time Base</b> <b>Resolution</b> <b>Input Impedance</b> <b>Sensitivity</b>	Switch selector 5Hz ~ 150MHz EXT Time base accuracy ± 1 count ± 20ppm(23°C ± 5°C) after 30 minutes warm up The maximum resolution is 100nHz for 0.1Hz and 1Hz for 100MHz 1MΩ // 150pF ≤ 35mVrms(5 ~ 100MHz); ≤ 45mVrms(100MHz~150MHz)
<b>MEMORY</b>	<b>Sare/Recall</b>	10 sets of front panel setting memories
<b>INTERFACE</b>	<b>RS-232C</b>	
<b>POWER SOURCE</b>		AC115V/230V ± 15%, 50/60Hz
<b>ACCESSORIES</b>		Power cord x 1, Instruction manual x 1, GTL-101 x 2
<b>DIMENSIONS &amp; WEIGHT</b>		290(W) x 142(H) x 460(D)mm, Approx. 5kg