GF-856C GF-858C

30 MHz FUNCTION GENERATORS

ONE OR TWO OUTPUT CHANNELS, 125 MSa/s

INCLUDES THE MOST COMMON WAVEFORMS
SINE, SQUARE, RAMP (SAW WAVE), PULSE, NOISE

LOW DISTORTION DDS SYNTHESIS

14 BITS VERTICAL RESOLUTION

16 MODULATIONS
INCLUDING FM, AM, PM, FSK, ASK, PWM...

ON-SCREEN GRAPHICAL READINGS
FREQUENCY METER AND PERIOD COUNTER

UP TO 160 ARBITRARY WAVEFORMS

DUAL OR SINGLE CHANNEL

COMPATIBLE WITH LabVIEW

GENERATE USER-DEFINED WAVEFORMS WITH PC SOFTWARE

The **GF-856C** and **GF-858C** are **advanced single channel or dual channel waveform generators**, respectively, using DDS technology, with a 30 MHz output frequency and a 125 MSa/s sample rate with 14-bit resolution. These excellent features are complemented by a 1µHz base resolution.

Capable of generating signals in **16 modulation schemes** (including FM, AM, PM, FSK, ASK, PWM), they also feature a 100 mHz to 100 MHz digital graphical frequency counter with a 6-digit resolution.

Beyond standard waveforms (sine, square, pulse, sawtooth, noise), these instruments allow users to create **custom waveforms** and access a library of 160 waveforms preloaded in the instrument's memory.

The **GF-856C** and **GF-858C** generators feature external modulation inputs, a sync output, and an external trigger input.

GENERAL FEATURES

Number of channels: 1 (GF-856C) or 2 (GF-858C)
Output frequency: 30 MHz
Sampling rate: 125 MSa/s
Vertical resolution: 14 bits
Standard waveforms: Sine, Square, Pulse, Sawtooth (ramp), Noise
Custom waveforms: User defined waveform, Exponential rise, Exponential decline, sin(x)/x, Pulse wave... A total of 160 waveforms.
Frequency resolution: 1 µHz to 30 MHz (Sine wave), 1 µHz to 15 MHz (Square/Pulse), 1 µHz to 1 MHz (Sawtooth), 20 MHz (Noise), 1 µHz to 10 MHz (Custom waveform)
Modulations: FM, AM, PM, FSK, ASK, PWM, 3FSK, 4FSK, PSK, BPSK, OSK, DSB-AM, QPSK, SUM, Sweep, Burst
Frequency counter: Frequency and period counter, margin from 100 mHz to 100 MHz
Screen: Color 3.6” TFT, 480x272 pixels
Interfaces: External modulation input, External trigger input, Sync output
Communication interfaces: USB Host, USB device (supports remote control from PC)
SCPI and LabVIEW support

COMPATIBLE
LabVIEW

30 MHz FUNCTION GENERATORS

SPECIFICATIONS	GF-856C / GF-858C
OUTPUT	
Channels	**1 (GF-856C) / 2 (GF-858C)**
Bandwidth	30 MHz
Sampling rate	125 MS/s
Vertical resolution	14 bits
Standard waveforms	Sine, Square, Ramp, Pulse, Noise
Custom waveforms	More than 160, including Sinc, Exponential rise and decline, Electrocardiogram, Gaussian, Lorentz Semi-positive, Dual audio, DC voltage
OUTPUT FREQUENCY (1 µHz resolution)	
Sine wave	1 µHz ~ 30 MHz
Square / Pulse wave	1 µHz ~ 15 MHz
Ramp	1 µHz ~ 1 MHz
Noise (-3 dB)	20 MHz BW (AWGN)
Custom waveform	1 µHz - 10 MHz
Resolution	1 µHz or 7 digits
Stability	±30 ppm (at ±40ºC)
AMPLITUDE	
Output amplitude	2 mVPP ~ 20 VPP（≤ 10 MHz）High Z 2 mVPP ~ 10 VPP（≤ 30 MHz）High Z 1 mVPP ~ 10 VPP（≤ 10 MHz）50 Ω 1 mVPP ~ 5 VPP（≤ 30 MHz）50 Ω
Accuracy	±(1% reading + 1 mVPP) (typ. sine 1 kHz, offset 0 V)
Resolution	1 mVPP or 4 digits
Output impedance	50 Ω typ
WAVEFORMS	
Sine	
Flatness	±0.3 dB (≤10 MHz) / ±0.5 dB (≤30 MHz)
Armonic distortion	0 dBm (typ.), < -65 dBc (DC@1 MHz) < -60 dBc (1 MHz to 30 MHz)
Noise phase	0 dBm, 10 kHz offset (typ) -110 dBc/Hz (10 MHz)
Square	
Rise/fall time	<20 ns
Jitter (rms)	200 ps + 30 ppm (typ., 1 VPP, 50 Ω)
Overshoot	<5 %
Ramp	
Linearity	<1 % of peak output (typ. 1 kHz, 1 VPP, symmetry 50%)
Symmetry	From 0% to 100%
Pulse	
Period	67 ns to 1 Ms
Pulse width	≥24 ns
Rise/fall time	≥15 ns
Overshoot	<5 %
Jitter (rms)	200 ps + 30 ppm (typ., 1VPP, 50 Ω)
Ruido	
Types	Gaussian noise and White noise
Bandwidth	20 M (-3 dB)
Custom waveform	
Bandwidth	10M
Waveform length	From 2 to 100 Kpoints
Sampling rate	125 Ma/s
Amplitude accuracy	14 bits

MODULATIONS	AM, DSB-AM, FM, PM, ASK, FSK, PSK, BPSK, QPSK, 3FSK, 4FSK, OSK, PWM, SUM
SWEEP	
Carrier	Sine wave, Square, Ramp, Custom (except DC)
Start frequency	From 1 µHz to max freq. carrier
End frequency	From 1 µHz to max freq. carrier
Types	Linear, Logarithmic
Sweep time	1 ms to 500 s ±0.1%
Trigger source	Internal, External or Manual
BURST	
Waveforms	Sine wave, Square, Ramp, Pulse, Custom (except DC)
Types	N-cycle, Gated
N-cycle trigger source	Internal, External, Manual
Carrier frequency	1 µHz ≤ *Offset* ≤ carrier max frequency/2
N-cycle trigger source	67 ns ~ 1 Ms (Min = Cycles * Period)
Periodicity	1 ~ 60000 (max.= Burst period / period) / infinite
Gated source	External Trigger
FREQUENCY COUNTER	
Measurements	Frequency, Period
Frequency margin	Single channel: 100 mHz - 200 MHz
Frequency resolution	6 digits
Input impedance	1 MΩ
INPUTS AND OUTPUTS	
Communication interfaces	USB Host, USB Device Supports remote control from PC LabVIEW support via USB
External modulation input	
Frequency margin	DC - 20 kHz
Level rage	± 1V full scale
Impedance (typ)	10 kΩ
External trigger input	
Level	TTL compatible
Slope	Rising or Falling (selectable)
Pulse width	>100 ns
Sync output	
Level	TTL compatible
Max frequency	1 MHz
GENERAL SPECIFICATIONS	
Screen	16-bit color TFT-LCD 3.6" (480x272 pixels)
Supply	100-240 VAC, 50/60 Hz CAT II (<20 W)
Fuse protection	250 V, tipo F1AL
Calibration	Annual calibration is recommended
OPERATING ENVIRONMENTAL CONDITIONS	
Operation temperature	From 0 to 40 ºC
Storage temperature	From -20 to 60 ºC
Relative humidity	≤90 % (<25 ºC), ≤60% (35 to 40 ºC)
Operation altitude	3000 m
Storage altitude	12000 m
MECHANICAL FEATURES	
Dimensions	200 (W.) × 92 (H.) × 145 (D.) mm
Weight	800 gr (aprox.)

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