

ARBITRARY FUNCTION GENERATOR



AFG-2100/2000 Series

FEATURES

- 0.1Hz ~ 5/12/25 MHz with in 1Hz Resolution
- Sine, Square, Ramp, Noise and Arbitrary Waveform
- 20MSa/s Sampling Rate, 10 bit Vertical Resolution and 4k point Memory for Arbitrary Waveform
- 1% ~ 99% Adjustable Duty Cycle for Square Waveform
- Waveform Parameter Setting Through Numeric Keypad Entry & Knob Selection
- Amplitude, DC Offset and Other Key Setting Information Shown on the 3.5" LCD Screen Simultaneously
- AM/FM/FSK Modulation, Sweep, and Frequency Counter functions (AFG-2100 only)
- USB Device Interface for Remote Control and Waveform Editing
- PC Arbitrary Waveform Editing Software



AFG-2000 Series Front

APPLICATIONS

- Audio Products Frequency Characteristics Measurement
- Pulse Signal as Trigger or Synchronization Signal for Electronic Product Testing
- Pulse Noise Simulation
- Reference Clock Signal of Electronic Device
- Vibration Signal Simulation
- Noise Simulation for Communication System Educational Lab

GW INSTEK
Simply Reliable



Innovation and Value in Waveform Design

The AFG-2100/2000 Series Arbitrary Function Generators are DDS based signal generators covering the output of Sine, Square, Ramp, Noise and 20MSa/s Arbitrary waveform. The 0.1Hz resolution and 1% ~ 99% adjustable duty cycle of Square(Pulse) waveform greatly extend its application range in various fields.

The AFG-2100/2000 Series includes 6 models in three frequency bands of 5MHz, 12MHz and 25MHz. Besides the features of AFG-2000, AFG-2100 also carries additional features of AM/FM/FSK Modulation, Sweep and Frequency Counter. The 3.5" color LCD will clearly display the digital waveform parameters set through front panel. The entire Series is equipped with USB Device interface for remote control and importing waveform data from PC.

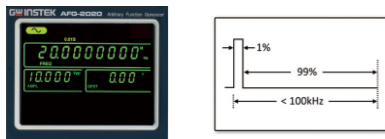
Built-In Arbitrary Waveform Function

20MSa/s sampling rate, 10 bit vertical resolution and 4k point memory equip AFG-2100/2000 the arbitrary waveform capacity. User can create waveform by mean of either point by point input from front panel or PC software.



1% Adjustable Duty Cycle of Square Wave

The AFG-2100/ 2000 Series provides 1% ~ 99% variable duty cycle for its square waveform output. This feature allows generating the pulse waveform to simulate a spike signal or a transient signal.



Fully Digital Entry Design

The fully digital entry design of AFG-2100/2000 Series improves the setting uncertainty of conventional Function Generator and therefore significantly increases the accuracy of its waveform output. The 3.5" LCD screen allows user to see the parameter value change in detail when the adjustment is in progress.



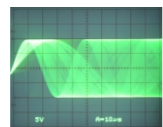
Amplitude and DC Offset Display

In addition to the setting parameters, the amplitude, DC offset values are also displayed on the LCD screen. Three amplitude units, Vpp, Vrms and dBm, can be selected and exchanged.



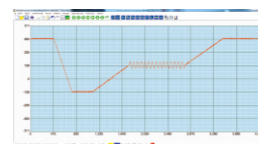
AM/FM/FSK, Sweep, Counter(AFG-2100 only)

AFG-2100 models are equipped with additional AM/FM/FSK Modulation, Sweep and Frequency Counter functions. The 150MHz frequency counter saves user the cost of purchasing a standalone frequency counter.



Arbitrary Waveform Editing Software

A free arbitrary waveform editing software is available which is used to edit the arbitrary waveform on PC. After completing the waveform editing, it can be downloaded to AFG through USB interface for waveform output.



AFG-2000/2100 Series

SPECIFICATIONS

		AFG-2105	AFG-2112	AFG-2125	AFG-2005	AFG-2012	AFG-2025	
WAVEFORMS ARITRARY FUNCTION	Sample Rate	Sine, Square, Ramp						
	Repetition Rate	20 MSa/s						
FREQUENCY CHARACTERISTICS	Waveform Length	10MHz						
	Amplitude Resolution	4k point						
		10 bit						
OUTPUT CHARACTERISTICS	Range	0.1Hz~5MHz	0.1Hz~12MHz	0.1Hz~25MHz	0.1Hz~5MHz	0.1Hz~12MHz	0.1Hz~25MHz	
	Resolution	1MHz						
	Stability	0.1 Hz						
	Aging	±20 ppm						
SINEWAVE CHARACTERISTICS	Tolerance	±1 ppm, per 1 year						
	Harmonic Distortion	< 10 mHz						
	Rise/Fall Time	≤20MHz:1mVpp~10Vpp(into 50Ω);2mVpp~20Vpp(open-circuit)						
	Overshoot	≤25MHz:1mVpp~5Vpp(into 50Ω);2mVpp~10Vpp(open-circuit)						
	Asymmetry	±1% of setting ±1 mVpp;(at 1 kHz,>10 mVpp)						
	Variable Duty Cycle	0.1 mV or 3 digits						
		±1%(0.1dB)≤100kHz;± 3%(0.3dB)≤5MHz;± 5%(0.4dB)≤12MHz						
RAMP CHARACTERISTICS	Units	±20%(2dB)≤20MHz;± 5%(0.4dB)≤25MHz;(sine wave relative to 1 kHz)						
		Vpp, Vrms, dBm						
AM MODULATION	Offset	±5 Vpk ac +dc (into 50Ω);±10Vpk ac +dc (Open circuit)						
	Accuracy	1% of setting + 2 mV+ 0.5% of amplitude						
FM MODULATION	Waveform Output Impedance Protection	50Ω typical (fixed); > 10MΩ (output disabled)						
		Short-circuit protected; Overload relay auto-matically disables main output						
FSK	SYNC Output	TTL-compatible into>1kΩ						
	Level Impedance	50Ω nominal						
SWEEP	Rise or Fall Time	≤ 25ns						
FREQUENCY COUNTER	Harmonic Distortion	-55dBc, DC~1MHz, Ampl>1Vpp; -45dBc, 1MHz~5MHz, Ampl>1Vpp; -30dBc, 5MHz~20MHz, Ampl>1Vpp						
STORE/RECALL INTERFACE	Carrier Waveforms	Sine, Square, Triangle						
	Modulating Waveforms	Sine, Square, Triangle						
POWER SOURCE	Modulating Frequency	2 mHz to 20 kHz (Int);DC to 20KHz (Ext)						
		0% to 120.0%						
POWER CONSUMPTION	Carrier Waveforms	Sine, Square, Triangle						
	Modulating Waveforms	Sine, Square, Triangle						
DIMENSIONS & WEIGHT	Modulating Frequency	2 mHz to 20 kHz (Int);DC to 20KHz (Ext)						
		DC to Max Frequency						
ACCESSORIES	Deviation	Sine, Square, Triangle						
		2 mHz to 20 kHz (Int);DC to 20KHz (Ext)						
OPTIONAL ASSESSORIES	Sweep Time	1ms~500s						
	Carrier Waveforms	Sine, Square, Triangle						
FREE DOWNLOAD	Modulating Waveforms	50% duty cycle square						
	Internal Rate	2mHz~20kHz						
PC Software Driver	Frequency Range	0.1Hz~Max Frequency						
GTL-242	Waveforms	Sine, Square, Triangle						
	Type	Linear or Logarithmic						
GTL-110	Start/Stop Frequency	0.1Hz to Max Frequency						
FreeWave software	Range	5Hz~150MHz						
	Accuracy	Time Base accuracy±1 count						
USB driver	Time base	±20ppm (23°C ± 5°C) after 30 minutes warm up						
	Resolution	The maximum resolution is:100nHz for 1Hz,0.1Hz for 100MHz						
USB driver	Input Impedance	1MΩ/150pf						
	Sensitivity	≤35mVrms(5Hz~100MHz); ≤45mVrms(100MHz~150MHz)						
FreeWave software	Range	10 Groups of Setting Memories						
	Accuracy	USB(Device)						
USB driver	Power Source	AC100 ~ 240V , 50 ~ 60Hz						
	Power Consumption	65 VA						
USB driver	Dimensions	266(W)×107(H)×293(D) mm ; Approx. 3.2 kg				266(W)×107(H)×293(D) mm ; Approx. 3.1 kg		
	Weight							

Specifications subject to change without notice. FG-2000GD1DH

ORDERING INFORMATION

AFG-2100 Series Arbitrary Waveform Function Generator
AFG-2000 Series Arbitrary Waveform Function Generator

ACCESSORIES

AFG-2100 Series - GTL-110 × 2, Instruction Manual × 1, Power cord × 1
AFG-2000 Series - GTL-110 × 1, Instruction Manual × 1, Power cord × 1

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