GWINSTEK
Made to Measure

AFG-2000/2100 Series

PRINT

Features

* 0.1Hz to 5/12/25 MHz with in 0.1Hz Resolution
* Sine, Square, Triangular, 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

Safety

CE   USB   PC Software

I Description

Arbitrary Waveform Function

Other than the high accuracy and high stability DDS Function Waveforms-Sine, Square and Triangle, the AFG-2100/2000 Series also provides the feature to generate Arbitrary Waveforms as what user wants. The 20MSa/s sampling rate, 10 bit vertical resolution and 4k point waveform memory allow user to create the needed waveform point by point through keypad entry on the front panel, or to do waveform editing on the PC and download the waveform data to the AFG-2100/2000 Series, for arbitrary waveform output. A PC software is available to facilitate the editing of complicated and irregular waveforms, which fulfill the requirements of various applications in the real life scenarios.

Adjustable Duty Cycle

The adjustable duty cycle of square waveform is a commonly used feature of a Function Generator. For a conventional Function Generator, however, the adjustable duty cycle mostly falls in a limited 20% ~ 80% range, which may not fit the demands of specific applications. The AFG-2100/2000 Series is able to provide a 1% ~ 99% variable duty cycle for its square waveform output. This feature allows the AFG-2100/2000 Series to be used as a Pulse Generator to create pulse waveform simulating a spike signal or a transient signal in most of the generic applications.
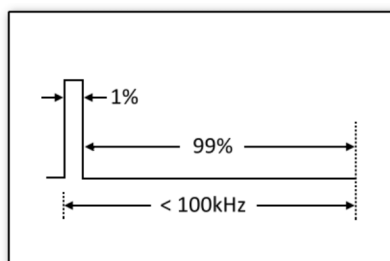

Parameter Setting

The keypad entry and/or knob selection for waveform parameter setting is a unique feature of the AFG-2100/2000 Series. The conventional analog knob, which is commonly adopted in the AFG design, is not accurate enough for precision setting of waveform parameters, and may generate noise to interfere the system operation. The keypad 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. Besides keypad entry, the AFG-2100/2000 Series also offers the knob selection convenience with a digital knob design, which allows user to see the parameter value change in detail on the 3.5" LCD screen when the adjustment is in progress.

Waveform Amplitude & DC Offset

Besides output waveform frequency, the AFG-2100/2000 Series is able to show output waveform amplitude, DC offset and other key setting information on the LCD screen simultaneously. This provides the convenience for user to know what signal is being sent out at the output terminal without the need to check the waveform through an oscilloscope. Further more, the waveform amplitude value can be shown in one of the three units, including Vpp, Vrms and dBm, depending on user's selection. This saves time for tedious math conversion among various units of waveform amplitude.
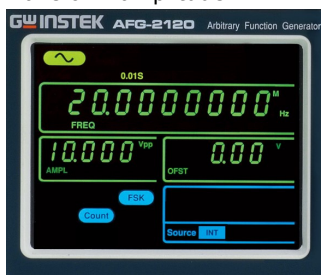
AM/FM/FSK Modulation, Sweep & Frequency Counter

All AFG-2100 models are equipped with additional AM/FM/FSK Modulation, Sweep & Frequency Counter functions. The AM/FM modulated signal provides a means for basic modulation circuit tests and experiments. Whereas, the FSK modulated signal is offered as a convenient source for the performance evaluation of digital modulation circuits. The Sweep function, with accurate frequency sweep range & sweep time, adequately fits a lot of basic applications in the market, such as sweep-tone test of the speaker in a 20Hz ~ 20kHz sweep range. The built-in frequency counter of AFG-2100 is able to measure the frequency of an external signal up to 150MHz. This add-on value saves for user an additional cost of purchasing a standalone frequency counter.

USB Interface

The AFG-2100/2000 Series provides a USB Device Interface, which allows the programming of remote control or ATE of the product. An arbitrary waveform editing software is available to facilitate the waveform creation task. After the waveform editing is completed on the PC, the waveform data can be downloaded through USB Interface to the AFG-2100/200 for arbitrary waveform output.

Arbitrary Waveform Editing PC Software

The arbitrary waveform editing software contains not only waveform drawing tools but also a wide variety of waveform editing functions. The most commonly used waveforms, including Rayleigh, Gaussian, Normal Noise, Pseudo Ternary, Bipolar AMI, Manchester, Differential Manchester, RS-232, and NRZ etc., are available in the library for user to tailor specific waveforms as needed. Besides, this software can import CSV format file as waveform data which is created by the other tools. The editing software will stretch AFG-2100/2000 to more applications.

I Specification

Models	AFG-2000 series			AFG-2100 Series		
	2005	2012	2025	2105	2112	2125
Waveforms						

Power Consumption	25 VA
Operating Environment	Temperature to satisfy the specification：18 ~ 28◦C Operating temperature：0 ~ 40◦C Relative Humidity: ≤ 80%, 0 ~ 40°C ≤ 70%, 35 ~ 40°C Installation category：CAT Ⅱ
Operating Altitude	2000 meters
Storage Temperature	-10 ~ 70◦C, Humidity: ≤70%
Dimensions (WxHxD)	266(W)×107(H)×293(D) mm
Weight	Approx. 2.5 kg
Accessories	CD (user manual + software) ×1 , Quick Start Guide x1, Power cord×1

GTL-101× 1	GTL-101× 2

❙ Accessories

User manual CD x 1
Quick Start Guide x 1
Power Cord x 1
GTL-110 test lead x 1 (AFG-2000 series)
GTL-110 test lead x 2 (AFG-2100 series)

❙ Ordering Information

AFG-2005, 5MHz Arbitrary DDS Function Generator
AFG-2105, 5MHz Arbitrary DDS Function Generator with Counter, Sweep, AM, FM and FSK Modulation
AFG-2012, 12MHz Arbitrary DDS Function Generator
AFG-2112, 12MHz Arbitrary DDS Function Generator with Counter, Sweep, AM, FM and FSK Modulation
AFG-2025, 25MHz Arbitrary DDS Function Generator
AFG-2125, 25MHz Arbitrary DDS Function Generator with Counter, Sweep, AM, FM and FSK Modulation

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