

# RIGOL

## Selection Guide

# DG900 Series Function/Arbitrary Waveform Generator

This manual is used to help users to quickly get familiar with the main features and key specifications of each model of DG900 series so as to select the desired model and options according to the actual need.

For the detailed specifications, please refer to *DG900 Series Data Sheet*; for an overview of the products, please refer to *DG900 Series Quick Guide*.



**RIGOL (SUZHOU) TECHNOLOGIES INC.**

# DG900 Series Overview

As a multi-functional signal generator, DG900 series function/arbitrary waveform generator integrates many instruments into 1, such as function generator, arbitrary waveform generator, noise generator, pulse generator, harmonic generator, analog/digital modulator, and frequency counter. As a multi-functional and portable instrument, it offers you a new choice in education, R&D, production, measurement, and other industries with its user-friendly touch screen and high performance at an unprecedented price point.

## Main Features

- Unique SiFi II (Signal Fidelity II) technology: generate the arbitrary waveforms point by point; recover the signal without distortion; sample rate accurate and adjustable; jitter of all the output waveforms (including Sine, Pulse, etc.) as low as 200 ps
- 16 Mpts memory depth per channel for arbitrary waveforms
- Standard dual-channel with the same performance, equivalent to two independent signal sources
- High frequency stability:  $\pm 1$  ppm; low phase noise: -105 dBc/Hz
- Built-in high-order harmonic generator (at most 8-order harmonics)
- Built-in 7 digits/s, 240 MHz bandwidth full featured frequency counter
- Up to 160 built-in arbitrary waveforms, covering the common signals in engineering application, medical electronics, auto electronics, math processing, and other various fields
- Sample rate up to 250 MSa/s, vertical resolution 16 bits
- Arbitrary waveform sequence editing function available; arbitrary waveforms also can be generated through the PC software
- Various analog and digital modulation functions: AM, FM, PM, ASK, FSK, PSK, and PWM.
- Standard waveform combine function, capable of outputting specified waveforms combined with the basic waveforms
- Standard channel tracking function, when enabled, all the parameters of both channels are updated based on users' configurations
- USB HOST&DEVICE interface (standard); USB-GPIB function supported
- 4.3" TFT color touch screen
- RS232, PRBS, and Dualtone outputs supported

## Selecting Procedures

You can select the desired model of signal generator and options according to the actual need. The procedures are as follows.

### 1. Select the proper model

Model	DG952	DG972	DG992
Channel	2	2	2
Max. Frequency	50 MHz	70 MHz	100 MHz
Sample Rate	250 MSa/s		
<b>Waveform</b>			
Basic Waveforms	Sine, Square, Ramp, Pulse, Noise, DC, Dual-tone		
Advanced Waveforms	PRBS, RS232, Sequence		
Built-in Arbitrary Waveforms	160 types of waveforms, including Sinc, Exponential Rise, Exponential Fall, ECG, Gauss, HaverSine, Lorentz, etc.		
<b>Frequency Characteristics</b>			
Sine	1 $\mu$ Hz to 50 MHz	1 $\mu$ Hz to 70 MHz	1 $\mu$ Hz to 100 MHz
Square	1 $\mu$ Hz to 15 MHz	1 $\mu$ Hz to 20 MHz	1 $\mu$ Hz to 25 MHz

Ramp	1 $\mu$ Hz to 1.5 MHz	1 $\mu$ Hz to 1.5 MHz	1 $\mu$ Hz to 2 MHz
Pulse	1 $\mu$ Hz to 15 MHz	1 $\mu$ Hz to 20 MHz	1 $\mu$ Hz to 25 MHz
Harmonic	1 $\mu$ Hz to 20 MHz	1 $\mu$ Hz to 20 MHz	1 $\mu$ Hz to 25 MHz
PRBS	2 kbps to 40 Mbps	2 kbps to 50 Mbps	2 kbps to 60 Mbps
Dual-tone	1 $\mu$ Hz to 20 MHz	1 $\mu$ Hz to 20 MHz	1 $\mu$ Hz to 20 MHz
RS232	baud rate range: 9600, 14400, 19200, 38400, 57600, 115200, 128000, 230400		
Sequence	2 k to 60 MSa/s		
Noise (-3 dB)	100 MHz bandwidth		
Arbitrary Waveform	1 $\mu$ Hz to 15 MHz	1 $\mu$ Hz to 20 MHz	1 $\mu$ Hz to 20 MHz
Resolution	1 $\mu$ Hz		
Accuracy	$\pm$ (1 ppm of the setting value + 10 pHz), 18°C to 28°C		

## 2. Select and order the options

### DG992/DG972/DG952

For these models, you can select and order the following option according to your need.

Option	Function Description	Order NO.
USB-GPIB Interface Converter	You can extend a GPIB interface via the USB HOST interface on the rear panel of the instrument using this module. Then, connect the instrument to the PC using a GPIB cable to realize the communication between the instrument and PC via the GPIB interface.	USB-GPIB
40 dB Attenuator	Connect the attenuator to the signal output connector to adjust the output signal voltage.	RA5040K

For the detailed information of the optional accessories, please refer to the corresponding specific manual (you can download the manual from **RIGOL** official website ([www.rigol.com](http://www.rigol.com))).

## Ordering Information

	Description	Order No.
<b>Model</b>	DG952 (50MHz, Dual-channel)	DG952
	DG972 (70MHz, Dual-channel)	DG972
	DG992 (100MHz, Dual-channel)	DG992
<b>Standard Accessories</b>	1 Power Cord conforming to the standard of the destination country	-
	1 USB Cable	CB-USBA-USBB-FF-150
	1 BNC Cable	CB-BNC-BNC-MM-100
	1 Quick Guide	-
	1 Product Warranty Card	-
<b>Optional Accessories</b>	40 dB Attenuator	RA5040K
	USB-GPIB Interface Converter	USB-GPIB-L