

## SAG1000 Series Arbitrary Function Generator Datasheet



Saluki Technology Inc.

The document applies to the arbitrary function generator of the following models:

Model	Digital Channel	Memory Depth	Bandwidth	Sampling Rate
SAG1002	2CH	64M	5MHz	250MSa/S
SAG1012	2CH	64M	10MHz	250MSa/S
SAG1022	2CH	64M	20MHz	250MSa/S
SAG1032	2CH	64M	30MHz	250MSa/S
SAG1062	2CH	64M	60MHz	250MSa/S
SAG1082	2CH	64M	80MHz	250MSa/S
SAG1102	2CH	64M	100MHz	250MSa/S

Standard accessories of SAG1000 arbitrary function generator

Item	Name	Qty
1	Main Machine	1 Set
2	Power Cord	1 pcs
3	Test cable	2 pcs
4	CD or U disk	1 pcs
5	PC software ( in U disk/ CD)	1 copy

## Preface

Thanks for choosing SAG1000 arbitrary function generator produced by Saluki Technology Inc.

## Document No.

SAG1000-02-01

## Version

Rev02 2017.04 Saluki Technology

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Research, development, manufacturing and testing of the product comply with the requirements of the quality and environmental management system.

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## 1 Overview

SAG1000 function/arbitrary waveform generator is a powerful arbitrary waveform generator with full functions. PC software is provided freely for user to easy operate and data management. SAG 1000 has different bandwidth models for variety applications.

### Key features

- 2CH analog channels, 16CH digital channels, 250MSa/s
- 5MHz – 100MHz maximum sine output frequency
- 16 channel digital output, together with the analog channel can rebuild the more mixed signals in daily practice
- Max 64M arbitrary waveform memory depth, 80M frequency counter
- Support AM, FM, PM, ASK, ASK, PSK and PWM modulations

## 2 Specification

### 2.1 Arbitrary Function Generator Main Feature

	SAG1002	SAG1012	SAG1022	SAG1032	SAG1062	SAG1082	SAG1102
Channel	2	2	2	2	2	2	2
Waveform Length	64M	64M	64M	64M	64M	64M	64M
Frequency	1uHz - 100MHz	1uHz - 80MHz	1uHz - 60MHz	1uHz - 30MHz	1uHz - 20MHz	1uHz - 10MHz	1uHz - 5MHz
Sample Rate	250MSa/s						
Voltage Resolution	16bit						
Digital Output Mode	16Channels						

## 2.3 Frequency Characteristics

	SAG1002	SAG1012	SAG1022	SAG1032	SAG1062	SAG1082	SAG1102
Waveform	Sine, Square, Ramp, Pulse, Noise, Sinc, Exponential Fall, ECG, Gauss, Haver Sine, Lorentz, Dual-Tone, DC						
Sine	1uHz - Max.						
Square	1uHz - 40MHz	1uHz - 35MHz	1uHz - 30MHz	1uHz - 30MHz	1uHz - 20MHz	1uHz - 10MHz	1uHz - 5MHz
Pulse	1uHz - 15MHz	1uHz - 15MHz	1uHz - 15MHz	1uHz - 15MHz	1uHz - 15MHz	1uHz - 10MHz	1uHz - 5MHz
Ramp	1uHz - 4MHz	1uHz - 4MHz	1uHz - 4MHz	1uHz - 3MHz	1uHz - 3MHz	1uHz - 3MHz	1uHz - 3MHz
White Noise	100MHz	60MHz	60MHz	30MHz	20MHz	10MHz	5MHz
Harmonic/Arbitrary	1uHz - 15MHz	1uHz - 15MHz	1uHz - 15MHz	1uHz - 15MHz	1uHz - 15MHz	1uHz - 10MHz	1uHz - 5MHz
Resolution	1uHz						
Accuracy	±2ppm, 18°C - 28°C						

## 2.4 Waveform Details

### 2.4.1 Square

	SAG1002	SAG1012	SAG1022	SAG1032	SAG1062	SAG1082	SAG1102
Rise / Fall Time (Typ.)	<10ns	<11ns	<12ns	<14ns	<16ns	<18ns	<18ns
Overshoot (Typ.)	<3% (100kHz 1Vpp)						
Duty Cycle	≤10MHz: 20% - 80%; 10MHz - 40MHz: 40% - 60% >40MHz: 50% (fixed)						
Non-symmetry	1% of period + 5ns						

### 2.4.2 Ramp

	SAG1002	SAG1012	SAG1022	SAG1032	SAG1062	SAG1082	SAG1102
Linearity	≤1% Typical, 1kHz, 1VPP, 100% symmetry						
Symmetry	0% - 100%						

## 2.4.4 Pulse

	SAG1002	SAG1012	SAG1022	SAG1032	SAG1062	SAG1082	SAG1102
Period	33ns - 1Ms	40ns - 1Ms	40ns - 1Ms	50ns - 1Ms	50ns - 1Ms	100ns - 1Ms	200ns - 1Ms
Pulse Width	≥16ns	≥16ns	≥16ns	≥16ns	≥16ns	≥16ns	≥16ns
Leading/Trailing Edge Time	≥12ns	≥12ns	≥12ns	≥12ns	≥12ns	≥12ns	≥12ns
Overshoot	Typical (1Vpp) <3%						

## 2.5 Amplitude

	SAG1002	SAG1012	SAG1022	SAG1032	SAG1062	SAG1082	SAG1102
Amplitude Range	≤20MHz:2mVpp - 20Vpp; ≤60MHz:2mVpp -15Vpp; ≤80MHz:2mVpp -10Vpp; ≤90MHz:2mVpp - 5Vpp; ≤100MHz:2mVpp - 2Vpp						
Accuracy	Typical ( 1kHz Sine, 0V deviation, >10mVpp, Auto), ±1% of setting ±2mVpp						
Resolution	1mv or 4 digits						
Isolation	< -80dB						
Impedance	50Ω(Typical)						

## 2.6 Modulation

SAG1000 series arbitrary waveform generator supports AM, FM, PM, 2ASK, 2FSK, 2PSK and PWM

### 2.6.1 AM/FM/PM

	SAG1002	SAG1012	SAG1022	SAG1032	SAG1062	SAG1082	SAG1102
Carrier Waveforms	Sine, Square, Ramp, Arb. (except DC)						
Source	Internal/External						
Modulating Waveforms	Sine, Square, Ramp, Noise, Arb						
Frequency	1Hz - 500KHz						
Depth	0% -- 120%						



## 2.6.2 2ASK/2FSM/2PSK/PWM

	SAG1002	SAG1012	SAG1022	SAG1032	SAG1062	SAG1082	SAG1102
Carrier Waveforms	Sine, Square, Ramp, Arb. (except DC)						
Source	Internal/External						
Modulating Waveforms	Square of 50% duty cycle(PWM:Sine, Square, Ramp, Noise, Arb.)						
Frequency	1Hz - 500KHz						

## 2.7 Burst Characteristic

	SAG1002	SAG1012	SAG1022	SAG1032	SAG1062	SAG1082	SAG1102
Burst Count	2M						
Gated Source	External Trigger						
Tigger Source	Internal, External or Manual						

## 2.8 Sweep Characteristic

	SAG1002	SAG1012	SAG1022	SAG1032	SAG1062	SAG1082	SAG1102
Direction	Up						
Type	Linear						
Sweep/Hold/Return Time	280000s						
Trigger Source	Internal, External, Manual						
Mark	Falling edge of Sync signal (programmable)						

## 2.9 General

Display	7" 64k Color TFT Display, 800*480 resoluton
Weight	3Kg

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