S1131 Signal Generator

Datasheet

Saluki Technology Inc.

The document applies to the instruments of the following models:

- S1131 signal generator (9kHz - 3GHz).

Standard Accessories of S1131 Signal Generator :

Item	Name	Qty
1	Main Machine	1 Set
2	Power Cord	1 pcs
3	CD	1 pcs

Options of S1131 Signal Generator :

Option No.	Item
S1131-01	Internal Baseband Data Generation Option
S1131-02	RF Upconversion Device
S1131-03	Analog External Audio Modulation
S1131-04	High Stability Time Base Option
S1131-05	Power Meter Control Kit
S1131-06	Directional Antenna (600MHz - 8GHz)
S1131-07	Omnidirectional Antenna (300MHz - 7.5GHz)

Preface

Thanks for choosing Saluki Technology Inc instrument. We devote ourselves to meeting your demands, providing you high-quality measuring instrument and the best after-sales service. We persist with “superior quality and considerate service”, and are committed to offering satisfactory products and service for our clients.

Document No.

S1131-02-01

Version

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Saluki Technology

Authorization

The information contained in this datasheet is subject to change without notice. The power to interpret the contents of and terms used in this document rests with Saluki.

Product Quality Assurance

The warranty period of the product is 18 months from the date of delivery. The instrument manufacturer will repair or replace damaged parts according to the actual situation within the warranty period. The user should return the product to the manufacturer and prepay mailing costs. The manufacturer will return the product and such costs to the user after maintenance.

Contacts

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Content

1. Overview

S1131 is a high-performance RF signal generator. It provides multiple functions such as CW signal generate, analog modulation, digital modulation, pulse modulation, frequency/amplitude sweep, step/list sweep etc. S1131 also provides flexible interfaces and support SCPI for easy remote control. S1131 is perfect suitable for education, RF component manufacture and maintenance.

Key Features

- Frequency range: 9kHz - 3.0GHz
- Typical output power: -120dBm to +10dBm
- Multi sweep mode, Step sweep, list sweep, frequency sweep and power sweep
- Standard low frequency output function, sine, square, triangle and saw tooth wave forms are supported
- Standard analog modulation functions, AM, FM, PM and Pulse modulation, minimum pulse width is 100ns
- Standard digital modulation functions, 2ASK, 2,4,8FSK, 2,4,8PSK supported
- Support linear frequency modulation, can simulate radar signals
- Standard IF input port
- USB/ LAN remote control interface, SCPI supported.

2. Specification Details

2. 1. Frequency

Frequency		
Frequency Range	9kHz - 3GHz	
Frequency Resolution	0.23Hz	
Reference Frequency	10MHz	
Aging Rate (Typ.)	1ppm/year	
Temperature Stability (Typ.)	±0.5ppm	Option 04: ±5ppb
Internal Reference Output	10MHz, +2dBm (typ.)	
Sweep Modes	Step Sweep / List Sweep	
Sweep Type	Sweep / Amplitude / Sweep+Amplitude	
Sweep Point	Step Sweep: 2 - 65535 List Sweep: 2 - 16383	
Trigger Mode	Free, External	
Dwell Time	20ms – 50s	

2. 2. Amplitude

Amplitude	
Output Power Range	-120dBm to +10dBm
Power Accuracy	±0.1dB (typ.)
Output Power Resolution	0.1dB
VSWR	<1.8
ALC Settings	
ALC Dynamic Range	50dB (typ.)
Dwell time (ALC ON)	≤5ms
Max. Reverse Power	1W

2. 3. Signal Purity

Spectral Purity Specifications			
SSB Phase Noise (dBc/Hz)	Carrier Frequency Offset	10kHz	100kHz
	f = 300MHz	-105dBc/Hz	-115dBc/Hz
	f = 1GHz	-93dBc/Hz	-105dBc/Hz
Harmonic	<-30dBc (typ.)		
Non-Harmonic	<-50dBc (typ.)		

2. 4. Analogue Modulation Specifications

Modulation Specification			
Internal Modulation Signal Generator (LF)	Waveform	Sine, square, triangle, sawtooth	
	Frequency Range	Sine wave:	0.1Hz – 500kHz
		Square	0.1Hz - 20kHz
		triangle, sawtooth	0.1Hz - 100kHz
	Frequency Resolution		0.01Hz
	Output level Range		200mVp-p to 2.0Vp-p
	Output level Resolution		1mV
Pulse Modulation	Break-make Ratio		≥70dB
	Pulse modulation rise/fall time		100ns (typ.)
	Pulse Cycle Range		200ns - 160s
	Resolution		100ns
	Pulse width		100ns -85s
Amplitude Modulation	Modulation Depth		0 - 100%
	Modulation Rate		20Hz – 1MHz
Phase Modulation	Modulation Phase		0 - 360
	Modulation Rate		20Hz – 1MHz
Frequency Modulation	Frequency Offset		5MHz (max.)
	Modulation Rate		20Hz – 1MHz

2. 5. IF Frequency Upper Conversion Settings

Frequency Upper Conversion	
Input IF frequency range	25MHz – 300MHz
Input IF power range	-50dBm - 0dBm
Output frequency range	301MHz – 3GHz
Output power range	-120dBm - +10dBm

2. 6. Digital Modulation

Digital Modulation	
Modulation Source	Internal and external
Internal Source	ASK/2FSK/4FSK/8FSK/2PSK/4PSK/8PSK
External Source	Modulation sequence
Modulation Rate	1Hz – 1MHz

2. 7. Interfaces

Interface	
RF Output Interface	N type 50ohm (Front Panel)
LF Output	BNC 50ohm (Front Panel)
IF Input	BNC 50ohm (Front Panel)
USB	USB B 2.0 B type (Front Panel)
External Ref In/Out	BNC 50ohm (Rear Panel)
External Pulse Input	BNC 50ohm (Rear Panel)
External Trigger Input	BNC 50ohm (Rear Panel)
LAN	10/100 Base T (Rear Panel)
USB	USB A type (Rear Panel)
RS232	9-PIN D-SUB Male (Rear Panel)

2. 8. General

General	
Dimension (W x D x H)	340mm× 230mm×110mm
Weight	Approx. 5Kg
Operating Temp.	0℃- +45℃
Storage Temp.	-20℃ - +70℃
Power Supply	110 - 240V 50/60Hz

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