

S1133A/B/C Microwave Signal Generator



- 4.3-inch display
- High Performance
- Multi-Interface
- Large Dynamic Range
- Multi-Modulation
- Simple and convenient

Introduction

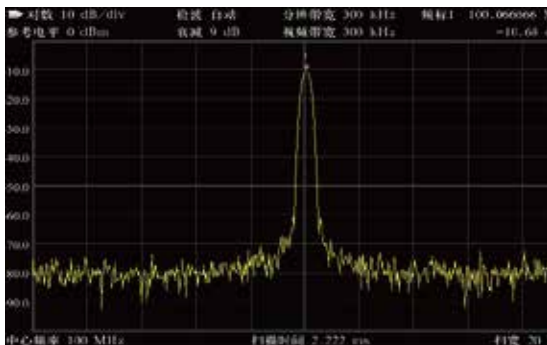
Microwave signal generator are mainly used in the electronic communication industry and microwave electronic measurement field,with a frequency coverage of up to 20GHz.They have various important analog modulation (AM/FM/ Φ M),pulse modulation,universal digital modulation functions (ASK/F SK/PSK),and customizable dedicated modulation methods,In addition,amplitude frequency scanning,linear frequency modulation,low-frequency output,and up-conversion functions have been integrated into the instrument,making it a flexible and versatile instrument suitable for various application scenarios such as teaching and research,product development,production and maintenance.The complete standard SCPI command set and universal USB and LAN interfaces provide great convenience for remote control and secondary development.Featuring a bilingual menu in both Chinese and English,the operation is simple,convenient,and easy to use.

Features

- ▶ Frequency range up to 20GHz
- ▶ Output amplitude range: -120dBm to +10dBm
- ▶ Standard analog modulation: AM/FM/ Φ M
- ▶ General digital modulation: ASK/FSK/PSK/QAM,built-in IQ modulator (Model-B)
- ▶ Pulse modulation
- ▶ Dimensions (WxHxD) : 385mmx 103mm x 410mm (excluding handle)
- ▶ Weight \leq 7.0kg

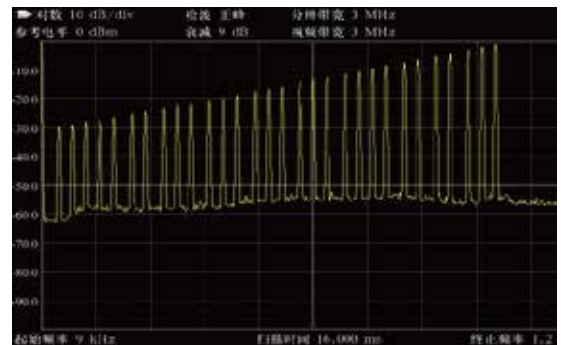
Applications

Pure Continuous Wave



- √.Outputting signals at various frequencies and amplitudes
- √.Output dynamic range of up to 130 dBm

Step Sweep Signal



- √.The signal generator is capable of generating sweep signals with equal steps,including three sweep modes:frequency sweep,amplitude sweep,and frequency+amplitude sweep;
- √.Sweep type:Step sweep,List sweep

Analog Modulation



√.AM/FM/ΦM

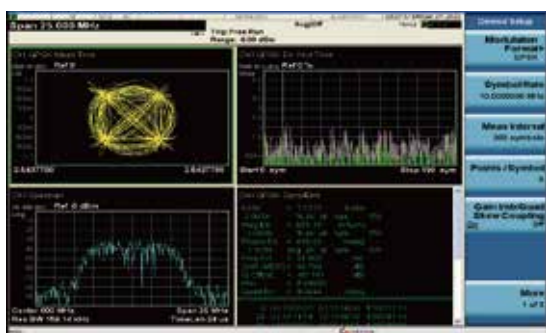
√.Customizable modulation(SSB/DSB/CW)

Low Frequency Output



low-frequency output:sine waves,square waves,triangular waves, and sawtooth waves

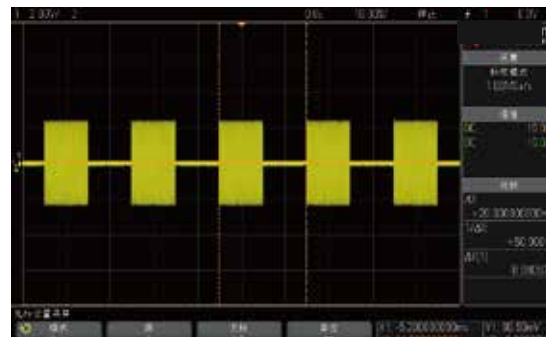
Digital Modulation



√.ASK/FSK/PSK/QAM

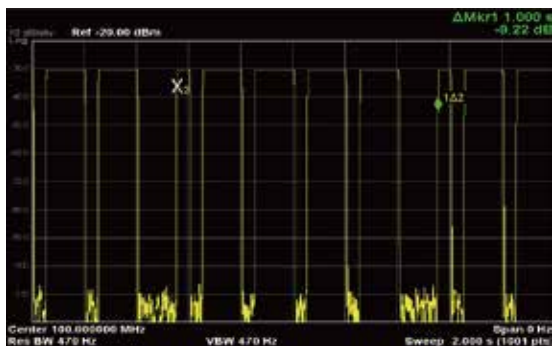
√.IQ modulator(S1133C)

Pulse Modulation



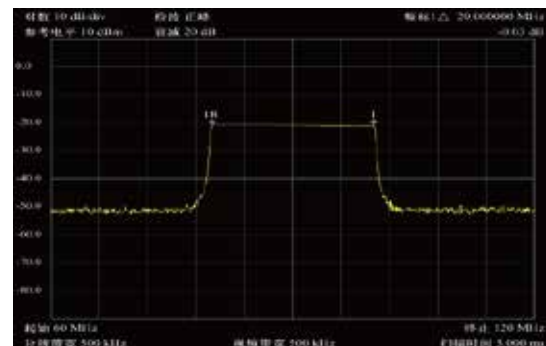
Pulse modulation ,supporting Internal/External pulse modulation input,External trigger input.

CW Modulation



Provide users with CW modulation function, including long code and short code messages,with a message rate of 20 code/min to 260 code/min.

Linear Frequency Modulation



√.Linear frequency modulation can simultaneously retain the characteristics of continuous signals and pulses.



Specifications

Model		S1133A	S1133B	S1133C
Frequency				
Frequency range		100kHz to 15.0GHz	9kHz to 20.0GHz	9kHz to 20.0GHz
Frequency resolution		0.01Hz	0.01Hz	0.23Hz
Reference				
Reference frequency		10MHz		
Temperature stability		±1ppm (Option : ±100ppb)		
Internal reference output	Typical	10MHz, ≥+2dBm		
Spectrum Purity				
Harmonics	Typical	≤-30dBc		≤-30dBc
Nonharmonics	Typical	≤-60dBc		≤-50dBc
SSB phase noise	f=1GHz	≤-115dBc/Hz@10kHz		≤-95dBc/Hz@10kHz
Amplitude				
Setting range		-120dBm to +10dBm		
Accuracy	ALC ON	-90dBm to +10dBm ≤1.0dB		-110dBm to +10dBm ≤1.5dB
		-110dBm to -90dBm ≤1.5dB		/
		-120dBm to -110dBm ≤2.0dB		-120dBm to -110dBm ≤2.0dB
Sweep Mode(Frequency And Amplitude)				
Sweep mode		Frequency, Amplitude, Frequency+Amplitude		
Sweep type		Step sweep, List sweep		
Sweep method		Single, Continuous		
Sweep range		Full frequency and amplitude range		
Step Change		Linear Change		
Number of points	Step sweep	2 to 65535		
	List sweep	2 to 16383		
Dwell time		10ms to 50s (S1133C:20ms to 50s)		
Trigger mode		Auto, External trigger.Key		
LF Output				
Wave form		Sine wave, Square wave, Triangle wave, Sawtooth wave		
Frequency range	Sine wave	1Hz to 500kHz		
	Triangle wave/ Sawtooth wave	1Hz to 100kHz/1Hz to 100kHz (S1133C Support)		
	Square wave	1Hz to 20kHz		
Modulation				
Analog modulation (AM/FM/ΦM)				
		S1133A/S1133B	S1133C	
AM	Modulation depth	0% to 90%		0% to 100%
	Modulation frequency response	10Hz to 20kHz		1Hz to 1MHz
FM	Maximum deviation	N ¹ × 64MHz (Nominal value)		5MHz
	Modulation frequency response	10Hz to 200kHz		1Hz to 1MHz
ΦM	Maximum phase deviation	N × 6rad (Nominal value)		0° to 360°
	Modulation frequency response	10Hz to 200kHz		1Hz to 1MHz
Digital modulation				
IQ modulator		/		Support
Internal source		/		Support general digital modulation(Option)
External source		/		Arb file (IQ data), Sample rate:1ksps to 50Msps
Pulse modulation				
On/Off ratio		≥ 70dB		
Pulse period		400ns to 160s	200ns to 160s	
Pulse width		200ns to 85s	100ns to 85s	

Linear Frequency Modulation (S1133C:Option)		
Sweep range	Maximum range	20MHz
Sweep time		1μs to 2s
RF up-conversion (S1133C:Option)		
Input IF range		200MHz±10MHz
Output frequency range		61MHz to 20GHz
Connectors		
RFoutput		N-type, 50Ω
LF output		BNC, 50Ω
Functional connectors	Connectors name	External IF input, PulseIN, Trigger IN, Ext MOD, 10M REF IN, 10M REF OUT, Trigger OUT, Pulse OUT, Sweep OUT
	Connectors type	BNC
USB		USB2.0
LAN		10/100 Base-T
RS232		DB9
General data		
Operating temperature	Typical	-10°C to +50 °C
Storage temperature		-40°C to +70 °C
Power Supply	AC	110V to 240V 50/60Hz
Dimensions (W×H×D)		385mm×103mm×410mm
Weight		≤7.0kg

N represents the factor that helps define the indicator, with a Maximum value of 1 and a Minimum of 1/128.

Order Information

Product	Description	Order Number	
Host	Microwave signal generator	S1133A, S1133B, S1133C	
Accessories	CD-ROM(User manual,Programming manual)		
	Power cable		
Options	S1133A/ S1133B	Pulse modulation	PU
		Pulse traingenerator	PT
	S1133C	Baseband generator	BBG
		RFup-conversion	RFUC
		Linear frequency modulation	LFM
		Amplitude modulation option(SSB/DSB/CW)	AMK
		High stable OCXO reference clock	OCXO ^①
	110dB Step Attenuator	SAT	
	Power meter controller(UP60)	PMC	
Rack mount kit	RMK		

① This option can only be assembled,calibrated,and debugged at the manufacturer' s location.