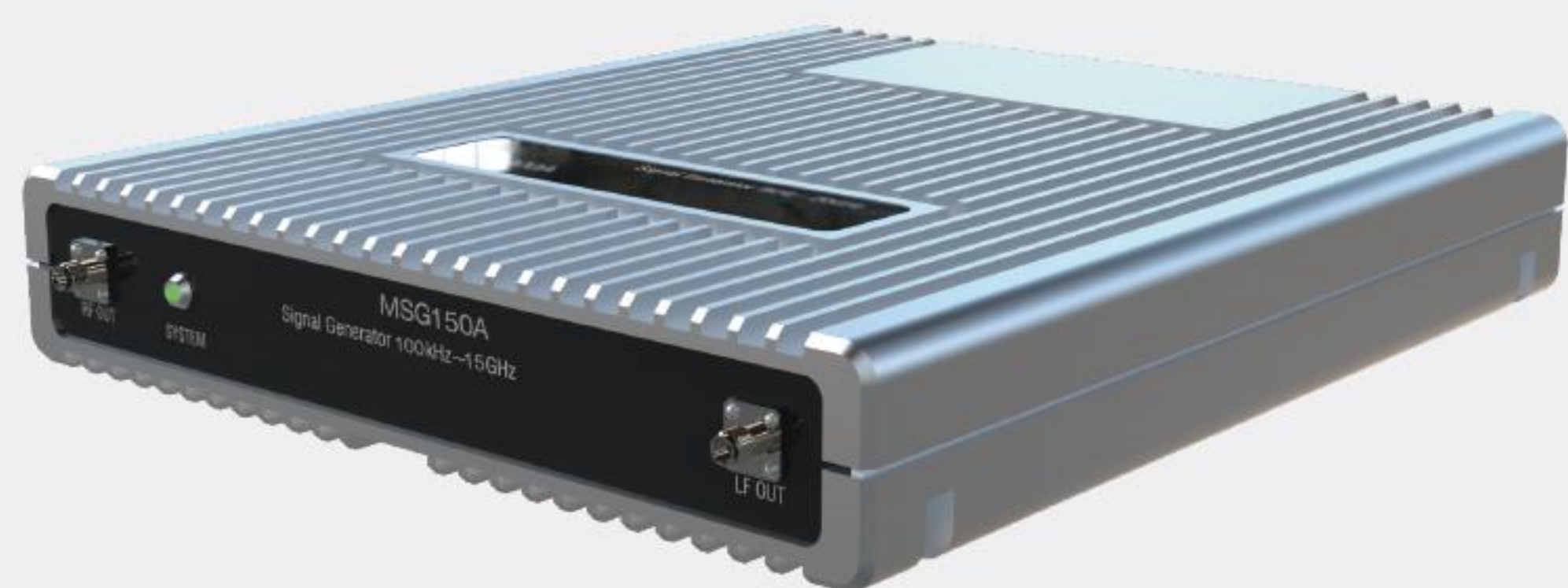


# MSG200 Modular Microwave Signal Generator



» High Performance »

» Compact Design »

» Multi-Modulation »

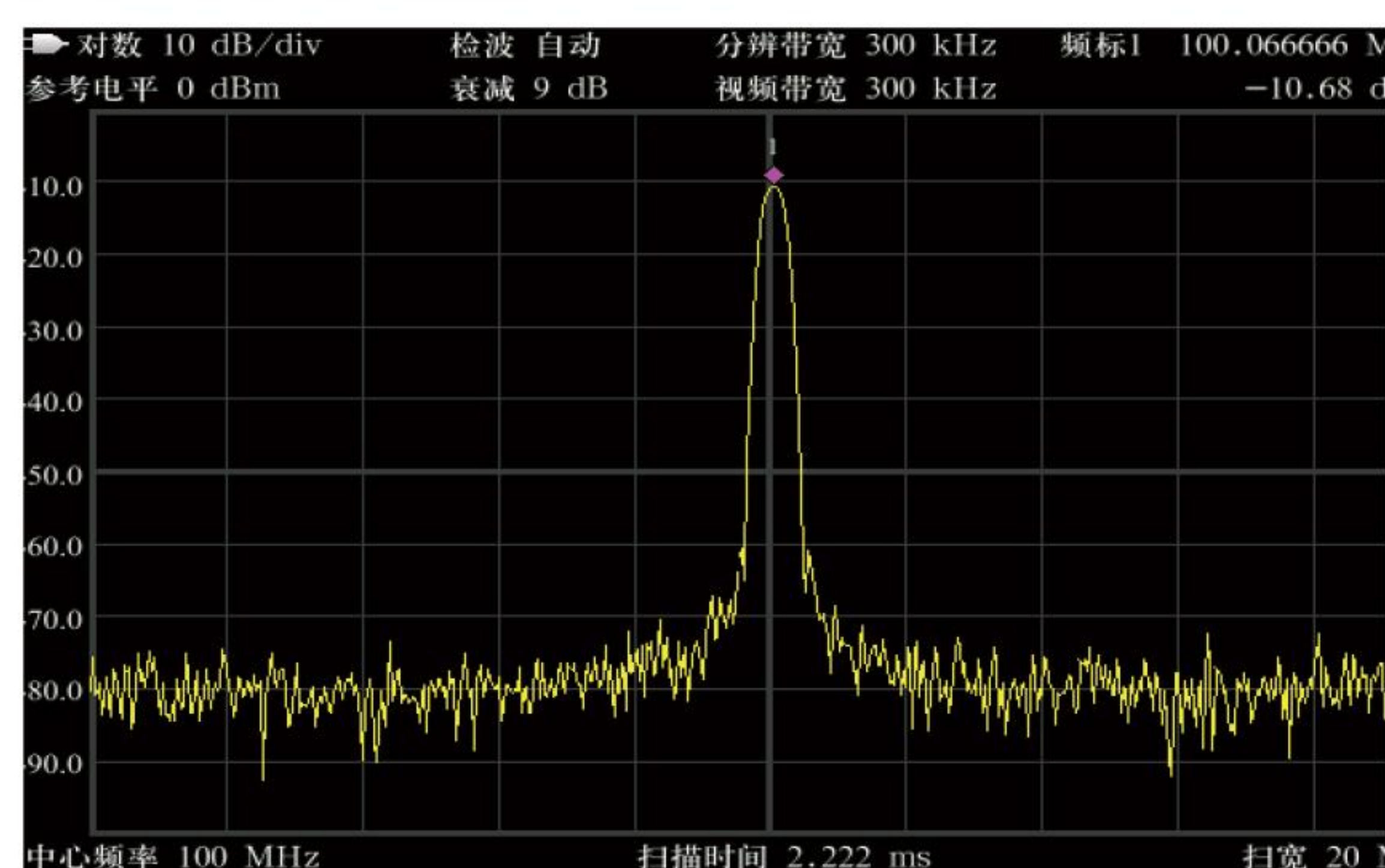
» System Integration »

## Features

- ▶ Frequency range up to 20GHz
- ▶ Output amplitude range:-120dB m ~+10dBm
- ▶ Pure Continuous Wave output, typical phase noise  $\leq -115\text{dBc/Hz}@10\text{KHz}$
- ▶ Sweep modes: frequency sweep, amplitude sweep, and frequency + amplitude sweep
- ▶ Standard analog modulation: AM/FM/ $\Phi$ M
- ▶ Pulse modulation with an on-off ratio of up to 70dB
- ▶ Low-frequency output: sine waves, square waves, triangular waves
- ▶ LAN remote control interface, offering a standard SCPI command set
- ▶ Low power consumption, lightweight design, and compact size
- ▶ suitable for system integration

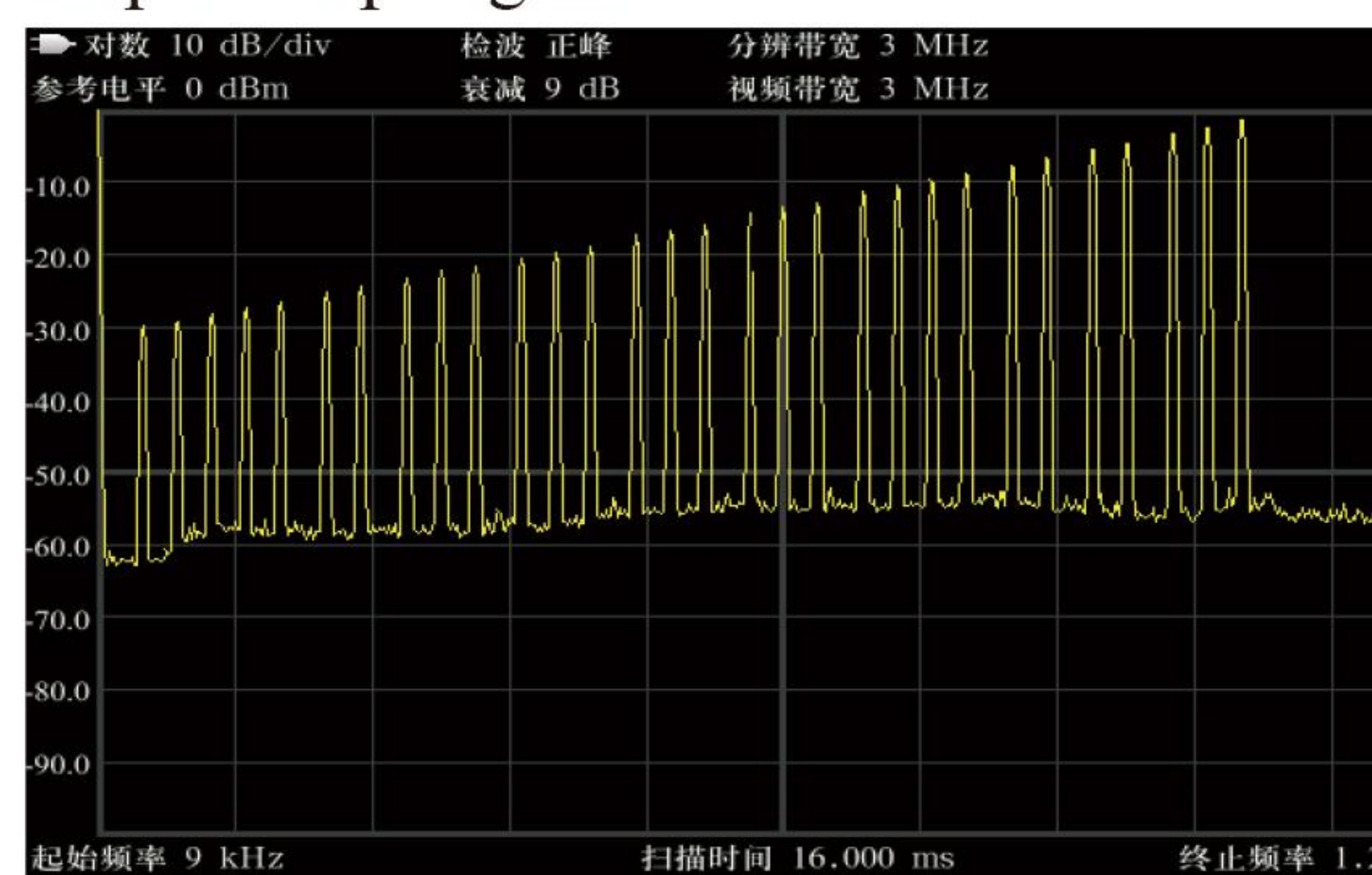
## Applications

### Pure Continuous Wave



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

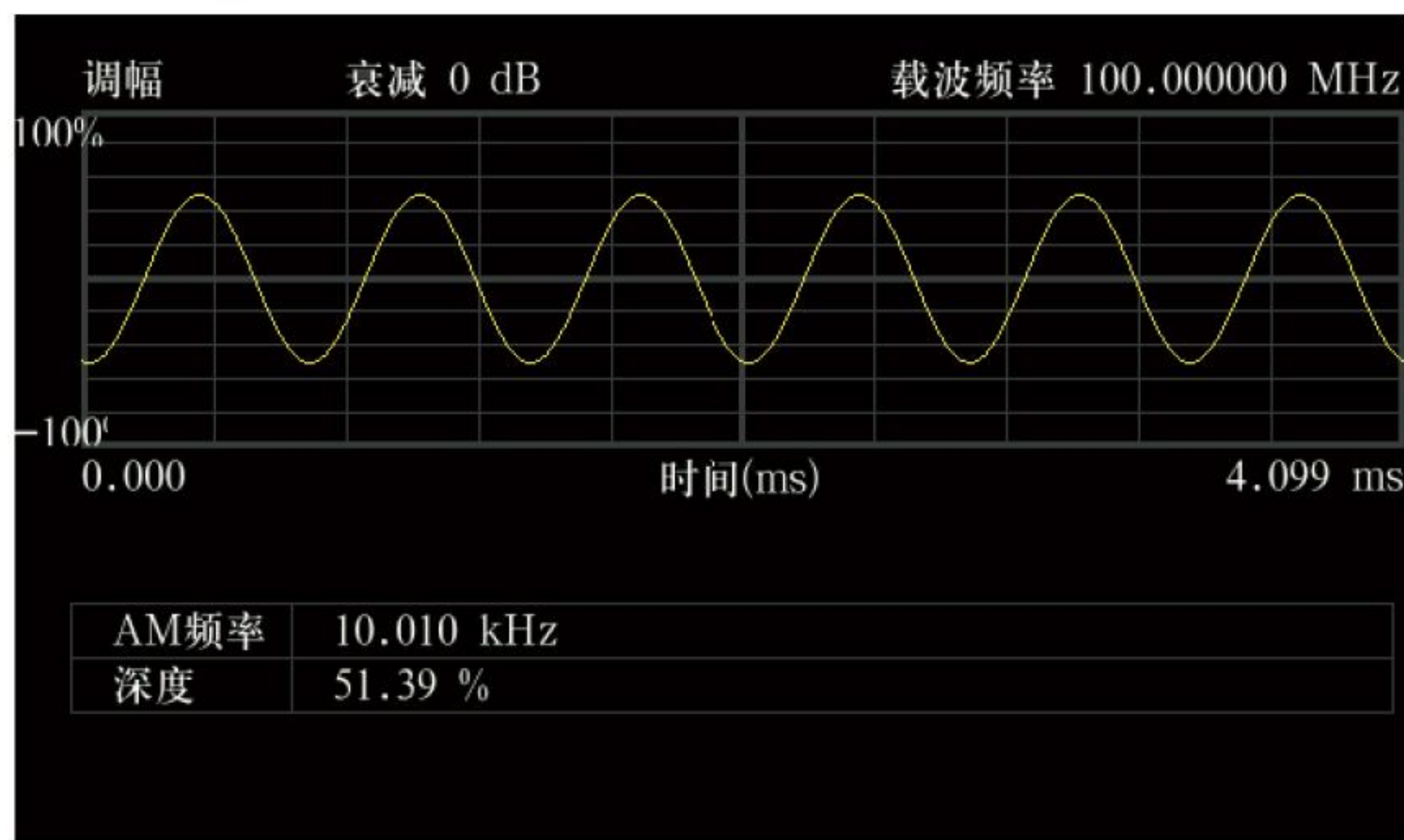
### Step Sweep Signal



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

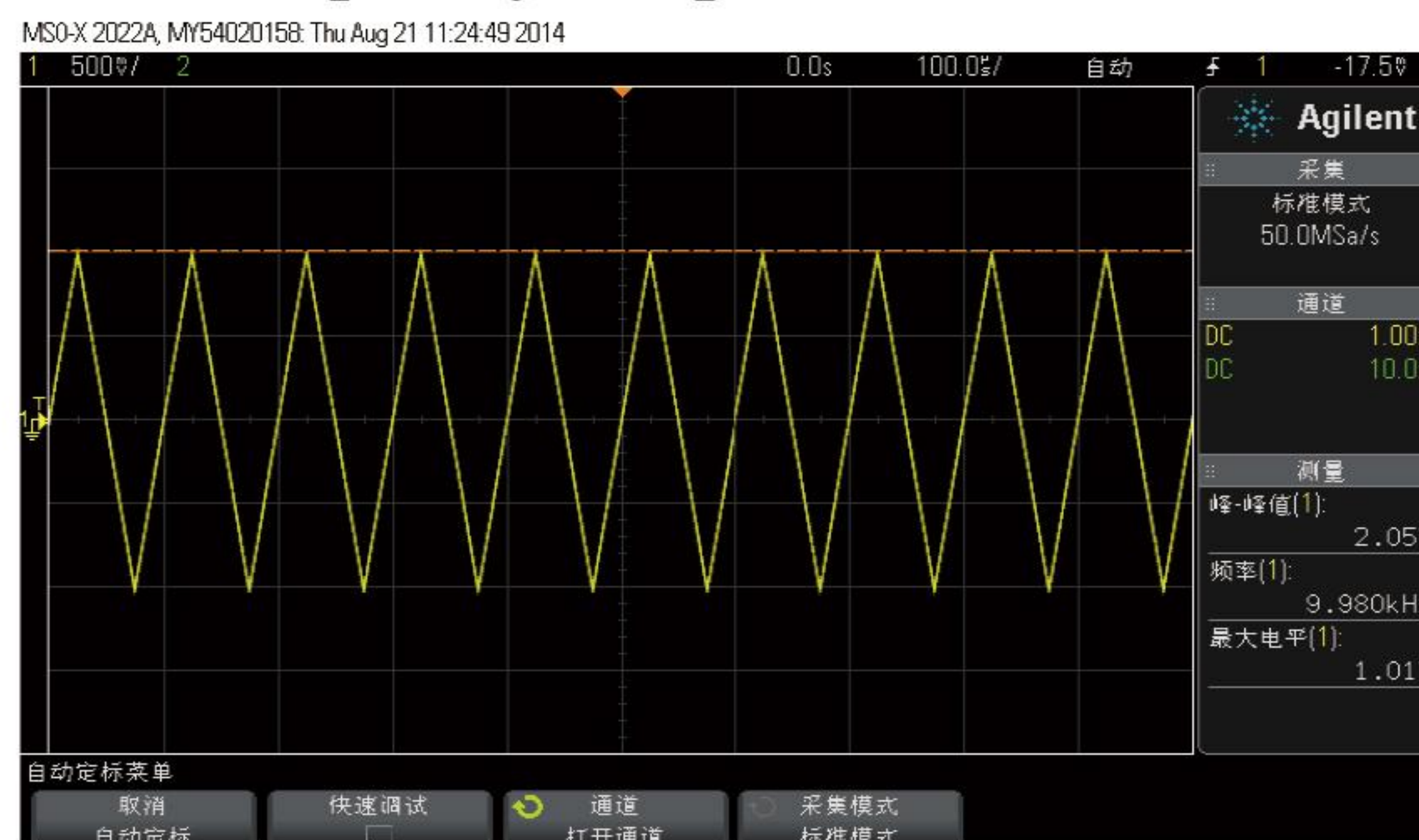


## Analog Modulation



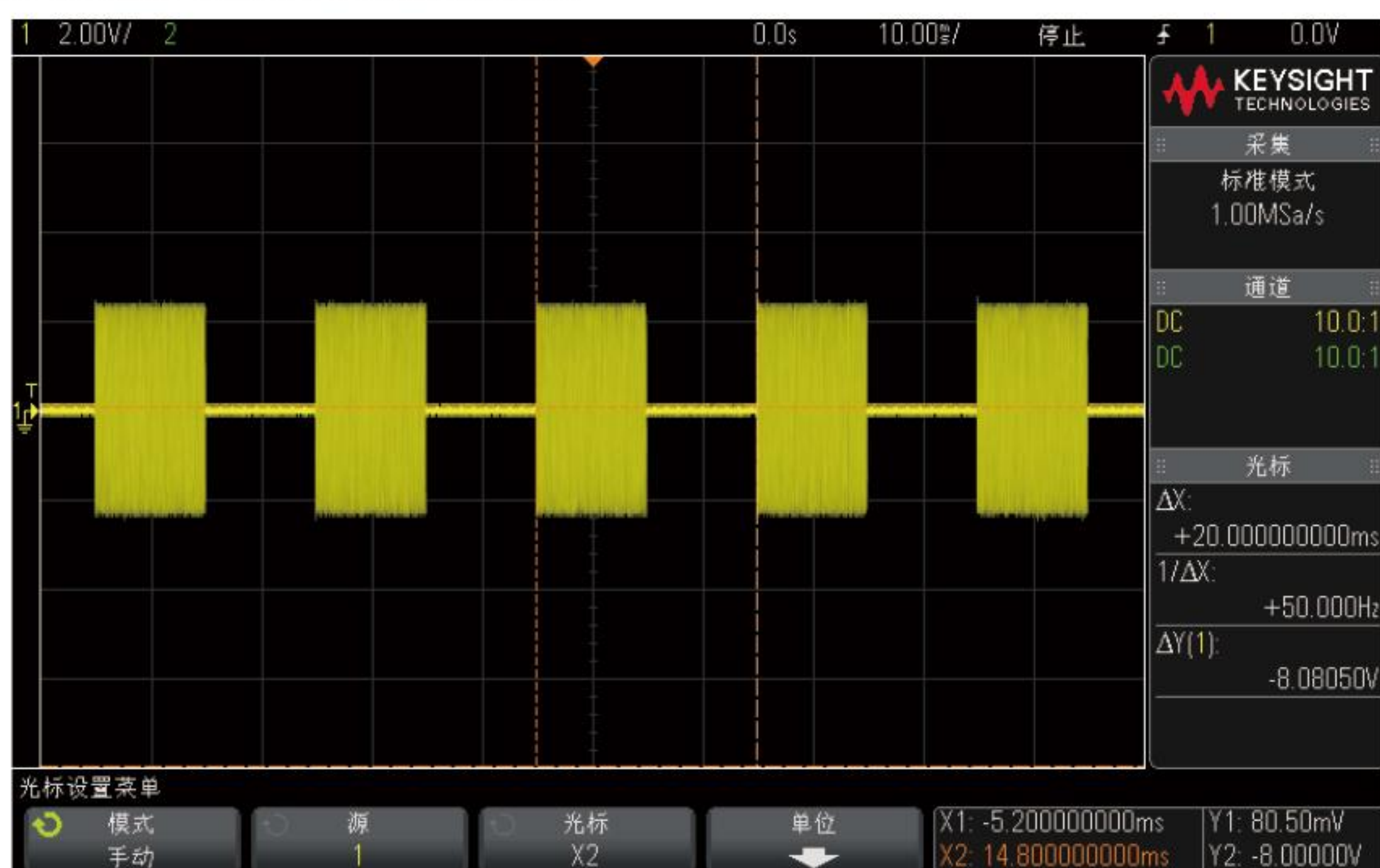
AM/FM/ΦM

## Low Frequency Output



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

## Pulse Modulation



Pulse modulation with minimum pulse width of 200ns, supporting Internal/External pulse modulation input, External trigger input

## Specifications

Model	MSG150A	MSG200A
<b>Frequency</b>		
Frequency range	100kHz~15.0GHz	9kHz~20GHz
Frequency resolution	0.01Hz	
<b>Reference</b>		
Reference frequency	10MHz	
Temperature stability	±1ppm (Option: ±100 ppb)	
Internal reference output	Typical	10MHz, ≥+8dBm
External reference output	0dBm~+10dBm	
<b>Spectrum Purity</b>		
Harmonics	Typical	≤-30dBc
Nonharmonics	Typical	≤-60dBc
SSB phase noise	f=1GHz	≤-115dBc/Hz@10kHz
<b>Level</b>		
Setting range	Maximum output power	+10dBm
	Minimum output power	-120dBm
Accuracy	ALC on	-90dBm~+10dBm ≤±1.0dB -110dBm~-90dBm ≤±1.5dB -120dBm~-110dBm ≤±2.0dB
<b>Amplitude/Frequency Sweep</b>		
Sweep mode	Frequency, amplitude, frequency + amplitude	
Sweep type	Step sweep, List sweep	
Sweep range	Full frequency and amplitude range	
Stepwise Change	Linear Change	
Sweep points	Step sweep	2~65535
	List sweep	2~16383



Dwell time		10ms ~ 50s
Trigger mode		Auto sweep, External trigger
<b>LF</b>		
Wave form	Sine wave, Square wave, Triangle wave	
Frequency range	Sine wave	1Hz~500kHz
	Triangular wave	1Hz~100kHz
	Square wave	1Hz~20kHz
Output voltage	0.2V <sub>P-P</sub> ~2V <sub>P-P</sub>	
<b>Modulation</b>		
<b>Analog modulation</b>		
AM	Modulation depth	0%~90%
	Modulation frequency response	10Hz~20kHz
FM	Maximum offset	N <sup>φ</sup> × 64MHz (Nominal value)
	Modulation frequency response	10Hz~200kHz
ΦM	Maximum phase offset	N × 6rad (Nominal value)
	Modulation frequency response	10Hz~200kHz
<b>Digital modulation</b>		
On/off ratio		≥70dB
Pulse period		400ns~160s
Pulsewidth		200ns~85s
<b>Connectors</b>		
RF output		2.92mm, 50 Ω
LF output		SMA, 50 Ω
Functional connectors	Connectors name	External pulse modulation input, Internal pulse output, External trigger input, internal trigger output, External modulation input and 10M reference input./output, AM modulation input, FM modulation input, Scan enable output
	Connectors type	SMA
LAN		10/100Base-T
<b>General Data</b>		
Operating temperature range	Typical	-10°C~+50°C
Storage temperature range		-40°C~+70°C
Power Supply	DC	+12V±5%, Maximum current 2A
Size		255mm×235mm×44mm
Weight		About 3kg

## Order Information

Product	Description	Order Number
MSG	Microwave signal generator	MSG150A、MSG200A
Accessories	CD-ROM(User manual, Programming manual)	
	Power cable	
Options	110dB Step Attenuator	MSG200-SAT
	Pulse Modulation	MSG200-PU
	Analog Modulation AM/FM/PM	MSG200-AMD
	Multi-function Signal Generator	MSG200-FG