

GA148X Series RF Signal Generators



Summary

GA148X series is a cost-effective signal generator, with ergonomic keyboard layout, 7-inch TFT color LCD display, simple and clear interface style, standard LAN, USB and GPIB a variety of communication interfaces. Can be widely used in radio, communications, radar and its automatic test system, also applies to components, components, receivers and other electronic products production, testing, measurement and research and development areas.

Main features

- Frequency upto 3GHz/4GHz with resolution 0.1Hz
- Simple and efficient operation interface military level stability
- Excellent phase noise: <-115dBc/Hz@20kHz
- Wide output power range: -127~+13dB (Available-136dBm)
- Rich modulation system: AM, FM, PM and pulse modulation
- Convenient and flexible scan output: the frequency, the amplitude of a variety of scanning output combination
- Economical and practical low-frequency function source: sine wave, square wave, triangular wave, sawtooth wave and so on

Advanced measurement functions

GRATEN GA1484 Signal Generator 250MHz - 4GHz

Frequency	4.000 000 000 0	GHz	Amplitude	0.00	dBm	LF Out on
Mod	off	Depth/Dev	Source	Rate	Waveform	LF Out Amplitude 1.000Vp
AM	off	30.0%	Internal	400Hz	Sine	Mod off LF off RF off
FM	on	5.000kHz	Internal	1.000kHz	Sine	AM on
ΦM	off	5.000rad	Internal	2.000kHz	Sine	AM Depth 30.0%
LF	on	1.000Vp	Internal	80.0usec	Sine	AM Source Internal
Pulse	off	40.0usec	Internal	80.0usec	Sine	AM Rate 400Hz

Modulation Status Information

Mod	State	Depth/Dev	Source	Rate	Waveform
AM	off	30.0%	Internal	400Hz	Sine
FM	on	5.000kHz	Internal	1.000kHz	Sine
ΦM	off	5.000rad	Internal	2.000kHz	Sine
LF	off	1.000Vp	Internal	80.0usec	Sine
Pulse	off	40.0usec	Internal	80.0usec	Sine

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Frequency	4.000 000 000 0	GHz	Amplitude	0.00	dBm	AM on
Mod	off	Depth/Dev	Source	Rate	Waveform	AM Depth 30.0%
AM	on	30.0%	Internal	400Hz	Sine	AM Source Internal
FM	on	5.000kHz	Internal	400Hz	Sine	AM Rate 400Hz
ΦM	off	5.000rad	Internal	2.000kHz	Sine	AM Waveform Sine
LF	off	1.000Vp	Internal	80.0usec	Sine	
Pulse	off	40.0usec	Internal	80.0usec	Sine	

Modulation Status Information

Mod	State	Depth/Dev	Source	Rate	Waveform
AM	on	30.0%	Internal	400Hz	Sine
FM	on	5.000kHz	Internal	400Hz	Sine
ΦM	off	5.000rad	Internal	2.000kHz	Sine
LF	off	1.000Vp	Internal	80.0usec	Sine
Pulse	off	40.0usec	Internal	80.0usec	Sine

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Low frequency function source LF OUT

FM/ AM Combined Modulation

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Frequency	4.000 000 000 0	GHz	Amplitude	-136.00	dBm	Edit Item
Mod	off	LF	on	RF	off	Insert Row
1	1.000000MHz	-11.00dBm	1sec			Delete Row
2	2.000000MHz	-9.00dBm	2sec			Goto Row
3	3.000000MHz	-8.00dBm	3sec			Insert Item
4	3.000000MHz	-7.00dBm	4sec			More
5	5.000000MHz	-6.00dBm	5sec			1 of 2
6	6.000000MHz	-5.00dBm	4.000sec			
7	7.000000MHz	-4.00dBm	4.000sec			
8	8.000000MHz	-3.00dBm	4.000sec			
9	9.000000MHz	-2.00dBm	4.000sec			
10	10.000000MHz	0.00dBm	4.000sec			

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Combined List SWEEP Output

SIGNAL GENERATORS

Technical Parameters

Model	GA1483	GA1484B	GA1484C	GA1484A	Test environment
Frequency features					
Frequency range	250kHz~3GHz		250kHz~4GHz		
Resolution		0.1Hz			
Internal Time Base		Frequency:10MHz; Aging rate: $\leq\pm 1$ ppm/year; Output amplitude ≥ 0.35 Vrms			
		Accuracy: $\leq\pm 0.1$ ppm	$\leq\pm 1$ ppm		
External reference input		Frequency: 10MHz; Output amplitude: 0.5~2Vrms; Connector: BNC female, 50Ω			
Output features					
Amplitude range	-127 ~ +13dBm		-15 ~ +17dBm	-110 ~ +13dBm	
Resolution		0.01dB			
Accuracy	$\leq\pm 1$ dB (≥ -120 dBm); $\leq\pm 1.8$ dB (≥ -127 dBm)		$\leq\pm 1$ dB	ALC ON; 20~30°C	
SSB Phase Noise		≤ 115 dBc/Hz	≤ 105 dBc/Hz	Carrier frequency: 1GHz Offset: 20KHz	
Residual FM		≤ 10 Hz peak	≤ 30 Hz peak	Carrier frequency: 1GHz Bandwidth: 0.3KHz-3KHz	
Harmonics		≤ -30 dBc		Output power: ≤ 0 dBm	
Non-harmonics		≤ -50 dBc		Deviation from the carrier frequency ≥ 20 KHz	
Output interface		Standing wave ratio ≤ 1.8 ; impedance: 50Ω (nominal value); N-type female			
Modulation features					
AM Modulation		Modulation frequency: 20 Hz ~ 20 kHz; amplitude modulation 0 ~ 100%		Output power ≤ 6 dBm	
		Amplitude error $\leq \pm$ (set value $\times 5\% + 0.2\%$); amplitude modulation distortion $< 2\%$		Modulation frequency 1kHz depth = 50	
FM Modulation		Modulation frequency: 20Hz ~ 80kHz; frequency offset range of 20 Hz ~ 100 kHz			
		Frequency deviation error: $\leq \pm$ (set value $\times 5\% + 0.2\%$) FM distortion $< 1\%$		Modulation frequency 1kHz Frequency deviation = 50kHz	
PM Modulation		Modulation frequency: 0.3 ~ 20 kHz; Phase deviation: 0 ~ 10rad (< 10 kHz) 0 ~ 5rad (≤ 20 kHz)			
		Phase error: \pm (set value $\times 5\% + 0.2$ rad); phase distortion 1.5%		Modulation frequency 1kHz; phase deviation = 5rad	
Pulse modulation		Rise / fall time: ≤ 60 ns; on / off ratio ≥ 60 dB			
		Pulse period: 1us ~ 2s; pulse width 400ns ~ 1s			
External modulation characteristics (specified input level, 1Vp-p)					
3dB Input bandwidth		AM、FM: 20Hz~20kHz; PM:300Hz~20kHz			
Pulse input		Level: ≥ 1.5 VPP; cycle 10us ~ 1s			
Rear panel input and output characteristics					
Trigger input		Waveform: sine wave, square wave; input level ≥ 2.5 VPP			
Trigger output		Wave: Pulse wave			
Scan output		Waveform: sawtooth wave; output level: 1 ~ 3.5V			
Pulse output		Waveform: the same as the modulation pulse; output level: low level ≤ 0.8 V, high level ≥ 2.4 V			
Low frequency function source characteristics					
Frequency and waveform type		20Hz ~ 100kHz(Sine wave, triangular wave, sawtooth wave)			
		20Hz~20kHz (Square wave); 50ms~20us (Pulse wave)			
Output characteristics		Output amplitude: 0 ~ 3VP-P; amplitude error: $\leq 5\%$; harmonic distortion: ≤ 70 dBc		Freq=1kHz Sine wave; U=1Vp-p	
General features					
Interface		Standard LAN, USB and GPIB interface			
Display		7.0 inch TFT, 800 x 480 pixels			
Power		Voltage: 100V~240V (50/60Hz); Frequency: (47.5~52.5)Hz; Power consumption: ≤ 50 W			
Size/Weight		Size:426mm×133mm×450mm (W*H*D); Weight: ≤ 10 kg			
Working temperature range	0°C~+40°C	-10°C~+50°C	0°C~+40°C		
Storage Temperature Range		-40°C~+70°C			