

## GA148X Series RF Signal Generators



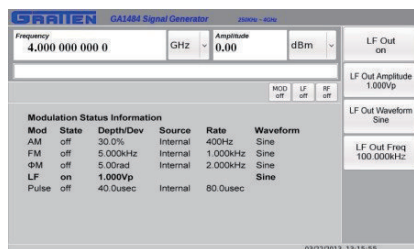
### Summary

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.

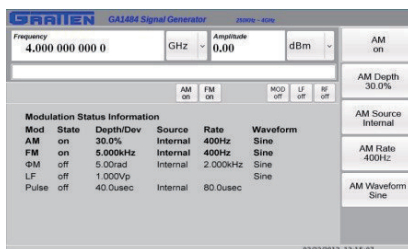
### Main features

- 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

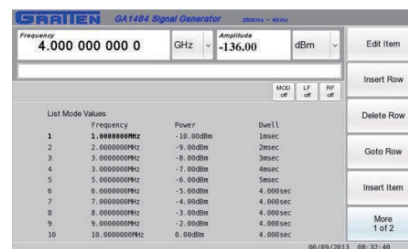
### Advanced measurement functions



Low frequency function source LF OUT



FM/ AM Combined Modulation



Combined List SWEEP Output

## SIGNAL GENERATORS

## Technical Parameters

Model	GA1483	GA1484B	GA1484C	GA1484A	Test environment
<b>Frequency features</b>					
Frequency range	250kHz~3GHz	250kHz~4GHz			
Resolution	0.1Hz				
Internal Time Base	Frequency:10MHz; Aging rate $\leq\pm 1$ ppm/year; Output amplitude $\geq 0.35$ Vrms				
	Accuracy: $\leq\pm 0.1$ ppm			$\leq\pm 1$ ppm	
External reference input	Frequency: 10MHz; Output amplitude: 0.5~2Vrms; Connector: BNC female, 50 $\Omega$				
<b>Output features</b>					
Amplitude range	-127 ~ +13dBm	-15 ~ +17dBm	-110 ~ +13dBm		
Resolution	0.01dB				
Accuracy	$\leq\pm 1$ dB ( $\geq -120$ dBm); $\leq\pm 1.8$ dB ( $\geq -127$ dBm)			$\leq\pm 1$ dB	ALC ON; 20~30 C
SSB Phase Noise	$\leq -115$ dBc/Hz			$\leq -105$ dBc/Hz	Carrier frequency: 1GHz Offset: 20KHz
Residual FM	$\leq 10$ Hz peak			$\leq 30$ Hz peak	Carrier frequency: 1GHz Bandwidth: 0.3KHz-3KHz
Harmonics	$\leq -30$ dBc				Output power: $\leq 0$ dBm
Non-harmonics	$\leq -50$ dBc				Deviation from the carrier frequency $\geq 20$ kHz
Output interface	Standing wave ratio $\leq 1.8$ ; impedance: 50 $\Omega$ (nominal value); N-type female				
<b>Modulation features</b>					
AM Modulation	Modulation frequency: 20 Hz ~ 20 kHz; amplitude modulation 0 ~ 100%				Output power $\leq 6$ 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 ( $\leq 20$ 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: $\leq 60$ ns; on / off ratio $\geq 60$ dB				
	Pulse period: 1 $\mu$ s ~ 2s; pulse width 400ns ~ 1s				
<b>External modulation characteristics (specified input level, 1Vp-p)</b>					
3dB input bandwidth	AM, FM: 20Hz~20kHz; PM:300Hz~20kHz				
Pulse input	Level: $\geq 1.5$ VPP; cycle 10 $\mu$ s ~ 1s				
<b>Rear panel input and output characteristics</b>					
Trigger input	Waveform: sine wave, square wave; input level $\geq 2.5$ 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 $\leq 0.8$ V, high level $\geq 2.4$ V				
<b>Low frequency function source characteristics</b>					
Frequency and waveform type	20Hz ~ 100kHz(Sine wave, triangular wave, sawtooth wave)				
	20Hz~20kHz (Square wave); 50ms~20 $\mu$ s (Pulse wave)				
Output characteristics	Output amplitude: 0 ~ 3VP-P; amplitude error: $\leq 5\%$ ; harmonic distortion: $\leq 70$ dBc				Freq=1kHz Sine wave; U=1Vp-p
<b>General features</b>					
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: $\leq 50$ W				
Size/Weight	Size:426mm $\times$ 133mm $\times$ 450mm (W*H*D); Weight: $\leq 10$ kg				
Working temperature range	0 C~+40 C	-10 C~+50 C	0 C~+40 C		
Storage Temperature Range	-40 C~+70 C				