1.5 Specifications

The MG3631A/MG3632A specifications are listed below.

Specifications (1/5)

Carrier frequency	Range	100 kHz to 1040 MHz setting range: 0 to 1040 MHz (MG3631A), 100 kHz to 2080 MHz setting range: 0 to 2080 MHz (MG3632A)	
	Resolution	10 Hz	
	Accuracy	Same as that for the reference oscillator, except in DC-FM mode	
	Internal reference oscillator *1	Frequency	10 MHz
		Aging rate	≦ ±2×10⁻⁷/day
		Temperature characteristics	±1×10⁻⁶ (0° to 50°C)
	External reference signal input	10 MHz ±10 ppm, TTL level, BNC connector on rear panel	
	Reference signal output	10 MHz, TTL level, BNC connector on rear panel	
	Switching time	Elapsed time from last command until frequency has stabilized to within ±500 Hz of set frequency during remote operation: ≦150 ms	
Output level	Range	−143 to +13 dBm	
	Unit	dBm, dBμ, V, mV, μV (Terminated and open voltages are selected in units of dBμ, V, mV or μV)	
	Resolution	0.1 dB	
	Frequency response	±0.5 dB at 0 dBm (≦1040 MHz) ±1 dB at 0 dBm (>1040 MHz, only for MG3632A)	
	Level accuracy	Frequency / Output level	100 kHz≦ to ≦1040 MHz	1040 MHz< to ≦1700 MHz, only for MG3632A	1700 MHz<, only for MG3632A
		+13 to −33 dBm	±1 dB	±1.5 dB	±1.5 dB
		−33.1 to −108 dBm	±1.5 dB	±2.5 dB	±3 dB
		−108.1 to −123 dBm	±1.5 dB	±2.5 dB	±4 dB
		−123.1 to −133 dBm	±3 dB	±4 dB	±4 dB
	Impedance	50Ω, N-type connector VSWR: ≦1.5 (≦1040 MHz, ≦ −3 dBm) ≦1.8 (>1040 MHz, ≦ −3 dBm, only for MG3632A)	

*1 Aging rates up to 2×10⁻⁹/day are available as options 01 to 03.

Specifications (2/5)

Output level (Cont.)	Switching time	Elapsed time from last command until output level is stabilized within ±0.5 dB of the last value during remote operation: ≦150 ms
	Interference radiation	≦0.3μV (Terminated with 50Ω load, measured 25 mm from front panel with a two-turn 25 mm diameter loop antenna. 10 MHz reference signal excluded with Option 01/02/03)
Signal purity	Spurious	In CW mode: f_c: carrier frequency
		Harmonics (2nd, 3rd): ≦ −30 dBc Band limited by Option 41 ≦ −30 dBc (2nd, 3rd) (10MHz≦f_c≦1040MHz) for MG3631A ≦ −30 dBc (2nd, 3rd) (10MHz≦f_c≦2080MHz) for MG3632A
		Sub-harmonics (f_c/2, 3f_c/2, 5f_c/2): None (at ≦1040 MHz); ≦ −30 dBc (at >1040 MHz for MG3632A)
		Non-harmonics: ≦ −60 dBc (f_c<130 MHz, ≧5 kHz offset) ≦ −66 dBc (130 MHz≦f_c<520 MHz, ≧5 kHz offset) ≦ −60 dBc (520 MHz≦f_c≦1040 MHz, 5 kHz offset) ≦ −54 dBc (f_c>1040 MHz, ≧5 kHz offset, only for MG3632A)
	SSB phase noise	In CW mode:

Frequency \ Offset frequency	10 kHz	20 kHz
10 MHz ≦ fc <130 MHz	≦ −124 dBc/Hz	≦ −125 dBc/Hz
130 MHz ≦ fc <260 MHz	≦ −133 dBc/Hz	≦ −134 dBc/Hz
260 MHz ≦ fc <520 MHz	≦ −130 dBc/Hz	≦ −131 dBc/Hz
520 MHz ≦ fc ≦ 1040 MHz	≦ −124 dBc/Hz	≦ −125 dBc/Hz
1040 MHz < fc (only for MG3632A)	≦ −118 dBc/Hz	≦ −119 dBc/Hz

	Residual AM	≦0.03% rms at ≧500 kHz (demodulation band: 50 Hz to 15 kHz)
	Residual FM	At demodulation band 0.3 to 3 kHz: ≦4 Hzrms (≧10 MHz, <130 MHz) ≦1 Hzrms (≧130 MHz, <260 MHz) ≦2 Hzrms (≧260 MHz, <520 MHz) ≦4 Hzrms (≧520 MHz, ≦1040 MHz) ≦8 Hzrms (>1040 MHz) (only for MG3632A) At demodulation band 50 Hz to 15 kHz: ≦10 Hzrms (≧10 MHz, <130 MHz) ≦3 Hzrms (≧130 MHz, <260 MHz) ≦5 Hzrms (≧260 MHz, <520 MHz) ≦10 Hzrms (≧520 MHz, ≦1040 MHz) ≦20 Hzrms (>1040 MHz) (only for MG3632A)

Specifications (3/5)

Amplitude modulation	Range	0 to 100%			
	Resolution	1%			
	Internal modulation frequency	Fixed frequency	400 Hz, 1 kHz		
		Variable frequency	0.1 Hz to 100 kHz, 0.1 Hz resolution		
		Frequency accuracy	100 ppm		
	Accuracy	± (5% of indicated value + 2%) [at ≧ 0.4 MHz, ≦ +7 dBm, 0 to 90%, internal 1 kHz, and demodulation band 0.3 to 3 kHz]			
	Frequency response	At ≦ +7 dBm, ±1 dB bandwidth			
		Lower modulation frequency limit	20 Hz (EXT AC mode) DC (EXT DC mode)		
		Upper modulation frequency limit	Carrier Frequency \ Modulation factor	0 to 30%	30.1 to 80%
			0.4 MHz ≦ f_c < 2 MHz	10 kHz	5 kHz
			2 MHz ≦ f_c	20 kHz	15 kHz
	External modulation	Input level	Approx. $2V_{p\text{-}p}/600\Omega$		
		Input impedance	Nominal 600Ω		
	Distortion	≦ −40 dB (at ≧ 0.4 MHz, ≦ +7 dBm, internal 1 kHz, 30%) ≦ −30 dB (at ≧ 0.4 MHz, ≦ +7 dBm, internal 1 kHz, 80%)			
	Incidental FM	≦ 200 Hz peak (at ≧ 0.4 MHz, < +7 dBm, internal 1 kHz, 30%, demodulation band 0.3 to 3 kHz)			
Frequency modulation	Range	0 to 200 kHz (0.5 MHz ≦ f_c < 130 MHz) 0 to 100 kHz (130 MHz ≦ f_c < 260 MHz) 0 to 200 kHz (260 MHz ≦ f_c)			
	Resolution	10 Hz (0 to 9.99 kHz deviation) 100 Hz (10 to 99.9 kHz deviation) 1 kHz (100 to 200 kHz deviation)			
	Accuracy	± (5% of indicated value + 20 Hz), (at ≧ 0.5 MHz, internal 1 kHz, demodulation band 0.3 to 3 kHz)			
	Frequency response	At ≧ 0.5 MHz, ±1 dB bandwidth			
		Frequency range	EXT AC mode: 20 Hz to 100 kHz EXT DC mode: DC to 100 kHz		

Specifications (4/5)

Frequency modulation (Cont.)	External modulation	Input level	Approx. $2V_{p\text{-}p}/600\Omega$
		Input impedance	Nominal 600Ω
	Distortion	≦ −45 dB (at≧ 0.5 MHz, AM 30%, internal 1 kHz, 3.5/22.5 kHz deviation)	
	Incidental AM	≦0.4% peak (at≧ 0.5 MHz, AM30%, internal 1 kHz, 22.5 kHz deviation, 0.3 to 3 kHz demodulation band)	
	Carrier frequency accuracy in DC-FM mode	±100 Hz during 3 minutes at 2. hour power-on and calibration (at 1000 MHz, FM 10 kHz)	
Internal modulation signal	Frequency range	400 Hz, 1 kHz 20 Hz to 100 kHz (Option 04)	
	Frequency accuracy	±100 ppm	
Other function	Simultaneous modulation	Simultaneous modulation with each AM and FM setting is possible as shown below. AM: 1 kHz/EXT, 400 Hz/EXT, AF/EXT, 1 kHz/AF, 400 Hz/AF FM: 1 kHz/EXT, 400 Hz/EXT, AF/EXT, 1 kHz/AF, 400 Hz/AF (AF: AF Oscillator of Option 04)	
	Modulation signal output	Modulation signal is output when modulating Output level: 2 V p-p±20%/600Ω	
	Modulation signal polarity	External-modulation-signal polarity can be changed.	
	Relative value display	Carrier frequency Output level	
	Continuously variable output level	Continuously variable within a 26 dB range of the set level with fixed 5 dB-step P-ATT value Linearity: ±1 dB (at ALC attenuator output level > −7 dBm, ≦ +13 dBm) ±3 dB (at ALC attenuator output level ≧ −13 dBm, ≦ −7 dBm) , where ALC attenuator output level +7 dBm as reference	
	Memory	100 panel settings (store/recall)	
	Memory backup	Last settings are stored when power is turned off. The following contents are not backed-up: data during key input and GP-IB transfer, remote status, and Reverse Power Protector (RPP) operation status.	

Specifications (5/5)

Other function (Cont.)	GP-IB	All functions except POWER switch and LOCAL key can be controlled. Interface: SH0, AH1, T0, L4, TE0, SR0, RL1, PP0, DC1, DT0, C0, E2
	REMOTE	External controller can control some or all functions equal to those by front panel keys (however, except POWER switch and rotary knob). Controllable functions depends on the remote controller.
Reverse power protection	Maximum reverse input power	50 W (≦ 1040 MHz), 25W (> 1040 MHz), ± 50 Vdc
General	Ambient temperature, rated range of use	0° to 50°C
	Power	**Vac + 10%/ – 15% (max. 250 Vac), 47.5 to 63 Hz, ≦ 125 VA
	Dimensions & weight	132.5H × 426W × 451D mm, ≦ 22 kg