

ANRITSU

MG3694B

The Anritsu MG3694B is a high-performance synthesized microwave signal generator covering the 2 GHz to 40 GHz frequency range. Belonging to the renowned MG3690B series, it provides outstanding output power, exceptional phase noise performance, and highly versatile modulation capabilities (including AM, FM, phase, and pulse). Designed for demanding RF and microwave applications, it serves as an ideal local oscillator or signal source in automated test equipment (ATE) systems, radar testing, and communication system characterization. It is fully backward compatible with the MG3690A and previous 68C/69B series synthesizers, and features a standard 3-year warranty.

SPECIFICATIONS

Frequency

Minimum Frequency	2 GHz Hz
Maximum Frequency	40 GHz Hz
Frequency Resolution	0.01 Hz
Frequency Range	2 GHz to 40 GHz
Frequency Switching Speed (Standard)	< 40 ms
Internal Reference Temperature Stability	< $\pm 2 \times 10^{-8}$ over 0 °C to 50 °C

Output

Maximum Output Power	+13 dBm dBm
Output Power Range	+13 dBm to -120 dBm (with Option 2 step attenuator)

Modulation

Modulation	Amplitude (AM), Frequency (FM), Phase, Pulse
Sweep Modes	Digital step sweep, Analog ramp sweep, Manual sweep
Pulse Modulation Minimum Pulse Width	100 ns (standard), 10 ns (with Option 24)
Pulse Modulation Rise/Fall Time	< 10 ns (typical)
Internal LF Generator Waveforms	Sine, Square, Triangle, Positive Ramp, Negative Ramp, Gaussian Noise, Uniform Noise (Option 10)
Internal LF Generator Frequency Range	0.1 Hz to 1 MHz (sine), 0.1 Hz to 100 kHz (square, triangle, ramps) (Option 10)
Internal Pulse Generator Modes	Free-run, Triggered, Gated, Delayed, Doublet, Triplet, Quadruplet (Option 24)
Internal Pulse Width Range	10 ns to 160 ms (Option 24)
Internal Pulse Delay Range	0 to 160 ms (Option 24)

General

Reference Oscillator	Internal 10 MHz reference
Interfaces	GPIO (IEEE-488)
Display	Front panel LCD

Physical

Power Supply	90 to 264 VAC, 47 to 440 Hz
Dimensions (W×H×D)	429 mm x 133 mm x 597 mm mm

Amplitude

Standard Output Power (2 to 20 GHz)	+19 dBm
Standard Output Power (20 to 40 GHz)	+13 dBm
Option 15A Output Power (2 to 20 GHz)	+23 dBm
Option 15A Output Power (20 to 40 GHz)	+19 dBm
Minimum Output Power	-120 dBm (with Option 2 step attenuator)
Amplitude Resolution	0.01 dB
Option 2 Attenuator Range	110 dB in 10 dB steps

Spectral Purity

Harmonics (2 to 20 GHz)	<-30 dBc
Harmonics (20 to 40 GHz)	<-30 dBc
Non-harmonics Spurious	<-60 dBc
SSB Phase Noise with Option 3 (10 GHz carrier, 10 kHz offset)	-115 dBc/Hz typical
Sub-harmonics	None (2 to 20 GHz), < -60 dBc (20 to 40 GHz)
Power Line Sidebands	< -50 dBc (< 2.2 GHz), < -55 dBc (2.2 to 20 GHz), < -49 dBc (20 to 40 GHz)

Analog Modulation

Frequency Modulation Source	Internal or External
Phase Modulation Source	Internal or External
Amplitude Modulation Source	Internal or External
Pulse Modulation Source	Internal or External

System Connectivity

RF Output Connector	K (female), 50 ohm nominal
External Reference Input Frequency	10 MHz ± 50 Hz
External Reference Input Amplitude	-10 dBm to +20 dBm

Physical and Environmental

Operating Temperature Range	0 °C to +50 °C
Storage Temperature Range	-40 °C to +75 °C

Power Requirements

Maximum Power Consumption	350 VA maximum
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Options

Option 4 Frequency Extension	Extends RF coverage down to 10 MHz
Option 5 Frequency Extension	Extends LF coverage down to 0.1 Hz

Performance

SSB Phase Noise (10 GHz carrier, 10 kHz offset, Standard)	-103 dBc/Hz (typical)
Phase Offset Resolution	0.1°

Inputs & Outputs

RF Output Impedance	50 Ω (nominal)
External Reference Output	10 MHz, 0 dBm nominal into 50 Ω (rear panel BNC)

Connectivity & Control

Remote Control Interfaces	GPIOB (IEEE-488.2), RS-232, 10/100 Base-T Ethernet (with Option 10)
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Environmental

Altitude	4,600 m (operating)
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Sweep

Analog Sweep Speed	30 ms to 99 s for any sweep span (Option 14)
Step Sweep Dwell Time	1 ms to 99 s
Step Sweep Number of Steps	2 to 10,000

Software & Control

Programming Language Compatibility	Anritsu/Wiltron 68XXX/69XXX, HP 8340/8341, HP 8360 series, HP 8662A, HP 8663A, HP 8648 series, HP 8656/57 series
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Compliance

EMC Compliance	EN 61326
Safety Compliance	EN 61010-1

TECHNOLOGY

Synthesized Microwave Signal Generator

APPLICATIONS

Radar testing, local oscillator emulation, RF and microwave communication system characterization, automated test equipment (ATE)

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