

# Quick Fact Sheet

## Rubidium™ MG362x1A

### Low Noise RF/Microwave Signal Generator

9 kHz to 20/43.5/70 GHz



Signal purity and frequency stability are essential distinguishing characteristics of a high frequency microwave signal generator. The Rubidium MG362x1A signal generator product line is built to deliver outstanding signal purity and frequency stability across a broad frequency range of 9 kHz to 70 GHz. The Rubidium MG362x1A delivers best in class output power even at high frequencies up to 70 GHz and beyond. With availability of industry standard interfaces and drivers for remote programming, Rubidium offers exceptional overall utility and value to users.

The Rubidium MG362x1A standard phase noise outperforms competition by a substantial margin. Two additional tiers of phase noise performance on top of the standard phase noise performance are offered as options:

- The low phase noise option (Option 3) delivers improved close in phase noise along with better frequency stability.
- The ultra low phase noise option (Option 13) provides improved phase noise at higher offsets.

For CW only applications between 2 GHz to 20 GHz, Rubidium provides an even lower phase noise than the ultra low phase noise option, allowing for another 3 dB improvement on a separate RF output port at the back panel.

All Rubidium MG362x1A standard models offer industry's highest output power outperforming nearest competition by 2 to 4 dB. Most signal generators in the market would be compelled to add a high power option in order to match Rubidium's standard output power, resulting in additional cost for users. Hence Rubidium standard output power offers the best value to its users compared to competition.

For users who require higher output power, Rubidium offers High Power Option (Option 15) which offers 2 to 4 dB higher power than any competitor. Higher output power is very helpful at microwave frequencies because it can overcome higher cable losses without any need for external amplifier.

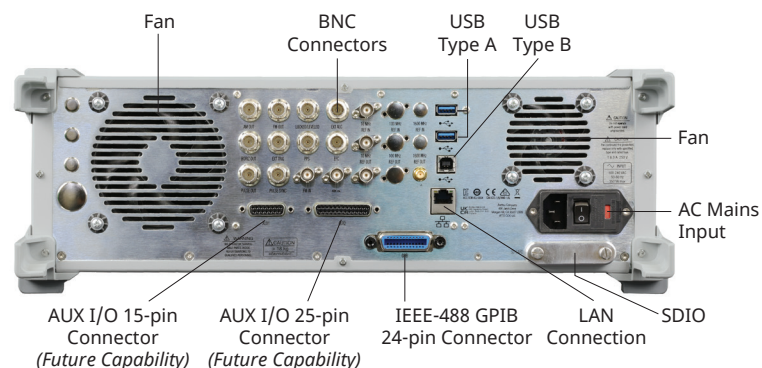
The low noise RF/microwave signal generator Rubidium MG362x1A offers atomic clock frequency stability with an internal rubidium frequency reference option. The exceptional frequency stability coupled with low phase noise performance makes the Rubidium MG362x1A the ideal choice for many metrology applications.

The Rubidium MG362x1A modulation capabilities include amplitude, frequency, phase, and pulse modulation to address simple to complex signal simulation requirements. It offers very comprehensive pulse generation capabilities including a pulse train generator to test pulsed radar systems. It also features an arbitrary wave form generator which enables customers to generate user defined waveforms for modulation.

The Rubidium MG362x1A is housed in a 3U chassis with a 7-inch touch screen on the front panel and traditional keypad/dial interface. The Rubidium MG362x1A offers a high degree of configurability through a wide range of options to achieve optimum cost to function tradeoffs for the customers.

## Key Benefits

- Broad frequency coverage from 9 kHz to 70 GHz, Operable to 72 GHz
- Industry leading phase noise and spurious performance over full frequency range
- Best in class output power even at high frequencies up to 70 GHz and beyond
- Atomic clock frequency stability with optional internal Rubidium frequency reference
- Pulse Radar signal simulation with comprehensive pulse generation capability including pulse train



Rubidium MG362x1A Signal Generator Back Panel

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#### Key Specifications

Performance	
Frequency Range	9 kHz to 20/43.5/70 GHz
Frequency Resolution	0.001 Hz
SSB Phase Noise	-136 dBc/Hz (typical) and -140 dBc/Hz (measured) at 10 GHz Output, 10 kHz Offset
Harmonics	(20/43.5/70 GHz) -55 dBc
Non-Harmonics	(20/43.5/70 GHz) -63 dBc
Internal Time Base Stability - Aging	< ±2 x 10E-8 per Year with Option 3
Leveled Output Power	Up to +30 dBm
Pulse Modulation	Rise/Fall Times 5 ns (typical)
Output Power	-130 dBm to +20 dBm (20 GHz standard output) -130 dBm to +16 dBm (43.5 GHz, standard output) -100 dBm to +6 dBm (70 GHz, standard output)
Power Sweep Resolution	0.01 dB/Step

#### Key Features

Feature	
Modulation	AM, FM, PM, Leveled Pulse, Pulse Train
LF Signal Generator Waveforms	Sine, Square, Pulse, Triangle, Ramp, GN/UN Noise
Frequency Sweep Modes	Step, List
Frequency Sweep Width	9 kHz to Full Frequency Range (step, list)
Power Sweep	Step and List

#### Rack Mount Options

Option No	Description
MG362x1A-0001	Rack Mount with Slides
MG362x1A-0011	Rack Mount without Slides (shelf mount)

#### Security Options

Option No	Description
MG362x1A-0037	Removable SDIO Memory

#### Instrument Options

Option Number	Description
MG362x1A-0001	Rack Mount with Slides (cannot be ordered with Option 11)
MG362x1A-0002	Mechanical Step Attenuator, 110 dB
MG362x1A-0003	Low Phase Noise and High Stability
MG362x1A-0006*	Analog Sweep, Frequency
MG362x1A-0009*	Rear Panel K(m)-Connector RF Output
MG362x1A-0010	User Defined Modulation (requires Option 12, 26, and 27)
MG362x1A-0011	Rack Mount without Slides (shelf mount)
MG362x1A-0012	Amplitude, Frequency, and Phase Modulation, Internal/External (requires Option 27)
MG362x1A-0013	Ultra Low Phase Noise (requires Option 3)
MG362x1A-0015	High Power Output
MG362x1A-0018*	On-site User Level Calibration (Requires 2000-2166-R accessory kit and MA243x0A USB power sensor, sold separately)
MG362x1A-0023	Premium Phase Noise, CW (requires Option 3 and 13)
MG362x1A-0025	Pulse Train Modulation (requires Option 26 and 27)
MG362x1A-0026	Pulse Modulation, Internal/External (requires Option 27)
MG362x1A-0027	Modulation Hardware (requires Option 12 or 26, or both for functionality)
MG362x1A-0029	Front Panel Modulation Input Output Access (Option 27 required when ordering Option 12 or 26, or both)
MG362x1A-0030	600 Ohms External AM/FM Input Impedance (requires Option 12 and 27)
MG362x1A-0033	Phase Noise, Export Option (cannot be ordered with Options 3, 13, 23, and 56)
MG362x1A-0037	Removable SDIO Memory
MG362x1A-0056	Ultra Stability Time Base (requires Option 3 or 13)
MG362x1A-0066	GNSS Atomic Clock Receiver (requires Option 3 or 13)
MG362x1A-0097	Accredited Calibration to ISO17025 and ANSI/NCSL Z540-1, Includes Calibration Certificate, Test Report, and Uncertainty Data
MG362x1A-0098	Standard Calibration to ISO17025 and ANSI/NCSL Z540-1, Includes Calibration Certificate
MG362x1A-0099	Premium Calibration to ISO17025 and ANSI/NCSL Z540-1, Includes Calibration Certificate, Test Report, and Uncertainty Data

\* MG36271A model excluded