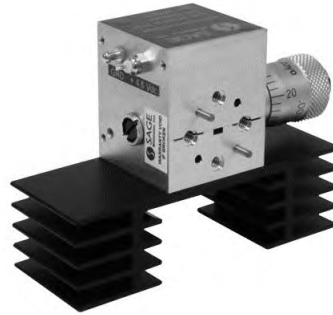


## Mechanically Tuned Gunn Oscillators, SOM Series

### FEATURES:

- ◆ Frequency coverage: 8.2 to 140.0 GHz
- ◆ Tuning bandwidth up to full waveguide band
- ◆ Low AM/FM noise and harmonics
- ◆ Bias tunable



### APPLICATIONS:

- ◆ Test sources
- ◆ Signal generation
- ◆ Lab test setups

### DESCRIPTION:

**SOM series** mechanically tuned Gunn oscillators utilize high performance GaAs Gunn diodes and various cavity designs to deliver moderate output power with low AM/FM noise and harmonic emissions. Compared to their counterparts, such as multiplier based sources, Gunn oscillators offer a broader mechanical tuning capability and lower cost solution. The standard offering covers the frequency range of 8.2 to 140 GHz. While standard models are equipped with a micrometer for bench test purpose, models with a self-locking set screw are also available for system integration. The performance of the oscillator can be further enhanced by adding an optional isolator, Gunn oscillator modulator/regulator and temperature heater.

### ELECTRICAL SPECIFICATIONS:

Frequency Band	X	Ku	K	Ka	Q	U	V	E	W	F
Waveguide Size	WR-90	WR-62	WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10	WR-08
Frequency Range (GHz)	8.2 to 12.4	12.0 to 18.0	18.0 to 26.5	26.5 to 40.0	33.0 to 50.0	40.0 to 60.0	50.0 to 75.0	60.0 to 90.0	75.0 to 110.0	90.0 to 140.0
Output Power Range (dBm)	10 to 27	10 to 27	10 to 27	10 to 23	10 to 23	10 to 20	5 to 20	3 to 19	3 to 19	0 to 17
Mechanical Tuning Bandwidth (GHz)	0.5 to 2.0	0.5 to 3.0	0.5 to 4.0	0.5 to 10.0	0.5 to 10.0	0.5 to 10.0	0.5 to 20.0	0.5 to 20.0	0.5 to 20.0	0.5 to 20.0
Bias Tuning Bandwidth (MHz/V)	5 to 25	10 to 25	10 to 50	10 to 50	25 to 100	25 to 100	50 to 250	50 to 500	50 to 750	50 to 750
Harmonics (dBc)	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
Phase Noise (dBc/Hz @ 100 KHz offset)	-90	-90	-90	-90	-85	-82	-80	-78	-75	-70
Frequency Stability (MHz/°C)	-0.5	-0.8	-1.0	-2.0	-3.0	-3.5	-4.0	-4.5	-5.0	-6.0
Power Stability (dB/°C)	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.03	-0.03	-0.03	-0.03
Bias Voltage Range (Volts)	8 to 10	6 to 8	5 to 8	4 to 6	4 to 8	4 to 10	4 to 10	4 to 10	4 to 10	4 to 10
Bias Current Range (Amps)	0.3 to 2.0	0.3 to 2.0	0.3 to 2.0	0.3 to 2.0	0.3 to 1.5	0.3 to 1.5	0.3 to 1.0	0.3 to 1.0	0.3 to 1.0	0.3 to 1.0
Outline	OM-MX	OM-M6	OM-MK	OM-MA	OM-MQ	OM-MU	OM-MV	OM-ME	OM-MW	OM-MF

### CUSTOM MODELS:

**SAGE Millimeter's** mechanically tuned Gunn oscillator model numbers are configured per the following format. Customers may refer to the format and specify their own model numbers accordingly when placing an order.

#### SOM - FON BWN PP - CO - XY

**FON** is the center frequency in MHz x 10N. For example: 37.0 GHz = 373

**BWN** is the tuning bandwidth in MHz x 10N. For example: 4.0 GHz = 043

**PP** is the output power in dBm. For example: 23 dBm = 23

**CO** is the RF output connector type. For example: WR-28 = 28

**X** is the tuning type. "M" is for micrometer tuned and "S" is for screw tuned.

**Y** is for factory reserve.

Example: SOM-37304320-28-M1 is a mechanically tuned Gunn oscillator with a center frequency of 37 GHz, a mechanical tuning bandwidth of 4 GHz and an output power of 20 dBm. The oscillator has a WR-28 waveguide at the RF output port and is micrometer tuned. "1" is a factory assigned number.