

MOS SERIES SYNTHESIZER

MOS SERIES: .1 - 20 GHz

FEATURES

- Low Cost
- 1/3 Rack Space
- Multi-Octave
- Standard step size: 1 kHz
- INTELSAT phase noise compliant
- Field-tested reliability
- Low power dissipation
- MIL-STD-188-164A microphonic compliant
- ETSI 300019-1-4 compliant

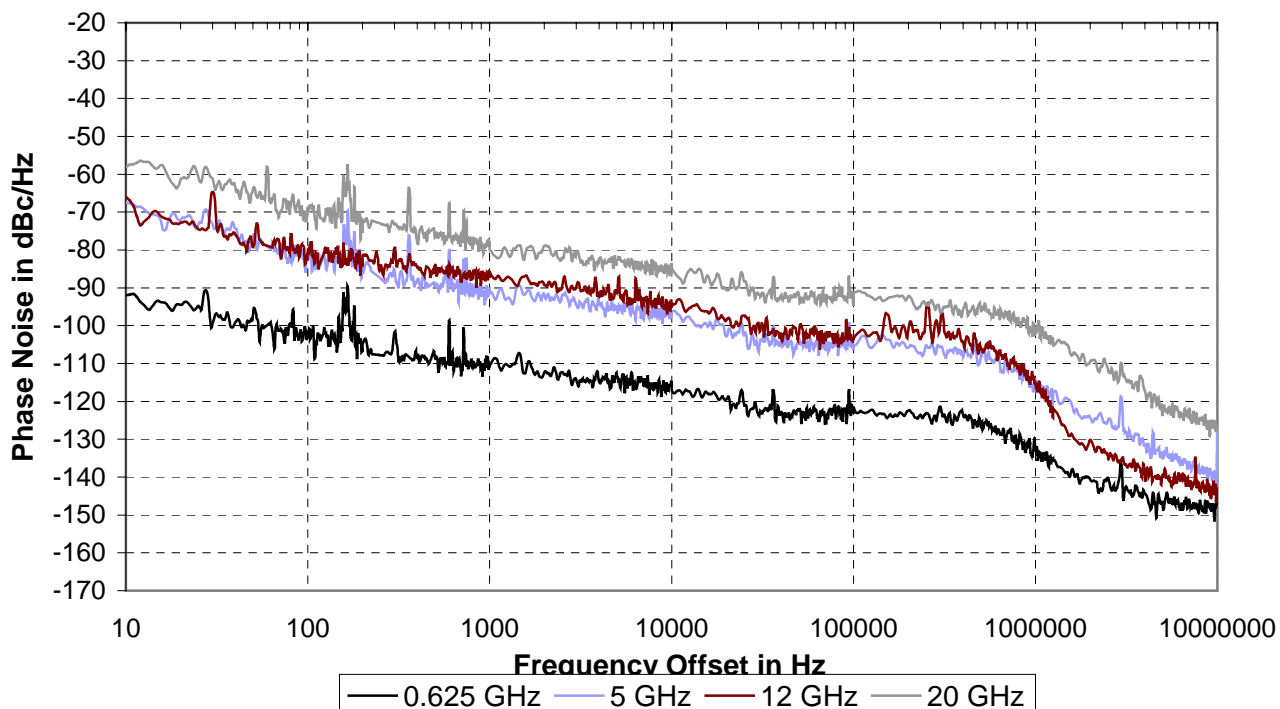


OPTIONS

- Fast Switching
- Custom frequency bands
- Fixed LO frequencies
- Custom step sizes
- Custom packaging
- Low Phase Noise Option
- Available in Modular Form

MITEQ's MOS series of Multi-Octave Wide, low phase noise synthesizers offer an economical solution for lab environment, and communication test applications. In addition to the 1kHz step size the MOS series synthesizers provide optional fast switching. MITEQ's field-tested design, and low power dissipation leads to lower MTBF & higher reliability.

MOS 0.1-20.0-1Ks Phase Noise Performance



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ELECTRICAL SPECIFICATIONS

Output frequency range (Note 1)	Tunable
	.1 - 20 GHz
Step size	1 kHz (Note 3, 4)
Output power	+13 dBm minimum
Output power variation	±2 dB maximum
Input reference frequency	10 MHz (Note 5)
Input power level	0 ±3 dBm
Spurious outputs	
In-band	-65 dBc minimum
Out-of-band	-65 dBc minimum
Phase noise	See graph (Note 6)
Offset from carrier	@ 20 GHz (Note 7)
10 Hz	-55 dBc
100 Hz	-65 dBc
1 kHz	-75 dBc
10 kHz	-85 dBc
100 kHz	-90 dBc
1 MHz	-100 dBc
10 MHz	-120 dBc
Harmonic output	-15 dBc typical
Output impedance	50 ohm nominal
Load VSWR	2.0:1 maximum, all phases
Noise and ripple	10 mV p-p maximum
Frequency control	RS485 (4 wire), RS422, Ethernet, Parallel
Acquisition time (to phase lock)	300 us typical
	750 us maximum
Summary alarm	In lock TTL 1
VCO lock voltage	2 – 11 volts
Power requirements	90 – 250Vac 12w typical
Outline drawing	175415

Notes:

1. Custom frequency bands available, consult factory.
2. Frequency accuracy $\pm 2.95 \times 10^{-9}$.
3. Custom step size available, consult factory.
4. Other reference frequency option available, consult factory.
5. Close in Phase Noise dependent on reference.
6. High performance phase noise available as option
7. Wider operating temperatures are available, consult factory.

ORDERING INFORMATION:

MOS-  **Start Freq.**  **Stop Freq.**  **Step size**  **M or K**  **MHz or KHz**  **M**  **Ref. Freq.**  **Interface**  **485**

Example: MOS-0.1-20.0-1K-10M-485 part number for frequency synthesizer covering 0.1 to 20 GHz with a step size of 1 KHz and a reference frequency of 10MHz and RS485 interface.



L-BAND FREQUENCY SYNTHESIZER

MECHANICAL SPECIFICATIONS

Outline drawing	175415
Weight.....	8 pounds typical
RF connectors	SMA female
Control connector	34-pin header for parallel operation. Ethernet, through RJ45, 9-pin D for R5485

ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating	0 to +65°C (Note 8)
Storage.....	-55 to +95°C
Humidity	Up to 95% at 40°C noncondensing
Shock (nonoperational).....	30 Gs, 10 ms pulse
Vibration (survival).....	20 to 2000 Hz random to .04 G ² /Hz
Altitude.....	Up to 13,500 feet
100% testing	Frequency range
	Output power
	Discrete power
	Spectral purity
	Phase bursts
	Alarm and monitors
100% screening	Temperature cycle/monitor

Outline Drawings

