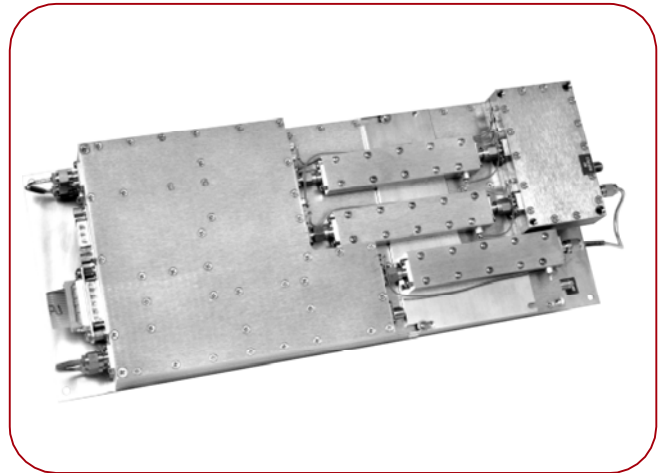


OCTAVE WIDE FREQUENCY SYNTHESIZER

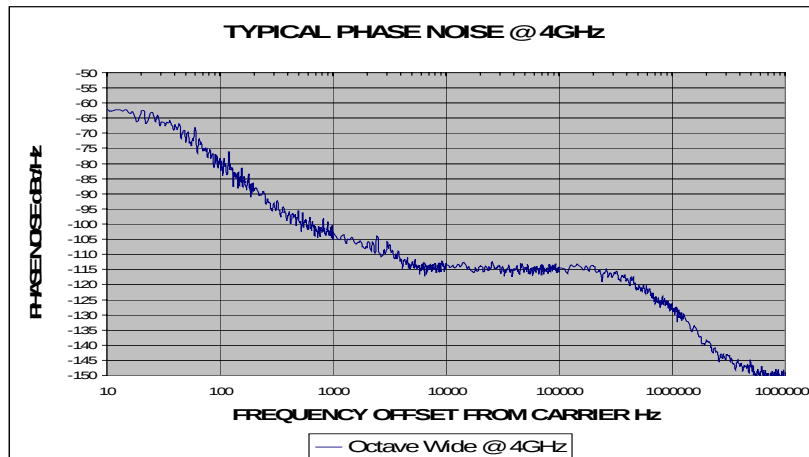
OW SERIES: 2 – 4 GHz

FEATURES

- Octave wide operation
- Standard 1 kHz Step size
- Low Power dissipation
- Wide selection of fixed LO
- MIL-STD-188-164A microphonic compliant
- ETSI 300019-1-4 compliant
- Ideal for YIG replacement
- Superior Phase noise without YIG Heat



MITEQ's OW series synthesizers are designed as a replacement for YIG based synthesizers, without the power dissipation and microphonics. Available in 2-4 GHz range, these octave wide synthesizers are ideal for ELINT, test translation and instrumentation. Superior Phase noise performance coupled with low power dissipation make an ideal replacement for YIG based broadband synthesizers.



MECHANICAL SPECIFICATIONS

Outline drawing.....	151016
Size	12.35"x5"x1.5"
Weight	5 pound typical
RF connectors.....	SMA female
DC power connector.....	Subminiature D9P
Control connector	20-pin header

ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating	-10 to +65°C (Note 7)
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

OCTAVE WIDE FREQUENCY SYNTHESIZER

ELECTRICAL SPECIFICATIONS

Output frequency range (Note 1)	Tunable 2 – 4 GHz	Fixed LO (Note 2) 1080 MHz 1150 MHz 1380 MHz 2160 MHz
Step size	1 kHz (Note 3, 4)	
Output power	+13 dBm minimum	+13 ±2 dBm
Output power variation	± 2 dB maximum	
Input reference frequency	10 MHz (Note 5)	
Input power level	0 ±3 dBm	
Spurious outputs		
In-band	-70 dBc minimum	-80 dBc minimum
Out-of-band	-65 dBc minimum	-70 dBc minimum
Phase noise	See graph (Note 6)	
Offset from carrier	Typical @ 4 GHz	AT 2160 MHz
10 Hz	-60 dBc	-68 dBc
100 Hz	-75 dBc	-95 dBc
1 kHz	-100 dBc	-100 dBc
10 kHz	-110 dBc	-100 dBc
100 kHz	-110 dBc	-110 dBc
1 MHz	-125 dBc	-135 dBc
10 MHz	-145 dBc	-145 dBc
Harmonic output	-15 dBc typical	-20 dBc typical
Output impedance	50 ohm nominal	
Load VSWR	1.5:1 maximum, all phases	
Regulation	±5%	
Noise and ripple	10 mV p-p maximum	
Frequency control	RS485 (4 wire)	
Acquisition time (to phase lock) 100 ms maximum	50 ms typical	
Summary alarm	In-lock TTL 1	
VCO lock voltage	2– 12 volts	
DC power requirements	+15 volts, 0.5 amps typical +5.2 volts, 1.3 amps typical	
Outline drawing	151016	

Note: 1. Custom frequency bands available, consult factory.
2. Optional fixed LO frequencies available from 600 to 3000 MHz in 10 MHz integers.
3. Frequency accuracy $\pm 1.27 \times 10^{-9}$.
4. Custom step size available, consult factory.
5. Other reference frequency option available, consult factory.
6. Close in phase noise dependent on reference.
7. Wider operating temperature ranges available.

ORDERING INFORMATION:

OW- . - . - - M

Start Freq.	Stop Freq.	Step Size M or K (MHz or KHz)	LO Frequency MHz	Reference Frequency
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Example: OW-2.0-4.0-1k-1150-10M part number for frequency synthesizer covering 2.0 to 4.0 GHz with a step size of 1 KHz, and a LO frequency of 1150 MHz.

OCTAVE WIDE FREQUENCY SYNTHESIZER

OCTAVE WIDE SERIES OUTLINE: 151016

