

# X-BAND FREQUENCY SYNTHESIZER

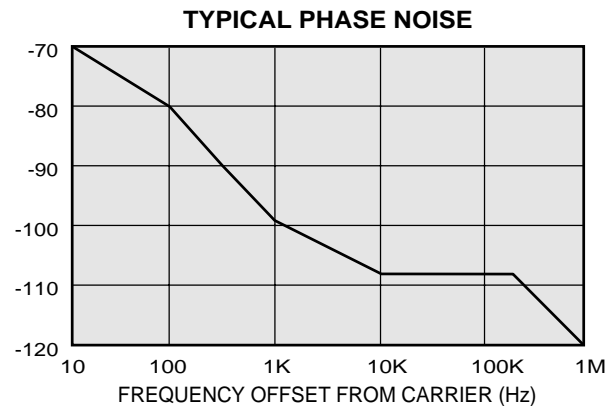
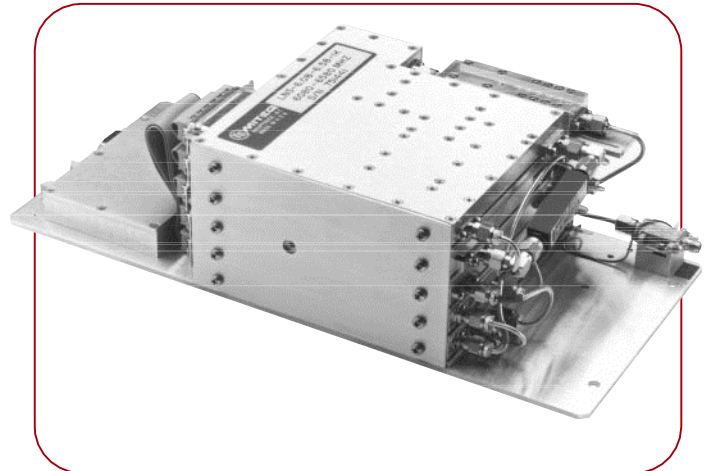
## LNS SERIES: 6.08 – 6.58 GHz

### FEATURES

- Low Phase Noise
- Rugged and reliable design
- Lock alarm/  
tuning voltage test point
- Quick disconnect subminiature  
D-type connector
- BCD input
- Low incidental FM

### OPTIONS

- Parallel or RS422 serial interface  
available
- Increased Output Power available
- Other step sizes available
- Auxiliary coupled output
- Extended temperature range



MITEQ's LNS series of high spectral purity frequency synthesizers is designed for applications where low phase noise performance is critical. The LNS is available in the three X-band frequency ranges, with step sizes to 1 kHz. Output power is +13 dBm typical, with higher power options available. Frequency control is via TTL parallel BCD format (standard), serial RS422 is also available. The LNS series has a standard lock alarm and a D subminiature connector for DC power.

### MECHANICAL SPECIFICATIONS

Outline drawing .....	120001
Weight.....	4.6 pounds typical
RF connectors .....	SMA female
DC power/control connectors...	DC power subminiature D9P Control subminiature D25P

### ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating .....	0 to +60°C
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 <sup>2</sup> /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

## X-BAND FREQUENCY SYNTHESIZER

## ELECTRICAL SPECIFICATIONS

Output frequency range	6.08 – 6.58 GHz
Step size	Down to 1 kHz
Output power	+13 dBm minimum
Output power variation	±1.5 dB maximum
Input reference frequency	5 or 10 MHz
Input power level	0 ±3 dBm
Spurious outputs In-band 0.6 – 300 Hz 300 – 1 MHz 1 – 30 MHz Out-of-band	-49 dBc minimum -64 dBc minimum -80 dBc minimum -65 dBc minimum
Phase noise	See graph
Offset from carrier 10 Hz 100 Hz 1 kHz 10 kHz 100 kHz 300 kHz 1 MHz 10 MHz	-68 dBc -80 dBc -100 dBc -105 dBc -105 dBc -105 dBc -115 dBc -140 dBc
Harmonic output	-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	BCD, TTL, parallel lines or serial RS422
Acquisition time (to phase lock)	10 ms typical 100 ms maximum
Summary alarm	In-lock TTL 1
VCO lock voltage	2 – 13 volts
DC power requirements	+20 /+15 volts, 1 amp maximum +5.2 volts, 1 amp maximum

## ORDERING INFORMATION

**LNS** - - - - - **M** \_\_\_\_\_  
 Start Freq. Stop Freq. Step Size (MHz/KHz) Ref. Freq. Interface  
 (GHz) (GHz)

EXAMPLE: LNS-6.08-6.58-1K-10M S Part Number for frequency synthesizer covering 6.080GHz to 6.580GHz with a step size of 1kHz and a reference of 10MHz serial control.

## OUTLINE DRAWING

### 120001 LNS SERIES

