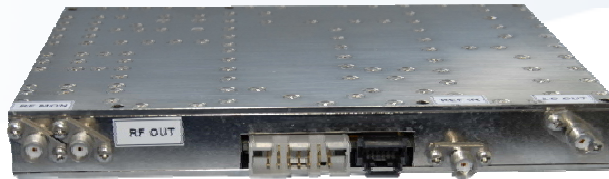


## **LNMFS Frequency Synthesizer**

### **LNMFS-1078**



### **FREQUENCY RANGE: 11.45-12.57 GHz**

#### **FEATURES**

- Very Low Phase Noise, 20 dB better than IESS-308
- Low Spurious:<-85 dBc
- 1 KHz and 125 KHz Standard Steps Size Options
- Includes Fixed Frequency L-Band Output
- Serial Control Simplifies Interfacing
- Compact Modular Construction: 7.7" X 5.5" X 0.73"
- Low DC Power Consumption, less than 8 watts
- Wide Operating Temperature Range
- Meets ESTI 300019-1-4 Shock and Vibration Requirements

#### **APPLICATIONS**

- LO for Fixed and Mobile SATCOM Converters
- LO for Digital Radio, up to 512 QAM
- Instrumentation
- OEM Products

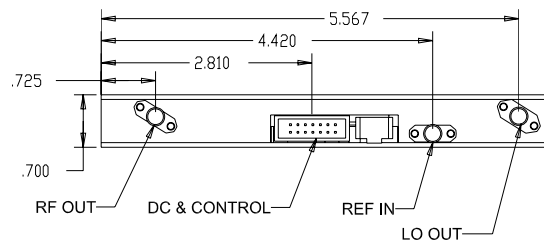
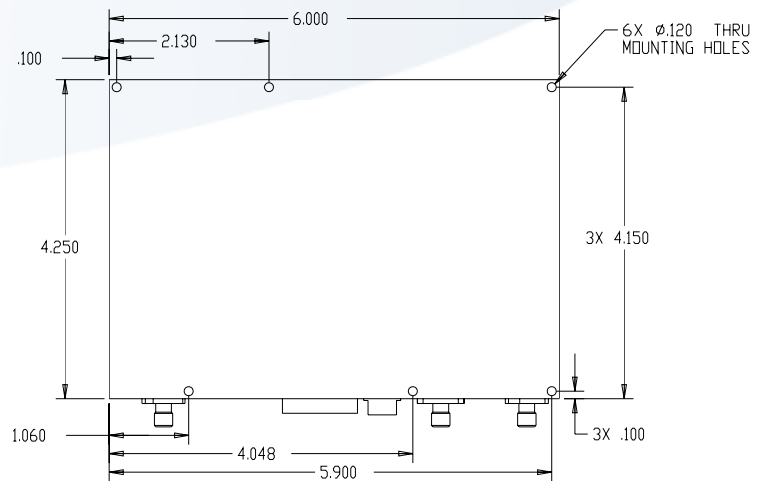
#### **GENERAL DESCRIPTION**

The LNMFS family of modular sub-octave coverage frequency synthesizers achieves exceptionally low phase noise in a rugged, compact package. Within the LNMFS, basic PLL indirect synthesizer architecture is enhanced using DDS and FPGA technology. This allows small step size and low spurious output levels to be achieved with moderate switching speed. The serial interface simplifies designing the synthesizer for any system application.

## SPECIFICATIONS

|                          |                   |               |
|--------------------------|-------------------|---------------|
| Output Frequency         | 11.45 – 12.57 GHz |               |
| Frequency Bandwidth      | 1.12 GHz          |               |
| Step Size                | 1 KHz             |               |
| Switching Speed          | < 50 mS           |               |
| Power Output             | 12 to 16 dBm      |               |
| In Band Spurious         | < -65 dBc         |               |
| Out of Band Spurious     | < -55 dBc         |               |
| Harmonics                | < -20 dBc         |               |
| Phase Noise              | 1 KHz             | < -78 dBc/Hz  |
|                          | 10 KHz            | < -90 dBc/Hz  |
|                          | 100 KHz           | < -100 dBc/Hz |
|                          | 1 MHz             | < -115 dBc/Hz |
| Fixed L-Band Output      |                   |               |
| Frequency                | 2160 MHz          |               |
| Power Output             | 12 to 16 dBm      |               |
| Spurious                 | < -70 dBc         |               |
| Harmonics                | < -40 dBc         |               |
| External Reference Input |                   |               |
| Frequency                | 10 MHz            |               |
| Input Level              | -3 to +7 dBm      |               |
| Power Consumption        |                   |               |
| DC Supply                | +15.3 V           | 500 mA        |
|                          | +5.3 V            | 1200 mA       |
| Operating Temp. Range    | -25°C to +75°C    |               |

## OUTLINE DRAWING



NOTES:  
CONNECTORS:  
RF OUT, LO OUT & REF IN: SMA  
TYPE JACK (FEMALE).  
DC & CONTROL: IDC TYPE, 14 PIN

| PIN | FUNCTION        |
|-----|-----------------|
| 1   | NC              |
| 2   | GND             |
| 3   | +5.25 to +5.50V |
| 4   | GND             |
| 5   | +12 to +18V     |
| 6   | GND             |
| 7   | LOCK            |
| 8   | GND             |
| 9   | DATA            |
| 10  | GND             |
| 11  | CLOCK           |
| 12  | GND             |
| 13  | ENABLE          |
| 14  | GND             |

**FOR ADDITIONAL INFORMATION CONTACT**  
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