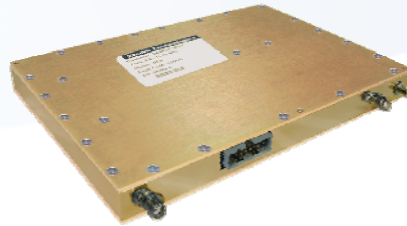


## MFS Frequency Synthesizer

### MFS-124



### FREQUENCY RANGE: 12.40-13.60 GHz

#### FEATURES

- Very Low Phase Noise, 20 dB better than IESS-308
- Low Spurious:<-85 dBc
- 1 KHz or 125 KHz Standard Steps Size Options
- Includes Fixed Frequency L-Band Output
- Serial Control for Simplified Interconnect
- Compact Modular Construction: 7.7" X 5.5" X 0.73"
- Low DC Power Consumption , < 8 watts
- Wide Operation Temperature Range
- Converts the entire KU-Band (2.25 GHz)
- Meets ESTI 300019-1-4 Shock and Vibration Requirements

#### APPLICATIONS

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

#### GENERAL DESCRIPTION

This family of efficient, low phase noise compact modular frequency synthesizers achieves small frequency step size through a fractional-N synthesis configuration designed for low phase noise and low-spurious outputs. A microcontroller handles digital IO and communicates with and optimizes the fractional-N PLL for the current set frequency. GaAs and SiGe MMIC devices provide for efficient RF and microwave signal processing. The low overall power consumption realized with this architecture results in reduced operating temperature and higher reliability, and it allows use of a smaller DC power supply. These synthesizers provide substantial performance margin for the phase noise requirements of IESS-308, Eutelsat, and MIL-STD-188 for fixed and mobile SATCOM ground stations. The MFS frequency synthesizer product family has over one-thousand units in field operation and is proven for high reliability under a wide range of operational conditions.

## SPECIFICATIONS

Output Frequency	12.40 – 13.60 GHz	
Frequency Bandwidth	1.20 GHz	
Step Size	125 KHz	
Switching Speed	< 50 mS	
Power Output	11 – 15 dBm	
Load VSWR	2.0:1	
In Band Spurious	-70 dBc	
Out of band Spurious	-82 dBc	
Phase Noise	1 KHz	-80 dBc
	10 KHz	-89 dBc
	100 KHz	-99 dBc
	1 MHz	-121 dBc

### Fixed L-Band Output

Frequency	N/A
Power Output	N/A
Spurious	N/A

### External Reference Input

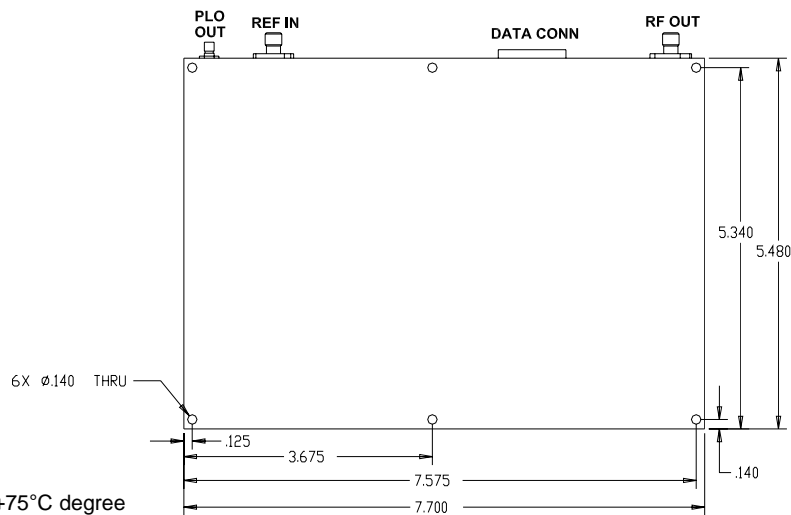
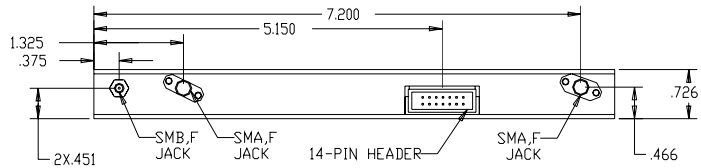
Frequency	10 MHz
Input Level	0 - 6 dBm

### Power Consumption

DC Supply	+5V	500 mA
	+5.25V	850 mA

Operating Temp. Range -15°C to +75°C degree

## OUTLINE DRAWING



PIN	FUNCTION
1	N/C
2	GND
3	+5.2V
4	GND
5	+18V
6	GND
7	LOCK
8	GND
9	DATA
10	GND
11	CLOCK
12	GND
13	ENABLE
14	GND

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