

MFS Frequency Synthesizer

MFS-17



FREQUENCY RANGE: 4.5725 – 5.5425 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

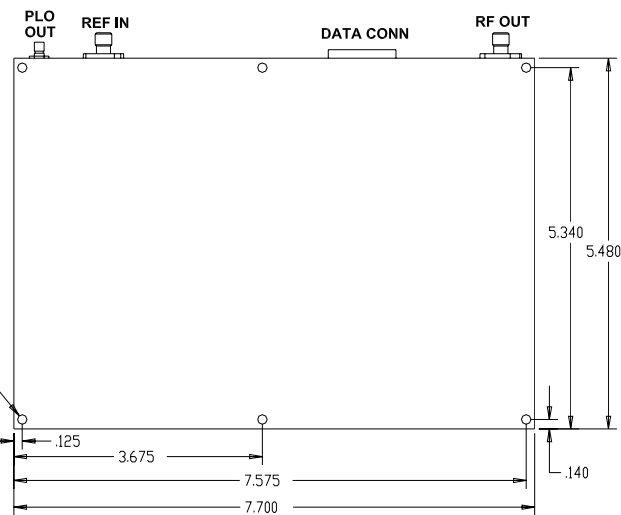
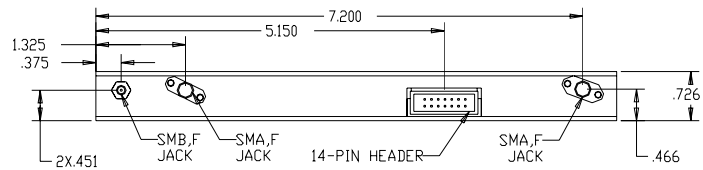
GENERAL DESCRIPTION

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 five-thousand units in field operation and is proven for high reliability under a wide range of operational conditions.

SPECIFICATIONS

Output Frequency	4.5725 – 5.5425 GHz
Frequency Bandwidth	0.97 GHz
Step Size	1 KHz
Switching Speed	50 mS
Power Output	13 – 17 dBm
Load VSWR	2.0:1
In Band Spurious	-70 dBc
Out of Band Spurious	-82 dBc
Phase Noise	1 KHz -86 dBc/Hz
	10 KHz -96 dBc/Hz
	100 KHz -105 dBc/Hz
	1 MHz -126 dBc/Hz
Fixed L-Band Output	
Frequency	1112.5 MHz
Power Output	11 – 14 dBm
Spurious	-82 dBc
External Reference Input	
Frequency	10 MHz
Input Level	-3 to 14 dBm
Power Consumption	
DC Supply	+15 V 500 mA
	+5.25 V 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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