



MFS Frequency Synthesizer

MFS-05



FREQUENCY RANGE: 8.61-10.73 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	8.61 – 10.73 GHz
Frequency Bandwidth	2.12 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 -81 dBc/Hz
	10 KHz -91 dBc/Hz
	100 KHz -101 dBc/Hz
	1 MHz -121 dBc/Hz

Fixed L-Band Output

Frequency	1950 MHz
Power Output	11 – 14 dBm
Spurious	-82 dBc

External Reference Input

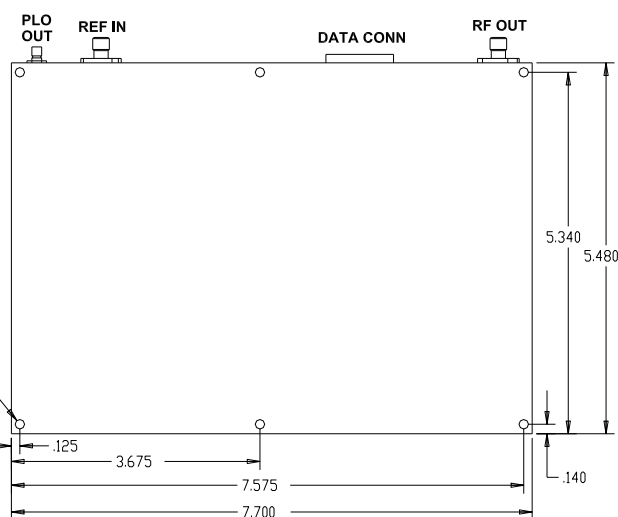
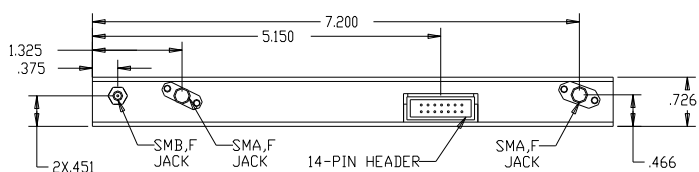
Frequency	10 MHz
Input Level	-3 to 14 dBm

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

FOR ADDITIONAL INFORMATION CONTACT

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