

SPI Frequency Synthesizer, 1 GHz to 6.4 GHz, +18 dBm Pout, 100 MHz Step Size, 100 MHz External Ref. Phase Noise -90 dBc/Hz, +5 Vdc, SMA

The FMSN3906 is a Frequency Synthesizer module that covers a broadband frequency range from 1 GHz to 6.4 GHz and produces > +18 dBm output power. The 50 ohm design provides high resolution with a 100 MHz output frequency step size, and supports a 100 MHz External Reference for design flexibility. Impressive typical performance includes low Spurious Rejection of -62 dBc, and low Phase Noise of -90 dBc/Hz @ 1 kHz offset. Operating Voltage is +5 Vdc with 200 mA current. The rugged ultra small size package design supports field replaceable SMA female connectors and can be drop mounted onto a PWB, with DC bias pins, and a TTL controlled Lock pin. Additional pins for command control functions through a serial peripheral interface (SPI) for signal enable, clock signal, and data. The module operates across a wide temperature range of -40°C to +85°C, and can withstand relative humidity exposure up to 95% maximum.

Electrical Specifications (TA= -40°C to +85°C, Vd1 = 5 V, Id1 = 200 mA)

Reference Control Interface External Serial, TTL

Description	Min	Typ	Max	Units
Frequency Range	1		6.4	GHz
Load Impedance		50		Ohms
Output Power	15	18	20	dBm
Step Size		100		MHz
Phase Locked Speed		300		us
Phase Noise @1kHz Offset		-90		dBc/Hz
Spurious		-62		dBc
2nd Harmonic		-12		dBc
Reference Frequency		100		MHz
Reference Power (CW)	0	5	8	dBm
Reference Phase Noise @ 1kHz Offset			-150	dBc/Hz
Operating DC Voltage 1	4.75	5	5.25	V
Operating DC Current 1		200		mA

Mechanical Specifications

Size	
Length	1.18 in [29.97 mm]
Width	1.18 in [29.97 mm]
Height	0.4 in [10.16 mm]
Weight	0.05 lbs [22.68 g]

Configuration	
Reference Connector	SMA Female Field Replaceable
Output Connector	SMA Female Field Replaceable

Environmental Specifications

Temperature	
Operating Range	-40 to 85 deg C
Storage Range	-55 to 85 deg C
Humidity	95%



Features:

- SPI Frequency Synthesizer Module
- Frequency Range 1 GHz to 6.4 GHz
- 100 MHz Output Frequency Step Size
- 100 MHz External Reference
- Output Power > +18 dBm
- Spurious Rejection -62 dBc
- Phase Noise -90 dBc/Hz @ 1 kHz offset
- Hopping Time < 300 msec
- DC Bias +5V @ 200 mA
- Operational Temperature Range -40°C to +85°C
- Field Replaceable SMA Female Connectors
- Rugged and small Mil Grade Aluminum Package Design
- Designed to withstand Humidity exposure up to 95% max

Applications:

- Signal Generators
- Test & Measurement
- Communication Systems
- EW Systems
- Radar Systems
- Frequency Conversion
- SIGINT
- Microwave Radio Systems
- Research & Development
- SATCOM

Fairview Microwave
301 Leora Ln., Suite 100
Lewisville, TX 75056
Tel: 1-800-715-4396 / (972) 649-6678
Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

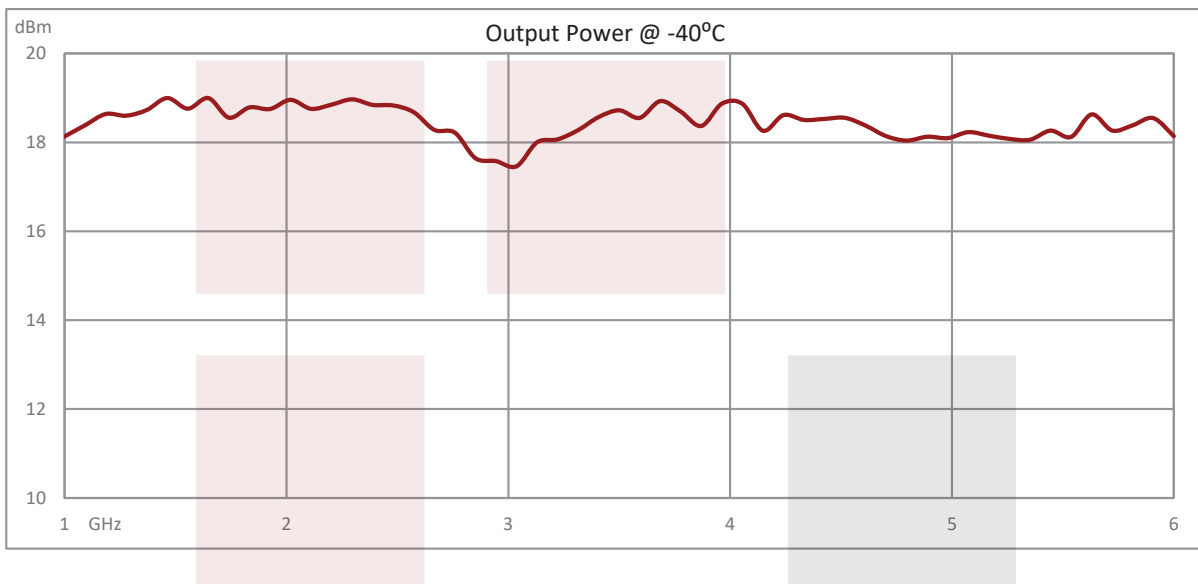
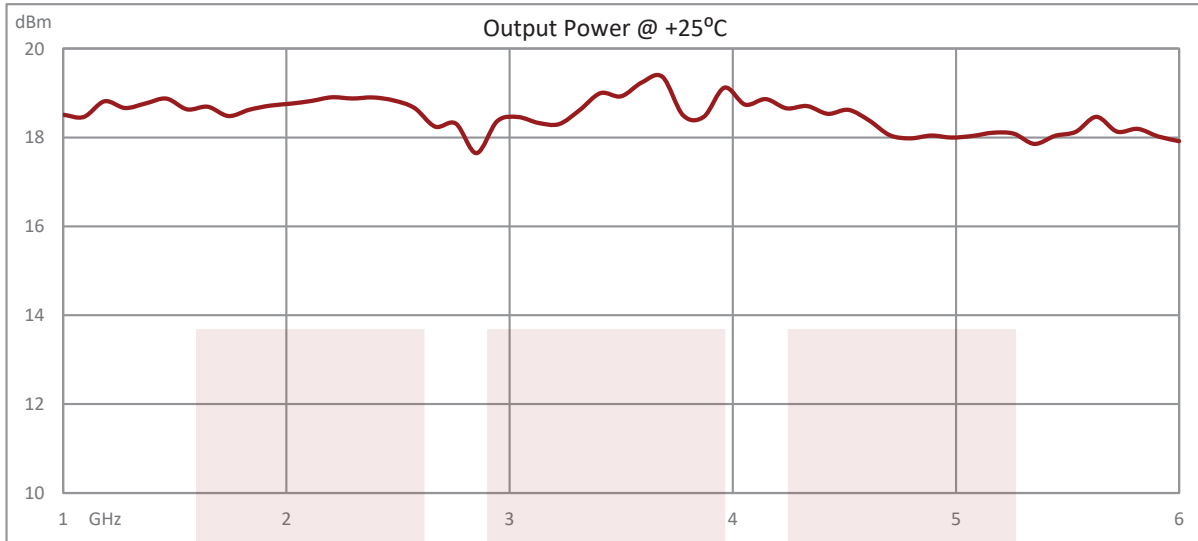
Compliance Certifications (see [product page](#) for current document)

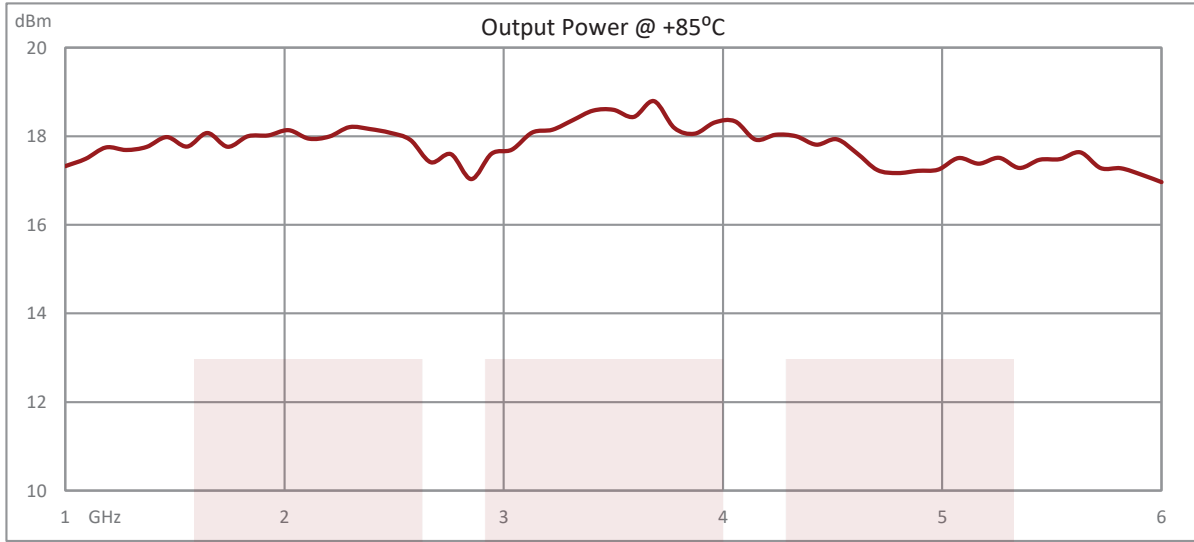
Plotted and Other Data

Notes:



Typical Performance Data





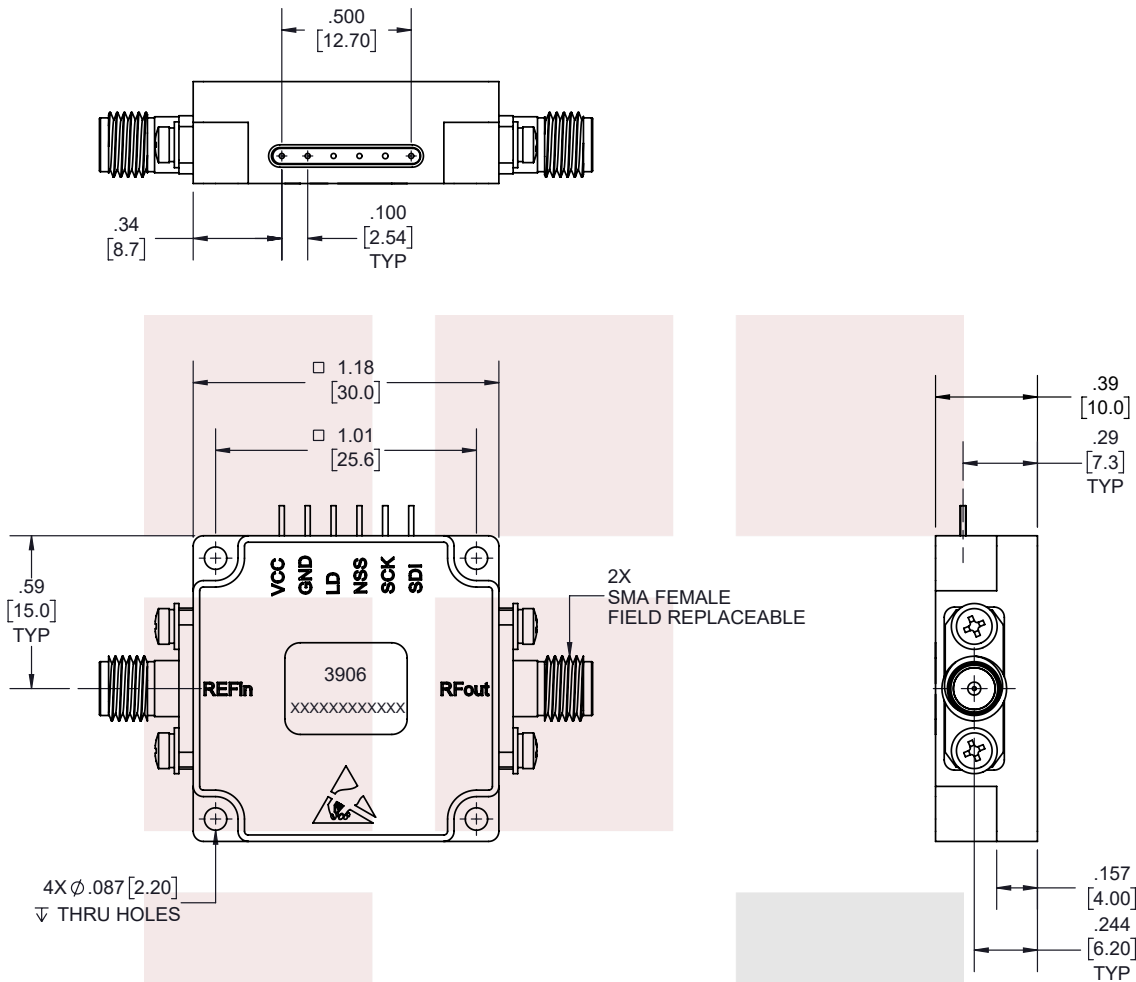
SPI Frequency Synthesizer, 1 GHz to 6.4 GHz, +18 dBm Pout, 100 MHz Step Size, 100 MHz External Ref. Phase Noise -90 dBc/Hz, +5 Vdc, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SPI Frequency Synthesizer, 1 GHz to 6.4 GHz, +18 dBm Pout, 100 MHz Step Size, 100 MHz External Ref. Phase Noise -90 dBc/Hz, +5 Vdc, SMA FMSN3906](https://www.fairviewmicrowave.com/spi-frequency-synthesizer-pll-1-6.4-ghz-sma-fmsn3906-p.aspx)

URL: <https://www.fairviewmicrowave.com/spi-frequency-synthesizer-pll-1-6.4-ghz-sma-fmsn3906-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	5/3/2022	T. GALLA



PIN CONFIGURATION		
1	VCC	+5V IN
2	GND	GND
3	LD	Lock Directive: High level: Locked Low level: Unlock
4	NSS	SPI Enable Signal
5	SCK	SPI Clock Signal
6	SDI	SPI Data

THESE COMMODITIES, TECHNOLOGY OR SOFTWARE WERE EXPORTED FROM THE UNITED STATES IN ACCORDANCE WITH THE EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW PROHIBITED.

TITLE
SPI Frequency Synthesizer, 1 GHz to 6.4 GHz, +18 dBm Pout, 100 MHz Step Size, 100 MHz External Ref. Phase Noise -90 dBc/Hz, +5 Vdc, SMA

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

TOLERANCES: CABLE LENGTH (L) TOLERANCES:

.X = ±.2 [5.08]	FRACTIONS	L ≤ 12 [305] = +1 [25] / -0
.XX = ±.02 [.51]	± 1/32	12 [305] < L ≤ 60 [1524] = +2 [51] / -0
.XXX = ±.005 [.13]	ANGLES ± 1°	60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
		120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
		300 [7620] < L = +5%L / -0

THIRD-ANGLE PROJECTION



THE INFORMATION AND DESIGN IN THIS DOCUMENT IS THE PROPERTY OF FAIRVIEW MICROWAVE CORPORATION. ALL RIGHTS RESERVED.

SHEET 1 OF 1

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SCALE N/A

SIZE A	CAGE CODE 3FKR5	DRAWN BY K.DANG	ITEM NO. FMSN3906	REV A
-----------	--------------------	--------------------	----------------------	----------

T-Rev.D