

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

The FMSN3912 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 1 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)

Mode	Integer/Fractional
Reference	External
Control Interface	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		1		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

<b>Size</b>	
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



### Features:

- SPI Frequency Synthesizer Module
- Frequency Range 1 GHz to 6.4 GHz
- 5 MHz Output Frequency Step Size
- 100 MHz External Reference
- Output Power > +15 dBm
- Spurious Rejection -60 dBc
- Phase Noise -90 dBc/Hz @ 1 kHz offset
- Hopping Time 300 msec
- DC Bias +5V @ 200 mA
- Operational Temperature Range -40oC to +85oC
- 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

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Humidity 95%

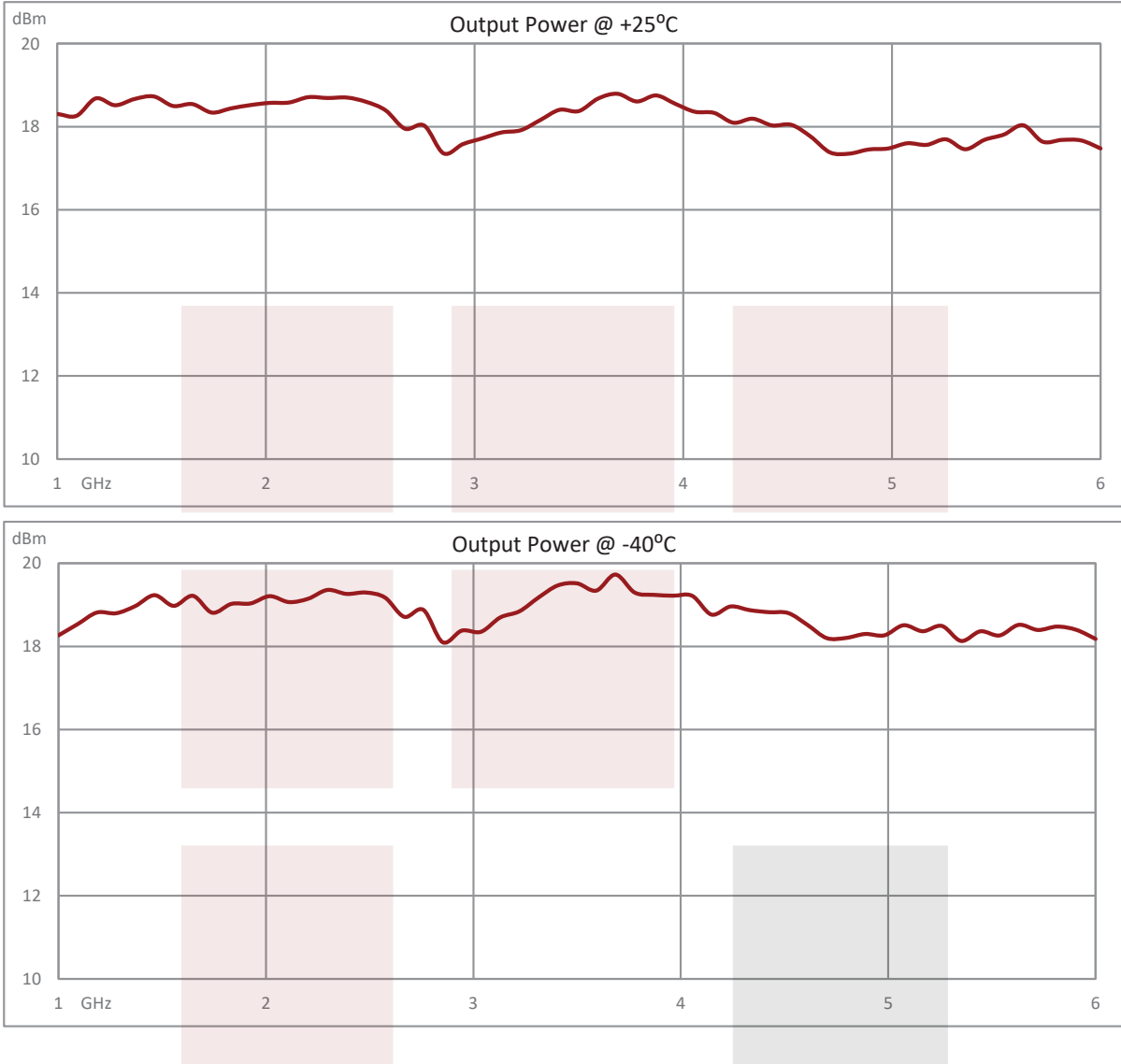
**Compliance Certifications** (see [product page](#) for current document)

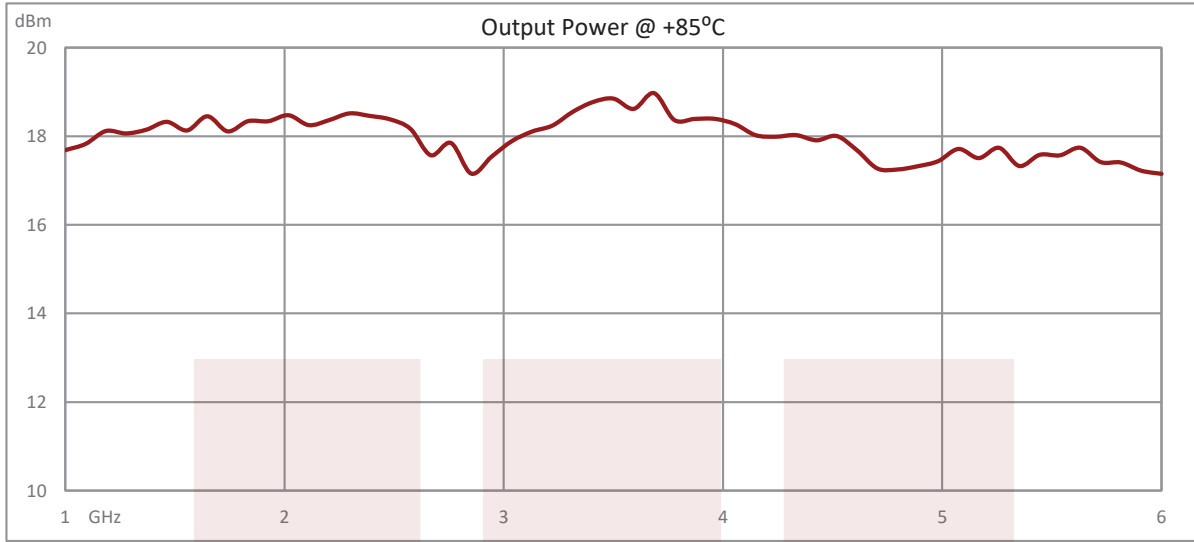
**Plotted and Other Data**

Notes:



**Typical Performance Data**





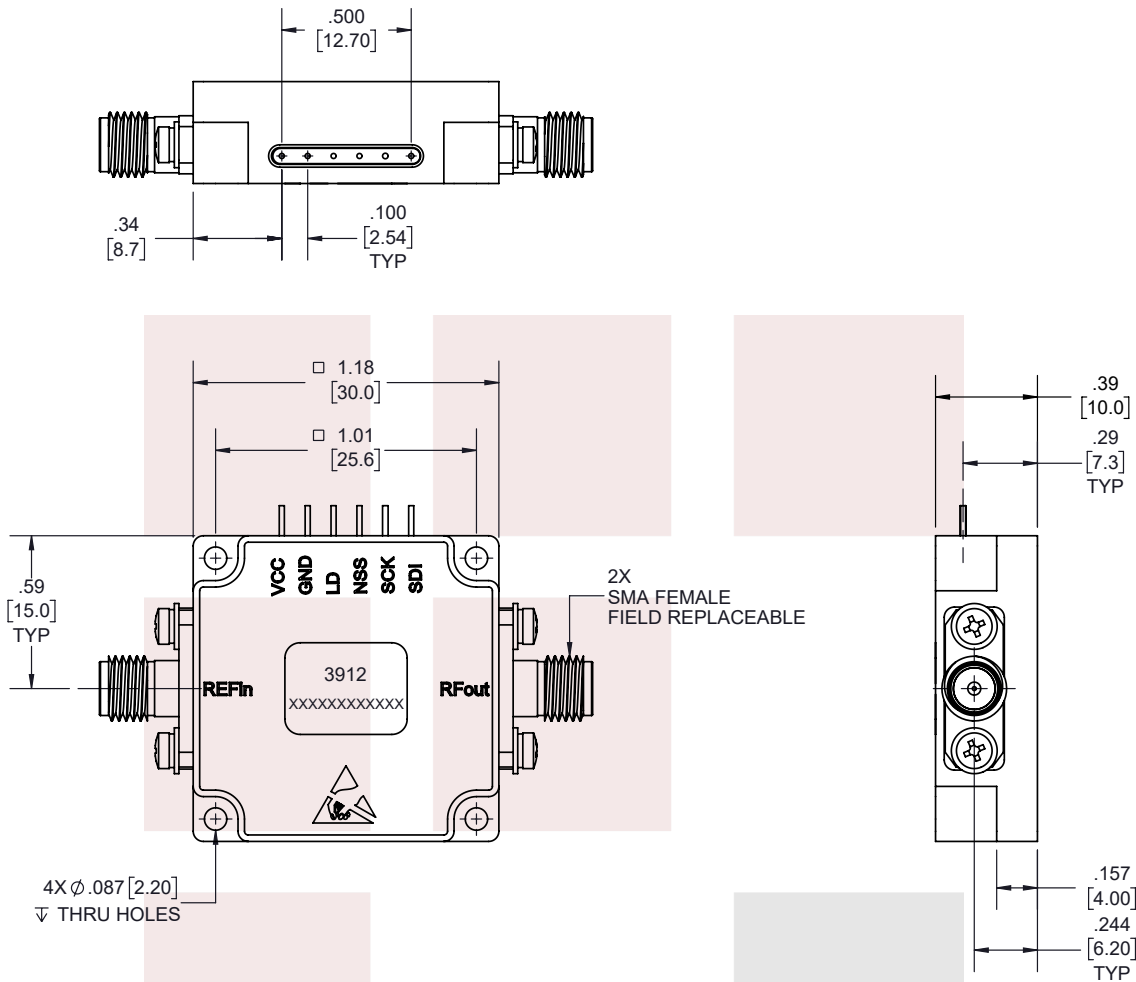
SPI Frequency Synthesizer, 1 GHz to 6.4 GHz, +18 dBm Pout, 1 MHz Step Size, 100 MHz External Reference, -90 dBc/Hz Phase Noise, +5 Vdc, SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified 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, 1 MHz Step Size, 100 MHz External Reference, -90 dBc/Hz Phase Noise, +5 Vdc, SMA FMSN3912](https://www.fairviewmicrowave.com/spi-frequency-synthesizer-pll-1-6.4-ghz-sma-fmsn3912-p.aspx)

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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

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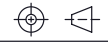
TITLE  
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UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES  
DIMENSIONS IN [ ] ARE MILLIMETERS

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



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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. FMSN3912	REV A
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T-Rev.D