Fairview Microwave
RF COMPONENTS ON DEMAND. Done!

FMSN3903
DATA SHEET

USB Frequency Synthesizer PLL (Phase Locked Loop), Operating From 10 GHz to 20 GHz With SMA Output

FMSN3903 is a Frequency Synthesizer Module that covers a wide frequency band from 10 GHz to 20 GHz with exceptional spurious rejection and phase noise performance. Maximum output power is > +10 dBm across the entire band and Attenuation range up to 30 dB is adjustable in 1 dB steps. This high quality signal source has several outstanding features including a USB 2.0 interface that is powered and command controlled directly by a host PC and a Female SMA output connector, and is VISA compliant which enables seamless cross platform use. The synthesizer can be GUI controlled via Windows®, Macintosh®, or Linux® platforms, or with SCPI compliant VISA commands (downloadable user manual), or with other system design software such as LabVIEW®. The compact size makes it ideal for bench top test and measurement use or for radar and communication systems. Frequency resolution of the FMSN3903 is available in integer and fractional operating modes and the user can select between an internal reference or externally applied reference. The module supports integrated phase locked loop (PLL) circuitry that the User can select between an internal reference (capable of phase locking) or externally applied reference. The RF Synthesizer Module comes complete with a USB 2.0 A extension and an SMA male to MMCX plug cable.

Electrical Specifications (TA= 25°C, Id1 = 500 mA)

Mode	Integer/Fractional
Reference	Internal (External Optional)
Option(s)	Phase Lock Indicator
Control Interface	USB

Description	Min	Typ	Max	Units
Frequency Range	10		20	GHz
Output Power	-19		+18	dBm
Step Size (Integer Mode)		200		MHz
Step Size (Fractional Mode)		1		MHz
Phase Locked Speed		60		µs
Phase Noise @100kHz Offset		-80		dBc/Hz
2nd Harmonic		-15		dBc
3rd Harmonic		-40		dBc
4th Harmonic		-60		dBc
Reference Frequency	5	50	100	MHz
Reference Power (CW)	+0		+15	dBm
Internal Reference Frequency		50		MHz
Internal Reference Accuracy		2.5		ppm
Operating DC Current 1		500		mA

Features:

- Wideband Output Frequency
- 10 GHz to 20 GHz
- Integer and Fractional operating modes
- +18 dBm max output power
- 30 dB Attenuation adjustable in 1 dB steps
- USB 2.0 Interface
- Female SMA output
- USBTMC VISA Compliant
- User Selectable internal reference or externally applied reference
- Small compact package size
- LED indicators
- Downloadable User Manual
- Accessory cables included

Applications:

- Signal Generators
- Test Equipment
- RF System Integration
- Communication Systems
- EW Systems
- X-Band Systems
- Ku-Band Systems
- K-Band Systems
- Radar Systems
- Frequency Conversion
- SIGINT

Fairview Microwave
1130 Junction Dr. #100
Allen, TX 75013
Tel: 1-800-715-4396 / (972) 649-6678
Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

Performance by Frequency

Description	F1	F2	F3	Units
Frequency	10	15	20	GHz
Phase Noise @ 100 kHz Offset (With Internal Reference)	-81	-80	-82	dBc/Hz
2nd Harmonics	-15	-30	-45	dBc
3rd Harmonics	-40			dBc
4th Harmonics	-60			dBc
Output Power Range	-13 to +18	-14 to +16	-19 to +11	dBm

Electrical Specification Notes:
Step size specified under default conditions (a 50 MHz reference input with a reference divider of 1).

Mechanical Specifications

Size

Length	4.1 in [104.14 mm]
Width	0.9 in [22.86 mm]
Height	0.645 in [16.38 mm]
Weight	0.2622 lbs [118.93 g]

Configuration

Package Type	Connectorized
Reference Connector	MMCX Female
Output Connector	SMA Female
Control Connector	USB Type A - Male
Reference Divider Out Connector	MMCX Female

Mechanical Specification Notes:
The USB Type A - Male connector is used for both Power and Control.

Environmental Specifications

Temperature

Operating Range	0 to +55 deg C
Storage Range	-50 to +100 deg C

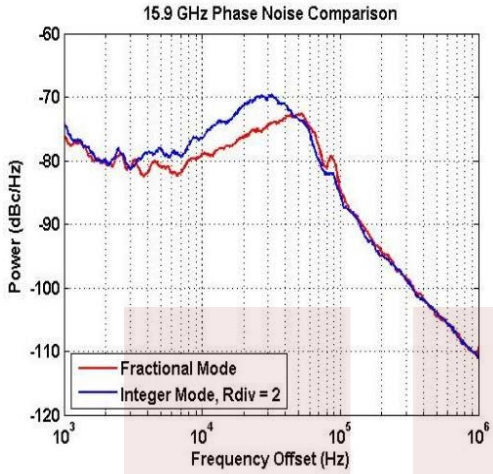
Compliance Certifications (visit www.FairviewMicrowave.com for current document)

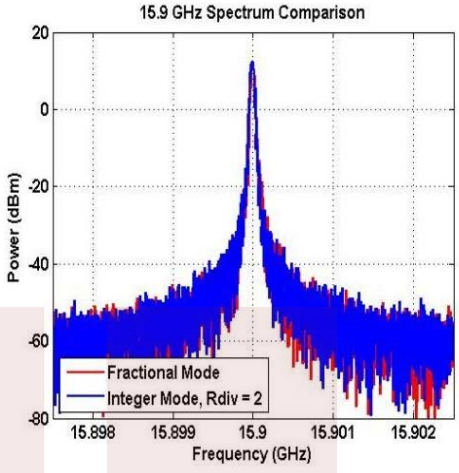
RoHS Compliant	Yes

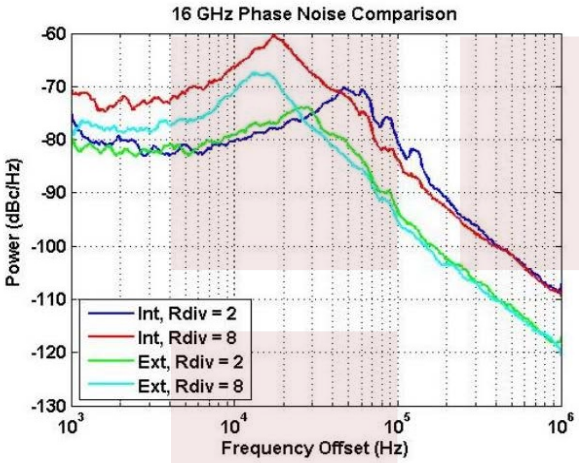
Plotted and Other Data

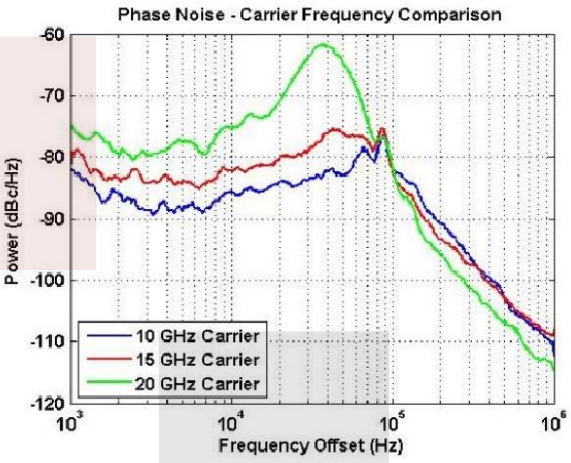
Notes:

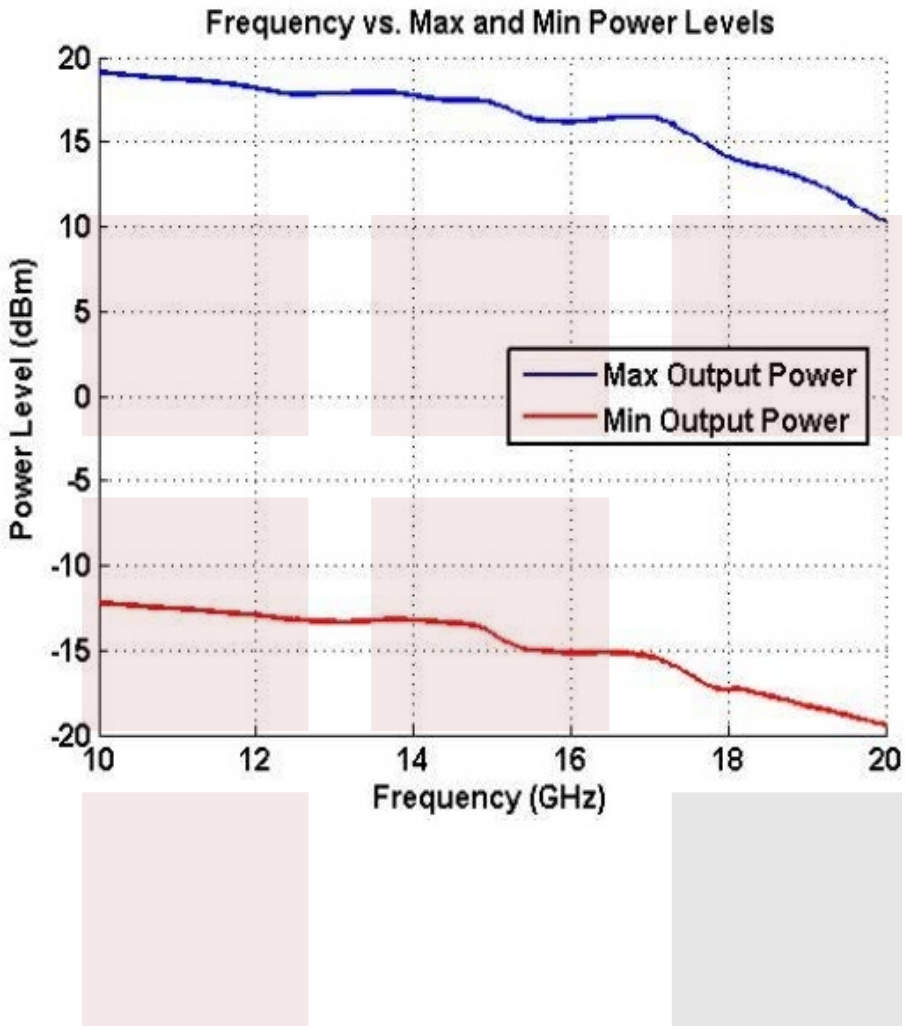
Typical Performance Data

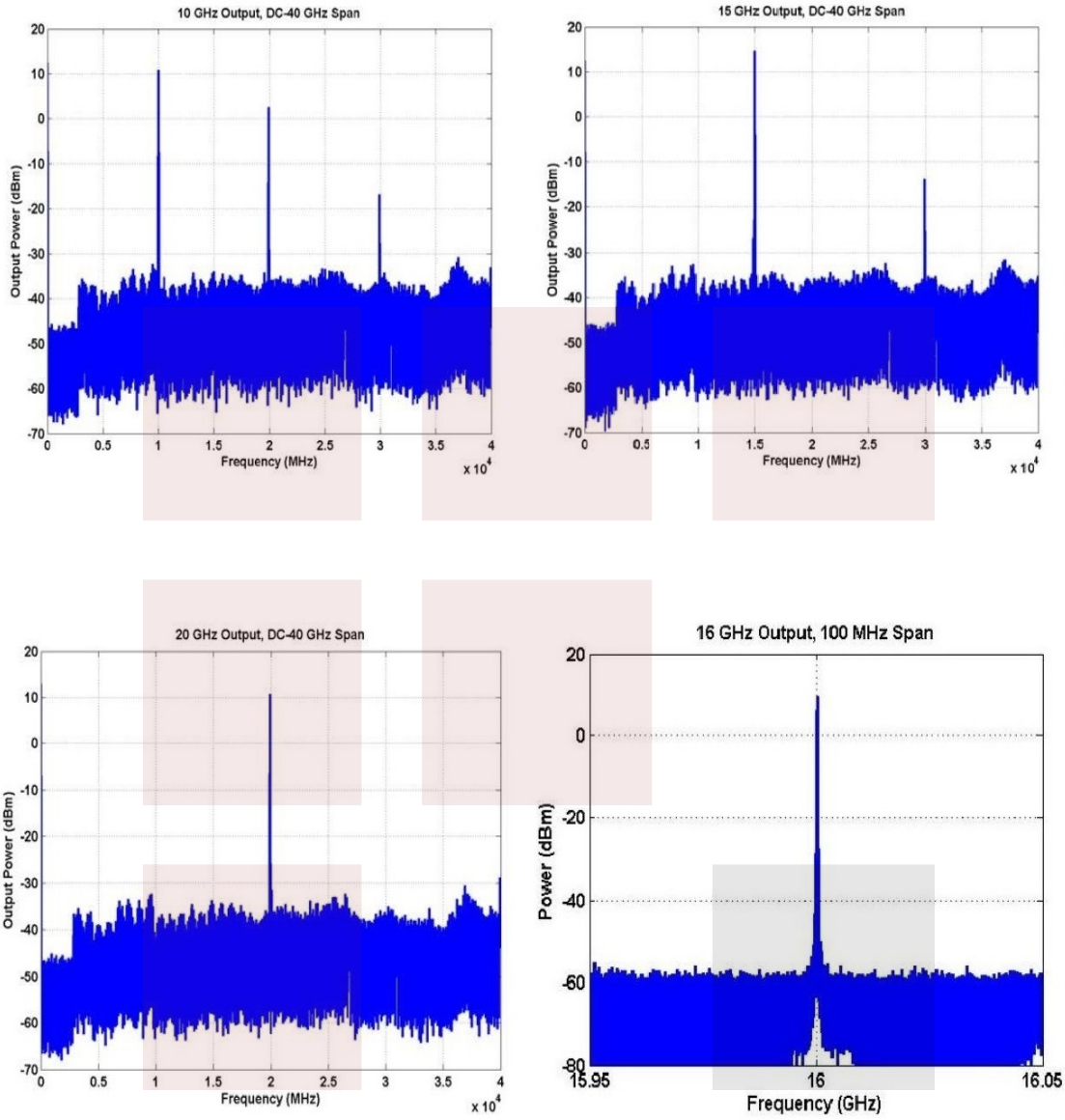


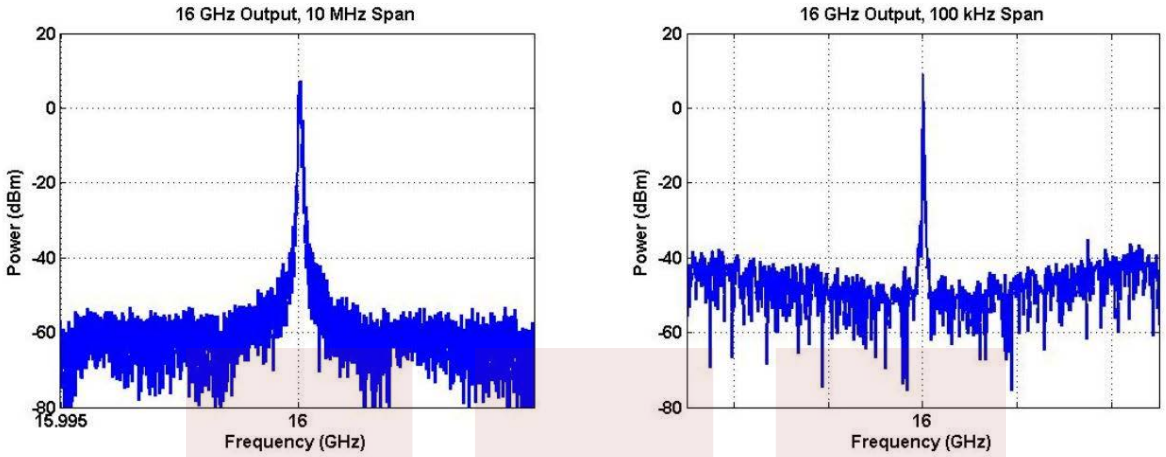








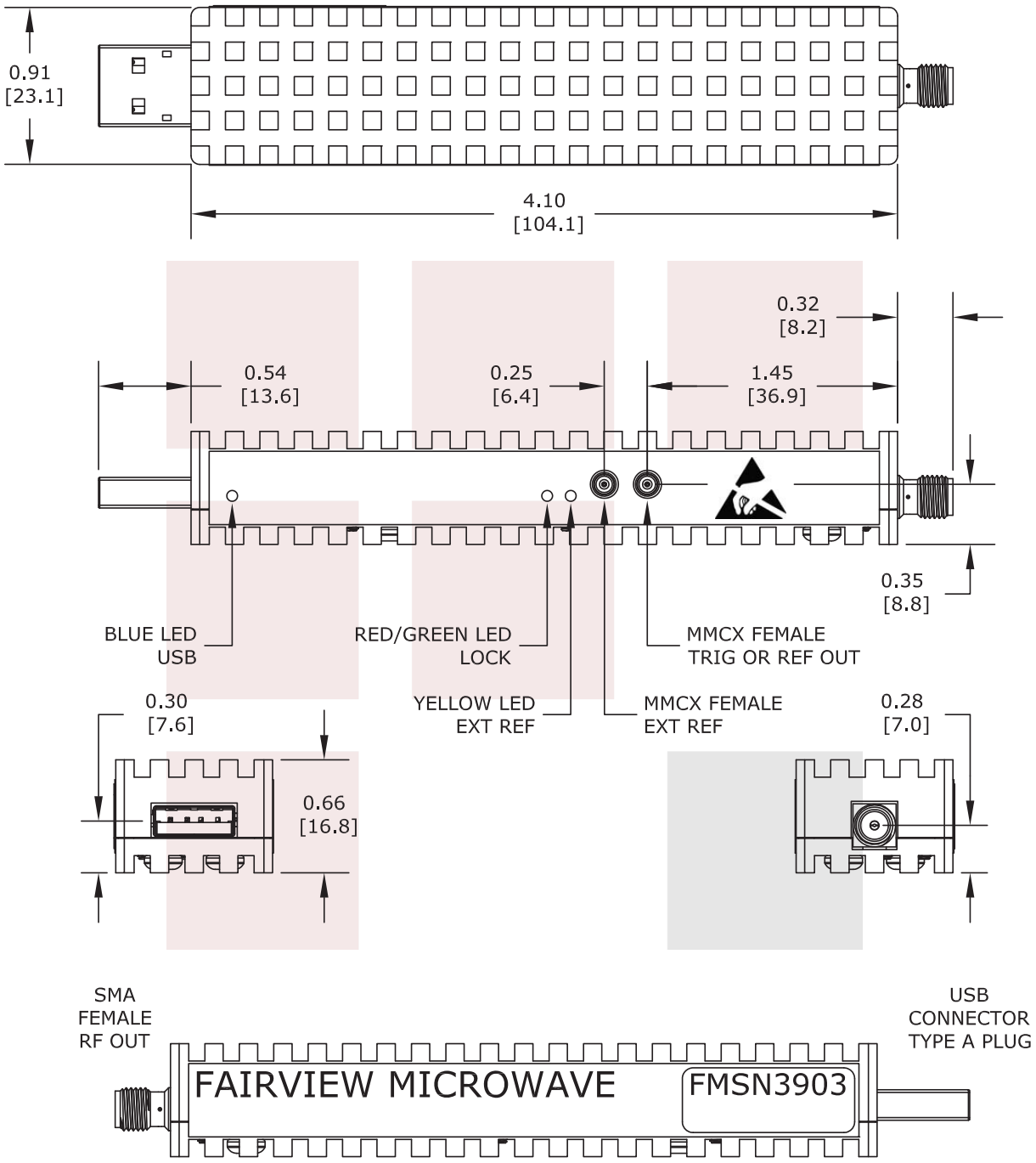




USB Frequency Synthesizer PLL (Phase Locked Loop), Operating From 10 GHz to 20 GHz With SMA Output from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: USB Frequency Synthesizer PLL (Phase Locked Loop), Operating From 10 GHz to 20 GHz With SMA Output FMSN3903

URL: https://www.fairviewmicrowave.com/usb-frequency-synthesizer-pll-10-20-ghz-sma-fmsn3903-p.aspx



FAIRVIEW MICROWAVE INC. ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM	NOTES: 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL. 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME. 3. DIMENSIONS ARE IN INCHES [mm].				
TITLE USB Frequency Synthesizer PLL (Phase Locked Loop), Operating From 10 GHz to 20 GHz With SMA Output	DWG NO FMSN3903		CAGE CODE 3FKR5		
	CAD FILE 021516	SHEET	SCALE N/A	SIZE A	2233