

**USB Frequency Synthesizer PLL (Phase Locked Loop), Operating From 25 MHz to 6 GHz With SMA Output**

FMSN3901 is a Frequency Synthesizer Module that covers a wide frequency band from 25 MHz to 6 GHz with exceptional spurious rejection and phase noise performance. Attenuation range up to 50 dB is adjustable in 1 dB steps across the entire frequency band. 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 FMSN3901 is available in integer and fractional operating modes and the User can select between an internal reference (capable of phase locking) 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.



**Features:**

- Wideband Output Frequency
- 25 MHz to 6 GHz
- Integer and Fractional operating modes
- Up to 50 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

**Electrical Specifications** (TA= 25°C)

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

Description	Min	Typ	Max	Units
Frequency Range	0.025		6	GHz
Phase Locked Speed		1		ms
Phase Noise @100kHz Offset		-86		dBc/Hz
2nd Harmonic		-24.66		dBc
3rd Harmonic		-10.66		dBc
4th Harmonic		-34.5		dBc
Reference Frequency	5	20	100	MHz
Reference Power (CW)	+0		+15	dBm
Internal Reference Frequency		50		MHz
Internal Reference Accuracy		0.5		ppm

**Applications:**

- Signal Generators
- Test Equipment
- RF System Integration
- Communication Systems
- EW Systems
- UHF/VHF Systems
- Radar Systems
- Frequency Conversion
- SIGINT

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**Performance by Frequency**

Description	F1	F2	F3	F4	Units
Frequency	0.05	3	6		GHz
Phase Noise @ 100 kHz Offset (with internal reference)	-104	-95	-86		dBc/Hz
2nd Harmonics	-24.66	-26.17	-28.5		dBc
3rd Harmonics	-10.66	-29	-47.5		dBc
4th Harmonics	-34.5	-46.83	> -70		dBc

Description	F1	F2	F3	F4	Units
Frequency	.025 to 1	1 to 1.5	1.5 to 3	3 to 6	GHz
Step Size (Integer Mode)	12.5	25	50	100	MHz

**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 0.2618 lbs [118.75 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**

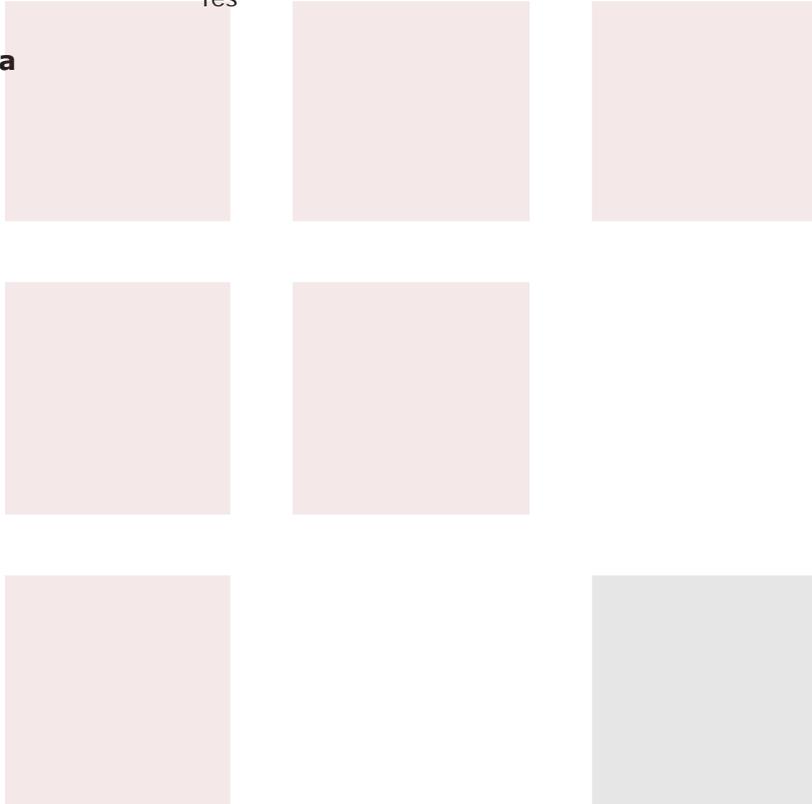
Operating Range                      0 to +55 deg C  
Storage Range                         -50 to +100 deg C

**Compliance Certifications** (visit [www.FairviewMicrowave.com](http://www.FairviewMicrowave.com) for current document)

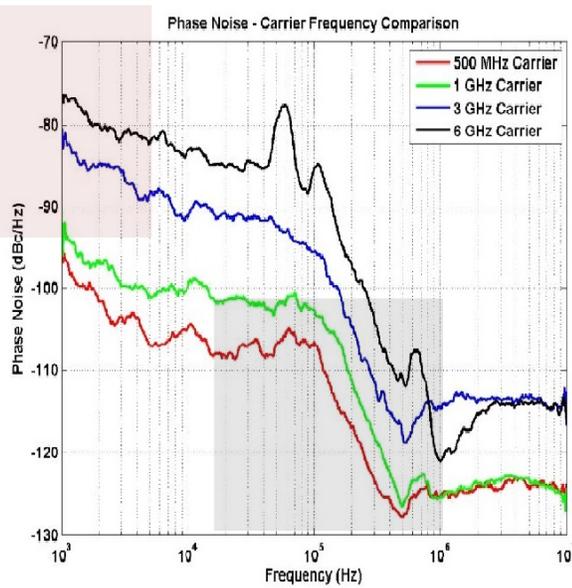
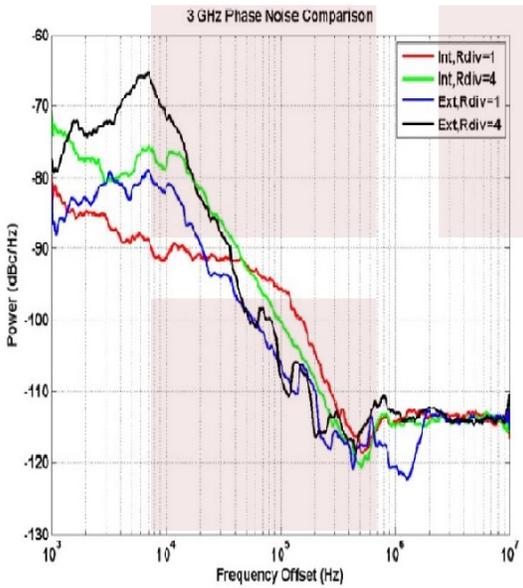
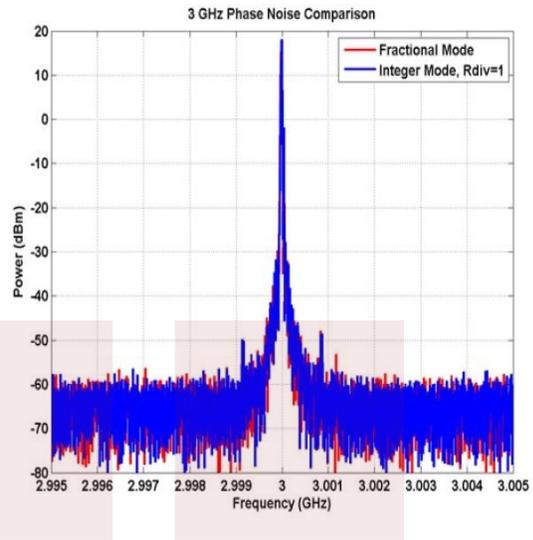
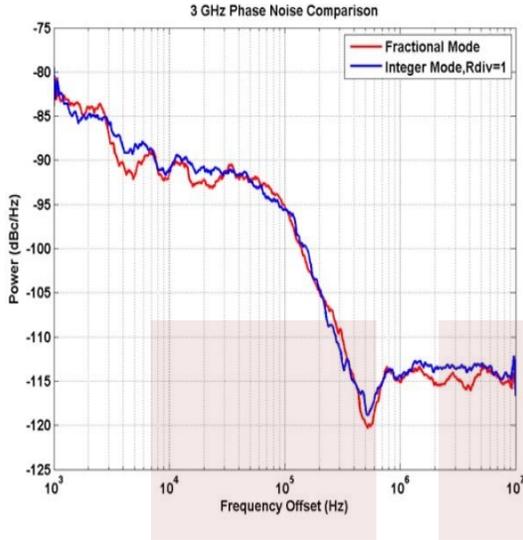
RoHS Compliant                      Yes

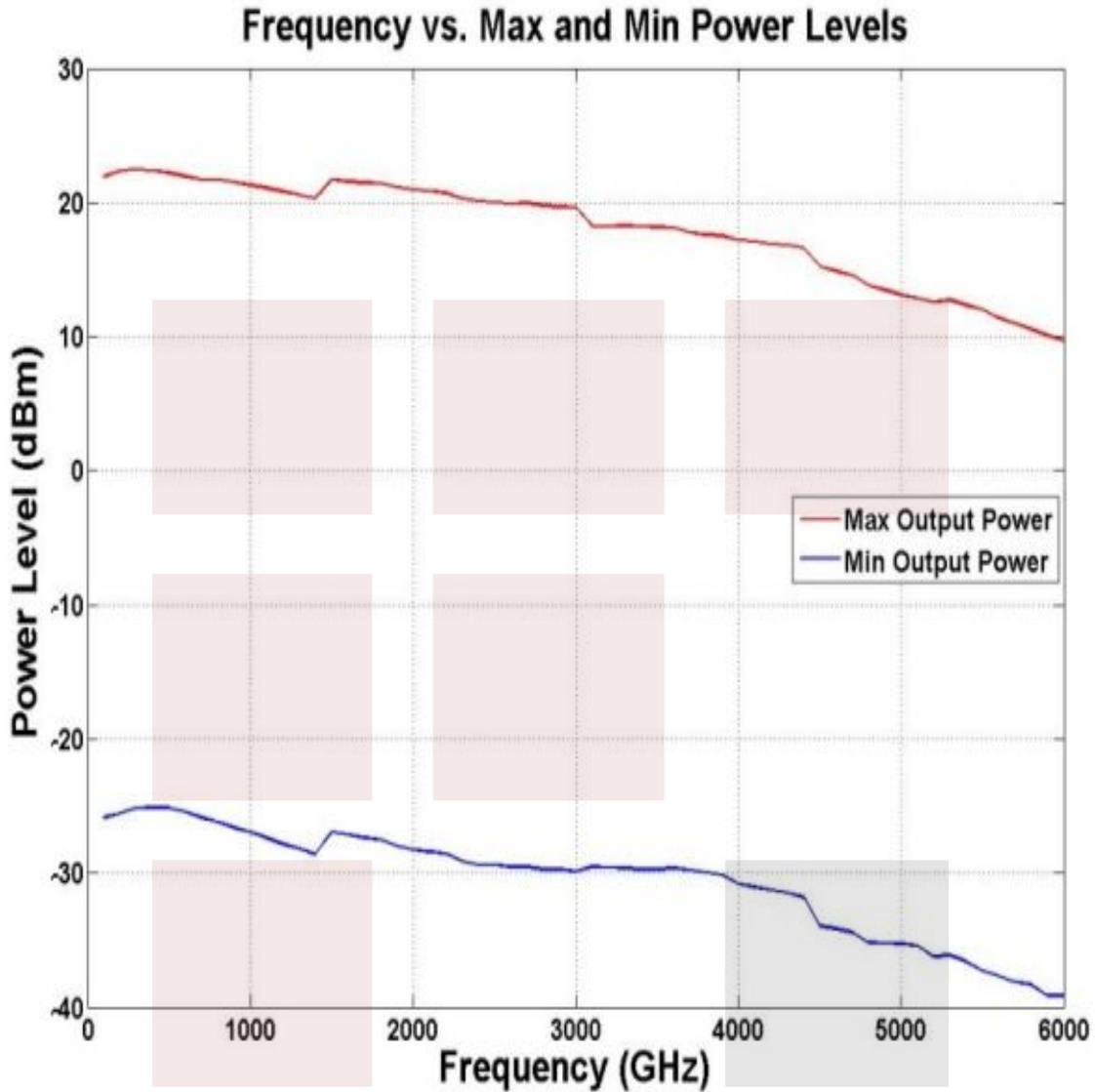
**Plotted and Other Data**

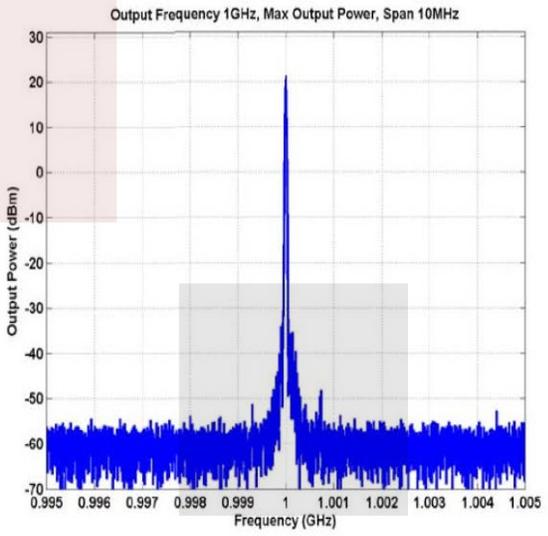
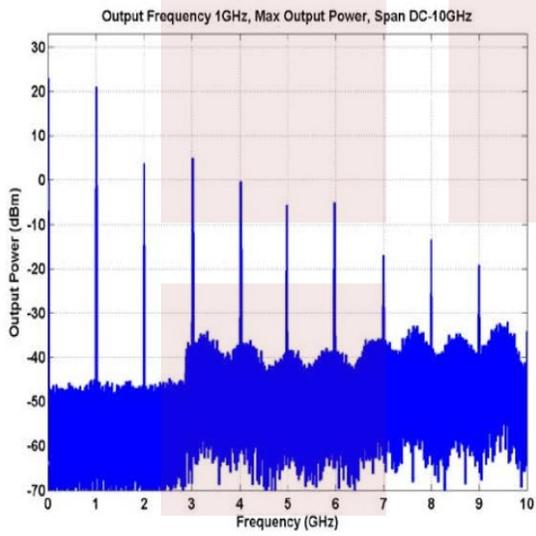
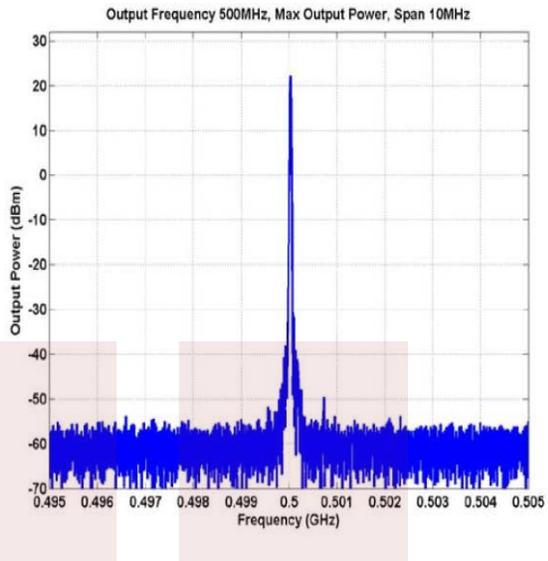
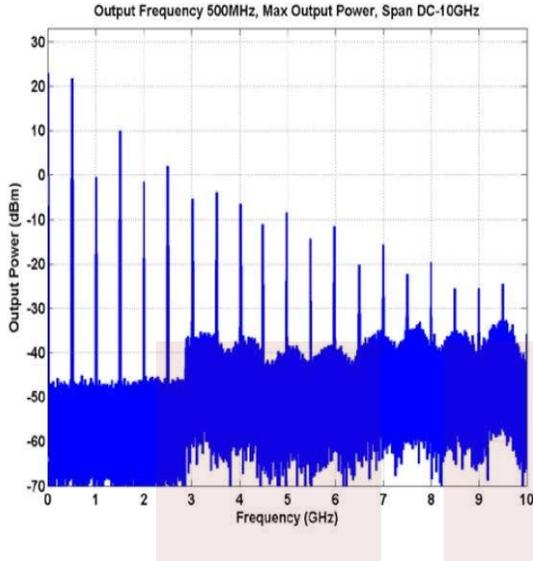
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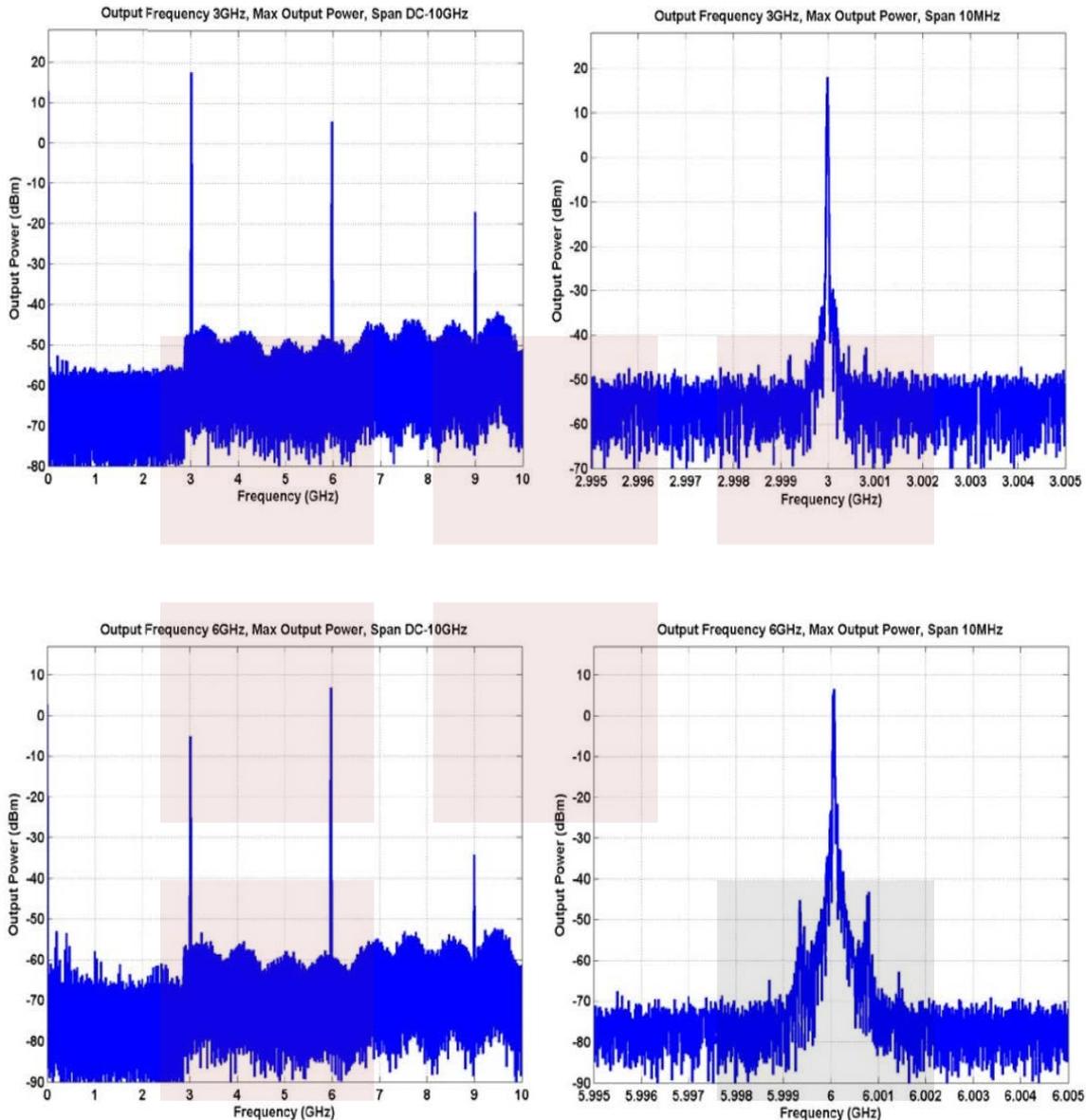


**Typical Performance Data**







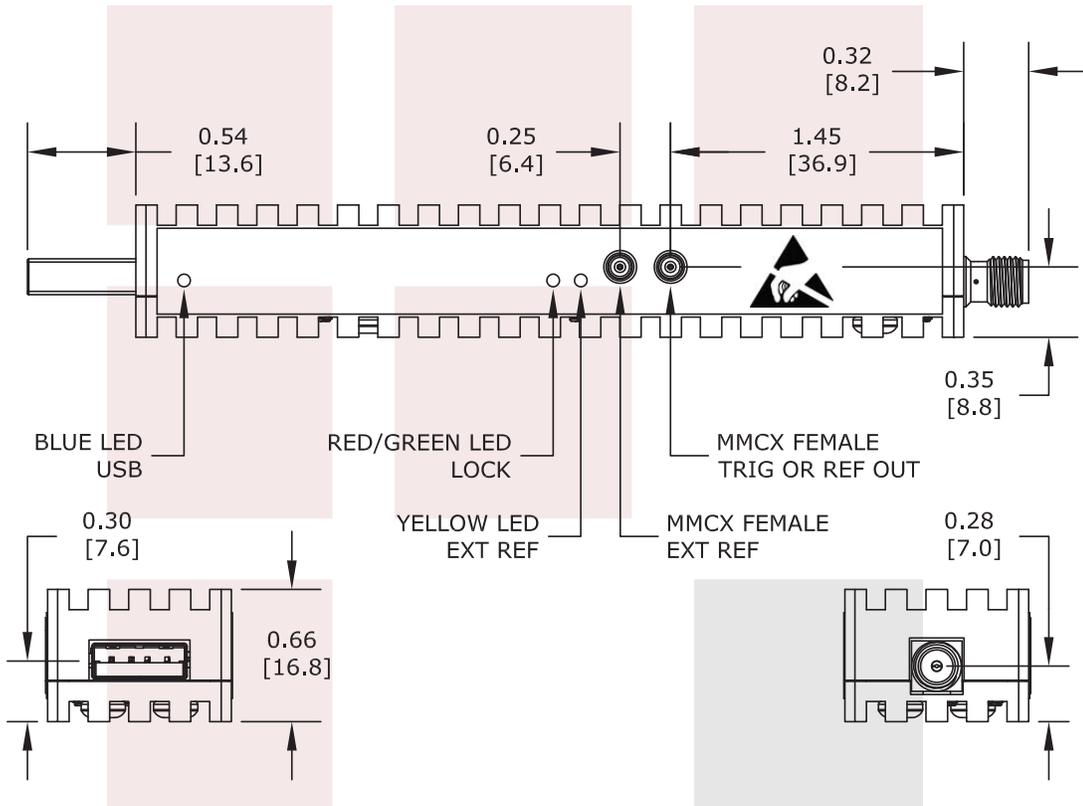
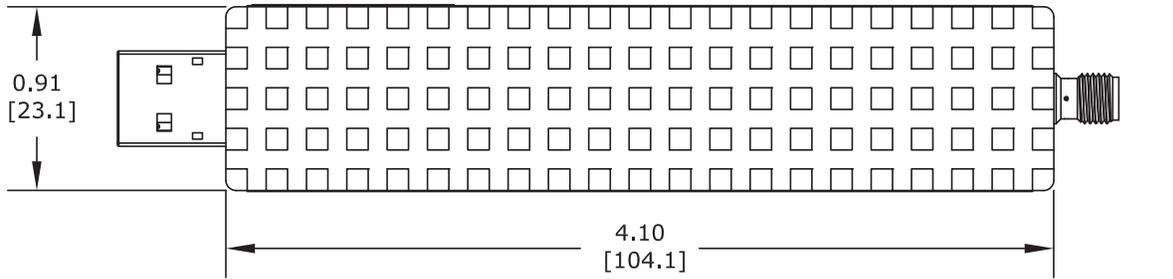


USB Frequency Synthesizer PLL (Phase Locked Loop), Operating From 25 MHz to 6 GHz With SMA Output from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [USB Frequency Synthesizer PLL \(Phase Locked Loop\), Operating From 25 MHz to 6 GHz With SMA Output FMSN3901](https://www.fairviewmicrowave.com/usb-frequency-synthesizer-pll-25-mhz-6-ghz-sma-fmsn3901-p.aspx)

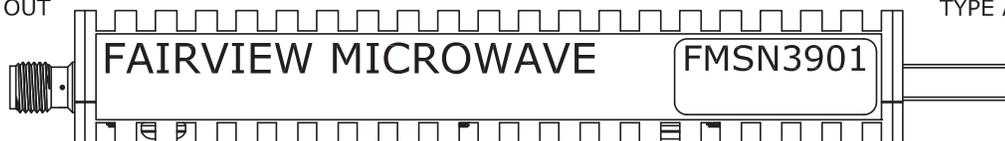
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SMA  
 FEMALE  
 RF OUT

USB  
 CONNECTOR  
 TYPE A PLUG



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TITLE USB Frequency Synthesizer PLL (Phase Locked Loop), Operating From 25 MHz to 6 GHz With SMA Output		DWG NO FMSN3901	CAGE CODE 3FKR5		
CAD FILE	021516	SHEET	SCALE	N/A	SIZE A 2233