

USB Frequency Synthesizer PLL (Phase Locked Loop), Operating from 21 GHz to 24 GHz with SMA Output

The FM11S3904 is a Frequency Synthesizer Module that covers a frequency band from 21 GHz to 24 GHz with exceptional spurious rejection and phase noise performance. Maximum output power +17 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 FM11S3904 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:

- 21 GHz to 24 GHz Output Frequency
- Integer and Fractional operating modes
- +17 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

Electrical Specifications (TA= 25°C, Id1 = 470 mA)

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

Description	Min	Typ	Max	Units
Frequency Range	21		24	GHz
Output Power	-17		+17	dBm
Step Size (Integer Mode)		400		MHz
Step Size (Fractional Mode)		1		MHz
Phase Locked Speed		1		ms
Phase Noise @100kHz Offset		-88		dBc/Hz
2nd Harmonic		-22		dBc
Reference Frequency	20	50	100	MHz
Reference Power (CW)	+0		+15	dBm
Internal Reference Frequency		50		MHz
Internal Reference Accuracy		0.5		ppm
Operating DC Current 1		470		mA

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: 0.263 lbs [119.29 g]

Configuration
 Package Type: Connectorized

Applications:

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

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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

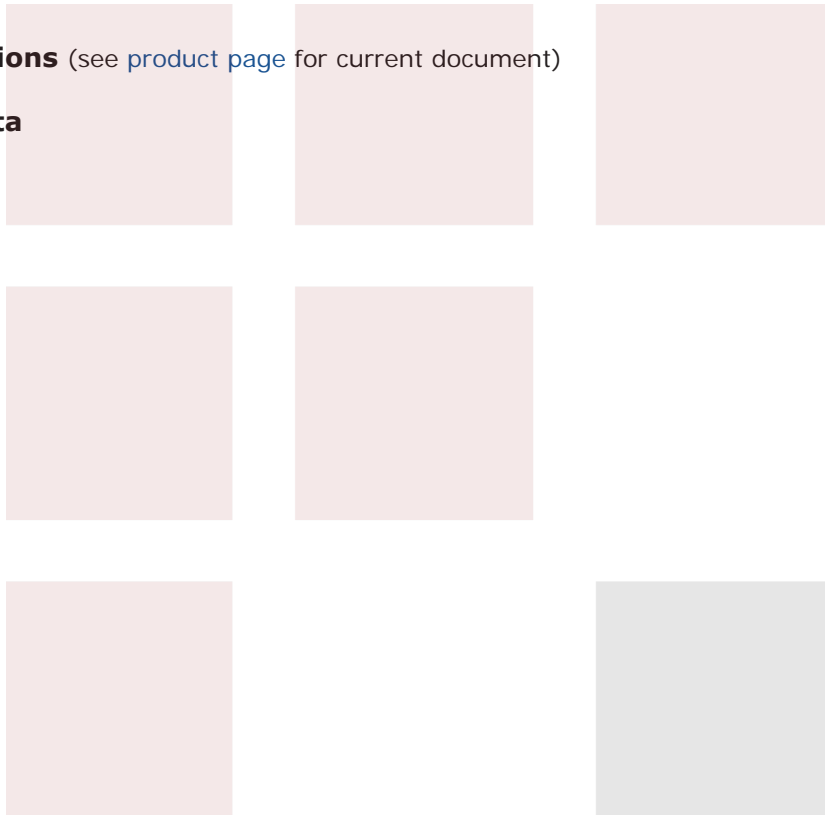
Temperature

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

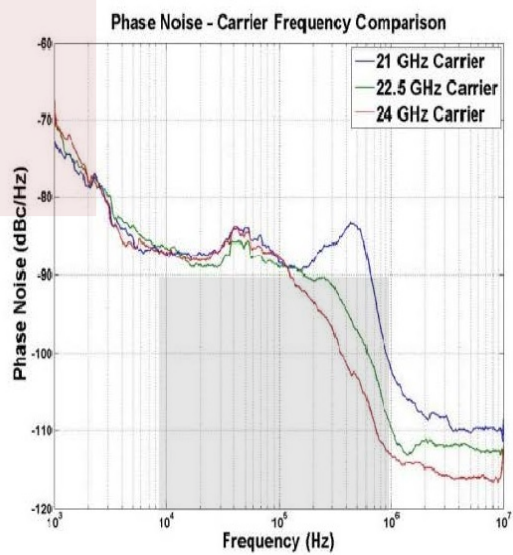
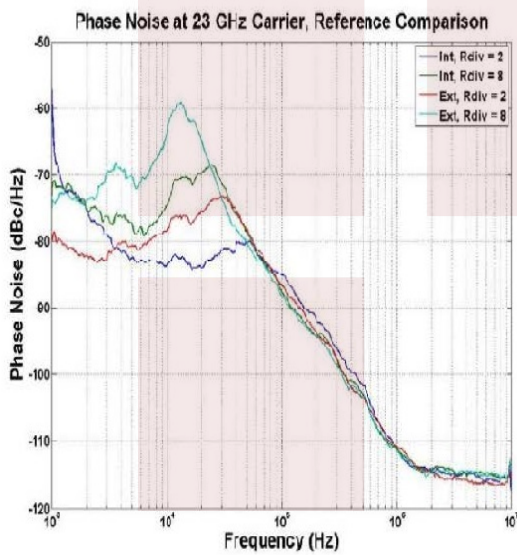
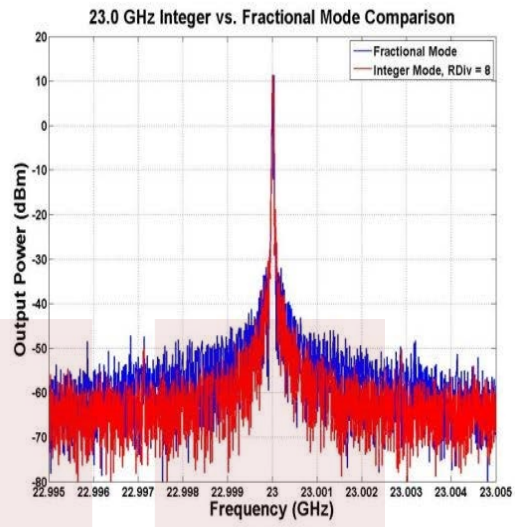
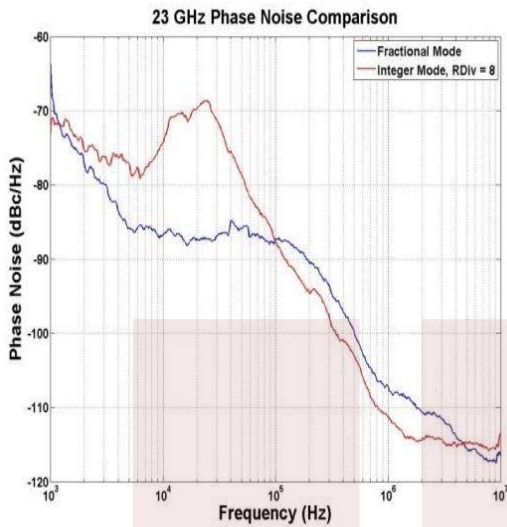
Compliance Certifications (see [product page](#) for current document)

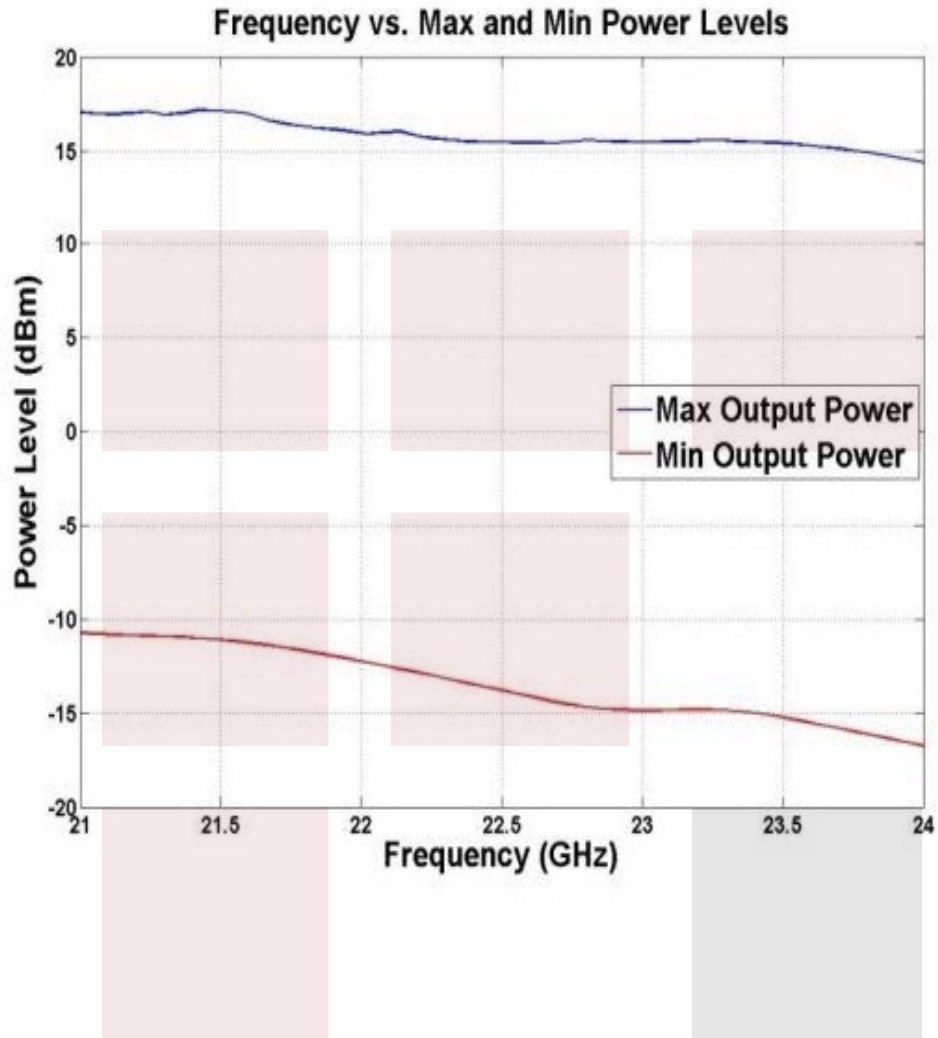
Plotted and Other Data

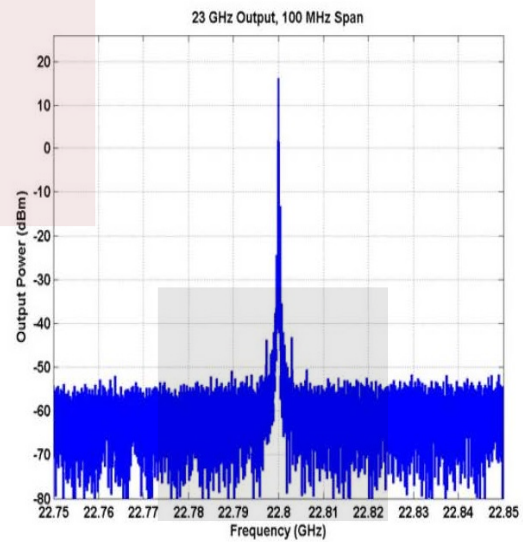
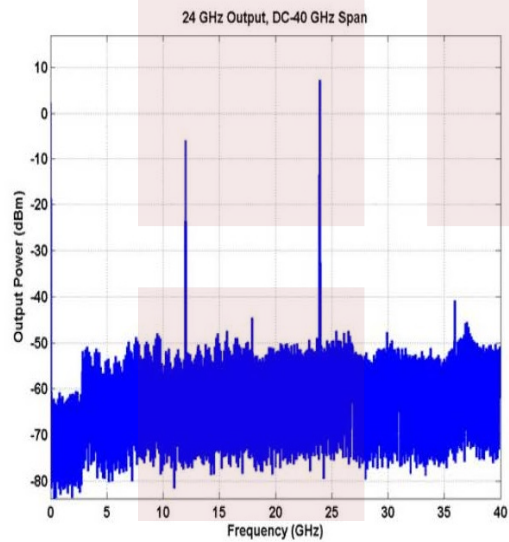
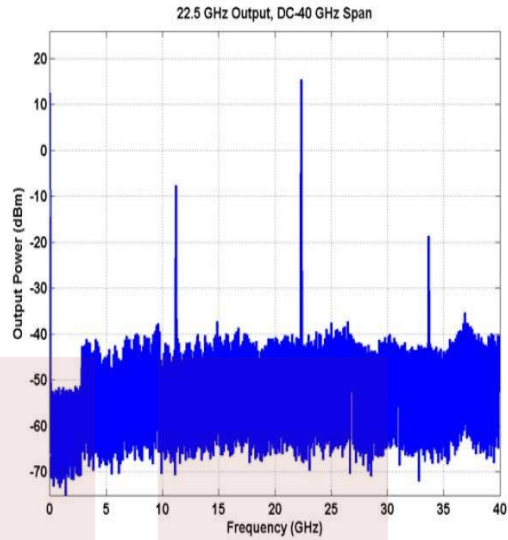
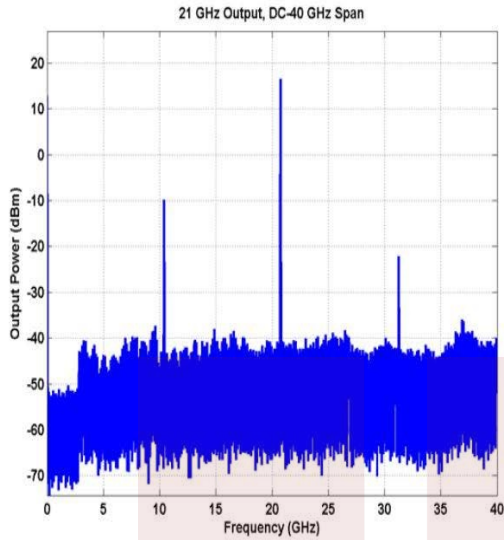
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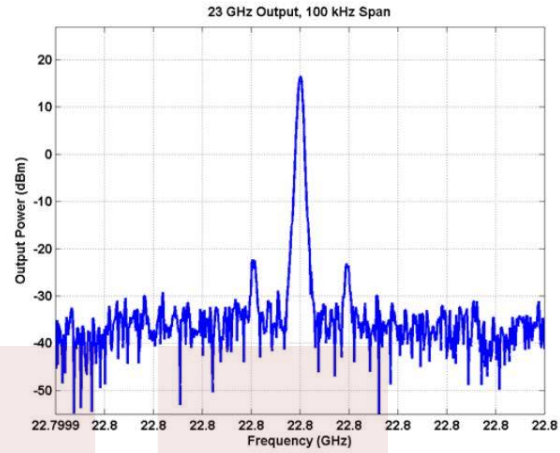
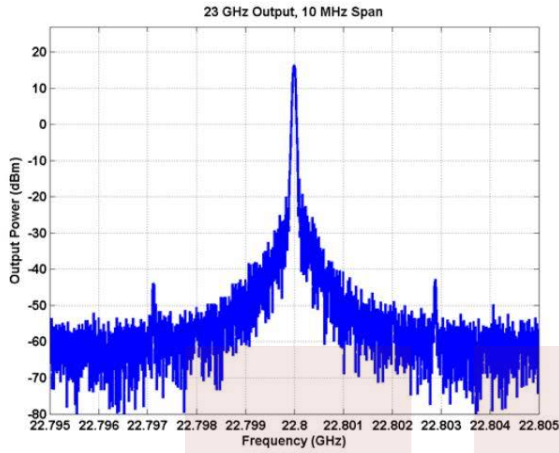


Typical Performance Data









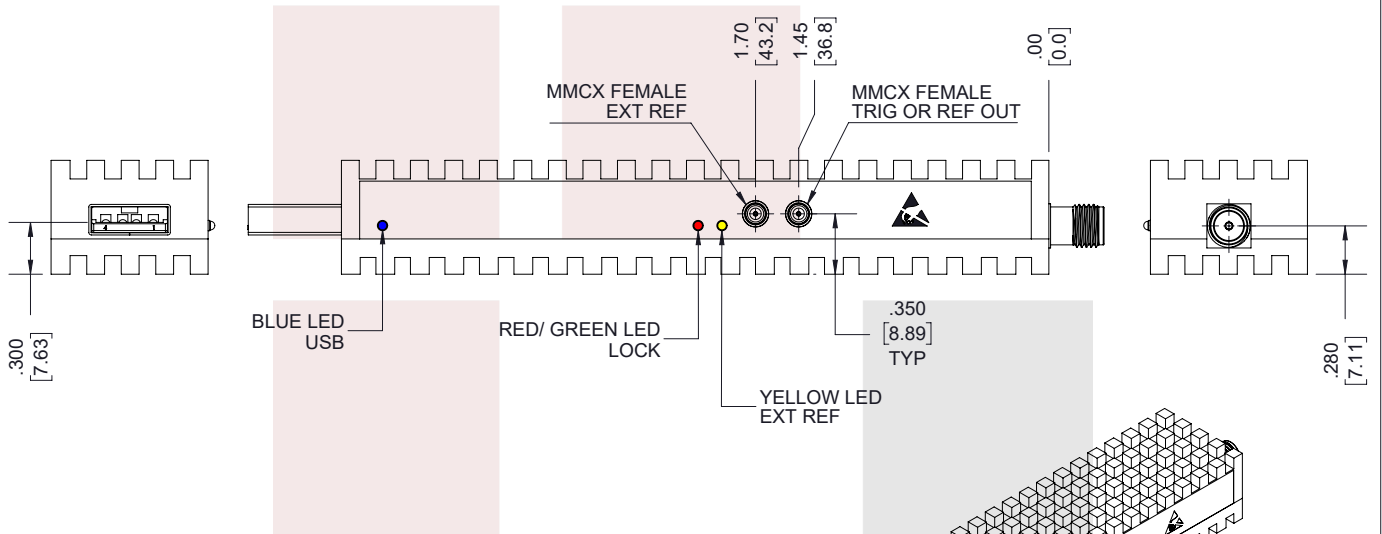
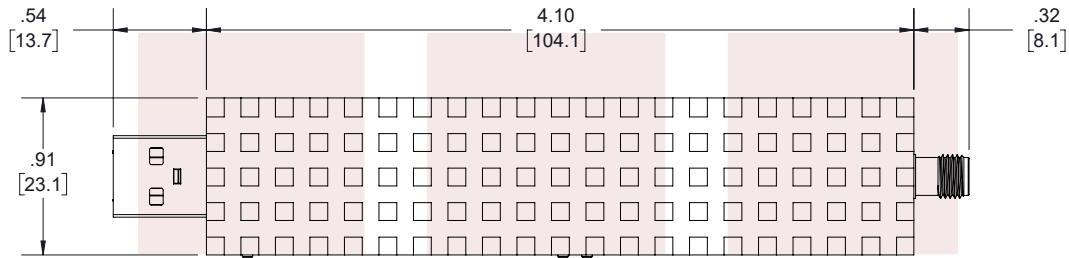
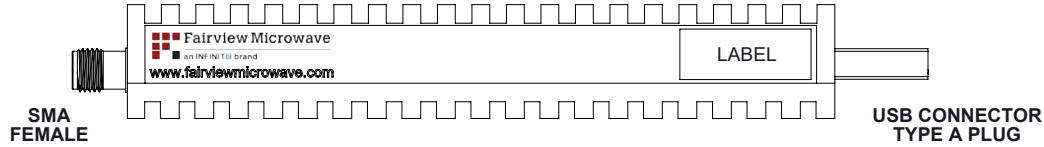
USB Frequency Synthesizer PLL (Phase Locked Loop), Operating from 21 GHz to 24 GHz with SMA Output from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview 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 21 GHz to 24 GHz with SMA Output FM11S3904](https://www.fairviewmicrowave.com/usb-frequency-synthesizer-pll-21-24-ghz-sma-fm11s3904-p.aspx)

URL: <https://www.fairviewmicrowave.com/usb-frequency-synthesizer-pll-21-24-ghz-sma-fm11s3904-p.aspx>

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	5/18/2020	T.GALLA



LABEL:

FAIRVIEW MICROWAVE
FM11S3904
D/C: YYWW

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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. FM11S3904	REV A
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T-Rev.D