



Blue Tops RF Modules > Integrated Frequency Multiplier (IFM-3R)

Features:

- Input Frequency: 5 MHz to 2 GHz
- Multiplication Factors: x8 to x567
- Output Frequency to 16 GHz
- Low Conversion Loss
- Intrinsic Phase Noise to -176 dBc/Hz
- Integral Filters and Amplifiers
- Includes Low Noise Voltage Regulator

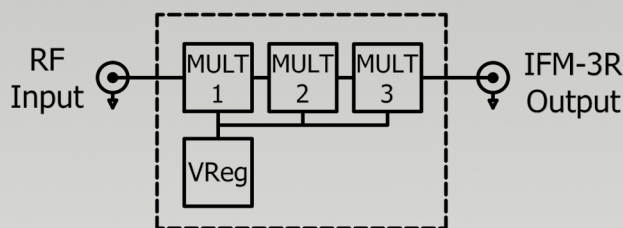
Applications:

- Synthesizer Building Block
- Communication Systems
- Radar Systems
- Electronic Warfare Systems



Description:

The IFM-3R is a low noise multiplier module, which combines low noise multipliers, bandpass filters, amplifiers and avoltage regulator to achieve exceptionally low phase noise, excellent spectral purity and good conversion efficiency. Multiplication factors of 8 to 567 are available using a combination of up to three (3) standard multipliers (2, 3, 4, 5, 7, 9 and 11) with output frequencies to 16 GHz. The IFM-3R provides input referred phase noise floors to -176 dBc/Hz. Please consult Wenzel technical staff for assistance in configuring a multiplier to suit specific requirements.



Electrical Specifications

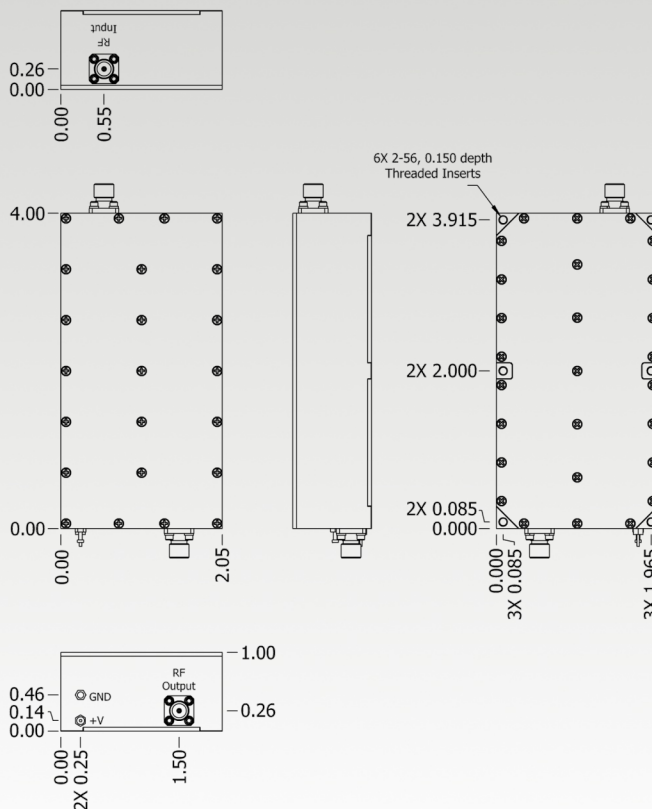
Input Frequency Range	5 MHz to 2 GHz, fixed		
Multiplication Factor (Fixed) Consists of a combination of three (3) standard multipliers. Input frequency limitations apply. See "Ordering Information" for more details.	x8	to	x567
Max Input Frequency:	2 GHz		5 MHz
Input Level	+12 dBm to +15 dBm, fixed (±1 dB)		
Output Frequency	to 16 GHz		
Output Level	to +20 dBm (±2 dB)		
Phase Noise Floor (Intrinsic, Input Referred)	to -176 dBc/Hz		
Conversion Loss	-3 dB to +5 dB		
Harmonics	≤ -25 dBc		
Sub-Harmonics	≤ -60 dBc		
Spurious (Excluding Supply Line Related Spurs)	≤ -80 dBc		
Supply Voltage	+15 VDC ±5% (Includes Internal Low Noise Voltage Regulator)		
Current Draw (Configuration Dependent)	225 to 450 mA		
Operating Temperature	+25 ±5°C **		
Storage Temperature	-40 to +85°C		

Mechanical

Dimensions	2.05" x 4" x 1"
DC Supply	Feed Thru Capacitor Solder Pin
Ground	Turret Terminal Solder Pin
RF Input / Output	SMA female *

* SMA female connectors are used unless otherwise specified. Contact factory for custom configurations.

** Please consult factory for custom Operating Temperature range options and capability.



Crystal Oscillators

• RF Modules

• Frequency Sources

• IMAs

• Military

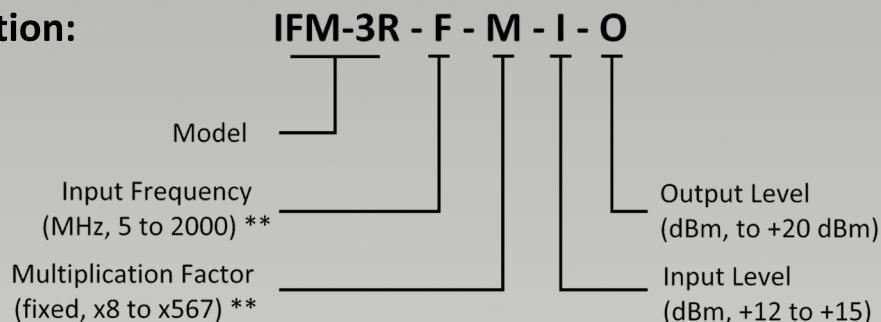
• Space





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Ordering Information:



** The multiplication factor selected will be a combination of up to three (3) standard multipliers (x2, x3, x4, x5, x7, x9 and x11), which are cascaded together. Please note that each of the multiplier stages have minimum and maximum input frequency limitations, which must be considered when selecting an input frequency and overall multiplication factor. See the "Standard Multiplier Frequency Limits" table for details. Consult factory to verify that the selected input frequency and multiplication factor is a valid configuration before ordering.

Standard Multiplier Frequency Limits		
Multiplier	Minimum Input Frequency	Maximum Input Frequency
x2	5 MHz	8 GHz
x3	5 MHz	5 GHz
x4	5 MHz	250 MHz
x5	5 MHz	700 MHz
x7	5 MHz	550 MHz
x9	5 MHz	50 MHz
x11	5 MHz	10 MHz

Standard P/N	Input Frequency	Multiplication Factor	Input Level	Output Level	Output Frequency	Input Referred Residual Phase Noise (100 kHz offset)	Supply Voltage
IFM-3R-1000-8-13-13	1000 MHz	x8 (2 x 2 x 2)	+13 dBm	+13 dBm	8000 MHz	≤ -170 dBc/Hz	+15 VDC
IFM-3R-500-12-13-13	500 MHz	x12 (3 x 2 x 2)	+13 dBm	+13 dBm	6000 MHz	≤ -170 dBc/Hz	+15 VDC
IFM-3R-80-16-13-13	80 MHz	x16 (4 x 2 x 2)	+13 dBm	+13 dBm	1280 MHz	≤ -170 dBc/Hz	+15 VDC
IFM-3R-100-18-13-13	100 MHz	x18 (3 x 3 x 2)	+13 dBm	+13 dBm	1800 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-3R-250-20-13-13	250 MHz	x20 (5 x 2 x 2)	+13 dBm	+13 dBm	5000 MHz	≤ -170 dBc/Hz	+15 VDC
IFM-3R-100-28-13-13	100 MHz	x28 (7 x 2 x 2)	+13 dBm	+13 dBm	2800 MHz	≤ -174 dBc/Hz	+15 VDC
IFM-3R-80-30-13-13	80 MHz	x30 (5 x 3 x 2)	+13 dBm	+13 dBm	2400 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-3R-125-36-13-13	125 MHz	x36 (4 x 3 x 3)	+13 dBm	+13 dBm	4500 MHz	≤ -170 dBc/Hz	+15 VDC
IFM-3R-100-50-13-13	100 MHz	x50 (5 x 5 x 2)	+13 dBm	+13 dBm	5000 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-3R-80-75-13-13	80 MHz	x75 (5 x 5 x 3)	+13 dBm	+13 dBm	6000 MHz	≤ -176 dBc/Hz	+15 VDC

