



Blue Tops RF Modules > Integrated Frequency Multiplier (IFM-4)

Features:

- Input Frequency: 5 MHz to 1 GHz
- Multiplication Factors: x16 to x3087
- Output Frequency to 16 GHz
- Low Conversion Loss
- Intrinsic Phase Noise to -176 dBc/Hz
- Integral Filters and Amplifiers

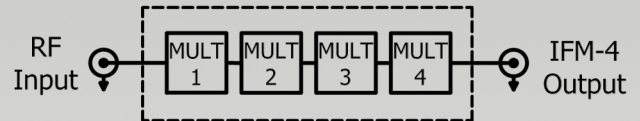
Applications:

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

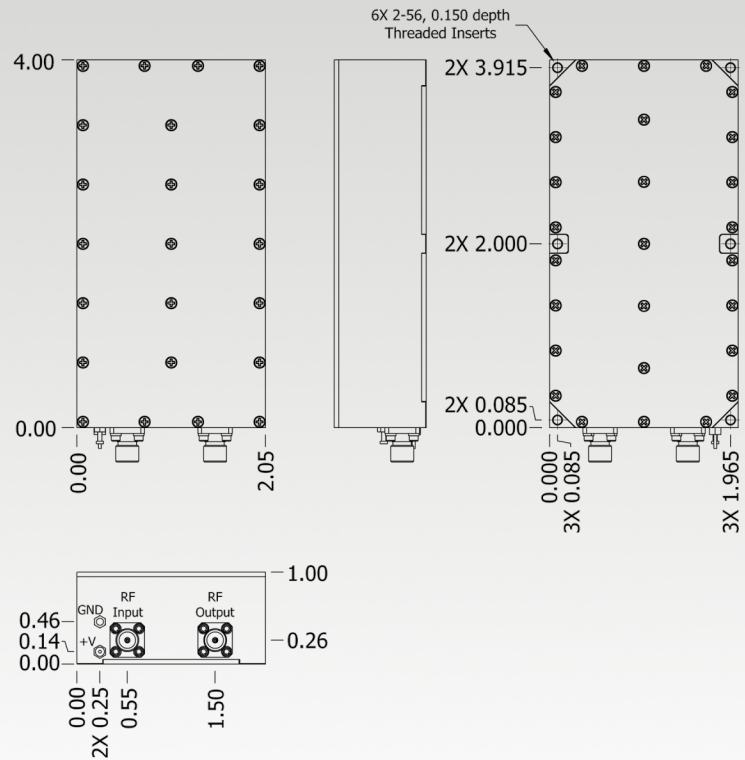


Description:

The IFM-4 is a low noise multiplier module, which combines low noise multipliers, bandpass filters and amplifiers to achieve exceptionally low phase noise, excellent spectral purity and good conversion efficiency. Multiplication factors of 16 to 3087 are available using a combination of up to four (4) standard multipliers (2, 3, 4, 5, 7, 9 and 11) with output frequencies to 16 GHz. The IFM-4 provides input referred phase noise floors as low as -176 dBc/Hz. Please consult Wenzel technical staff for assistance in configuring a multiplier to suit specific requirements.



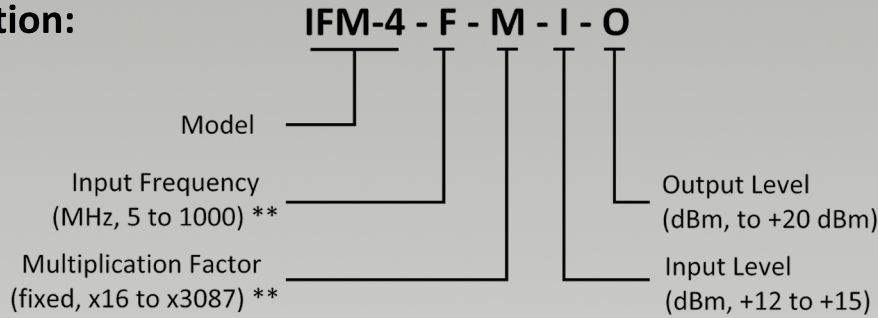
Electrical Specifications							
Input Frequency Range	5 MHz to 1 GHz, fixed						
Multiplication Factor (Fixed) Consists of a combination of four (4) standard multipliers. Input frequency limitations apply. See "Ordering Information" for more details. Max Input Frequency:	<table border="1"> <tr> <td>x16</td> <td>to</td> <td>x3087</td> </tr> <tr> <td>1 GHz</td> <td></td> <td>5 MHz</td> </tr> </table>	x16	to	x3087	1 GHz		5 MHz
x16	to	x3087					
1 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 ±2%						
Current Draw (Configuration Dependent)	280 to 650 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.							





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Ordering Information:



** The multiplication factor selected will be a combination of up to four (4) 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-4-640-16-13-13	640 MHz	x16 (2 x 2 x 2 x 2)	+13 dBm	+13 dBm	10240 MHz	≤ -170 dBc/Hz	+15 VDC
IFM-4-80-24-13-13	80 MHz	x24 (3 x 2 x 2 x 2)	+13 dBm	+13 dBm	1920 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-4-80-32-13-13	80 MHz	x32 (4 x 2 x 2 x 2)	+13 dBm	+13 dBm	2560 MHz	≤ -170 dBc/Hz	+15 VDC
IFM-4-100-40-13-13	100 MHz	x40 (5 x 2 x 2 x 2)	+13 dBm	+13 dBm	4000 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-4-50-56-13-13	50 MHz	x56 (7 x 2 x 2 x 2)	+13 dBm	+13 dBm	2800 MHz	≤ -170 dBc/Hz	+15 VDC
IFM-4-100-60-13-13	100 MHz	x60 (5 x 3 x 2 x 2)	+13 dBm	+13 dBm	6000 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-4-10-72-13-13	10 MHz	x72 (9 x 2 x 2 x 2)	+13 dBm	+13 dBm	720 MHz	≤ -174 dBc/Hz	+15 VDC
IFM-4-125-80-13-13	125 MHz	x80 (5 x 4 x 2 x 2)	+13 dBm	+13 dBm	10000 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-4-100-100-13-13	100 MHz	x100 (5 x 5 x 2 x 2)	+13 dBm	+13 dBm	10000 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-4-100-150-13-13	100 MHz	x150 (5 x 5 x 3 x 2)	+13 dBm	+13 dBm	15000 MHz	≤ -176 dBc/Hz	+15 VDC