



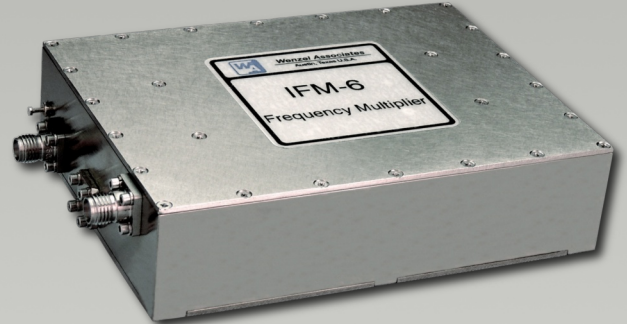
Blue Tops RF Modules > Integrated Frequency Multiplier (IFM-6)

Features:

- Input Frequency: 5 MHz to 250 MHz
- Multiplication Factors: x64 to x3200
- Output Frequency to 16 GHz
- Low Conversion Loss
- Intrinsic Phase Noise to -176 dBc/Hz
- Integral Filters and Amplifiers

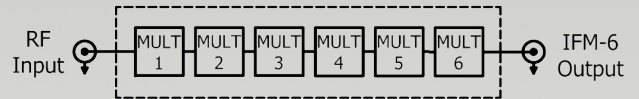
Applications:

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

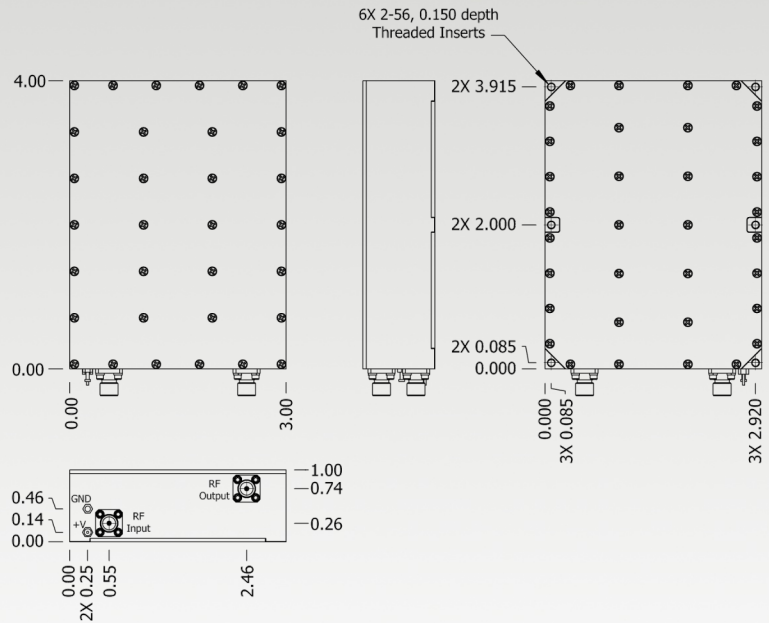


Description:

The IFM-6 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 x64 to x3200 are available using a combination of up to six (6) standard multipliers (2, 3, 4, 5, 7, 9 and 11) with output frequencies to 16 GHz. The IFM-6 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.



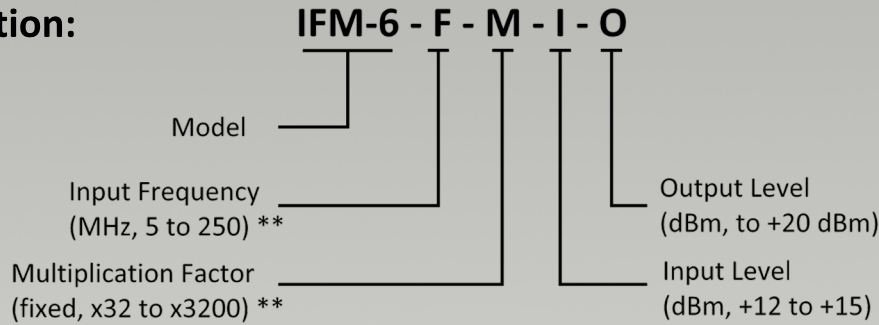
Electrical Specifications	
Input Frequency Range	5 MHz to 250 MHz, fixed
Multiplication Factor (Fixed)	x32 to x3200
Consists of a combination of six (6) standard multipliers. Input frequency limitations apply. See "Ordering Information" for more details.	
Max Input Frequency:	250 MHz to 5 MHz
Input Level	+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)	450 to 950 mA
Operating Temperature	+25 ±5°C **
Storage Temperature	-40 to +85°C
Mechanical	
Dimensions	3.0" 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 six (6) 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-6-120-64-13-13	120 MHz	x64 (2 x 2 x 2 x 2 x 2 x 2)	+13 dBm	+13 dBm	7680 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-6-80-96-13-13	80 MHz	x96 (3 x 2 x 2 x 2 x 2 x 2)	+13 dBm	+13 dBm	7680 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-6-80-128-13-13	80 MHz	x128 (4 x 2 x 2 x 2 x 2 x 2)	+13 dBm	+13 dBm	10240 MHz	≤ -174 dBc/Hz	+15 VDC
IFM-6-80-144-13-13	80 MHz	x144 (3 x 3 x 2 x 2 x 2 x 2)	+13 dBm	+13 dBm	11520 MHz	≤ -174 dBc/Hz	+15 VDC
IFM-6-100-160-13-13	100 MHz	x160 (5 x 2 x 2 x 2 x 2 x 2)	+13 dBm	+13 dBm	16000 MHz	≤ -176 dBc/Hz	+15 VDC
IFM-6-50-240-13-13	50 MHz	x240 (5 x 3 x 2 x 2 x 2 x 2)	+13 dBm	+13 dBm	12000 MHz	≤ -174 dBc/Hz	+15 VDC
IFM-6-10-256-13-13	10 MHz	x256 (4 x 4 x 2 x 2 x 2 x 2)	+13 dBm	+13 dBm	2560 MHz	≤ -174 dBc/Hz	+15 VDC
IFM-6-10-360-13-13	10 MHz	x360 (5 x 3 x 3 x 2 x 2 x 2)	+13 dBm	+13 dBm	3600 MHz	≤ -174 dBc/Hz	+15 VDC
IFM-6-10-400-13-13	10 MHz	x400 (5 x 5 x 2 x 2 x 2 x 2)	+13 dBm	+13 dBm	4000 MHz	≤ -174 dBc/Hz	+15 VDC
IFM-6-10-600-13-13	10 MHz	x600 (5 x 5 x 3 x 2 x 2 x 2)	+13 dBm	+13 dBm	6000 MHz	≤ -174 dBc/Hz	+15 VDC