

### Applications:

- Microwave and Millimeter Transmitters and Receivers
- Instrumentations
- Test Bench

### Features:

- State-of-the art Solid State Packaging Technologies
- Various Bandwidth Coverage
- Low Level Harmonics and spurious
- Coax or Waveguide RF connectors



### Descriptions:

**3J Microwave, Inc.** offers a complete line of active multipliers in frequency range of 18 to 110 GHz. The available state-of-the-art solid-state technology, devices, packaging & harmonics suppression & filtering techniques are utilized in the active multipliers to meet various requirements. Coax RF connectors are available in the frequency range below 67 GHz. Waveguide connectors are designed

to cover eight waveguide bands from K to W-Band in the frequency range of 18 to 110 GHz. The series active multipliers are designed for the various applications such as Receivers, transceivers, bench test & instrumentations etc. The active multipliers are sorted in two categories: 1) **FMC** series coax active multipliers. 2) **FM** series waveguide multipliers.

### FMC Series Coax Active Multiplier Specifications:

Model No.***	Type	Fout (GHz)	Fout Bandwidth (GHz)	Pout** (dBm)	Fin (GHz)	Pin (dBm)	DC Bias* (V/ma)	Output RF Connector	Outline	
FMCxx-xxxxxxx-00	x2	18-27	2 to 9	+10 to +30	9-13.5	0	+12/200 to 1000	2.92 mm	****	
	X3	18-27	2 to 9		11-16.5					
	X2	18-40	2 to 22		9-20					
	x3	18-40	2 to 22		8.6-13.4					
	X4	18-40	3 to 22		4.5-10					
	x2	18-50	3 to 32		9-25					
	x3	18-50	3 to 32	6-16.7	2.40 mm					
	X4	18-50	3 to 32	4.5-12.5						
	x2	50-67	3 to 17	+10 to +20				25-33.5		1.85 mm
	x3	50-67	3 to 17					16.7-22.3		
	X4	50-67	3 to 17					12.5-16.8		

\* The Bias Voltage and Current may vary depending on the specifications  
 \*\* Pout can be chosen in the range.  
 \*\*\* Please see "how to order" for the model number details  
 \*\*\*\* Please consult the factory

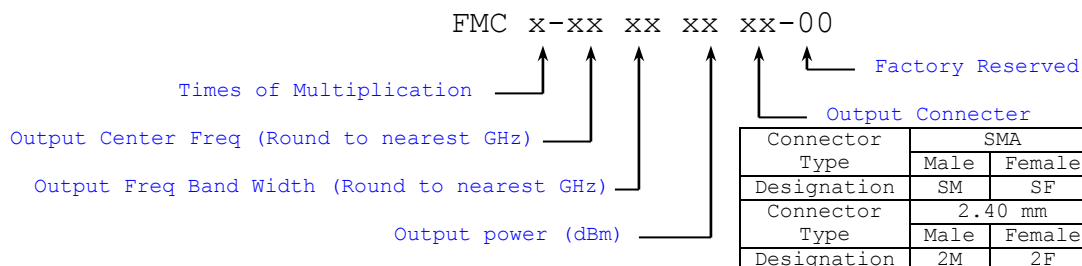


## Section 3-5: Active Multiplier Series

[www.3jmicrowave.com](http://www.3jmicrowave.com)

Frequency Coverage: 18 to 110 GHz

### How to Order:



### FMC Model Number Example:

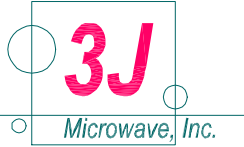
Model Number of a Coax x3 Active Multiplier:

Specifications	Model number
<b>Input RF Frequency:</b> 8.66 to 13.33 GHz <b>Input Power:</b> 0 dBm <b>Multiplication Times:</b> 3 <b>Output RF Frequency:</b> 26 to 40 GHz <b>Output Power:</b> +15 dBm <b>Harmonics:</b> -15 dBc (Typ) <b>Input Connector:</b> SMA Female <b>Output Connector:</b> 2.92 mm Female	<b>FMC3-331415KF-00</b>

### FM Series Waveguide Active Multiplier Specifications:

Model No.***	Type	Fout (GHz)	Fout Bandwidth (GHz)	Pout* (dBm)	Fin (GHz)	Pin (dBm)	DC Bias (V/ma)**	RF Output Connector	RF Input Connector	Outline	
FMxx-xxxxxxxx-00	Kx2	18-27	2 to 9	+10 to +30	9-13.5	0	+12/200 to 1000	UG595-U	SMA	M01	
	34x2	22-33	2 to 11		11-16.5			UG595-UM			M02
	34x3	22-33	3 to 14	7.3-11	UG599-U			M03			
	Kax2	26-40		13-20							
	Kax3	26-40	8.6-13.4	UG383-UM	SMA						
	Qx2	33-50	3 to 17					16.5-25	UG385-U	2.92 mm or WR-28	
	Qx3	33-50	3 to 20	11-16.7	UG387-U			2.92 mm or WR-42			
	Ux2	40-60		20-30					UG387-U	SMA	
	Ux3	40-60	13.3-20	UG387-UM	2.40 mm or WR-22						
	Vx2	50-75						3 to 17	25-37.5	UG387-UM	2.92 mm or WR-28
	Vx3	50-75	3 to 30	16.6-25	UG387-UM			2.92 mm or WR-28			
	Vx4	50-75		12.5-18.8					UG387-UM	SMA	
	Ex2	60-90	5 to 35	30-45	UG387-UM			2.40 mm or WR-19			
	Ex3	60-90		20-30					UG387-UM	2.92 mm or WR-28	
	Ex4	60-90	15-22.5	UG387-UM	2.92 mm or WR-28						
	Ex6	60-90	10-15					UG387-UM	SMA		
	Wx2	75-110	5 to 35	37.7-55	UG387-UM					2.40 mm or WR-19	
	Wx3	75-110		25-36.7				UG387-UM	2.92 mm or WR-28		
	Wx4	75-110	18.8-27.5	UG387-UM	SMA						
	Wx6	75-110	12.5-18.3					UG387-UM	SMA		
Wx8	75-110	9.38-13.8	UG387-UM	SMA							

\* Output power can be chosen in the range. Higher output power is available upon request



# Section 3-5: Active Multiplier Series

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Frequency Coverage: 18 to 110 GHz

- \*\* The Bias current may vary depending on the specifications
- \*\*\* Please see "how to order" for the model number details

## How to Order:

FM x x-xx xx xx xx-00

Waveguide Designation      Factory Reserved

Input Connector

WG-BAND	K	WR34	Ka	Q	U	V	E	W
Designation	K	J	R	Q	U	V	E	W

Times of Multiplication

Output Center Freq (Round to nearest GHz)  
For 100-109 GHz: B0-B9  
For 110 GHz: H0

Output Freq Bandwidth (Round to nearest GHz)

Output Power (dBm)

Coax:

Connector Type	SMA		2.92 mm	
	Male	Female	Male	Female
Designation	SM	SF	KM	KF
Connector Type	2.40 mm		1.85 mm	
	Male	Female	Male	Female
Designation	2M	2F	VM	VF

Waveguides:

WG-BAND	K	WR34	Ka	Q	U
Designation	42	34	28	22	19

## FM Model Number Example:

Model Number of a W-Band Times 6 Active Multiplier:

Specifications	Model number
<b>Output RF Frequency:</b> 75 to 110 GHz <b>Output Power:</b> 0 dBm <b>Input RF Frequency:</b> 12.5 to 18.3 GHz <b>Input Power:</b> 0 dBm <b>Harmonics:</b> -15 dBc <b>Input Connector:</b> SMA Female <b>Output Connector:</b> WR-10 <b>DC Bias:</b> +12V/450 mA	<b>FMW6-933500SF-00</b>

## Waveguide Outline: M01, M02, M03 and M04