

# Jersey Microwave

## Low Profile Satcom Up & Down Converter MIC Modules

### Features

- ✓ Compact size in dense packaging using microstrip and standard PC board construction
- ✓ Low cost and high reliability
- ✓ IF attenuator with linearizer circuit
- ✓ Coupler, muting, LO monitor, and temperature compensation included
- ✓ Tested over wide temperature range, -20°C to 70°C

### Options

- Choice of 70MHz or 140 MHz IF
- IF Impedance of 50 or 75 Ω
- Higher output power
- Higher IP3

Jersey Microwave components can be tailored to meet your company's specific needs.

### Specifications

PARAMETER		UP CONVERTER	DOWN CONVERTER
<b>RF Characteristics</b>		<b>Output</b>	<b>Input</b>
Frequency Range	C-Band	5.85 – 6.45 GHz	3.60 – 4.20 GHz
	X-Band	7.90 – 8.40 GHz	7.25 – 7.75 GHz
	Ku-Band	14.00 – 14.50 GHz	10.95 – 12.75 GHz
Impedance		50 Ω	
Connectors		SMA-Female	
Return Loss		21 dB min.	
<b>IF Characteristics</b>		<b>Input</b>	<b>Output</b>
Frequency Range of Model	-1	140 +/- 40 MHz	
	-2	70 +/- 20 MHz	
Impedance		50 Ω or 75 Ω	
Connectors		BNC-Female	
Return Loss		26 dB min.	
<b>LO Characteristics</b>			
LFLO	C-Band	1112.5 MHz	1112.5 MHz
	X-Band	1112.5 MHz	1950 MHz
	Ku-Band	1150 MHz	1950 MHz
Power Level		12 dBm +/- 2 dB	
Impedance		50 Ω	
Connectors		SMA-Female	
Return Loss		15 dB min.	
HFLO	C-Band	$F_{HFLO} = F_{RF} - (F_{LFLO} + F_{IF})$	$F_{HFLO} = F_{RF} + (F_{LFLO} - F_{IF})$
	X-Band & Ku-Band	$F_{HFLO} = F_{RF} - (F_{LFLO} - F_{IF})$	$F_{HFLO} = F_{RF} + (F_{LFLO} + F_{IF})$
Power Level		13 dBm +/- 2 dB	
Impedance		50 Ω	
Connectors		SMA-Female	
Return Loss		12 dB min.	

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Input to Output Performance	UP CONVERTER	DOWN CONVERTER
Frequency Sense	No Spectral Inversion	
Gain	32 dB +/-2 dB	48 dB +/-2 dB
Gain Control: IF Band	25 dB	
RF Band	25 dB	N/A
Output Power @ 1 dB Compression	+10 dBm min. +20 dBm optional	+15 dBm min.
3rd Order Intercept Point	20 dBm min. 30 dBm optional	27 dBm min.
Gain Flatness Across the IF Band	0.6 dB p-p max.	
Across the RF Band	1.5 dB p-p max.	
Gain Slope	0.5 dB/MHz p-p max.	
Gain Variation over Temperature (0° C to +50° C)	1.5 dB max.	2.0 dB max.
Group Delay	2.0 ns p-p max.	3.0 ns p-p max.
Group Delay Ripple	1.0 ns p-p max.	
Noise Figure	18 dB max.	12 dB max.
Spurious @Po = 0 dBm Non-carrier related	-80 dBm max.	
Carrier related	-60 dBm max. in band	
Harmonics of the IF Frequency @Po = 0 dBm	-50 dBc max.	
Image Rejection	N/A	-90 dBc max.
IMD	-40 dBc max. for two output carriers @ 0 dBm	-60 dBc max. for two output carriers @ -3 dBm
Carrier Mute	70 dB min.	
Monitoring Characteristics		
IF Coupler	20 dB +/- 1 dB below input @ 1st mixer	20 dB +/- 1 dB below output level
RF Coupler	20 dB +/- 1 dB below output level	20 dB +/- 1 dB below input level
LFLO Monitor	-10 dBm +/- 3 dB	
HFLO Monitor	-10 dBm +/- 3 dB	
DC Power Requirements: +12 VDC	350 mA	500 mA
-12 VDC	50 mA max.	50 mA max.
L-Band Attenuator Drive Voltage	0 – 10 V	0 – 10 V
Package Size (L x W x H)	8.0" x 4.5" x 1.0 (approximately)"	

Note: Specifications are subject to change without notice