

# Jersey Microwave

## High Performance X-Band Phase-Locked Block Converters

### Features

- ✓ Excellent Frequency Stability
- ✓ Voltage Regulator & Delay Circuit Included
- ✓ Low Phase Noise (MIL-STD 188-164A Compliant)
- ✓ Stable Gain Over Temperature (2.0 dB Max)
- ✓ High Reliability & Low Cost
- ✓ Low Phase Error

### Options

- Locks To External 5 MHz, 10 MHz, or 50 MHz, or to an Internal Reference
- Alternative gain, output power, and phase noise performance for specific requirements



### Description

The *Jersey Microwave* High Performance Block Converter series are specially designed to translate a block of L-Band frequencies to X-Band frequencies, or vice versa, for use in transmitting or receiving applications for satellite communication systems. Jersey Microwave components can be tailored to meet your company's specific needs.

### XBUC & XBDC – Series

Designation	Input Frequency	Output Frequency	LO Frequency
XBUC-1015-3520	1000 – 1500 MHz	7.90 – 8.40 GHz	6.90 GHz
XBDC-7277-2518	7.25 – 7.75 GHz	1000 – 1500 MHz	6.25 GHz

### Requirements on the characteristics of the external reference

Parameter	Offset frequency (fm)	Min.	Typ.	Max.	Units
Reference Frequency			5 / 10 / 50		MHz
Reference Input Level		-3	+0	+3	DBm
Reference Input Impedance			50		Ohm
Reference Phase Noise	10 Hz			-105	dBc/Hz
	100 Hz			-135	dBc/Hz
	1 KHz			-145	dBc/Hz
	10 KHz			-150	dBc/Hz

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## Specifications

PARAMETER	UP CONVERTER	DOWN CONVERTER
Gain	35 dB Min.	25 dB Min.
Gain Flatness Over RF Band	+/-1.00 dB max.	
Over any 40 MHz Segment	+/-0.20 dB max.	
Gain Stability at constant temperature	+/-0.25 dB / day max.	
Gain Stability over the operating range	+/-1.00 dB max.	
Gain Control		
L-Band: Range	4 ± 2 dB	N/A
Control Voltage	0 to +4.5V	
RF Attenuator: Range	20 dB ± 2dB	N/A
Control Voltage	0 to +4.5V	
Output Power Po (1dB)	+20 dBm min.	+18 dBm min.
Intermodulation Distortion (With two output carriers @0 dBm per)	-60 dBc max.	-55 dBc max.
Output Spurious (In-Band): Signal Dependent (Po = 0dBm)	-80 dBc max.	
Signal Independent	-85 dBm max.	
LO Leakage @ Output Port	-80 dBm max.	
Image Rejection	N/A	80 dB min.
Noise Figure	15 dB max.	14 dB max.
Return Loss: Input/Output	18 dB / 18 dB min.	
Reference Input	15 dB min.	
LO Fault Alarm	TTL: "H" = Locked / " L " = Unlocked	
LO Monitor	-10 dBm +/- 5 dB	
SSB Phase Noise *		
100 Hz	-70 dBc/Hz	
1 KHz	-75 dBc/Hz	
10 KHz	-85 dBc/Hz	
100 KHz	-95 dBc/Hz	
1 MHz	-115 dBc/Hz	
Supply Voltage	+12 to +15 Vdc@600 ma	
Operating Temperature	-30°C to +70°C	
Humidity	0 – 95 % Non-condensing	
Connectors: Input/Output/Reference	SMA-Female	
Supply Voltage/Alarm	Solder Feedthru	
Package Size (L x W x H)	6.20" x 3.90" x 0.90"	5.30" x 3.30" x 0.90"

\* - Phase Noise levels depicted are dependent upon use of an External Reference meeting or exceeding the requirements outlined above.

Note: Specifications are subject to change without notice