

# X-BAND BLOCK CONVERTER MODULES



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

## Features/Options

**Voltage Regulator &  
Delay Circuit Included**

**Low Phase Noise –  
MIL-STD 188-164 compliant**

**Stable Gain Over Temperature**

**High Reliability & Low Cost**

**5, 10 and 20 Watt Versions  
Available for BUC**

**Locks To External 5, 50 or 100  
MHz References**

**Internal Reference –  
Standard or High Stability**

**25 dB Gain Control at L-Band  
with 0.1 dB Step**

**Auto Switch-Over from  
External to Internal REF**

## Standard Frequency Bands

### X-Band Block Down Converter

Model Number	Input Frequency	Output Frequency	LO Frequency
XBDC-725775-2018	7250-7750 MHz	950-1450 MHz	6.30 GHz

### X-Band Block Up Converter

Model Number	Input Frequency	Output Frequency	LO Frequency
XBUC-790840-2010	950 – 1450 MHz	7.90- 8.40 GHz	6.95 GHz

Custom bands and custom specifications can be provided.

Electrical Specification	Up Converter	Down Converter
<b>IF Port Characteristics</b>	<b>Input</b>	<b>Output</b>
Frequency Range	- See Table -	- See Table -
Connectors/Impedance	SMA-Female / 50 Ω	
Return Loss	18 dB min.	
<b>RF Port Characteristics</b>	<b>Output</b>	<b>Input</b>
Frequency Range	- See Table -	- See Table -
Connectors/Impedance	SMA-Female / 50 Ω	
Return Loss	18 dB min.	
<b>LO Characteristics</b>		
Frequency	- See Table -	
Reference Input	10 MHz or 50 MHz (Option: 5 MHz)	
Reference Input Level	-10 dBm ± 10 dB	
Reference Port: Connectors/Impedance	SMA-Female / 50 Ω	
Return Loss	15 dB min.	
Frequency Stability: External	Same as the reference unit	
Option: Internal	±5 ppm max. (±1.0 ppm max. option)	
Phase Lock Alarm: TTL	"H" = Locked / "L" = Unlocked – Open Collector: Option	
<b>Input to Output Performance</b>		
Transfer Type	Single Conversion	
Frequency Sense	No Spectral Inversion	
Gain	20 dB ± 2 dB	
Gain Flatness: Over RF Band	± 1.00 dB max.	
Over any 40 MHz Segment	± 0.25 dB max.	
Output Power Po (1dB)	+10 dBm min.	+18 dBm min.
IMD (two output carriers at 0 dBm per)	-40 dBc max.	-50 dBc max.
Gain vs. temperature		
At constant temperature	± 0.25 dB/day max. @ constant temperature 25°C	
Over the operating temperature	± 1.5 dB max.	
Noise Figure	15 dB max.	
Group Delay	2.0 nsec p-p max over RF band	
In-Band Spurious		
Signal Independent	-80 dBm max.	
Signal Dependent @Po = 0 dBm	-70 dBc max.	
LO Leakage	-70 dBm max	
Image Rejection	-70 dBc max.	
SSB Phase Noise	<b>External Reference</b>	<b>Internal Reference</b>
10 Hz	REF – [20log(1/N) + 3 dB]	-45 dBc/Hz
100 Hz	REF – [20log(1/N) + 3 dB]	-72 dBc/Hz
1 KHz	REF – [20log(1/N) + 3 dB]	-95 dBc/Hz
10 KHz	REF – [20log(1/N) + 3 dB]	-100 dBc/Hz
100 KHz	REF – [20log(1/N) + 3 dB]	-105 dBc/Hz
1 MHz	-125 dBc/Hz typical / -120 dBc/Hz max.	
Supply Voltage	+12 Vdc@ 650 ma	
Connector	Solder Feedthru	
Operating Temperature Range	-30° to +70° C	
Package Size (L x W x H)	4.75" x 2.96" x 1.16"	3.85" x 2.90" x 1.16"

**Note - Specifications may change without notice, please consult the factory for your specific needs.**

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