

# X-BAND OUTDOOR BLOCK CONVERTERS



The **Jersey Microwave** Block Converter series are specially designed to translate a block of L-Band frequencies into X-band, or vice versa, for use in transmitting or receiving of Satellite applications. **Jersey Microwave** components can be tailored to meet your company's specific needs. Alternate gain, higher output level, custom frequency plans can all be considered.

## Features/Options

**Low Phase Noise –  
Exceeds MIL-188-164A**

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

**Auto Switch Over to an  
Internal High Stability REF**

**Internal REF Tune to Match  
with External <1KHz**

**High Reliability & Low Cost**

**Ethernet Control**

**Full Monitor and  
Control Functionality**

**High Frequency Stability**

**Gain Slope Equalizer**

**High Output Power up to 2W**

**RF/IF Monitor**

**Indoor 1 RU chassis**

## Standard Frequency Bands

### X-Band Block Down Converters

Model Number	Input Frequency	Output Frequency	LO Frequency
XBDC-675725-3018-ODU	6.75-7.25 GHz	950-1450 MHz	5800 MHz
XBDC-725775-3018-ODU	7.25-7.75 GHz	950-1450 MHz	6300 MHz
XBDC-820870-3018-ODU	8.20-8.70 GHz	1000-1500 MHz	7200 MHz

### X-Band Block Up Converters

Model Number	Input Frequency	Output Frequency	LO Frequency
XBUC-790840-2015-ODU	950-1450 MHz	7.90-8.40 GHz	6950 MHz

**Custom bands and custom specifications can be provided.**

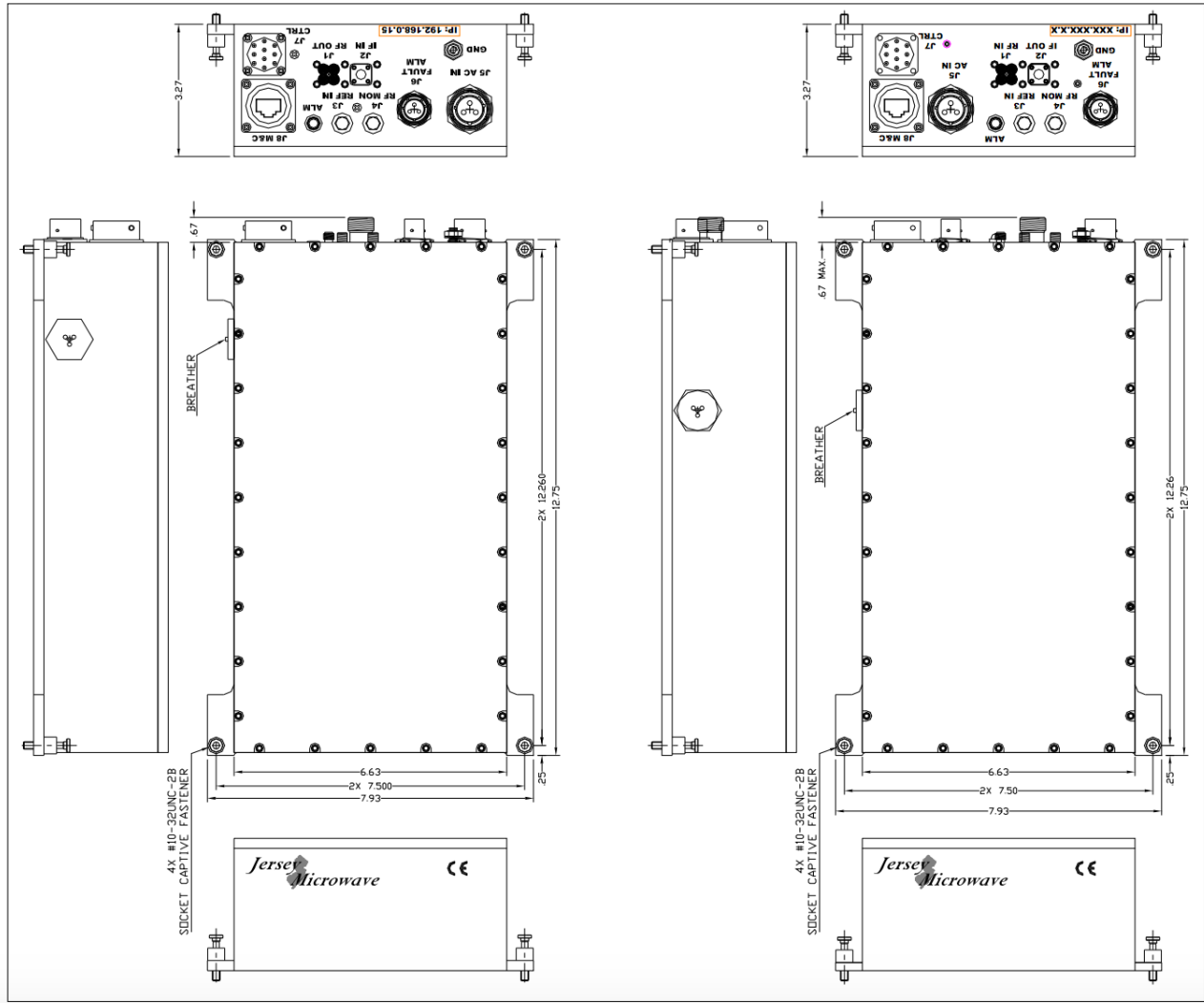
Electrical Specification	Up Converter	Down Converter
<b>IF Port Characteristics</b>	<b>Input</b>	<b>Output</b>
Frequency Range	- See Table -	- See Table -
Impedance	50 $\Omega$	
Return Loss	18 dB min.	
<b>RF Port Characteristics</b>	<b>Output</b>	<b>Input</b>
Frequency Range	- See Table -	- See Table -
Impedance	50 $\Omega$	
Return Loss	18 dB min.	
<b>LO Characteristics</b>		
Frequency	- See Table -	
Reference Input	10 MHz	
Reference Input Level	-10 to +5 dBm	
Auto-switchover level	External: $\geq -10$ dBm / Internal: $< -12$ dBm	
External Reference Phase Noise		
	10 Hz	-90 dBc/Hz, max.
	100 Hz	-120 dBc/Hz, max.
	1 KHz	-145 dBc/Hz, max.
	10 KHz	-155 dBc/Hz, max.
	100 KHz	-160 dBc/Hz, max.
Frequency Stability:	External	Same as the reference unit
	Internal	$\pm 2 \times 10^{-8}$ per day @ constant temperature
		$\pm 1 \times 10^{-7}$ over operating temperature, after 72 hours of operation
<b>Input to Output Performance</b>		
Transfer Type	Single Conversion	
Frequency Sense	No Spectral Inversion	
Gain	20 dB $\pm$ 2 dB	30 dB $\pm$ 2 dB
Gain Flatness: Over RF Band	$\leq \pm 1.0$ dB peak-peak	
Over any 40 MHz Segment	$\leq \pm 0.25$ dB peak-peak	

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

Gain Control	Range: 25 dB	
	Step Size: 0.1 dB	
	Power up default set @ 25 dB attenuation	
Output Power Po (1dB)	≥ +15 dBm	≥ +18 dBm
IMD (two output carriers at 0 dBm total)	≤ -50 dBc	≤ -55 dBc
Gain vs. temperature		
At constant temperature	≤ ± 0.25 dB/day @ constant temperature 25°C	
Over the operating temperature	≤ ± 1.5 dB	
Noise Figure	≤ 15 dB	
Group Delay	≤ 2 nsec p-p max over RF band	
In-Band Spurious		
Signal Independent	≤ -70 dBm max.	
Signal Dependent @Po = 0 dBm	≤ -70 dBc max.	
LO Leakage @RF Port	≤ -70 dBm max.	
Image Rejection	≤ -70 dBc max.	
Mute Control	≤ -70 dBc max.	
SSB Phase Noise		
	10 Hz	-45 dBc/Hz
	100 Hz	-70 dBc/Hz
	1 KHz	-95 dBc/Hz
	10 KHz	-105 dBc/Hz
	100 KHz	-110 dBc/Hz
	1 MHz	-120 dBc/Hz
	10 MHz	-130 dBc/Hz
<b>Power Requirements</b>		
Voltage Standard	90-260 VAC, 3 wires – single phase	
Frequency	47-63 Hz	
Power	30 Watts max.	
<b>Mechanical Configuration</b>		
Weight	15 lbs	
Dimensions (L x W x D)	12.75" x 7.93" x 3.27"	
Finish	Weather resistant Iridite / White paint finish	
RF Connector	N-Female	
IF Connector	N-Female	
Reference Connector	SMA-Female	
AC Power Connector	PT07C12-3P (027)	
M & C Control Connector	PT02E-12-10P (025)	
Ethernet	RJ45 Female (RJF2SA1B)	
Fault Alarm Connector	PT07C-8-3P	
<b>Environmental</b>		
Operating Temperature	-30°C to +70°C	
Non-Operating Temperature	-40°C to +80°C	
Altitude	Up to 10,000 feet	
Humidity	Up to 100% condensation	
Vibration	Normal commercial carrier handling	
<b>Monitor &amp; Control</b>		
Interface	Standard: RS-485 / RS-422	
	Ethernet 10 Base-T	
Fault	Form-C Contact Alarm	
LED Indicator	Green: Operational	
	Red: Fault	

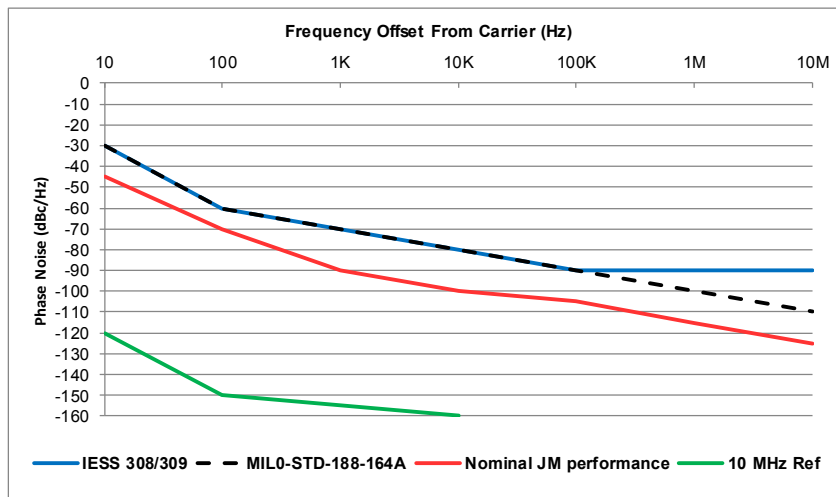
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# Standard Mechanical Outlines



Note: Dimensions are in inches.

## Phase Noise Characteristics (1.0 Hz Bandwidth)



DS-102-04