

DIRECT BROADCAST SATELLITE “DBS” OUTDOOR BLOCK CONVERTERS



The **Jersey Microwave** DBUC Block Converter series are specially designed to translate a block of L-Band frequencies into DBS band frequencies, or vice versa, for use in transmitting or receiving of Direct Broadcast Satellite applications. Jersey also offers the DBS “reverse” band solution. **Jersey Microwave** components can be tailored to meet your company’s specific needs.

Features/Options

**Low Phase Noise
Exceeds IESS 308/309**

**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 <1 KHz**

High Reliability and Low Cost

Ethernet Control

**Full Monitor and Control
Functionality**

High Frequency Stability

Gain Slope Equalizer

High Output Power

Indoor 1 RU Chassis

90-260 VAC or 24-32 VDC

Monitor Ports

**Independent Contact Closure
Summary Alarm**

Standard Frequency Bands

DBS ODU | UP CONVERTER - Series

Model Number	Input Frequency	Output Frequency	LO Frequency
DBUC-173178-2015-ODU	950-1450 MHz	17.30-17.80 GHz	16.35 GHz
DBUC-173181-2015-ODU	950-1750 MHz	17.30-18.10 GHz	16.35 GHz
DBUC-173184-2015-ODU	950-2050 MHz	17.30-18.40 GHz	16.35 GHz
DBUC-247252-2015-ODU	950-1450 MHz	24.75-25.25 GHz	23.80 GHz

DBS ODU | DOWN CONVERTER - Series

Model Number	Input Frequency	Output Frequency	LO Frequency
DBDC-122127-3018-ODU	12.20-12.70 GHz	950-1450 MHz	11.25 GHz
DBDC-173178-3018-ODU	17.30-17.80 GHz	950-1450 MHz	16.35 GHz
DBDC-173181-3018-ODU	17.30-18.10 GHz	950-1750 MHz	16.35 GHz
DBDC-173184-3018-ODU	17.30-18.40 GHz	950-2050 MHz	16.35 GHz

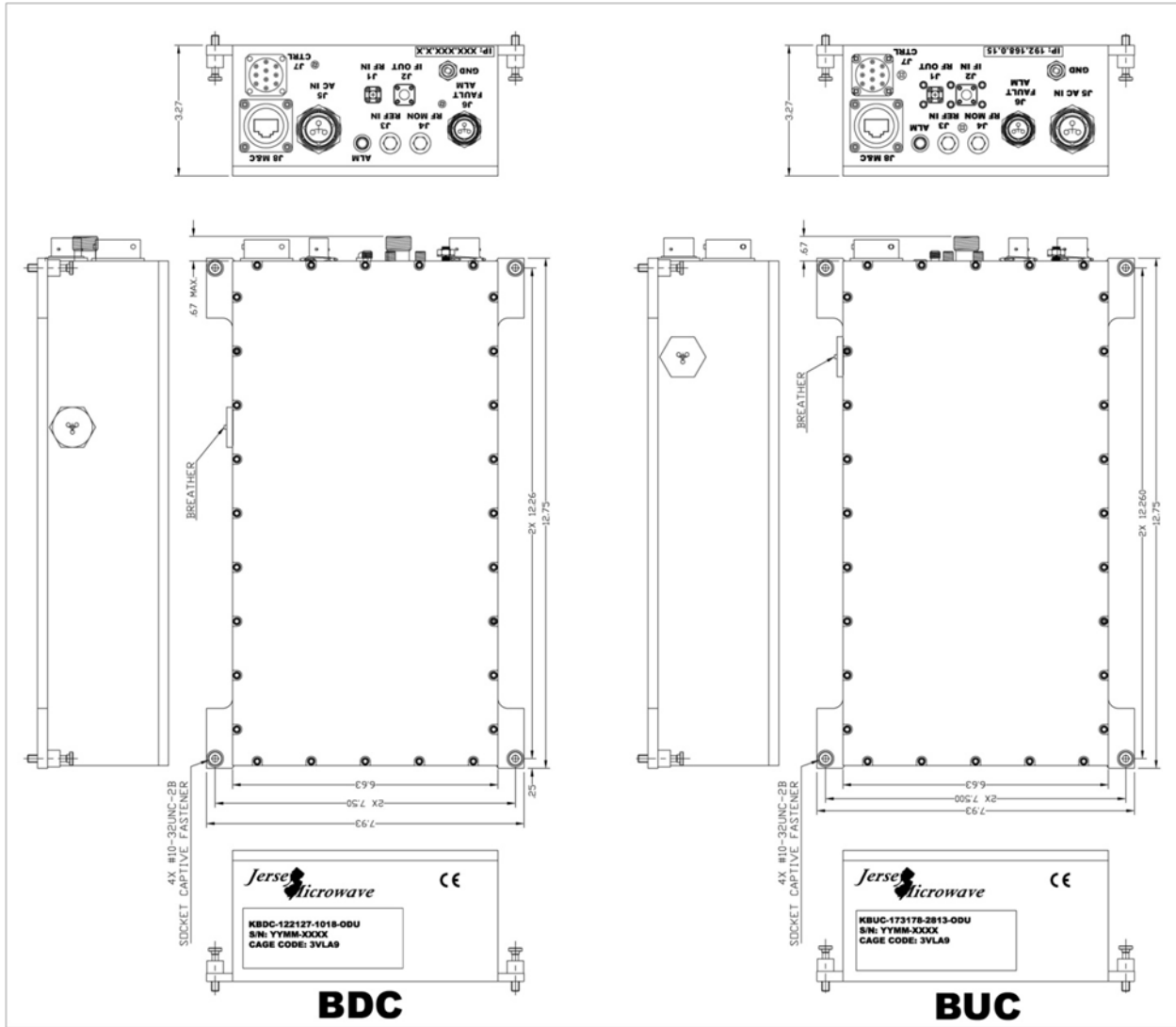
Custom bands and custom specifications can be provided.

Parameter	Up Converter	Down Converter
IF Port Characteristics	Input	Output
Frequency Range	- See Table -	- See Table -
Return Loss / Impedance	BW ≤ 1000 MHz: ≥ 18 dB / BW > 1000 MHz: ≥ 17 dB, 50 Ω	
RF Port Characteristics	Output	Input
Frequency Range	- See Table -	- See Table -
Return Loss / Impedance	≥ 18 dB, 50 Ω	
LO Characteristics		
Frequency	- See Table -	- See Table -
Reference Input	10 MHz @ -10 to +5 dBm	
Auto-switchover level	External: ≥ -10 dBm / Internal: < -12 dBm	
External Reference Phase Noise		
	10 Hz	-90 dBc/Hz
	100 Hz	-120 dBc/Hz
	1 KHz	-145 dBc/Hz
	10 KHz	-155 dBc/Hz
	100 KHz	-160 dBc/Hz
Frequency Stability:		
	External	Same as the reference unit
	Internal	±2 x 10 ⁻⁸ per day @ constant temperature
		±1 x 10 ⁻⁷ over operating temperature, after 72 hours of operation
Input to Output Performance		
Transfer Type / Frequency Sense	Single Conversion / No Spectral Inversion	
Gain	20 dB ± 2 dB	30 dB ± 2 dB
Gain Flatness:	≤ ±1.0 dB peak-peak	
	Over RF Band	
	Over any 40 MHz Segment	≤ ±0.25 dB peak-peak

Parameter	Up Converter	Down Converter
Gain Control	Range: 25 dB in 0.1 dB Step Size	
	Power up default set @ 25 dB attenuation	
Output Power Po (1 dB)	≥ +15 dBm	≥ +18 dBm
IMD (two output carriers at 0 dBm total)	≤ -50 dBc	≤ -55 dBc
Gain vs. temperature	± 0.25 dB/day max @ constant temperature 25°C	
At constant temperature		
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	
	Signal Dependent @Po = 0 dBm	
	≤ -70 dBc	
	2IF+LO @ Po = 0 dBm (For BW ≥ 1000 MHz)	
	≤ -60 dBc	
LO Leakage @RF Port	≤ -70 dBm	
Image Rejection @Po = 0 dBm	≤ -70 dBc	
Mute Control	≤ -70 dBc	
SSB Phase Noise		
	10 Hz	-45 dBc/Hz
	100 Hz	-70 dBc/Hz
	1 KHz	-95 dBc/Hz
	10 KHz	-100 dBc/Hz
	100 KHz	-105 dBc/Hz
	1 MHz	-120 dBc/Hz
	10 MHz	-130 dBc/Hz
Power Requirements		
Voltage Standard	90-260 VAC, 3 wires – single phase	
Frequency	47-63 Hz	
Power	30 Watts Max.	
Mechanical Configuration		
Weight	15 lbs	
Dimensions (L x W x D)	12.75" x 7.93" x 3.27"	12.75" x 7.93" x 3.27"
Finish	Weather resistant Iridite / White paint finish	
RF Connector	WR-34 Flat	SMA-Female / 50 Ω
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	
Environmental		
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	
Monitor & Control		
Interface	Standard: RS-485, RS-422 Option	
Type	Ethernet 10Base-T	
Fault	Form-C Contact Alarm	
LED Indicator	Green: Operational	
	Red: Fault	

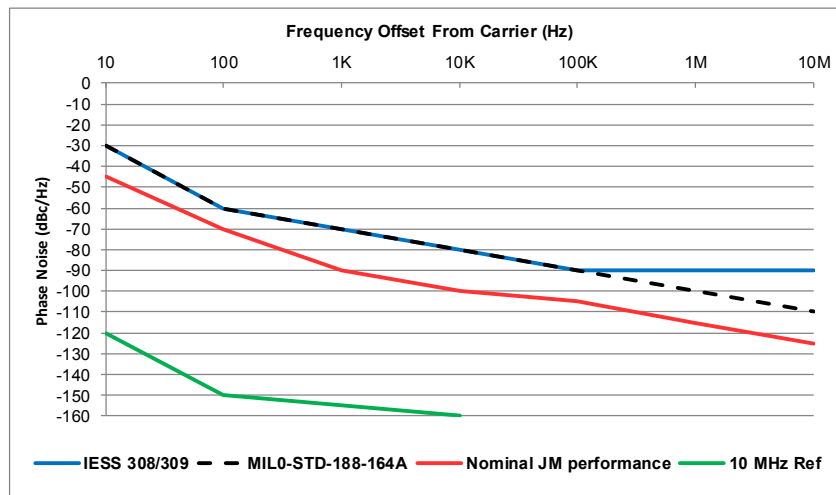
Note - Specifications may change without notice, please consult the factory for your specific needs.

Standard Mechanical Outlines



Note: Dimensions are in inches.

Phase Noise Characteristics (1.0 Hz Bandwidth)



DS-040-05