

Q-BAND (33-50 GHz) FREQUENCY BLOCK UP/DOWN CONVERTERS



Jersey Microwave has developed and is manufacturing Q-band Frequency Block Up and Down Converters that are designed to handle the harsh Outdoor Environment. The Jersey QBUC and QBDC “ODU” Series covers every Q-band frequency bands within 33 GHz to 50 GHz and can accommodate custom frequency bands (≤ 3500 MHz bandwidth depending on frequency). Jersey Microwave engineers have over 35 years of designing and manufacturing frequency conversion products. All Jersey Microwave block converters are rigorously tested and undergo 100% Environmental Stress Screening (ESS) which includes vibration, temperature cycling and burn-in.

Features/Options

**Low Phase Noise exceeds
IES308/309 & MIL-STD-188-164A**

**Available in Dual,
Tri & Quad Bands**

**Auto-Switchover of 10 MHz
external reference or manually
selectable internal reference**

**Electronic Adjustment
of Internal Reference**

90-260 VAC or 24-32 VDC

Ethernet Capability

RS-422/RS-485

Higher Output Power

Gain Control

Custom Frequencies

**Independent Contact Closure
Summary Alarm**

Standard Frequency Bands

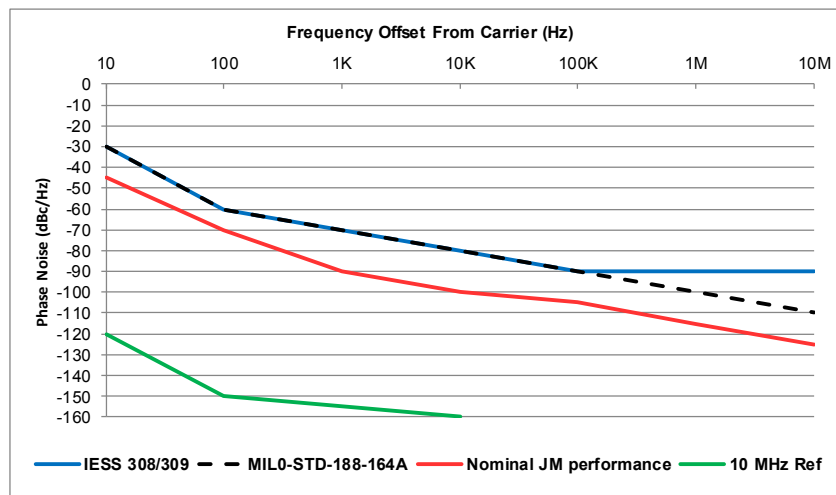
QBUC ODU | BLOCK UP CONVERTER - Series

Model Number	Input Frequency	Output Frequency	LO Frequency
QBUC-329361-2015-ODU	900-4100 MHz	32.9-36.1 GHz	32.0 GHz
QBUC-330360-2015-ODU	6.0-9.0 GHz	33.0-36.0 GHz	27 GHz
QBUC-435445-2015-ODU	950-1950 MHz	43.5-44.5 GHz	42.55 GHz
QBUC-435455-2015-ODU	3.8-5.8 GHz	43.5-45.5 GHz	39.7 GHz

QBDC ODU | BLOCK DOWN CONVERTER - Series

Model Number	Input Frequency	Output Frequency	LO Frequency
QBDC-435445-3015-ODU	43.5-44.5 GHz	950-1950 MHz	42.55 GHz
QBDC-435455-3015-ODU	43.5-45.5 GHz	3.8-5.8 GHz	39.7 GHz

Phase Noise Characteristics (1.0 Hz Bandwidth)



Custom bands and custom specifications can be provided.

Electrical Specification		Up Converter	Down Converter
Gain		20 dB \pm 2 dB	30 dB \pm 2 dB
Gain Flatness	-Over RF Band -Over any 125 MHz Segment	1 GHz BW: \pm 1.25 dB max. / 500 MHz BW: \pm 1.00 dB max. \pm 0.50 dB max.	
Gain Stability		\pm 0.50 dB / day max. at constant temperature \pm 1 dB over -20 to $+60^{\circ}\text{C}$ \pm 1.5 dB over -30 to $+70^{\circ}\text{C}$	
Gain Control (at L-Band Input)		at L-Band Input	At L-Band Output
Range		20 dB	20 dB
Step Size (Digital 7-bit)		0.25 dB (0.1dB option)	0.25 dB (0.1 dB option)
Output Power Po (1dB)		+10 dBm min.	+15 dBm min.
Intermodulation Distortion (With two output carriers @ 0 dBm per)		-40 dBc max.	-50 dBc max.
Output Spurious (In-Band): - Signal Dependent (Po = 0 dBm) - Signal Independent - LO Leakage (IF band dependent)		-70 dBc typical. -70 dBm typical -70 dBm typical	
2IF + LO @ Pout = 0 dBm (max gain)		-50 dBc max.	-N/A
Output Noise Density		128 dBm/Hz max.	N/A
Image Rejection		80 dB min.	70 dB min.
Noise Figure @ 25°C (max gain)		15 dB max.	20 dB max.
Return Loss:	Input Output	18 dB min. 15 dB min.	15 dB min. 18 dB min.
Reference Input Frequency		10 MHz	
Reference Input Level		-5 dBm to +5 dBm	
Frequency Stability (internal reference)		$\pm 2 \times 10^{-8}$ per day @ fixed temperature, $\pm 5 \times 10^{-8}$ over temperature	
Frequency Offset between External and Internal		< \pm 1 KHz	
Group Delay		2 nsec peak-to-peak max.	
Type / Frequency Sense		Single Conversion / No Inversion	
Power Requirements			
Voltage Standard		90 - 260 VAC, Single Phase	
Frequency		47 - 63 Hz	
Power		50 Watts max.	35 Watts max.
DC Voltage (Option)		20 - 48 VDC	
Mechanical Configuration			
Weight		15 lbs max.	15.0 lbs max
RF Connectors		WR-22 Flat	2.92 mm
IF Connectors		N-Female	N-Female
Reference Connector		SMA Female	
AC Power Connector		PT07C12-3P (027)	
M & C Control Connector		PT02E-12-10P (025)	
Ethernet		RJ45 Female (RJF2SA1B)	
Environmental			
Temperature		-40°C to $+50^{\circ}\text{C}$	-40°C to $+50^{\circ}\text{C}$
Altitude		Up to 10,000 feet	Up to 50,000 feet
Humidity		Up to 100% Condensation	
Vibration		Normal Commercial Carrier Handling	

Note - Specifications may change without notice, please consult the factory for your specific needs. DSQ-100_01