



## **QV-BAND BLOCK UP CONVERTERS WITH MULTIPLE INDEPENDENT L-BAND INPUTS / ONE COMBINED RF OUTPUT**



**Jersey Microwave** has moved their experience of being a leader in Ka-band block conversion up to Q/V-band. All the main building blocks are designed and manufactured by the JM team. This Q/V band solution allows for 4 separate L-Band inputs to be up converted to 47.2-51.4 GHz (custom bands welcomed) and then combined and amplified to cover 1 wideband output.

Using JM's high performance integrated Phase Locked oscillators and block converter modules the Jersey QVBUC Series covers multiple Q/V bands and can accommodate custom specifications. The unit can receive multiple L-Band inputs to cover a wideband output. The Converter units have excellent phase noise and are Phase Locked to 10 MHz, they can be offered at different gain and output power levels. Higher output powers are available (contact factory). Options include a high stability internal reference, Ethernet connectivity, Monitor Port, Mute Control, RS-422 or RS-485 control and attenuation control (0.1 dB resolution) up to 20 dB.

### **Features/Options**

**Low Phase Noise exceeds  
IESS308/309**

**High Performance**

**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**

**Alternate Gain Options**

**Gain Control**

**Custom Frequencies**

**Monitor Ports**

**Mute Control**

**Independent Contact Closure  
Summary Alarm**

**Custom Specifications**

**And**

**Custom Packaging Available**

Electrical Specification	Up Converter
Model	<b>QVBUC-472514-2005-ODU</b>
Input Frequency (4 independent inputs)	1450-2450 MHz
Output Frequency (1 combined output)	Channel #1 47.2-48.2 GHz, Channel #2 48.2-49.2 GHz, Channel #3 49.2-50.2 GHz, Channel #4 50.4-51.4 GHz
LO Frequencies	Channel #1 45.75 GHz, Channel #2 46.75 GHz, Channel #3 47.75 GHz, Channel #4 48.95 GHz
Type / Frequency Sense	Single Conversion / No Inversion
Impedance In / Out	50 $\Omega$
Gain @ Fc & 25C	20 dB min.
Gain Flatness -Over RF Band (4 GHz) -Each Channel (1 GHz) -Over any 125 MHz Segment Over any 40 MHz Segment	4.0 dB p/p max. 3.0 dB p/p max. 1.0 dB p/p max. 0.5 dB p/p max.
Gain Over Temperature	4.0 dB max.
Gain Control	20 dB Power up default set to 20 dB attenuation
Step Size	0.1 dB
Output Power Po (1dB)	+5 dBm min.
Intermodulation Distortion (With two output carriers @ 0 dBm per)	-35 dBc max.
Output Spurious (In-Band): - Signal Dependent (Po = 0 dBm) - Signal Independent - LO Leakage @ RF Output	-60 dBc max. -70 dBm max. -70 dBm max.
2IF + LO @ Pout= 0 dBm	-50 dBc max.
Image Rejection	-70 dBc min.
Output Noise Density	-115 dBm/Hz max.
Return Loss: - Input - Output	18 dB min. 12 dB min.
Reference Input Frequency	10 MHz
Reference Input Level	-3 dBm to +3 dBm
Frequency Stability (Internal Reference Option)	$\pm 1 \times 10^{-9}$ per day @ fixed temperature $\pm 5 \times 10^{-9}$ over operating temperature after 72 hours of operation
Frequency Accuracy (between references)	$\leq 10$ KHz Typical
Auto-Switchover Level	$\leq -8$ dBm
MUTE Control	$\leq -60$ dBc
Group Delay over each RF band	2 nsec peak-to-peak max.
Reference Phase Noise Requirement	10 Hz = $\leq -110$ dBc/Hz, 100Hz = $\leq -135$ dBc/Hz, 1 KHz = $\leq -145$ dBc/Hz, 10 KHz = $\leq -155$ dBc/Hz, 100 KHz = $\leq -160$ dBc/Hz
SSB Phase Noise Performance	10 Hz = $\leq -35$ dBc/Hz, 100Hz = $\leq -65$ dBc/Hz, 1 KHz = $\leq -89$ dBc/Hz, 10 KHz = $\leq -92$ dBc/Hz, 100 KHz = $\leq -92$ dBc/Hz, 1 MHz = $\leq -115$ dBc/Hz

**Electrical Specification****Up Converter**

<b>Power Requirements</b>	
Voltage Standard	90-260 VAC, 3 wires– Single Phase
Frequency	47-63 Hz
Power Consumption	100 Watts max.
<b>Mechanical Configuration</b> (a formal outline will be provided)	
Weight	50 lbs. max.
RF Connectors	WR-19
IF Connectors	N Female
Reference Connector	SMA Female
AC Power Connector	PT07C12-3P (027)
M & C Control Connector	PT02E-12-10P (025)
Ethernet	RJ45 Female (RJF2SA1B)
Finish	Weather Resistant Iridite and/or White Paint Finish
<b>Monitor &amp; Control</b>	
Interface	Standard :RS-485, Ethernet 10Base-T
Fault	Form-C Contact Alarm
LED Indicator	Green: Operational, Red: Fault
<b>Environmental</b>	
Operating Temperature	-40°C to +60°C
Non-operating Temperature	-40°C to +85°C
Operating Altitude	Up to 10,000 feet
Humidity	Up to 100% Condensation
Vibration	Normal Commercial Carrier Handling

*Note - Cover picture for illustration only, your offer may differ. Specifications may change without notice, please consult the factory for your specific needs.*

DS-QVBUC-01