



# KA-BAND BLOCK UP CONVERTERS WITH MULTIPLE INDEPENDENT L-BAND INPUTS



Jersey Microwave has taken their standard field proven line of single band L to Ka-Band high performance Frequency Block Converters and re-packaged them to allow 2, 3 or 4 separate L-Band inputs to be combined to cover 1 wideband RF output.

Using high performance integrated Phase Locked oscillators and block converter modules the Jersey DKABUC, TBUC, QKABUC Series cover multiple Ka frequency bands and can accommodate custom specifications. The unit can receive multiple L-Band inputs (<1500 MHz BW) and be combined to cover a wideband output (<4500 MHz). The Converter units have superior phase noise and are Phase Locked to 10 MHz, they can be offered at different gain and output power levels. The units are AC powered (DC as an option) via the weatherized connectors. 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 30 dB.

## Features/Options

**Low Phase Noise exceeds IESS308/309 & MIL-STD-188-164A**

**High Performance**

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

**Auto-switchover of 5/10 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**

**Alternate Gain Options**

**Gain Control**

**Custom Frequencies**

**Monitor Ports**

**Mute Control**

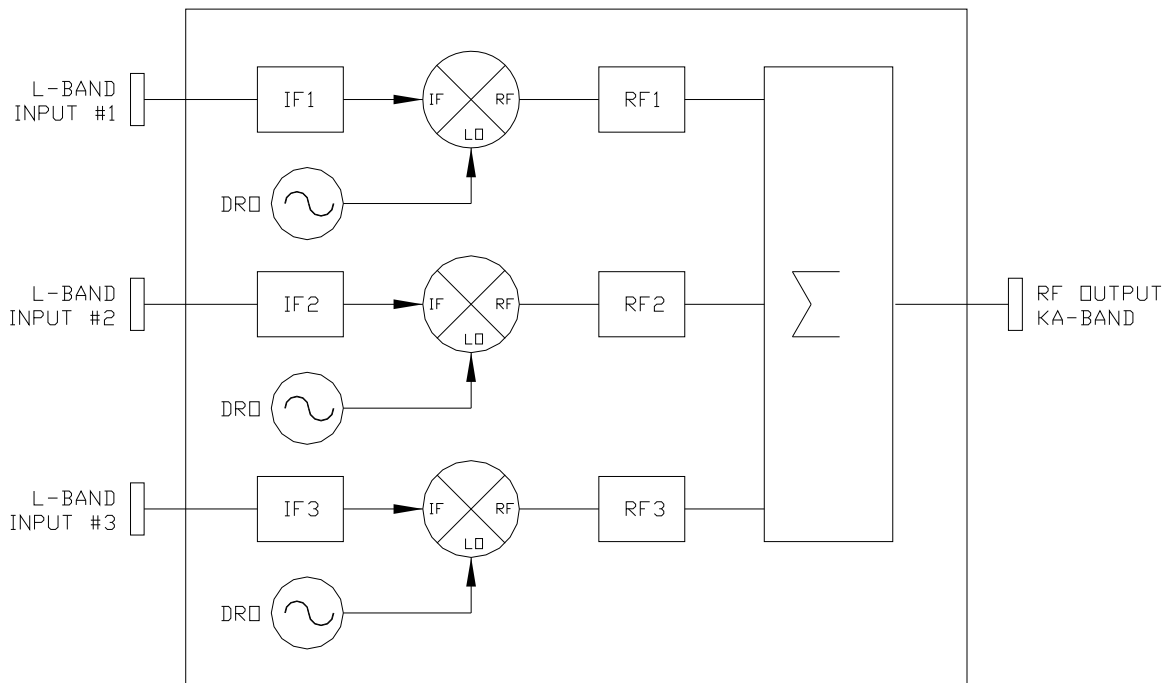
**Independent Contact Closure Summary Alarm**

# Standard Frequency Bands

## KA-BAND BLOCK UP CONVERTERS

Model Number	Input Frequency	Output Frequency	LO Frequency
DKABUC-290310-2015-ODU	IF1: 950-1950 MHz	29.00-30.00 GHz	28.05 GHz
	IF2: 1000-2000 MHz	30.00-31.00 GHz	29.00 GHz
DKABUC-295310-2015-ODU	IF1: 950-1450 MHz	29.50-30.00 GHz	28.55 GHz
	IF1: 1000-2000 MHz	30.00-31.00 GHz	29.00 GHz
DKABUC-285300-2015-ODU	IF1: 950-1650 MHz	28.50-29.20 GHz	27.55 GHz
	IF2: 950-1750 MHz	29.20-30.00 GHz	28.25 GHz
TBUC-270285-2010-ODU	IF1: 950-1450 MHz	27.00-27.50 GHz	26.05 GHz
	IF2: 950-1450 MHz	27.50-28.00 GHz	26.55 GHz
	IF3: 950-1450 MHz	28.00-28.50 GHz	27.05 GHz
TKABUC-275300-2010-ODU	IF1: 950-1750 MHz	27.50-28.30 GHz	26.55 GHz
	IF2: 950-1750 MHz	28.30-29.10 GHz	27.35 GHz
	IF3: 950-1850 MHz	29.10-30.00 GHz	28.15 GHz
QKABUC-275310-2010-ODU	IF1: 950-1750 MHz	27.50-28.30 GHz	26.55 GHz
	IF2: 950-1750 MHz	28.30-29.10 GHz	27.35 GHz
	IF3: 950-1850 MHz	29.10-30.00 GHz	28.15 GHz
	IF4: 1000-2000 MHz	30.00-31.00 GHz	29.00 GHz

### BLOCK DIAGRAM (FOR TBUC SERIES, 1 RF OUTPUT, 3 INDEPENDENT IF INPUTS)

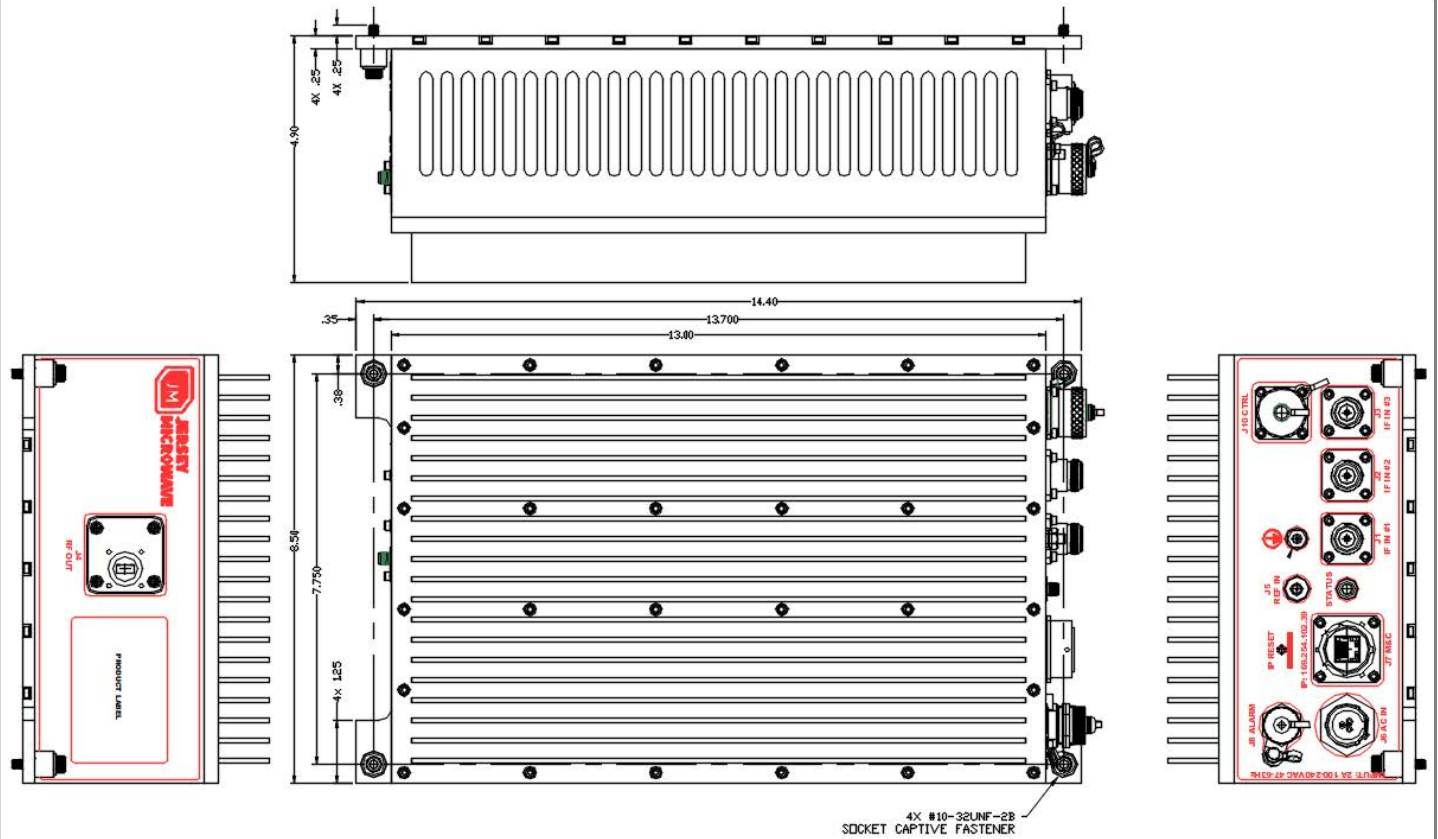


**Custom bands and custom specifications can be provided.**

Electrical Specification	Up Converter
Type / Frequency Sense	Single Conversion / No Inversion
Gain @ Center Frequency & +25°C	25 dB ±2 dB
Gain Flatness -Over RF Band -Over any 125 MHz Segment	1 GHz BW: ±1.25 dB max. / 500 MHz BW: ±1.00 dB max. ±0.50 dB max.
Gain Stability	±0.50 dB / day max. at constant temperature ±1.00 dB over -20°C to +40°C ±1.50 dB over -40°C to +50°C
Gain Control	@ L-Band Input
Range	25 dB
Step Size (Digital 9-bit)	0.1 dB
Output Power Po (1dB)	+15 dBm min.
Intermodulation Distortion (With two output carriers @ 0 dBm per)	-45 dBc max.
Output Spurious (In-Band): - Signal Dependent (Po = 0 dBm) - Signal Independent - LO Leakage @ RF	-70 dBc max. -80 dBm max. -80 dBm max.
2IF + LO @ Pout = -5 dBm	-60 dBc max.
Image Rejection	80 dB min.
Output Noise Density	-132 dBm/Hz max.
Return Loss: IF Input / RF Output	18 dB / 17 dB, min.
Reference Input Frequency	10 MHz
Reference Input Level	-10 dBm to +5 dBm
Frequency Stability (Internal Reference Option)	± 2 x 10 <sup>-8</sup> per day @ fixed temperature ±5 x 10 <sup>-7</sup> over -30°C to +70°C (Reference to +25°C)
Frequency Accuracy (Internal Reference Option)	<±10 KHz
Phase Noise	10Hz = -40 dBc/Hz / 100Hz = -70 dBc/Hz / 1KHz = -92 dBc/Hz 10KHz = -100 dBc/Hz / 100KHz = -105 dBc/Hz / 1MHz = -120 dBc/Hz
Group Delay	2 nsec peak-to-peak max.
<b>Power Requirements</b>	
Voltage Standard	90 - 260 VAC, Single Phase
Frequency	47 - 63 Hz
Power	80 Watts max.
DC Voltage (Option)	20 - 48VDC
<b>Mechanical Configuration</b>	
Weight	18 lbs for Dual & Tri-Band / 25 lbs. for Quad-Band max.
RF Connectors	WR34 / WR28 Grooved
IF Connectors	N Female
Reference Connector	SMA Female
AC Power Connector	PT07C12-3P (027)
M & C Control Connector	PT02E-12-10P (025)
Ethernet (Option)	RJ45 Female (RJF2SA1B)
<b>Environmental</b>	
Operating Temperature	-40°C to +50°C
Non-operating Temperature	-40°C to +80°C
Operating Altitude	Up to 10,000 feet
Non- Operating Altitude	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.**

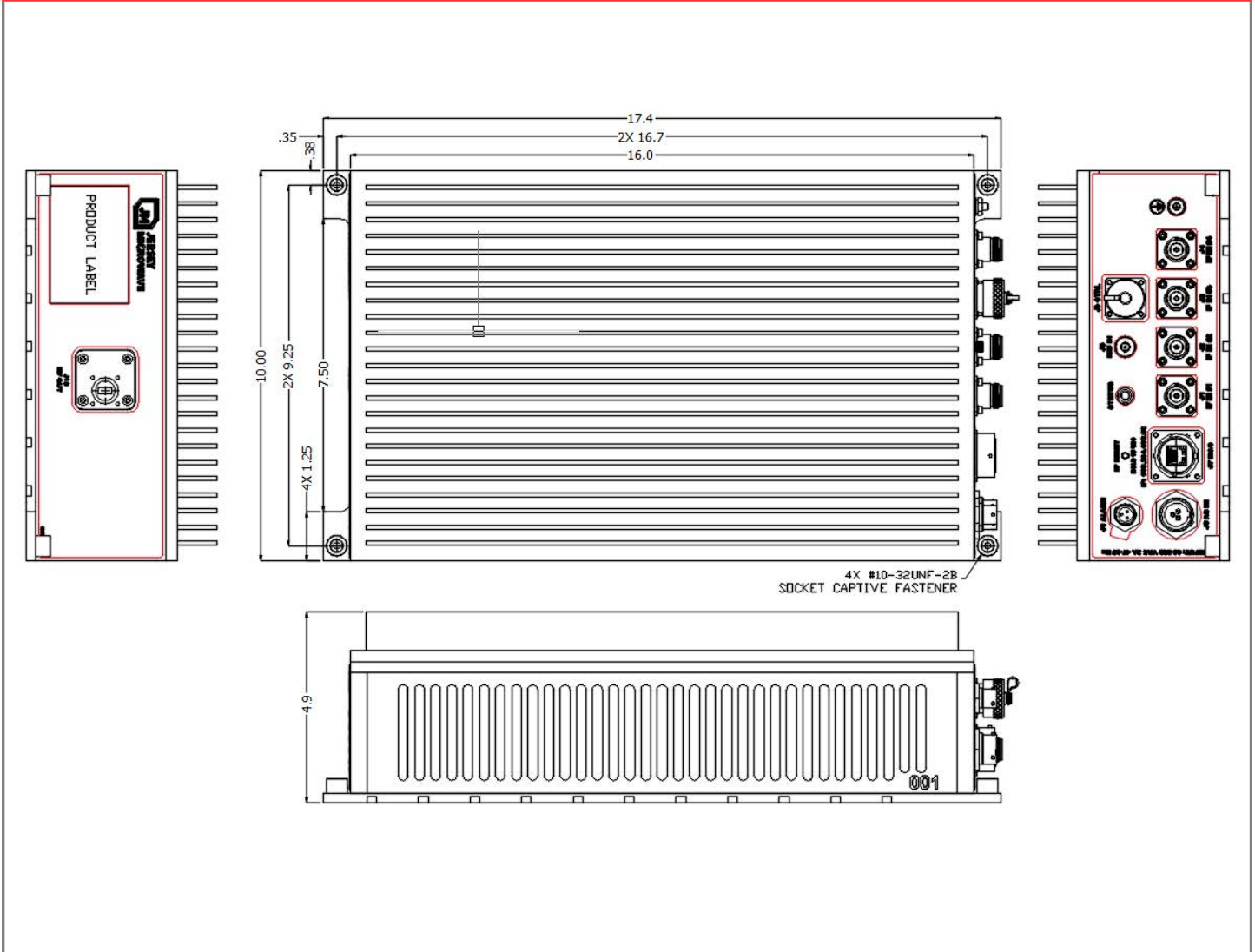
# Standard Mechanical Outlines (Dual / Tri-Band)



Note: Dimensions are in inches.

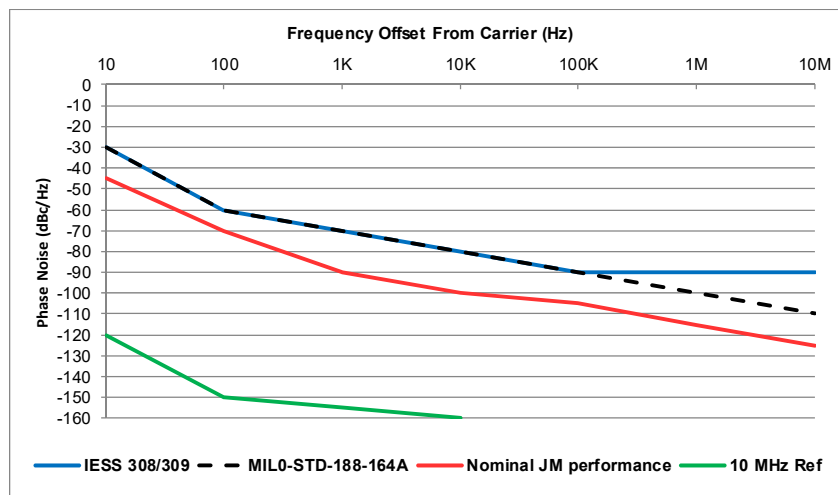
DS-208-04

# Standard Mechanical Outlines (Quad-Band)



Note: Dimensions are in inches.

## Phase Noise Characteristics (1.0 Hz Bandwidth)



DS-208-04