# KA-BAND BLOCK DOWN CONVERTERS WITH MULTIPLE INDEPENDENT L-BAND OUTPUTS


**Jersey Microwave** has taken their standard field proven line of single band Ka to L-Band high performance Frequency Block Converters and re-packaged them to allow 1 wideband Ka-Band input and split into 2 or 3 independent L-Band outputs.

Using high performance integrated Phase Locked oscillators and block converter modules the Jersey Multi-band Series cover multiple Ka frequency bands and can accommodate custom specifications. The DKABDC and TBDC series 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 40 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**

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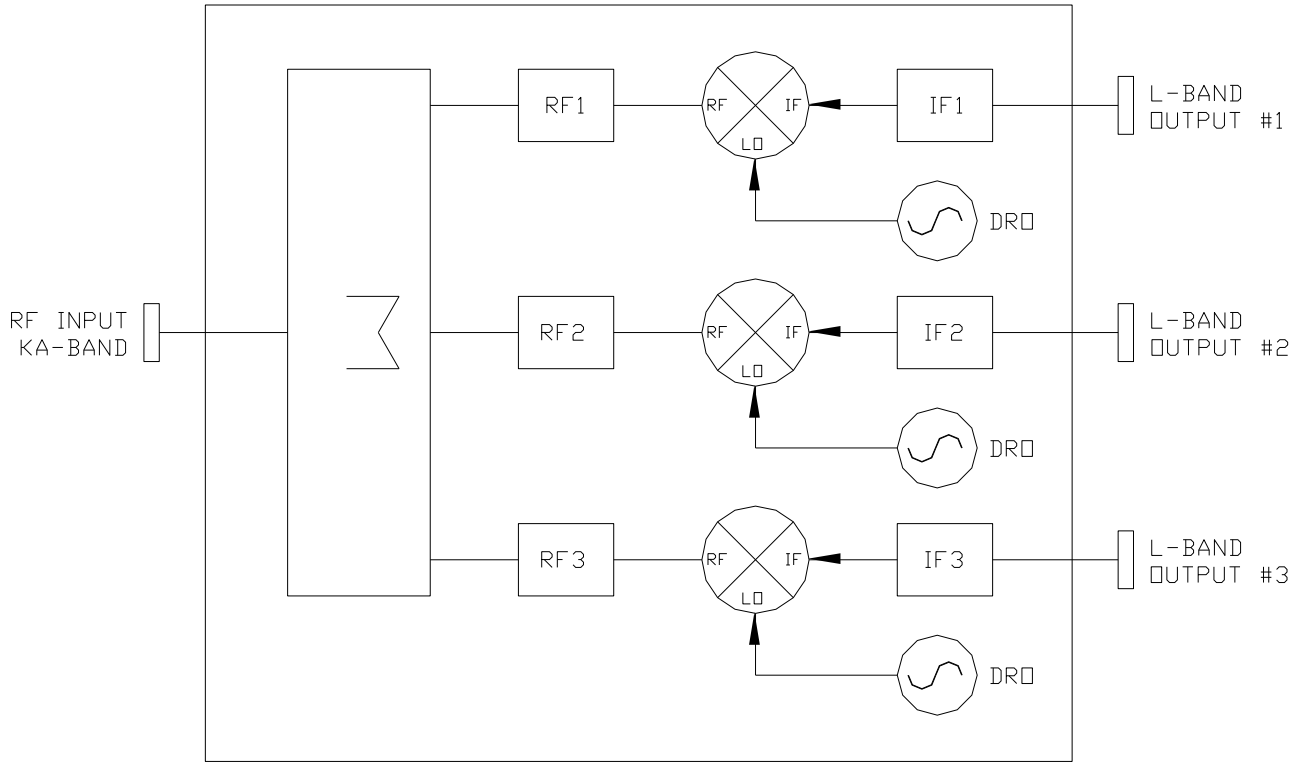
# Standard Frequency Bands

## KA-BAND BLOCK DOWN CONVERTERS

| Model Number | Input Frequency | Output Frequency | LO Frequency |
|---|---|---|---|
| DKABDC-192212-2515-ODU | RF1: 19.20-20.20 GHz | 950-1950 MHz | 28.05 GHz |
| | RF2: 20.20-21.20 GHz | 1000-2000 MHz | 29.00 GHz |
| DKABDC-197212-2515-ODU | RF1: 19.70-20.2 GHz | 950-1950 MHz | 28.55 GHz |
| | RF2: 20.20-21.20 GHz | 1000-2000 MHz | 29.00 GHz |
| DKABDC-285300-2515-ODU | RF1: 18.70-19.2 GHz | 950-1450 MHz | 27.55 GHz |
| | RF2: 19.20-19.70 GHz | 950-1450 MHz | 28.25 GHz |
| TKABDC-178193-2510-ODU | RF1: 17.80-18.30 GHz | 950-1450 MHz | 26.05 GHz |
| | RF2: 18.30-18.80 GHz | 950-1450 MHz | 26.55 GHz |
| | RF3: 18.80-19.30 GHz | 950-1450 MHz | 27.05 GHz |
| TKABDC-175212-2510-ODU | RF1: 17.80-18.30 GHz | 950-1450 MHz | 26.55 GHz |
| | RF2: 19.70-20.20 GHz | 950-1450 MHz | 27.35 GHz |
| | RF3: 20.20-21.20 GHz | 1000-2000 MHz | 28.15 GHz |

## BLOCK DIAGRAM (FOR TBDC SERIES, 1 INPUT, 3 INDEPENDENT OUTPUTS)

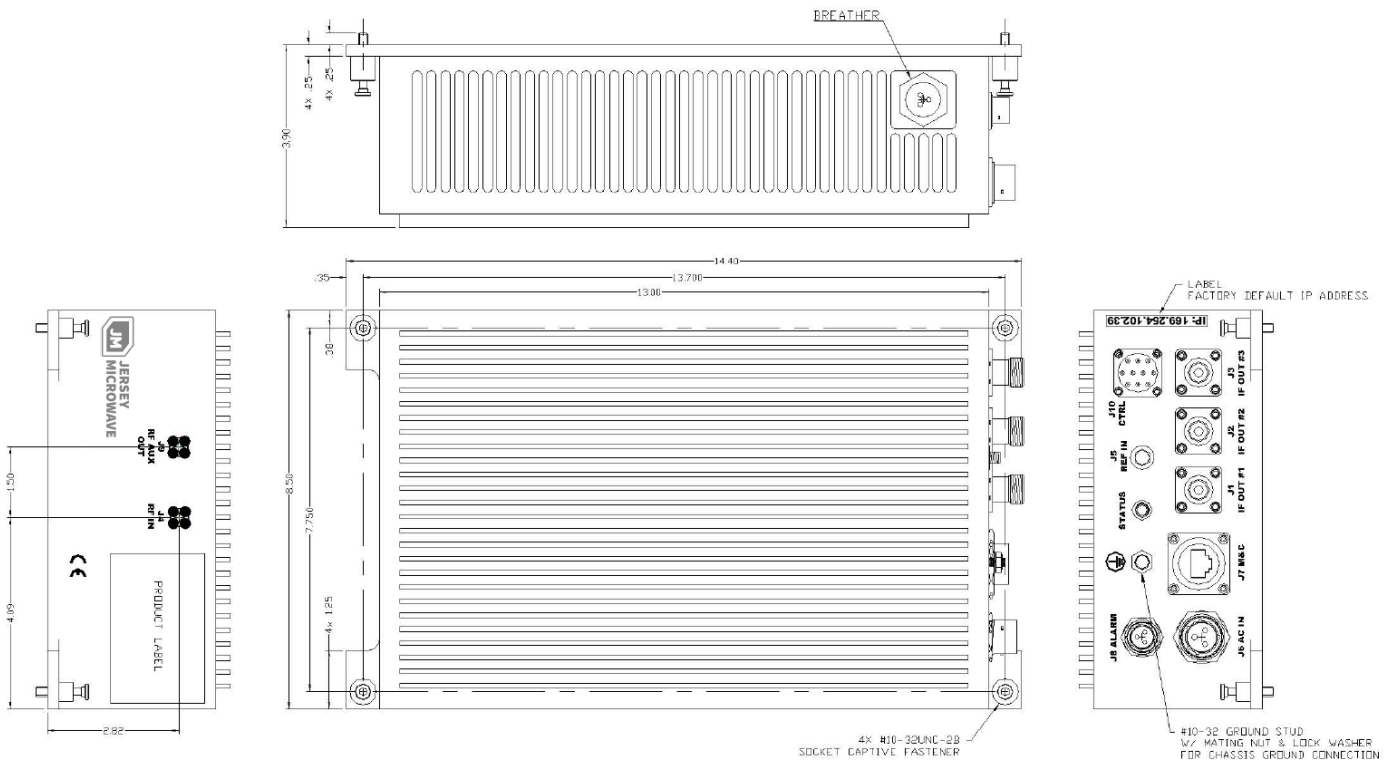



**Custom bands and custom specifications can be provided.**

| Electrical Specification | Down Converter |
|---|---|
| Type / Frequency Sense | Single Conversion / No Inversion |
| Gain | 25 dB ±2 dB |
| Gain Flatness<br>-Over RF Band<br>-Over any 125 MHz Segment | 1 GHz BW: ±1.25 dB max. / 500 MHz BW: ±1.00 dB max.<br>±.50 dB max. |
| Gain Stability | ±0.50 dB / day max. at constant temperature<br>±1.00 dB over -20°C to +40°C<br>±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<br>(With two output carriers @ 0 dBm per) | -50 dBc max. |
| Output Spurious (In-Band):<br>- Signal Dependent (Po = 0 dBm)<br>- Signal Independent<br>- LO Leakage @ RF | <br>-70 dBc max.<br>-80 dBm max.<br>-80 dBm max. |
| 2IF + LO @ Pout= 0 dBm (max gain) | -50 dBc max. |
| Image Rejection | -70 dBc min. |
| Noise Figure | 15 dB max. |
| Return Loss:<br>- Input<br>- Output | <br>17 dB min.<br>18 dB min. |
| Reference Input Frequency | 10 MHz |
| Reference Input Level | -10 dBm to +5 dBm |
| Frequency Stability (Internal Reference Option) | ± 2 x $10^{-8}$ per day @ fixed temperature<br>±5 x $10^{-7}$ over operating temperature |
| Frequency Accuracy (Internal Reference Option) | <±1 KHz |
| Group Delay | 2 nsec peak-to-peak max. |
| Power Requirements | |
| Voltage Standard | 90 - 260 VAC, Single Phase |
| Frequency | 47 - 63 Hz |
| Power | 80 Watts max. |
| DC Voltage (Option) | 20 - 48 VDC |
| Mechanical Configuration | |
| Weight | 25 lbs. max. |
| RF Connectors | 2.92 mm Female |
| 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) |
| Environmental | |
| 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 |

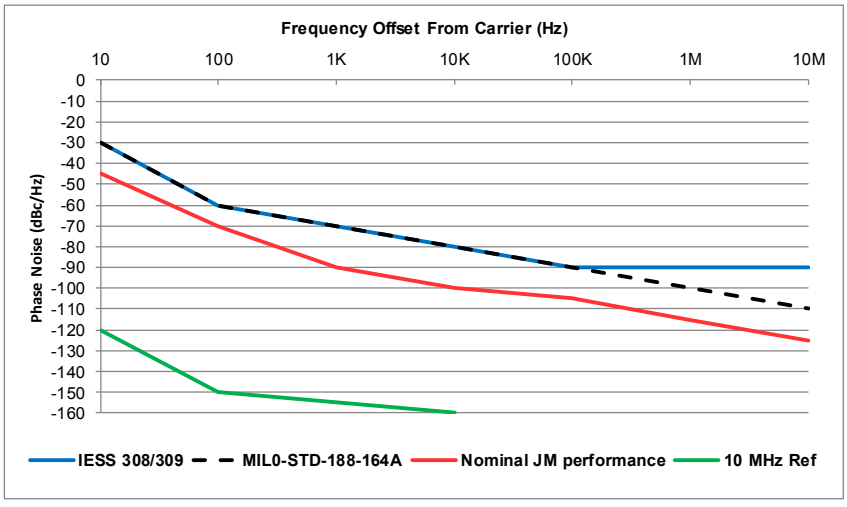
**Note - Specifications may change without notice, please consult the factory for your specific needs.**

# Standard Mechanical Outlines




**Note: Dimensions are in inches.**

# Phase Noise Characteristics (1.0 Hz Bandwidth)



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