

KA-BAND TRI-BAND FREQUENCY BLOCK UP CONVERTERS MILITARY / COMMERCIAL

27.0 - 31.0 GHz



Jersey Microwave has taken their standard field proven line of single band L to Ka-Band high performance Frequency Block Converters and re-designed them to handle multiple bands within one outdoor enclosure.

Using high performance integrated Phase Locked oscillators and block converters the Jersey TBUC Series covers multiple Ka frequency bands and can accommodate custom specifications. The unit can switch from the Military (30-31 GHz) band to any commercial band within 27.0 to 30 GHz (≤ 2500 MHz BW). Up Converter units have superior phase noise (10-20 dB better than MIL-STD-188-164A) and are Phase Locked to 10 MHz, they have 20 dB gain, +15 dBm output (P1dB) and are AC powered (DC as an option) via the weatherized connectors. Higher output powers are available (up to 16 Watts P_{SAT}).

Jersey Microwave's "Wideband" solutions allows three independent L-Band inputs to convert and combine to one wideband Ka-Band output (<4500 MHz).

Features/Options

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

Redundancy

**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

Gain Control

Custom Frequencies

Monitor Ports

Mute Control

**Independent Contact Closure
Summary Alarm**

Slope Equalizer

Standard Frequency Bands

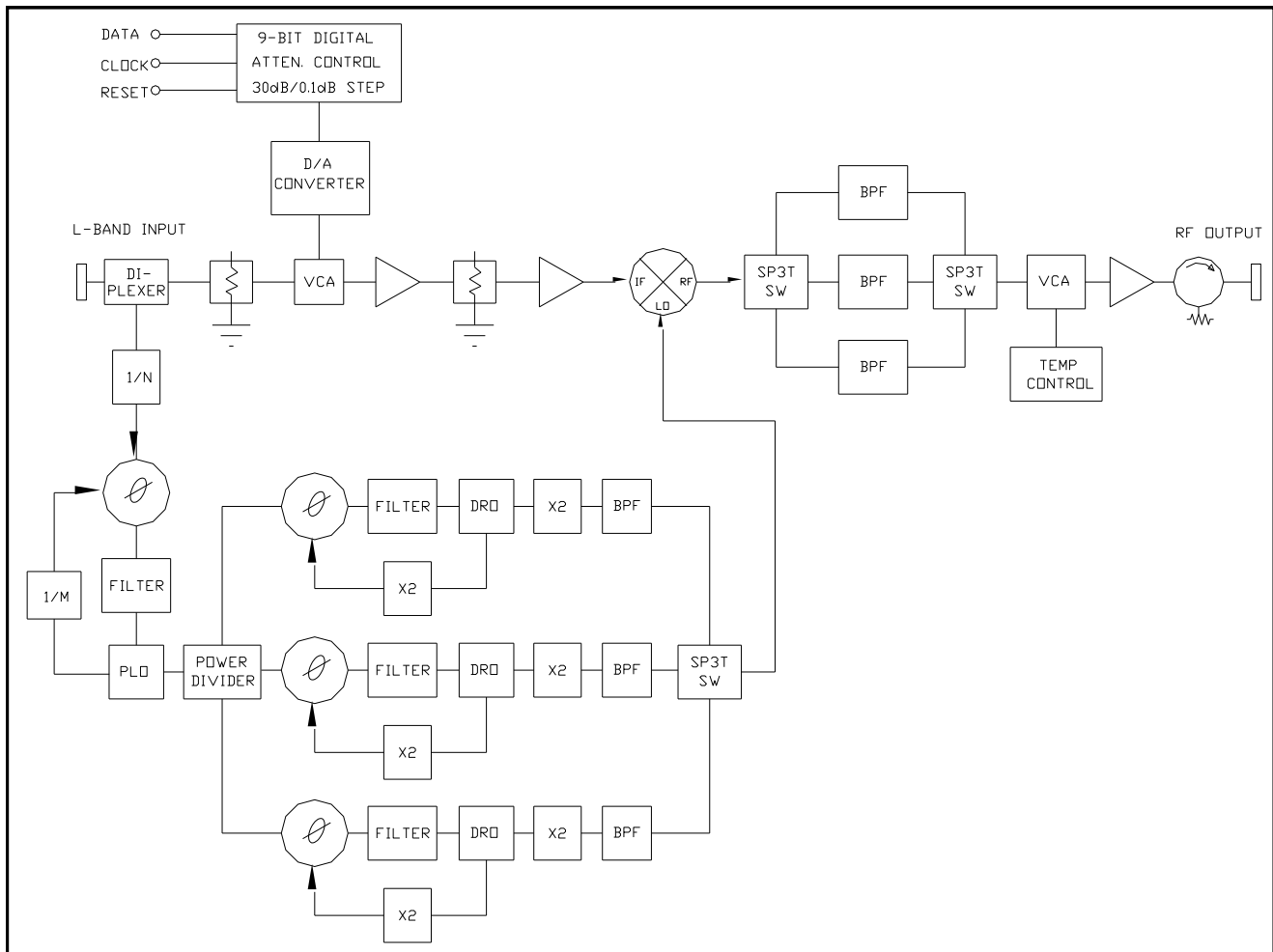
Tri-Band Model Numbers

Model Number	Input Frequency	Output Frequency	LO Frequency
TBUC-280310-2015-ODU	1000-2000 MHz	a) 28.00-29.00 GHz b) 29.00-30.00 GHz c) 30.00-31.00 GHz	27.00 GHz 28.00 GHz 29.00 GHz
TBUC-295310-2015-ODU	950-1450 MHz	a) 29.50 -30.00 GHz b) 30.00-30.50 GHz c) 30.50-31.00 GHz	28.55 GHz 29.05 GHz 29.55 GHz
TBUC-275300-2015-ODU	950-1850 MHz	a) 27.50-28.40 GHz b) 28.40-29.30 GHz c) 29.30-30.00 GHz	26.55 GHz 27.45 GHz 28.35 GHz

Note - Jersey Microwave can combine alternate Ka-Band segments from 27.0-31.0 GHz.
If you do not see the combination you desire above, please contact us.

Custom bands and custom specifications can be provided.

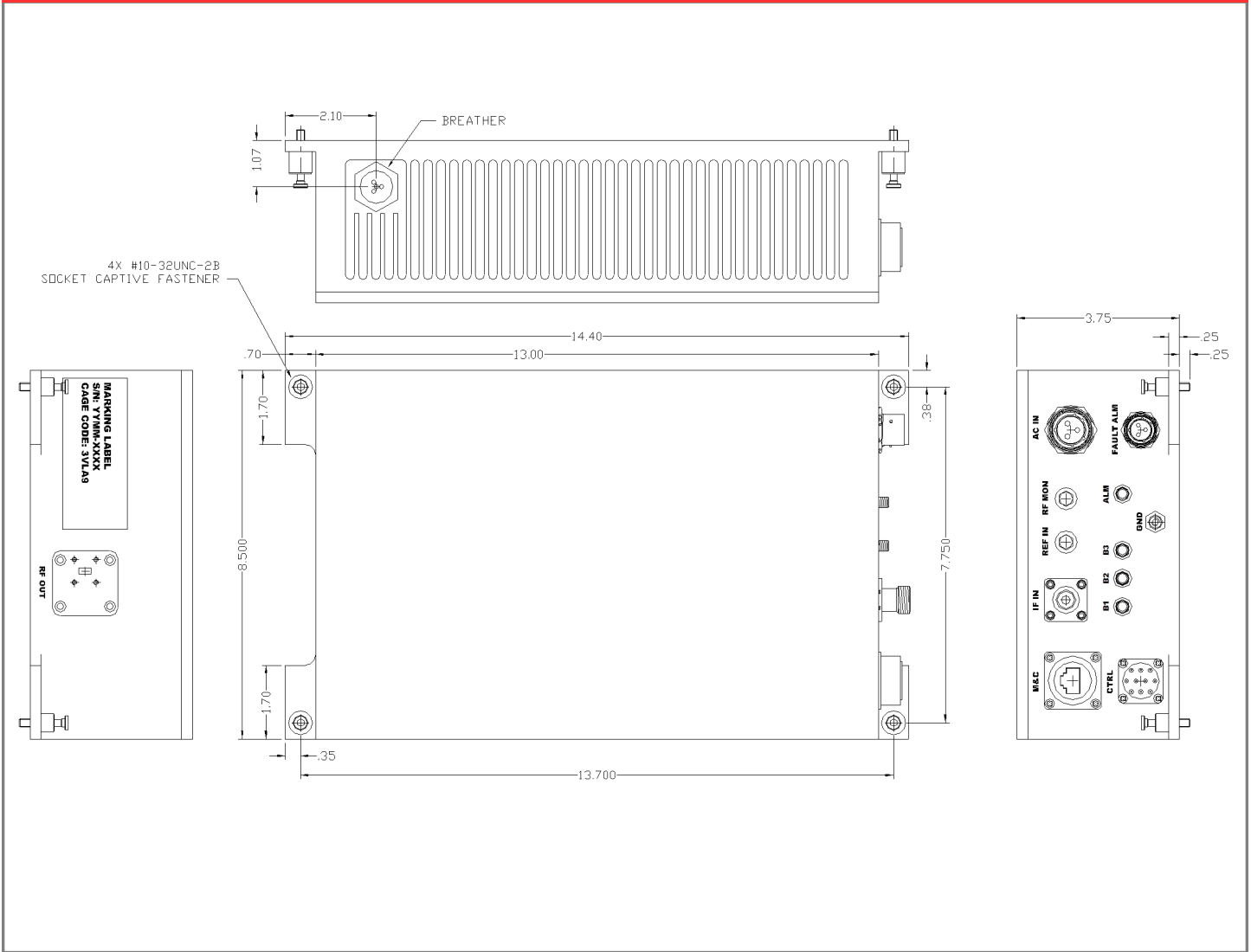
Tri-Band Block Diagram



Electrical Specification	Band #1 or Band #2 or Band #3
Gain @ minimum attenuation	20 dB \pm 2 dB
Gain Flatness @ max Gain -Over RF Band -Over any 125 MHz Segment -Over any 40 MHz Segment	1 GHz BW: \pm 1.0 dB max. \pm 0.50 dB max. \pm 0.25 dB max.
Gain Stability	\pm 0.35 dB / day max. at constant temperature \pm 1.25 dB over -20°C to +60°C \pm 1.75 dB over -30°C to +70°C
Gain Control (at L-Band Input)	30 dB
Step Size (Digital 9-bit)	0.1 dB
Output Power Po (1dB)	+15 dBm min.
OIP3 (With two output carriers @ 0 dBm total output power)	-40 dBc max.
Output Spurious (In-Band): - Signal Dependent (Po = 0 dBm) - Signal Independent - LO Leakage @ RF	-60 dBc max. -70 dBm max. -70 dBm max.
2IF + LO @ 0 dBm	-60 dBc max.
Output Noise Density	-130 dBm/Hz max.
Return Loss: - Input - Output	18 dB min. 18 dB min.
Reference Input Frequency	10 MHz
Reference Input Level	0 dBm to \pm 10 dBm
Frequency Stability Internal Reference option (after 72 hours of operation)	\pm 2 x 10 ⁻⁹ per day @ fixed temperature \pm 5 x 10 ⁻⁸ over temperature -40°C to + 70°C
Frequency Stability (external reference)	Same as reference
Type / Frequency Sense	Single Conversion / No Inversion
Power Requirements	
Voltage Standard	90 - 260 VAC, Single Phase
Frequency	47 - 63 Hz
Power	40 Watts max.
DC Voltage (Option)	20 - 48VDC
Mechanical Configuration	
Weight	15 lbs. max.
RF Connectors	WR-28 Flat
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 +70°C
Non-Operating Temperature	-40°C to +85°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

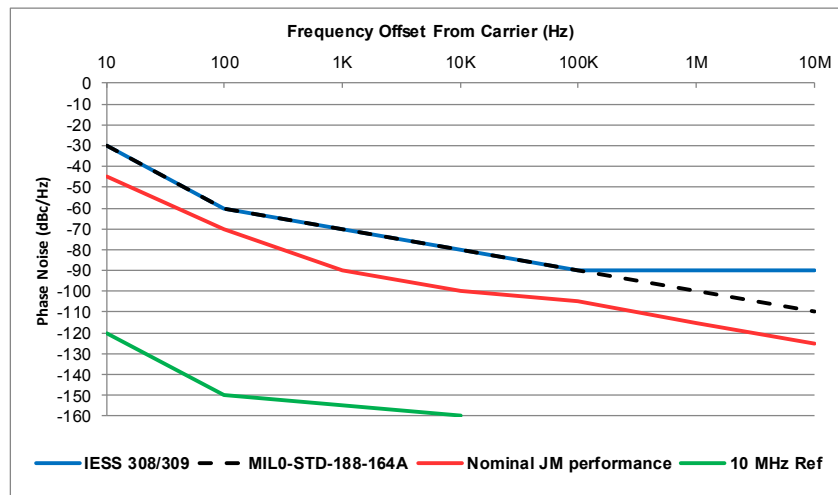
Note - Specifications may change without notice, please consult the factory for your specific needs.

Standard Mechanical Outlines



Note: Dimensions are in inches.

Phase Noise Characteristics (1.0 Hz Bandwidth)



DS-107-04