

Jersey Microwave

High Performance Ka-band Phase-Locked Block Converters Jersey's KABUC Series

Features

Locks to External Reference of 10 MHz (5/50 MHz Option)
Internal Reference with Auto-Switchover Option also available
Low Phase Noise (exceeds MIL-STD-188-164A see chart)
Light compact module (Std unit less than 22 oz, 16 oz available)
High Reliability, Low Power Consumption & Low Cost
Alternate Gain options, Output Power for specific requirements
Attenuator Option – Digital or Analog



High Volume production module

Description

The *Jersey Microwave* Ka-Band Block Converter series are specially designed to translate a block of L-Band frequencies to Ka-Band frequencies, or vice versa, for use in transmit or receive applications. The design represents an accomplishment in dense packaging that incorporates a wide variety of microstrip technology techniques, high frequency cavity filtering, standard PC board construction and the combination of high frequency conversion techniques developed after years of providing high performance converter products. The result is the smallest, lightest and highest performance Ka-Band Block Converter on the market that is suitable for both commercial and military communication applications.

CUSTOM FREQUENCY BANDS CAN BE PROVIDED

KABUC Standard Series

Model Number	Input Frequency	Output Frequency	LO Frequency
KABUC-247252-2515	950-1450 MHz	24.75-25.25 GHz	23.8 GHz
KABUC-275285-2515	950-1950 MHz	27.50-28.50 GHz	26.55 GHz
KABUC-276291-2515	950-2450 MHz	27.60-29.10 GHz	26.55 GHz
KABUC-283300-2515	950-2600 MHz	28.35-30.00 GHz	27.4 GHz
KABUC-285295-2515	1000-2000 MHz	28.50-29.50 GHz	27.5 GHz
KABUC-288296-2515	975-1725 MHz	28.875-29.625 GHz	27.9 GHz
KABUC-291293-2515	1300-1500 MHz	29.10-29.30 GHz	27.8 GHz
KABUC-290295-2515	1000-1500 MHz	29.00-29.50 GHz	28.0 GHz
KABUC-292300-2515	1000-1800 MHz	29.20-30.00 GHz	28.2 GHz
KABUC-295300-2515	1100-1600 MHz	29.50-30.00 GHz	28.4 GHz
KABUC-290300-2515	1000-2000 MHz	29.00-30.00 GHz	28.0 GHz
KABUC-295305-2515	1000-2000 MHz	29.50-30.50 GHz	28.5 GHz
KABUC-300308-2515	1000-1800 MHz	30.00-30.80 GHz	29.0 GHz
KABUC-300310-2515	1000-2000 MHz	30.00-31.00 GHz	29.0 GHz

KABDC Standard Series (most models are available with 950 MHz output - starting frequency)

Designation	Input Frequency	Output Frequency	LO Frequency
KABDC-178193-2010	17.80-19.30 GHz	1000-2500 MHz	16.80 GHz
KABDC-183188-2010	18.30-18.80 GHz	1000-1500 MHz	17.3 GHz
KABDC-188193-2010	18.80-19.30 GHz	1000-1500 MHz	17.8 GHz
KABDC-193198-2010	19.30-19.80 GHz	1000-1500 MHz	18.3 GHz
KABDC-194196-2010	19.40-19.60 GHz	1300-1500 MHz	18.1 GHz
KABDC-198203-2010	19.80-20.30 GHz	1000-1500 MHz	18.8 GHz
KABDC-195202-2010	19.50-20.20 GHz	1000-1700 MHz	18.5 GHz
KABDC-202212-2010	20.20-21.20 GHz	1000-2000 MHz	19.2 GHz

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CONTACT US 908-684-2390 EXT 23 TO DISCUSS YOUR SPECIFIC NEED, WE CAN ADJUST OUR STANDARD UNIT FOR MOST PARAMETERS WITHOUT AN ENGINEERING PRICE INCREASE, GAIN, OUTPUT POWER (P1dB), FREQUENCY BAND, AND MOST PARAMETERS BELOW

ELECTRICAL SPECIFICATION	UP CONVERTER	DOWN CONVERTER
Gain	25 dB min.	30 dB min.
Gain Flatness Over RF Band Over any 125 MHz Segment	1 GHz BW: ± 1.0 dB max. / 500 MHz BW: ± 0.75 dB max. ± 0.50 dB max.	
Gain Stability	± 0.50 dB / day max. at constant temperature ± 1 dB over -20° to $+60^{\circ}$ C ± 1.5 dB over -30° C to $+70^{\circ}$ C	
Gain Control (at L-Band Input) Option		N/A
Range	30 dB	N/A
Step Size	0.1 dB	N/A
Control Interface	Serial three wire	N/A
Output Power Po (1dB)	+19 dBm typical / +15 dBm min.	+18 dBm typical / +15 dBm min.
Intermodulation Distortion (With two output carriers @ 0dBm per)	-48 dBc max.	-50 dBc max.
Output Spurious (In-Band): Signal Dependent (Po = 0dBm) Signal Independent	-60 dBc max. -65 dBm max. -70 dBm max.	
LO Leakage		
Rejection at Receive Band	-70 dBc max.	N/A
2 IF + LO (Po = 0 dBm)	-60 dBc max.	N/A
Image Rejection	N / A	60 dB min.
Noise @ 25°C	Output Noise Density -117 dBm/Hz max.	Noise Figure 5 dB max.
Return Loss: Input	14 dB min.	12 dB min.
Output	12 dB min.	18 dB min.
Reference Input Frequency	10 MHz	
Reference Input Level	0 dBm ± 5 dB	
LO Alarm: TTL	"H" = Locked / "L" = Unlocked	
SSB Phase Noise		
10 Hz	-35 dBc/Hz	-35 dBc/Hz
100 Hz	-68 dBc/Hz	-70 dBc/Hz
1 KHz	-88 dBc/Hz	-90 dBc/Hz
10 KHz	-98 dBc/Hz	-98 dBc/Hz
100 KHz	-100 dBc/Hz	-102 dBc/Hz
1 MHz	-115 dBc/Hz	-115 dBc/Hz
Supply Voltage	+12 Vdc, +/-0.5 V @ 1.2 A max. (1.35 surge)	+12 Vdc, +/-0.5 V @ 0.8A max.
Operating Temperature	-30° C to $+70^{\circ}$ C	
Humidity	0-95% Non condensing	
Connectors: Input	N-Female (SMA female Option)	2.92 mm Female
Output	2.92 mm Female	N-Female
Reference Input	Via L-Band Connector (Diplexer)	
Supply Voltage/Alarm	D type	
Package Size (L x W x H)	4.61" x 3.30" x 1.50"	3.30" x 3.20" x 1.08"

Note: Specifications are subject to change without notice. Jersey Microwave components can be tailored to meet your company's specific needs.

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Jersey Microwave components can easily be tailored to meet your specific needs.

Requirements on the characteristics of the external reference

Parameter	Remark	Min.	Typ.	Max.	Units
Reference Frequency			10		MHz
Reference Input Level		-5	+0	+5	dBm
Reference Input Impedance			50		Ohm
Reference Phase Noise	Offset frequency (fm)	SSB Phase Noise			
	10 Hz		-105		dBc/Hz
	100 Hz		-125		dBc/Hz
	1 KHz		-145		dBc/Hz
	10 KHz		-155		dBc/Hz
	100 KHz		-160		dBc/Hz

