



# "SMART" POWER DKABUCS HIGH POWER DUAL SWITCHED BAND BLOCK UP CONVERTERS 29.0-30.0 GHz / 30.0-31.0 GHz



The **Jersey Microwave** "Smart" Power DKABUC series is a Dual Ka-Band full RF sub-system provided in a more compact package as compared to standard Dual Block Up Converter sub-systems with high output power (up to 25 Watts Psat). The "Smart" Power DKABUC is supplied with the intelligence to accomplish all monitoring and control functions (RS-485) and the unit's cooling management. The design incorporates JM's "Smart" DKABUC module, M&C circuitry, Power Supply, Ethernet connectivity and a custom SSPA (GaN technology). JM's cooling approach has a unique "Smart" technique to maintain a low temperature rise (Patent Pending). The "Smart" Power DKABUCs are specially designed to translate a block of L-Band frequencies into to Ka-Band frequencies for transmitting applications in commercial and military satellite communications systems.

## Features/Options

- Fully Integrated M&C**
- 25 dB Gain Control at L-Band @ 0.1 dB Steps**
- IF Band Slope Equalizer**
- Internal/External Auto Switchover**
- Internal Reference with Electronic tuning**
- Mute Control**
- Summary Alarm**
- Monitor/Alarm**
- IF Input / RF Output Power Monitors**
- LO Lock Alarm**
- Temperature Monitor**
- Thermostatically Controlled Cooling System**
- Reference Input Detector**
- Continuous verification of performance with alarm history**
- User defined Start-up/Shut-down of control functions**

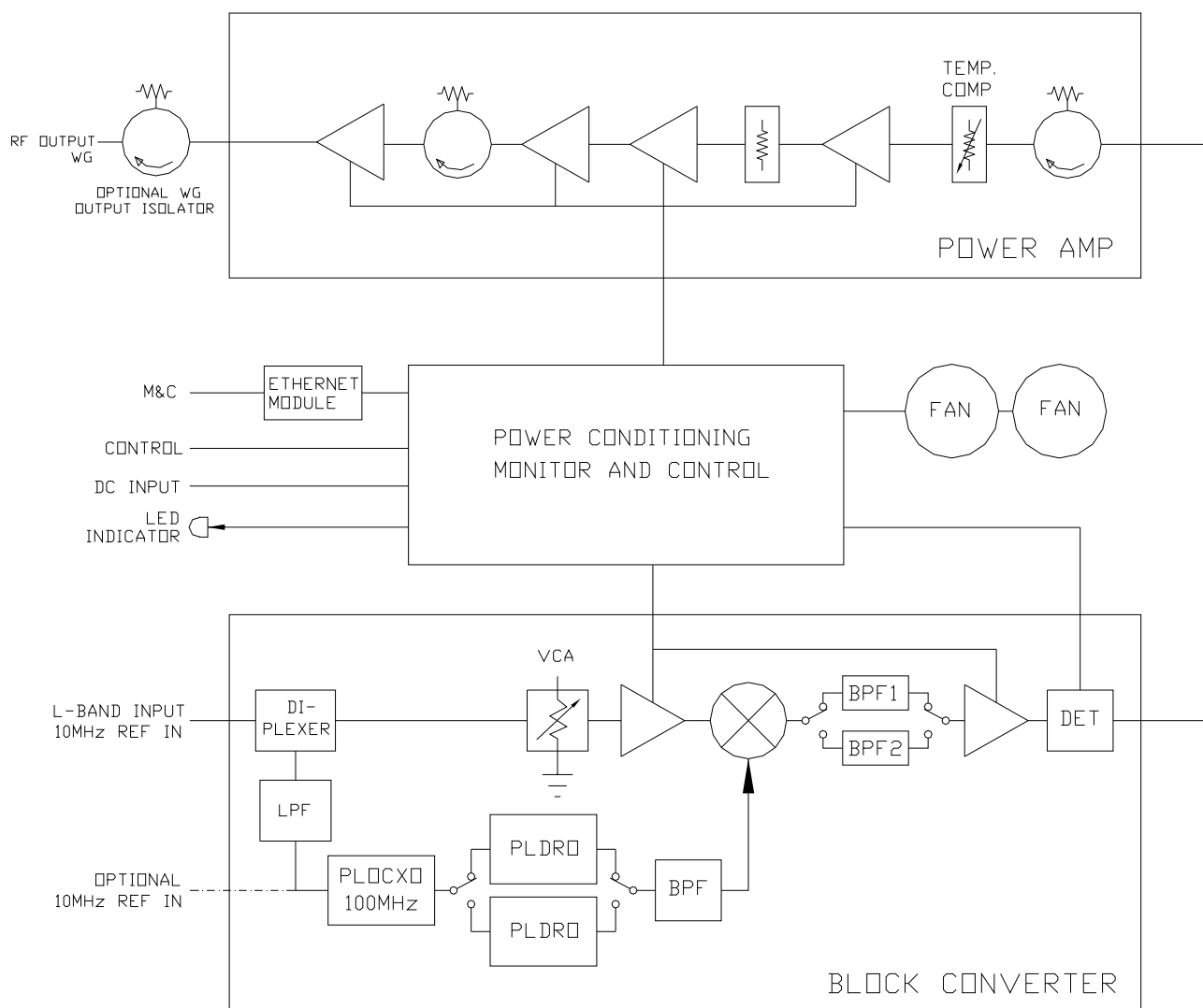
# Standard Frequency Bands

## Ka-Band Dual Switched Channel Block Up Converter “Smart” Power DKABUC series

Model Number	Input Frequency	Output Frequency	Output Power	LO Frequency
DKABUC-290310-6039	1.0 - 2.0 GHz	29.0-30.0 / 30.0-31.0 GHz	+42 dBm Psat	28.0 / 29.0 GHz
DKABUC-290310-6040	1.0 - 2.0 GHz	29.0-30.0 / 30.0-31.0 GHz	+43 dBm Psat	28.0 / 29.0 GHz
DKABUC-290310-6041	1.0 - 2.0 GHz	29.0-30.0 / 30.0-31.0 GHz	+44 dBm Psat	28.0 / 29.0 GHz

Custom bands and custom specifications can be provided.

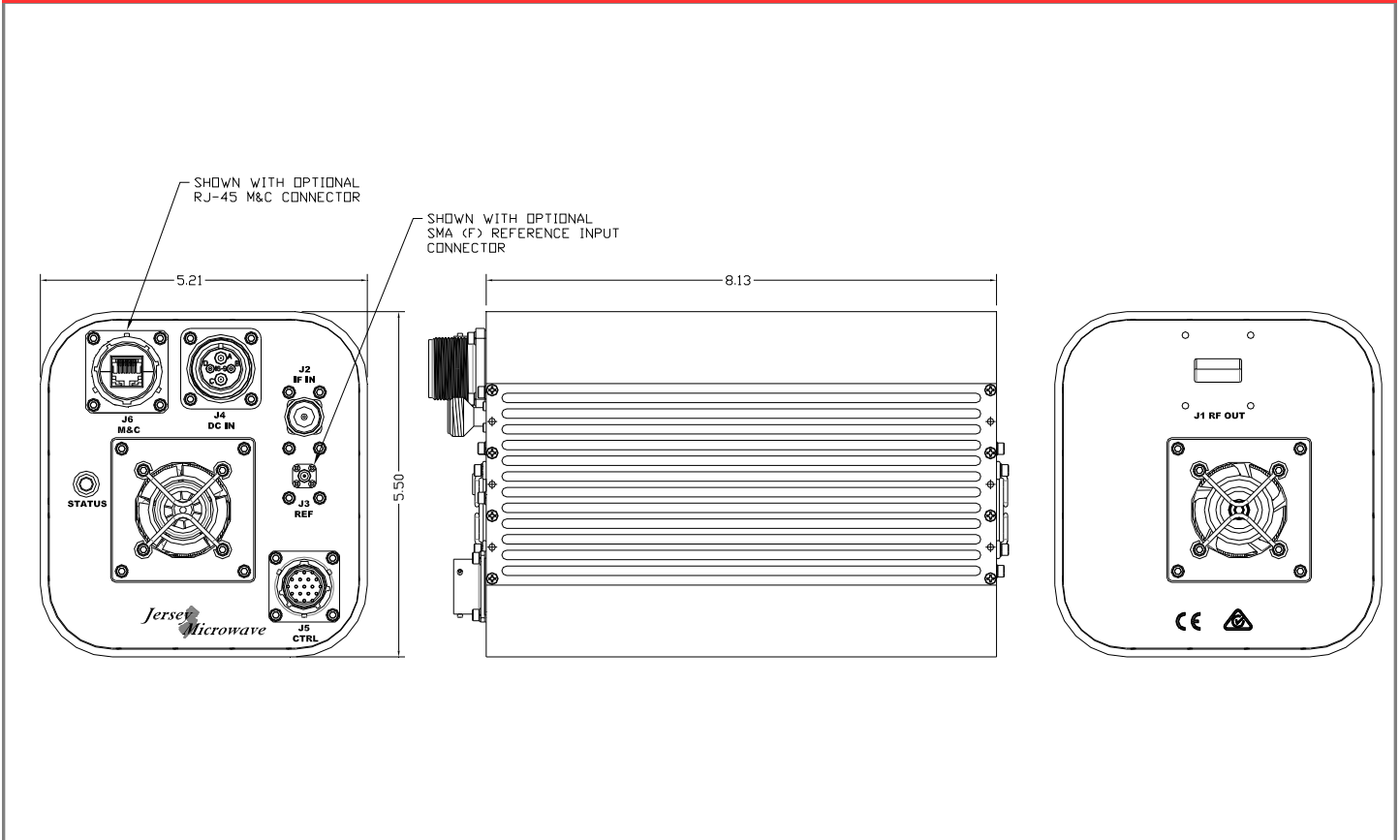
### “SMART” POWER DKABUC BLOCK DIAGRAM



ELECTRICAL SPECIFICATIONS		16W	20W	25W
Saturated Output Power (Psat)		+42 dBm	+43 dBm	+44 dBm
Linear Output Power (Plin)		+39 dBm	+40 dBm	+41 dBm
IF Input Frequency	1.0-2.0 GHz (950-1950 MHz option)			
RF Output Frequency	Channel "A" 29.0-30.0 GHz / Channel "B" 30.0-31.0 GHz			
Internal LO Frequency	CH A 28.0 GHz / CH B 29.0 GHz (28.05 GHz / 29.05 GHz option)			
IF/RF Gain	≥ 60 dB			
Gain Flatness	Over RF Band : ≤ ± 1.25 dB peak-to-peak			
	Over any 40 MHz segment: ≤ ± 0.35 dB peak-to-peak			
Gain versus temperature (-30° to +60°C)	≤ ± 2.0 dB peak-to-peak			
Gain Control Adjustment	Range: 25 dB			
	Step size: 0.1 dB			
Group Delay	≤ 2.0 nsec peak-to-peak over RF Band			
AM/PM Conversion	2°/dB at Linear Power			
Spectral Regrowth	-30 dBc @PLINEAR (OQPSK @ 1.0 x symbol rate)			
3rd Order Intermod @ Plin	≤ -25 dBc			
In-Band Spurious @Rated Output Power	Signal Independent: ≤ -60 dBm			
	Signal Dependent: ≤ -60 dBc			
LO Leakage @ RF Output	≤ -25 dBm			
Output Noise Density	Tx Band: ≤ -75 dBm/Hz			
	Rx Band: ≤ -90 dBm/Hz			
External Reference Frequency	10.00 MHz via L-Band Input			
External Reference Input Level	-5 to +5 dBm			
Internal Reference (Optional)	100 MHz OCXO			
	Frequency Stability: ± 1.0 ppm			
	Frequency Accuracy between INT/EXT Reference: ≤ 10 KHz			
Output SSB Phase Noise				
	10 Hz	-45 dBc/Hz		
	100 Hz	-70 dBc/Hz		
	1 KHz	-85 dBc/Hz		
	10 KHz	-90 dBc/Hz		
	100 KHz	-93 dBc/Hz		
	1 MHz	-113 dBc/Hz		
IF / RF Connector	N-Female / WR75			
Input Voltage	+18 to +36 VDC or +36 to +76 VDC			
Power Consumption	120W	175W	230W	
<b>Environment</b>				
Operating Temperature	-40°C to +60°C			
Non-Operating	-40°C to +70°C			
Humidity	Up to 100% Condensing			
Shock & Vibration	Normal Transportation			
Altitude	10,000 Ft AMSL			
Cooling	Forced Air			
Dimensions (Inches)	8.13" x 5.50" x 5.21"		9.00" x 6.75" x 5.88"	
Weight	8.0 lbs		12 lbs	

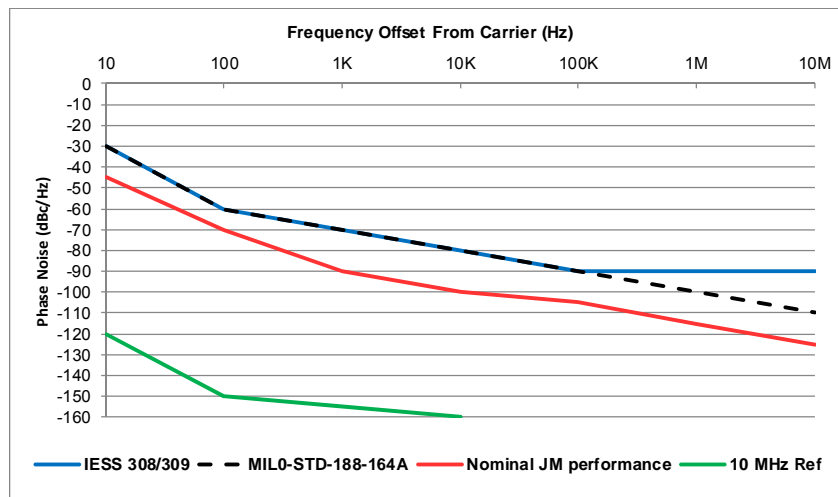
**Note - Specifications may change without notice, please consult the factory for your specific needs.**

# Standard Mechanical Outline



Note: Dimensions are in inches.

## Phase Noise Characteristics (1.0 Hz Bandwidth)



DS-602-02