

“SMART” POWER KBUCS HIGH POWER BLOCK UP CONVERTERS



The **Jersey Microwave** “Smart” Power KBUC series is a Ku-Band full RF sub-system provided in a more compact package as compared to standard Block Up Converter sub-systems with high output power (up to 50 Watts Psat). The “Smart” Power BUC 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” BUC 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 KBUCs are specially designed to translate a block of L-Band frequencies into to Ku-band frequencies for transmitting applications in satellite communications systems.

Features/Options

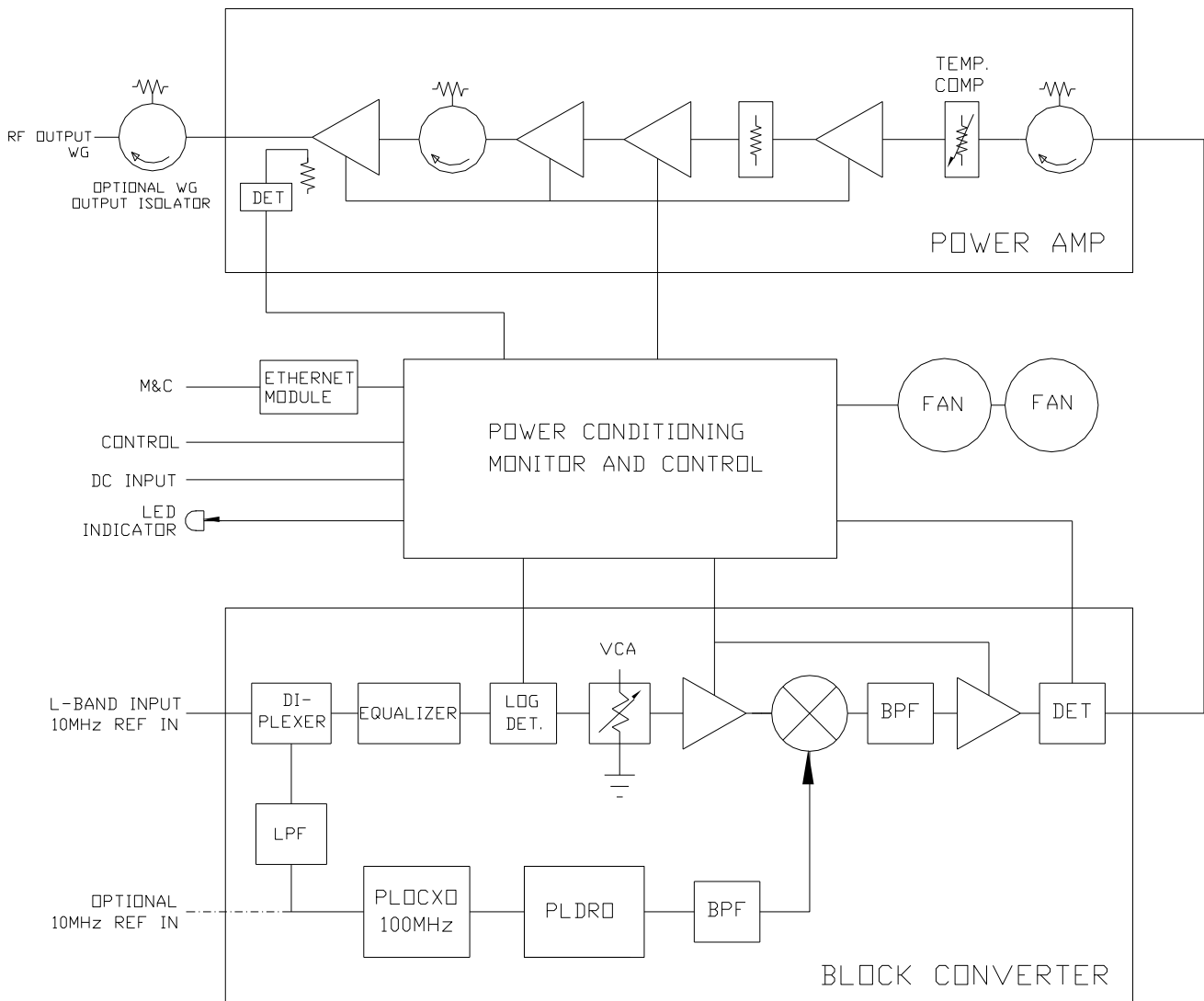
- Fully Integrated M&C**
- 25 dB Gain Control at L-Band
@ 0.1 dB Steps**
- IF Band Slope Equalizer**
- Internal/External
Auto Switchover**
- Internal Reference with
Electronic tuning**
- Mute Control**
- Summary Alarm**
- Monitor/Alarm**
- IF Input / RF Output Power
Monitors**
- LO Lock Alarm**
- Temperature 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

Ku-Band Block Up Converter “Smart Power KBUC” series

Model Number	Input Frequency	Output Frequency	Output Power
KBUC-140145-6043	950 – 1450 MHz	14.00 – 14.50 GHz	+43 dBm Psat
KBUC-140145-6046	950 – 1450 MHz	14.00 – 14.50 GHz	+46 dBm Psat
KBUC-140145-6047	950 – 1450 MHz	14.00 – 14.50 GHz	+47 dBm Psat
KBUC-137145-6043	950 – 1700 MHz	13.75 – 14.50 GHz	+43 dBm Psat
KBUC-137145-6046	950 – 1700 MHz	13.75 – 14.50 GHz	+46 dBm Psat
KBUC-137145-6047	950 – 1700 MHz	13.75 – 14.50 GHz	+47 dBm Psat

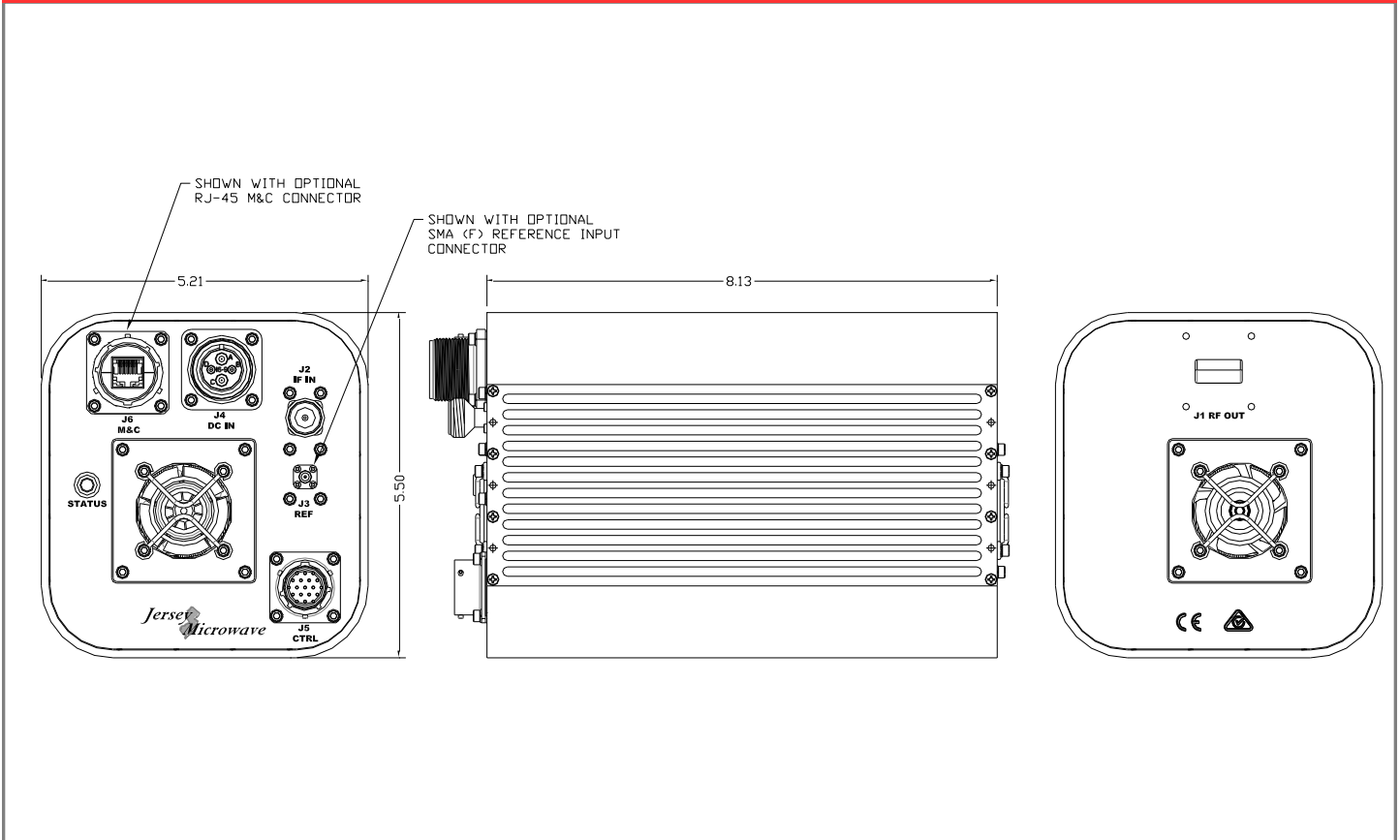
“SMART POWER BUC” BLOCK DIAGRAM



ELECTRICAL SPECIFICATIONS		20W	40W	50W
Saturated Output Power (Psat)		+43 dBm	+46 dBm	+47 dBm
Linear Output Power (P _{lin})		+39 dBm	+42 dBm	+43 dBm
IF Input Frequency	Ku-narrow band (Kn) : 950 - 1450 MHz / Ku-wideband (Kw): 950 -			
RF Output Frequency	Kn: 14.0-14.5 GHz / Kw: 13.75-14.50 GHz			
Internal LO Frequency	Kn: 13.05 GHz / Kw: 12.80 GHz			
IF/RF Gain	60 - 65 dB			
Gain Flatness	Over RF Band : $\leq \pm 1.25$ dB peak-to-peak			
	Over any 40 MHz segment: $\leq \pm 0.35$ dB peak-to-peak			
Gain versus temperature (-30° to +60°C)	$\leq \pm 2.0$ dB peak-to-peak			
Gain Control Adjustment	Range: 30 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			
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)	Kn: 90 MHz OCXO / Kw: 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	-90 dBc/Hz		
	10 KHz	-100 dBc/Hz		
	100 KHz	-105 dBc/Hz		
	1 MHz	-120 dBc/Hz		
IF / RF Connector	N-Female / WR75			
Input Voltage	+18 to +36 VDC or +36 to +76 VDC			
Power Consumption	130W	310W	390W	
Environment				
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	

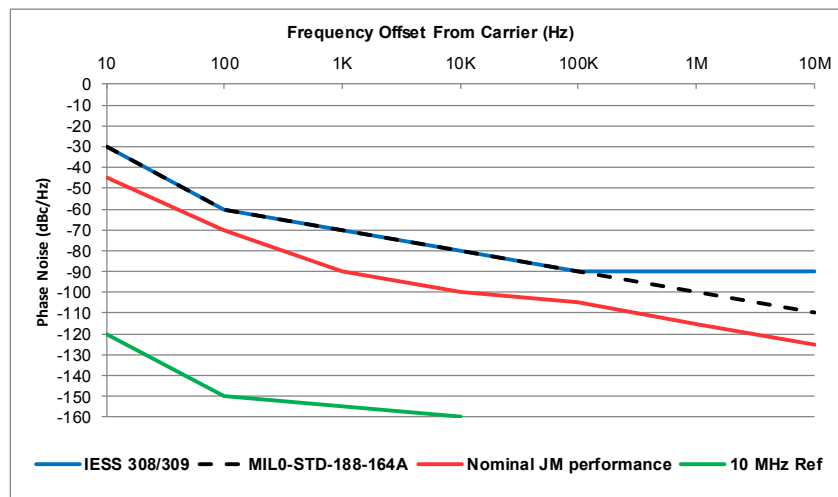
Note - Specifications may change without notice, please consult the factory for your specific needs.

Standard Mechanical Outline



Note: Dimensions are in inches.

Phase Noise Characteristics (1.0 Hz Bandwidth)



DS-501-01