

# 100W/125W Ka-Band BUC

## Second Generation Advanced GaN Technology

### Advanced GaN Technology

SSPM-3010Ka™ Series

### Features

- Converts L-Band signal Ka-Band from 28.5 – 31 GHz (sub-bands)
- Meets the requirements per MIL-STD-188-164A. WGS Compliant.
- Integrated amplifier with an output power of 100W to 125W
- Phase-locked oscillator to external 10MHz reference
- High linearity (low intermodulation products), very low spectrum regrowth
- Weatherproof package
- Remote Monitor & Control
- Protection against thermal runaway and out-of-lock conditions
- Compact packaging
- CE marking

### Overview

The SSPB-3010Ka series are hub-mount up-converter transmitters, operating in the Ka-Band. The SSPB-3010Ka is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-3010Ka provides the utmost in convenience and efficiency. Other SSPB's are also available for higher powers or for operation at other up-link frequencies.

### Options

- Ethernet interface
- Internal High Stability Reference with auto-sensing
- Redundant system

### Application

The SSPB-3010Ka systems are designed for Ka-Band satellite up-link applications. They are mounted outdoors, near the hub of an antenna. Also available from Advantech Wireless are the SSPA series - solid-state high power amplifiers - with all the features of the SSPB's except block up-converter. Please contact us for more information.

### Redundancy

The SSPB-3010Ka series are available in redundant configuration with single Monitor and Control interface.



Fig.1 – Redundant System

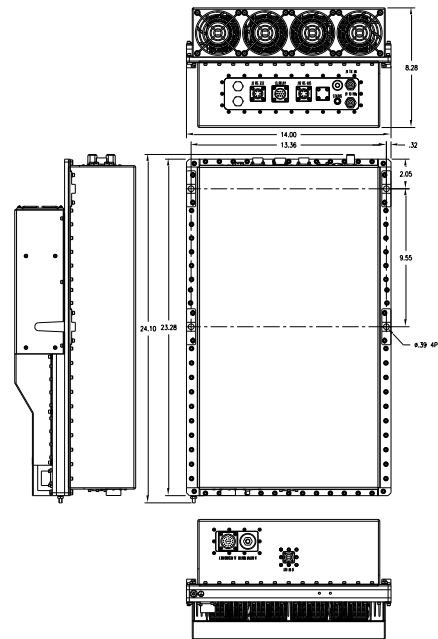


Table A

Band	RF Band (GHz)	IF Band (MHz)
K1	29.5 – 30.0	1000 – 1500 MHz Option 950 – 1450 MHz
K2	28.8 – 29.1	1000 – 1300 MHz
K3	30 – 31	1000 – 2000 MHz Option 950 – 1950 MHz
K4	29.5 – 31 (29.5 – 30/30 – 31)	Dual band 950 – 1450/1000- 2000 MHz

Other operating bands available

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Technical Specifications					
Electrical Characteristics		100W		125W	
Input/Output Frequency range		See table A on front page (for dual band, the operating band is selectable via the M&C port)			
Frequency sense		Non-inverting			
Output power (P <sub>SAT</sub> )		+50 dBm		+51 dBm	
Output power (P1dB) min.		+49 dBm		+50 dBm	
Linear Power (P <sub>Linear</sub> )		+46 dBm		+47 dBm	
Conversion gain @ maximum setting		68 dB min		69 dB min	
Gain slope		0.04 dB/MHz, max			
Gain flatness		±2.0 dB max over 1000 MHz, ±0.6 dB over 40 MHz			
Gain variation over temperature		±1.5 dB over full operating range			
Gain variation over 24 hours		±0.25 dB max at constant temperature & drive level			
Gain adjustment range		20 dB min (0.1 dB steps)			
Input VSWR		1.4:1			
Output VSWR		1.3:1			
Spurious at rated power		-60 dBc max			
AM/PM conversion		<2°/dB @ P <sub>Linear</sub>			
Noise Power Density max.		In band: -75 dBm/Hz; Out-of-band: -130 dBm/Hz (@ max gain)			
Third order IMD (2 equal tones 5MHz apart)		-25 dBc max @ P <sub>LINEAR</sub>			
Spectrum Regrowth		-30 dBc at 49 dBm			
Phase Noise		Exceeds MIL-STD-188-164A by 5 dB typically			
Group Delay		Linear: 0.02 nsec/MHz max. Parabolic: 0.003 nsec/MHz <sup>2</sup> max. Ripple: 1 nsec p-p max.			
External Reference					
Reference frequency		5 MHz/10 MHz site configurable			
Reference frequency phase noise		-115 dBc/Hz at 10 Hz		-150 dBc/Hz at 10 kHz	
		-135 dBc/Hz at 100 Hz		-160 dBc/Hz at 100 kHz	
		-148 dBc/Hz at 1000 Hz			
Reference frequency level		0 dBm ± 5 dB			
Power Requirements					
AC Input Voltage		95 – 265 VAC (47-63 Hz)			
Power consumption (nominal)		at Linear Power 800 W		900 W	
		at Saturation 1000 W		1100 W	
Mechanical Characteristics					
Dimensions (L x W x H)		23.28" x 14" x 8.28" 591.3 x 355.6 x 210.3 mm			
Weight		66 lbs (30 kg)			
Interfaces:		RF input	N-Type (f)	Redundancy	MS3112E16-26P
		Discrete port	MS3112E12-10P	RS-232	MS3112E10-6P
		AC Line	MS3102E20-19P	RS-485	MS3112E10-6P
				RF output	WR28 Grooved
Environmental Conditions					
Temperature:		Operating -30°C to +55°C    Option 1: -40°C to +60°C; Option 2: -50°C to +50°C			
		Storage -55°C to +85°C			
Humidity		100%, condensing (2" rain/hour)			
Altitude		10,000' AMSL, de-rated 2°C/1,000' from AMSL			

\*Other frequencies are available. Please consult our Sales Representatives.

Ref.: PB-SSPBg-2G-Ka-100W-1250W-18134

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