



Figure 1: 80W Ka-Band 1:1 Redundant System

Features

- Converts L-Band signal Ka-Band from 28.5 – 31 GHz (in bands)
- Meets the requirements per MIL-STD-188-164A
- Integrated amplifier with an output power of 30W to 80W
- Phase-locked oscillator to external 5MHz or 10MHz reference (configurable)
- High linearity (low intermodulation products)
- Weatherproof package
- Remote Monitor & Control
- Protection against thermal runaway and out-of-lock conditions
- Output sample monitoring port
- Detachable power supply
- Compact packaging
- CE Marking

Options

- Ethernet interface
- Internal High Stability Reference with auto-sensing
- Extra Low Phase Noise
- Redundant system

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 detachable 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.

Application

The SSPB-3010Ka™ 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 Advantech Wireless for more information.

Redundancy

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

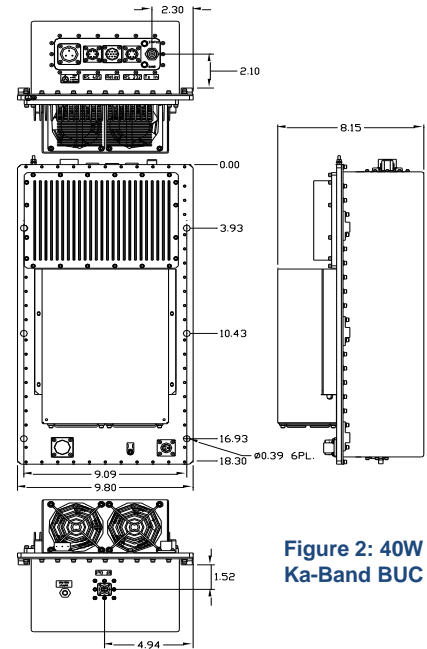


Figure 2: 40W
Ka-Band BUC

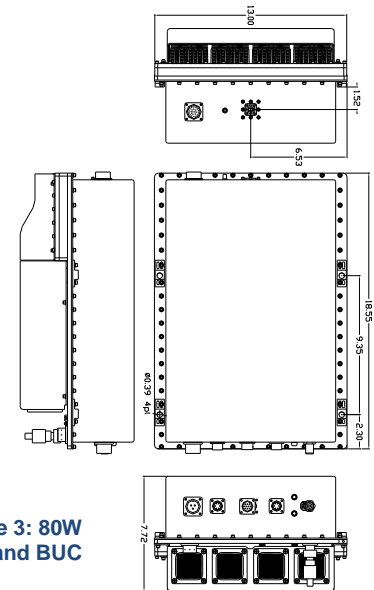


Figure 3: 80W
Ka-Band BUC

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

TECHNICAL SPECIFICATIONS	30W	40W	50W	60W	80W	
Electrical Characteristics						
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 _{SAT})	+45 dBm	+46 dBm	+47 dBm	+48 dBm	+49 dBm	
Output power (P _{1dB}) min.	+44 dBm	+45 dBm	+46 dBm	+47 dBm	+48 dBm	
Linear Power (P _{Linear})	+41 dBm	+42 dBm	+43 dBm	+44 dBm	+45 dBm	
Conversion gain @ maximum setting	65 dB min	65 dB min	+68 dB min	68 dB min	68 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	-55 dBc max					
AM/PM conversion	<2°/dB @ P _{Linear}					
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)	-23 dBc max @ P _{LINEAR}					
Spectrum Regrowth	-25 dBc at P _{LINEAR}					
Phase Noise	Exceeds MIL-STD-188-164A by 2 dB typically					
Group Delay	Linear: 0.02 nsec/MHz max. Parabolic: 0.003 nsec/MHz ² max. Ripple: 1 nsec p-p max.					
External reference						
Reference frequency	5MHz/10 MHz site configurable					
Reference frequency phase noise	-115 dBc/Hz at 10 Hz -135 dBc/Hz at 100 Hz -148 dBc/Hz at 1000 Hz		-150 dBc/Hz at 10 kHz -160 dBc/Hz at 100 kHz			
Reference frequency level	0 dBm ± 5 dB					
Power Requirements						
AC input voltage	95 – 265 VAC (47-63 Hz)					
Power consumption, (nominal)	at Linear Power 400W	at Saturation 500W	600W 800W	700W 900W	800W 1000W	
Mechanical Characteristics						
Dimensions (L x W x H)	18.3" x 9.8" x 8.15" 465 x 249 x 207 mm		18.5" x 13" x 7.7" 470 x 330 x 226 mm			
Weight	35.27 lbs (16kg)		48.5 lbs(22 kg)			
Interfaces:	RF input MS3112E12-10P AC Line MS3102E20-19P	N-Type (f) Discrete MS3112E16-26P MS3112E10-6P MS3112E10-6P	Redundancy RS-232 RS-485	MS3112E16-26P MS3112E10-6P 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, derated 2°C/1,000' from AMSL					

Specifications are subject to change without notice

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