



Features

- Converts L-Band to Ka-Band 10W or 20W output power
- Phase-locked oscillator to external 10MHz reference
- Protection against thermal runaway and out-of-lock conditions
- Built-in power supply
- Light weight
- Weatherproof package
- Compact packaging
- CE Marking

Fig 1: 5W/10W

Fig 2: 20W

Accessories

- Mounting kit

Overview

The SSPB-2010Ka™ series are hub-mount up-converter transmitters, operating in the Ka-Band. The SSPB-2010Ka™ is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-2010Ka™ provides the utmost in convenience and efficiency. Other SSPB's are also available for higher powers or for operation at other up-link frequencies.

The design of these units is based on Advantech Wireless industry proven reliable solid-state high power amplifiers. The use of high efficiency power supply and conservative thermal designs contribute to the trouble-free operation of the amplifier.

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 – 31.0 29.5 – 30 30 – 31	1000 – 1500 MHz 1000 – 2000 MHz (selectable)
K5	29 – 31 29 – 30 30 – 31	1000 – 2000 MHz (selectable) Option 950 - 1950

Application

The SSPB-2010Ka™ series convert an L-Band signal to the Ka-band frequency (see table A). Designed for Ka-Band satellite up-link applications, the SSPB Ka series are available in output power from 10W to 80W. The SSPB-2010Ka™ series are fully integrated units of 10W or 20W output power designed for mounting outdoors, near the hub of an antenna.

Ka-BAND HUB-MOUNT SSPB (Solid State Power Block-Up Converter) 10W/20W SSPB-2010Ka™ series



TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS	10W	20W
Electrical Characteristics		
Output power (P1dB) min	39 dBm	42 dBm
Linear Power (P _{Linear})	36 dBm	39 dBm
Conversion gain (nominal)	60 dB	65 dB
Input/Output frequency range	See table A on front page	
Max input power without damage	+0 dBm	
Gain flatness	±2.5 dB p-p, max over full band, ±1 dB p-p over 54 MHz	
Gain variation over temperature	±2.5 dB over full operating range	
Gain variation over 24 hours	±0.5 dB max at constant temperature & drive level	
Gain stability	±0.5 dB over 24hr (constant temperature and drive)	
Input VSWR	1.5:1	
Output VSWR	2 :1 dB	
Noise power density (NPD)	-95 dBm/Hz in TX band -155 dBm/Hz in RX band (18.0 – 21 GHz)	
Spurious at rated power	-55 dBc, max	
Third order IMD (2 equal tones 5MHz apart)	-23 dBc max @ P _{LINEAR}	
Spectrum Regrowth	-25 dBc at P _{LINEAR}	
AM/PM conversion	<2°/dB @ P _{Linear}	
Phase noise	-60 dBc/Hz at 100Hz -83 dBc/Hz at 10 kHz -95 dBc/Hz at 1 MHz	-73 dBc/Hz at 1000Hz -93 dBc/Hz at 100 kHz
External reference		
Reference frequency	10 MHz	
Reference frequency phase noise	-115 dBc/Hz at 10 Hz -135 dBc/Hz at 100 Hz -148 dBc/Hz at 1000 Hz	-155 dBc/Hz at 10 kHz -160 dBc/Hz at 100 kHz
Reference frequency level	0 dBm ± 5 dB supplied via input L-Band cable	
Power Requirements		
Input voltage	48 VDC supplied via L-Band IF cable or Separate connector Optional 110/220V AC 50/60Hz	
Power Consumption (at Linear Power)	90W	170W
Cooling	Forced air	
Mechanical Characteristics		
Dimensions (L x W x H)	12" x 5" x 4.9" 308 x 127 x 125	13" x 7.8" x 4.7 330 x 198 x 119 mm
Weight	13 lbs (5.9 kg)	17 lbs (7.7 kg)
Interfaces:	IF input Type N RF output WR-28 flat	RS485 MS3112 type DC connector MS3102 type (optional)
Environmental Conditions		
Temperature:	Operating Storage	-30°C to +55°C; Option: E-40°C to +55°C; G: -50°C to +50°C -55°C to +85°C
Humidity	100%, condensing (2" rain/hour)	
Altitude	10,000' AMSL, de-rated 2°C/1,000' from AMSL	

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Ref.: PB-SSPB-Ka-10-20-14283