

FEATURES

- Converts L-Band (950-1450 MHz) to Rascom Ku-Band (12.75 to 13.25 GHz)
- Phase-locked local oscillator locks directly to an external 10 MHz reference
- Fully meets IESS 308/309 Phase/Noise requirements
- Output power of 2W, 4W or 8W
- Robust, weatherproof package
- Power feed (DC) and 10 MHz Reference via coaxial cable
- Protection against thermal runaway and out-of-lock conditions
- CE Marking

OPTIONS

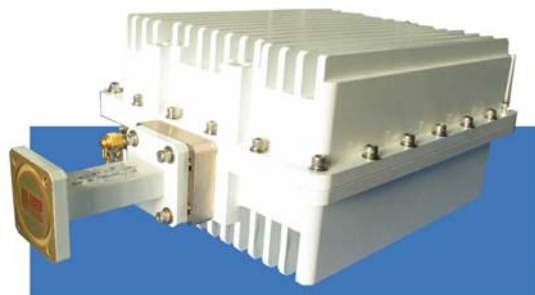
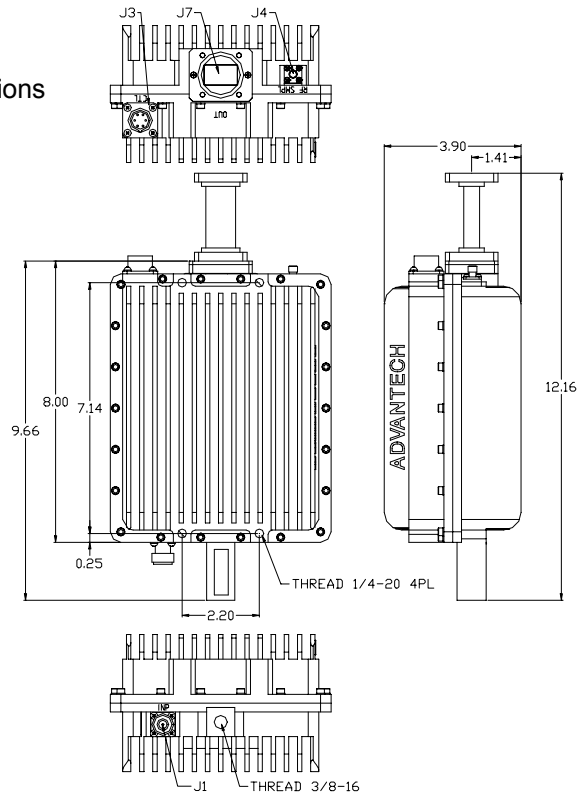
- Receive Reject Filter

OVERVIEW

Advantech introduced a new Ku-Band Block-up Converters family intended for the Rascom QAF1 satellite system. The SSPB-100KR® series are hub-mount up-converter transmitters, operating in the Ku-Band. The SSPB-100KR® is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-100KR® 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 hub-mount SSPB-100KR® is constructed in a compact cooling enclosure for outdoor operation. The units are weatherproof. They are the smallest fully integrated units on the market today.

The design of these units is based on ADVANTECHAMT™ industry proven reliable solid-state high power amplifiers.



APPLICATION

The SSPB-100KR® series are intended to operate in conjunction with indoor mounted L-Band Transceivers. The SSPB's convert an L-Band signal (950-1450 MHz) to the Rascom Ku-band frequency of 12.75 to 13.25 GHz. Designed for the Rascom Ku-Band satellite up-link applications, the SSPB KR series are available in output power from 2W to 200W. The SSPB-100KR® series are fully integrated units for up to 8W output power designed for mounting outdoors, near the hub of an antenna.



RASCOM Ku-BAND BLOCK UP CONVERTER

2W to 8W

SSPB-100KR[®] series



Ku-Band Block-Up Converter 2W to 8W

TECHNICAL SPECIFICATIONS

Electrical Characteristics			
	2W	4W	8W
Input /Output frequency range	L-Band 950-1450 MHz / Ku-Band 12.75 -13.25 GHz		
Output power (P1dB) min	+33 dBm	+36 dBm	+39 dBm
Conversion gain typical	54 dB	57 dB	60 dB
Gain flatness	3 dB p-p over 500 MHz, 1.5 dB p-p over 54 MHz @ 25°C		
Gain variation over temperature	3 dB over full operating range		
Maximum input power without damage	+ 5 dBm		
Input VSWR (in-band)	2: 1		
Output VSWR	2: 1		
Input impedance	50 Ω		
Noise Power density	<-155 dBm in the band from 10.7 to 11.45 GHz		
Spurious at rated power	-55 dBc, max		
Harmonics at rated power	-45 dBc, max		
AM/PM conversion	3°/dB typical (at P _{1dB})		
Local Oscillator frequency (LO)	11.8 GHz		
LO leakage	< -20 dBm		
Phase noise	-28 dBc/Hz at 10Hz	-70 dBc/Hz at 1000Hz	-90 dBc/Hz at 100 kHz
	-60 dBc/Hz at 100Hz	-80 dBc/Hz at 10 kHz	-110 dBc/Hz at 1 MHz
Integrated (SSB) Phase Noise	2° RMS typical		
Group Delay (over any 40 MHz):			
Linear	0.05 ns /MHz, max		
Parabolic	0.005 ns/MHz ² , max		
Ripple	2 nsec p-p, max		
Rejection in receive band	-55 dBc		
External reference			
Reference frequency	10 MHz		
Recommended 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			
Supply voltage	20 V to 60 V DC		
Power consumption (nominal)	25W	50W	80W
Mechanical Characteristics			
Dimensions (L x W x H)	20.0x10.0x8.0 cm (7.87" x 3.96" x 3.14")	30.0x15.0x10.0 cm (11.81"x 5.90"x 3.96")	35.0x18.0x10.0 cm (13.77"x7.08"x3.96")
Weight	2.5 kg (5.51lbs)	3.6 kg (7.94 lbs)	4.8 kg (10.58lbs)
Interfaces:	RF input Type N (Female) RF output WR75		
Environmental Conditions			
Temperature: Operating	-30°C to +55°C; Option: -40°C to +55°C		
Storage	-55°C to +85°C		
Humidity	100%, condensing (6" rain/hour)		
Altitude	10,000' AMSL, de-rated 2°C/1,000' from AMSL		



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