

40W/50W/60W Ku-Band Compact Block-Up Converter (BUC/SSPB)

40W to 60W
SSPB-S2100K™ Series

Features

- Converts L-Band to Ku-Band (see table A)
- Integrated amplifier with an output power of 40W to 60W (see table A)
- Phase-locked oscillator to external 10MHz reference
- High linearity (low intermodulation products)
- Built-in Receive Reject Filter
- Remote Monitor & Control
- Protection against thermal runaway and out-of-lock conditions
- Built-in power supply
- Light weight
- Weatherproof package
- Compact packaging
- CE Marking

Overview

The SSPB-S2100K™ series are hub-mount up-converter transmitters, operating in the Ku-Band. The SSPB-S2100K™ is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-2100K™ 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. Built-in microprocessor controller provides the capability for serial port interfaces (RS232/485) for remote monitoring and control.

Application

The SSPB-2100K™ series convert an L-Band signal to the Ku-band frequency (see table A). Designed for Ku-Band satellite up-link applications, the SSPB K series are available in output power from 8W to 500W. The SSPB-S2100K™ series are fully integrated units from 20W to 60W output power designed for mounting outdoors, near the hub of an antenna.

Accessories

- Remote M&C panel (Ethernet port optional)
- Handheld terminal
- Boom mounting kit

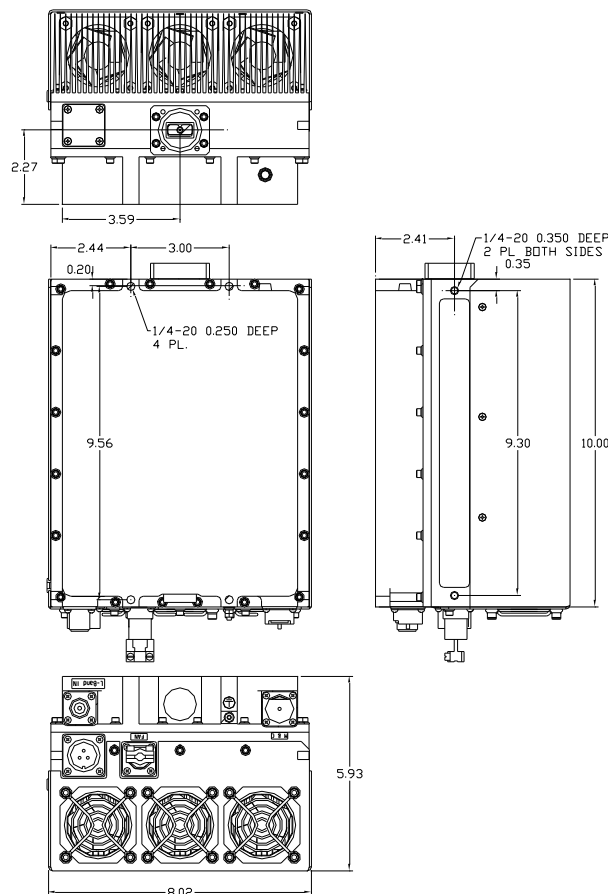


Figure 1

Table A

Band	RF Band (GHz)	IF Band (MHz)	Output Power W	LO (GHz)
KS	14.00 - 14.50	950 - 1450	40-60	13.05
KX	13.75 - 14.5	950 - 1700	40-60	12.8

*Other frequency sub-bands are available. Please consult factory.

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Technical Specifications			
Output Power	40W	50W	60W
KS-band	✓	✓	✓
KX-band	✓	✓	✓
Output power (P _{SAI}) typ. dBm	+46	+47	+48
Output power (P _{1dB}) min dBm	+45	+46	+47
Conversion gain @ maximum setting	66 dB	67 dB	68 dB
Gain adjustment range	20 dB min		
Input/Output frequency range	See table A on front page		
Max input power without damage	+10 dBm		
Gain flatness	3.0 dB p-p, max over full band, 1 dB p-p dB/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		
Input VSWR	1.5:1 dB, min		
Output VSWR	1.5:1 dB typical,		
Noise power density (NPD)	-75 dBm/Hz in TX band -135 dBm/Hz in RX band		
Spurious at rated power	-55 dBc, max		
AM/PM conversion	3°/dB typical (at P _{1dB})		
Third order IMD (2 tones)	-25 dBc, max at 3 dB back-off from P _{1dB}		
Local Oscillator frequency (LO)	See table A on front page		
LO leakage	-20 dBm max		
Phase noise	-50 dBc/Hz at 10Hz -73 dBc/Hz at 1000Hz -93 dBc/Hz at 100 kHz -63 dBc/Hz at 100Hz -83 dBc/Hz at 10 kHz -105 dBc/Hz at 1 MHz		
Group delay (over any 40 MHz):	Linear	0.02 ns /MHz, max	
	Parabolic	0.003 ns/MHz ² , max	
	Ripple	1 nsec p-p, max	
External Reference			
Reference frequency	10 MHz		
Reference frequency phase noise	-115 dBc/Hz at 10 Hz -155 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 supplied via input L-Band cable		
Power Requirements			
Input voltage	110 /220V AC (47-63 Hz) auto-ranging (90-132 V / 180-264 V) 24-35V DC or 40-60V DC		
Power consumption (max)	400W	450W	550W
Mechanical Characteristics			
Dimensions (L x W x H)	10" x 8" x4.8" (254 x 203 x 114 mm)	DC 13" x 8" x4.8" (330 x 203 x 114 mm) AC 13" x 8" x5.2" (330 x 203 x 132 mm)	
Weight	14.4 lbs (6.5 kg)	18 lbs. (8.2 kg)	
Interfaces	RF input: Type N (optional SMA) RF output: WR-75 RS-485/RS232: MS3112E12-10P	DC Line: AC Line:	MS3102R16-10PX MS3102R16-10P
Environmental Conditions			
Temperature: Operating	-30°C to +55°C	Option 1 -40°C to +55 °C	Option 2 -50°C to +55 °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		

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