



### FEATURES

- Up-converts an L-Band input frequency to a standard Ku-Band frequency or to an extended Ku-Band frequency
- Output power up to 10W
- Forced air cooled
- Phase-locked local oscillator locks directly to an external 10 MHz reference
- Fully meets IESS 308/309 Phase/Noise requirements
- Robust, weatherproof package
- Power feed (DC) and 10 MHz reference supplied via IFL coaxial cable
- Protection against thermal runaway and out-of-lock conditions
- Integral Receive Reject Filter
- CE Marking

### OPTIONS

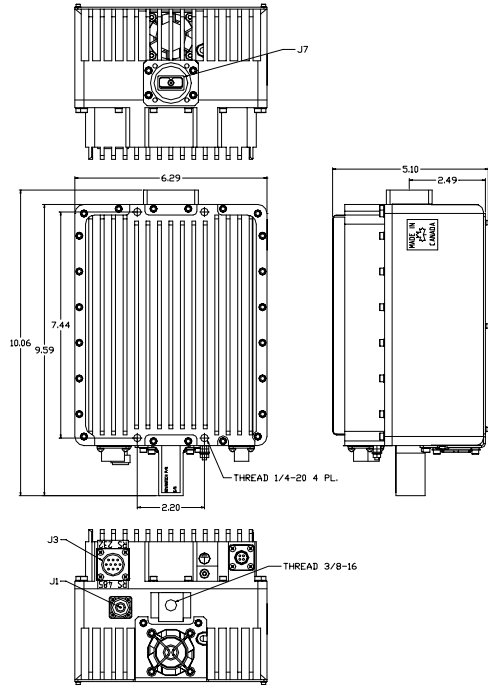
- RS-485 serial interface for remote Monitoring and Control
- Optional Ku-Band of 12.75 GHz - 13.25 GHz
- Optional AC Power
- Hand Held Terminal
- Receive Reject Filter

### OVERVIEW

The SSPB-210K<sup>®</sup> series are hub-mount up-converter transmitters, operating in the Ku-Band. The SSPB-210K<sup>®</sup> is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-210K<sup>®</sup> provides the utmost in convenience and efficiency. Other SSPBs are also available for higher powers or for operation at other up-link frequencies.

The hub-mount SSPB-210K<sup>®</sup> 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 Advantech's industry proven reliable solid-state high power amplifiers. Built-in design features and assembly methods incorporated with efficient combining techniques result in a device with exceptional linearity and operating efficiency. The use of high efficiency power supply and conservative thermal designs contribute to the trouble-free operation of the unit.



Built-in microprocessor controller provides the capability for serial port interfaces (RS485) for remote monitoring and control.

### APPLICATION

The SSPB-210K<sup>®</sup> series are intended to operate in conjunction with indoor mounted L-Band Transceivers and modems. The SSPB's convert an L-Band signal (950-1450 MHz or 950 –1700 MHz) to the Ku-band frequency of 14.0-14.5 GHz or extended Ku-band (13.75 –14.5 GHz). Designed for Ku-Band satellite up-link applications, the SSPB K series are available in output power from 1W to 300W. The SSPB-210K<sup>®</sup> series are fully integrated units up to 10W output power designed for mounting outdoors, near the hub of an antenna.



## Ku-BAND BLOCK-UP CONVERTER

8W and 10W

SSPB-210K<sup>®</sup> series

TECHNICAL SPECIFICATIONS		8W	10W
<b>Electrical Characteristics</b>			
Availability in this series			
KS		√	√
KX		√	√
KL		√	√
Output power (P1dB) min		+39 dBm	+40 dBm
Conversion gain min.		+61 dB	
Input /Output frequency range		L-Band 950-1450 MHz /Ku-Band 14.0-14.5 GHz (SSPB-210 KS <sup>®</sup> series); L-Band 950-1700 MHz/Ku-Band 13.75-14.5 GHz (SSPB-210 KX <sup>®</sup> series)	
Input Level		-20 dBm for P1dB	
Gain flatness		4.0 dB p-p, typical over 500 MHz, 2.0 dB p-p /40 MHz	
Attenuation range		20 dB typical	
Gain variation over temperature		3.0 dB max over full operating range	
Input VSWR, in-band		1.4: 1	
Output VSWR		1.5: 1	
Input impedance		50 Ω	
Noise Power Density		-90 dBm/Hz in Transmit Band, -135 dBm/Hz in Receive Band	
Spurious (in-band) at rated power		-55 dBc, max	
AM/PM conversion		3°/dB typical (at P <sub>1dB</sub> )	
Third order IMD (2 tones)		-26 dBc, max at 3 dB total back-off from P <sub>1dB</sub>	
Local Oscillator frequency (LO)		13.05 GHz (KS series); 12.80 GHz (KX series); 11.80 GHz (KL series)	
LO leakage		< -20 dBm	
Phase noise		-55 dBc/Hz at 10Hz    -70 dBc/Hz at 1000Hz    -105 dBc/Hz at 100 kHz	-65 dBc/Hz at 100Hz    -83 dBc/Hz at 10 kHz    -110 dBc/Hz at 1 MHz
Integrated (SSB) Phase Noise		2° RMS typical	
Group Delay		0.02 ns /MHz, max	
(over any 40 MHz):		Parabolic 0.003 ns/MHz <sup>2</sup> , max	
Ripple		1 nsec p-p, max	
<b>External reference</b>			
Reference frequency		10 MHz	
Recommended reference frequency		-115 dBc/Hz at 10 Hz	-150 dBc/Hz at 10 kHz
phase noise		-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	
<b>Power Requirements</b>			
Supply voltage		40 V to 60 V DC	
Power consumption (nominal)		95W	130W
<b>Mechanical Characteristics</b>			
Dimensions (W x H x L)		15.97 x 12.96 x 25.55 cm (6.29" x 5.10" x 10.06")	
Weight		5 kg (11 lbs)	
Interfaces:		RF input Type N (F) RF output WR75 grooved RS-485/RS-232 Serial Port MS3112E12-10P) (option)	
<b>Environmental Conditions</b>			
Temperature: Operating		-30°C to +55°C; Option 1: -40°C to +55°C; Option 2: -50°C to +50°C	
Storage		-55°C to +85°C	
Humidity		100%, condensing	
Altitude		10,000' AMSL, de-rated 2°C/1,000' from AMSL	

