

FEATURES

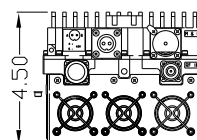
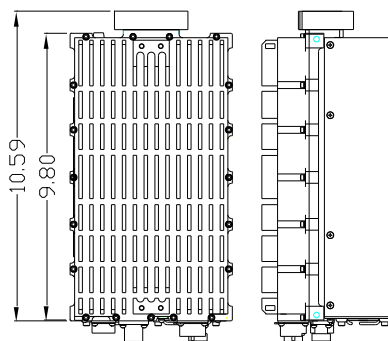
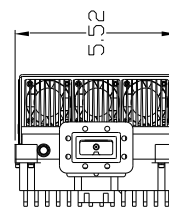
- Up-converts an L-Band input frequency to a standard X-Band frequency
- Output power 50W
- Lightweight, smallest fully integrated BUC on the market designed for man-pack applications
- Phase-locked local oscillator locks directly to an external 10 MHz reference
- Exceeds IESS 308/309 Phase/Noise requirements by more than 3 dB
- Robust, weatherproof package
- Protection against thermal runaway and out-of-lock conditions
- High efficiency and low power consumption
- CE Marking

OPTIONS

- AC operation
- External Receive Reject Filter

ACCESSORIES

- Mounting kit



OVERVIEW

Ideally suited for fly-away or portable terminal applications, the SSPB-110X[®] series are hub-mount up-converter transmitters, operating in X-Band. The SSPB-110X[®] is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-110X[®] 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-110X[®] is constructed in a compact cooling enclosure for outdoor operation. The units are weatherproof. They are the smallest and lightest fully integrated units on the market today.

The design of these units is based on Advantech's industry proven reliable solid-state power amplifiers. The product has 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.

APPLICATION

The SSPB's convert an L-Band signal (950-1450 MHz) to the X-band frequency of 7.9 -8.4 GHz. Designed for X-Band satellite up-link applications the SSPB-110X[®] series is fully integrated unit with 50W output power designed for mounting outdoors on the OMT or boom of the antenna

X-Band SSPB is available in output power of up to 800W.

SSPB-110X Series

LIGHTWEIGHT X-BAND 50W Block-Up Converter

TECHNICAL SPECIFICATIONS			
Electrical Characteristics			
Input Frequency Range	950 – 1450 MHz		
Output Frequency Range	7.9 - 8.4 GHz		
Output power	P_{1dB}	+ 47 dBm typical	
	P_{LINEAR}	+ 44 dBm	
Conversion gain min.	+ 68 dB (+53 dB optional)		
Gain adjustment range	20 dB min.		
Gain flatness	3.0 dB p-p, typical over 500 MHz, 1.0 dB p-p over any 40 MHz		
Gain variation over temperature	± 1.5 dB over full operating range		
Input /Output VSWR, in-band	1.3: 1		
Input impedance	50 Ω (option 75 Ω)		
Noise Power Density	-81 dBm/Hz in Transmit Band, -81 dBm/Hz in Receive Band (-110 dBm/Hz with external filter option)		
Spurious (in-band) at rated power	-60 dBc, max		
Harmonics Output	-60 dBc, max (at P_{LINEAR})		
AM/PM conversion	1°/dB typical (at P_{LINEAR})		
Third order IMD (2 tones)	-25 dBc, max at P_{LINEAR}		
Spectral regrowth (at P_{LINEAR})	-30 dBc, 1SR, QPSK		
Local Oscillator frequency (LO)	6.95 GHz		
LO leakage	< -20 dBm		
Phase noise	-55 dBc/Hz at 10Hz	-73 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	Linear	0.02 ns /MHz, max	
(over any 40 MHz):	Parabolic	0.003 ns/MHz ² , max	
	Ripple	1 nsec p-p, max	
External Reference			
Reference frequency	10 MHz (optional internal 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	40V to 60V DC supplied via separate connector Option AC 110/220 auto-ranging 47 – 63 Hz		
Power consumption (max)	at P_{SAT}	250W	
	at P_{LINEAR}	200W	
Mechanical Characteristics			
Cooling	Forced air		
Dimensions (L x W x H)	10.6" x 5.5" x 4.5" (269 x 140 x 114 mm)		
Finish	White		
Weight	5.0 kg (11 lbs)		
Interfaces:	RF input	N-type (50 Ω)	RS232/RS485
	RF output	CPR112	Power
			MS311212-10P
			MS3102 type
LED indicators	Green	Normal operation/ Red	Summary fault
Environmental Conditions			
Temperature: Operating	-30°C to +60°C option -40°C to +60°C		
Storage	-55°C to +85°C		
Humidity	100%, condensing		
Altitude	10,000' AMSL, de-rated 2°C/1,000' from AMSL		

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