

50W X-Band Block Up Converter GaN Technology

SSPBg-210X™ series

Designed to meet MIL-STD-188-164A

Features

- Up-converts an L-Band input frequency 950 – 1450 MHz to the X-Band frequency of 7.9 – 8.4 GHz
- Rated Output Power 50W
- Phase-locked local oscillator locks directly to an external 10 MHz reference
- 24 VDC main power via L-Band or separate connector
- Robust, weatherproof package
- Protection against thermal runaway and out-of-lock conditions
- Designed to meet MIL-STD-188-164A

Overview

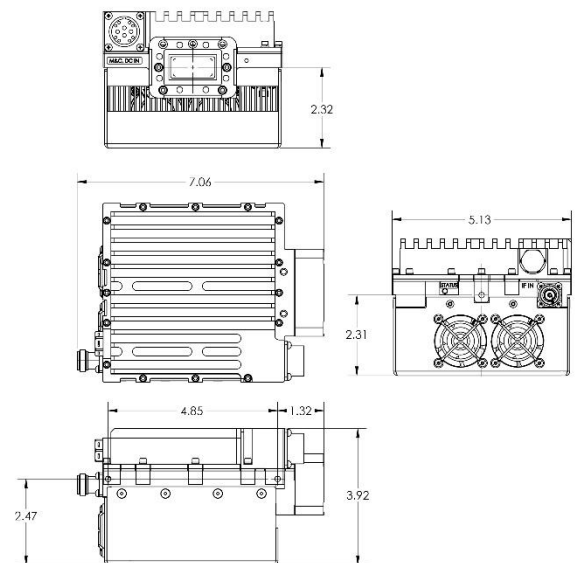
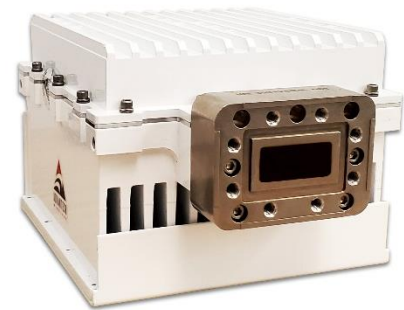
The SSPBg-210X series are hub-mount up-converter transmitters, using GaN Technology, operating in the X-Band. The SSPBg-210X is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPBg-210X provides the utmost in convenience and efficiency.

The hub-mount SSPBg-210X is constructed in a compact cooling enclosure for outdoor operation. The units are weatherproof.

The design of this unit is based on Advantech Wireless' industry proven reliable solid-state high power amplifiers. Built-in design features result in a product with exceptional linearity and operating efficiency. The use of high efficiency power supply and conservative thermal design contribute to the trouble-free operation of the unit

Accessories

- Mounting kit
- Rx Reject filter



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 SSPBg-210X series are fully integrated units with up to 25W output power designed for mounting outdoors, near the hub of an antenna.

The size and weight of this very compact design makes it especially attractive for man-pack terminal applications.

50W X-Band Block Up Converter GaN Technology

Technical Specifications		
Electrical Characteristics	50W	
Rated Output power	+47.0 dBm typ. *	
Linear Output power	+44.0 dBm min.	
Conversion gain min.	+54 dB ± 2 dB	
Input /Output frequency range	L-Band 950-1450 MHz/X-Band 7.9 – 8.4 GHz	
Input Level	-10 dBm for Linear Output Power	
Gain flatness	3.0 dB p-p, typical over 500 MHz, 1.0 dB p-p /40 MHz	
Gain variation over temperature	3.0 dB p-p max over full operating range	
Input VSWR, in-band	1.5: 1	
Output VSWR	1.5: 1	
Input impedance	50 Ω	
Noise Power Density in Tx Band	-75 dBm/Hz	
Noise Power Density in Rx Band	-110 dBm/Hz max without external Rx Reject Filter	
Spurious at rated power	-60 dBc, max	
AM/PM conversion	<2°/dB at linear power	
Spectrum Regrowth	-30 dBc, max at linear output power @ 1.0 symbol rate for QPSK/OPQSK/8PSK modulation	
Local Oscillator frequency (LO)	6.950 GHz	
LO leakage	-20 dBm max	
Phase noise	-53 dBc/Hz at 10Hz	-63 dBc/Hz at 100Hz
	-73 dBc/Hz at 1000Hz	-83 dBc/Hz at 10 kHz
	-93 dBc/Hz at 100 kHz	-103 dBc/Hz at 1 MHz
Integrated (SSB) Phase Noise	2° RMS typical	
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	24 V DC via L-band connector or MS3112E14-12P connector	
Power consumption (nominal)	145W at 44dBm output power	
Mechanical Characteristics		
Cooling	Mini-fan	
Dimensions (L x W x H)	17.93 x 13.03 x 9.96 cm (7.06" x 5.13" x 3.92")	
Weight	2.5 kg (5.5 lbs)	
Finish	White (option NATO Green)	
Interfaces:	RF input Type N (F)	RF output CPR112 grooved
	M&C Ethernet SNMP V3	MS3112E14-12P connector
Environmental Conditions		
Temperature:	Operating	-30°C to +55°C option -40°C to +55°C
	Storage	-55°C to +85°C
Humidity	100%, condensing	
Altitude	10,000' AMSL, de-rated 2°C/1,000' from AMSL	

*Limited to 44dBm

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