

50W X-Band BUC - Block Up Converter

Second Generation GaN Technology

SSPBg-210XTM 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 of 50W
- Phase-locked local oscillator locks directly to an external 10 MHz reference
- Exceeds IESS 308/309 Phase/Noise requirements by 3 dB
- Robust, weatherproof package
- Protection against thermal runaway and out-of-lock conditions
- Serial M&C via RS232/RS485
- Designed to meet MIL-STD-188-164A

Overview

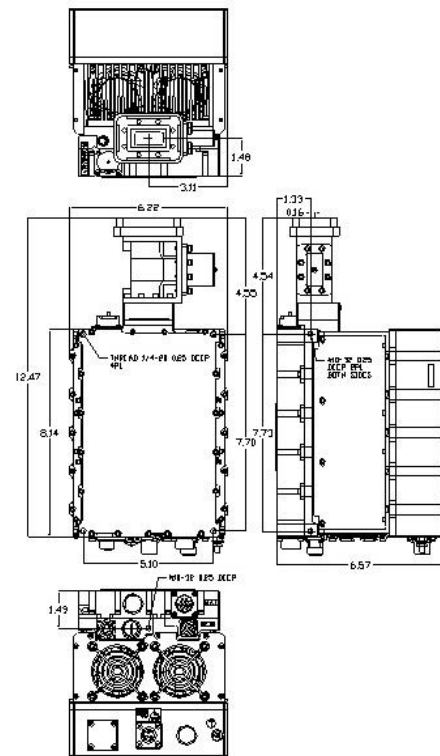
The SSPBg-210XTM series are hub-mount up-converter transmitters, using GaN Technology, operating in the X-Band. The SSPBg-210XTM is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPBg-210XTM provides the utmost in convenience and efficiency. Other SSPBs are also available for higher powers or for operation at other up-link frequencies.

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

The design of these units 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-210XTM series are fully integrated units with up to 50W 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. X-Band SSPBs are available in output power of up to 1000W.

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Technical Specifications		
Electrical Characteristics		50W
Rated Output power		+47.0 dBm typ.
Linear Output power		+44.0 dBm min.
Conversion gain min.		+68 dB
Input /Output frequency range		950-1450 MHz/X-Band 7.9 – 8.4 GHz
Input Level		-22 dBm for rated 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 Rx Band		-110 dBm/Hz max without external Rx Reject Filter
Noise Power Density in Tx Band		-75 dBm/Hz
Spurious at rated power		-55 dBc, max
AM/PM conversion		1°/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		-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 (over any 40 MHz):	Linear	0.03 ns /MHz, max
	Parabolic	0.01 ns/MHz ² , max
	Ripple	1 nsec p-p, max
External Reference		
Reference frequency		10 MHz
Recommended reference frequency phase noise		-115 dBc/Hz at 10 Hz
		-135 dBc/Hz at 100 Hz
		-148 dBc/Hz at 1000 Hz
		-150 dBc/Hz at 10 kHz
		-160 dBc/Hz at 100 kHz
Reference frequency level		0 dBm ± 5 dB
Power Requirements		
Supply voltage		40 V to 75 V DC via separate connector
Power consumption (nominal)		240W @47dBm, 150W @ 44 dBm (Plin)
Mechanical Characteristics		
Cooling		Mini-fan
Dimensions (L x W x H)		8.14"x5.1"x6.57" (206.7x129.5x167.6 mm)
Weight		3.6 kg (8 lbs)
Finish		White (option NATO Green)
Interfaces:		RF input Type N (F)
		M&C and Power : MS311E12-14P
		RF output CPR112 grooved / Type N (F) optional
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

Ref.: PB-SSPBg-2G-X-50W-18130

NORTH AMERICA

USA
info.usa@advantechwireless.com

CANADA
Info.canada@advantechwireless.com

EUROPE

UNITED KINGDOM
info.uk@advantechwireless.com

RUSSIA & CIS
info.russia@advantechwireless.com

SOUTH AMERICA

info.latam@advantechwireless.com

BRAZIL
info.brazil@advantechwireless.com

ASIA

info.asia@advantechwireless.com

INDIA
info.india@advantechwireless.com