

60W C-Band BUC/SSPB/SSPA

Second Generation GaN Technology

SSPBg-210C™ series

Features

- Up-converts an L-Band input signal to the C-Band frequency of 5.85 – 6.425 GHz (5.85-6.725 GHz optional)
- Rated Output Power of 60W
- 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

Overview

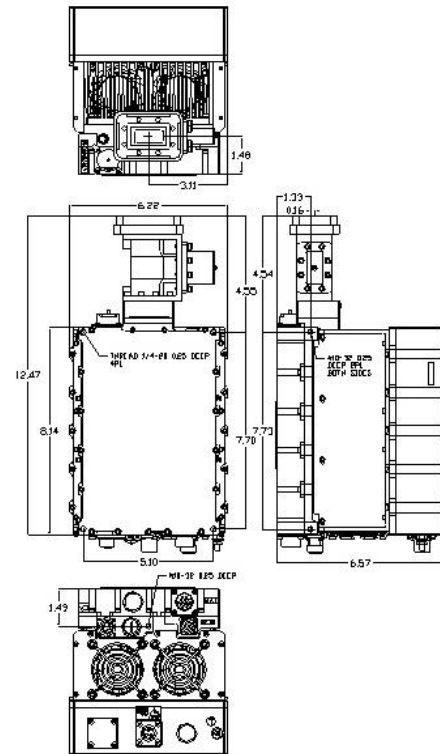
The SSPBg-210C series are hub-mount up-converter transmitters, using GaN Technology, operating in the C-Band. The SSPBg-210C is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPBg-210C provides the utmost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

The hub-mount SSPBg-210C is constructed in a compact cooling enclosure for outdoor operation. The units are weatherproof. They are smallest fully integrated units on the market today.

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

- High Power Output Circulator and Dummy Load
- Mounting kit
- RS232/485 adaptor and outdoor serial cables



Application

The SSPB's convert an L-Band signal to the C-band frequency of 5.85 – 6.425 GHz (optional 5.85-6.725 GHz, or 6.725-7.025 GHz). Designed for C-Band satellite up-link applications, the SSPBg-210C series are fully integrated units with up to 60W 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. C-Band SSPBs are available in output power of up to 1000W.

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Technical Specifications			
Electrical Characteristics		60W	
Rated Output power, P _{SAT}		+48.0 dBm typ.	
Linear Output power, P _{LINEAR}		+44.0 dBm min.	
		P _{LINEAR} is the power at which the IMD3=-25 dBc for two CW signals 5 MHz apart and the spectral regrowth is <-30 dBc @ 1.0 x symbol rate for a single QPSK/OQPSK/8PSK signal	
Conversion gain min.		+68 dB	
Input /Output frequency range		950-1525 MHz/ 5.85 – 6.425 GHz (950-1825 MHz/5.85-6.725 GHz optional)	
Input Level		-22 dBm for rated output power	
Gain flatness		4.0 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		-135 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)		4.9 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 Parabolic Ripple	0.03 ns /MHz, max 0.01 ns/MHz ² , max 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		20 V to 65 V DC via separate connector	
Power consumption (nominal)		360W @ P _{SAT}	300W @ P _{LINEAR}
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) RF output: CPR137G (grooved) / Type N (F) optional	RS232/RS485 and DC Power: MS 3112E14-12P
Environmental Conditions			
Temperature:	Operating Storage	-30°C to +55°C -55°C to +85°C	Option 1 -40°C to +55°C Option 2 -50°C to +55°C
Humidity		100%, condensing	
Altitude		10,000' AMSL, de-rated 2°C/1,000' from AMSL	

Ref.: PB-SSPBg-2G-C-60W-18144

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