

16W / 20W Ku/Kx-Band Lightweight BUC/SSPB Second Generation GaN Technology

SSPBg-210K™ series

Features

- Covers Standard Ku-band 14.0-14.5 GHz or Extended Ku-band 13.75 – 14.5 GHz, with user selectable LO switch (discrete jumper)
- Manually Switchable LO: 12.8 GHz or 13.05 GHz
- Rated Output Power from 16W or 20W, GaN technology
- Exceeds IESS 308/309 Phase/Noise requirements by 3dB
- Phase-locked local oscillator locks directly to an external 10 MHz reference
- Robust, weatherproof package
- Protection against thermal runaway and out-of-lock conditions
- CE Marking
- Light weight and high energy efficiency, ideal for SATCOM manpack terminals

Overview

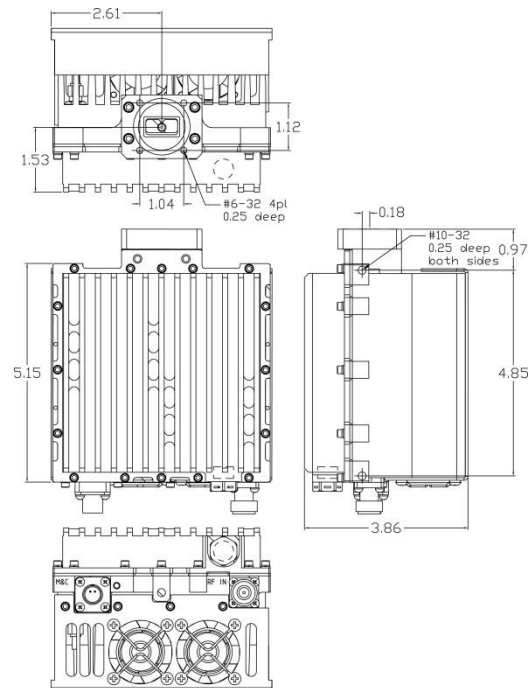
The SSPBg-210K series is a hub-mount up-converter transmitter, using GaN Technology, operating in Ku-Band. The SSPBg-210K is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPBg-210K provides the utmost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

The hub-mount SSPBg-210K is constructed in a weatherproof, compact cooling enclosure for outdoor operation. They are the 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 a highly efficient power supply and conservative thermal designs contribute to the trouble-free operation of the unit.

Accessories

- Mounting kit
- External Receive reject filter (-65dBc)
- External Power Supply AC/DC with integrated
- Bias-Tee



Applications

The SSPB's convert an L-Band signal from 950 - 1450MHz (or 950-1700 MHz) to the Ku-Band frequency of 14.0 – 14.5 GHz or to the Extended Ku-Band frequency of 13.75 – 14.5 GHz, by selecting the proper LO in the field. The SSPBg-210K series is available at either 16W or 20W output power and is designed for Ku-Band satellite up-link applications, mounting outdoors, near the hub of an antenna.

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

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Technical Specifications		16W		20W	
Rated Output power (PSAT) typ.		+42 dBm		+43 dBm	
Linear Power: P _{LINEAR} is the power at which the IMD=-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		+38 dBm min		+39 dBm min	
Conversion gain nominal		63 dB		64 dB	
Input /Output frequency range		950 – 1450 MHz / Ku-Band 14.0 – 14.5 GHz 950 – 1700 MHz / Kx-Band 13.75 – 14.5 GHz			
Input Level		-22 dBm for rated output power			
Gain flatness		4.0 dB p-p, typical over any 500 MHz segment, 1.0 dB p-p /40 MHz			
Gain variation over temperature		+/- 2dB 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		-75 dBm/Hz max in Tx band (-145 dBm/Hz max in Rx band 10.95 – 12.75 GHz)			
Spurious at Plin		-55 dBc, max			
AM/PM conversion		1°/dB at 3db output back off from rated power, 3°/dB max (at rated power)			
Local Oscillator frequency (LO)		12.8 GHz or 13.05 GHz (switchable)			
LO Leakage		-10 dBm max			
Phase noise		-53 dBc/Hz at 10Hz -73 dBc/Hz at 1000Hz	-63 dBc/Hz at 100Hz -83 dBc/Hz at 10 kHz	-93 dBc/Hz at 100 kHz	
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 L-band connector			
Power consumption (@ P _{LINEAR})		90 W		90 W	
Power consumption max (@ P _{SAT})		130 W		130 W	
Mechanical Characteristics					
Cooling		Mini-fan			
Dimensions (L x W x H)		14.78 x 13.25 x 9.8 cm (5.82" x 5.22" x 3.86")			
Weight		2.5 kg (5.5 lbs)			
Finish		White (option NATO Green)			
Interfaces:		RF input Type N (F)		RF output WR 75 grooved / Type N (F) optional	
Environmental Conditions					
Temperature:		-30°C to +55°C		Option -40°C to +55°C	
Operating		-55°C to +85°C			
Storage		100%, condensing			
Humidity		10,000' AMSL, de-rated 2°C/1,000' from AMSL			
Altitude					

Ref.: PB-SSPBg-2G-Ku-Kx-16W-20W-18144

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