

C-Band Hub-mount SSPB (Solid State Power Block-Up Converter)

Phoenix Line

150W to 250W
SSPB-2000C™ series

Features

- Converts L-Band to C (see table A)
- Integrated amplifier with an output power of 50W to 250W (see table A)
- Phase-locked oscillator to external 10MHz reference
- High linearity (low intermodulation products)
- Weatherproof package
- Remote Monitor & Control
- Protection against thermal runaway and out-of-lock conditions
- Output sample monitoring port
- Field Replaceable Power Supply
- Built-in Harmonic Filter
- Compact packaging
- CE Marking

Overview

The SSPB-2000C series are hub-mount up-converter transmitters, operating in the C-Band. The SSPB-2000C is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-2000C provides the utmost in convenience and efficiency. They are the smallest fully integrated units on the market today. Other SSPBs are also available for diverse powers or for operation at other up-link frequencies.

The design of these units is based on Advantech's industry proven reliable solid-state high power amplifiers. Built-in design features and assembly methods incorporated with efficient combining techniques result in an amplifier with exceptional linearity and operating efficiency. The use of high efficiency power supply and conservative thermal designs contribute to the trouble-free operation of the amplifier.

Built-in microprocessor controller provides the capability for serial port interfaces (RS232/485) for remote monitoring and control.

Application

The SSPB-2000C series convert an L-Band signal to the C-band frequency (see table A). Designed for C-Band satellite up-link applications, the SSPB C series are available in output power from 10W to 1000W. For higher power Advantech provides phase combined systems. The SSPB-2000C series are fully integrated units with up to 250W output power designed for mounting outdoors, near the hub of an antenna.

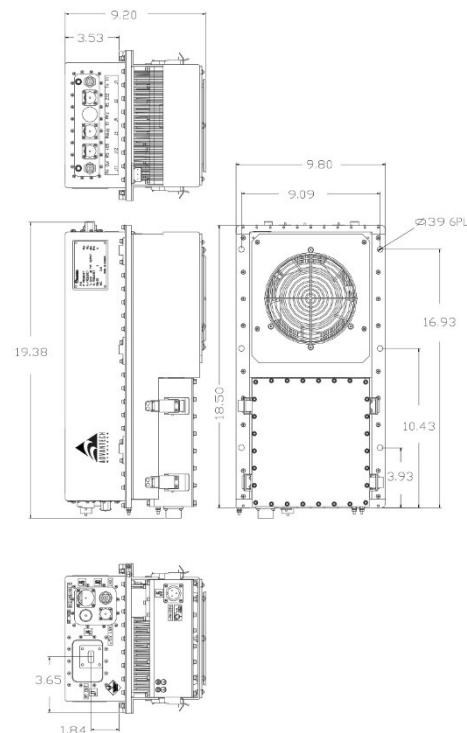


Table A

Band	RF Band (GHz)	IF-Band (MHz)	Output Power (W)	LO GHz
CL	4.400 - 5.000	950 - 1550	60 - 200	4.900
CP	6.425 - 6.725	1025 - 1325	50 - 200	5.400
CI	6.725 - 7.025	1225 - 1525	50 - 200	5.500
CR	5.725 - 6.025	950 - 1450	60 - 250	4.775
CS	5.850 - 6.425	950 - 1525	60 - 250	4.900
CX	5.850 - 6.725	950 - 1825	50 - 200	4.900

*Other frequency sub-bands are available. Please consult factory.

Redundancy

With the addition of the appropriate waveguide and switch kit, The SSPB-2000C series converters can be easily converted for the operation in a redundant configuration with full remote Monitor and Control capability of the redundant system via serial interface.

Options

- Internal High Stability 10 MHz Reference
- Redundant system
- Remote M&C panel (Ethernet port optional)

Accessories

- Redundancy kit
- Mounting Frame

C-Band Hub-mount SSPB

Technical Specifications		150W	200W	250W
Electrical Characteristics				
Availability in this series				
	CS, CR	√	√	√
	CL	√	√	NA
	CX, CI, CP	√	√	NA
Output power (P _{SAT})	dBm	+52	+53	+54
Output power (P _{1dB}) min.	dBm	+51	+52	+53
Conversion gain @ max. setting at ambient temperature		72 dB	73 dB	74 dB
Gain adjustment range	20 dB min			
Input / Output frequency range	See table A on front page			
Frequency sense	Non-inverting except for CX band (5.85 GHz – 6.725 GHz)			
Gain flatness	±1.5 dB, max over full band, 0.6 dB/40 MHz			
Gain variation over temperature	±1.5 dB over full operating range			
Gain variation over 24 hours	±0.25 dB max at constant temperature & drive level			
Input return loss / Input VSWR	14 dB / 1.5:1			
Output return loss / Output VSWR	19 dB / 1.25:1			
Noise power density (NPD)	-70 dBm/Hz, max in TX band -155 dBm/Hz, max in RX band			
Spurious at rated power	-60 dBc, max			
Harmonics at rated power	-70 dBc, max			
AM/PM conversion at rated power	2.5°/dB max. at P _{1dB} 1°/dB max. at 3 dB back-off			
Third order IMD (2 tones)	-26 dBc, max at 3 dB back-off from P _{1dB}			
Local Oscillator frequency (LO)	See table A on front page			
LO leakage	-20 dBm			
Phase noise	-50 dBc/Hz at 10Hz -65 dBc/Hz at 100Hz		-75 dBc/Hz at 1000Hz -85 dBc/Hz at 10 kHz	
Group delay (over any 40 MHz):	Linear	0.02 ns /MHz, max	Parabolic	0.003 ns/MHz ² , max
	Ripple	1 nsec p-p, max		
Reference (auto-switching)				
<i>Note: In case external reference is not provided, the unit will automatically switch to internal reference. For 1:1 redundant operation, internal 10MHz reference is recommended.</i>				
Reference frequency	10 MHz			
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	
Reference frequency level	0 dBm ± 5 dB			
Power Requirements				
AC Input voltage	110 / 220 VAC Auto ranging (47-63 Hz)			
Power consumption (W nominal)	1200W		1300W	1500W
Mechanical Characteristics				
Dimensions (L x W x H)	19.38"x 9.80" x 9.20" (49.22 x 25.40 x 23.36 cm)			
Weight	44 lbs (20 kg)			48.50 lbs (22 kg)
Interfaces:	RF input	N Type (Female)	Redundancy	MS3112E16-26P
	Relay port	MS3112E12-10P	RS-232	MS3112E10-6P
	AC Line	MS3102R16-10P	RS-485	MS3112E10-6P
				RF output CPR137 contact (for CL series – CPR 187)
Environmental Conditions				
Temperature:	Operating	-30°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			

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