

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

50W 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.

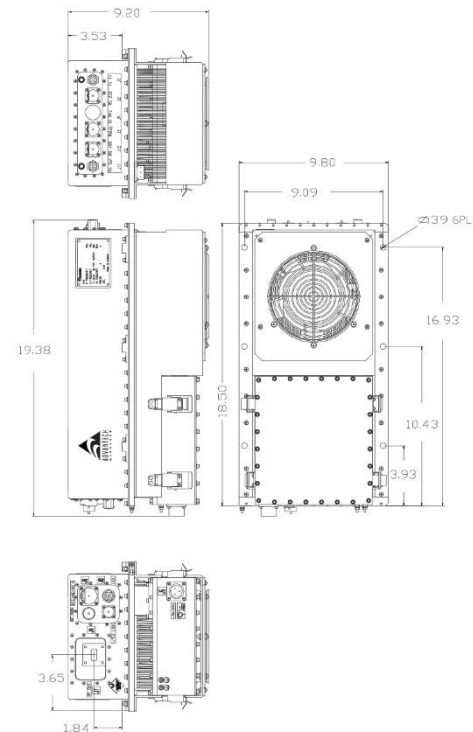


Table A

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		50W	60W	80W	100W	125W	150W	200W	250W	
Electrical Characteristics										
Availability in this series										
	CS, CR	√	√	√	√	√	√	√	√	
	CL	√	√	√	√	√	√	√	NA	
	CX, CI, CP	√	√	√	√	√	√	√	NA	
Output power (P _{SAT}) dBm		+47	+48	+49	+50	+51	+52	+53	+54	
Output power (P _{1dB}) min. dBm		+46	+47	+48	+49	+50	+51	+52	+53	
Conversion gain @ max. setting at ambient temperature		67 dB	68 dB	69 dB	70 dB	71 dB	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		-75 dBc/Hz at 1000Hz		-95 dBc/Hz at 100 kHz		-105 dBc/Hz at 1 MHz		
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		-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										
AC Input voltage		110 /220 VAC Auto ranging (47-63 Hz)								
Power consumption (W nominal)		400W	600W	800W	900W	1000W	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		RF output	CPR137 contact (for CL series – CPR 187)			
	Relay port	MS3112E12-10P	RS-232	MS3112E10-6P						
	AC Line	MS3102R16-10P	RS-485	MS3112E10-6P						
Environmental Conditions										
Temperature:	Operating	-30°C to +55°C; Option: Option 1: -40°C to +55°C;				Option 2: -50°C to +50°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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