



# C-BAND HUB-MOUNT SSPB (Solid State Power Block-Up Converter) UP TO 200W SSPB-3000C® series



## FEATURES

- Converts L-Band to C-Band (see table A)
- Integrated amplifier with an output power of 50W to 200W (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
- Built-in power supply
- Built-in Harmonic Filter
- Compact packaging
- CE Marking

## OPTIONS

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

## OVERVIEW

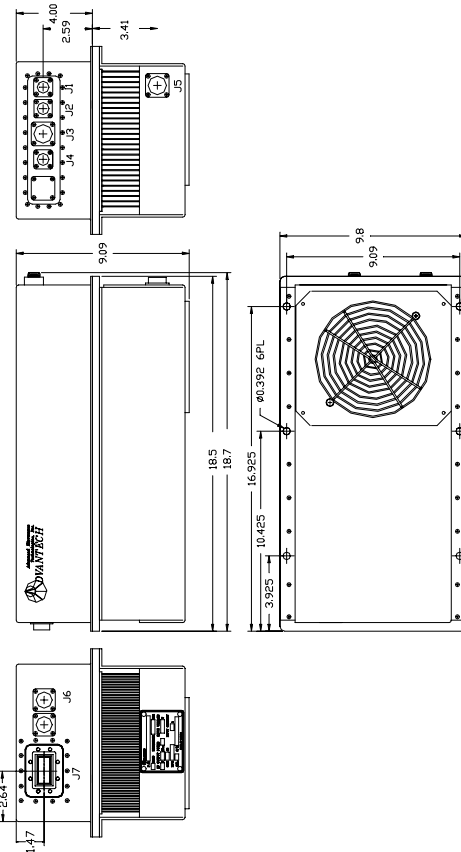
The SSPB-3000C® series are hub-mount up-converter transmitters, operating in the C-Band. The SSPB-3000C® is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-3000C® provides the utmost in convenience 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 AMT™ 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.

## REDUNDANCY

With the addition of the appropriate waveguide and switch kit, The SSPB-3000C 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.



**Table A**

Band	RF Band (GHz)	IF Band (MHz)	Output Power (W)	LO (GHz)
CL	4.400 - 5.000	950-1550	60 - 150	3.45
CP	6.425- 6.725	1025-1325	50 - 150	5.4
CI	6.725 - 7.025	1025-1325	50 - 150	5.7
CR	5.725 - 6.025	950-1450	60 - 200	4.775
CS	5.850 - 6.425	950-1525	60 -200	4.9
CX	5.85 - 6.725	950 - 1825	50 - 150	7.675

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

## APPLICATION

The SSPB-3000C® 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 2W to 1000W. For higher power Advantech provides phase-combined systems. The SSPB-3000C® series are fully integrated units with up to 200W output power designed for mounting outdoors, near the hub of an antenna.

C-band Medium Power SSPB



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SSPB-3000C® series

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TECHNICAL SPECIFICATIONS	50W	60W	80W	100W	125W	150W	200W	
<b>Electrical Characteristics</b>								
Availability in this series								
CS, CR	Note 1	Yes	Yes	Yes	Yes	Yes	Yes	
CL	Note 1	Yes	Yes	Yes	Yes	Yes	Note 2	
CX, CI, CP	Yes	Yes	Yes	Yes	Yes	Yes	Note 2	
Output power (P <sub>SAT</sub> ) (dBm)	+47	+48	+49	+50	+51	+52	+53	
Output power (P1dB) min. (dBm)	+46	+47	+48	+49	+50	+51	+52	
Conversion gain @ maximum setting at ambient temperature	67 dB	68 dB	69 dB	70 dB	71 dB	72 dB	73 dB	
Gain adjustment range	20 dB							
Input/Output frequency range	See table A on front page							
Frequency sense	Non-inverting except for CX band (5.85 GHz – 6.725 GHz)							
Max input power without damage	+10 dBm							
Gain flatness	±2.0 dB, max over full band, 0.3 dB/10 MHz at 25°C							
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	18 dB							
Output return loss	19 dB							
Noise power density	-70 dBm/Hz, max in TX band, -140 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 P1dB, 1°/dB max. at 3 dB back-off							
Third order IMD (2 tones)	-26 dBc, max at 3 dB back-off from P1 dB							
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					
	-65 dBc/Hz at 100Hz	-85 dBc/Hz at 10 kHz	-105 dBc/Hz at 1 MHz					
Group delay: (over any 40 MHz)	Linear	0.02 ns /MHz, max						
	Parabolic	0.003 ns/MHz <sup>2</sup> , max						
	Ripple	1 nsec p-p, max						
<b>Reference (auto-switching)</b>								
<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	-148 dBc/Hz at 1000 Hz						-160 dBc/Hz at 100 kHz
	-135 dBc/Hz at 100 Hz	-150 dBc/Hz at 10 kHz						
Reference frequency level	0 dBm ± 5 dB							
<b>Power Requirements</b>								
AC input voltage	110 /220 VAC (47-63 Hz)							
Power consumption (nom.) (W)	400W	600W	800W	900W	1000W	1200W	1500W	
<b>Mechanical Characteristics</b>								
Dimensions (L x W x H)	18.50"x 9.80" x 9.09" (46.99 x 25.4 x 23.09 cm)							
Weight	32 kg (70 lbs)							
Interfaces:	RF input	Type N (F)	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				
<b>Environmental Conditions</b>								
Temperature:	Operating	-30°C to +55°C; Option: E-40°C to +55°C; G: -50°C to +50°C						
	Storage	-55°C to +85°C						
Humidity	100%, condensing (2" rain/hour)							
Altitude	10,000' AMSL, de-rated 2°C/1,000' from AMSL							

Note 1. Please refer to SSPB-2000C® product datasheet

Note 2. Please refer to SSPB-4000C® product datasheet

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CE An ISO9001: 2000 Company



**United States**  
 1553 W Todd Dr, Suite 206  
 Tempe, Arizona  
 United States, 85283-4805  
 Tel.: (480) 839-4136  
 Fax: (480) 839-0860  
 Email: Sales@AdvantechAMT.com

**CANADA**  
 657 Orly Avenue  
 Dorval, Quebec  
 Canada H9P 1G1  
 Tel.: (514) 420-0045  
 Fax: (514) 420-0073  
 Email: Sales@AdvantechAMT.com

**EUROPE**  
 39 Edison Road  
 St. Ives Huntingdon, Cambridgeshire  
 United Kingdom PE27 3LF  
 Tel.: +44 (1480) 357 600  
 Fax: +44 (1480) 357 601  
 Email: Sales.Europe@AdvantechAMT.com