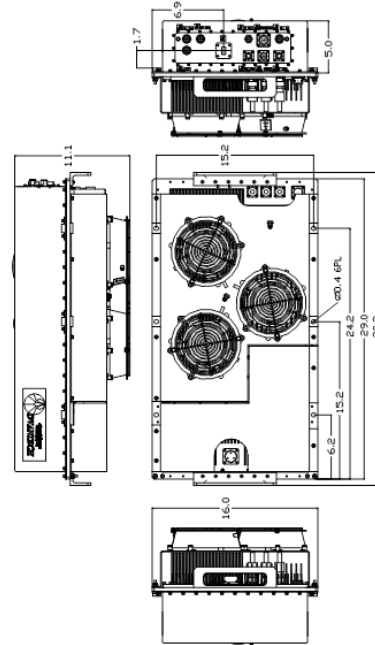




(Solid State Power Block-Up Converter)

300W to 500W
SSPB-4000C® series



Features

- Converts synthesized L-Band to C-Band (see table A)
- Integrated amplifier with an output power from 300W to 500W (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

Overview

The SSPB-4000C® series are hub-mount up-converter transmitters, operating in the C-Band. The SSPB-4000C® is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-4000C® provides the utmost in convenience and efficiency. They are the smallest fully integrated units on the market today. Other SSPB's are also available for higher 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.

Application

The SSPB-4000C® 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-4000C® series are fully integrated units from 300W to 500W 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	300 - 400	3.450
CP	6.425 – 6.725	1025 – 1325	300 - 400	5.400
CI	6.725 – 7.025	1225 – 1525	300 - 400	5.500
CR	5.725 – 6.025	950 – 1450	300 - 500	4.775
CS	5.850 – 6.425	950 – 1525	300 - 500	4.900
CX	5.850 – 6.725	950 – 1825	300 - 400	7.675

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

Options

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

Redundancy

The SSPB-4000C® series are available in redundant configuration with a single Monitor and Control interface.

C-Band Hub-mount SSPB



Technical Specifications	300W	400W	500W	
Electrical Characteristics				
Availability in this series				
CS, CR	√	√	√	
CX, CI, CP, CL	√	√	Note 1	
Output power (P _{SAT})	+55 dBm	+56 dBm	+57 dBm	
Output power (P1dB) min	+54 dBm	+55 dBm	+56 dBm	
Conversion gain @ maximum setting	75 dB	76 dB	77 dB	
Gain adjustment range	20 dB			
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 @ 25°C			
Gain variation over temperature	±1.5 dB over full operating range			
Gain variation over 24 hours	±0.25 dB max @ 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 in RX band			
Spurious at rated power	-60 dB, 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 @ 3 dB back-off from rated P1dB			
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	-95 dBc/Hz at 100 kHz -105 dBc/Hz at 1 MHz	
Group delay (over any 40 MHz):	Linear Parabolic Ripple	0.02 ns /MHz, max 0.003 ns/MHz ² , max 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	190 to 265 VAC (47-63 Hz)			
Power consumption (nominal)	1700W	2200W	2700W	
Mechanical Characteristics				
Dimensions (L x W x H)	30.00" x 16.00" x 11.00" (88.90 x 49.53 x 37.97 cm)			
Weight	117 lbs (53 kg)			
Interfaces :	RF input Relay port AC Line	Type N (F) MS3112E12-10P MS3102E20-19P	Redundancy MS3112E16-26P RS-232 MS3112E10-6P RS-485 MS3112E10-6P	RF output CPR137 contact (for CL series - Type N (F))
Environmental Conditions				
Temperature:	Operating Storage	-30°C to +55°C; Option: E-40°C to +55°C; G: -50°C to +50°C -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-5000C® product datasheet

NORTH AMERICA

USA
Tel: +1 678 889-1831
Fax: +1 678 889-1756
info.usa@advantechwireless.com

CANADA

Tel: +1 514 420 0045
Fax: +1 514 420 0073
info.canada@advantechwireless.com

EUROPE

UNITED KINGDOM
Tel: +44 1480 357 600
Fax: +44 1480 357 601
info.uk@advantechwireless.com

RUSSIA & CIS

Tel: +7 495 971 59 18
info.russia@advantechwireless.com

SOUTH AMERICA

USA
Tel: +1 678 889-1831
Fax: +1 678 889-1756
info.latam@advantechwireless.com

BRAZIL

Tel: +55 11 3054 5701
Fax: +55 11 3054 5701
info.brazil@advantechwireless.com

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