



(Solid State Power Block-Up Converter)

50W to 250W
SSPB-2000C® series

Features

- Converts L-Band to C-Band (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 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-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.

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.

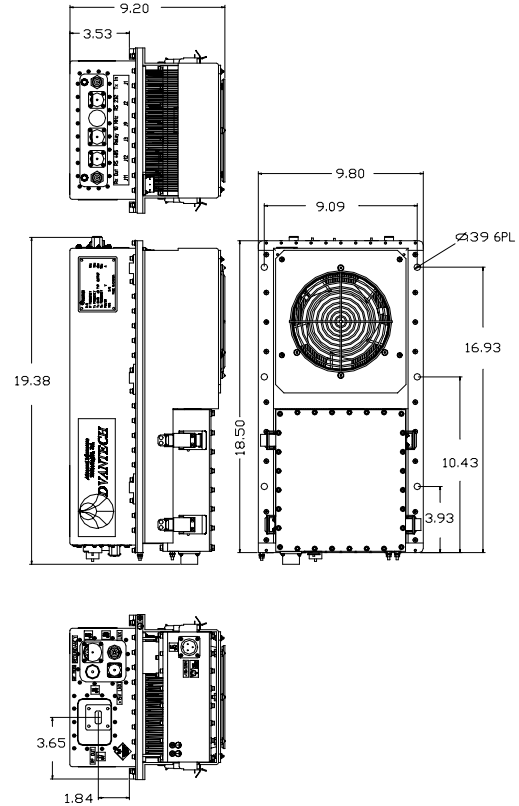


Table A

Band	RF Band (GHz)	IF Band (MHz)	Output Power (W)	LO (GHz)
CL	4.400 – 5.000	950 – 1550	60 - 200	3.450
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	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)

Accessories

- Redundancy Kit
- Mounting Frame



Technical Specifications 50W 60W 80W 100W 125W 150W 200W 250W

Electrical Characteristics

Availability in this series								
CS, CR	√	√	√	√	√	√	√	√
CL	√	√	√	√	√	√	√	√
CX, CI, CP	√	√	√	√	√	√	√	√
Output power (P _{SAT}) (dBm)	+47	+48	+49	+50	+51	+52	+53	+54
Output power (P1dB) min. (dBm)	+46	+47	+48	+49	+50	+51	+52	+53
Conversion gain @ maximum 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							
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							
Spurious at rated power	-140 dBm/Hz, max in RX band							
Harmonics at rated power	-60 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 ² , max					
	Ripple		1 nsec p-p, max					

Reference (auto-switching)

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

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		

Power Requirements

AC input voltage	110 /220 VAC Auto ranging (47-63 Hz)							
Power consumption (nom.) (W)	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 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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