

500W to 1000W SSPB-5000C™ series

Features

- Converts L-Band signal to C-Band frequencies (see table A)
- Output power from 500W to 1000W (see table A)
- Phase-locked oscillator to external 10MHz reference
- High linearity (low intermodulation products)
- Weatherproof package
- Remote Monitor & Control
- Output sample monitoring port
- Protection against thermal runaway and out-of-lock conditions
- Built-in power supply
- Built-in Harmonic Filter
- CE Marking

Overview

The SSPB-5000C™ series are hub-mount up-converter transmitters, operating in the C-Band. The SSPB-5000C® is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-5000C™ are weatherproof and provide the utmost in convenience and efficiency. Other SSPB's 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 a device 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 unit. Built-in microprocessor controller provides the capability for serial port interfaces (RS232/485) for remote monitoring and control.

Redundancy

The SSPB-5000C™ series are available in redundant configuration with a single Monitor and Control interface.

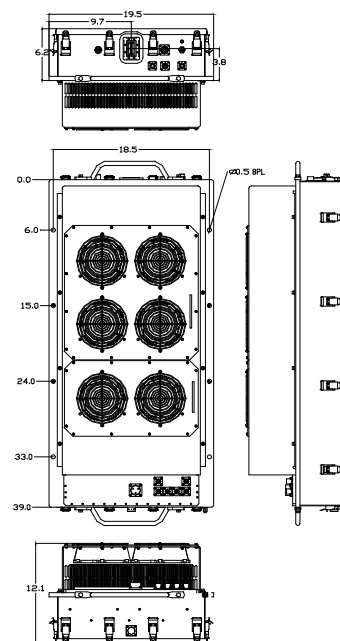


Table A

Band	RF Band (GHz)	IF Band (MHz)	Output Power (W)	LO (GHz)
CL	4.400 – 5.000	950 – 1550	500 - 800	3.450
CP	6.425 – 6.725	1025 – 1325	500 - 800	5.400
CI	6.725 – 7.025	1225 – 1525	500 - 700	5.500
CR	5.725 – 6.025	950 – 1450	600 - 1000	4.775
CS	5.850 – 6.425	950 – 1525	600 - 1000	4.900
CX	5.850 – 6.725	950 – 1825	500 - 800	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)

Application

The SSPB's 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-5000C™ series are fully integrated units for 500W to 1000W output power designed for mounting outdoors, near the hub of an antenna.

C-Band Hub-mount SSPB

Technical Specifications			500W	600W	700W	800W	1000W
Electrical Characteristics							
Availability in this series							
CS, CR			Note 1	√	√	√	√
CI			√	√	√	--	--
CX, CP, CL			√	√	√	√	--
Output power (P _{SAT})			+57 dBm	+58 dBm	+58.5	+59 dBm	+60 dBm
Output power (P1dB) min			+56 dBm	+57 dBm	+57.5	+58 dBm	+59 dBm
Conversion gain @ maximum setting @ ambient temperature			77 dB	78 dB	78.5 dB	79 dB	80 dB
Frequency range			See table A on front page				
Gain adjustment range			20 dB				
Max input power without damage			+10 dBm				
Gain flatness			±2.0 dB max over 500 MHz, 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 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 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			-26 dBc max at 3 dB total 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)							
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							
External reference frequency			10 MHz				
External 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		
External reference frequency level			0 dBm ± 5 dB				
Power Requirements							
AC input voltage			190 to 265 VAC (47-63 Hz)				
Power consumption, (nominal)			2700W	3500W	4000W	4500W	5500W
Mechanical Characteristics							
Dimensions (L x W x H)			39.00" x 18.50" x 12.10" (99.00 x 47.00 x 30.70 cm)				
Weight (with mounting frame)			80 kg (176 lbs)				
Interfaces:	RF input Relay port 10P AC Line	Type N (F) MS3112E12- MS3102E20-19P	Redundancy RS-232 RS-485	MS3112E16-26P MS3112E10-6P MS3112E10-6P	RF output CPR187 contact (for CL series - Type N (F))		
Environmental Conditions							
Temperature		Operating Storage	-30°C to +55°C; Option F: -40°C to +55°C; option G: -50°C to +50°C -55°C to +85°C				
Humidity			100%, condensing (2" rain/hour)				
Altitude			10,000' AMSL, derated 2°C/1,000' from AMSL				

Note 1: Please refer to SSPB-4000C™ product datasheet

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Ref.: PB-SSPB-C500-1000-13150