

300W to 500W
SSPB-3000X™ series



Features

- Converts synthesized L-Band to X-Band
- Integrated amplifier with an output power of 250W to 500W
- 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
- Compact packaging
- CE Marking
- Built-in Receive Reject Filter (35 dB rejection @ 7.25 – 7.75 GHz)
- MIL-STD-188-164A latest revision compliant

Overview

The SSPB-3000X™ series are hub-mount up-converter transmitters, operating in the X-Band. The SSPB-3000X™ is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism.

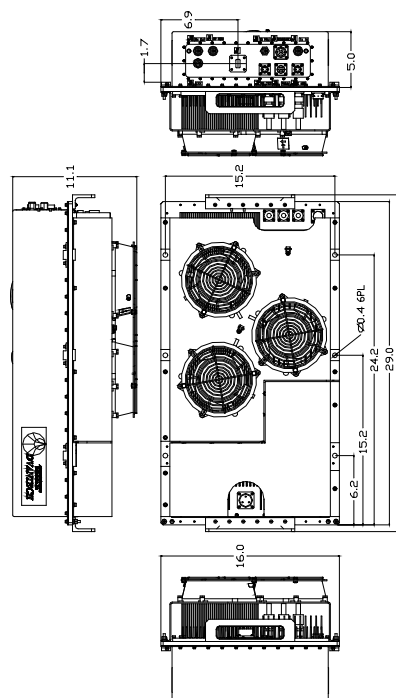
Intended for outdoor operation, the SSPB-3000X™ provides the utmost in convenience and efficiency. Other SSPBs are also available for higher powers or for operation at other up-link frequencies.

The design of these units is based on Advantech Wireless' 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

The AWMT-5000LX™ series of transceivers may be configured to operate in 1:1 redundancy mode. No extra controller is required for redundancy operation, as the built-in controller in each amplifier provides this function. Redundancy kits are required for redundant operation.



Outline Drawing for up to 500W

Options

- Additional High performance external Receive Reject Filter
- Internal High Stability 10MHz Reference
- Redundant System
- Remote M&C panel (Ethernet port optional)

Application

The SSPB-3000X® series convert an L-Band signal to the X-band frequency. Designed for X-Band satellite up-link applications, the SSPB series are available in output power from 10W to 1000W. The SSPB-3000X™ series are fully integrated units with 300W to 500W output power designed for mounting outdoors, near the hub of an antenna. The 300W units are packaged with dimensions of 35.27" x 16.8" x 14.09".

Advantech Wireless SSPB product line includes variety of units operating in various satellite band frequencies with full range of output power levels.

X-Band Hub-mount SSPB

Technical Specifications		300W	350W	400W	500W
Electrical Characteristics					
Output power (P _{SAT})		+55 dBm	+55.5 dBm	+56 dBm	+57 dBm
Output power (P _{1dB}) min		+ 54 dBm	+54.5 dBm	+ 55 dBm	+ 56 dBm
Conversion gain @ max gain setting		75 dB	76 dB	76 dB	77 dB
L-Band input frequency		950 - 1450 MHz			
RF Output frequency		7.9 – 8.4 GHz			
Max input power without damage		+10 dBm			
Gain flatness		± 2.0 dB max full band, 0.3 dB/10 MHz			
Gain variation temperature		3.0 dB p-p max -30°C to +55°C			
Gain adjustment range		20 dB			
Input return loss		18 dB, min			
Output return loss		20 dB, min			
Noise Power Density		-70dBm/Hz in TX band, -110 dBm/Hz in RX band			
Spurious at rated power		-60 dBc, max			
Harmonics at rated power		-75 dBc, max			
AM/PM conversion		2.5°/dB typical (at P _{1dB})			
Third order IMD (2 tones)		-24 dBc, max at 3 dB back-off from P _{1dB}			
Local Oscillator frequency (LO)		6.950 GHz			
LO leakage		-20 dBm			
Phase noise*		-60 dBc/Hz at 10Hz -65 dBc/Hz at 100Hz -73 dBc/Hz at 1000Hz		-83 dBc/Hz at 10 kHz -93 dBc/Hz at 100 kHz -110 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		
External reference					
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			
(For 1:1 redundant operation, internal 10MHz reference is recommended)					
Power Requirements					
AC input voltage		220 VAC (47-63 Hz)			
Power consumption (nominal)		1700W	2000W	2400W	2800W
Mechanical Characteristics					
Dimensions (L x W x H)		30" x 16" x 11" (76.20 x 40.60 x 28.00cm)			
Weight		128 lbs (58 kg)			
Interfaces:	RF input Relay port AC Line	Type N (F) MS3112E12-10P MS3102E20-19P	Redundancy RS-232 RS-485	MS3112E16-26P MS3112E10-6P MS3112E10-6P	RF output CPR-112G
Environmental Conditions					
Temperature:	Operating Storage	-30°C to +55°C; <i>Option 1: -40°C to +55°C; Option 2: -50°C to +50°C</i> -55°C to +85°C			
Humidity		100%, condensing (2" rain/hour)			
Altitude		10,000' AMSL, de-rated 2°C/1,000' from AMSL			

* Based on internal 10MHz Reference.

NORTH AMERICA
USA
 Tel: +1 703 659 9796
 Fax: +1 703 635 2212
 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

INDIA
 Tel: +91 33 2415 5922
 info.india@advantechwireless.com

SOUTH AMERICA
 Tel: +1 514 420 0045
 Fax: +1 514 420 0073
 info.latam@advantechwireless.com

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

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Ref.: PB-SSPB-X-300-500-13150