

600W to 800W
SSPB-5000X® series

Features

- Converts synthesized L-Band to X-Band
- Integrated amplifier with an output power of 600W to 800W
- 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-5000X® series are hub-mount up-converter transmitters, operating in the X-Band. The SSPB-5000X® is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism.

Intended for outdoor operation, the SSPB-5000X® provides the utmost in convenience and efficiency. Other SSPBs are also available for higher powers or for operation at other up-link frequencies.

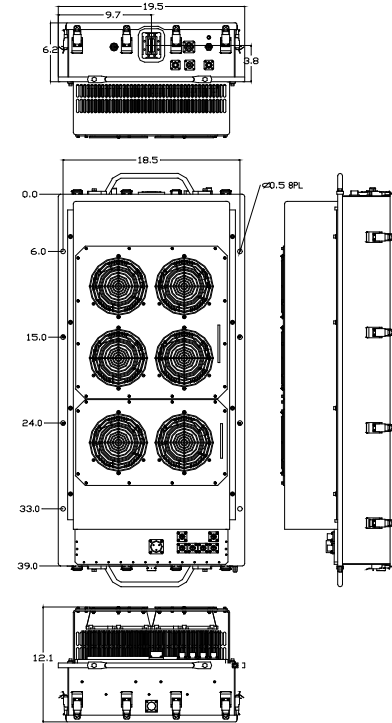
The design of these units is based on Advantech Wireless industry proven reliable solid-state high power amplifiers. Built-in design features and assembly methods incorporated with efficient combining techniques result in an amplifier with exceptional linearity and operating efficiency. The use of high 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.

Application

The SSPB-5000X® 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 SSPB5000X® series are fully integrated units with 600W to 800W output power designed for mounting outdoors, near the hub of an antenna.

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



Options

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

Redundancy

The SSPB-5000X® series are available in redundant configuration with single Monitor and Control interface. Redundancy kits are required for redundant operation.

X-Band Hub-mount SSPB

Technical Specifications	600W	700W	800W
Electrical Characteristics			
Output power (P_{SAT})	+58 dBm	+58.5 dBm	+59 dBm
Output power (P_{1dB}) min	+57 dBm	+57.5 dBm	+58 dBm
Conversion gain @ max gain setting	78 dB	78.5 dBm	79 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 Parabolic Ripple	0.02 ns /MHz, max 0.003 ns/MHz ² , max 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)	3500W	4000W	4500W
Mechanical Characteristics			
Dimensions (L x W x H)	39" x 18.5" x 12.1" (99.00 x 47.00 x 30.70 cm)		
Weight (with mounting frame)	176 lbs (80 kg)		
Interfaces:	RF input Type N (F) Relay port MS3112E12-10P AC Line MS3102E20-19P	Redundancy MS3112E16-26P RS-232 MS3112E10-6P RS-485 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.

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