

X-Band Hub-mount SSPB

600W to 1000W
SSPB-5000X™ series

Features

- Converts synthesized L-Band to X-Band
- Integrated amplifier with an output power of 600W to 1000W
- 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
- 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.

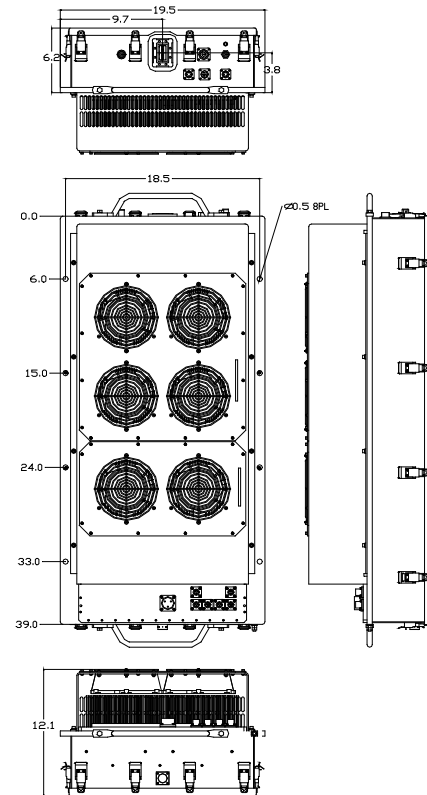
The design of these units is based on Advantech Wireless industry proven reliable solid-state high power amplifiers. Built-in design features and assembly methods incorporated with efficient combining techniques result in an amplifier with exceptional linearity and operating efficiency. The use of high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

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Technical Specifications				
	600W	700W	800W	1000W
Output power (P _{SAT})	+58 dBm	+58.5 dBm	+59 dBm	+60 dBm
Output power (P1dB) min	+57 dBm	+57.5 dBm	+58 dBm	+59 dBm
Operating Frequency	7.9 – 8.4 GHz			
L-Band input (BUC)	950 - 1450 MHz			
Gain	SSPA +70 dB minimum		SSPB (BUC) +80 dB minimum	
Gain adjustment range	20 dB in 0.1 dB steps			
Gain flatness over full band	± 1dB max for SSPA		± 1.5dB max for SSPB (BUC)	
Gain slope over 40 MHz	± 0.3 dB max for SSPA		± 0.5dB max for SSPB (BUC)	
Gain variation temperature	± 1.5 dB max -30°C to +55°C			
Input Impedance and VSWR	50 Ω SSPA 1.3:1 max		SSPB (BUC) 1.4:1 max	
Output VSWR	1.3:1 max			
Noise Power Density	-70dBm/Hz in TX band -110 dBm/Hz in (7.25 - 7.75GHz)			
Spurious at P1dB	-65 dBc for SSPA		-60 dBc max for SSPB (BUC)	
Harmonics	-60 dBc, max @ P1dB			
AM/PM conversion	2°/dB at P1dB, 1°/dB at 3dB back-off			
Third order intermod (two tones)	-25 dBc, max at 3 dB back-off from P _{1dB} , relative to carrier level			
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		
Residual AM Noise	0 – 10 kHz	-45 dBc		
	10 kHz – 500 kHz	-20 (1.25 + log F) dBc	F = Frequency in kHz	
	500 kHz – 1 MHz	-80 dBc		
SSPB (BUC)				
Local Oscillator frequency (LO)	6.950 GHz			
LO leakage	-20 dBm			
Phase noise*	-60 dBc/Hz at 10Hz	-83 dBc/Hz at 10 kHz		
	-65 dBc/Hz at 100Hz	-93 dBc/Hz at 100 kHz		
	-73 dBc/Hz at 1000Hz	-110 dBc/Hz at 1 MHz		
External Reference frequency level	0 dBm ± 5 dB			
External Reference frequency phase noise (max)	10 MHz			
	-115 dBc/Hz at 10 Hz	-150 dBc/Hz at 10 kHz		
	-135 dBc/Hz at 100 Hz	-160 dBc/Hz at 100 kHz		
	-148 dBc/Hz at 1000 Hz			
Weight & Dimensions				
Dimensions	L x W x H 39.00" x 18.50" x 12.10" (990 x 470 x 307 mm)			
Weight	275 lbs (125 kg)			
AC input voltage	190 – 265 VAC (47 - 63 Hz)			
Power consumption (nominal)	6300W			
Interfaces	Input (RF or L-Band)	N type female	AC line	MS3102 type
	Output Sample Port	N type female	RF output	CPR-112G
	RS232/RS485	MS3102 type	Ethernet	RJ45 (Weatherized)
Environmental	Temperature	Operating -30°C to +55°C	Option 1	-40°C to +55°C
		Storage -55°C to +85°C	Option 2	-50°C to +55 °C with startup @ -40°C
	Humidity	100%, condensing		
	Altitude	10,000' AMSL, de-rated 2°C/1,000' from AMSL		

* Based on internal 10MHz Reference.

Ref.: PB-SSPB-X-600W-1000W-20013

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