



# X-BAND HUB-MOUNT SSPB (Solid State Power Block-Up Converter) 10W TO 40W SSPB-1000X® series



## FEATURES

- Converts L-Band signal to X-Band frequency
- Integrated amplifier with an output power of 10W to 40W
- 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

## OPTIONS

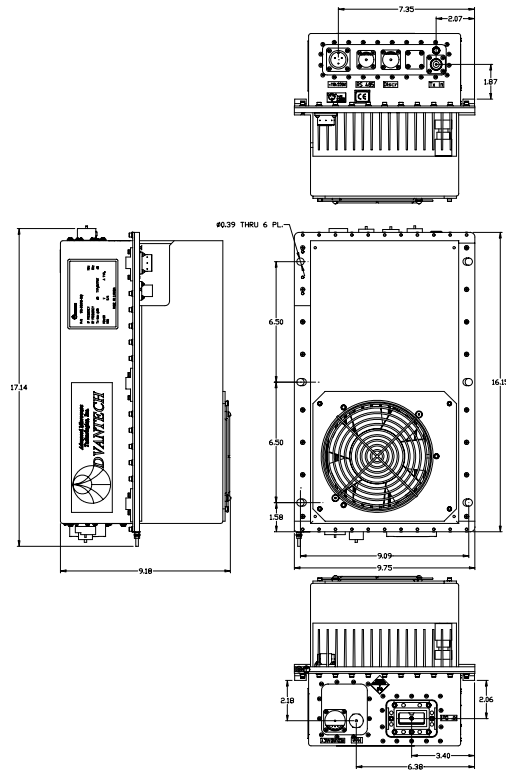
- High performance external Receive Reject Filter
- Internal High Stability 10MHz Reference
- Redundant System
- Remote M&C panel (Ethernet port optional)

## OVERVIEW

The SSPB-1000X® series are hub-mount up-converter transmitters, operating in the X-Band. The SSPB-1000X® is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-1000X® 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 AMT™'s industry proven reliable solid-state high power amplifiers. Built-in design features and assembly methods incorporated with efficient combining techniques result in the trouble-free operation of the amplifier. 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-1000X® 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-1000X® series are fully integrated units with 10W to 40W output power designed for mounting outdoors, near the hub of an antenna.

Advantech AMT™'s SSPB product line includes a variety of units operating in various satellite band frequencies with full range of output power levels. Please contact Advantech AMT™ for additional information.

## REDUNDANCY

The SSPB-1000X® series are available in redundant configuration with single Monitor and Control interface. Redundancy kits are required for redundant operation.

X-band Low Power SSPB



X-BAND HUB-MOUNT SSPB (Solid State Power Block-Up Converter) 10W TO 40W

SSPB-1000X<sup>®</sup> series



X-band Low Power SSPB

TECHNICAL SPECIFICATIONS	10W	20W	25W	30W	40W
<b>Electrical Characteristics</b>					
Output power (P <sub>SAT</sub> )	+41 dBm	+43 dBm	+44 dBm	+45dBm	+46dBm
Output power (P <sub>1dB</sub> ) min	+40 dBm	+42 dBm	+43 dBm	+44dBm	+45dBm
Conversion gain @ max gain setting	61 dB	63 dB	64 dB	65 dB	66 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 over 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	-65 dBc, max				
Harmonics at rated power	-75 dBc, max				
AM/PM conversion	2.5°/dB typical (at P <sub>1dB</sub> )				
Third order IMD (2 tones)	-24 dBc, max at 3 dB back-off from P <sub>1dB</sub>				
Local Oscillator frequency (LO)	6.950 GHz				
LO leakage	-20 dBm				
Phase noise*	-60 dBc/Hz at 10Hz -63 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 <sup>2</sup> , max			
	Ripple	1 nsec p-p, max			
<b>External reference</b>					
Reference frequency	10 MHz				
Reference frequency phase noise	-115 dBc/Hz at 10Hz -135 dBc/Hz at 100Hz		-148 dBc/Hz at 1000Hz -150 dBc/Hz at 10 kHz		-150 dBc/Hz at 100 kHz
Reference frequency level (For 1:1 redundant operation, internal 10MHz reference is recommended)	0 dBm ± 5 dB				
<b>Power Requirements</b>					
AC input voltage	110/220 VAC (47-63 Hz) auto ranging				
Power consumption (nominal)	150W	200W	300W	400W	450W
<b>Mechanical Characteristics</b>					
Dimensions (L x W x H)	16.15"x 9.75" x 9.16" (41.02 x 24.77 x 23.27 cm)				
Weight	32 lbs (16 kg)				
Interfaces:	RF input Type N (F)	Redundancy MS3112E16-26P	RF output CPR-112G		
	Relay port MS3112E12-10P	RS-232 MS3112E10-6P			
	AC Line MS3102R10SL-3P	RS-485 MS3112E10-6P			
<b>Environmental Conditions</b>					
Temperature:	Operating	-30°C to +55°C; <i>Option 1: -40°C to +55°C; Option 2: -50°C to +50°C; Option 3 -30°C to +60°C (note: 10W unit will have the same outline and weight as the 20W unit)</i>			
	Storage	-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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