



25W to 125W
SSPB-2100X™ series



Features

- Converts L-Band to X (see table A)
- Integrated amplifier with an output power of 25W to 125W (see table A)
- Phase-locked oscillator to external 10MHz reference
- High linearity (low inter-modulation products)
- Remote Monitor & Control
- Protection against thermal runaway and out-of-lock conditions
- Output sample monitoring port
- Built-in power supply
- Light weight
- Weatherproof package
- Compact packaging
- CE Marking
- MIL-STD-188-164A latest revision compliant

Overview

The SSPB-2100™ series are hub-mount up-converter transmitters, operating in the C/X and Ku-Band. The SSPB-2100™ is an integrated unit, complete with power supply, phase-locked oscillator, mixer, filter and cooling mechanism. Intended for outdoor operation, the SSPB-2100™ provides the utmost in convenience and efficiency. Other SSPB's 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. 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-2100X™ series converts an L-Band signal to the X-band frequency (see table A). Designed for satellite up-link applications, the SSPB series are available in output power from 1W to 500W. The SSPB-2100X™ series are fully integrated units from 25W to 125W output power designed for mounting outdoors, near the hub of an antenna.

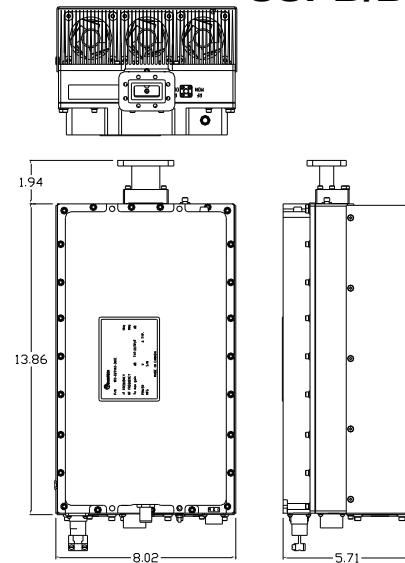


Figure 1: Outline 80-125 W units

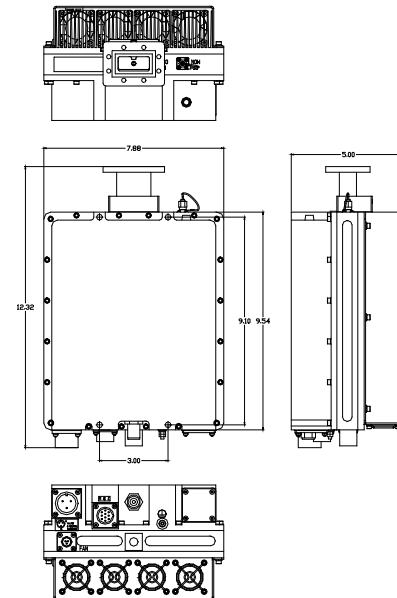


Figure 21: Outline 25-60 W units

Table A

Band	RF-Band (GHz)	IF-Band (MHz)	Output Power	LO GHz
X-Band	7.9 - 8.4	950 - 1450	25- 125	6.950

Accessories

- External Receive Reject Filter
- Remote M&C panel (Ethernet port optional)
- Handheld terminal

Compact X-Band Hub-mount SSPB/BUC

Technical Specifications			25W	30W	40W	50W	60W	80W	100W	125W
Electrical Characteristics										
Output power (P _{SAT})	dBm		+44	+45	+46	+47	+48	+49	+50	+51
Output power (P1dB) min	dBm		+43	+44	+45	+46	+47	+48	+49	+50
Conversion gain @ maximum setting	dB		64	65	66	67	68	69	50	71
Gain adjustment range			20 dB min							
Input/Output frequency range			See table A on front page							
Max input power without damage			+10 dBm							
Gain flatness			3 dB p-p, max over full band, 1.0 dB/40 MHz							
Gain variation over temperature			±1.5 dB over full operating range (temperature compensation mode)							
Gain variation over 24 hours			±0.5 dB max at constant temperature & drive level							
Input VSWR			1.5 :1 dB, min							
Output VSWR			1.5 :1 dB min,							
Noise power density (NPD)			-85 dBm/Hz in TX band -110 dBm/Hz in RX Band							
Spurious at rated power			-55 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)			6.95 GHz							
LO leakage			-20 dBm max							
Phase noise			-50 dBc/Hz at 10Hz		-73 dBc/Hz at 1000Hz		-93 dBc/Hz at 100 kHz			
			-63 dBc/Hz at 100Hz		-83 dBc/Hz at 10 kHz		-105 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				-155 dBc/Hz at 10 kHz			
			-135 dBc/Hz at 100 Hz				-160 dBc/Hz at 100 kHz			
			-148 dBc/Hz at 1000 Hz							
Reference frequency level			0 dBm ± 5 dB supplied via input L-Band cable							
Power Requirements										
AC input voltage			110 /220 VAC (47-63 Hz) auto-ranging (90-132 V / 180-264 V)							
Power consumption (W nominal)			150	180	200	300	350	400	450	500
Mechanical Characteristics										
Dimensions (L x W x H)			10" x 8" x4.8" (254 x 203 x 114 mm)					DC	13" x 8" x4.8" (330 x 203 x 114 mm)	
								AC	13" x 8" x5.2" (330 x 203 x 132 mm)	
Weight			14.4 lbs (6.5 kg)					22.0lbs (10.0 kg)		
Interfaces:	RF input	Type N (F)	RS-485/RS232					AC Line MS3102R16-10P		
	RF output	CPR112	MS3112E12-10P					DC Line MS3102R16-10PX		
Environmental Conditions										
Temperature:	Operating		-30°C to +55°C; Option: E-40°C to +55°C; G: -50°C to +50°C							
	Storage		-55°C to +85°C							
Humidity			100%, condensing (2" rain/hour)							
Altitude			10,000' AMSL, de-rated 2°C/1,000' from AMSL							

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