



C-Band Hub-mount SSPA/SSPB

SSPA-4100C series
SSPB-4100C series
500W to 1000W

Features

- Full range of output power from 500W to 1000W in a single package
- High linearity
- Redundant ready with no external controller
- Full M&C capability via RS485
- Forward and Reflected power monitoring
- Output Sample Port
- Redundant Systems shipped fully tested
- Infinite VSWR protection with automatic high reflected power shutdown
- Built-in harmonic Filter
- Weatherproof construction
- CE marking

Overview

Advantech Wireless C-Band line of Amplifiers and BUCs are intended for satellite up-link applications. The design of these units is based on Advantech's proven techniques resulting in high linearity and operating efficiency. Conservative thermal design contributes to the high MTBF for these units. Full monitor and control is provided via the serial or Ethernet ports. Special features such as automatic over-temperature shutdown and high-reflected power protection contribute to a trouble free operation.

Also available from Advantech Wireless is the SSPB-2100 series of compact low weight BUCs with output power of to 125W in C-Band, mainly intended for mobile applications.

Advantech Wireless also offers the SUMMIT modular SSPA system for either indoor or outdoor applications.

Please contact factory for more details.

The AWM-C series is available in output power from 500W to 1000W. Higher power operation may be provided using external phase combining techniques offering an output power up to 6000W.

The full set of accessories made available will facilitate the integration of these units in any application.



Options

- 1:1 or 1:2 Redundant configuration
- Phase combined systems for higher power
- L-Band input (SSPB/BUC operation)
- Ethernet port
- Internal 10 MHz reference for SSPB applications

Accessories

- Mounting kits
- Remote M&C panel with optional SNMP
- Handheld terminal

Redundancy

Advantech Wireless C-Band line of Amplifiers and BUCs may be configured to operate in 1:1 or 1:2 redundancy modes. No extra controller is required for the redundancy operation as the built-in controller in each unit provides this function. For 1:1 redundancy operation, in addition to the two units (operating and standby) a special redundancy kit is required. For 1:2 redundancy operation another redundancy kit is needed in addition to the three units. The kits include the waveguide switches, terminations, splitter, interconnecting cable assemblies and mounting frames.

All redundancy systems are delivered fully assembled, integrated, and tested



**500W/ 600W/ 700W/ 800W/ 1000W
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Technical Specifications

Table A

Band*	RF Band (GHz)	L-Band Input for BUC (MHz)	LO for BUC (GHz)	Output Power (W)
CS	5.850 - 6.425	950 - 1525	4.900	500 - 1000
CX	5.850 - 6.725	950 - 1825	4.900	500 - 800
CL	4.400 - 5.000	950 - 1550	3.450	500 - 1000
CI	6.725 - 7.025	1225 - 1525	5.500	500 - 700
CP	6.425 - 6.725	1025 - 1325	5.400	500 - 800
CR	5.725 - 6.025	950 - 1250	4.775	500 - 800

*Other frequency sub-bands are available. Please consult factory.

**Table B
SSPA/SSPB (BUC) Line**

Rated Power W	Psat dBm	P1dB dBm	Gain (dB) minimum		Availability in this series		Power Consumption W (nominal)	Weight	Dimensions Outline
			SSPA	SSPB BUC	CS/ CI CP	CX			
500W	+57	+56	+67	+77	√	√	2700	128 lbs (58kg)	30"x16"x11" 762x406x280 mm Outline 1
600W	+58	+57	+68	+78	√	√	3500	176 lbs (80kg)	39"x18.5"x12.1" 990x470x307 mm Outline 2
700W	+58.5	+57.5	+69	+79	√	√	4000		
800W	+59	+58	+70	+80	√	√	4500		
1000W	+60	+59	+70	+80	√	-	5500		

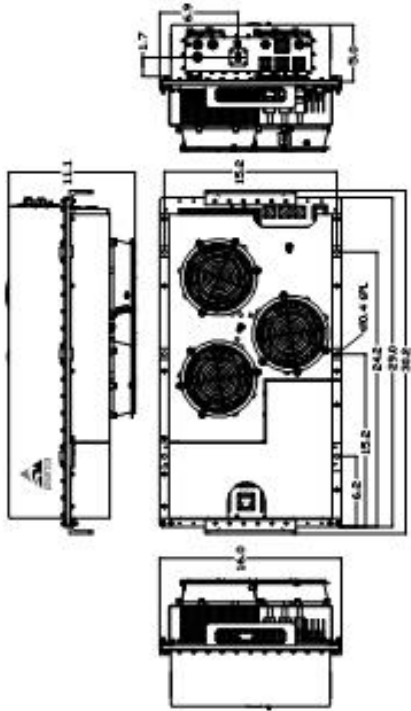


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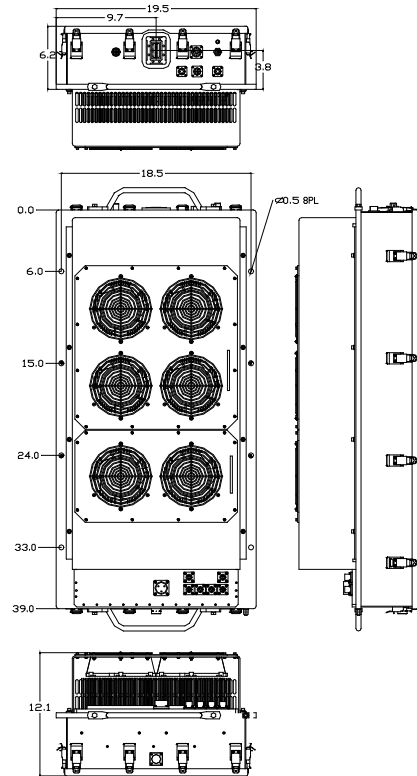
General Specifications				
Operating Frequency	See table A			
L-Band input (BUC)	See table A			
Output Power	See table B			
Gain	See table B			
Gain adjustment range	20 dB in 0.1 dB steps			
Gain flatness over full band	± 1dB max for SSPA	± 1.5dB max for SSPB (BUC)		
Gain slope over 40 MHz	± 0.3 dB max for SSPA	± 0.5dB max for SSPB (BUC)		
Gain variation over temperature	± 1.5 dB max			
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 -155dBm/Hz in Rx band (3.4 - 4.2Ghz)			
Spurious at P1dB	-65 dBc for SSPA		-60 dBc for SSPB (BUC)	
Harmonics	-60 dBc max @ P1dB			
AM/PM conversion	2.5°/dB at P1dB, 1°/dB at 3dB back off			
Third order intermod (two tones)	-26dBc, at 3 dB total back-off from rated P _{1dB} , relative to carrier level			
Group delay	Linear	0.02 nsec/MHz max	Parabolic 0.003 nsec/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	See table A			
Internal Reference frequency (option)	10 MHz	Stability ±2 × 10 ⁻⁸ over temp range Aging ±5 × 10 ⁻⁸ /year		
Phase Noise	-60 dBc/Hz at 10Hz	-85 dBc/Hz at 10 kHz		
	-65 dBc/Hz at 100Hz	-95 dBc/Hz at 100 kHz		
	-75 dBc/Hz at 1000Hz			
External Reference Frequency phase noise (max)	10 MHz			
	-115 dBc/Hz at 10Hz	-150 dBc/Hz at 10 kHz		
	-135 dBc/Hz at 100Hz	-160 dBc/Hz at 100 kHz		
	-148 dBc/Hz at 1000Hz			
External reference level	0 dBm ± 5 dB via L-Band interface or separate connector			
Weight & Dimensions				
Dimensions	See table B			
Weight	See table B			
AC input voltage	190 - 265 VAC (47 - 63 Hz)			
Power consumption	See table B			
Interfaces	Input (RF or L-Band)	N type female	AC line	MS3102 type
	Output Sample Port	N type female	RF output	CPR 137 contact
	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, derated by 2 °C/1000' from AMSL		



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Outline 1



Outline 2

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