Advantech Wireless

C-Band Hub-mount SSPA/SSPB

16W to 1000W

Features

- Full range of output power from 16W 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

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

Overview

Advantech AMT 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 is the SSPB-2100 series of compact low weight BUCs with output power of to 60W in C-Band, mainly intended for mobile applications.

Advantech 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 16W to 1000W. Higher power operation may be provided using external phase combining techniques offering an output power up to 1600W.

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

Redundancy

Advantech AMT 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.

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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	16 - 1000
CX	5.850 – 6.725	950 – 1825	4.900	16 - 800
CL	4.400 – 5.000	950 – 1550	3.450	16 - 1000
CI	6.725 – 7.025	1225 – 1525	5.500	16 - 700
CP	6.425 – 6.725	1025 – 1325	5.400	16 - 800
CR	5.725 – 6.025	950 – 1250	4.775	16 - 800

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

Table B

SSPA/SSPB (BUC) Line

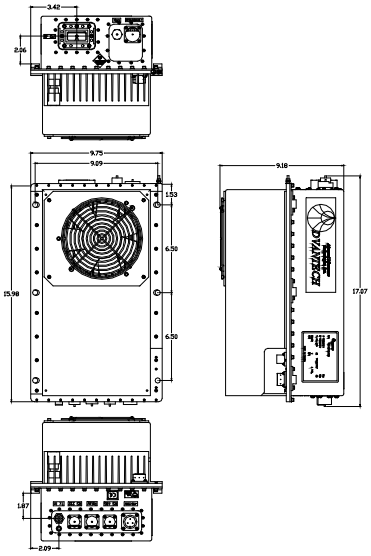
Rated Power W	Psat dBm	P1dB dBm	Gain (dB) minimum		Availability in this series		Power Consumption W (nominal)	Weight	Dimensions Outline
			SSPA	SSPB BUC	CS/ CI CP	CX			
16W	+42	+41	+52	+62	√	√	170	36 lbs (16 kg)	16.5”x10”x9” 420x254x229 mm Outline
20W	+43	+42	+53	+63	√	√	180		
25W	+44	+43	+54	+64	√	√	200		
30W	+45	+44	+55	+65	√	√	250		
40W	+46	+45	+56	+66	√	√	300		
50W	+47	+46	+57	+67	√	√	350		
60W	+48	+47	+58	+68	√	√	550	48.5 lbs (22kg)	18.5”x10”x9” 470x254x229mm Outline 2
80W	+49	+48	+59	+69	√	√	800		
100W	+50	+49	+60	+70	√	√	900		
125W	+51	+50	+61	+71	√	√	950		
150W	+52	+51	+62	+72	√	√	1000		
200W	+53	+52	+63	+73	√	√	1100	128 lbs (58kg)	30”x16”x11” 762x406x280 mm Outline 3
250W	+54	+53	+64	+74	√	√	1400		
300W	+55	+54	+65	+75	√	√	1700		
350W	+55.5	+54.5	+65	+75	√	√	2000		
400W	+56	+55	+66	+76	√	√	2200	176 lbs (80kg)	39”x18.5”x12.1” 990x470x307 mm Outline 4
500W	+57	+56	+67	+77	√	√	2700		
600W	+58	+57	+68	+78	√	√	3500		
700W	+58.5	+57.5	+69	+79	√	√	4000		
800W	+59	+58	+70	+80	√	√	4500		
1000W	+60	+59	+70	+80	√	-	5500		

C-Band Hub-mount SSPA/SSPB

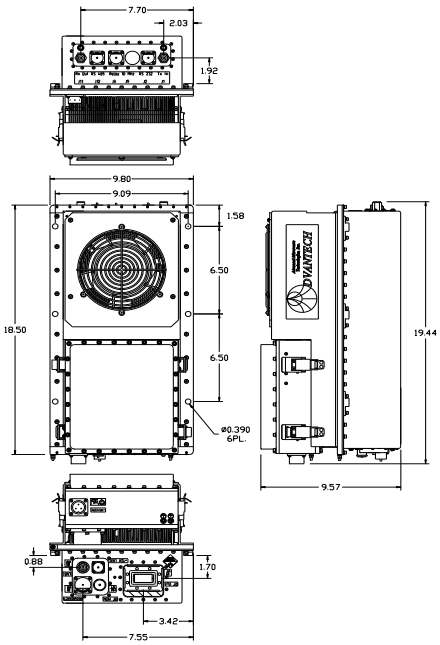
General Specifications

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 ± 2dB max for SSPB (BUC)
Gain slope over 40 MHz	± 0.3 dB max
Gain variation over temperature	± 1.5 dB max
Input Impedance and VSWR	50 Ω SSPA 1.3:1 SSPB (BUC) 1.4:1
Output VSWR	1.3:1 max
Spurious at P1dB	-65 dBc max
Harmonics	-60 dBc @ P1dB -3 dB max
AM/PM conversion	2.5º/dB at P1dB
Third order intermod (two tones)	-26 dBc at 3 dB total back-off from rated P1dB
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 ±1^{-8} over temp range aging ±1^{-7}/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	10 MHz
External reference level	0 dBm ± 5 dB via L-Band interface or separate connector
External Reference Frequency phase noise (max)	-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
Weight & Dimensions	See table B
AC input voltage	Up to 250W output power 110/220 VAC auto-ranging 47-63 Hz, Option 48V DC 300W output power and higher 220 VAC 47-63 Hz
Interfaces	Input (RF or L-Band) N type female Output Sample Port N type female RF output CPR 137 contact AC line MS3102 type RS232 serial port MS3112E10-6P RS485 MS3112 type Ethernet (option) RJ45
Environmental	Temperature Operating -30ºC to +55 ºC Option 1 -40ºC to +55 ºC Option 2 -50ºC to +50 ºC Storage -55ºC to +85 ºC Humidity 100% condensing Altitude 10,000' AMSL, derated by 2 ºC/1000> from AMSL

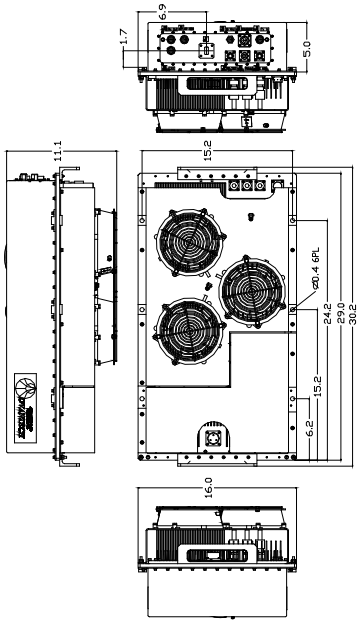
C-Band Hub-mount SSPA/SSPB



Outline 1



Outline 2
(with field replaceable power supply)



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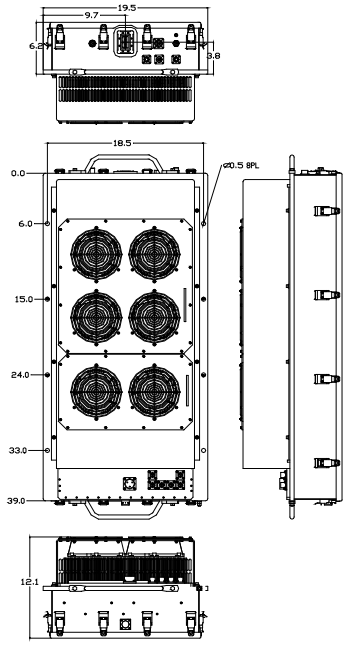

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