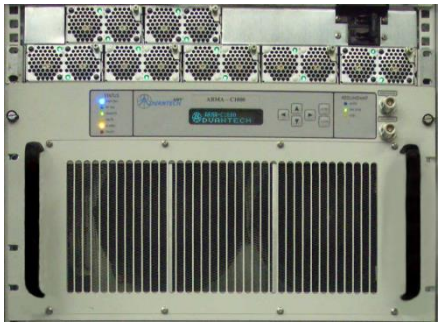
C-Band Rack-mount SSPA/SSPB



Features

- Full range of output power from 16W to 1000W
- High linearity
- Redundant ready with no external controller
- Full M&C capability via RS485 or Ethernet port
- 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
- Power factor correction
- CE marking

Options

- 1:1 or 1:2 Redundant configuration
- Phase combined systems for higher power
- L-Band input (SSPB/BUC operation)
- SNMP interface

Accessories

- Mounting slides
- Remote M&C panel

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.

The ARM-C series 19" rackmount SSPA/SSPB (BUC) 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. Please contact factory for more details.

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

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 mode. 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 tested.

C-Band Rack-mount SSPA/SSPB

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 - 1000
CP	6.425 – 6.725	1025 – 1325	5.400	16 - 1000
CR	5.725 – 6.025	950 – 1450	4.775	16 - 1000

*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	BUC	CS CI CP	CX			
16W	+42	+41	+52	+62	√	√	170	37.5 lbs (17 kg)	3RU Outline #1
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	66 lbs (30kg)	4RU 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	99 lbs (45kg)	5RU 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	198 lbs (90kg)	8RU 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 Rack-mount SSPA/SSPB

Advantech Wireless

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 (SSPA), ±1.5dB max (SSPB)	
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	1.25:1	
Noise power density	-70 dBm/Hz in Transmit Band,	
	-150 dBm/Hz in Receive Band (3.40 – 4.20 GHz)	
Spurious at P1dB	-60 dBc max	
Harmonics	-60 dBc @ P1dB, -70 dBc @ P1dB -3 dB max	
AM/PM conversion	2.5º/dB at P1Db	
Third order intermod (two tones)	-25 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	
Reference frequency	10 MHz stability ±1$_{-8}$ over temp range ±2$_{-10}$/day	
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)	-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	95 - 265 VAC, 47-63 Hz, Option 48V DC
	300W output power and higher	220VAC 47 – 63 Hz
Cooling system	Forced air with front intake	
Interfaces	Input (RF or L-Band) N type female	
	Output Sample Port N type female	
	RF output CPR137 contact	
	AC line IEC 320 inlet	
	RS232 serial port D-sub 9S	
	RS485 D-sub 9S	
	Ethernet (option) RJ45	
Environmental	Temperature	Operating 0ºC to +50 ºC
		Storage -55ºC to +85 ºC
	Humidity	5% to 95% non-condensing
	Altitude	10,000’ AMSL, derated by 2 ºC/1000’ from AMSL

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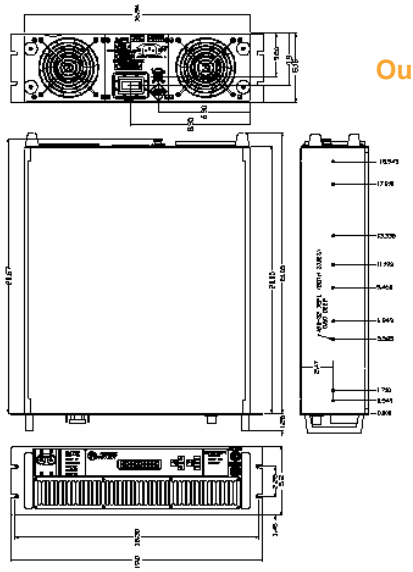
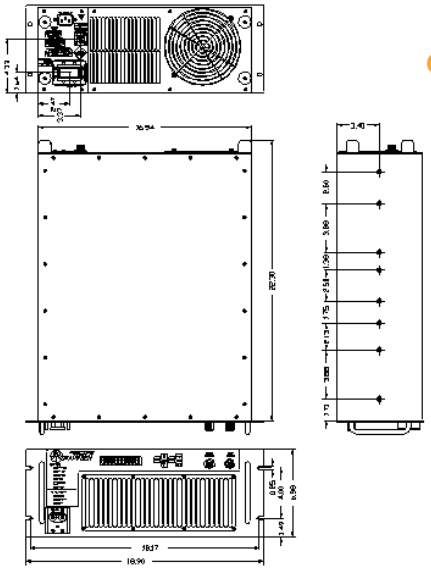
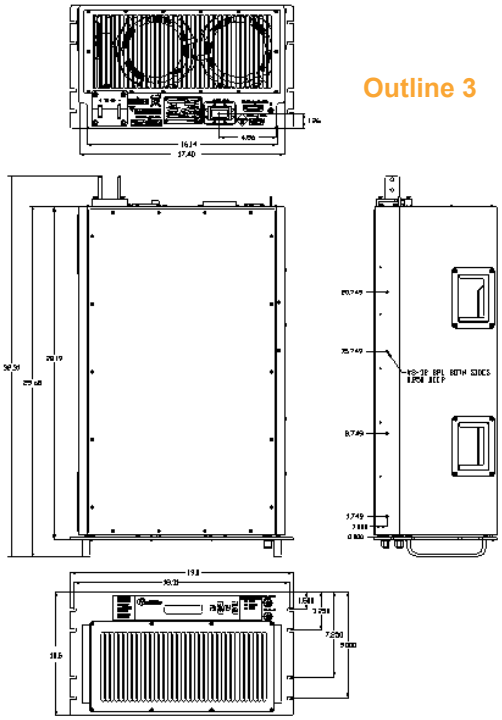
Outline 1



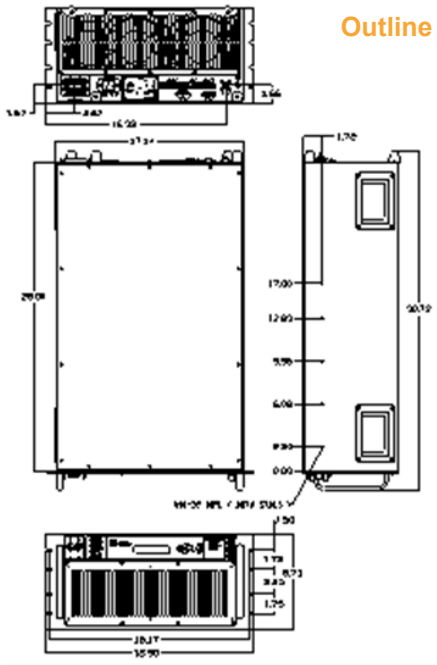
Outline 2



Outline 3



Outline 4



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