X-BAND HUB-MOUNT SSPA/SSPB
16W to 1000W
AWM-X® series

FEATURES

- Full range of output power from 16W to 800W in a single package
- 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, assembled and tested
- Infinite VSWR protection with automatic high reflected power shutdown
- Built-in Receive Reject 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)

ACCESSORIES

- Mounting kits
- External Receive Reject Filter
- Remote M&C panel with optional SNMP
- Handheld terminal

DESCRIPTION

Advantech AMT X-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 AWM-X series is available in output power from 16W to 800W. Higher power operation may be provided using external phase combining techniques offering an output power up to 1400W. Please contact factory for more details.

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

REDUNDANCY

Advantech AMT X-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 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)
X	7.9 – 8.4 GHz	950 – 1450	6.95	16 - 800

Table B

SSPA/SSPB (BUC) Line

Rated Power W	Psat dBm	P1dB dBm	Gain (dB) (minimum)		Power Consumption W (nominal)	Weight	Dimensions Outline
			SSPA	BUC			
16W	+42	+41	+52	+62	200	36 lbs (16 kg)	16.5”x10”x9” 420x254x229 mm Outline 1
20W	+43	+42	+53	+63	220		
25W	+44	+43	+54	+64	250		
30W	+45	+44	+55	+65	300		
40W	+46	+45	+56	+66	350		
50W	+47	+46	+57	+67	450		
60W	+48	+47	+58	+68	700	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	1000		
150W	+52	+51	+62	+72	1200		
200W	+53	+52	+63	+73	1400		
250W	+54	+53	+64	+74	1700	132 lbs (60kg)	35”x20”x15” 890x508x381 mm Outline 3
300W	+55	+54	+65	+75	2000		
350W	+55.5	+54.5	+65	+75	2200		
400W	+56	+55	+66	+76	2700		
500W	+57	+56	+67	+77	3500	220 lbs (100kg)	39”x18.5”x12.1” 990x470x307 mm Outline 4
600W	+58	+57	+68	+78	4000		
700W	+58.5	+57.5	+69	+79	4400		
800W	+59	+58	+70	+80	5400		
1000W	+60	+59	+70	+80	5700		

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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
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	-80 dBm/Hz max. in Transmit Band, -110 dBm/Hz max. in Receive Band (7.25 – 7.75 GHz)
Spurious at P1dB	-60 dBc max/ -55dBc max for BUC
Harmonics	-60 dBc at 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
Phase Noise /SSPB/	-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 200W output power 110/220 VAC auto-ranging 47-63 Hz, Option 48V DC 250W 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 CPR112contact AC line MS3102 type RS232 serial port MS3112E10-6P RS485/Ethernet MS3112 type
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

X-Band Hubmount SSPA/SSPB

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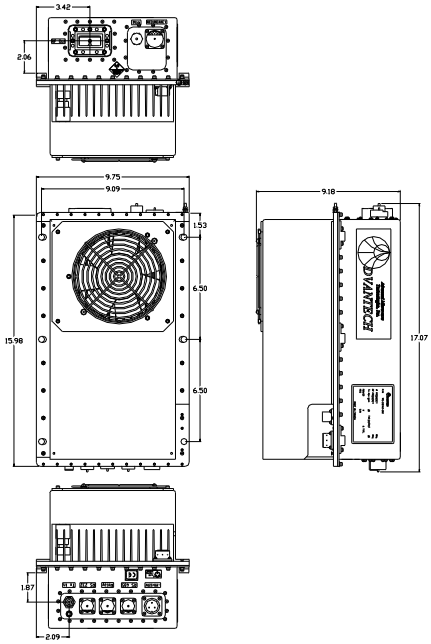
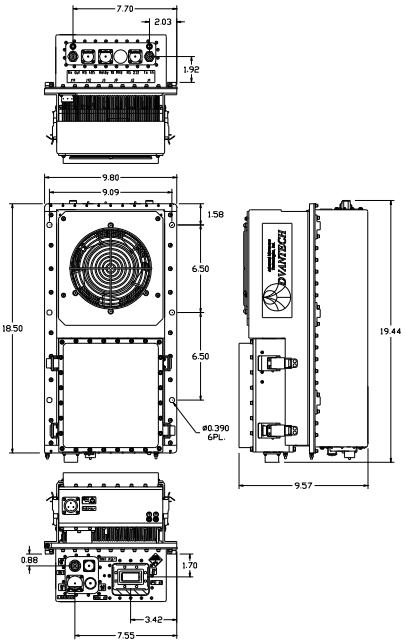
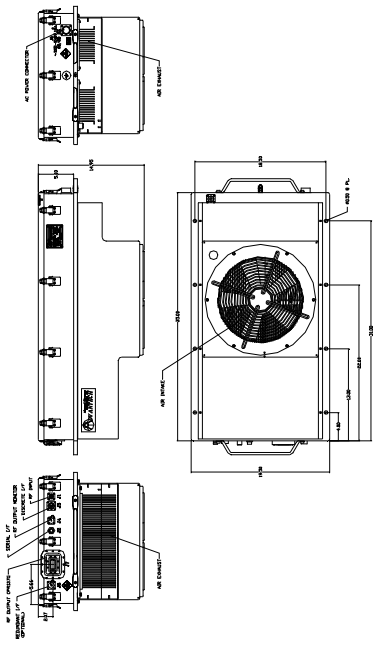


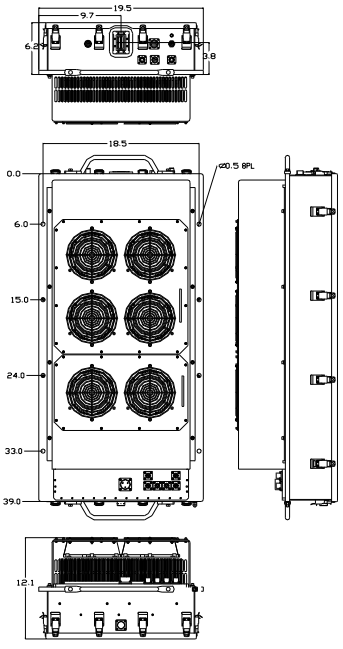
Outline 1



Outline 2 *(with field replaceable power supply)*



Outline 3



Outline 4

Specifications are subject to change without notice

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