



20W to 50W
AWMA-2000X™ series



Features

- Remote Monitor & Control
- High gain and linearity
- Output power up to 50W (see table A)
- Gain adjustment
- Output sample monitor port
- Temperature gain compensation
- Automatic over-temperature shutdown
- Automatic high reflected power shutdown
- Infinite VSWR protection
- CE Marking

Overview

The AWMA-X series are the outdoor solid-state power amplifiers (SSPAs), operating in X-Band frequency range. The amplifier is an integrated unit, complete with power supply and cooling system. Intended for outdoor operation, the AWMA-2000X™ is weatherproof. Built-in microprocessor controller provides the capability for serial port interfaces (RS485) for remote monitoring and control.

Advantech's SSPAs set the industry standard for linearity and operating efficiency. Built-in design features and assembly methods incorporated with efficient combining techniques result in the trouble-free operation of the amplifier.

Application

The SSPAs are designed for X-Band satellite up-link applications. They are mounted outdoors, near the hub of an antenna. The AWMA-X series are available in output power from 20W to 800W. For higher power Advantech provides phase-combined systems.

Other SSPAs are available for operation at other satellite frequency bands. With all the features of the AWMA-X, Advantech also offers a built-in converter.

Redundancy

With the addition of the appropriate waveguide and switch kit, the AWMA-2000X™ amplifiers can be easily converted for the operation in 1:1 redundant configuration without the use of any external controller. Full remote Monitor and Control of the redundant system is accessible via the serial port (RS-485).

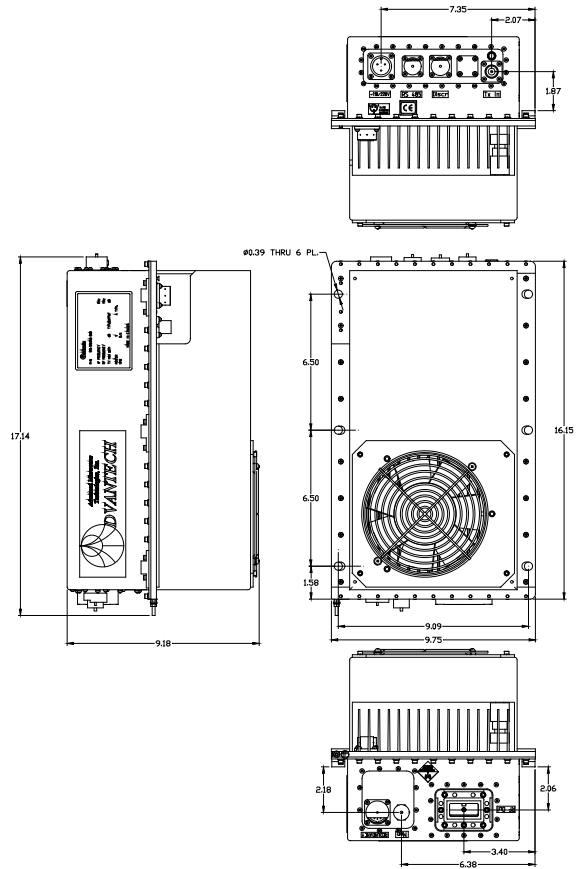


Table A

Band*	RF Band (GHz)	Output Power (W)
X	7.90 – 8.40 GHz	20 - 50

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

Options

- Integrated Block Up Converter
- Additional harmonic filter
- Extreme temperature operation
- Redundant system
- External Receive or Transmit Reject Filter

Accessories

- Redundancy Kit
- Mounting Frames
- Remote M&C panel (Ethernet port optional)

X-Band Hub-mount SSPA

Technical Specifications	20W	25W	30W	40W	50W	
Electrical Characteristics						
Availability in this series						
X	√	√	√	√	√	
Output power (P _{SAT})	+43 dBm	+44 dBm	+45 dBm	+46 dBm	+47 dBm	
Output power (P1dB) min	+42 dBm	+43 dBm	+44 dBm	+45 dBm	+46 dBm	
Power gain @ maximum gain setting	56 dB min					
Operating frequency range	See table A on front page					
Max input power without damage	+10 dBm					
Gain slope	0.6 dB max over 40 MHz					
Gain flatness over 500 MHz	±1.0 dB					
Gain variation over temperature	±1.5 dB over full operating temperature range					
Gain variation over 24 hours	±0.25 dB max @ constant temperature & drive level					
Gain adjustment range	20 dB (0.1 dB resolution)					
Input return loss	18 dB					
Output return loss	19 dB					
Noise power density	-70dBm/Hz max in TX band -110 dBm/Hz max 7.25 – 7.75 GHz RX band					
Spurious at rated power	-65 dBc, max					
Harmonics at rated power	-60 dBc, max					
AM/PM conversion at rated power	2.5%dB max. at P1dB, 1%dB max. at 3 dB back-off					
Third order IMD (2 tones 5 MHz apart)	-26 dBc max. 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: 1.0 nsec p-p max.					
Residual AM (F* - frequency in kHz)	0-10 kHz -45 dBc 10 kHz - 500 kHz -20 (1.25+log F*) dBc 500 kHz - 1 MHz -80 dBc					
Power Requirements						
AC input voltage	110/220 VAC auto ranging (47-63 Hz)					
Power consumption (nominal)	200W	250W	315W	370W	430W	
Mechanical Characteristics						
Dimensions (L x W x H)	16.15" x 9.75" x 9.16" (41.02 x 24.77 x 23.27 cm)					
Weight	25 Kg (55 lbs)					
Interfaces:	RF input Output sample port AC Line	Type N (Female) Type N (Female) MS3102R16-10P	Redundancy Discrete port RS-485	MS3112E14-12P MS3112E16-26P MS3112E10-6P	RF output: CPR112 Contact	
Environmental Conditions						
Temperature:	Operating Storage	-30°C to +55°C; Option: 1: -40°C to +55°C; 2: -50°C to +50°C -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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