



300W to 500W
AWMA-5000X™ series



Features

- Remote Monitor & Control
- High gain and linearity
- Output power up to 500W (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-5000X® 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-5000X™ 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).

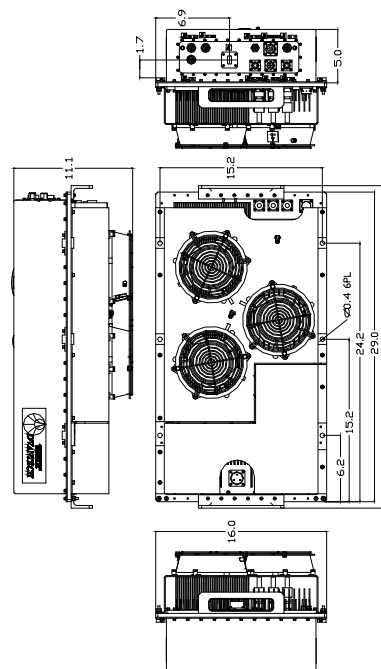


Table A

Band*	RF Band (GHz)	Output Power (W)
X	7.90 – 8.40 GHz	300 - 500

Options

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

Accessories

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

X-Band Hub-mount SSPA

Technical Specifications		300W	350W	400W	500W
Electrical Characteristics					
Availability in this series					
X		√	√	√	√
Output power (P _{SAT})		+55 dBm	+55.5 dBm	+56 dBm	+57 dBm
Output power (P1dB) min		+54 dBm	+54.5 dBm	+55 dBm	+56 dBm
Power gain @ maximum gain setting		65 dB min	66 dB min	66 dB min	67 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)		-25 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		220 VAC (47-63 Hz)			
Power consumption (nominal)		2000W	2200W	2700W	3500W
Mechanical Characteristics					
Dimensions (L x W x H)		30.20" x 15.20" x 11.10" (767 x 386.00 x 282 mm)			
Weight		117 lbs (53 kg)			
Interfaces:	RF input Output sample port AC Line	Type N (Female) Type N (Female) MS3102E20-19P	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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Ref.: PB-AWMA-X-300-500-13150