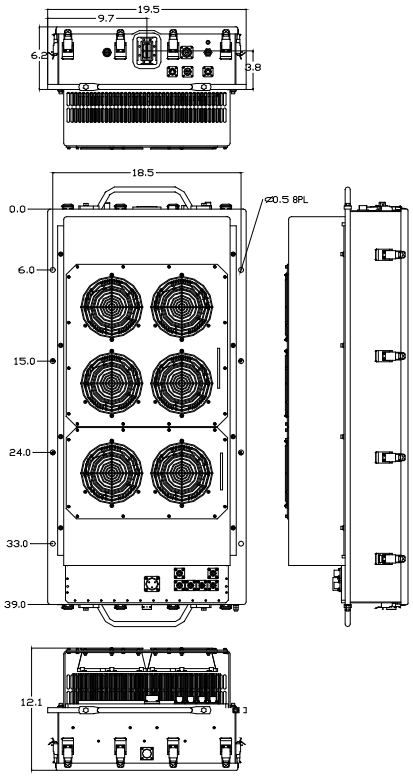
Ku-Band Hub-mount SSPA

300W to 500W
AWMA-5000K™ series



Features

- Remote Monitor & Control
- High gain and linearity
- Output power of 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-K series are the outdoor solid-state power amplifiers (SSPAs), operating in Ku-Band frequency range. The amplifier is an integrated unit, complete with power supply and cooling system. Intended for outdoor operation, the AWMA-5000K™ 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.

Table A

Band	RF Band (GHz)	Output Power (W)
KS	14.00 - 14.50	300-500
KX	13.75 - 14.50	300-500

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

Application

The SSPAs are designed for Ku-Band satellite up-link applications. They are mounted outdoors, near the hub of an antenna. The AWMA-K series are available in output power from 10W to 500W. 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-K, Advantech also offers a built-in converter.

Redundancy

With the addition of the appropriate waveguide and switch kit, the AWMA-5000K™ amplifiers can be easily converted for the operation in 1:1 redundant configuration with full remote monitor and control capability of the redundant system via serial interface. Single Monitor and Control interface is required to manage redundant system.

Options

- Integrated Block Up Converter
- Additional harmonic filter
- Extreme temperature operation
- Redundant system

Accessories

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

Ku-Band Hub-mount SSPA

Technical Specifications	300W	400W	500W
Availability in this series			
KS	√	√	√
KX	√	√	√
Output power (P_{SAT})	+55 dBm	+56 dBm	+57 dBm
Output power (P1dB) min.	+54 dBm	+55 dBm	+56 dBm
Power gain @ maximum gain setting	77 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 500MHz	±1.0 dB max		
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 min (0.1 dB resolution)		
Input return loss	18 dB min		
Output return loss	19 dB min		
Noise power density	-70 dBm/Hz max in TX band, -145 dBm/Hz max in 10.95 – 12.75 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 P_{1dB}) 1.0°/dB max, at 3 dB back-off		
Third order IMD (two equal tones 5 MHz apart)	-25 dBc max at 3 dB total back-off from rated P1dB (-23dBc max for 500W KX unit)		
Group delay	Linear: 0.02 nsec/MHz max. Parabolic: 0.003 nsec/MHz^2 max. Ripple: 1 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	* F = frequency in kHz	
Power Requirements			
AC input voltage	220 VAC (47-63 Hz)		
Power consumption, (nominal)	2500W	3500W	4000W
Mechanical Characteristics			
Dimensions (L x W x H)	39.00” x 18.50” x 12.10” (99.00 x 47.00 x 30.70 cm)		
Weight	80 kg (176 lbs)		
Interfaces: RF input Type N (Female) RF output WR-75 contact Output sample port Type N (Female)	Redundancy MS3112E14-12P Discrete port MS3112E16-26P RS-485 MS3112E10-6P	AC Line S3102E20-19P	
Environmental Conditions			
Temperature Operating Storage	-30°C to +55°C *Option 1: -40°C to +55°C; option 2: -50°C to +50°C* -55°C to +85°C		
Humidity	100%, condensing (2” rain/hour)		
Altitude	10,000’ AMSL, derated 2°C/1,000’ from AMSL		

NORTH AMERICA
USA
Tel: +1 703 659 9796
Fax: +1 703 635 2212
info.usa@advantechwireless.com

CANADA
Tel: +1 514 420 0045
Fax: +1 514 420 0073
info.canada@advantechwireless.com

EUROPE
UNITED KINGDOM
Tel: +44 1480 357 600
Fax: +44 1480 357 601
info.uk@advantechwireless.com

RUSSIA & CIS
Tel: +7 495 971 59 18
info.russia@advantechwireless.com

INDIA
Tel: +91 33 2415 5922
info.india@advantechwireless.com

SOUTH AMERICA
Tel: +1 514 420 0045
Fax: +1 514 420 0073
info.latam@advantechwireless.com

BRAZIL
Tel: +55 11 3054 5701
Fax: +55 11 3054 5701
info.brazil@advantechwireless.com

An ISO 9001 : 2008 Company

Ref.: PB-AWMA-Ku-300-500-13150