Advantech Wireless

50W to 125W
ARMA-1000® series

Features

- High gain and linearity
- Output power up to 125W
- Gain adjustment (Local & Remote)
- Remote Monitor & Control (Local & Remote)
- Output sample monitor port
- Temperature gain compensation
- Automatic over-temperature shutdown
- Automatic high reflected power shutdown
- Infinite VSWR protection
- Power factor correction
- CE Marking

Overview

The ARMA-1000S® series are the rack-mount solid-state power amplifiers (SSPAs), operating in S-Band frequency range. The amplifier is an integrated unit, complete with power supply and cooling system. Intended for indoor operation, the amplifiers are of compact size and occupy three rack-mounting spaces (3 RU - 5¼") of a standard 19-inch rack. Built-in microprocessor controller provides 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.
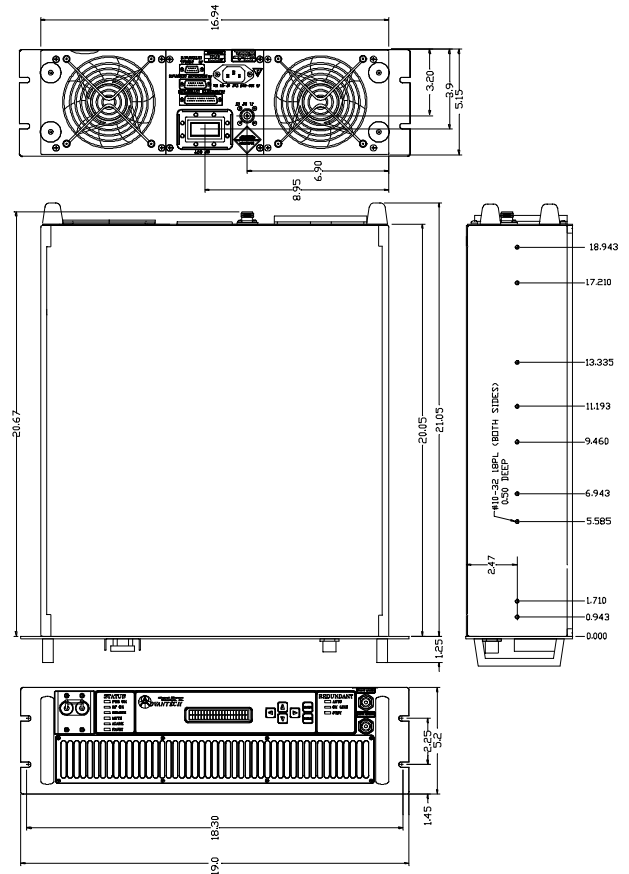
Application

The featured SSPAs are designed for S-Band satellite up-link applications. They are designed for 19-inch rack mounting in a protected environment. The ARMA-S series are available in output power from 50W to 1000W. 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 ARMA-S, Advantech also offers a built-in converter.

Redundancy

With the addition of the appropriate waveguide and switch kit, the ARMA-1000S® 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)
S	2.025 - 2.120	50 - 125

Options

- Integrated Block Up Converter
- RF input sample port
- Redundant system

Accessories

- Redundancy Kit
- Shelf slides
- Band pass filter
- Remote M&C panel (Ethernet port optional)

S-Band Rack-mount SSPA

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Technical Specifications		50W	60W	80W	100W	125W
Electrical Characteristics						
Availability in this series						
S		√	√	√	√	√
Output power (P$_{SAT}$)		+47 dBm	+48 dBm	+49 dBm	+50 dBm	+51 dBm
Output power (P1dB) min		+46 dBm	+47 dBm	+48 dBm	+49 dBm	+50 dBm
Power Gain @ max setting		65 dB min				
Frequency range		2.025 - 2.120 GHz				
Gain adjustment range		20 dB				
Max input power w/out damage		+10 dBm				
Gain flatness		±1.5 dB max over full band ±0.6 dB over 10 MHz at 25ºC				
Gain slope		0.015 dB/ MHz max.				
Gain variation over temperature		±1.5 dB over full operating range (temperature compensation mode)				
Gain variation over 24 hours		±0.25 dB max at constant temperature & drive level				
Input VSWR		1.3:1				
Output VSWR		1.4:1				
Noise Power Density		-100 dBm/Hz max in TX band				
Spurious at rated power		-65 dBc, max.				
Harmonics at rated power		-90 dBc, max				
AM/PM conversion at rated power		2.5°/dB max. at P1dB, 1°/dB max. at 3 dB back-off from rated P1dB				
Third order IMD (two equal tones 5 MHz apart)		-26 dBc max. at 3 dB total back-off from rated P1dB				
Group Delay		Linear: 0.01 nsec/MHz max. Parabolic: 0.002 nsec/MHz^2 max. Ripple: 0.5 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		90-264 VAC auto ranging (47-63 Hz)				
Power consumption (nom.) (W)		200	250	300	400	500
Mechanical Characteristics						
Panel Height		3 RU of 19" rack				
Weight		13 kg (29 lbs)				
Interfaces:	RF input RF output Output sample port	N-Type (F) N-Type (F) N-Type (F)	Redundancy RS-232 RS-485	D-sub 25S D-sub 9S D-sub 9S	Discrete port 9S AC Line	D-sub IEC 320 inlet
Environmental Conditions						
Temperature:	Operating Storage	0°C to +50°C -55°C to +85°C				
Humidity		5%-95%, non-condensing				
Altitude		10,000' AMSL, de-rated 2°C/1,000' from AMSL				