S-Band Rack-mount SSPA

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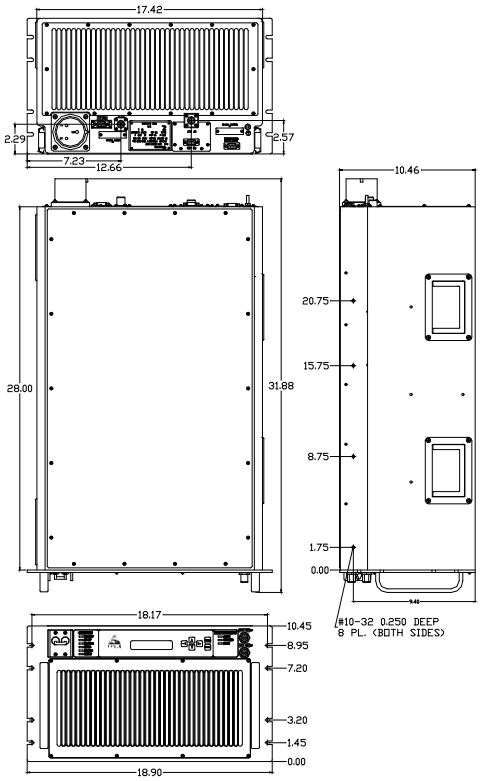
300W to 500W
ARMA-4000S™ series



Features

- High gain and linearity
- Output power up to 500W
- 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-4000S™ 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 six rack-mounting spaces (6 RU - 10½") of a standard 19-inch rack. Built-in microprocessor controller provides capability for serial port interfaces (RS485) for remote monitoring and control.

Advantech Wireless'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 1250W. 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 Wireless also offers a built-in converter.

Redundancy

With the addition of the appropriate waveguide and switch kit, the ARMA-4000S® 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	600 - 1250

Options

- 1:1 or 1:2 Redundant configuration
- Phase combined systems for higher power
- L-Band input (SSPB/BUC operation)
- SNMP interface

Accesories

- Mounting slides
- Remote M&C panel

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Technical Specifications	300W	350W	400W	500W
Electrical Characteristics				
Availability in this series				
S	√	√	√	√
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 @ max setting	70 dB min			
Frequency range	2.025 GHz - 2.120 GHz			
Gain adjustment range	20 dB			
Max input power w/out damage	+10 dBm			
Gain flatness	1.5 dB p-p max over full band 0.5 dB p-p over 10 MHz at 25°C			
Gain slope	0.06 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	-80 dBm/Hz max in TX band -85 dBm/Hz max in RX band (without optional filter)			
Spurious at rated power	-65 dBc, max.			
Harmonics at rated power	-45 dBc, max			
AM/PM conversion	2.5°/dB max. at P_{1dB} 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	180-264 VAC auto ranging (47-63 Hz)			
Power consumption (nom.) (W)	1500	1600	1700	1900
Mechanical Characteristics				
Panel Height	6 RU of 19" rack			
Weight	65kg (143 lbs)			
Interfaces:	RF input N-Type (F) RF output N-Type (F) Output sample port N-Type (F)	RedundancyD-sub 25S RS-232D-sub 9S RS-485D-sub 9S	Discrete port D-sub 9S AC Line 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			

Ref.: PB-ARMA-S-300-500-19114