![Advantech - wireless broadband culture]

250W to 400W
ARMA-4000S® series

Features

- High gain and linearity
- Output power up to 400W
- 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'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-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).
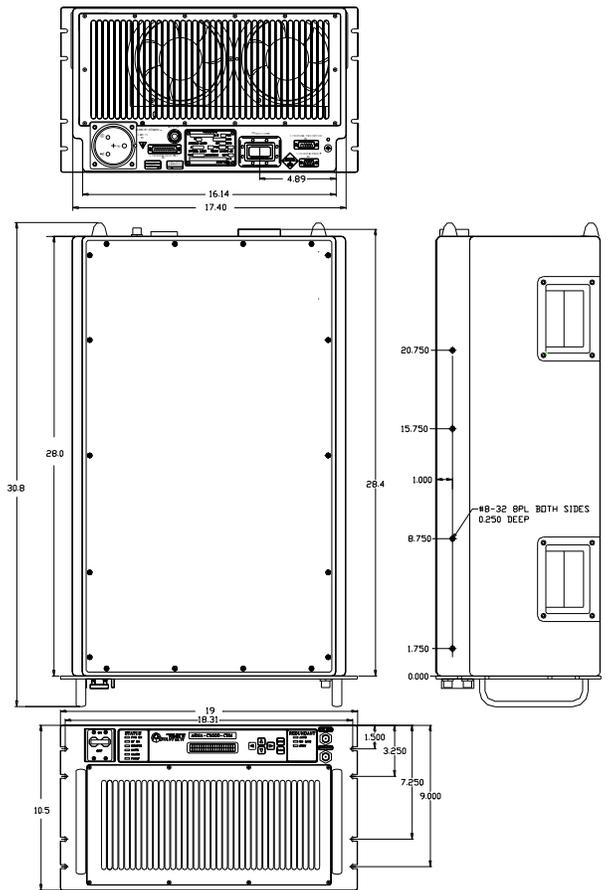
Table A

Band	RF Band (GHz)	Output Power (W)
S	2.025 - 2.120	250 - 400

Options

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

Accessories

- Mounting slides
- Remote M&C panel

S-Band Rack-mount SSPA

Technical Specifications		250W	300W	350W	400W
Electrical Characteristics					
Availability in this series					
S		√	√	√	√
Output power (P_{SAT})		+54 dBm	+55 dBm	+55.5 dBm	+56 dBm
Output power (P1dB) min		+53 dBm	+54 dBm	+54.5 dBm	+55 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 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		-90 dBm/Hz max in TX band			
Spurious at rated power		-65 dBc, max.			
Harmonics at rated power		-90 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)		1400	1500	1600	1700
Mechanical Characteristics					
Panel Height		6 RU of 19" rack			
Weight		65kg (143 lbs)			
Interfaces:	RF input RF output Output sample port	N-Type (F) N-Type (F) N-Type (F)	Redundancy D-sub 25S RS-232 D-sub 9S RS-485 D-sub 9S	Discrete port AC Line	D-sub 9S 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			