

S-Band Rack-mount LDMOS SSPA

600W to 1250W
ARMA-5000S™ series

Features

- High gain and linearity
- Output power up to 1250W
- M&C RS-232/485/Ethernet/SNMP
- Gain adjustment (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-5000S™ 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 seven rack-mounting spaces (7 RU) 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 600W 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 also offers a built-in converter.

Redundancy

With the addition of the appropriate waveguide and switch kit, the ARMA-5000S™ 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).

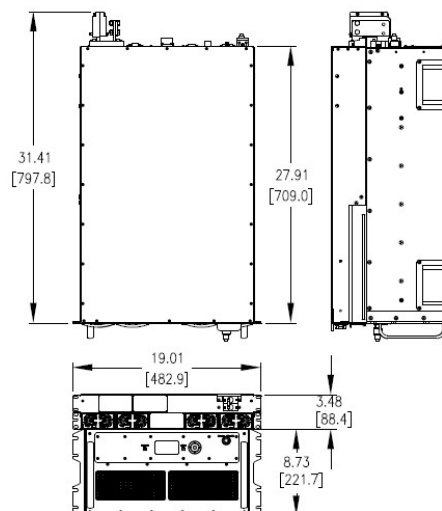
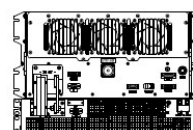


Table A

Band	RF Band (GHz)	Output Power (W)
S	2.025 - 2.120	600 - 1250

Options

- Integrated Block Up Converter
- RF input sample port
- 1:1 or 1:2 Redundant system
- Remote M&C panel

S-Band Rack-mount LDMOS SSPA

Technical Specifications		600W		700W		800W		1000W		1250W	
Electrical Characteristics											
Availability in this series											
S		√		√		√		√		√	
Output power (P _{SAT})		+58 dBm		+58.5 dBm		+59 dBm		+60 dBm		+61 dBm	
Output power (P1dB) min		+57 dBm		+57.5 dBm		+58 dBm		+59 dBm		+60 dBm	
Gain at maximum setting		70 dB min									
Frequency range		2.025 - 2.120 GHz									
Gain adjustment range		20 dB									
Max input power without damage		+10 dBm with maximum attenuation (minimum gain) setting									
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		±0.5 dB max at constant temperature & drive level									
Input VSWR		1.3: 1									
Output VSWR		1.3: 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		3.5°/dB max at P _{1dB} 1°/dB max at 3 dB total back-off from rated P1dB									
Third order IMD (two equal tones 5 MHz apart)		-24 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 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											
DC input voltage		180-264 VAC (47-63 Hz)									
Power consumption, (nominal)		2500W		2700W		3000W		3200W		3500W	
Mechanical Characteristics											
Dimensions (L x W x H)		7 RU of 19" rack (5 RU amplifier + 2 RU power supply unit)									
Weight		140 lbs (64 kg) SSPA plus 60 lbs (27 kg) Power Supply									
Interfaces:	RF input N-Type (F) RF output 7-16 DIN (F) Output sample port N-Type (F)	Redundancy RS-232/Discrete port RS-485		D-sub 25S D-sub 15S D-sub 9S		Ethernet RJ45 DC Line AC Line		RJ45 2-pole terminal board IEC 320 inlet			
Environmental Conditions											
Temperature		Operating		0°C to +50°C							
		Storage		-55°C to +85°C							
Humidity		5% to 95% non-condensing									
Altitude		10,000' AMSL, derated 2°C/1,000' from AMSL									

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