

## S-Band Rack-mount SSPA



600W to 1250W ARMA-5000S™ series



### **Features**

- High gain and linearity
- Output power up to 1250W
- 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-5000S<sup>™</sup> 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 nine rack-mounting spaces (9 RU - 15¾") 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 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<sup>™</sup> 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).

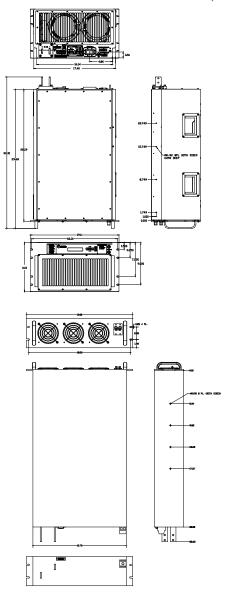


Table A

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

### **Options**

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

### **Accesories**

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



## **S-Band Rack-mount SSPA**

Output power (P1dB) min         +57 dBm         +58 dBm         +59 dBm         +60 dt           Gain at maximum setting         70 dB min         70 dB min         Frequency range         2.025 - 2.120 GHz         20 dB         30 dB min         40 d	Technical Specifications		600W	700W	800W	1000W	1250W		
S	Electrical C	haracteristics							
Dutput power (P <sub>Sa1</sub> )	Availability in	this series							
Output power (P1dB) min		S	√	√	√	√	√		
Gain at maximum setting	Output power (P <sub>SAT</sub> )		+58 dBm	+58.5 dBm	+59 dBm	+60 dBm	+61 dBm		
Frequency range			+57 dBm	+57.5 dBm	+58 dBm	+59 dBm	+60 dBm		
Gain adjustment range         20 dB           Max input power without damage         +10 dBm           Gain flatness         0.5 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 of the stand of the s			70 dB min						
Max input power without damage			2.025 - 2.120 GHz						
Sain flatness			20 dB						
Gain Names's 0.5 dB p-p over 10 MHz at 25°C  Gain Slope 0.06 dB/MHz, max	, ,		+10 dBm						
Gain variation over temperature Gain variation over 24 hours 40.5 dB max at constant temperature & drive level  Input VSWR  1.3: 1  -80 dBm/Hz max in TX band -85 dBm/Hz max in TX band (without optional filter)  Spurious at rated power Harmonics at rated power Blob back-off from rated P1dB  10									
Sain variation over 24 hours   1.3: 1	Gain slope								
Input VSWR	·								
Noise Power Density									
All	Input VSWR								
Sour	·		1.3: 1						
Spurious at rated power   -65 dBc max	Noise Power Density								
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  Linear: 0.02 nsec/MHz max. Parabolic: 0.003 nsec/MHz² max. Residual AM (F* - frequency in kHz)  10 ch NHz - 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 3200W 3500W  Mechanical Characteristics  Dimensions (L x W x H) 9 RU of 19" rack (6 RU amplifier + 3 RU power supply unit)  Weight N-Type (F) RF output 7-16 DIN (F) RF-232 D-sub 95 DC Line 2-pole terminal bo Output sample port N-Type (F) RF-232 D-sub 95 D-sub 95 DC Line 2-pole terminal bo AC Line IEC 320 inlet  Environmental Conditions	Spurious at r	ated power	·						
1°/dB max at 3 dB total back-off from rated P1dB   1°/dB max at 2 db fall max   1°/dB max at 3 dB total back-off from rated P1dB   1°/dB max at 2 db fall max   1°/dB max at 2 db fall max   1°/dB max at 2 db fall max   1°/dB ma	Harmonics at	t rated power	-45 dBc max						
Third order IMD (two equal tones 5 MHz apart)  -24 dBc max at 3 dB total back-off from rated P1dB  Linear: 0.02 nsec/MHz max. Parabolic: 0.003 nsec/MHz² max. Ripple: 1 nsec p-p max.  Residual AM									
Linear: 0.02 nsec/MHz max.   Parabolic: 0.003 nsec/MHz max.   Residual AM   Ripple: 1 nsec p-p max.   Parabolic: 0.003 nsec/MHz² max.   Residual AM   O-10 kHz									
Residual AM			Parabolic: 0.003 nsec/MHz² max.						
Power Requirements  DC input voltage	Residual AM								
Power Requirements  DC input voltage	(F* - frequency in kHz)		_						
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) 9 RU of 19" rack (6 RU amplifier + 3 RU power supply unit)  Weight 80 kg (176 lbs.)  Interfaces: RF input N-Type (F) Redundancy D-sub 25S Discrete port D-sub 9S PAC Line 2-pole terminal boom output sample port N-Type (F) RS-485 D-sub 9S AC Line IEC 320 inlet  Environmental Conditions  Temperature Operating Storage 0°C to +50°C -55°C to +85°C	Power Regu	irements	300 KHZ 1 WH	12 00 dBC					
Power consumption, (nominal)  2500W  2700W  3000W  3200W  3200W  3500C  Mechanical Characteristics  Dimensions (L x W x H)  9 RU of 19" rack (6 RU amplifier + 3 RU power supply unit)  Weight  80 kg (176 lbs.)  Interfaces:  RF input  RF output  7-16 DIN (F)  Output sample port  N-Type (F)  RS-232  D-sub 9S  DC Line  2-pole terminal bo  AC Line  IEC 320 inlet  Environmental Conditions  Temperature  Operating  Storage  O°C to +50°C  -55°C to +85°C	·		180-264 VAC (47-63 Hz)						
Mechanical Characteristics  Dimensions (L x W x H)  9 RU of 19" rack (6 RU amplifier + 3 RU power supply unit)  Weight  80 kg (176 lbs.)  Interfaces: RF input RF output 7-16 DIN (F) Output sample port N-Type (F) RS-485  D-sub 9S DC Line 2-pole terminal bo AC Line IEC 320 inlet  Environmental Conditions  Temperature Operating Storage 0°C to +50°C -55°C to +85°C	-				3000W	3200W	3500W		
Dimensions (L x W x H)  Weight  RF input RF output 7-16 DIN (F) Output sample port N-Type (F) Redundancy RS-232 D-sub 9S DC Line RS-485 D-sub 9S AC Line IEC 320 inlet  Environmental Conditions  Temperature Operating Storage O°C to +50°C Storage  PRO of 19" rack (6 RU amplifier + 3 RU power supply unit)  Redundancy D-sub 25S D-sub 9S DC Line 2-pole terminal bo AC Line IEC 320 inlet		•							
Weight  RF input N-Type (F) Redundancy D-sub 25S Discrete port D-sub 9S  RF output 7-16 DIN (F) RS-232 D-sub 9S DC Line 2-pole terminal bo Output sample port N-Type (F) RS-485 D-sub 9S AC Line IEC 320 inlet  Environmental Conditions  Temperature Operating O°C to +50°C Storage -55°C to +85°C			9 RU of 19" ra	ck (6 RU amplifier	+ 3 RU powers	supply unit)			
Interfaces: RF input N-Type (F) Redundancy D-sub 25S Discrete port D-sub 9S RF output 7-16 DIN (F) RS-232 D-sub 9S DC Line 2-pole terminal bo Output sample port N-Type (F) RS-485 D-sub 9S AC Line IEC 320 inlet    Environmental Conditions									
Environmental Conditions  Temperature Operating 0°C to +50°C Storage -55°C to +85°C		RF output 7-16 DIN (F)	RS-232 D-sub 9S DC Line 2-pole terminal bo		rminal board				
Temperature Operating 0°C to +50°C Storage -55°C to +85°C	Environmen		KS-485	D-Sub 95	F	AC LINE IEC 320	iiiiet		
Storage -55°C to +85°C			0°C to ±50°C						
<u> </u>									
HUMIDITY 5% to 95% non-condensing	Humidity		5% to 95% non-condensing						
-	-		10,000' AMSL, derated 2°C/1,000' from AMSL						

Ref.: PB-ARMA-S-600-1250-19114

