

16W to 50W
ARMA-X® series



Features

- High gain and linearity
- Output power up to 50W (see table A)
- 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-X® series are the rack-mount solid-state power amplifiers (SSPAs), operating in X-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 X-Band satellite up-link applications. They are designed for 19-inch rack mounting in a protected environment. The ARMA-X series are available in output power from 16W to 800W. 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-X, Advantech also offers a built-in converter.

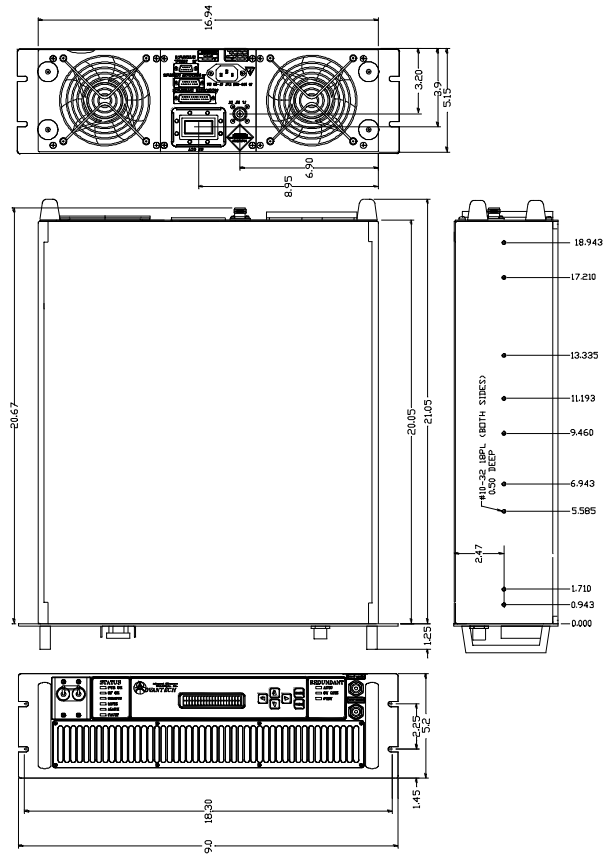


Table A

Band*	RF Band (GHz)	Output Power (W)
X	7.90 – 8.40 GHz	16 - 50

*Other frequency sub-bands are available. Please consult factory.

Options

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

Accessories

- Redundancy Kit
- Shelf slides
- Remote M&C panel (Ethernet port optional)
- Receive Reject Filter

Redundancy

With the addition of the appropriate waveguide and switch kit, the ARMA-X® amplifiers can be easily converted for the operation in 1:1 redundant configuration with full remote monitor and control capability of the redundant system via serial interface.

X-Band Rack-mount SSPA

Technical Specifications	16W	20W	25W	30W	40W	50W
Electrical Characteristics						
Availability in this series						
X	√	√	√	√	√	√
Output power (Psat) (dBm)	+42	+43	+44	+45	+46	+47
Output power (P1dB) (dBm)	+41	+42	+43	+44	+45	+46
Power gain at maximum gain setting	56 dB min					
Operating frequency range	7.90 – 8.40 GHz					
Max input power without damage	+10 dBm					
Gain slope	0.6 dB max over 40 MHz					
Gain flatness over 500 MHz	±1.0 dB max					
Gain variation over temperature	±1.5 dB over full operating temperature range					
Gain variation over 24 hours	±0.25 dB max at constant temperature & drive level					
Gain adjustment range	20 dB min. (0.1 dB resolution)					
Input return loss	18 dB					
Output return loss	19 dB					
Noise power density	-70dBm/Hz max in TX band -110 dBm/Hz max 7.25 – 7.75 GHz RX band					
Spurious at rated power	-65 dBc, max					
Harmonics at rated power	-60 dBc, max					
AM/PM conversion at rated power	2.5 %dB max. at P1dB, 1 %dB max. at 3 dB back-off					
Third order IMD (2 tones 5 MHz apart)	-25 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: 1.0 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 (nominal)		250W	315W	370W	430 W	510 W
Mechanical Characteristics						
Panel height	3 RU of 19" rack					
Weight	13 kg (29lbs)					
Interfaces:	RF input RF output	N-Type (F) CPR-112 contact	Redundancy RS-485 Discrete port	D-sub 15S D-sub 9S D-sub 25S	AC Line Output sample port	IEC 320 inlet N-Type (F)
Environmental Conditions						
Operating temperature:	0°C to +50°C					
Humidity	5%-95%, non-condensing					
Altitude	10,000' AMSL, de-rated 2°C/1,000' from AMSL					

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