

200W/250W/300W SH-Band Hub-mount SSPA

Advanced Solid State GaN Technology

Phoenix Line

AWMAg-SH™ Tracker series

**Solid State Technology for Satellite TT&C
and Deep Space Communication**



Features

- Full range of output power up to 300W in a single package
- High linearity
- Unconditionally stable at any load VSWR
- Redundant ready with no external controller
- M&C capability via RS485
- Infinite VSWR protection with automatic high reflected power shutdown
- Forward and Reflected power monitoring
- Output Sample Port
- Redundant Systems shipped fully tested, assembled and tested
- Weatherproof construction

Overview

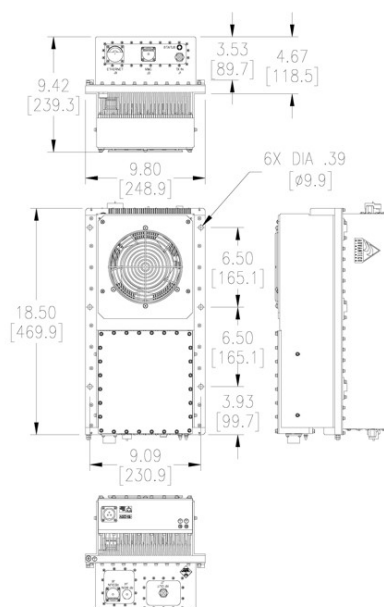
Advantech Wireless SH-Band line of Amplifiers is intended for satellite TT&C and Deep Space Communication. The design of these units is based on Advantech Wireless proven techniques resulting in high linearity and operating efficiency. Conservative thermal design contributes to the high MTBF for these units. Full monitor and control is provided via the serial or Ethernet ports. Special features such as automatic over-temperature shutdown and high-reflected power protection contribute to a trouble-free operation.

This package is available for 200W/250W/300W. Higher power operation may be provided using external phase combining techniques. Please contact factory for more details.

The full set of accessories made available will facilitate the integration of these units in any application.

Options

- 1:1 or 1:2 Redundant configuration
- Phase combined systems for higher power
- Ethernet Port



Accessories

- Mounting kits
- Remote M&C panel

Redundancy

Advantech Wireless SH-Band line of Amplifiers may be configured to operate in 1:1 or 1:2 redundancy mode. No extra controller is required for the redundancy operation as the built-in controller in each unit provides this function. For 1:1 redundancy operation, in addition to the two units (operating and standby) a special redundancy kit is required. For 1:2 redundancy operation another redundancy kit is needed in addition to the three units. The kits include the switches, terminations, splitter, interconnecting cable assemblies and mounting frames.

All redundancy systems are delivered fully assembled, integrated, and tested.

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Technical Specifications

General Specifications			
Operating Frequency	2.2 – 2.4GHz		
Saturated Output Power	200W	250W	300W
P _{SAT} , typ.	+53 dBm	+54 dBm	+54.8 dBm
P _{LINEAR} , min.	+49 dBm	+50 dBm	+51 dBm
Gain	65 dB min.		
Gain adjustment range	20 dB in 0.1 dB steps		
Gain flatness	2.5 dB p-p max over full band 0.5 dB p-p over any 10 MHz		
Gain slope	0.06 dB/ MHz max.		
Gain variation over temperature	± 1.5 dB max		
Input Impedance and VSWR	50 Ω	1.5:1	
Output Impedance and VSWR	50 Ω	1.3:1	
Noise power density	-80 dBm/Hz max in TX band		
Spurious at Plin	-60 dBc max		
Harmonics	-60 dBc at Plin		
AM/PM conversion	<1.0º/dB P _{LINEAR} , <2.5º/dB at Psat		
Third order IMD (2- tones 5MHz apart)	-25 dBc at Plin		
Group delay	Linear	0.02 nsec/MHz max	
	Parabolic	0.003 nsec/MHz² max	
	Ripple	1 nsec p-p max	
Residual AM Noise	0 – 10 kHz-45 dBc		
	10 kHz – 500 kHz	-20 (1.25 + log F) dBc F = Frequency in kHz	
	500 kHz – 1 MHz	-80 dBc	
Residual Phase Noise, Continuous	-60 dBc/Hz at 10Hz		
	-115 dBc/Hz at 100 KHz		
	-90 dBc/Hz at 100Hz		
	-125 dBc/Hz at 1 MHz		
	-100 dBc/Hz at 1000Hz		
Input voltage	-130 dBc/Hz at 10 MHz		
	- 110 dBc/Hz at 10 kHz		
Power consumption W (nominal)	- 130 dBc/Hz at 100 MHz		
	110/220 Auto ranging		
Weight & Dimensions	1400W	1450W	1500W
Interfaces	18.5"x9.8"x9.42" (470x249x239 mm), 50.7 lbs (23 kg)		
	Input (L/S-Band)	N type female	
	Output Sample Port	N type female	
	RF output	N type female	
	AC line	MS3102 type	
	M&C	MS3112E14-19P	
Environmental	Ethernet port	RJ45 outdoor	
Environmental	Temperature	Operating -30°C to +55 °C	Option 1 -40°C to +55 °C
		Storage -55°C to +85 °C	
	Humidity	100% condensing	
	Altitude	10,000' AMSL, derated by 2 °C/1000' from AMSL	

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