

High Power Hub Mount Solid-state Power Amplifiers (SSPAs)



The high power SSPA series is primarily designed for use in satellite communications applications. The operating frequency band of Ku Band SSPA is in the standard 14.0GHz to 14.5GHz, and 5.85GHz to 6.42GHz in the standard C Band. Other frequency ranges are also available to customer specification.

These units are characterized by high linearity and high power efficiency, as well as excellent thermal efficiency and dependability over the full operating temperature range.

Key features

- Operating temperature range of -40°C to +55°C
- Redundancy ready
- Light weight and compact – highest power density on the market
- High thermal dissipation efficiency resulting in “Best in Class” Mean Time Before Failure (60-120K hours)
- RF monitor Output power
- Over temperature shutdown
- Monitor & Control Interface
 - Serial and Analog M&C interfaces
 - Alarms: Voltage/Current/Temperature/Summary
 - Control: Mute/Gain
 - Monitoring: Forward
 - RF power detection
 - Local Status Indicators – LED
 - Transmit/Fault/Standby
 - Power On
 - RF Sample Port



High Power Hub Mount Solid-state Power Amplifiers (cont.)

Mechanical Features

- Fans are environmentally protected (IP54 compliant)
- Fans are field replaceable
- External shroud helps reduce thermal heat from direct sun
- Light weight
- Smallest size

Options

- Frequency range options available
- Serial Remote Interfaces (RS422/RS232)
- Remote Control Unit
- 1:1 to 1:N Redundancy System
- 1:1 Compact Redundancy Combining Assembly
- Extended Warranty
- RF Monitor for input power
- Monitoring of RF forward & reflected power
- Constant Power
- External Fuse

KU Band SSPA 20W - 250W

Part No.	Output Power @ PSAT Nom (Watts/dBm)	Output Power @ P1dB min (Watts/dBm)	Weight (kg)	Dimensions L,W,H (inches)	Power Consumption For Booster (Watts)
WPA-14014542-60-ES-00	20W/43	16W/42	19	17x8x12	250
WPA-14014543-60-ES-00	25W/44	20W/43	19	17x8x12	300
WPA-14014544-60-ES-00	30W/45	25W/44	19	17x8x12	350
WPA-14014545-60-ES-00	40W/46	30W/45	19	17x8x12	400
WPA-14014546-60-ES-00	50W/47	40W/46	19	17x8x12	600
WPA-14014547-60-ES-00	60W/48	50W/47	19	17x8x12	700
WPA-14014548-60-ES-00	100W/50 – 220 VAC only	80W/49	33	21x15x10	1200
WPA-14014549-60-ES-00	125W/51 – 220 VAC only	100W/50	33	21x15x10	1300
WPA-14014550-60-ES-00	150W/52 – 220 VAC only	125W/50.7	33	21x15x10	1400
WPA-14014551-60-ES-00	200W/53 – 220 VAC only	150W/52	50	21x15x14	2000
WPA-14014553-60-ES-00	250W/54 – 220 VAC only	200W/53	50	21x15x14	2300

High Power Hub Mount Solid-state Power Amplifiers (cont.)

Electrical Characteristics	Specifications (typical)	
	KU Band SSPA 20W-250W	C Band SSPA 100W-250W
Frequency range	14.0 – 14.5 GHz (13.75 – 14.5 GHz available)	5.850 – 6.425 GHz (other options available)
Gain	70dB nominal	
Max. input power without damage	+ 10 dBm	
Gain Flatness over full band	± 1.0 dB max.	
Gain slope	± 0.3 dB/40 MHz max.	
Gain variation	± 1.0 dB over operating temperature range	
Gain Adjustment Range	20 dB typical with 0.1 dB step size	
Input & Output Return Loss	18 dB min.	
Noise Figure at maximum gain	10 dB nominal	
Spurious at P1dB	- 65 dBc max.	
Harmonics at P1dB – 3dB	- 50 dBc max.	
AM/PM conversion	2.0 degrees/ dB max (@ P1dB)	
Third order IMD (2 equal tones 5MHz apart)	- 25 dBc max. @P1dB – 3 dB	
Prime Power Voltage	90 – 265 VAC (high power models 190 – 265)	
Prime Power Frequency	47 – 63 Hz	

Mechanical Characteristics

Interfaces

RF input	Type N (Female)	
RF output	WR75 Cover Grooved (other options available)	CPR 137 Cover Grooved (other options available)
RF output sample	Type N (Female)	
RF input sample	Type N (Female)	
M&C – RS485 & Analogue	Military Specification Weatherized Connector	
Power	Military Specification Weatherized Connector	

C Band SSPA 100W-250W

Part No.	Output Power @ PSAT Nom (Watts/dBm)	Output Power @ P1dB min (Watts/dBm)	Weight (kg)	Dimen- sions L, W, H (inches)	Power Consumption For Booster (Watts)
WPA-596449-70-ES-00	100W/50	80/49	15	22x10x12	600
WPA-596450-70-ES-00	125W/51	100/50	15	22x10x12	800
WPA-596451-70-ES-00	150W/52	125/51	15	22x10x12	900
WPA-596452-70-ES-00	200W/53	150/52	15	22x10x12	1000
WPA-596453-70-ES-00	250W/54	200/53	15	22x10x12	1100