

# HUB-MOUNTED SOLID STATE POWER AMPLIFIER



SATELLITE COMMUNICATIONS

## HIGH LINEARITY THAT JUST WON'T QUIT

**Mitec, a global provider of RF components and systems to telecom and satcom markets, is cranking up the power.**

Choose one of our high power hub mount solid-state power amplifiers for C Band or Ku Band and you'll receive a value priced solution, when you need it, where you need it, with everything you need. The fact is Mitec has been building and supporting carrier-grade solutions since 1973. Fast delivery, full documentation, immediate product support, engineered solutions—that's Mitec.

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SALES@MITECTELECOM.COM | WWW.MITECTELECOM.COM | 1-514-694-9000





## HIGH POWER HUB MOUNT SOLID-STATE POWER AMPLIFIERS (SSPAs)

### **KU BAND SSPA 80W-250W** **C BAND SSPA 50W-500W**

Mitec's products have more than a quarter century of proven field experience, demonstrating their unmatched dependability and reliability day after day. This level of dependability can be found in our line of high power hub mount solid-state power amplifiers (SSPAs). Uniquely designed to be a high quality, but cost effective solution for the satellite communications market, this line of high power hub mount SSPAs sets the standard for the satellite industry.

The Mitec series of high power SSPAs are designed for use primarily 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.



#### **KU BAND SSPA 80W-250W**

The operating frequency band of KU BAND SSPA is in standard Ku Band from 14.0 to 14.5 GHz (13.75 - 14.5 GHz available)



#### **C BAND SSPA 50W-500W**

The operating frequency band of C BAND SSPA is in standard C Band from 5.85 to 6.42 GHz (6.4 - 6.7 GHz and 6.7 - 7.0 GHz available)



## 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
- RF monitor Output power
- Over temperature shutdown
- High Mean Time Before Failure (MTBF 60 - 120 K hours)
- 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



## 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 and 1:2 Redundancy Systems
- 1:1 Compact Redundancy Combining Assembly
- Extended Warranty
- RF Monitor for input power
- Monitoring of RF forward & reflected power

# HUB-MOUNTED SSPAs SPECIFICATIONS

SPECIFICATIONS (TYPICAL)	KU BAND SSPA 80W-250W	C BAND SSPA 50W-500W
Frequency range	14.0 – 14.5 GHz (13.75 – 14.5 GHz available)	5.850 – 6.425 GHz (other options available)
Gain	70dB nominal	70dB nominal
Max. input power without damage	0 dBm	0 dBm
Gain Flatness over full band	± 1.0 dB max.	± 1.0 dB max.
Gain slope	± 0.3 dB/40 MHz max.	± 0.3 dB/40 MHz max.
Gain variation	± 1.0 dB over operating temperature range	± 1.0 dB over operating temperature range
Gain Adjustment Range	20 dB typical with 0.1 dB step size	20 dB typical with 0.1 dB step size
Input and Output Return Loss	18 dB min.	18 dB min.
Noise Figure at maximum gain	10 dB nominal	10 dB nominal
Spurious at P1dB	- 60 dBc max.	- 60 dBc max.
Harmonics at P1dB – 3dB	- 50 dBc max.	- 50 dBc max.
AM/PM conversion	2.0 degrees/dB max (@ P1dB)	2.0 degrees/dB max (@ P1dB)
Third order IMD (2 equal tones 5MHz apart)	- 25 dBc max. @P1dB – 3 dB	- 25 dBc max. @P1dB – 3 dB
Prime Power Voltage	90 – 265 VAC (high power models 190 – 265)	90 – 265 VAC (high power models 190 – 265)
Prime Power Frequency	47 – 63 Hz	47 – 63 Hz

## MECHANICAL CHARACTERISTICS

Interfaces:	C-Band	Ku-Band
	RF input N-type (Female)	
RF output	CPR 137 G (other options available)	WR 75 Cover Grooved
M&C–Analogue pr RS-485	Circular Bayonet Lock Connectors MS31 type	
Power	Circular Bayonet Lock Connectors MS31 type	

## KU BAND SSPA 80W-250W ORDERING INFORMATION

MODEL #	OUTPUT POWER @ PSAT NOM. (WATTS)	OUTPUT POWER @ P1DB MIN. (dBm)	WEIGHT (KG/LBS)	DIMENSIONS (INCHES)	POWER CONSUMPTION (WATTS)
WPA-14014548-75-ES-50	80	48	25/55	17 x 12 x 11	1000
WPA-14014549-75-ES-50	100	49	25/55	17 x 12 x 11	1200
WPA-14014550-75-ES-35	125	50	33/72	21 x 15 x 10	1300
WPA-14014551-75-ES-35	150	51	33/72	21 x 15 x 10	1400
WPA-14014552-75-ES-35	200	52	50/110	21 x 15 x 14	2200
WPA-14014553-75-ES-35	250	53	50/110	21 x 15 x 14	2500

## C BAND SSPA 50W-500W ORDERING INFORMATION

MODEL #	OUTPUT POWER @ PSAT NOM. (WATTS)	OUTPUT POWER @ P1DB MIN. (dBm)	WEIGHT (KG/LBS)	DIMENSIONS (INCHES)	POWER CONSUMPTION (WATTS)
WPA-596446-70-ES-50	50	46	15.4/34	16.5 x 8.2 x 12.3	350
WPA-596447-70-ES-50	60	47	15.4/34	16.5 x 8.2 x 12.3	400
WPA-596448-70-ES-50	80	48	15.4/34	16.5 x 8.2 x 12.3	450
WPA-596449-70-ES-50	100	49	15.4/34	16.5 x 8.2 x 12.3	550
WPA-596451-70-ES-01	150	51	18/39.6	20 x 10 x 9.5	900
WPA-596452-70-ES-01	200	52	18/39.6	20 x 10 x 9.5	1000
WPA-596453-70-ES-01	250	53	18/39.6	20 x 10 x 9.5	1100
WPA-596454-75-ES-35	300	54	45/99	21 x 17 x 12	1800
WPA-596455-75-ES-35	400	55	45/99	21 x 17 x 12	2000
WPA-596456-75-ES-35	500	56	45/99	21 x 17 x 12	2200

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