



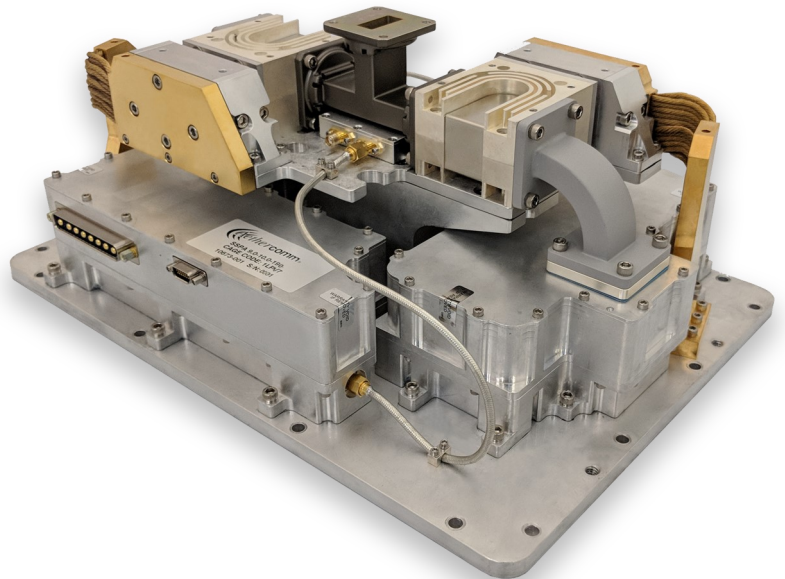
High Power, Broadband, SSPA

SSPA 9.35-9.85-500

Aethercomm Model Number SSPA 9.35-9.85-500 is a high power, Gallium Nitride (GaN) solid state power amplifier that operates from 9.35-9.85 GHz. It is packaged in an enclosure that is optimized for high altitude operation along with high performance shock and vibration for LEO flight. Nominal output power is 500 watts typical. Typical small signal gain is 50-60 dB. The composite power added efficiency with a pulsed RF input is 20-25% at Pout max. Input VSWR is 1.5:1 typical and output VSWR is 2.0:1 typical. This SSPA can be blanked on and off in less than 2.0 μ Sec. Standard features include reverse polarity protection, output short and open circuit protection, and over/under voltage protection. Temperature is monitored and reported by this module along with many other health parameters. This power amplifier module operates from -40°C to $+85^{\circ}\text{C}$ base plate temperature.

This high power SSPA is employed on a space based sensor. It is designed for a five year mission life. The housing volume is approximately 14" (w) x 10" (l) x 6.0" (h). DC and logic connections are accessible via DSUB connectors. The RF input connector is an SMA female. The RF output connector is WR-90 waveguide. Typical transmit test data appears on page two of this data sheet at room temperature.

- **GaN Technology**
- **Operation from 9.35 GHz to 9.85 GHz Min.**
- **500 Watts Peak Output Power Typ.**
- **Composite PAE of 20-25% Typ.**
- **28 Vdc Operation**
- **Space Operation**
- **Mass is ~13Kg Max.**



This is an example of an Aethercomm standard product. Aethercomm designs and manufactures high performance, high power CW or pulsed SSPA's for commercial, military and satellite communication customers.

Aethercomm Inc. reserves the right to make changes without further notice. Aethercomm recommends that before these items herein are specified into a system or critical application that the performance characteristics be verified by contacting the factory.

SSPA 9.35-9.85-500**Basic Electrical Performance Parameters at 25C Baseplate**

Frequency	Saturated Output Power
Operating Frequency (GHz)	9.35 to 9.85 minimum
RF Output Power (dBm)	57 peak typical
RF Input Power (dBm)	0 typical
Small Signal Gain Flatness (dB)	1.0 dB pk-pk typical
Output Load VSWR	2.0:1 for rated performance
Operating Voltage (Vdc)	28 typical
Composite Power Added Efficiency (%)	20-25 typical
Pulse Width (uSec)	500 typical
Duty Cycle (%)	50 maximum
Pulse Droop (dB)	0.5 maximum
Second and Third Harmonics (dBc)	-30 dBc maximum

