



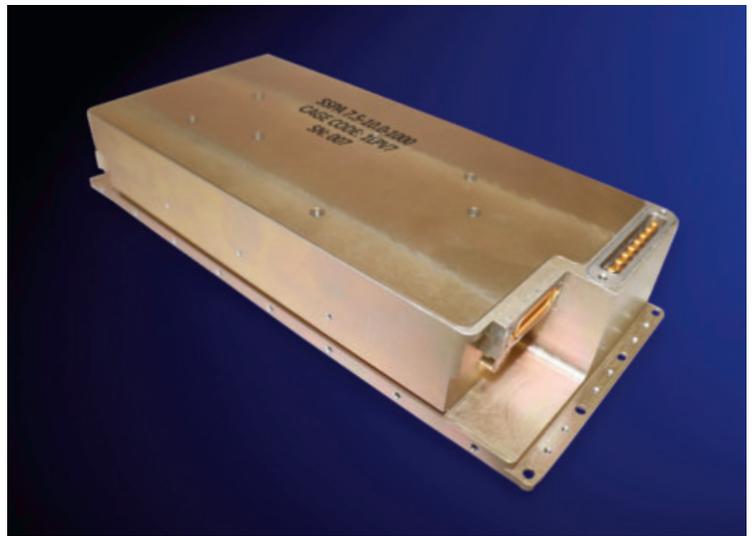
## X Band, GaN, 1000W, LEO SSPA

### SSPA 7.5-10.00-1000

Aethercomm Model Number SSPA 7.5-10.0-1000 is a space qualified, Gallium Nitride (GaN) solid state power amplifier that operates from 7.5-10.0 GHz. It is packaged in an enclosure that is optimized for high altitude operation along with high performance shock and vibration to include LEO flight. Nominal output power is 1000 watts minimum. The composite power added efficiency with a pulsed RF input is 25-30% 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 uSec. 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°C base plate temperature.

This high power SSPA, is employed on a space based sensor. It is designed for a five year mission life. It is capable of all the shock and vibration requirements to lift and survive in space. The housing volume is approximately 4.6" (w) x 10.9" (l) x 2.0" (h) with a step for the output waveguide flange of 3.0". 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 7.5 GHz to 10.0 GHz Minimum**
- **1000 Watts Peak Output Power Typical**
- **Composite PAE of 25-30% Typical**
- **28 Vdc Operation**
- **Space or Airborne Operation**
- **Mass is 5.0 Kg Maximum**



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 7.5-10.0-1000

SSPA 7.5-10.0-1000 Basic Electrical Performance Parameters at 25C Baseplate

Frequency	Saturated Output Power
Operating Frequency (GHz)	7.5 to 10.0 minimum
RF Output Power (dBm)	60 peak typical
RF Input Power (dBm)	-10 typical
Small Signal Gain Flatness (dB)	1.0 dB pk-pk typical over any 750 MHz
Output Load VSWR	2.0:1 for rated performance
Operating Voltage (Vdc)	28 typical
Composite Power Added Efficiency (%)	25-30 typical
Pulse Width (uSec)	500 typical
Duty Cycle (%)	50 maximum
Pulse Droop (dB)	0.5 maximum
Second and Third Harmonics (dBc)	-30 dBc maximum

