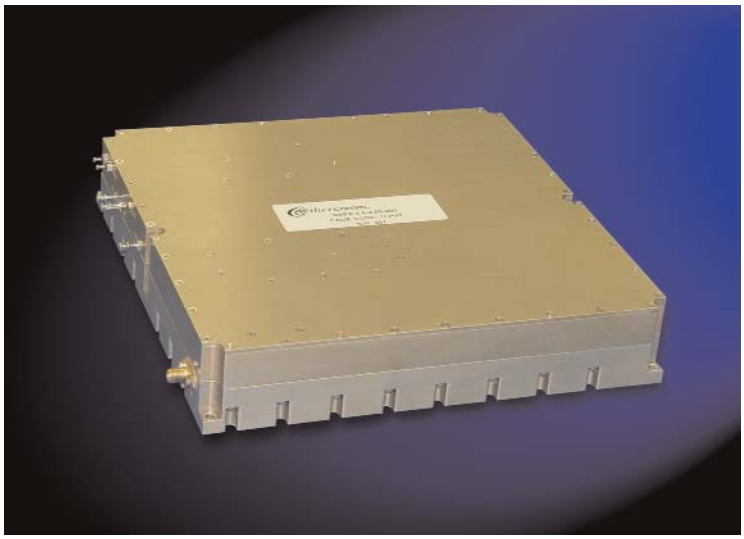
GaN Broadband Power Amplifier

Solid State RF Amplifier

Aethercomm Model Number SSPA 0.8-2.5-200 is a high power, broadband, gallium nitride (GaN) RF amplifier that operates from 0.8 to 2.5 GHz. This PA is ideal for broadband military platforms as well as commercial applications because it is robust and offers high power over a multi-octave bandwidth. This amplifier operates with a base plate temperature of 85C with no degradation in the MTBF for the GaN devices inside. It is packaged in a modular housing that is approximately 8.0" by 8.0" by 1.5". This amplifier has a typical P3dB of 200 watts at room temperature. Noise figure at room temperature is 10.0 dB typical. This amplifier offers a typical gain of 47 dB with a typical gain flatness of ± 2.5 dB. Typical OIP3 is 60 dBm. Input and Output VSWR is 2.0:1 maximum. Class AB current is ~5.0 amps typical employing a +50 Vdc supply. This PA operates from a +50 Vdc input voltage. Typical harmonic values can be found on the next page of this data sheet.

This SSPA includes an external DC blanking command that enables and disables the module in 5000 nSec typical. Standard features include over/under voltage protection and reverse polarity protection. The output is fully protected from an open or short circuit presented to this port with no damage. Input/output RF connectors are SMA female. Other connector types can be configured for airborne applications. DC and command voltages are accessible via DC feed through capacitors. Contact the factory with any questions you may have. This amplifier operates from -40C to +85C base plate. Summary test data is found on sheet two of this data sheet.

- **Gallium Nitride Broadband Power Amplifier**
- **Operation from 800 MHz to 2.5 GHz min**
- **Small Signal Gain 47 dB typical**
- **60 dBm OIP3 typ**
- **200 Watts P3dB typ**



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 communications customer.

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SSPA 0.8-2.5-200 Typical Performance @ 25°C

Freq (MHz)	Small Signal Gain (dB)	P3dB (dBm)	Pin at P3dB (dBm)	Current @ P3dB from @ 50Vdc Supply (Amps)	2nd Harmonic @ P3dB (dBc)	3rd Harmonic @ P3dB (dBc)
0.80	48.6	53.2	9.0	17.0	-27.5	-37.3
1.00	47.6	53.1	9.5	18.8	-26.0	-35.2
1.20	47.0	53.2	9.5	20.5	-26.3	-28.5
1.40	46.6	51.7	10.0	19.0	-22.0	-36.0
1.60	43.7	50.4	10.0	18.1	-23.5	-29.3
1.80	43.6	50.2	10.0	13.7	-19.7	-33.5
2.00	45.4	52.8	10.0	16.5	-22.7	-28.2
2.20	49.6	54.2	10.0	18.9	-31.7	-32.7
2.40	49.6	53.7	9.5	18.0	-26.0	-42.3
2.50	49.2	52.0	9.0	16.4	-19.2	-63.0