



## GaN Broadband Power Amplifier

### Solid State RF Amplifier

Aethercomm Model Number SSPA 2.5-6.0-50 is a high power, broadband, Gallium Nitride (GaN) RF amplifier that operates from 2.5 to 6.0 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 2.5(w)" by 6.4(l)" by 1.0(h)". This amplifier has a typical P3dB of 25-50 watts at room temperature. Noise figure at room temperature is 10.0 dB typical. This amplifier offers a typical gain of 48 dB with a typical gain flatness of  $\pm 2.5$  dB. Input and Output VSWR is 2.0:1 maximum. Class AB quiescent current is ~2.5 amps typical employing a +28 Vdc supply. This PA operates from a +28Vdc  $\pm 2\%$  input voltage. Typical harmonic values can be found on page two of this data sheet.

This SSPA includes an external DC blanking command that enables and disables the module in 7500 nSec typical. A logic low or open circuit commands the PA On. A logic high commands this amplifier Off. 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. DC and command voltages are connected via a nine pin DSUB connector. Contact the factory for a configuration drawing. 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 2.5 GHz to 6.0 GHz min**
- **Small Signal Gain 48 dB typical**
- **30-50 Watts P3dB at room temperature 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 2.5-6.0-50

SSPA 2.5-6.0-50 Typical Performance @ 25°C

Freq (MHz)	Psat (dBm)	Current @ Psat (Amps)	2nd Harmonic (dBc)	Small Signal Gain (dB)
2500	46.1	5.0	-21.7	47.6
2850	45.3	4.7	-17.3	46.5
3250	46.7	5.9	-18.5	49.1
3550	45.9	6.5	-27.5	49.0
3900	45.9	5.5	-29.2	47.8
4250	46.0	5.8	-36.5	47.8
4600	46.3	5.7	-54.7	47.4
4750	45.3	6.0	-73.5	48.9
5300	45.1	5.9	-62.5	49.6
5650	45.4	5.9	-55.0	49.7
6000	44.8	5.8	-55.3	47.9