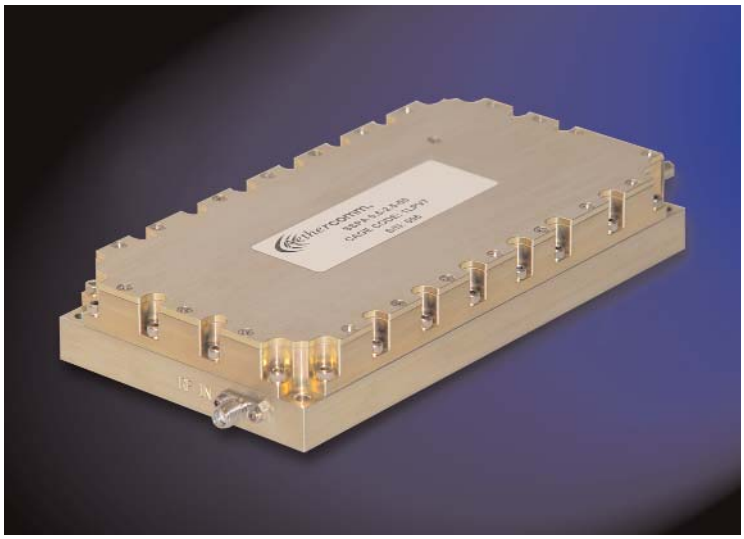
GaN Broadband Power Amplifier

Solid State RF Amplifier

Aethercomm Model Number SSPA 0.5-2.5-50 is a high power, broadband, Gallium Nitride (GaN) RF amplifier that operates from 500 MHz to 2500 MHz. 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 was designed for broad band jamming and communication systems platforms. It is packaged in a modular housing that is approximately 3.4" (width) by 6.4" (long) by 1.06" (height). This amplifier has a typical P3dB of 40-50 watts at room temperature. Noise figure at room temperature is 10.0 dB typical. This amplifier offers a typical gain of 53 dB with a typical gain flatness of ± 2.5 dB. The power and gain flatness across the band is extremely flat for the bandwidth. Input VSWR is 2.0:1 maximum. Class AB quiescent current is ~2.0 amps typical employing a +28 Vdc supply. This PA operates from a +28 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 the unit in 500 nSec and disables the module in 3000 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 a 9 pin DSUB connector. 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 for room temperature operation.

- **Gallium Nitride Broadband Power Amplifier**
- **Operation from 500 MHz to 2500 MHz min**
- **Small Signal Gain 53 dB typical**
- **40-50 Watts P3dB typical**
- **30-40% PAE typical**



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 0.5-2.5-50 Typical Performance @ 25°C

Freq (MHz)	Small Signal Gain (dB)	P3dB (dBm)	Current @ P3dB from a 28 Vdc Supply (Amps)	2nd Harmonic @ P3dB (dBc)	3rd Harmonic @ P3dB (dBc)	Power Added Efficiency @ P3dB (%)
500	55.2	46.4	3.6	-17.0	-25.0	43.6
750	52.4	46.2	4.5	-18.0	-24.0	32.9
1000	51.9	45.4	4.6	-14.0	-31.0	27.0
1250	54.1	45.8	4.0	-14.0	-44.0	29.6
1500	56.1	47.6	4.5	-26.0	-47.0	45.9
1750	56.6	47.1	4.7	-46.0	-47.0	39.0
2000	56.8	47.0	4.9	-46.0	-46.0	36.4
2250	56.7	45.7	4.3	-45.0	-32.0	30.6
2500	53.5	46.0	4.2	-44.0	-39.0	34.0