

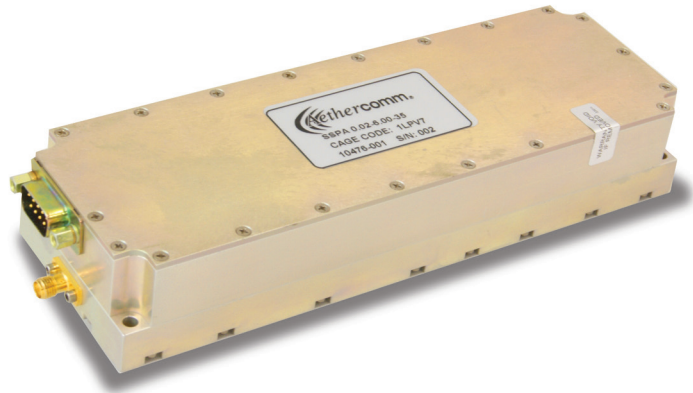


### **GaN Broadband Power Amplifier** **SSPA 0.020-0.6000-35**

Aethercomm introduces another industry first. Model Number SSPA 0.020-6.000-35 is a high power, super broadband, Gallium Nitride (GaN) RF amplifier that operates from 20 MHz 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 an extremely large bandwidth with decent power added efficiency. This amplifier operates with a base plate temperature of -30C to +70C. It is packaged in a modular housing that is approximately 2.5" (width) by 7.7" (long) by 1.4" (height). The weight of this unit is 2.0 pounds maximum. This amplifier has a typical saturated output power of 35 watts at room temperature (review the data on page 2 for frequency vs power across the band). Noise figure at room temperature is 10 dB typical. The power flatness across the band is typically  $\pm 3.0$ dB with a typical power of 80 watts at 800 MHz and 20 watts at 6 GHz. Input and output VSWR is 2.0:1 typical. This PA operates from a +28 Vdc input voltage. Typical second and third 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 25.0 uSec maximum. Typical on/off timing values are 18uSec. A logic low or open circuit disables the amplifier. Logic high will enable the amplifier. Standard features include over/under voltage protection and reverse polarity protection. The output is fully protected from an

- Gallium Nitride Broadband Power Amplifier
- Operation from 20 MHz to 6.0 GHz Min.
- Large Signal Gain 50 dB Typ.
- 20 to 80 Watts PSat Typ.



***This is a capability example of an Aethercomm product. Aethercomm designs and manufactures high performance, high power CW or pulsed SSPA's for commercial, military and satellite communications customer.***

open or short circuit presented to this port with no damage. Input/output RF connectors are SMA female. DC and command voltages are accessible via a DSUB connector. Contact the factory with any questions you may have. Summary test data is found on sheet two of this data sheet at room temperature.

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.

## Gallium Nitride Power Amplifier

### *SSPA 0.020-6.000-35*

#### SSPA 0.020-6.000-35 Typical Performance @ 25° C from a +28 Vdc Supply.

Freq. (MHz)	Pout @ PSat (dBm)	Pin for PSat Measurement (dBm)	Power Added Efficiency Supply (%)	Current at PSat from a 28 Vdc Sup- ply (Amps)	2nd Harmonic @Pout = 41 dBm (dBc)	3rd Harmonic @Pout = 41 dBm (dBc)
20	43.5	-14.0	43.0	2.84	-16.8	-12.7
50	45.9	-11.0	41.0	3.32	-16.7	-15.3
100	46.7	-10.0	41.0	4.09	-13.0	-13.0
200	48.7	-10.0	47.0	5.66	-18.2	-16.2
400	48.7	-11.0	50.0	5.28	-20.8	-18.7
600	47.6	-13.0	43.0	4.78	-11.2	-13.2
800	49.1	-13.0	47.0	6.05	-29.8	-22.0
1000	48.2	-11.0	44.0	5.36	-17.2	-18.7
1500	47.4	-10.0	34.0	5.89	-15.7	-14.2
2000	46.2	-5.0	22.0	6.71	-17.8	-15.7
2500	46.7	-1.0	22.0	7.55	-12.7	-19.0
3000	46.4	-2.0	28.0	5.47	-23.2	-18.8
3500	45.6	-5.0	25.0	5.28	-15.0	-24.7
4000	46.1	0.0	22.0	6.51	-17.8	-68.7
4500	46.4	2.0	24.0	6.63	-10.8	-64.0
5000	44.6	1.0	16.0	6.58	-23.3	-74.0
5500	42.4	3.0	10.0	6.06	-23.0	-66.3
6000	43.5	6.0	13.0	6.30	-67.7	-64.7