FRONTGRADE Aethercomm

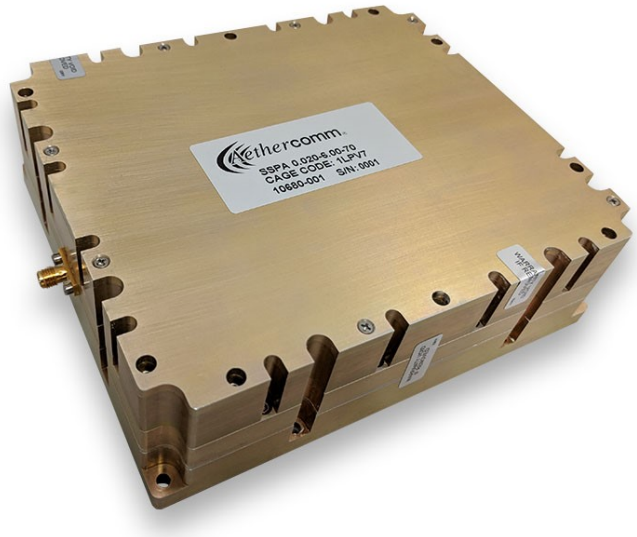
High Power, Super Broadband, GaN SSPA

SSPA 0.020-6.000-70

Aethercomm introduces another industry first. Model Number SSPA 0.020-6.000-70 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 –20C to +70C. It is packaged in a modular housing that is approximately 5.5”(width) by 6.5”(long) by 2.0”(height). The weight of this unit is 4.0 pounds maximum. This amplifier has a typical saturated output power of 70 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 gain flatness from 20 to 5500 MHz is typically ± 3 dB. Power flatness at saturation is typically ± 3 dB. 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. 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.

- Operation from 20 to 6000 MHz minimum
- GaN Technology
- 40—120 Watts PSat typical
- 50—60 dB Small Signal Gain typical
- 25 uSec Tx On/Off Switching Time typical
- Compact, High Shock and Vibe Packaging
- ~26.5% Composite Power Added Efficiency



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 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.

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SSPA 0.020-6.000-70 Typical Performance from 20 to 6000 MHz @ 25ºC with a CW Input Stimulus From a +28 Vdc Power Supply

Freq. (MHz)	Pin @ PSat (dBm)	Pout @ PSat (dBm)	Pout @ PSat (Watts)	Current @ PSat (Amps)	PAE (%)	2nd Harmonic (dBc)	3rd Harmonic (dBc)
20	-15.4	46.5	44.9	4.2	38.2	-16.0	-14.7
50	-10.4	47.9	61.1	6.2	35.1	-11.3	-13.8
100	-7.3	49.7	93.1	8.6	38.7	-9.2	-10.8
200	-9.3	52.2	164.1	13.1	44.7	-16.8	-11.2
400	-13.5	51.0	126.2	11.4	39.4	-12.7	-13.8
600	-16.5	50.6	113.8	9.4	43.2	-18.7	-19.5
800	-14.4	50.8	119.1	10.9	38.9	-16.0	-19.7
1000	-10.4	51.2	131.2	12.2	38.4	-15.5	-18.0
1500	-8.6	50.3	106.7	12.9	29.5	-16.0	-14.0
2000	-6.9	48.5	71.4	13.9	18.4	-17.6	-14.5
2500	-6.0	47.3	53.2	14.3	13.3	-19.0	-24.7
3000	-7.2	46.8	47.7	10.4	16.3	-27.5	-16.5
3500	-5.1	47.1	50.9	11.2	16.3	-17.2	-17.0
4000	-2.3	47.2	52.0	13.1	14.2	-21.8	-22.6
4500	-4.3	46.6	45.7	11.8	13.8	-19.3	-30.2
5000	-3.3	46.8	48.3	12.2	14.2	-19.5	-34.5
5500	0.6	46.4	43.3	11.8	13.1	-21.0	-36.8
6000	3.3	45.5	35.3	11.5	11.0	-21.8	-39.3