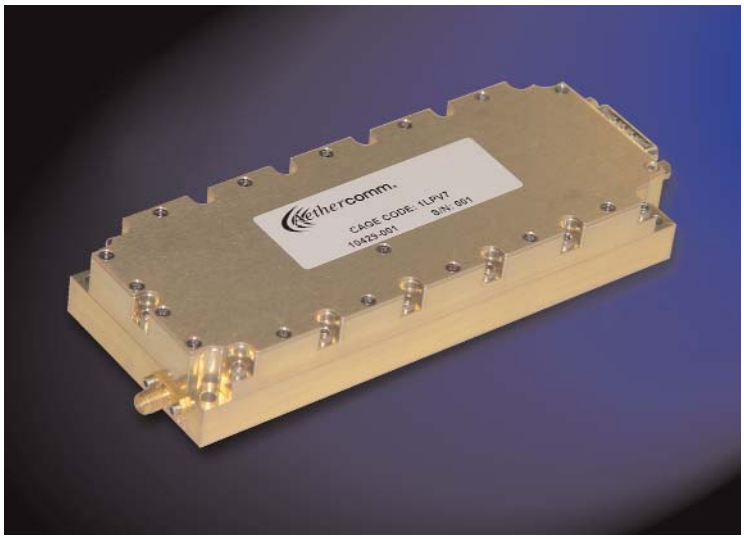
High Power, Compact GaN Amplifier

Solid State RF Amplifier

Aethercomm Model Number SSPA 0.1-0.8-70 is a high power, Gallium Nitride (GaN) amplifier that operates from 100 MHz to 800 MHz minimum and is packaged in a compact, high performance package. This amplifier is designed for operation in harsh environments. Typical output power is 80 watts across the band at P3dB. Small signal gain is 57 to 58 dB across the band typically. Power added efficiency in saturation is typically 45% to 60% across the band. Input and output VSWR is 2.0:1 maximum. This unit is equipped with DC switching circuitry that enables and disables the RF devices inside the amplifier in 4000 nSec typical for turn on and 1650 nSec typical for turn off time. Standard features include reverse polarity protection, output short and open circuit protection, and over/under voltage protection. There is a temperature sensor internal to this amplifier. This RF power amplifier operates from a +28 Vdc power supply. Standby current is ~45 mA and the quiescent current is 1.10 amps without RF drive. This unit operates from -40C to +85C base plate temperature. Noise figure is 5.0 dB typically across the band.

This compact, high power RF module can be employed in high shock and vibration environments. Standard housing size is approximately 2.5(w) by 6.4(l) by 1.0(h) inches. For mounting and heat sink instructions, please contact the factory. An SMA female connector is standard on the RF input port. An SMA female connector is standard on the output port. DC and logic connections are accessible via a DSUB connector. A logic low or open circuit enables the amplifier to the On state. A logic high will disable the unit. Typical test data appears on page two of this data sheet at room temperature.

- **Operation Across 100 to 800 MHz min**
- **CW Operation**
- **80 Watts Output Power typ**
- **28 Vdc Operation**
- **Small Compact Package**



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 0.1-0.8-70 Typical Performance from 100 to 800 MHz @ 25°C with a CW Input Signal

Freq (MHz)	Pout @ P3dB (dBm)	Current @ P3dB from a +Vdc Supply (Amps)	Power Added Efficiency at P3dB (%)	Small Signal Gain at Pin = -20 dBm (dB)
100	49.1	6.02	48.2	57.5
200	49.9	6.17	56.6	57.4
300	49.9	6.15	56.7	57.8
400	49.8	5.73	59.5	58.2
500	49.3	5.31	57.2	57.1
600	48.9	5.33	51.8	56.2
700	48.9	5.31	52.2	56.6
800	48.8	6.11	44.3	57.0