

# Broadband High Power Amplifiers

Aethercomm designs and manufactures broadband high power class A and AB amplifiers for military communication systems to transmit voice, data and video. These high power amplifiers are also used by wireless customers and for industrial applications. Aethercomm broadband product offerings include octave, multi-octave and decade bandwidths that have exceptional gain flatness and high output power. We design broadband high power amplifiers to operate in a range of environments, from the laboratory to extremely demanding combat conditions. Aethercomm military amplifiers are designed for the highest reliability and for operation in the most extreme environments. These amplifiers are ideal for broadband electronic warfare (EW) jamming and communication systems. Aethercomm has delivered over 30,000 broadband amplifiers in the last two years.

The list of broadband high power amplifiers on pages 15 - 20 is a sampling of standard offerings from Aethercomm. We produce high power broadband amplifiers with frequencies from 10 MHz to 40 GHz, the majority being between 30 MHz and 18 GHz. Power levels for octave and multi-octave designs range from 1 watt to over 1000 watts. Aethercomm employs GaAs, LDMOS, Silicon Bipolar, SiC, GaN and MMIC technologies as required to maximize performance.

**Broadband high power amplifier custom features include:**

- operation from 12 or 28 Vdc supplies, or any power supply specified
- high-speed DC blanking function of 1000 nSec maximum
- low noise figure
- internal DC-DC converter
- self protect functions
- system protect functions
- BIT telemetry options
- rack mounting
- high-speed digital interface
- microprocessor control
- other high performance options upon request

If you do not see the product you need in the standard offerings listed below, please contact the factory with your specific requirements. Aethercomm will design and manufacture your custom amplifier to your exacting specifications.

All data presented is at room temperature. Visit [www.aethercomm.com](http://www.aethercomm.com) for a complete list of datasheets.

**SSPA 0.020-1.000-30-28V**



- Operation from 20 MHz to 1000 MHz min
- Small signal gain 50 dB typ
- 30 to 50+% typ power added efficiency
- 20-45 watts P3dB typ
- Gallium nitride broadband power amplifier

**SSPA 0.020-1.000-30-48V**



- Operation from 20 MHz to 1000 MHz min
- Small signal gain 50 dB typ
- 40 to 50+% typ power added efficiency
- 30-45 watts P3dB typ
- Gallium nitride broadband power amplifier

**SSPA 0.020-6.000-10**



- Operation from 20 MHz to 6000 MHz min
- Small signal gain 50 dB typ
- 5-10 watts PSat typ
- Gallium nitride broadband power amplifier

**SSPA 0.020-1.000-20**



- Operation from 20 MHz to 1000 MHz min
- Small signal gain 53 dB typ
- 30-40 watts P3dB typ
- 30-60% PAE typ
- Gallium nitride broadband power amplifier

**SSPA 0.020-0.520-125**



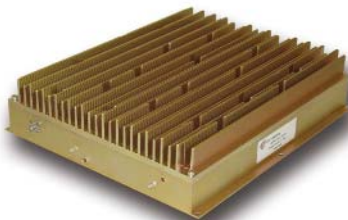
- Operation from 20 MHz to 520 MHz min
- Small signal gain 58 dB typ
- 50+% typ power added efficiency
- 125 watts P3dB typ
- Gallium nitride broadband power amplifier

**SSPA 0.020-1.000-100**



- Operation from 20 MHz to 1000 MHz min
- Small signal gain 58 dB typ
- 40-60% typ power added efficiency
- 100 watts P3dB typ
- Gallium nitride broadband power amplifier

**SSPA 0.020-2.500-20**



- Operation from 20 MHz to 2500 MHz min
- Small signal gain 40 dB typ
- 15 watts P1dB typ
- 50 dBm OIP3 typ

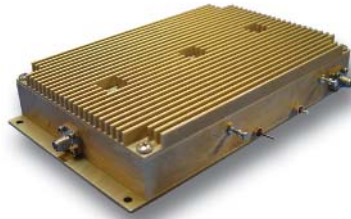
**SSPA 0.020-2.500-50**



- Operation from 20 MHz to 2500 MHz min
- 50-100 watts P3dB typ
- +28 Vdc operation
- 20 uSec DC blanking time
- Gallium nitride broadband power amplifier

## >>Broadband High Power Amplifiers

### SSPA 0.2-2.0-5



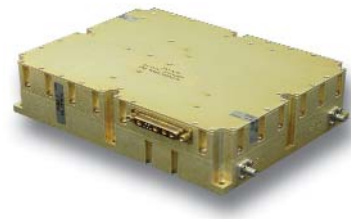
- Operation from 200 MHz to 2000 MHz min
- 5.0 watts Psat typ
- 50 dB small signal gain typ
- 28 Vdc operation

### SSPA 0.5-2.0-20



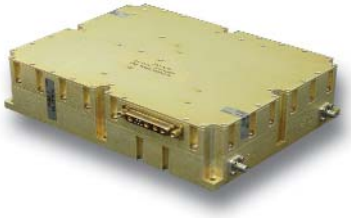
- Operation from 500 MHz to 2000 MHz min
- Small signal gain 42 dB min
- 53 dBm OIP3 typ
- 20 watts P1dB typ
- Silicon carbide technology

### SSPA 0.5-2.5-10



- Operation from 500 MHz to 2500 MHz min
- Small signal gain 47 dB min
- 47 dBm OIP3 typ
- 15 watts P1dB typ
- Silicon carbide broadband power amplifier

### SSPA 0.5-2.5-30



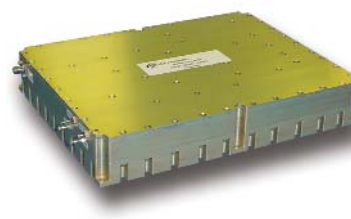
- Operation from 500 MHz to 2500 MHz min
- Small signal gain 50 dB min
- 50 dBm OIP3 typ
- 40 watts PSat typ
- Gallium nitride broadband power amplifier

### SSPA 0.5-2.5-50



- Operation from 500 MHz to 2500 MHz min
- Small signal gain 53 dB min
- 40-50 watts P3dB typ
- 30-40% PAE typ
- Gallium nitride broadband power amplifier

### SSPA 0.5-3.0-50



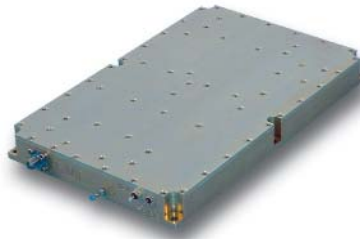
- Operation from 500 MHz to 3000 MHz min
- Small signal gain 35 dB min
- High speed DC blanking of 5uSecs max
- 70 to 100 watts P3dB typ
- Gallium nitride broadband power amplifier

**SSPA 0.6-2.0-20**



- Operation from 600 MHz to 2000 MHz min
- 8 watts min output power
- 5 dB noise figure
- 50 dB small signal gain typ

**SSPA 0.6-3.0-10**



- Operation from 600 MHz to 3000 MHz min
- 2+ octave operational bandwidth
- Saturated output power of 9 watts typ
- High OIP3 across band
- High speed DC switching circuitry

**SSPA 0.8-2.5-50**



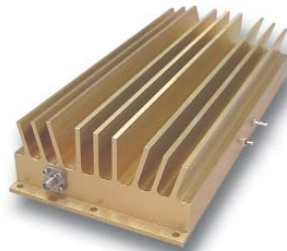
- Operation from 800 MHz to 2500 MHz min
- Small signal gain 45 dB typ
- 58 dBm OIP3 typ
- 70 watts P3dB typ
- Silicon carbide broadband power amplifier

**SSPA 0.8-2.5-200**



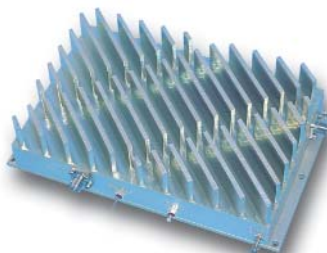
- Operation from 800 MHz to 2500 MHz min
- Small signal gain 47 dB typ
- 60 dBm OIP3 typ
- 100-200 watts P3dB typ
- Gallium nitride broadband power amplifier

**SSPA 0.8-3.2-10**



- Operation from 800 MHz to 3200 MHz min
- 9 watts typ output power
- +12 Vdc operation
- 46 dBm OIP3 typ
- 30 dB small signal gain typ

**SSPA 1.0-2.3-10**



- 10 watts P1dB typ
- Operation from 1000 MHz to 2300 MHz min
- Small signal gain 50 dB typ
- 50 dBm OIP3 typ
- 4.0 dB typ noise figure max

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### SSPA 1.0-2.5-20



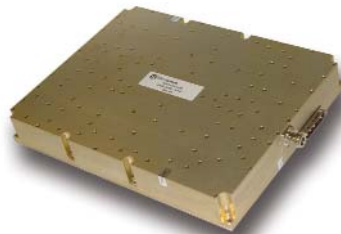
- Operation from 1.0 GHz to 2.5 GHz min
- Small signal gain 49 dB typ
- 52 dBm OIP3 typ
- 20 watts PSat typ
- Silicon carbide broadband power amplifier

### SSPA 1.0-2.5-50



- Operation from 800 MHz to 2500 MHz min
- Small signal gain 50 dB typ
- 57 dBm OIP3 typ
- 50 watts PSat typ
- Gallium nitride broadband power amplifier

### SSPA 1.5-3.0-200



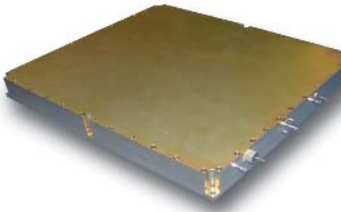
- Operation from 1.5 GHz to 3.0 GHz min
- Small signal gain 65 dB typ
- 200 watts PSat typ
- Gallium nitride broadband power amplifier

### SSPA 1.65-2.50-30



- Operation from 1.65 GHz to 2.5 GHz min
- Small signal gain 51 dB typ
- 30-40 watts P3dB typ
- Gallium nitride broadband power amplifier

### SSPA 2.0-4.0-20



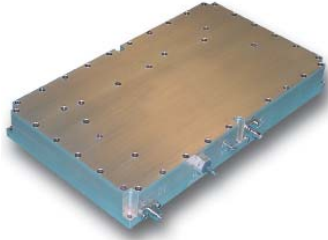
- Operation from 2.0 to 4.0 GHz min
- Saturated output power is 20 watts typ
- 45 dB small signal gain typ
- High speed DC switching circuitry
- Output short/open circuit protection

### SSPA 2.5-6.0-50



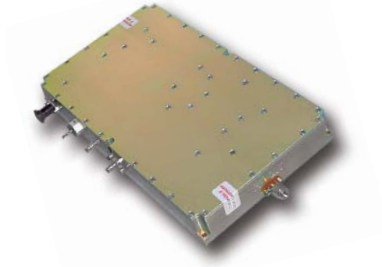
- Operation from 2.5 GHz to 6.0 GHz min
- Small signal gain 48 dB typ
- 50 watts P3dB typ
- Gallium nitride broadband power amplifier

**SSPA 3.0-4.0-20**



- Operation from 3.0 GHz to 4.0 GHz min
- Small signal gain 60 dB typ
- 55 dBm OIP3 typ
- 30 watts P1dB typ

**SSPA 8.0-11.0-10**



- Operation from 8.0 GHz to 11.0 GHz min
- 10 watts P1dB min
- 40 dB min small signal gain
- High speed DC switching circuitry
- 15 watts saturated output power typ