



High Power, X Band GaN Amplifier Solid State RF Amplifier

Aethercomm Model Number SSPA 7.6-7.8-150 is a high power, Gallium Nitride (GaN) amplifier that operates from 7600 MHz to 7800 MHz minimum and is packaged in a small, rugged enclosure. This X Band GaN power amplifier is smaller, more efficient and offers higher power than a conventional GaAs FET power amplifier. This amplifier is designed for operation in combat environments and is deployed on US Military Ground Vehicles. Typical output power is 150+ watts across the band at P3dB with a power flatness of ± 0.5 dB. 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 4 μ Sec typical for turn on and 500 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 with thermal shut down for protection. This RF power amplifier operates from a +18 to +36 Vdc vehicle power supply. Standby power dissipation is less than 20 Watts. This unit operates from -40C to +85C base plate temperature. Noise figure is 10.0 dB typically across the band.

This high power RF module is employed in high shock and vibration environments. Standard housing size is approximately 4.85(w) by 7.95(l) by 1.42(h) inches. For mounting and heat sink instructions, please contact the factory. An SMA female connector is standard on the RF input port. A type TNC female connector is standard on the output port. DC and logic connections are accessible via a DSUB connector. Typical test data appears on page two of this data sheet at room temperature.

- **High Power X Band GaN Power Amplifier**
- **Operation across 7600 to 7800 MHz minimum**
- **US Military Ground Vehicle Communication System**
- **18-36 Vdc Operation**
- **High Efficiency, High Power & Extreme Ruggedness**



This is an example of an Aethercomm High Frequency, High Power RF Amplifier Module. Aethercomm designs and manufactures GaN High Frequency, High Power Modules up to 18 GHz. We are able to achieve octave and multi-octave bandwidths in incredibly small packages with the high performance of GaN solid state devices. We offer better power added efficiency, higher power density and extreme reliability by employing high frequency GaN devices in these new modules. Please contact the factory today with any questions or requirements you may have.

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.

SSPA 7.6-7.8-150

SSPA 7.6-7.8-150 Typical Performance from 7600 to 7800 MHz
 @ 25° C with a CW Input Signal with Vin = 28Vdc

Freq (MHz)	Pout@Pin= -2dBm (dBm)	Current a@t PSat (Amps)	2nd Harmonic @ PSat (dBc)	Noise Figure (dB)	Power Added Efficiency (%)
7600	52.2	21.3	-46.5	9.9	27.6
7625	52.3	21.8	-48.5	10.4	28.0
7650	52.4	21.9	-52.0	10.2	28.3
7675	52.4	21.9	-54.0	10.2	28.3
7700	52.4	21.7	-54.5	10.0	28.3
7725	52.3	21.5	-54.0	9.9	28.4
7750	52.2	21.2	-63.3	9.7	28.1
7775	52.0	20.9	-68.0	9.7	27.2
7800	51.8	20.4	-59.0	9.7	26.2