



Ka Band GaN SSPA

SSPA 27.0-31.0-20

Aethercomm Model Number SSPA 27.0-31.0-20 is a high power, Gallium Nitride (GaN) solid state power amplifier that operates from 27-31 GHz. It is packaged in an enclosure that is optimized for high shock and vibration requirements. Nominal output power is 20 watts typical. Typical power gain is 43 dB minimum. Input and output VSWR is 2.0:1 maximum.

This SSPA can be blanked on and off in less than 10.0 uSec. OIP3 is 47 dBm minimum. This SSPA operates from a +28 Vdc power supply. Standard features include reverse polarity protection and output short and open circuit protection. This power amplifier module operates from -40°C to +70°C base plate temperature. There is also an over-temperature shut down feature to protect the amplifier.

This high power SSPA can be employed in any system that requires high power at Ka band. The housing volume is approximately 4.0" (W) X 5.0" (L) X 2.0" (H). DC and logic connections are accessible via feed through pins. The RF input connector is an SMA female. The RF output connector is WR-28 waveguide. Typical transmit test data appears below at room temperature. The maximum weight is 2.5 lbs. For mounting and heat sink instructions, further test data or operation and logic and pin out requirements, please contact the factory.

- **GaN Technology**
- **Operation from 27 GHz to 31 GHz min.**
- **20+ Watts CW Output Power typ.**
- **28 Vdc Operation**
- **10 uSec max. Switching Speed**
- **OIP3 of 47 dBm**



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.

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 27.0-31.0-20 Performance at 25C with a CW Stimulus and an Applied Voltage of +28 Vdc

Operating Frequency (GHz)	27-31 minimum
RF Output Power (dBm)	43 typical
RF Input Power (dBm)	0 typical
Small Signal Gain Flatness (dB)	±1.5 typical
Output Load VSWR	1.5:1 for rated performance
Operating Voltage (Vdc)	28 ± 3%
Composite Power Added Efficiency (%)	TBD typical
OIP3 (dBm)	47 minimum
Duty Cycle (%)	100% maximum
Input/Output VSWR	2.0:1 maximum
Second and Third Harmonics (dBc)	-25 typical
Tx Switching Speed (uSecs)	10 maximum