High Power, Pulsed X Band

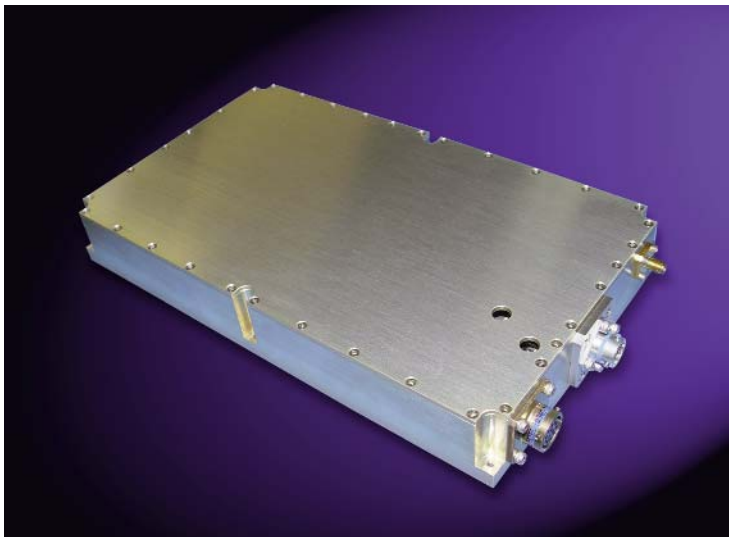
Solid State RF Amplifier

Aethercomm P/N SSPA 9.0-9.2-50 is a high power, X band, solid state pulsed power amplifier that operates from 9.0 to 9.2 GHz. This is a true pulsed amplifier and cannot be used in CW applications. The peak output power is 47 dBm minimum at 25C. Typical small signal gain is 27.5 dB. Input VSWR is 1.5:1 maximum. Output VSWR is 1.5:1 maximum. This unit is equipped with Aethercomm's proprietary DC switching circuitry that enables and disables the DC-DC circuitry in 1000 nSec maximum. Standard features include reverse polarity protection, output short and open circuit protection, an over-temperature alarm with shutdown, an integrated DC-DC converter with over/under voltage protection, DC current telemetry and a battlefield short to over-ride the over-temperature shut down. This power amplifier operates from a +15 Vdc power supply and with a 10% duty cycle on the Enable Pin the average current will be 2.8 amps maximum and this corresponds to a 28 amp peak current waveform. This HPA operates from -40C to +65C base plate temperature. This unit exhibits excellent pulse characteristics to include pulse droop, amplitude change pulse to pulse, phase change pulse to pulse and linear phase across the pulse. These amplifiers can be phased matched to +/-10 degrees from a golden standard and amplitude matched to +/-0.5 dB from the same standard. The maximum duty cycle for this amplifier cannot exceed 25%. The RF rise time is 25nSec typically. The RF fall time is 30nSec typically.

Typical Performance from 9.0 to 9.2 GHz @ 25 C

Parameter	Min	Typ	Max
Small Signal Gain (dB)	27.0	27.5	28.0
Small Signal Gain Flatness (dB)	-	+/-0.25	+/-0.50
Peak Output Power (dBm)	47.0	47.5	50.0
Input Return Loss (dB)	-	-20.0	-14.0
Output Return Loss (dB)	-	-20.0	-14.0
Maximum Peak Current (Amps)	-	27.0	30.0
Supply Voltage (Vdc)	14.5	15.0	15.5
Harmonics (dBc)	-	-60	-40
DC Switching On Time (nSecs)	-	520	1000
DC Switching Off Time (nSecs)	-	320	1000
Pulse Droop for 5uSec PW (dB)	-	0.15	0.30
DC or RF Operating Duty Cycle (%)	-	10	25

- **Operation across 9.0 to 9.2 GHz**
- **50 watts peak output power minimum**
- **27 dB small signal gain minimum**
- **High speed DC switching circuitry**
- **Phase and amplitude matching available**



This SSPA is ideal for X band radar systems that require high reliability and high power in a rugged and compact module. Standard housing size is approximately 5.25 X 9.00 X 1.25 inches. This PA needs to be heat sunk properly to keep the base plate temperature to +65C maximum. SMA female connectors are standard on all RF ports. DC and command/control signals are accessible via two mil-circular DC connectors.

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