L/S Band Specialty Amplifier System

Solid State RF Amplifier

This data sheet is an example of a high power microwave system designed, fabricated and characterized by Aethercomm. This system operates at L and S bands and incorporates redundant high power transmitters and AC/DC converters. The system is controlled via a microprocessor with commands supplied via the host computer. This high power assembly is employed at Edwards Air Force base and is used to communicate with fighter and attack aircraft, UAV's and the Space Shuttle.

The complete assembly is packaged in an EMI enclosure. The transmit section is fully redundant and each path consists of two phased and amplitude matched PA's that deliver 200 watts of RF energy to the antenna. There is no receive circuitry in this system. The output is fully protected from an infinite VSWR at the antenna port. The AC/DC converters operate from a 120VAC, 60 Hz, single phase power. This circuitry is also redundant for a high system MTBF. All commands to control this assembly utilize a microprocessor assembly inside this unit. This internal microprocessor assembly also monitors the health of the internal LRU's and reports such items as forward and reflected power to the host platform.

This high power amplifier assembly is approximately 30 inches in width with the integral heat sinks, 30 inches in height and 13 inches in depth. Both TX input and output connections are type N female connectors. AC and command/control inputs and outputs are mil-circular connectors. The entire assembly is cooled with fins on the sides of the enclosure. The weight of the entire assembly is 50 pounds typically.

- **L/S Band High Power Amplifier System**
- **Redundant Amplification Sections**
- **Redundant AC/DC Converter Sections**
- **Microprocessor Controlled**
- **Multiple System Level BIT Indicators**

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 1.75-2.12-100 Typical Performance @ Room Temperature for Either Channel

Freq (MHz)	P1dB (dBm)	P3dB (dBm)	Current @ P1dB (Amps-AC)	Small Signal Gain (dB)
1756	52.5	52.8	10.0	50.3
1796	52.8	53.3	10.4	51.0
1842	53.2	53.6	10.8	50.7
1888	53.3	53.8	10.8	50.9
1934	53.2	53.9	10.8	50.5
1980	53.0	53.6	10.8	50.6
2026	52.6	53.5	10.9	49.8
2072	52.4	53.5	10.7	49.7
2120	52.2	53.2	10.0	49.0