# Technical Bulletin

# PA220S Power Amplifier

**Airborne Telemetry Products** 



#### **DESCRIPTION**

The PA220S is a solid-state, UHF power amplifier intended for use with S-Band telemetry transmitters when greater transmission power is required. L-3 Communications Telemetry-East's ST402 and T102S-Band transmitters can be mounted directly on top of, and electrically connected to, the PA220S. An efficient, compact highpower transmitter is the result. Due to the broad-bandwidth response of the PA220S Amplifier, it can be used with the assigned frequency transmitter within a 50 MHz Band: wider bandwidths are optional. PA220S performance specifications are in accordance with the latest IRIG standards.

PA220S output filtering provides spectral purity; output isolation prevents damage from operation into shorted or open loads. A power line regulator and reverse polarity diode provide line protection and assure uniform performance over the range of input voltages.

PA220S enclosures are milled nickel-plated aluminum alloy. The connector configuration shown in the outline drawing is standard; customer-specified configurations will be provided as an option.

#### **FEATURES**

- 20 Watt Output from Two-Watt Transmitters
- Video or Telemetry Applications
- Useable with Single-frequency (T602) and Multifrequency (ST402, ST802 Synthesized) Transmitters
- Direct-Mount compatibility with T602, ST802, ST402 Transmitters
- State-of-the-Art Design and Construction
- High-Efficiency

#### **ELECTRICAL SPECIFICATIONS**

Input Characteristics

Line Regulation: All units have internal

voltage regulators and are reverse polarity protected

Power Supply Voltage: 28 ±4 Vdc

Input Current: 6 amps max at 20 watts output

RF Input Power Range: 2 to 4 watts for specified RF

output power

RF Input Impedance: 50 ohms

Frequency Range: 2200 MHz to 2300 MHz

2300 MHz to 2400 MHz



### **ELECTRICAL SPECIFICATIONS**

(continued)

#### **Output Characteristics**

RF Power Output: 20 watts minimum

Output Impedance: 50 ohms

Performance 3 dB bandwidth is 150 MHz; Bandwidth: simultaneous usable bandwidth

is 100 MHz; wider bandwidths

are optional

Output Mismatch

Capability:

All units have internal output isolators ensuring performance without PA damage when operating into any output load condition, up to  $\infty$ :1

VSWR

Spurious Emissions: -68 dB relative to carrier.

#### **MECHANICAL SPECIFICATIONS**

Size: See outline drawing
Weight: 12 ounces maximum

Connector

Configuration: DC Power Input Connector: Viking

VR514AG15,

Mate: VP514CE15
Pin Connections:
A. +28 V input
B. +28 V input

C. Power Return and ChassisD. Power Return and Chassis

E. No Connection

Note: A and B are common, C and D are common. RF Input Connector: SMA Type, Mate: OSM 501-3 RF Output Connector: TNC Type, Mate: GRFF 4000-0009

#### **ENVIRONMENTAL SPECIFICATIONS**

Baseplate Temperature: -20°C to +71°C, (extended range

available as an option.)

## **QUALITY CONTROL**

The PA220S Power Amplifier is manufactured under Quality Control procedures accordant with ISO 9001 and MIL-Q-9858A. Each assembled unit is fully tested to a comprehensive Acceptance Test Procedure that includes full performance testing at thermal extremes.

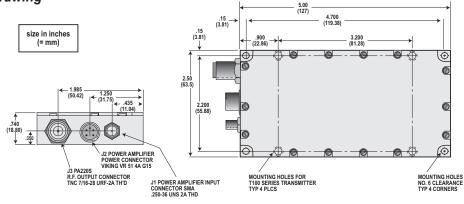
Through the heritage of Aydin Vector/Telemetry, L-3 Communications Telemetry-East has supported numerous Hi-Rel aerospace programs requiring exhaustive component screening, preconditioning and selection procedures. Hi-Rel procedures or specific customer-generated procedures can be invoked during the manufacture of the PA220S Power Amplifier.

#### ORDERING INFORMATION

When ordering, specify model number and exact operating frequency band in Megahertz.

For special applications or additional information, contact L-3 Communications Telemetry-East, Newtown, PA or your nearest L-3 Communications Telemetry-East Sales Representative.

#### PA220S Outline Drawing





#### L-3 Communications Telemetry-East

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