

HPA-100

VHF-UHF High Power Amplifier

**Reliable,
Compatible
Power
Amplifier**



The **Talla-Com HPA-100 VHF-UHF High Power Amplifier** provides up to 100 watts PEP and average power output over the entire 30 to 400 MHz frequency range. The amplifier provides highly reliable, continuous duty cycle communications for existing and future shipboard, fixed, and transportable systems.

Compatible

The HPA-100 also supports voice and data communications and is fully compatible with the requirements of MIL-STD-188-181, -182, and -183 DAMA and 203-3 Link 4A operating requirements.

Features

- 30 MHz to 400 MHz frequency coverage, 100 watt PEP and average
- Remotely adjustable power output for DAMA compliance
- Supports SINCGARS, HQI, HQII, and SATURN ECCM waveforms
- Built-in agile, high power, low pass filtering
- Supports AM, FM, FSK, PSK, and DAMA waveforms
- Front panel/local control and monitor
- Remote control via high speed serial asynchronous interface
- Built-In-Test (BIT) to the SRU Level
- Removable front panel dust cover and EMI shield
- First line maintenance with no special tools.
- MTTR < 0.5 hour

● **Front Panel Control**

● **Qualified**

● **Reliable**



Technical Description

The HPA-100 is a 100 watt PEP and average output power amplifier. The unit is enclosed in an EMI and RFI shielded, 3.5 inch high, 19 inch wide rack mount chassis. HPA-100 units can be stacked vertically without additional separation.

The HPA-100 is designed for continuous transmit and uses forced air cooling by internal fans. The overall inlet to outlet air temperature rise is less than 14°C.

The HPA-100 is powered from its internal power supply operating from a common 115 AC power source. The maximum AC current consumption is less than 600VA. The HPA-100 provides the user with a "sleep" mode, so that if the unit sits idle, it will reduce its total power consumption to less than 80VA until the next time it is keyed.

The HPA-100 uses a real-time microcontroller to handle all system operation, protection, and management functions. The unit may be manually or remotely controlled using a four key, front panel keypad and display, or a rear panel serial remote communication port.

The HPA-100 is designed around our standard 30 MHz to 400 MHz, 100 watt, 30db gain, class AB amplifier module. Applied input power can be adjusted to accept from -20 dBm to +20 dBm, for use with a wide range of exciter products and installations. The overall gain of the power amplifier can also be adjusted in 0.5db steps through the front panel or remote interfaces.

Excellent harmonic performance is achieved by the use of a fast switching filter bank designed to operate in Frequency Hopping modes.

The HPA-100 has Built-In-Test functions for easy troubleshooting. The unit is provided with VSWR protection, over-temperature protection, and amplifier system monitoring, to ensure reliable, long-term performance. The unit's modular design provides a MTTR of less than 30 minutes.

* Specifications subject to change without notice 4.14.05

Electrical Specifications

| | |
|---------------------------------|--|
| Frequency Range | 30 to 400 MHz |
| Spurious | <-70 dBc |
| Harmonics | 3 rd < -45 dBc, all others <-50 dBc |
| Duty Cycle | Continuous Transmit |
| Load Impedance | 50 Ω |
| RF Input Power | -20 dBm to +20 dBm |
| Primary Power | 115 VAC, 1 Phase, 47 to 63 Hz, MIL-STD 1399 Compatible |
| Remote Control Interface | Serial Asynchronous |
| RF Output Power | 100 watts (Variable in 0.5 db Steps) |
| VSWR | Operates into 4:1 max. Forward Power Reduced at Max VSWR |

Environment Specifications

| | |
|-------------------------------|-----------------------------|
| Temperature Operating | 0° to 50°C |
| Non-Operating Altitude | -40° to +70°C |
| Non-Operating | 15,000 ft. |
| Humidity | 95%, Non-Condensing |
| Vibration | MIL-STD-167-1, Type 1 |
| Finish | MIL-S-901D, Grade A Class 1 |

Physical Description

| | |
|---------------|---------------------|
| Height | 3.25 in. |
| Width | 19 in. |
| Depth | 20 in. |
| Weight | 35 lb. |
| Finish | Corrosion resistant |