UPA-55 VHF/UHF RF Power Amplifier

Overview

The UPA-55 Amplifier provides extra power to URC-200 or URC-200 (V2) Line-of-Sight (LOS) Radios to meet specific mission needs. This user-friendly amplifier broadcasts up to a full 50 watts in AM or FM in the VHF (115-174 MHz) and UHF (225-420 MHz) bands in AM, FM, FSK or continuous wave (CW) modulations.

While offering excellent harmonic and spurious frequency rejection with an extremely low noise floor, the UPA-55 operates in the most challenging LOS environments on land, in the air, and at sea. This rugged piece of equipment is able to withstand humidity, fungus, altitude, shock, dropping and vibration, and has demonstrated a Mean-Time-Between-Failure (MTBF) rate averaging 10,000 hours.

Measuring less than 400 cubic inches, the entire package is lightweight and designed to meet MIL-STD-461 for emissions. All controls are conveniently located on the front of the device for ease of use, with only an emergency reset button on the back.

Dependable and user-friendly, UPA-55 Power Amplifiers are an essential accessory to the URC-200 or URC-200 (V2) LOS Radios for faster installation and longer product life.

Broadcasts 25 or 50 Watts in AM or FM
Full control from front of unit
Lightweight, rugged and easy to use in challenging environments
Operates at full power into a >3:1 VSWR
Benefits/Features

**Powerful**
- 50 Watt VHF/UHF RF power amplifier
- 115 MHz to 174 MHz and 225 MHz to 420 MHz

**Versatile**
- 25 or 50 Watt FM
- 25 or 50 Watt AM, AVG @ 90%
- CW, AM, FM or FSK
- Lightweight
- Remote controllable

**Dependable**
- Excellent co-location performance
- 10,000 hours MTBF

Saves Money
- Low cost

50 Watt Rackmount Configuration

- **A.** URM-100 (part # 01-P35865M001) 19-inch rack mount for radio, power amp, and power supply
- **B.** URC-200 or URC-200 (V2) VHF/UHF, multi-band transceiver
- **C.** UIB-100 (part # 01-P35807M001) Interface for radio to external power source
- **D.** UAC-250 AC supply, radio plus power amplifier
- **E.** UPA-55 (part # 01-P49423J001) 50 Watt power amplifier

**UPA-55H**
(part number: 01-P49423J002)

- **RF output power:**
  - HIGH FM Power: 50 watts, ±1 dB
  - LOW FM Power: 25 watts, ±1 dB
  - HIGH AM Power: 50 watts, +1dB, -2.2dB (average at 90% modulation)
  - LOW AM Power: 25 watts ±1 dB (average at 90% modulation)

- **RF input power:**
  - 3 to 12 watts average at 90% modulation

- **Electro-magnetic Interference (EMI):**
  - MIL-STD-461E, CE106, RE102

- **Noise floor:** Outputs <–140 dBm/Hz

- **Input impedance:**
  - 50 ohms

- **Harmonics:**
  - FM Mode, all Harmonics shall be ≤ -60dBc, (≤ -80dBc typically)
  - AM Mode, all Harmonics shall be ≤ -80dBc

- **Powerful:**
  - ≤ -80 dBc typically)

- **Added Amplifier distortion:**
  - Max of 10% at 90% AM; with input of 3-9 Watts
  - Max of 15% at 90% AM; with input of 9-12 Watts

- **Protection:**
  - Fault indicator for short, open, temperature & VSWR >3:1

- **Bypass mode:**
  - Automatic

- **Remote control:**
  - ON/OFF, Power HI/LO, AM/FM, VHF/UHF

- **Encryption:**
  - Low cost

- **LOW FM Power:** 25 watts, ±1 dB

- **LOW AM Power:** 20 watts ±1 dB

- **Saves Money:**
  - Lightweight

- **Environment:**
  - Per MIL-STD-810:
    - Humidity: 95% Non-condensing
    - Altitude: Operational 15,000 ft., Non-Operational 50,000 ft.
    - Drop test in transit case; Bench handling
  - Per MIL-STD-454:
    - Fungus
    - Tested:
      - Vibration
      - Operational Temperature: -20°C to +55°C

**UPA-55H Outline Drawing**

**Typical Installation Reference**

**GENERAL DYNAMICS**
Mission Systems