

UPA-55 VHF/UHF RF Power Amplifier



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

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.

UPA-55 VHF/UHF RF Power Amplifier

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

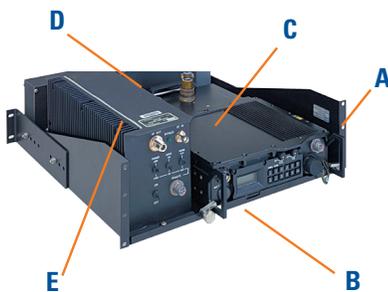
Dependable

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

Saves Money

- Low cost

50 Watt Rackmount Configuration

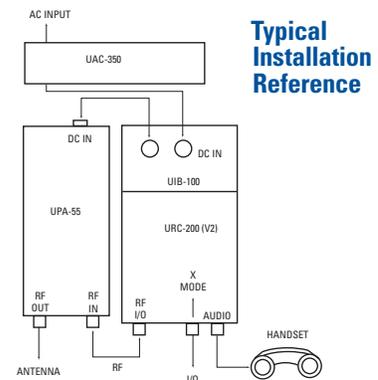
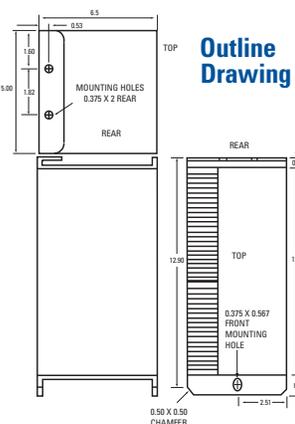


- A. URM-100 (part # 01-P35865M001) 19-inch rack mount for radio, power amp, and power supply
- B. URC-200 or URC-200 (V2) VHF/UHF multi-band transceiver
- C. UIB-100 (part # 01-P35807M001) Interface for radio to external power source
- D. UAC-350 AC supply, radio plus power amplifier
- E. UPA-55 (part # 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, ± 1 dB, -2.2 dB (average at 90% modulation)
 - LOW AM Power: 20 watts ± 1 dB (average at 90% modulation)
- **Harmonics:**
 - FM Mode, all Harmonics shall be ≤ -60 dBc, (≤ -80 dBc typically)
 - AM Mode, all Harmonics shall be ≤ -80 dBc
- **Weight: 13.0 lbs. MAX**
- **Model number: UPA-55**
- **Part number: 01-P49423J001**
- **Frequency range:**
 - FM: 115 to 174 MHz; 225 to 420 MHz
 - AM: 115 to 174 MHz; 225 to 400 MHz
- **Encryption: Compatible with wide and narrow band encryptors**
- **DC current requirement:**
 - 11.0 Amps maximum at +28 VDC
- **RF output power:**
 - HIGH FM Power: 50 watts, ± 1 dB
 - LOW FM Power: 25 watts, ± 1 dB
 - HIGH AM Power: 50 watts, ± 1 dB (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% AM, CW FM
- **Electro-magnetic Interference (EMI):**
 - MIL-STD-461E, CE106, RE102
- **Noise floor: Outputs ≤ -140 dBm/Hz**
- **Input impedance: 50 ohms**
- **Harmonics:**
 - 115 to 174 MHz = ≤ -60 dBc
 - 225 to 420 MHz = ≤ -60 dBc
- **Spurious: ≤ -80 dBc**
- **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
- **Supply voltage:**
 - +26 to +32 VDC for rated output
- **Operating temperature:**
 - -20°C to $+55^{\circ}\text{C}$
- **Storage temperature:**
 - -54°C to $+70^{\circ}\text{C}$
- **Duty Cycle:**
 - 9 min Rec, 1 min Transmit Continuous at $+30^{\circ}\text{C}$, 1/2 hour at 55°C
- **Cooling: Convection (without blower)**
- **Weight:**
 - 13.5 lbs. MAX
- **Size:**
 - 6.5 inch high x 5.12 inch wide x 13.3 inch deep (165mm x 130mm x 305mm)
- **MTBF:**
 - 10,000 hours
- **Environmental:**
 - 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 $+55^{\circ}\text{C}$



GENERAL DYNAMICS

Mission Systems