

# URC-300™ Transceiver

*Maximized RF Performance - Redefining Software Defined*



Significant RF improvement over the  
URC-200 (V2) LOS Transceiver

8.33kHz ETSI EN 300 676-1 Compliance  
and CE marking for global operations

Designed to meet stringent FAA requirements

Customizable, software-defined platform enables future  
field-upgradeable enhancements

Compatible with many legacy URC-200 family accessories

## Improved Ground-to-Air-Communications

The new software-defined URC-300 Transceiver improves ground-to-air communications with an architecture that enables users to upgrade fielded radios as new technology becomes available. The URC-300 retains a familiar user-friendly interface from the URC-200 (V2) as well as many of the legacy accessories.

- UHF / VHF AM Voice; ETSI EN 300 676-1 compliant for both 8.33kHz and 25kHz
- Separate DC input powers radio and charges battery
- Optional accessories to power from AC or DC source
- Built-in power conditioning replaces external filter accessories
- Smaller size and less weight than the URC-200 (V2); ideal for emergency grab-and-go
- Side-by-side radios fit into a 19" rack for rackmount applications
- Web-based configuration and monitoring tool for maintainers
- Redesigned user interface with large, user-friendly display

## Future, Field-Upgradeable Enhancements

- FM voice
- 50W power amplifier
- Additional accessories for vehicular, shipboard, backpack and rackmount applications
- Cipher text (data)
- 30 - 90 MHz frequency band
- Remote Control Unit
- ED-137 VoIP Gateway Adapter
- Frequency agile cosite filter
- Adaptive Noise Reduction (ANR)

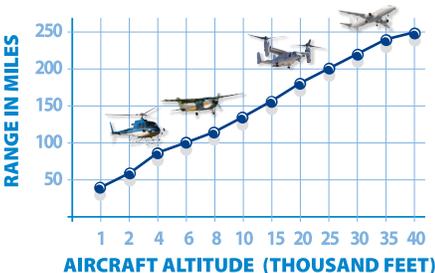
## Additional Certifications

- MIL-461G EMI/EMC
- CE / RoHS / REACH / Radio Equipment Directive
- FCC

# URC-300™ Transceiver

## Features

- Highly Versatile
  - VHF and UHF AM capability provides interoperability with a variety of RF systems
  - Adaptable to many applications, including manpack, rackmount, vehicular and intercom
- Remote Control
  - SNMP V3 command / control / BIT
- Intuitive Front Panel Control
  - All parameters are easy to set and access via the front-panel control and web-based GUI
- Web-based provisioning tool for maintainers



Optimal Line-of-Sight (LOS) transmission distances relative to aircraft altitude

## Technical Specifications

### General

- Frequency range:
  - VHF: 115 MHz to 150 MHz (AM)
  - VHF: 115 MHz to 173.995 MHz (Future FM)
  - UHF: 225 MHz to 399.995 MHz
- Tuning increments:
  - 25 kHz, 12.5 kHz, 5 kHz and 8.33 kHz
- Channel Spacing:
  - 25 kHz, 8.33 kHz, ETSI EN 300 676-1 Compliant
- Frequency stability:
  - $\pm 1$  PPM
- 20 Channel Presets: Independently programmable transmit and receive

## Receiver Characteristics

- Sensitivity:
  - AM PT: -102 dBm (-103.5 dBm typical)
  - Dynamic range:  $\geq 115$  dB
- Cross modulation  $\geq 80$  dB
- Audio noise (S + N) / N:  $\geq 40$  dB
- Image response:  $\geq 80$  dB
- Spurious response:  $\geq 70$  dB ( $\geq 80$  dB typical)
- Squelch range: Operator adjustable from below sensitivity to above -80 dBm
- Adjacent channel rejection:
  - 25 kHz:  $\geq 60$  dB; 8.33 kHz:  $\geq 60$  dB
- FM Broadcast Intermod Immunity:  $\geq 95$  dB

## Transmitter Characteristics

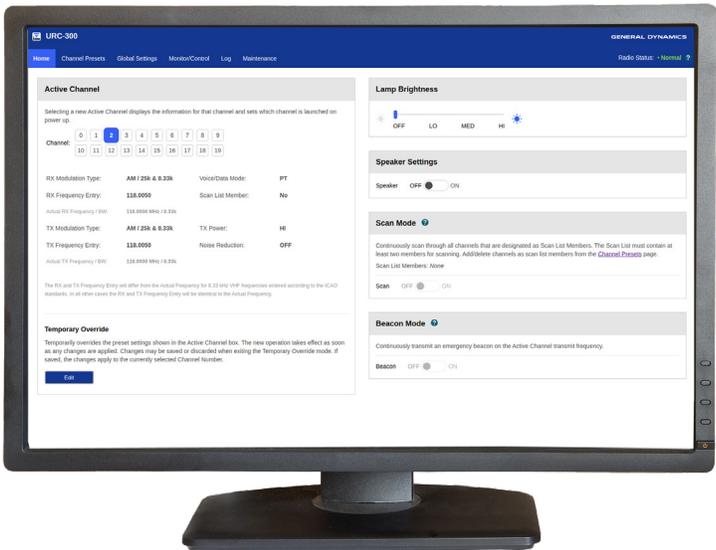
- Output power:
  - 1 to 7 Watts (CW) user adjustable in 0.2 Watt steps; 10 Watts avg  $\pm 1$  dB @ 90% AM
- Modulation: 0 - 95% user adjustable
- Distortion:  $< 10\%$
- Spurious output:  $< -85$  dBc
- Harmonic output:  $< -75$  dBc
- Adjacent Channel Power:
  - 25 kHz:  $\leq 60$  dB
  - 8.33 kHz:  $\leq 50$  dB

## Physical Characteristics

- Weight:
  - 10.9 lbs. (less battery)
- Dimensions:
  - 10.6" L x 8.5" W x 3.5" H (without battery and handles)
- Environmental:
  - Ruggedized. Environmentally tested for humidity, vibration, shock/drop, rain/drip-proof, temperature and altitude. Meets relevant sections of MIL-STD-810H and is rated IP65 for ingress protection
- Temperature:
  - 20°C to +55°C (operating)
  - 50°C to +70°C (non operating)

## Power Supply

- Battery:
  - BB-2590 (rechargeable)
- AC:
  - 90 – 260 VAC, 47 – 63 Hz
- DC:
  - 10.7 – 34 VDC
- Battery case dimensions:
  - 5.2" L x 10.3" W x 2.8" H
- Current drain (+28 VDC):
  - Transmit:  $< 2.5$  amps
  - Receive:  $< 360$  mA



Web-based provisioning tool for maintainers.

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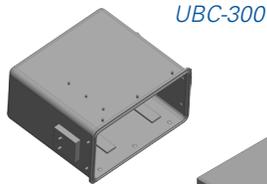
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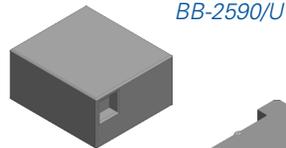
# BP-300-BLK Backpack System



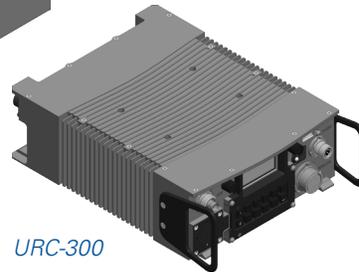
UBP-300-BLK



UBC-300



BB-2590/U



URC-300

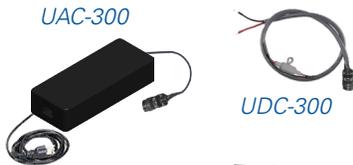


PTHS-200

PTHS-300

PTHS-250

## USER-DEFINED EQUIPMENT FOR AUDIO DEVICE



UAC-300

UDC-300



UBS-110

## USER-DEFINED EQUIPMENT FOR BATTERY CHARGING/POWER



UVU-100

## BACKPACK SYSTEM

Supplied, User-Defined and Optional Equipment

### SUPPLIED EQUIPMENT:

- Qty. Description
  - 1 URC-300 VHF/UHF Transceiver
  - 1 UBC-300 Battery Case
  - 1 BB-2590/U Rechargeable Battery w/SMBus
  - 1 UVU-100 VHF/UHF Portable Antenna
  - 1 UBP-300-BLK Black Backpack

### USER-DEFINED EQUIPMENT:

- User must select the desired audio device at time of quote (separately priced)
  - PTHS-200 Headset
  - PTHS-250 H-250 Handset
  - PTHS-300 Speaker Microphone
- User must select the desired battery charging device at time of quote (separately priced) <sup>(1)</sup>
  - UBS-110 Portable Battery Charger
  - UDC-300 DC Power Cable
  - UAC-300 AC/DC Power Supply

### OPTIONAL EQUIPMENT:

- Audio
  - PTHS-xxx Additional Audio Device (see list above)
- Power
  - BB-2590/U Additional Battery
  - Additional Battery Charging Devices (see list above)
- Backpack
  - UBP-300-WLD Woodland Backpack
  - UBP-300-DCF Desert Camouflage Backpack

### FUTURE FIELD-UPGRADEABLE FUNCTIONS:

- AM Cipher Text Data (CT)
- FM (PT Voice and CT Data)
- 30-90 MHz Frequency Band Extension (FM only)
- Adaptive Noise Reduction (ANR) Machine Learning Algorithm

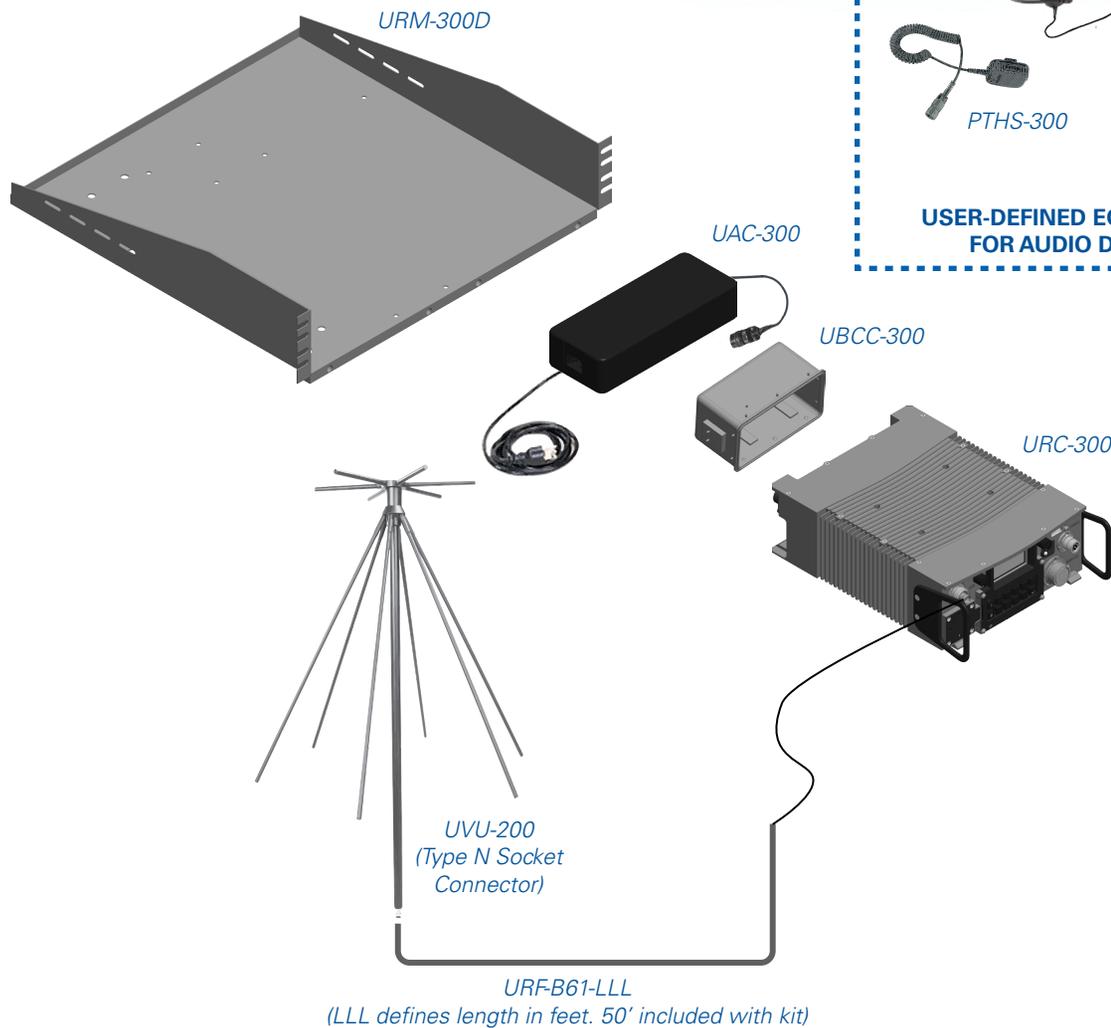
### NOTES:

(1) The DC cable or AC/DC power supply will power the radio and simultaneously charge the battery while it is installed on the radio and the radio is powered on. The portable battery charger recharges the BB-2590/U battery separate from the radio and cannot be used to power the radio.

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# RM-100 10 Watt Base Station System



## 10 WATT BASE STATION SYSTEM

Supplied, User-Defined and Optional Equipment

### SUPPLIED EQUIPMENT:

- Qty. Description
- 1 URC-300 VHF/UHF Transceiver
- 1 URM-300D Rack Mount Tray (Deep)
- 1 UAC-300 AC/DC Power Supply
- 1 UBCC-300 Battery Connector Cover
- 1 UVU-200 VHF/UHF Base Station Antenna
- 1 URF-B61-050 50' Heliax Antenna Cable<sup>(1)</sup>

### USER-DEFINED EQUIPMENT:

- User must select the desired audio device at time of quote (separately priced)
- PTHS-200 Headset
- PTHS-250 H-250 Handset
- PTHS-300 Speaker Microphone

### OPTIONAL EQUIPMENT:

- Audio
- PTHS-xxx Additional Audio Device (see list above)
- Power
- UDC-300 DC Power Cable (power radio directly from DC source)
- RF and Antenna
- URF-B61-LLL Custom Length RF Cable<sup>(1)</sup>
- Additional, compatible antennas and cables (contact General Dynamics for information)

### FUTURE FIELD-UPGRADEABLE RADIO FUNCTIONS:

- AM Cipher Text Data (CT)
- FM (PT Voice and CT Data)
- 30-90 MHz Frequency Band Extension (FM only)
- Adaptive Noise Reduction (ANR) Machine Learning Algorithm

### FUTURE OPTIONAL ANCILLARIES:

- BRCU-300 Base Station Remote Control Unit (Rack mountable)

### NOTES:

(1) Cables with greater lengths available in 50' increments up to 300'.

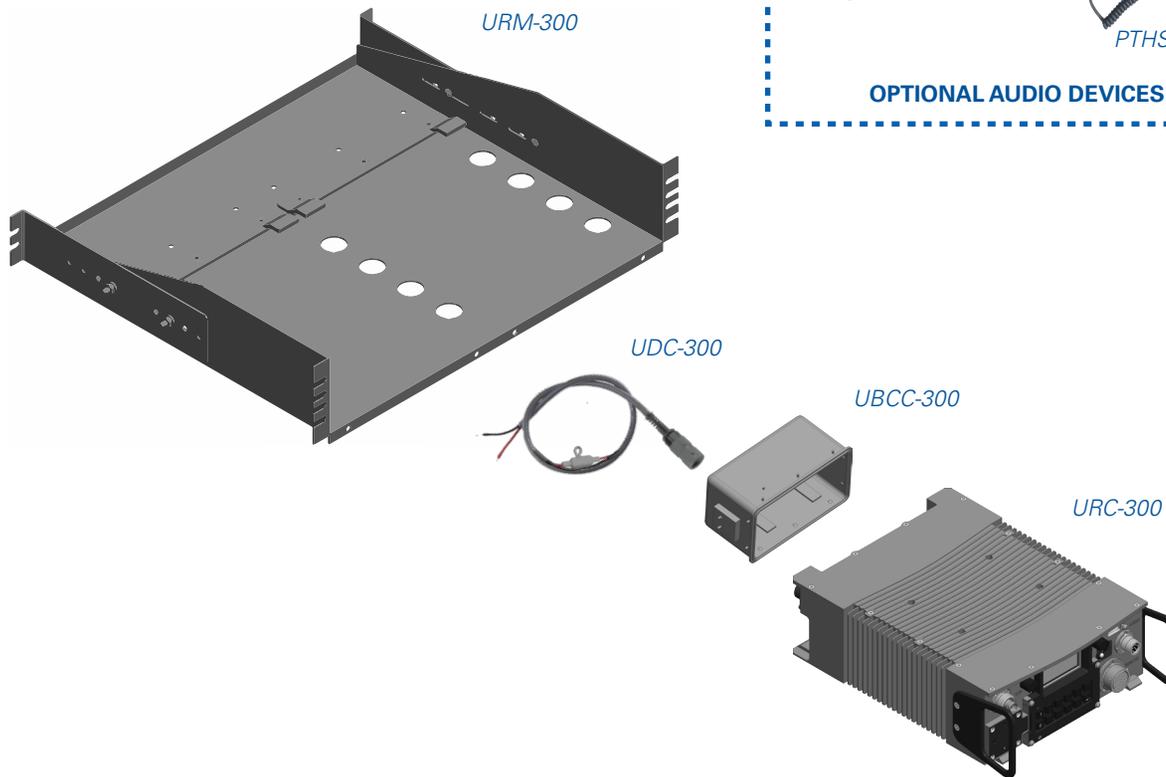
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H-RM100-10WBS-07-0820

# RM-105 10 Watt Base Station System



## 10 WATT BASE STATION SYSTEM

Supplied, User-Defined and Optional Equipment

### SUPPLIED EQUIPMENT:

- Qty. Description
  - 1 URC-300 VHF/UHF Transceiver
  - 1 URM-300 Rack Mount Tray
  - 1 UDC-300 DC Power Cable
  - 1 UBCC-300 Battery Connector Cover

### OPTIONAL EQUIPMENT:

- Audio
  - PTHS-200 Headset
  - PTHS-250 H-250 Handset
  - PTHS-300 Speaker Microphone
- Power
  - UAC-300 AC/DC Power Supply (power radio from AC source)
- RF and Antenna
  - Additional, compatible antennas and cables (contact General Dynamics for information)

### FUTURE FIELD-UPGRADEABLE RADIO FUNCTIONS:

- AM Cipher Text Data (CT)
- FM (PT Voice and CT Data)
- 30-90 MHz Frequency Band Extension (FM only)
- Adaptive Noise Reduction (ANR) Machine Learning Algorithm

### FUTURE OPTIONAL ANCILLARIES:

- BRCU-300 Base Station Remote Control Unit (Rack mountable)

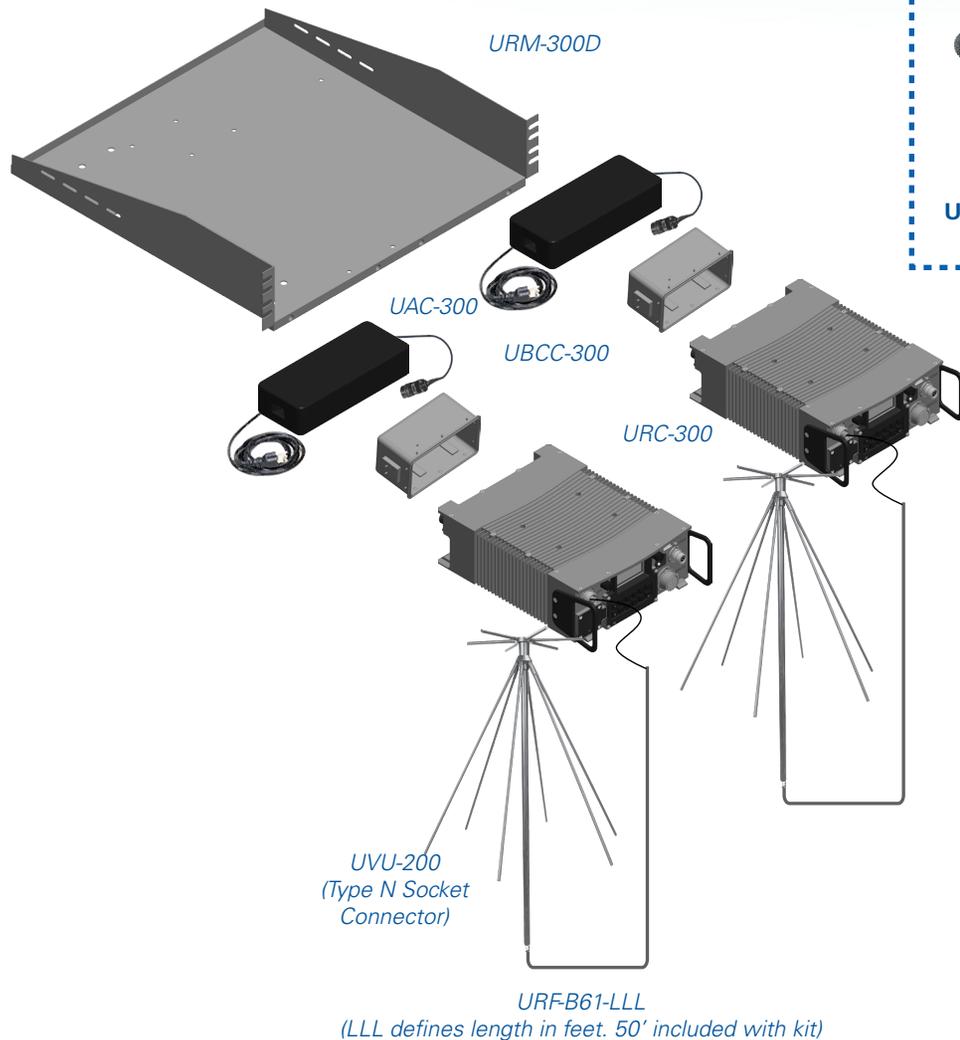
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H-RM105-10WBS-01-0620

# DRM-100 Dual 10 Watt Base Station System



## DUAL 10 WATT BASE STATION SYSTEM

Supplied, User-Defined and Optional Equipment

### SUPPLIED EQUIPMENT:

- Qty. Description
  - 2 URC-300 VHF/UHF Transceiver
  - 1 URM-300D Rack Mount Tray (Deep)
  - 2 UAC-300 AC/DC Power Supply
  - 2 UBCC-300 Battery Connector Cover
  - 2 UVU-200 VHF/UHF Base Station Antenna
  - 2 URF-B61-050 50' Heliax Antenna Cable<sup>(1)</sup>

### USER-DEFINED EQUIPMENT:

- User must select any combination of two audio devices at time of quote (separately priced)
  - PTHS-200 Headset
  - PTHS-250 H-250 Handset
  - PTHS-300 Speaker Microphone

### OPTIONAL EQUIPMENT<sup>(2)</sup>:

- Audio
  - PTHS-xxx Additional Audio Device (see list above)
- Power
  - UDC-300 DC Power Cable (power radio directly from DC source)
- RF and Antenna
  - URF-B61-LLL Custom Length RF Cable<sup>(1)</sup>
  - Additional, compatible antennas and cables (contact General Dynamics for information)

### FUTURE FIELD-UPGRADEABLE RADIO FUNCTIONS:

- AM Cipher Text Data (CT)
- FM (PT Voice and CT Data)
- 30-90 MHz Frequency Band Extension (FM only)
- Adaptive Noise Reduction (ANR) Machine Learning Algorithm

### FUTURE OPTIONAL ANCILLARIES:

- BRCU-300 Base Station Remote Control Unit (Rack mountable)

### NOTES:

(1) Cables with greater lengths available in 50' increments up to 300'.

(2) Select optional equipment in quantities of one or two to support one or both of the dual base station radios.

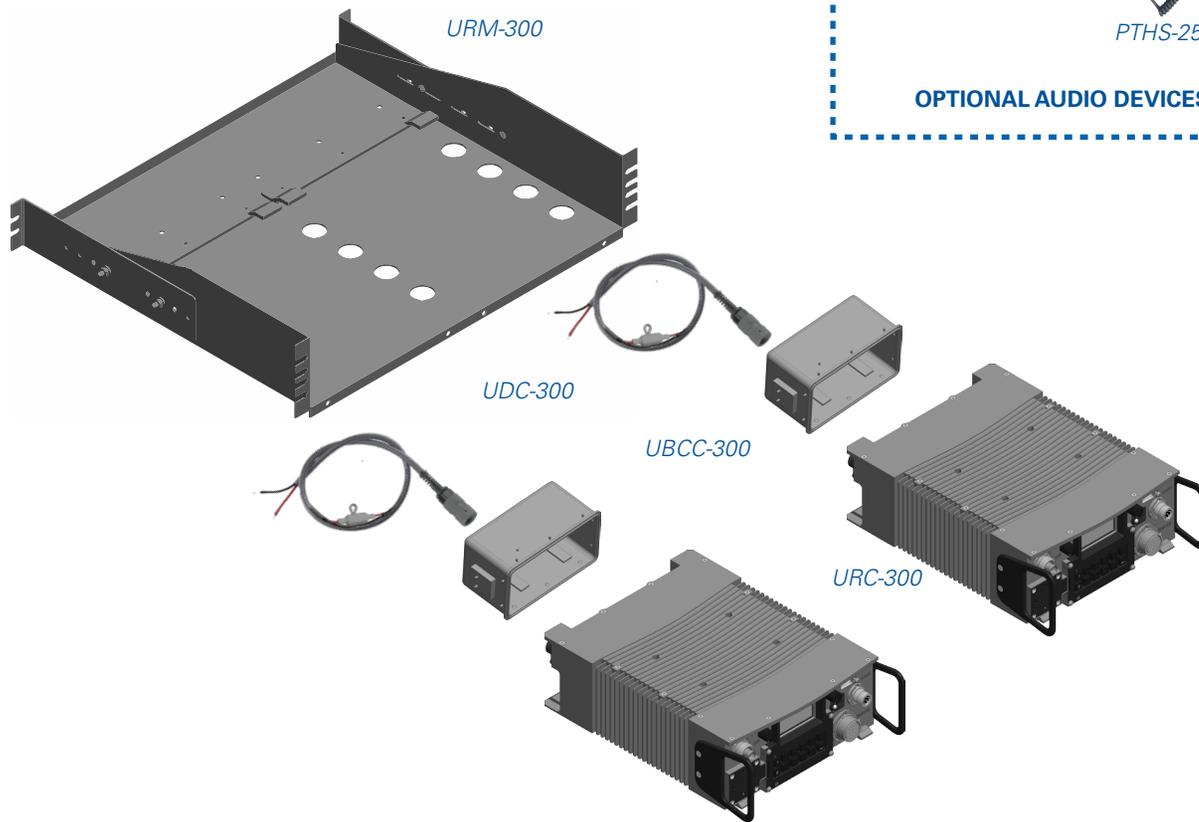
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H-DRM100-10WBS-DUAL-07-0820

# DRM-105 Dual 10 Watt Base Station System



## DUAL 10 WATT BASE STATION SYSTEM

Supplied, User-Defined and Optional Equipment

### SUPPLIED EQUIPMENT:

- Qty. Description
  - 2 URC-300 VHF/UHF Transceiver
  - 1 URM-300 Rack Mount Tray
  - 2 UDC-300 DC Power Cable
  - 2 UBCC-300 Battery Connector Cover

### OPTIONAL EQUIPMENT:

- Audio
    - PTHS-200 Headset
    - PTHS-250 H-250 Handset
    - PTHS-300 Speaker Microphone
  - Power
    - UAC-300 AC/DC Power Supply (power radio from AC source)
  - RF and Antenna
    - Additional, compatible antennas and cables (contact General Dynamics for information)
- ### FUTURE FIELD-UPGRADEABLE RADIO FUNCTIONS:
- AM Cipher Text Data (CT)
  - FM (PT Voice and CT Data)
  - 30-90 MHz Frequency Band Extension (FM only)
  - Adaptive Noise Reduction (ANR) Machine Learning Algorithm
- ### FUTURE OPTIONAL ANCILLARIES:
- BRCU-300 Base Station Remote Control Unit (Rack mountable)

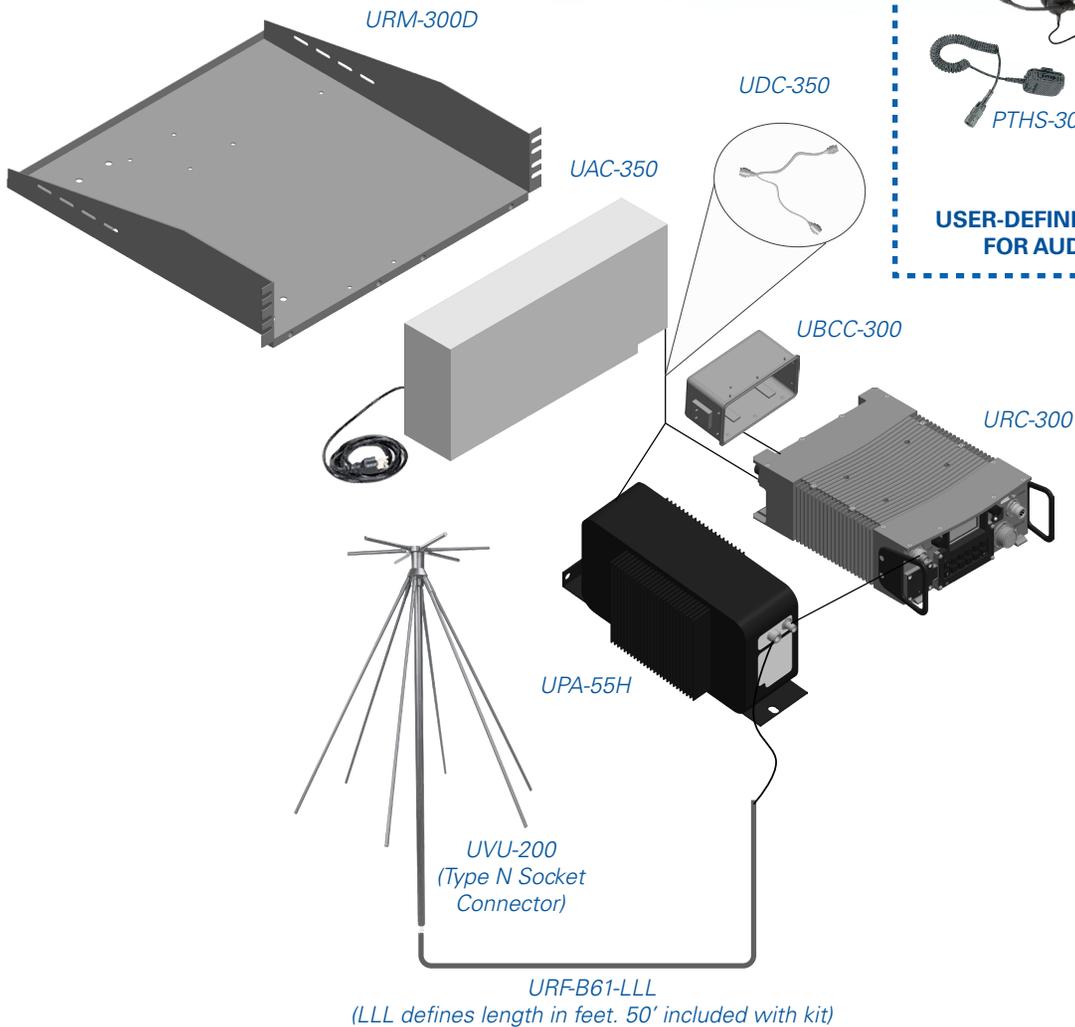
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H-DRM105-10WBS-DUAL-01-0620

# RM-500 50 Watt Base Station System



## 50 WATT BASE STATION SYSTEM

Supplied, User-Defined and Optional Equipment

### SUPPLIED EQUIPMENT:

- Qty. Description
- 1 URC-300 VHF/UHF Transceiver
- 1 URM-300D Rack Mount Tray (Deep)
- 1 UAC-350 AC/DC Power Supply
- 1 UDC-350 Power Distribution Cable
- 1 UBCC-300 Battery Connector Cover
- 1 UPA-55H 50W Power Amplifier
- 1 UVU-200 VHF/UHF Base Station Antenna
- 1 URF-B61-050 50' Helix Antenna Cable<sup>(1)</sup>

### USER-DEFINED EQUIPMENT:

- User must select the desired audio device at time of quote (separately priced)
  - PTHS-200 Headset
  - PTHS-250 H-250 Handset
  - PTHS-300 Speaker Microphone

### OPTIONAL EQUIPMENT:

- Audio
  - PTHS-xxx Additional Audio Device (see list above)
- RF and Antenna
  - URF-B61-LLL Custom Length RF Cable<sup>(1)</sup>
  - Additional, compatible antennas and cables (contact General Dynamics for information)

### FUTURE FIELD-UPGRADEABLE RADIO FUNCTIONS:

- AM Cipher Text Data (CT)
- FM (PT Voice and CT Data)
- 30-90 MHz Frequency Band Extension (FM only)
- Adaptive Noise Reduction (ANR) Machine Learning Algorithm

### FUTURE OPTIONAL ANCILLARIES:

- BRCU-300 Base Station Remote Control Unit (Rack mountable)

### NOTES:

(1) Cables with greater lengths available in 50' increments up to 300'.

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