

Exhibit 12 – Operational Description

General Dynamics C4 Systems

VHF URC-200 Transceiver

FCC ID: MIJURC-200XCVR-V2

Model No. URC-200 (V2)

12.0 URC-200 (V2) Theory of Operation

The URC-200 (V2) VHF/UHF Transceiver is a lightweight, tactical, Line-Of-Sight (LOS) radio that provides AM/FM communication of non-secure voice or data. It is suitable for manpack, vehicular, or fixed station applications.

- In the AM mode the VHF frequency range is 115 to 149.9950 MHz
- In the FM mode the VHF frequency range is 115 to 173.9950 MHz
- In both the AM and FM modes the UHF frequency range is 225 to 399.9950 MHz.
- An 8.33 kHz tuning increment and channel spacing option is available
- An extended 400-420 MHz FM UHF option is available
- A 30-90 MHz FM Low VHF option is available

The radio has standard tuning increments of 25 kHz, 12.5 kHz, and 5 kHz. The radio is capable of transmitting and receiving analog Plain Text (PT) voice and digital Cipher Text (CT) voice or data. The URC-200 can be remote controlled.

In FM mode, transmitter output power is 10W, 5W, or 100 mW (nominal). In AM mode, output power is 10W or 5W average (nominal). 30-90 MHz option output power is 5W, 1W, or 150mW (nominal). Output power level is set via the front panel keypad or remotely.

The radio is a fully synthesized transceiver having a frequency stability of 1 part per million (ppm). The radio is capable of self-calibration. There are no user accessible adjustments or tuning required on the transceiver. All necessary initial adjustments and tuning are performed during manufacture of the radio. Self-calibration of the receiver front end is available via remote command if needed. Any other periodic adjustments after service require special equipment and are password protected.

The radio is housed in a cast aluminum housing that includes a keypad, display, volume and squelch controls, speaker, and connectors.

The Cover Assembly consists of the top cover/heatsink, the Main RF Printed Wiring Board (PWB), and the Preselector printed wiring board. These components are assembled as a single, integral subassembly.

The Chassis Assembly consists of the Audio, Processor/Power Supply (APPS) printed wiring board assembly, the Front Panel Flex assembly, and the chassis. On radios with the 30-90 MHz option, the Chassis Assembly also includes the 30-90 MHz printed wiring board assembly.

The URC-200 (V2) has a number of accessories available. The UVU-100 is a 2.5 dBi passive antenna designed for the URC standard VHF/UHF bands. The UAC-100 is a 110 VAC to 28V DC converter designed to attach to the rear of the radio. The radio operating voltage range is 22 to 34 VDC (28 VDC nominal).

The unregulated DC voltage directly feeds the power amplifier in the transceiver. The maximum current measured into the final PA driver (Q301) and the final PA itself (Q302) are listed below:

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| 1) DC Voltage into Final RF Amplifier: | 28 Volts DC, nominal |
| 2) Maximum DC Current into the Final PA driver: | 0.480 Amps (@ 10W Output Power, FM) |
| 3) Maximum DC Current in the Final RF Amplifier: | 2.02 Amps (@ 10W Output Power, FM) |
| 4) Maximum DC Current into the Final PA driver: | 0.460 Amps (@ 10W Output Power, AM) |
| 5) Maximum DC Current in the Final RF Amplifier: | 1.75 Amps (@ 10W Output Power, AM) |