Overview

The Digital Modular Radio (DMR), AN/USC-61(C), is the first software defined radio to have become a communications system standard for the U.S. Military. The compact, multi-channel DMR provides multiple waveforms and multi-level information security for voice and data communications from the core of the network to the tactical edge. The DMR is currently deployed on 12 different U.S. ship and submarine platforms. The DMR system approach reduces SWAP-C on platforms.

DMR Today

Digital Modular Radios currently operate aboard U.S. Navy surface and subsurface vessels, fixed-sites and other Department of Defense communication platforms using frequencies ranging from 2 MHz to 2 GHz. The USCG will receive the DMR system in FY2019. Certified to pass secure voice and data at Multiple Independent Levels of Security (MILS) over HF, VHF, UHF, and SATCOM channels, the DMR system was developed to the U.S. Navy's specifications and meets all the stringent environmental, EMI and performance requirements for use on U.S. Fleets and five eye countries. DMR is certified by the Joint Interoperability Test Command (JITC) to be compliant with the U.S. government's UHF SATCOM.

Next-Generation Communications Capability

Built using open architecture standards, General Dynamics' Digital Modular Radios continue to provide improved functionality and interoperability by including waveforms and advanced network connectivity, such as the Integrated Waveform and advanced network connectivity with the Mobile User Objective System (MUOS) waveforms. Additionally, system-wide software applications such as Dynamic Routing and Virtual Channel Exploitation extend channel capacity without additional hardware.
Digital Modular Radio

Benefits

- Single radio for the entire 2 MHz - 2 GHz bands
- Lower spares cost and inventory
- Single point of control
- Dramatically simplified shipboard communications system architecture
  - Embedded Type 1 Encryption
  - Embedded red/black baseband switching and routing
- Superior co-site performance using configurable embedded preselector filtering
- Reduced manpower requirements
  - Single point of control for entire HF/VHF/UHF/SATCOM system
  - High reliability
  - Built-In Test (BIT)
- Full logistical support in the U.S. Navy system
  - Single depot and common logistics
  - Common operations and maintenance training
  - Common manuals
  - Low life-cycle costs
  - Very low maintenance costs
- FMS approved

Technical Specifications – Communication

Reprogrammable Waveform Capabilities

- SATCOM – MIL-STD-188-181B, 182A, and 183A
- SATCOM – Integrated Waveform
- SATCOM – MIL-STD-188-187 MUOS
- SINCgars SIP/ESIP
- Havequick I/II
- HF/UHF Link-11
- UHF Link-4A
- MIL-STD-188-110B and 110C HF Modem**
- MIL-STD-188-141B HF ALE and 3G ALE**
- VHF/UHF LOS
- AM Civil and Military Aviation (WB/NB)
- FM Voice and Data (WB/NB)
- FSK/BPSK/SBPSK/QPSK/CPM
- SATURN***
- Others as Required*

Reprogrammable Voice and Data Security Options

- KY-57/58
- KGV-10, 11
- KG-84A/C
- KYV-5 (ANDVT)
- KY-99A
- KWR-46
- HAIPE
- Others as Required*

Key Fill

- DS-101 & DS-102 via CYZ-10 (DTD) and PYQ-10 (SKL) devices

Configuring, controlling, and operating

- Windows-based HMI can control up to 128 DMR channels
- Single DMR can be controlled from up to 15 networked operator stations

System Characteristics

- Frequency Range:
  - 2 MHz – 2 GHz, contiguous

- Size/Weight:
  - 17.5” W x 19.25” H x 22” D (EIA-310-D Clearance)
  - 44.45 x 48.90 x 55.9 cm
  - 197 pounds

- Input Power:
  - 100 - 140 VAC, (47 - 63 Hz @ 10A)

- Operating Temperature:
  - 0° to 55° C

- Vibration
  - MIL-STD-167

- Shock
  - MIL-STD-901E

- EMI
  - MIL-STD-461, and MIL-STD-1399

Call for complete system characteristics

* Upgradeable. Call for availability
** - 110C and 3G ALE available in 2019
*** Planned for 2020