GENERAL DYNAMICS
Mission Systems

Badger™ Software-Defined Radio

Complete, Software-Defined Communication System

BADGER

Two full duplex channels

Complete HF, VHF, UHF and SATCOM / MUOS waveform capability

Programmable embedded Type 1 encryption

Multiple Independent Levels of Security (MILS) certified

Waveform and encryption algorithm upgradeability

Overview

The Badger™ software-defined radio is a compact, 2-channel software-defined radio that provides multi-level information security of voice and data communications from the core of the network to the tactical edge. The Badger is based on the long proven Digital Modular Radio (DMR) that currently operates aboard U.S. Navy surface and sub-surface vessels, fixed sites and other Department of Defense communication platforms. The Badger is a 2-channel software-defined radio that has the waveforms and flexibility of the DMR software-programmable radio in a small, compact chassis. The reduced size, weight and power of the radio enables it to provide a broad range of DMR equivalent services on small platforms, simplifying the logistics chain, and reducing costs. The radio is being certified to pass secure voice and data at Multiple Independent Levels of Security (MILS) over HF, VHF, UHF and SATCOM/MUOS channels.

The Badger is secured by General Dynamics' programmable Advanced INFOSEC Machine (AIM) technology certified Type 1 capabilities that secures communications and simplifies the system architecture. It supports MILS capability which enables it to communicate simultaneously at multiple levels of security, on each of the radio's two channels."

Next-Generation Communications Capability

Built using open architecture standards, the Badger provides a highly flexible voice and data communication platform. The inherent flexibility of the radio enables simplified incorporation of next-generation highly interoperable communications including future waveforms and advanced network connectivity without redesign.
The radio is software adaptable to meet custom communication requirements.

Badger™ Software-Defined Radio

Benefits

- 2-Channel Radio with built-in transceiver for the entire 2 MHz – 512 Mhz band
- Dramatically simplifies communications system architecture
  - Embedded Type 1 encryption
  - Embedded red/black baseband switching and routing
- Robust operation in communication denied environment
- Superior co-site performance
- Reduced manpower requirements
  - Single point of control for entire HF/VHF/UHF/SATCOM system
  - High reliability
  - Built-In Test (BIT)
- U.S. Navy support of LRUs
  - Lower spares cost and inventory
  - Single depot and common logistics
  - Common operations and maintenance training
  - Common manuals
  - Low life-cycle costs

Technical Specifications

Communication

- Reprogrammable waveform capabilities
  - MUOS-Data rates up to 384K
  - SATCOM – MIL-STD-188-181B, 182A, and 183A
  - Integrated Waveform (IW)
  - SINCGARS SIP/ESIP
  - SINCGARS v3.1 (In Development))
  - Havequick I/II*
  - SATURN (Future)
  - MIL-STD-188-110A HF Modem
  - MIL-STD-188-141A HF ALE
  - MIL-STD-188-110C Wideband HF WF (In Development)
  - MIL-STD-188-141C Wideband ALE (In Development)
  - VHF/UHF LOS
  - AM civil and military aviation (WB/NB)
  - FM voice and data (WB/NB)
  - FSK/BPSK/SBPSK/QPSK/CPM
  - Others as required**
- Reprogrammable voice and data security options
  - KY-57/58
  - KGV-11
  - KGV-10
  - KYV-5 (ANDVT)
  - KY-99A
  - HAIPE
  - AES
  - PKI
  - KGV-11M (TTAM)
  - AES FH2
  - TSVCIS Suite B
  - Others as Required**
- Key fill devices
  - DS-101
  - DS-102
- Configuring, controlling, and operating
  - Tailorable external I/O
  - Audio, VoIP
  - Data- Serial‡, Ethernet
- Compatible with COTS 100W, 200W, 500W, 1KW power amplifiers

Digital Modular Radio (DMR)

Badger

System Characteristics (Planned)

- Frequency Range: 2 MHz – 512MHz contiguous
- Size: 11.23" H x 22.09" D x 8.82" W
- Weight: 45 lbs (approx)
- Input Power: 100 - 140 VAC, (47 - 63 Hz)
- Operating Temperature: 0° to 55° C
- Vibration: MIL-STD-167
- Shock: MIL-S-901
- EMI: MIL-STD-461, and MIL-STD-1399

Offering all the waveforms and flexibility of the DMR at 1/4 the size, the Badger is ideal for smaller platforms.

Call for complete system characteristics

** For U.S. government use only.*

*** Upgradeable. Call for availability.*

‡External Adapter Required

GENERAL DYNAMICS
Mission Systems

Badgerinfo@gd-ms.com • Phone 800-424-0052