

HOOK3[®] Combat Survival Radio (CSR)

Search and Rescue with Confidence



Smaller, lighter, and better power efficiency
than previous CSAR radios

Auto-activation – G-Force & saltwater

Supports multiple Global Navigation Satellite Systems (GNSS)

Shorter time to first GPS fix

Option for P(Y) SAASM GPS Receiver -Radio designed to be
upgradeable to M-Code receiver when available

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Overview

The HOOK3 Combat Survival Radio (CSR) provides direct, line-of-sight voice and encrypted two-way data communications that help combat search and rescue teams quickly locate and rescue downed pilots and isolated military personnel. The radio sends encrypted global positioning information, user identification and situation reports to provide rescue teams and aircraft operating in hazardous conditions with quick and accurate location information.

The new HOOK3 radio is significantly smaller, lighter and has better power efficiency than previous CSAR radios. Multi-mode capability allows a crew member to carry a single radio as opposed to multiple pieces of equipment. The radio is equipped with a new auto-activation feature that automatically transmits location data when G-Force or salt water is detected. In addition the new GPS module now has 32 channels enabling a faster acquisition time, better resolution due to increased satellite detection, better performance under canopy and near structures and supports multiple Global Navigation Satellite Systems (GNSS). With over 36,000 radios delivered to 36 different countries since 2001, HOOK radios have been the worldwide CSAR radio of choice when lives are on the line.

Additional Features & Benefits

- Fully compatible with existing HOOK2[®] assets (HOOK2 radios, Quickdraw2[®], SATCOM Base Station)
- User friendly, software-defined transceiver enables waveforms, crypto and software upgrades to be added as they become available
- Smaller size allows crew members to carry a single radio to satisfy Emergency Location Transmitter (ELT) or Personal Locator Beacon (PLB) functions
- Single, short encrypted bursts sent to CSAR aircraft significantly lowers risk of detection and interception
- Two-way SATCOM and 406 SARSAT beacon modes provide a real-time, over-the-horizon communications path between survivor and rescue personnel
- Configurable for 121.5 MHz or 243 MHz swept tone beacon
- PLS DME transponder and beacon provides Terminal Area Guidance (TAG)
- Can be interrogated by the Rockwell Collins RSC 125G or Cubic PLS AN/ARS-6(V12)
- Automatic response to interrogations enables rescue forces to be able to extract the survivor's GPS coordinates from the radio without operator intervention
- Web browser administration (no Program Loader block)

Designed and manufactured at the General Dynamics Mission
Systems Scottsdale, AZ facility

HOOK3® Combat Survival Radio (CSR)

General Radio Characteristics

- **Frequency range**
 - 121.5, 123.1 MHz; 225–320 MHz; capable of 100 - 512 MHz; 406 SARSAT
- **Tuning increments**
 - 25 KHz steps (LOS)
 - 5 KHz steps (SATCOM)
- **Frequency stability:** ± 1ppm
- **Modulation**
 - AM voice, AM swept-tone beacon
 - PLS DME Transponder mode: BPSK/OOK
 - HOOK mode: MSK 1200 BPS
 - SARSAT mode: BPSK
 - SATCOM mode: BPSK
 - FM (future)
- **Data burst**
 - Encrypted (LOS and SATCOM) includes ID, GPS Coordinates and Text Message
- **Operating modes**
 - Voice
 - Swept-tone beacon
 - PLS DME transponder
 - GPS Interrogation (LOS or SATCOM)
 - 406 SARSAT
 - UHF SATCOM
- **Weight:** 22 oz. with battery (without SAASM)
- **Size (with battery)**
 - 6.4 in x 2.90 in x 1.56 in
 - 6.4 in x 2.90 in x 1.90 in with SAASM
- **Operational temp.:** –40°C to +55°C
- **Storage temp.:** –40°C to +80°C
- **Primary and Rechargeable Batteries**
- **Battery life:** >50h SARSAT Battery Saver

Receiver Characteristics

- **Sensitivity (typical)**
 - –100dBm (VHF AM Voice)
 - –104dBm (UHF AM Voice)
 - –138dBm (UHF SATCOM data)
- **Bandwidth (typical)**
 - Narrow Band: 60 KHz (min)
 - Wide Band: 5 MHz (min)
- **Spurious response:** 50 dB(typical)
- **Image response:** 40 dB min.
- **Audio response:** 500 Hz to 3500 Hz
- **Distortion (typical):** 2 percent
- **Audio output (typical):** 50 milliwatts

Transmitter Characteristics

- **Average power**
 - 1 Watt – UHF; capable of 5W (FM)
 - 200 mW – VHF; capable of 2W (FM)
 - 406 SARSAT 5.0W min.
 - UHF SATCOM 5.0W ± 2 dB
- **Modulation:** 86% AM
- **Harmonics:** ≤30 dB below carrier
- **Distortion:** 3% typical at 86% modulation

GPS/Navigation

- **GPS General Characteristics**
 - Civilian: C/A state-of-the-art GPS Receiver, parallel L1 band only; multiple international constellations supported
 - Military SAASM (opt): 12 channel, L1 and L2 bands.
- **Sensitivity**
 - Civilian: -145 dBm
 - Military: -132 dBm
- **Accuracy:** Civilian: < 25 meters
- **Navigation:** up to 250 waypoints
- **Coordinate system**
 - Geodetic (lat./long.) GEO, GEO2, UTM, MGRS

Benefits:

- **Accurate**
 - Position accuracy to <25 meters
 - Configurable GPS position updates up to 1 second
- **Secure**
 - HOOK2 waveform
 - 256 bit AES encryption - SATCOM
- **Rugged**
 - Immersible to 50 feet for 15 minutes or to 3 feet for 24 hours
 - MIL-STD-464 and MIL-STD-810
 - Smaller Handheld, lightweight design
 - Auto-Activation upon Ejection and/or Saltwater Detection
 - Operable underwater with Remote Antenna Kit
- **Easy to use**
 - Automatically responds to interrogation without user intervention
 - Acquires GPS position automatically when unit is turned on
 - Single-hand operation
 - Situation report feature
 - Large non-glare, daylight visible display
 - Intuitive keypad and UI menu system
 - Web based configuration utility supports fast configuration and cloning
 - Single button MAYDAY feature

Flexible

- Software Defined Radio; upgradeable with future waveforms and crypto
- Can be powered by rechargeable battery
- Indicates detection and relative strength of GPS interference
- LOS and OTH communications paths
- Voice and Databurst modes
- Canned, pre-programmed, free-format, and Situation Report encrypted message formats
- Interoperates with a variety of interrogators with multiple interrogation modes (SATCOM, LOS, PLS)
- Onboard and Remote VHF/UHF and GPS antennas
- 25 programmable Communication Presets selectable by either the 7 position, easy access selector knob or the User Interface
- Configurable battery saving options
- Low risk of interception/detection
- Encrypted 2-way burst data transmission (messaging and position)
- Advanced forward error correction (FEC) for burst data

Fully compatible with the existing HOOK2 CSAR ecosystem

- Quickdraw2
- HOOK SATCOM Base Station
- Embedded Interrogator
- PRC-112B1 and PRC-112G radios
- ARS-6, ARS-6 (v12)
- RSC-125G

Ancillaries:

- Primary and Rechargeable batteries
- Primary Communication Antenna
- Spare Antenna
- Remote Antenna Kit
- Earphones
- Headset with microphone
- USB Provisioning cable
- DS-101 Key Fill cable
- Protective Faceplate/Display Cover
- AC/DC Battery Eliminator(s)
- Pouch
- Antenna Adapters
- Battery Charger

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