

# HOOK3<sup>®</sup> Combat Survival Radio (CSR)

*Search and Rescue with Confidence*



Cospas-Sarsat Approved

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

Auto-activation – G-Force & saltwater

Supports multiple Global Navigation Satellite Systems (GNSS)

## 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 38,000 radios delivered to 39 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<sup>®</sup> assets (HOOK2 radios, Quickdraw2<sup>®</sup>, 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
- Swept tone beacon on any supported frequency including 121.5 MHz & 243 MHz
- PLS DME transponder and beacon provides Terminal Area Guidance (TAG)
- Can be interrogated by the Rockwell Collins RSC 125G and Cubic PLS AN/ARS-6(V12) and (V14)
- 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 using USB Provisioning Cable

**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; hardware capable of 100 - 512 MHz; 406 SARSAT
- **Tuning increments**
  - 25 KHz steps (LOS)
  - 5 KHz steps (SATCOM)
- **Frequency stability:**  $\pm 1$  ppm
- **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 (TAC #723)
  - UHF SATCOM
- **Weight:** 24 oz. with battery
- **Size (with battery)**
  - 6.4 in x 2.90 in x 1.56 in
- **Operational temp.**
  - - 40°C to +55°C
  - - 20°C to +55°C (for SARSAT)
- **Storage temp.:** -40°C to +80°C
- **Primary and Rechargeable Batteries**
  - For SARSAT operation use 60-P58140R001
- **Battery life:** SARSAT certification for 24 hours with 60-P58140R001

## Receiver Characteristics

- **Sensitivity (typical)**
  - -116 dBm (VHF AM Voice)
  - -114 dBm (UHF AM Voice)
  - -138 dBm (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

## Part Number:

- 01-P58100R004

## Transmitter Characteristics

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

## GPS/Navigation

- **GPS General Characteristics**
  - Civilian: C/A state-of-the-art 32 channel GPS Receiver, parallel L1 band only; multiple international constellations supported
- **Sensitivity**
  - Civilian: -145 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 and 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 backlit display
  - Intuitive keypad and UI menu system
  - Web based configuration utility supports fast configuration and cloning
  - Single button EMERGENCY feature
- **Flexible**
  - Software Defined Radio; upgradeable with future waveforms and crypto
  - Configurable with any mainstream browser
  - 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:

- Replaceable Primary and rechargeable batteries
- Replaceable primary communication antenna
- Easy-to-use test set
- Remote antenna kit
- Earphones
- Headset with microphone (future)
- USB provisioning cable
- Protective faceplate/display cover
- AC/DC battery eliminator(s) (future)
- Pouch
- Antenna adapters
- DS-101 fill cable
- Battery charger (4 and 10 bay)

## CTS-6025 CSAR Radio Test Set

- **Designed by Astronics Test Systems, the CTS-6025 is the preferred test set for the HOOK2 and HOOK3 radio**
  - Offers fault detection and operational verification of radio communications at all levels of deployment
  - Guided scripted radio testing that quickly provides consistent, cataloged test results
  - Removable solid state hard drive protects mission critical data
  - Most comprehensive communications tester for field testing

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