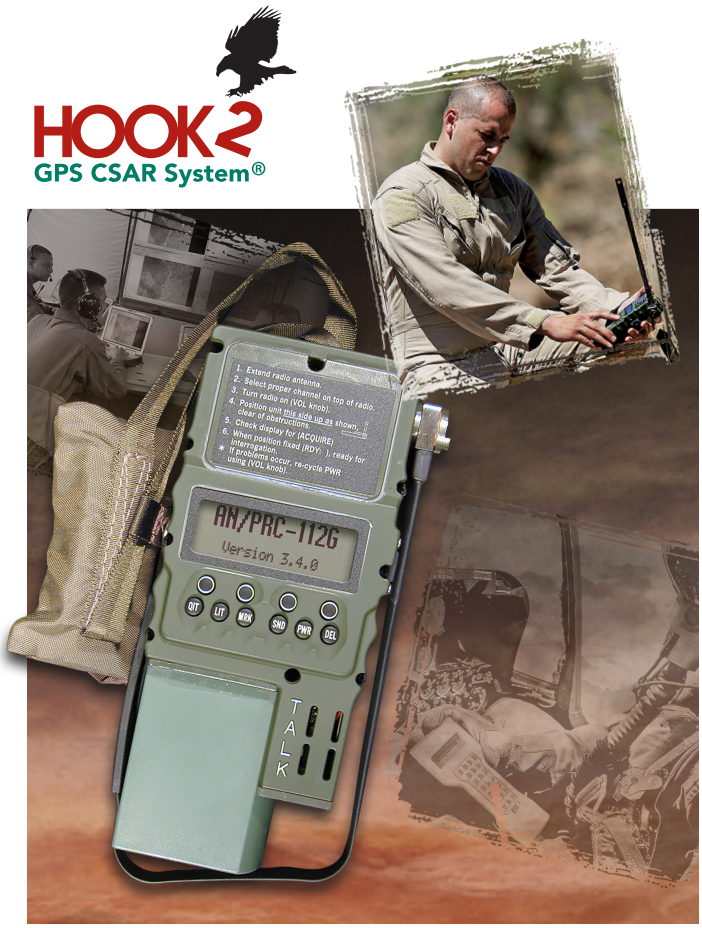
GENERAL DYNAMICS
Mission Systems

AN/PRC-112G® CSAR Transceiver

Fielded. Proven. Trusted.



Terminal Area Communications and Terminal Area Guidance (TAC/TAG)

Low power consumption GPS

406 SARSAT and two-way dedicated SATCOM

Software Defined. Upgradeable.

Over 25,000 HOOK2® Radios fielded

Flexibility and Interoperability

Interoperable with all AN/PRC-112 and HOOK2 family radios in use by U.S. and international customers, the AN/PRC-112G Radio is ideal for unilateral or coalition operations. The user-friendly AN/PRC-112G transceiver is software defined, meaning new features, waveforms and software upgrades can be added as they become available.

Secure Information in Just One Button Press

The upgraded AN/PRC-112G radio sends encrypted global positioning data (lat/long), user identification code, text messages and situation reports. This provides quick and accurate location and rescue information for air crews, forward air controllers and personnel operating in hazardous conditions. A single, short encrypted burst to CSAR aircraft offers low risk of detection and interception. Two-way SATCOM[1] and 406 SARSAT beacon modes are available now as software options[2], enabling a real-time, direct, over-the-horizon communications path between survivor and rescue personnel.

Terminal Area Communications and Terminal Area Guidance (TAC/TAG)

The General Dynamics AN/PRC-112G radio features direct, line-of-sight voice and encrypted two-way data communications between survivor and rescue forces (TAC). In addition, the radio incorporates a PLS DME transponder and beacon for terminal guidance (TAG). For assured communications with rescue personnel, the radio communicates to our plug-and-play Quickdraw2® Interrogator onboard a wide variety of rescue platforms, and can also be interrogated by the Rockwell Collins RSC 125G or Cubic PLS[3] AN/ARS-6(V12). Because the radio automatically responds to interrogations, rescue forces can extract the survivor's GPS coordinates from the radio without operator intervention.

Continually Updates and Detects GPS Interference

The radio contains a CA code, 12-channel parallel GPS Receiver, with automatic position updates each second. It detects GPS interference, providing visual notification of the presence and relative strength of an interferer. Utilizing CA code maximizes battery life and requires no key management.

AN/PRC-112G® CSAR Transceiver

GSA Order Number: GSA Order: GS-35F-0060N Schedule #70 SIN 132-8

Benefits:

- Accurate
  - Position accuracy to 25 meters
  - Continuous GPS position updates every second
- Secure
  - HOOK2 waveform
  - 256 bit AES encryption
- Rugged
  - Immersible to 50 feet for 15 minutes or to 3 feet for 24 hours
  - Meets MILSPEC for vibration and drop
  - Handheld, lightweight design
- Easy to use
  - Automatically responds to interrogation without user intervention
  - Acquires up to 12 GPS satellites automatically when unit is turned on
  - Single-hand operation
  - Situation report feature
- Flexible
  - Software Defined Radio; upgradeable with future waveforms
  - Can be powered by rechargeable battery and/or solar cells
  - 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)
- Low risk of interception/detection
  - Encrypted 2-way burst data transmission (messaging and position)
  - Advanced forward error correction (FEC) for burst data

Technical Specifications

General Radio Characteristics

- Frequency range
  - 121.5, 123.1 MHz;
  - 225–320 MHz;
  - 406 SARSAT4
- 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
- Data burst
  - 455 ms, without preamble
- Operating modes
  - Voice
  - Swept-tone beacon: 121.5 MHz, 243 MHz
  - PLS DME transponder
  - GPS Interrogation
  - 406 SARSAT
  - UHF SATCOM
- Weight
  - 27.2 oz. (0.78 Kg) w/o battery (typical)
- Size
  - 7.7 x 3.87 x 2.1 in
  - (w/ battery ant. not extended) 19.56 x 9.83 x 5.33 cm)
- Operational temp.
  - –40°C to +55°C; display marginal from –40°C to –30°C
- Storage temp.
  - –40°C to +80°C
- Battery
  - 1794AS0953A/U
- Battery life
  - >4 days, estimated depending on CSAR operational scenario

Receiver Characteristics

- Sensitivity (typical)
  - –100dBm (VHF AM Voice)
  - –104dBm (UHF AM Voice)
  - –138dBm (UHF SATCOM data)
- IF selectivity (typical)
  - <6 dB @ Fo ± 30 KHz
  - >50 dB @ Fo ±140 KHz
- Spurious response (typical)
  - 50 dB
- Image response
  - 40 dB min.
- Audio response
  - 500 Hz to 3500 Hz
- Distortion (typical)
  - 10 percent
- Audio output (typical)
  - 50 milliwatts

Transmitter Characteristics

- Average power output
  - 1 Watt – UHF
100 mW Tx – VHF
  - 406 SARSAT: 5.0W min.
  - UHF SATCOM: 5.0W ± 2 dB
- Modulation
  - 86% AM
- Harmonics
  - ≤30 dB below carrier
- Distortion
  - 15% typical at 86% modulation

GPS General Characteristics

- Type
  - 12-channel parallel L1, CA code
- Navigation
  - up to 250 waypoints
- Coordinate system
  - Geodetic (lat./long.) GEO, GEO2, UTM, MGRS
- Accuracy
  - < 25 meters

1. *JITC Tested*
2. *To add the 406 SARSAT option, all radios must be returned to the factory for upgrade, due to COSPAS/SARSAT regulations. Call for a quotation.*
3. *PLS is a registered trademark of Cubic Defense Systems.*
4. *COSPAS/SARSAT approved, letter of compatibility issued May 2006*

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