The AN/ARC-231 is an Airborne VHF/UHF/LOS and SATCOM Communications System.

This system supports Department of Defense (DoD) requirements for airborne, multi-band, multi-mission, secure anti-jam voice, data and imagery transmission and provides network-capable communications in a compact radio set.

The AN/ARC-231(V)(C) Skyfire Radio System, based upon the RT-1808A/ARC-231(V)(C) Receiver Transmitter is a fully compliant, high performance, fully qualified, low risk solution for any airborne platform.

Benefits

- NSA & JTC certified for SATCOM, DAMA and IW
- Enhanced MELP vocoder
- Anti-jam communications: HAVE QUICK I/II and enhanced SINCGARS
- MIL-STD-1553 or Serial Control
- Embedded Tactical Internet protocols (IPV4)
- High data rate communications in LOS and SATCOM for imagery file transfer
- Embedded Communications security (COMSEC)
- Net Control Device functions (OTAR/OTAT) externally supported
- Embedded Advanced Data Controller (ADC)
- Bussed DS-101 advanced fill device supported
- 239 preset channels
- Software programmable
- 30-512Mhz operation

Description

The AN/ARC-231(V)(C) is fully qualified to appropriate Military Standards (MIL-STD) through Environmental, Reliability, Electromagnetic interference (EMI)/ Electromagnetic compatibility (EMC) and Joint Interoperability Test Command (JITC) testing that ensures interoperability across the tactical environment in addition the AN/ARC-231(V)(C) is Air-Worthiness certified.

The ARC-231(V)(C) Radio System operates from 30 to 512 MHz, AM/FM Very High Frequency (VHF), Ultra High Frequency (UHF) Line-of-Sight (LOS) with frequency agile modes Electronic counter-
countermeasures (ECCM), UHF Satellite Communications (SATCOM), Demand Assigned Multiple Access (DAMA), Integrated Waveform (IW), Air Traffic Control (ATC) channel spacing is operator selectable in 5, 8.33, 12.5, and 25kHz steps. Standard Ship-to-Shore Maritime operation is also available.

Communications security is achieved via an updated embedded encryption engine, certified by the National Security Agency (NSA), providing interoperability with KG84 Modes 1, 2, 3 and 4 it is also compatible with FASINATOR, VINSON and ANDVT. Communications integrity is maintained with SINCGARS (Single Channel Ground and Airborne Radio System) and HAVE QUICK I and II frequency agile modes. UHF SATCOM and DAMA protocols provide BLOS (Beyond Line-of-Sight) satellite communications. Networking is achieved with an embedded Internet Protocol (IP) stack and menu configurable network parameters.

Voice communications is significantly enhanced with the incorporation of the Mixed Excitation Linear Predictive (MELP) vocoder. This mode improves communications capabilities in noisy environments over narrowband channels. In addition the AN/ARC-231(V)(C) has an automatic mode that detects when either MELP or ANDVT messages are received and switches to the appropriated decoding algorithm, permitting participation in nets using both encoding techniques.

Data communications utilizes an internal data controller. The internal data controller is menu configurable and may be disabled should an external data controller be utilized. Data rates up to 56, 64, and 76.8kbps can be achieved dependent upon channel and operational mode. The networking parameters facilitate tactical internet and range extension (TI-RE) capabilities supporting situational awareness Force XXI Battle Command Brigade and Below (FBCB2) data via satellite.

The ARC-231 is a software definable radio, allowing implementation of upgrades via PC-based software downloads, even while the equipment is installed within the operational platforms. These advanced capabilities provide a solid foundation fulfilling current and future communication requirements.

The RT-1808A typically will operate under 1553 bus control, however, the C-12601 Control Indicator is available as either a primary control device for the system or as a backup radio control.

AN/ARC-231(V)(C) radio system salient features include:

- Continuous full power transmission at high temperatures and altitudes, and excellent receiver performance across all frequency bands
- Robust receiver processing to overcome Radio Frequency (RF) signal distortion and fading associated with SATCOM downlink signal reception through turning rotors
- MIL-STD-188-184 protocol implemented for LOS, SATCOM and DAMA waveforms
- MIL-STD-188-220 protocol implemented for SINCGARS, HAVE QUICK I/II waveforms
- Reset to factory defaults capability
- Fewer than 0.5% degraded channels
- Dual antenna ports that eliminate the need for an external RF routing switch.
- Low Power consumption
- Front Accessible connections

The AN/ARC-231(V)(C) Multi-Band/Multi-Mission System and may be comprised of the following items:

- Radio RT-1808A/ARC-231(V)(C)
- Remote Control Indicator C-12601
- Fill Panel C-12608
- High Power Amplifier AM-7565
- Preamplifier AM-7566 which interfaces to a single element SATCOM antenna
- Preamplifier AM-7529 which interfaces to a dual element SATCOM antenna

Platforms

The RT-1808A/AN-ARC-231(V)(C) is currently used on a wide variety of platforms. Rotary wing platforms include MH-60L/M and UH-60L/M Black Hawks, MH-47E/G and CH-47G Chinooks, UH-1N Hueys, A2C2S Black Hawks, AH-64 Apaches and UH-72A Light Utility helicopters (LUH). Fixed wing platforms...
include Airborne Reconnaissance Low-Altitude Multi-Mission –ARLM, USAF Rivet Joint, and USAF Joint-STARS. These platforms, along with a wide variety of additional users, utilize the ARC-231 for VHF/UHF Line-of-Sight Single Channel and SATCOM BLOS for voice and data transmission.

**ITAR STATEMENT**

The AN/ARC-231 is included on the U.S. Munitions List as defined in the International Traffic in Arms Regulations (ITAR), 22 CFR 120. As such, direct download of technical data referred to at this website is not authorized. Please contact ARC-231 Support, identified below, to request a copy of any document listed at this website. The requested document(s) will be sent via encrypted e-mail upon receipt and confirmation of a valid .mil e-mail address (size permitting). If e-mail transmission is not feasible, the requested document(s) will be provided on compact disc and will be sent only to a valid U.S. Military installation or U.S. Government contractor.

Additional information is available by contacting us via [ARC-231_Support@Raytheon.com](mailto:ARC-231_Support@Raytheon.com) or 877-227-2231. Once you are validated as an authorized recipient, the requested information can be distributed via encrypted email or by compact disc.

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