The AN/ARC-231A RT-1987 is BAE Systems’ newest generation of multi-band, multi-mission, airborne communications system with a modernized NSA, Type 1 embedded cryptographic solution. The Software Communications Architecture (SCA)/Software-Defined Radio (SDR) design of the RT-1987 provides a design reserve capacity for software-only deployment of future operational, mission, and end user deployment focused configurability. The RT-1987 is a fully backward compatible, drop in SDR replacement that includes all RT-1808A control interfaces, both federated and Flight Management System (FMS) functions and requires no other changes for existing integrated platforms. It duplicates the communications capabilities of its predecessor with the same set of Electronic Counter-Counter Measures (ECCM) capabilities (HAVE QUICK, SATURN, and SINCGARS), and UHF SATCOM modes (DAMA and IW), coupled with the foundational building blocks supporting Mobile User Objective System (MUOS).

The RT-1987 adds Ethernet and USB for remote control via aircraft FMS and discrete remote control sets to the MIL-STD-1553, EIA RS-232/422, and continues to support current and evolving joint service interoperable voice and data standards for Line of Sight (LOS) and beyond LOS communications in VHF/UHF spectrum. Field-tested, the RT-1987 covers 30 to 512 MHz with expandable coverage out to 2GHz. Designed to perform in the most demanding environments, BAE Systems’ RT-1987 airborne radio provides warfighters with secure mission-critical information when they need it most.

Features and benefits

- Programmability reduces the time to field evolving communication needs, special mission modifications, and performance enhancements.
- SCA/SDR design provides a significant opportunity to field new capabilities as software-only upgrades.
- Multiple control interface options — such as independent red and black MIL-STD-1553, Ethernet, and USB — allows for flexible integration and mission deployment options.
- Provides ED-23C (8.33 kHz) internationally compliant air traffic control communications and full range of mandatory US and NATO capabilities.
Transmitter characteristics

**Power output**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Power (W)</th>
<th>Frequency Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOS AM</td>
<td>10 W (116 to 156 MHz, 225 to 400 MHz)</td>
<td>225 to 512 MHz</td>
</tr>
<tr>
<td>SINCgarsLOS FM</td>
<td>20 W (30 to 88 MHz, 130 to 174 MHz, 225 to 512 MHz)</td>
<td>225 to 512 MHz</td>
</tr>
<tr>
<td>SATCOM</td>
<td>125 W (290 to 320 MHz w/AM-7665 or AM-7668 HPAs)</td>
<td>225 to 512 MHz</td>
</tr>
<tr>
<td>MUOS</td>
<td>100 W (300 to 320 MHz w/AM-7668 HPA)</td>
<td>225 to 512 MHz</td>
</tr>
</tbody>
</table>

Exciter output 10 dBm (121.5–2,000 MHz)

Adjustable power 1 dB steps down to 0.2 Watts

Audio input Adjustable for 150 ohm, 600 ohm, DC-MIC, Wideband and X-mode inputs

Receiver characteristics

<table>
<thead>
<tr>
<th>Mode</th>
<th>Sensitivity (10dB SINAD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOS</td>
<td>AM &lt; -105 dBm (30% mod)</td>
</tr>
<tr>
<td>ATC mode</td>
<td>FM &lt; -112 dBm (±5.6 kHz dev)</td>
</tr>
</tbody>
</table>

Audio bandwidth 50 kHz, 1.2, 4.8 and 19.5 MHz

Audio output 0 to 300 mW adjustable for both 150 and 600 ohm interfaces

Response Narrowband and ATC ±3 dB, Normal, Wideband

Distortion <5% AM or FM

SATCOM Bit Error Rate (BER) 1 x 10^-5

SIARC mode noise figure 10 dBm (512–2,000 MHz)

SATCOM mode sensitivity 1 dB steps down to 0.2 Watts

Guard receiver Dedicated 121.5 MHz/243 MHz (LOS) and scanning

Environmental characteristics

Temperature range

- Operating: -40° to +71°C
- Non-operating: -55° to +95°C

Altitude 55,000 ft.

Humidity 100%

EMI/EMC MIL-STD-461F, ADS-37A-PRF

Primary Power: MIL-STD-704A-E 28VDC

Modes of operation

<table>
<thead>
<tr>
<th>Mode</th>
<th>Modulation modes</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOS</td>
<td>AM, FM, FSK, Continuous Phase Modulation (CPM) (2.48 MHz data rate up to 76.8 kbps)</td>
</tr>
<tr>
<td>ECCM</td>
<td>HQ VII, SINCgars ESIPEOM, SATURN</td>
</tr>
<tr>
<td>SATCOM</td>
<td>Dedicated SATCOM (2.48 MHz data rate up to 56 kbps)</td>
</tr>
<tr>
<td>DAMA</td>
<td>25kHz DAMA (19.2K Burst)</td>
</tr>
<tr>
<td>IW</td>
<td>25kHz DAMA (19.2K Burst)</td>
</tr>
<tr>
<td>MUOS</td>
<td>Voice and Data (2.4 kHz to 384 kHz)</td>
</tr>
</tbody>
</table>

Encryption

Embedded Modern Programmable Type I TRANSEC & COMSEC, Data & Voice, HAIEPU (MUOS), TSSCIS

External/Interop YSKY, KYV, KYV/5, KYV/6, KYV/7, KYV/8, KYV/9, KYV/10, KG-84 AC (Modes 4-6), KG-84 AC (Modes 1-3), KG-84 AC (Modes 7-8)

Features LPC-10e and MELP narrowband vocoders, Transmit and Receive Over-the-Air rekey (OTAR), DS-102 and DS-101 (Bussed and Non-Bussed) key fill

Fill Devices ANPYQ-10 (SKL), KIK-30 (RSKL)

For more information contact:

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