

# Modified Miniature Receive Terminal (MMRT)

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The Rockwell Collins Modified Miniature Receive Terminal (MMRT) provides a VLF/LF communication link from the National Command Authority to the E-4B National Airborne Operations Center, and the E-6B TACAMO aircraft via the Minimum Essential Emergency Communications Network (MEECN).

- *Enhanced Emergency Action Message Processing*
- *Nuclear hardening protection*
- *Flexible programmability to meet changing mission roles*



### **Enhanced survivable strategic VLF/LF connectivity**

The MMRT is an enhanced version of the U.S. Air Force AN/ARR-85 miniature receiver terminal. It has a new high data rate (HIDAR) mode, improved command post operator control capabilities and advanced packaging to enhance MEECN mission performance. Like the ARR-85, the MMRT ensures automatic reception and processing of secure, long-haul emergency action messages (EAM) in benign, hostile, and nuclear-stressed environments.

Collins' MMRT is a common VLF/LF receive solution for U.S. Air Force and U.S. Navy land, sea, and airborne communication platforms. It is a self-contained VLF/LF receiver/demodulator with automatic message processing and embedded cryptographic equipment that allows for on-aircraft updates. It incorporates high performance, adaptive signal processing, a wide dynamic range front end, programmable operational modes, and high reliability advanced modular design and packaging.

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## Major benefits are:

- Global interoperability for all MEECN/VERDIN command post platforms
- Enhanced and faster EAM processing
- Improved anti-jam performance
- Flexible programmability to meet changing mission roles
- Affordable upgrading and capabilities expansion
- Increased operator control and management
- Lower life-cycle support costs
- Improved reliability and lower mean time to repair

## Improved performance ensures reliable EAM delivery

The Collins MMRT provides high-performance EAM reception to globally deployed strategic forces in support of post-cold war scenarios. The architecture includes digital signal processing enhancements to provide high data rate reception and increased anti-jam capabilities. A MIL-STD-1553B interface provides real-time system control. The MMRT uses Ada software and has built-in flexibility for future enhancements.

## The Collins MMRT features:

- Three-channel or single-channel
- Interoperability with MEECN modes 15, 9 and 9 MMPM, HIDAR and VERDIN modes 22 and 23
- High dynamic range for simultaneous transmitter operation
- Three-channel TE/TM spatial diversity adaptive combining
- Anti-jam protection via multi-channel null steering, NBIS and single-channel, non-linear adaptive processing
- Time diversity, three-channel reception/message combining
- Automatic dual mode search (one normal/one special)

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- Frequency scanning from one to five transmitters (operator programmable), five-day mission plan
- Smaller size and lower power consumption and weight
- Low life-cycle cost through receiver hardware commonality
- Additional nuclear hardening protection

## **Adaptive for multiple missions and platforms**

The MMRT has optional ancillary equipment to enhance operation and adaptability for various mission roles and platforms. They include:

- An antenna coupler for platform antenna interface matching
- A radio set control for mission data set creation and receiver control/status display
- A receiver control panel for controlling receiver power on/off and key fill