AN/VRC-100 Advanced HF Ground/Vehicular Communications System

A multifunctional HF communications system designed for tactical operations centers, air traffic control and vehicular applications.

Military users need an easy-to-operate, multifunctional, fully Digital Signal Processing (DSP) high frequency radio for a variety of ground or mobile applications. That's why Rockwell Collins designed the VRC-100, providing beyond line of sight communications for tactical operations centers, air traffic control, and vehicular applications such as the High Mobility Multi-purpose Wheeled Vehicle (HMMWV).

The fully integrated plug and play multi-mode voice or data communications system is configured in a portable case. As the primary ground radio for HF tracker interface, the VRC-100 increases your situational awareness of aviation assets. And with capabilities identical to the ARC-220 HF radio system, it is the ideal radio to support ARC-220-equipped airborne platforms.

With the VRC-100, you can maintain beyond line of sight contact during short, mid, and long range operations. In addition to enhanced voice communications capabilities, the AN/VRC-100 advanced data communications system provides reliable digital connectivity.

KEY FEATURES/USER BENEFITS

- Standard HF radio of U.S. Army aviation - logical choice for ground support of ARC-220-equipped aircraft
- Embedded ALE, ECCM and data modem (JITC certified)
- Automatic Quick Call ALE (AQC-ALE) for faster connections - (V)4 system
- Automatic Position Reporting - (V)4 system
- Binary messaging with ARQ protocol - (V)4 system
- Personal computer (PC) or laptop connectivity
- Used with Army HF Tracker software for situational awareness and messaging
- Ground HF network entry point for U.S. Army aviation
  - Secure text messaging and digital voice
  - Situational awareness
- Scope Comand Connection - SIPRNET/NIPRNET email via HF Messenger™
- Department of Homeland Security is using AN/ARC-220 and VRC-100
SPECIFICATIONS

Frequency 2.0000 - 29.9999 MHz in 100 Hz steps
Channels/Nets 20 user programmable simplex or half-duplex
20 programmable automatic link establishment (ALE) scan lists
12 programmable ECCM hop sets
Frequency Stability 3.3 x 10^-7 over operating temperature range
Emission Modes USB & LSB-voice and data, CW and AME
ALE Linking Protection ALE Linking Protection AL1, AL2, & AL3 (MIL-STD-188-141B Appendix B)
ECCM IAW MIL-STD-188-148A (with ALE) - JITC certified 18 July 2002
IAW CR-CX-0218-001 (Army enhanced)
Modem IAW MIL-STD-188-110B and STANAG 4285 - JITC certified 18 July 2002
Power Requirements 24 VDC vehicular power, 28 VDC IAW MIL-STD-1275, or 115 VAC + 5%, or 220 VAC +5%, 47-63 Hz
28 VDC 600 W (transmit) maximum
117 VAC 650 VA (transmit) maximum
220 VAC 650 VA (transmit) maximum
Mission Data Backup +6 VDC to +24 VDC
Battery Input 1000 hours MTBF minimum
Reliability Fault Isolation/Detection 95% LRU fault detection
98% fault isolation (LRU level)
Mechanical 22.25” x 22.875” x 8.75” (LxWxH); 88.0 lbs
FIELD REPROGRAMMABLE
Transsec Keys (VRC-100(V)1 only) DS-101
Software (OFP) IAW MIL-STD-2217
RECEIVE
Characteristics IAW MIL-STD-188-141B
Sensitivity -111 dBm signal for 10 dB (S+N/N)
TRANSMIT
Characteristics IAW MIL-STD-188-141B
Power Output 3 levels: 175 W pep (100 W avg)
Tune Time 50 W avg
10 W avg
1 sec nominal, 5 sec max
INTERFACES
Audio Voice H-250 Handset
Adjustable 0 or +17 dBm (5 mW)
Audio Data 1 mW (0 dBm), 600 ohm balanced
Secure Voice/Data Operation Compatible with KY-100 (AIRTERM), USC-43 (TACTERM)
Data Sources 1553, EIA-232C, PLGR GPS (time & position), HF Messenger™

ENVIRONMENTAL
Operating Temperature -40°C to +55°C
Storage Temperature -51°C to +85°C
Altitude 15,000 ft maximum
Humidity 95%

ANTENNAS
LFH-230 C&S Antennas - “Fanlite”
Broadband fan-dipole antenna used with telescopic “CARRYMAST”
excellent NVIS antenna
BWDS-90N Barker & Williamson broadband
Folded dipole - good NVIS antenna
AT-1011/U 32’ whip, Shakespeare 120-11 longer range omnidirectional antenna
AS-2259 Telex Hy-Gain 637K-1

SELECTION GUIDE

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<td>HF ground/vehicular radio set</td>
<td>822-0793-001 NSN: 5821-01-413-4235</td>
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<td>HF ground/vehicular radio set without ECCM &amp; NSA LP3 waveforms</td>
<td>822-0793-003</td>
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<td>Technical product support man-day rate at Rockwell Collins facility</td>
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For more information contact:
Rockwell Collins
400 Collins Road NE
Cedar Rapids, Iowa 52498
800.321.2223
319.295.5100
Fax: 319.295.4777
E-mail: collins@rockwellcollins.com
Website: www.rockwellcollins.com/gs