**HARRIS**

# AN/VRC-103(V)1

### MULTIBAND, MULTIMISSION VEHICULAR RADIO SYSTEM

*a fully integrated, compact communications system, offering the security and performance features your missions demand*

The AN/VRC-103(V)1 Multiband, Multimission Vehicular Radio System includes an AN/PRC-117F Multiband, Multimission Tactical Radio and the AM-7588 Multiband Power Amplifier. This system covers the entire 30 to 512 MHz frequency range offering 50 watts PEP transmit power, embedded COMSEC, SATCOM, and ECCM capabilities.

Fully compatible with the TSEC/KY-57 and the ANDVT/KYV-5 in voice and data modes, the AN/VRC-103(V)1 is also compatible with Fascinator equipment in voice mode and the KG-84C in data mode. Transmit and receive SARK operations are fully supported for each COMSEC interoperability mode. The radio supports both DS-101 and DS-102 fill interfaces and all common fill devices. The AN/VRC-103(V)1 also supports a KY-57/VINSON compatible interface to ease backwards interoperability with fielded equipment.
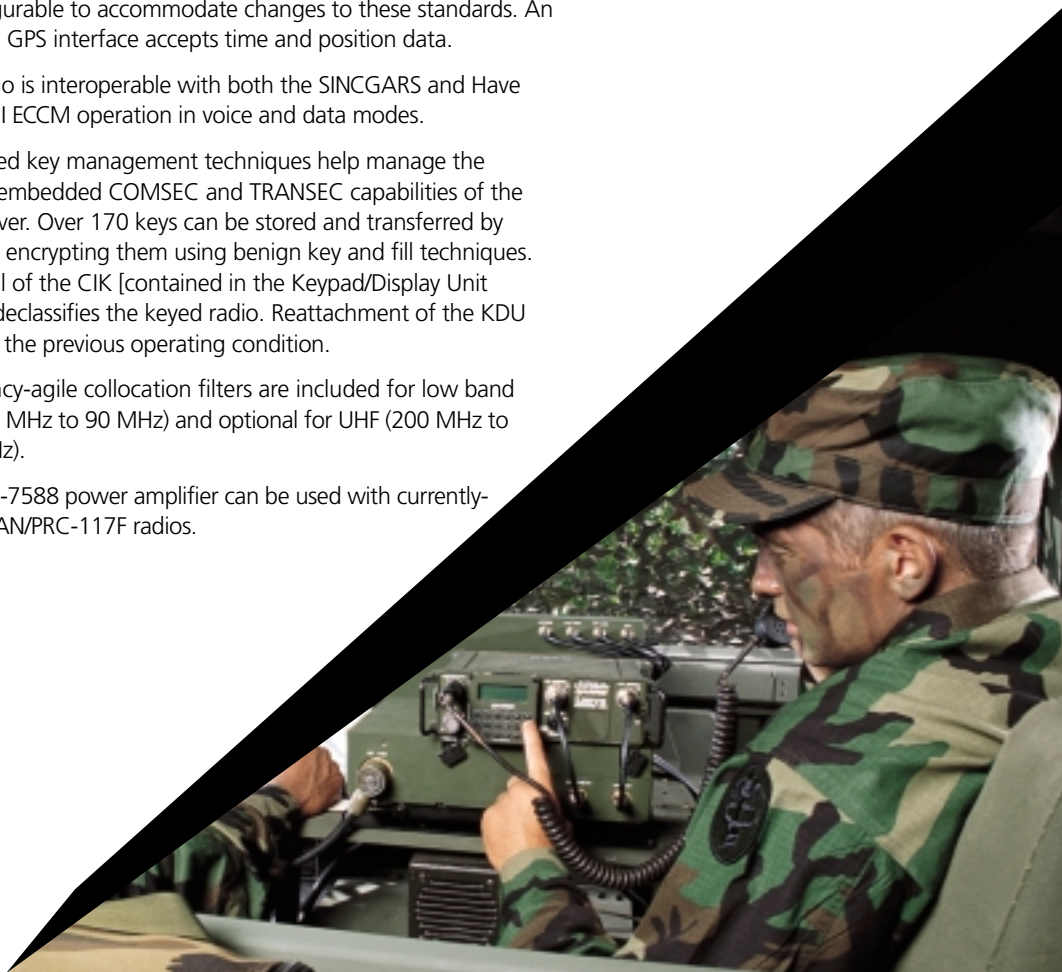
An embedded DAMA and SATCOM modem complies with MIL-STD-188-181A, -182, and -183 and is software reconfigurable to accommodate changes to these standards. An external GPS interface accepts time and position data.

The radio is interoperable with both the SINCGARS and Have Quick I/II ECCM operation in voice and data modes.

Advanced key management techniques help manage the diverse embedded COMSEC and TRANSEC capabilities of the transceiver. Over 170 keys can be stored and transferred by securely encrypting them using benign key and fill techniques. Removal of the CIK [contained in the Keypad/Display Unit (KDU)] declassifies the keyed radio. Reattachment of the KDU restores the previous operating condition.

Frequency-agile collocation filters are included for low band VHF (30 MHz to 90 MHz) and optional for UHF (200 MHz to 400 MHz).

The AM-7588 power amplifier can be used with currently-fielded AN/PRC-117F radios.

## General

- **Frequency Range**
  VHF LOW: 30.000 to 89.999 MHz
  VHF HIGH: 90.000 to 224.999 MHz
  UHF: 225.000 to 512.000 MHz
  UHF SATCOM: 243.000 to 270.000 and 292.000 to 318.000 MHz

- **Channel Spacing**
  Resolution: 10 Hz
  Bandwidth: 5, 6.25, 8.33, 12.5, 25 kHz

- **Preset Channels**
  100 Fixed/Hopping presets
  10 DAMA presets

- **Modulation**
  VHF LOW: FM, FSK, TCM (option)
  VHF HIGH: FM, AM, FSK, ASK
  UHF: FM, AM, FSK, ASK
  UHF SATCOM: BPSK, SBPSK, SOQPSK, DEQPSK

- **Power Supply:** 26 VDC Nominal (22 TO 32 VDC)

- **Environmental:** Tested to MIL-STD-810E
  Shock/Vibration: Ground mobile environment
  Immersion: 1m of water
  Operating Temperature: –40°C to +70°C
  Altitude: Operate to 40,000 ft.

- **Size (maximum envelope):** 9.9H x 15W x 14.9D in.

- **Weight:** 55 lb

- **Voice Modes**
  Simplex or Half-duplex
  SINCGARS ECCM (VHF LOW band only) Plain Text Analog Voice
  Wideband Cipher Text Digital Voice (16 kbps; CVSD; KY-57),
  12k bps Fascinator
  Narrowband Cipher Text Digital Voice (2.4 kbps; LPC-10,
  ANDVT/KYV-5)
  Have Quick I/II ECCM (UHF band only)

- **Data Modes**
  Simplex or Half-duplex
  Asynchronous data (75, 150, 300, 600, 1200, 2400, 4800, 9600,
  19.2k, 38.4k, 57.6k, 115.2k)
  Synchronous data (300, 600, 1200, 2400, 12k bps, 16k bps)
  SINCGARS ECCM (1200, 2400, 4800, 9600, 16k bps, TACFIRE)
  Wideband Cipher Text Digital Data (16 kbps; KY-57,12k bps
  Fascinator)
  Narrowband Cipher Text Digital Data (2.4 kbps; ANDVT/KYV-5)
  KG-84C
  Have Quick I/II ECCM (16 kbps; KY-57 UHF band only)

- **Data Capabilities**

  48/64 kbps LOS Secure Data

  High Performance Waveform (HPW)

- **SATCOM Compatibility**
  MIL-STD-188-181B – Dedicated Channels
  MIL-STD-188-182 – 5 kHz DAMA
  MIL-STD-188-183 – 25 kHz DAMA
  Full orderwire capability

- **COMSEC Interoperability**
  KY-57 VINSON, ANDVT/KYV-5 (Mode 3),
  KG-84C (Modes 1, 2, 3, 4), Fascinator

- **COMSEC Features**
  One Red KEK, One Cryptographic Ignition Key, Over-the-Air Rekey
  (OTAR), including full SARK capability, storage for over 170 black
  keys of type TrKEK, TEK, KEK, or TSK

- **COMSEC Fill Devices**
  KYK-13, KOI-18, KYX-15, AN/CYZ-10 DTD (supports
  DS-101 and DS-102 and mode 2/3(RDS) fill formats)

- **TRANSEC Interoperability**
  SINCGARS ESIP (ICOM, SDM, EDM)
  Have Quick I/II
  DAMA Orderwire

- **TRANSEC Fill Devices**
  MX-18290/VRC; AN/CYZ-10 DTD

- **GPS Capability**
  External dedicated interface, PLGR & NMEA Compatible

- **External Data Interfaces**
  RS-232E, MIL-STD-188-114A, RS-422 balanced

- **Remote Control Capability**
  Full remote control — RS-232E or RS-422 balanced interface
  Removable Keypad/Display Unit (up to 250 feet)

- **Interoperable Radios**
  AN/PRC-117D(V)2; AN/VRC-94D(V)2; AN/PRC-119E CNR,
  AN/PRC-113; AN/PRC-77, LST-5 B/D/E, PSC-5A/C/D

## Transmitter Specifications

- **Output Power:** 5 - 50 Watts PEP

- **Output Power Selection:** Variable in 2 dB steps

## Receiver Specifications

- FM : 30-512 MHz;
  -118 dBm with internal LNA

- AM: 90-512 MHz @70% Modulation;
  -112 dBm with internal LNA

- UHF TACSAT: -120 dBm with internal LNA

## Available Accessories

- 200 - 400 MHz Collocation Filter

- External Fan Kit

- Locking Kit

- Embedded IP, Wireless Cloning, MELP