

AN/PRC-117F

**MULTIBAND,
MULTIMISSION RADIO**



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

The AN/PRC-117F Multiband, Multimission Manpack Radio uses advanced Harris software-defined radio (SDR) technology to provide battle proven embedded COMSEC, SATCOM, and ECCM capabilities. It covers the entire 30 to 512 MHz frequency range, using two antenna ports for optimum range performance.

Multiband scan and cross band/mode retransmit features expand the operational capabilities, and a built-in-test mode checks system performance down to the module level.

Fully compatible with the TSEC/KY-57 and the ANDVT/KYV-5 in voice and data modes, the NSA COMSEC certified AN/PRC-117F 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/PRC-117F also supports a KY-57/VINSON compatible interface to ease backwards interoperability with fielded equipment.

An embedded DAMA and SATCOM modem is JITC certified to MIL-STD-188-181B, -182, and -183 and is software reconfigurable to accommodate changes to these standards. Data rates up to 56 kbps are supported in SATCOM. An external GPS interface accepts time and position data.

The radio is interoperable with both the SINCGARS (ESIP) and Have Quick VII 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.

A High Performance Waveform (HPW) securely transfers files and TCP/IP data between external computers over 5 and 25 kHz SATCOM links. This waveform provides error-free data delivery using high-speed over-the-air data rates, automatic repeat request (ARQ), and automatic waveform adaption based on channel conditions. A high speed data capability over line-of-sight (LOS) channels provides up to 64 kbps data in a 25 kHz channel.



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
- **Frequency Tuning**
 - Resolution: 10 Hz
- **Channel Bandwidth**
 - VHF LOW: 25 kHz
 - VHF HIGH: 8.33 kHz, 12.5 kHz, 25 kHz
 - UHF: 5 kHz, 8.33 kHz, 12.5 kHz, 25 kHz
- **Preset Channels**
 - 100 Fixed/Hopping presets
 - 10 DAMA presets
- **Modulation**
 - VHF LOW: FM (5, 6.5, or 8 kHz), FSK
 - VHF HIGH: FM (5, 6.5, or 8 kHz); AM (90%), FSK, ASK
 - UHF: FM (5, 6.5, or 8 kHz); AM (90%), FSK, ASK
 - UHF SATCOM: BPSK, SBPSK, SOQPSK, DEQPSK, CPM
- **Power Supply**
 - 26 VDC Nominal, accepts two BA-5590, BA-390A/U, or BB-590 batteries
- **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)**
 - 3.2H x 10.5W x 9.6D in. (w/o battery case)
 - 3.2H x 10.5W x 13.5D in. (w/battery case)
- **Displacement Volume**
 - 235 in³ (w/o battery case); 375 in³ (w/battery case)
- **Weight**
 - 15.9 lb (w/2 BA-5590 batteries and battery case)
 - 9.8 lb (w/o batteries or battery case)
- **Voice Modes**
 - Simplex or Half-duplex
 - SINGGARS ECCM (VHF Lowband only) Plain Text Analog Voice
 - Wideband Cipher Text Digital Voice (16 kbps; CVSD; KY-57), 12 kbps 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, 16k bps)
 - SINGGARS ECCM (VHF LOW band/1200, 2400, 4800, 9600, 16K, & TACFIRE)
 - Wideband Cipher Text Digital Data (16 kbps; KY-57)
 - 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 Capability**
 - High Performance Waveform (HPW) SATCOM
 - 48/64 kbps LOS secure data

- **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 TRTEK, 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**
 - SINGGARS ESIP (ICOM, SDM and EDM)
 - Have Quick I/II
 - DAMA Orderwire
- **TRANSEC Fill Devices**
 - MX-18290/VRC; AN/CYZ-10 DTD
- **GPS Capability**
 - External dedicated interface, PLGR and NMEA-protocol 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-119A CNR, AN/PRC-113; AN/PRC-77, PSC-5, LST-5 B/D/E

Transmitter Specifications

- **Output Power**
 - 30-90 MHz FM: 1-10 Watts PEP and Avg.
 - 90-400 MHz FM: 1-20 Watts PEP and Avg.
 - 90-400 MHz AM: 1-20 Watts PEP (10 Watts Avg.)
 - 400-512 MHz FM: 1-10 Watts PEP and Avg.
 - 400-512 MHz AM: 1-10 Watts PEP (4 Watts Avg.)
 - UHF TACSAT: FM: 2-20 Watts PEP and Avg.
- **Output Power Selection:** Variable in 1 dB steps
- **Harmonic Suppression:** Greater than 40 dBc
- **Frequency Stability:** 1 x 10⁻⁶

Receiver Specifications

- **Sensitivity**
 - VHF LOW FM: -118 dBm for 10 dB SINAD
 - VHF HIGH FM: -118 dBm for 10 dB SINAD
 - VHF HIGH AM: -110 dBm for 10 dB SINAD, 70% Modulation
 - UHF FM: -117 dBm for 10 dB SINAD (225 - 243 MHz and 270 - 512 MHz)
 - UHF AM: -110 dBm for 10 dB SINAD, 70% Modulation
 - UHF TACSAT: FM: -120 dBm for 10 dB SINAD
- **Adjacent Channel Rejection**
 - 60 dB referenced to 10 dB SINAD (50 kHz channel)
 - VHF = 60dB (50 kHz off channel)
 - UHF = 45dB (50 kHz off channel)

Available Features

- Embedded IP Capability, Wireless Cloning, MELP

Specifications are subject to change without notice.

