

AN/PRC-117F(C)

**TYPE-1 MULTIBAND,
MULTIMISSION RADIO**



NSA CERTIFIED

*A fully integrated, compact
communications system,
offering the security and
performance features that
missions demand*

The Harris AN/PRC-117F(C) multiband, multimission, manpack radio is an advanced software-defined radio covering the entire 30 to 512 MHz frequency spectrum, providing the warfighter with unsurpassed battle-proven communications technology.

The AN/PRC-117F(C) has embedded Communications Security (COMSEC), Transmission Security (TRANSEC) and is fully compatible with VINSON, ANDVT/KYV-5, KG-84C, and 12 Kbps Fascinator encryption in voice and data modes, with full Over-the-Air-Rekeying (OTAR) capability. Storing up to 75 COMSEC keys, the radio supports DS-101, DS-102 fill, and CT3 interfaces, utilizing all common fill devices.

An embedded software programmable JITC-certified SATCOM and Demand-Assigned Multiple Access (DAMA) modem complies with DOD MIL-STD-188-181B, 182-/A, and 183-/A revisions. Mixed Excitation Linear Prediction (MELP) digitized voice greatly improves narrowband voice communications and is MIL-STD-3005 compliant with other MELP radios. The programmable SATCOM table can be custom built for international requirements. The system also features SATCOM Situational Awareness (SA) transmit and receive capability.

The AN/PRC-117F(C) has SINCGARS and Havequick I/II ECCM frequency hopping. ESIP and ASIP modes are supported, along with ICOM Mode 2/3 SINCGARS, with manual or Global Positioning System (GPS) and Time of Day (TOD) clock sync, plus SA capability.

The High Performance Waveform (HPW) data can securely transmit and receive email and transfer large files over SATCOM and line-of-sight (LOS) AM/FM nets by adapting to varying channel conditions. HPW ensures error-free data delivery using high-speed, over-the-air data rates up to 64 Kbps on LOS nets and up to 56 Kbps on wideband SATCOM nets.

Channel SCAN can monitor a mix of up to 10 SATCOM or LOS nets. Both CDCSS and CTCSS squelch tone support is provided in transmit and receive, for LMR repeater systems and FRS nets.

The removable Keypad/Display Unit provides total control when on the move, with a full-function remote control capability. The simple, menu-driven interface allows programming and control of 110 nets. Cable radio cloning is standard, or optional wireless radio cloning along with the Radio Programming Application (RPA) ensures critical communications nets are quickly and accurately programmed and established.



Specifications for the AN/PRC-117F(C)

| General | |
|--------------------------------|---|
| Frequency Range | VHF Low: 30.000–89.999 MHz VHF High: 90.000–224.999 MHz UHF: 225.000–512.000 MHz UHF SATCOM: 243.000–270.000 and 292.000–318.000 MHz |
| Channel Spacing | Resolution: 10 Hz AM Spacing: 8.33, 12.5, 25 kHz FM Deviation: 5, 6.25, or 8.0 kHz |
| Presets Channels | 100 Fixed/Hopping presets 10 DAMA presets |
| Modulation | VHF Low: FM, FSK, TCM VHF High: FM, AM, FSK, ASK, TCM UHF: FM, AM, FSK, ASK UHF SATCOM: BPSK, SBPSK, SOQPSK, DEQPSK, CPM |
| Power Supply | 26 VDC Nominal, accepts one or two BA-5590, BB-390AIU, BB-2590, or BB-590 batteries |
| Environmental | Tested to MIL-STD-810F Shock/Vibration: Ground mobile environment Immersion: 1 m of water Operating Temperature: -40° to + 70°C Altitude: Operate to 15,000 ft. (After storage: 40,000 ft.) |
| Size (maximum envelope) | 3.2 H x 10.5 W x 9.6 D in. (without battery case) 3.2 H x 1 0.5 W x 13.5 D in. (with battery case) |
| Displacement Volume | 235 in ³ (without battery case); 375 in ³ (with battery case) |
| Weight | 15.9 lbs. (with 2 BA-5590 batteries and battery case) 9.8 lbs. (without 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, MELP, ANDVT/KYV-5, KG-84) Havequick I/II ECCM (UHF band only) |

| Data over-the-air in Cipher Text (CT) | |
|---|--|
| LOS Data Capabilities | VINSON: 16 Kbps, KG-84 up to 64 Kbps FASCINATOR: 12 Kbps |
| SINGGARS and ESIP Data Capabilities | VINSON: 600, 1200, 2400, 4800 bps, and 16 Kbps (includes SA) KYV-5: 1200N, 2400N, 4800N, 9600N bps EDM (PT, CT-TACFIRE) SDM (interoperability with DCT, IDM) RS-232 EDM (allows ASYNC data to be sent as SYNC data over-the-air) Packet EDM (interoperability with SINGGARS/X.21, includes SA) |
| Reed-Solomon FEC rates 25 kHz: CPM | 4.8, 6.0, 7.2, 8.0, 28.8, 32.0, 38.4 Kbps |
| Havequick I/II Data Capabilities | VINSON: 16 Kbps |
| UHF Dedicated SATCOM Data Capabilities | VINSON 16 Kbps (Includes SA) ANDVT: 300, 600, 1200, 2400 bps KG-84: 300, 600, 1200, 2400, 9600 bps and CPM, 4.8, 6.0, 7.2, 8.0, 9.6, 19.2, 28.8, 32, 38.4, 48, 56 Kbps FASCINATOR: 12 Kbps |

| Data over-the-air in Cipher Text (CT) cont. | |
|--|---|
| SATCOM Compatibility | MIL-STD-188-181B-Dedicated Channels (SA) MIL-STD-188-182 rev (-) & rev (A) 5 kHz DAMA MIL-STD-188-183 rev (-) & rev (A) 25 kHz DAMA Full order wire capability User-programmable frequency table MELP-5 kHz dedicated SATCOM and DAMA SATCOM TDMA Compatibility |
| COMSEC Interoperability | KY-57 VINSON, ANDVT/KYV-5 (Mode 3), KG-84C (Modes 1, 2, 3, 4), Fascinator 12 Kbps |
| COMSEC Features | One Cryptographic Ignition Key (CIK) KDU, OTAR & OTAT, storage for 75 Traffic Encryption Keys, with associated KEK, and 50 Transmission Security Keys |
| COMSEC Fill Devices | KYK-13, KOI-18, KYX-15, AN/CYZ-10, SKL, supporting DS-101, DS-102/RDS, and CT-3 fill formats |
| TRANSEC Interoperability | SINGGARS ESIP (ICOM, SDM and EDM) Havequick I/II (DAMA and HPW order wire) |
| TRANSEC Fill Devices | MX-18290/VRC, AN/CYZ-10, and SKL |
| GPS Capability | External dedicated interface, DOD PLGR/DAGR and NMEA-183 commercial GPS devices |
| External Data Interfaces | MIL-STD-188-114A (RS-232E and RS-422 balanced) |
| Remote Control Capability | ASCII, with full remote control—RS-232E or RS-422 balanced interface Removable Keypad/Display Unit (KDU) up to 250 feet |
| Situational Awareness | Send report based on time, position, PTT, or combination, 6 digit ID/UDP packet |

| Transmitter Specifications | |
|-----------------------------------|---|
| Output Power | 30-90 MHz FM: 1–10 watts 90-400 MHz FM: 1–20 watts 90-400 MHz AM: 1–10 watts Avg. (20 watts PEP) 400–512 MHz FM: 1–10 watts 400–512 MHz AM: 1–10 watts PEP (4 watts AVG) UHF SATCOM: 2–20 watts DAMA SATCOM: 1–20 watts |
| 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: 60 dB (50 kHz off channel) UHF: 45 dB (50 kHz off channel) |

| Available Features | |
|---------------------------|------------------|
| | Embedded IP DATA |
| | Wireless Cloning |
| | 5 kHz SATCOM STC |



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