

## AN/PRC-117F(C)

TYPE-1 MULTIBAND,  
MULTIMISSION RADIO

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

**NSA CERTIFIED**



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 Demand-Assigned Multiple Access (DAMA) and Integrated Waveform (IW) modem complies with DOD MIL-STD-188-181B/C, 182-A, and 183-A/B 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 Situational Awareness (SA) transmit and receive capability.

The AN/PRC-117F(C) has SINGARS and Havequick I/II ECCM frequency hopping. ESIP and ASIP modes are supported, along with ICOM Mode 2/3 SINGARS, 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 120 nets. The Communications Planning Application (CPA) and Optional wireless radio cloning help to ensure critical communications nets are quickly and accurately programmed.

**NOW  
WITH  
IW**

Integrated Waveform



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

## General

<b>Frequency Range</b>	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
<b>Channel Spacing</b>	Resolution: 10 Hz AM Spacing: 8.33, 12.5, 25 kHz FM Deviation: 5, 6.25, or 8.0 kHz
<b>Presets Channels</b>	100 LOS/Hopping presets/SATCOM 10 DAMA presets 10 IW presets
<b>Modulation</b>	VHF Low: FM, FSK, TCM VHF High: FM, AM, FSK, ASK, TCM UHF: FM, AM, FSK, ASK UHF SATCOM: BPSK, SBPSK, SOQPSK, DEQPSK, CPM
<b>Power Supply</b>	26 VDC Nominal, accepts one or two BA-5590, BB-390AIU, BB-2590, or BB-590 batteries
<b>Power Draw</b>	Typical: 3.8A @ 26.5 VDC, 5A maximum
<b>Environmental</b>	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.)
<b>Size (max. envelope)</b>	3.2 H x 10.5 W x 9.6 D in. (without battery case) 3.2 H x 10.5 W x 13.5 D in. (with battery case)
<b>Displacement Volume</b>	235 in <sup>3</sup> (without battery case); 375 in <sup>3</sup> (with battery case)
<b>Weight</b>	15.9 lbs. (with 2 BA-5590 batteries and battery case) 9.8 lbs. (without batteries or battery case)
<b>Voice Modes</b>	<ul style="list-style-type: none"> <li>• LOS</li> <li>• SINCGARS and Havequick I/II</li> <li>• Dedicated SATCOM</li> <li>• DAMA SATCOM</li> <li>• IW SATCOM</li> <li>• SATCOM TDMA (STC)</li> <li>• 12 Kbps Fascinator</li> </ul>

## Data over-the-air in Cipher Text (CT)

<b>LOS Data Capabilities</b>	VINSON: 16 Kbps, KG-84 up to 64 Kbps FASCINATOR: 12 Kbps
<b>SINCGARS and ESIP Data Capabilities</b>	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 SINCGARS/X.21, includes SA)
<b>Reed-Solomon FEC rates 25 kHz: CPM</b>	4.8, 6.0, 7.2, 8.0, 28.8, 32.0, 38.4 Kbps
<b>Havequick I/II Data Capabilities</b>	VINSON: 16 Kbps
<b>UHF Dedicated SATCOM Data Capabilities</b>	VINSON 16 Kbps (Includes SA) ANDVT: 300, 600, 1200, 2400 bps KG-84: 300, 600, 1200, 2400, 9600 bps/CPM, 4.8, 6.0, 7.2, 8.0, 9.6, 19.2, 28.8, 32, 38.4, 48, 56 Kbps FASCINATOR: 12 Kbps
<b>Situational Awareness</b>	Send report based on time, position, PTT, or combination, 6 digit ID/UDP packet

## Crypto

<b>COMSEC Interoperability</b>	KY-57 VINSON, ANDVT/KYV-5 (Mode 3), KG-84C (Modes 1, 2, 3, 4), Fascinator 12 Kbps
<b>COMSEC Features</b>	One Cryptographic Ignition Key (CIK) KDU, OTAR & OTAT, storage for 75 Traffic Encryption Keys, with associated KEK, and 50 Transmission Security Keys
<b>COMSEC Fill Devices</b>	KYK-13, KOI-18, KYX-15, AN/CYZ-10, SKL, supporting DS-101, DS-102/RDS, and CT-3 fill formats
<b>TRANSEC Interoperability</b>	SINCGARS ESIP (ICOM, SDM and EDM) Havequick I/II (DAMA, HPWand IW order wire)
<b>TRANSEC Fill Devices</b>	MX-18290/VRC, AN/CYZ-10, and SKL

## External Data Interfaces

<b>Remote Control Capability</b>	<ul style="list-style-type: none"> <li>• MIL-STD-188-114A (RS-232E, RS-422 balanced and ASCII)</li> <li>• Removable KDU with standard 6 ft cable, (optional) cable lengths up to 250 ft.</li> </ul>
<b>GPS Capability</b>	External dedicated interface, DOD PLGR/DAGR and NMEA-183 commercial GPS devices

## Transmitter Specifications

<b>Output Power</b>	<ul style="list-style-type: none"> <li>• 30-90 MHz FM: 1–10 watts</li> <li>• 90-400 MHz FM: 1–20 watts</li> <li>• 90-400 MHz AM: 1–10 watts (20 watts PEP)</li> <li>• 400–512 MHz FM: 1–10 watts</li> <li>• 400–512 MHz AM: 1–4 watts (10 watts PEP)</li> <li>• Dedicated UHF SATCOM: 2–20 watts</li> <li>• DAMA SATCOM: 1–20 watts</li> <li>• IW SATCOM 2–20 watts</li> </ul>
<b>Output Power Selection</b>	Variable in 1 dB steps
<b>Harmonic Suppression</b>	Greater than 40 dBc
<b>Frequency Stability</b>	1 x 10 <sup>-6</sup>

## Receiver Specifications

<b>Sensitivity</b>	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
<b>Adjacent Channel Rejection</b>	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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