

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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