HARRIS®

assuredcommunications®

RF-5800H-MP

ADVANCED HF/VHF TACTICAL RADIO SYSTEM



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

The RF-5800H-MP is a member of the FALCON II® family of multiband tactical radio systems. It is an advanced HF-SSB/VHF-FM manpack radio that provides reliable tactical communications through enhanced secure voice and data performance, networking, and extended battery life. The transceiver's extended frequency range (to 60 MHz) provides secure FSK 16 kbps CVSD voice and data in the VHF band in addition to the HF capability. It is like having two radios in one compact package.

High speed data rates up to 9600 bps (HF) and selectable ARQ modes reduce on-the-air transmission time and enhance secure data transmissions for improved communications reliability and throughput. The combined robust digital voice (MELP, LPC-10) and serial tone data modem operate over poor communication channels. The RF-5800H-MP includes a last ditch voice mode and SMS-like messaging that transmit digitally, using ultra robust 3G waveforms for operation in channels where legacy waveforms will not work.

A serial-tone ECCM waveform with DSP-based excision filtering and a 600 bps vocoder are combined to provide reliable, secure HF communications in the presence of jamming. Secure digital voice, 75 to 2400 bps data, and ARQ mode are supported in the ECCM mode.

The latest third generation HF Link Automation, STANAG 4538, is included and provides high-performance ALE and data link protocols to deliver superior linking and error-free data transfer.

The Harris Citadel® ASIC provides high-speed data and digital voice encryption using either a Harris-standard or a customer-unique algorithm.

An internal Global Positioning System (GPS) receiver option provides local position information and Automatic Position Reporting (APR). This feature allows the radio to be used in situational awareness systems without PCs attached to the outstation radios. The accurate GPS timing data can be used for ECCM and advanced ALE synchronization.

Integrated telephony capability allows the radio operator to place and receive telephone calls using the radio keypad when used with the RF-6010 Tactical Network Access Hub.

The data capability and network management features of the RF-5800H-MP utilize industry standard IP-based protocols to provide fast, simple, and direct communications, and permit easy setup and maintenance of networks.

The removable Keypad/Display Unit provides controls for on-the-move operation.



Specifications for the RF-5800H-MP

General	
Frequency Range	1.6-59.999 MHz
Net Presets	75, fully programmable
Frequency Stability	±0.5 x 10^{-6}
Emission Modes	J3E (single sideband, upper or lower, suppressed carrier telephony) H3E (compatible AM single sideband plus full carrier) A1A, J2A (compatible CW), selectable; F3E (FM telephone)
RF Input/Output Impedance	50 ohm nominal, unbalanced
Power Input	26 VDC (20.5-32 VDC)
Data Interface	Synchronous or asynchronous (RS-232C; MIL-STD-188-114A)
Dimensions (with battery case)	10.5 W x 3.5 H x 13.2 D in. (26.7 W x 8.1 H x 34.3 D cm)
Radio Weight	10 lbs. (4.7 kg) without batteries

Receiver	
Sensitivity	SSB: –113 dBm (0.5 µV) for 10 dB SINAD
Audio Output	15 mW at 1000 ohm to external handset
Squelch	Front panel adjustable, active squelch selectable
IF Rejection	Greater than 80 dB
Image Rejection	Greater than 80 dB (1st IF image)
AGC	Mode dependent, automatically selected
Intermodulation Distortion	–80 dB or better for two –30 dBm signals separated 30 kHz or more
Overload Protection	Receiver protected to 32 VRMS

Transmitter	
Power Output	1, 5, 20 watts PEP/Average -1/+2 dB (1, 5, 10 watts FM)
Audio Input	1.5 mV at 150 ohm or 0 dBm at 600 ohm for full rated output
Carrier Suppression	Greater than 60 dB below PEP output (J3E mode)
Undesired Sideband Suppression	Greater than 60 dB below PEP output
Spurious Outputs (Greater than 20 kHz from Fc)	–50 dB relative to rated output, except harmonics which are –40 dB minimum for f = 1.6-30 MHz
Antenna Tuning Capability	OE-505 10-foot (3 m) whip (1.6-60 MHz) RF-1936P (AS-2259) NVIS (3.5-10 MHZ) RF-1940-AT001/RF-1941 dipole

Environmental	
Test Method	Per MIL-STD-810F
Vibration	Ground tactical
Immersion	3 ft. (.9m) of water
Operating Temperature	–40° to +70°C

Features	
Encrypted Data	HF: MIL-STD-188-110B App. C (9600 bps and 12,800 bps uncoded), App. B 39-tone (2400 bps), (maximum data rate) Serial Tone (2400 bps), STANAG 4285 (2400 bps), STANAG 4415 (75 bps), STANAG 4539 (9600 bps), FSK (600 bps) VHF: FSK (16 kbps)
Automatic Link Establishment (ALE)	STANAG 4538 FLSU, MIL-STD-188-141B Appendix A
Frequency Hopping	Serial Tone ECCM
Vocoder	HF: LPC-10-52E (600/2400), MELP (600/2400), VHF: CVSD
Data Link Layer Protocol (ARQ)	STANAG 4538 (3G), pFED-STD-1052

System Configuration

	Digital Encryption	GPS
RF-5800H-MP025	Citadel	—
RF-5800H-MP026	Citadel	Internal
RF-5800H-MP035	Datotek/Citadel	—
RF-5800H-MP036	Datotek/Citadel	Internal
RF-5800H-MP065	AES/Citadel	—
RF-5800H-MP066	AES/Citadel	Internal

Major System Components	
RF-5800H-V006	20-Watt Vehicular Adapter
RF-5832H	125-Watt Power Amplifier
RF-5833H	150-Watt Vehicular Adapter Unit
RF-5834H	400-Watt Power Amplifier
RF-5382H	150-Watt Antenna Coupler
RF-382A	400-Watt Antenna Coupler
RF-5845H	Pre/Postselector

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