



Tactical Radio Products

RF-5800H-MP **ADVANCED HF/VHF** **TACTICAL RADIO** **SYSTEM**

*a fully integrated, compact
communications system,
offering the security and
performance features your
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 that transmits digital voice using ultra robust 3G waveforms for operation in channels where no other waveforms will 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, providing 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. 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.

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 tactical networks.

The removable Keypad/Display Unit provides easy access to controls, for on-the-move operation.



General

| | |
|---------------------------------------|--|
| Frequency Range | 1.6 to 59.999 MHz |
| Net Presets | 75, fully programmable |
| Frequency Stability | $\pm 1 \times 10^{-6}$ |
| 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 to 32 VDC) |
| Data Interface | Synchronous or asynchronous (RS-232C; MIL-188-114A) |
| Dimensions (with battery case) | 10.5W x 3.5H x 13.2D inches (26.7W x 8.1H x 34.3D cm) |
| Radio Weight | <10 lb (4.5 kg) without batteries |

Receiver

| | |
|-----------------------------------|--|
| Sensitivity | SSB: -113 dBm (0.5 μ V) for 10 dB SINAD |
| Audio Output | 15 mW at 1000 ohm to external handset |
| Squelch | Front panel adjustable, active squelch selectable |
| Image and IF Rejection | Greater than 80 dB |
| AGC | Mode dependent, automatically selected |
| Intermodulation Distortion | -80 dB or better for two -30 dBm signals separated 110 kHz or more |
| Overload Protection | Receiver protected to 32 VRMS |

Transmitter

| | |
|--|--|
| Power Output | 1, 5, 20 watts PEP/Average ± 1 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 -45 dB Minimum for f _o = 1.6-30 MHz |
| Antenna Tuning Capability | OE-505 10-foot (3 m) whip (1.6 to 60 MHz) RF-1936P (AS-2259) NVIS (3.5 to 10 MHz) RF-1940-BNC dipole (3 to 60 MHz) |

Environmental

| | |
|------------------------------|----------------------|
| Test Method | Per MIL-STD-810E |
| Vibration | Ground Tactical |
| Immersion | 3 ft. (.9m) of water |
| Operating Temperature | -40°C to +70°C |

Features

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

System Configuration

| | Digital Encryption | GPS |
|----------------|--------------------|----------|
| RF-5800H-MP023 | — | — |
| RF-5800H-MP024 | — | Internal |
| RF-5800H-MP025 | Citadel | — |
| RF-5800H-MP026 | Citadel | Internal |
| RF-5800H-MP035 | Datotek/Citadel | — |
| RF-5800H-MP036 | Datotek/Citadel | Internal |

Major System Components

| | |
|----------|---------------------------------|
| RF-5830H | 20 Watt Power Amplifier/Coupler |
| 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-382 | 400 Watt Antenna Coupler |
| RF-5845H | Pre/Post Selector |

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