



RF-7800M-MP

MULTIBAND NETWORKING RADIO

***A revolutionary CNR-sized
radio providing secure
wideband and narrowband
voice and data on the move***

The RF-7800M-MP Multiband Networking Radio provides secure voice and high-speed networked data services on the move. This single-channel voice and data radio covers 30 MHz to 2 GHz and provides 20 watts of transmit power in a compact package. Capable of fixed-site, vehicular, or manportable battery-powered operation, the radio supports narrowband (25 kHz or less) waveforms from 30 to 512 MHz and wideband (greater than 25 kHz) waveforms from 225 to 2000 MHz.

The RF-7800M-MP features a Software Communications Architecture (SCA) operating environment, providing the optimal transition to software-defined radio technology. Built-in AES and Citadel encryption provide high-grade security for all transmissions using a 256-bit key. The Quicklook ECCM waveform also protects narrowband voice and data from hostile interference. The SCA architecture enables loading of future waveforms.

The RF-7800M provides high-speed networked data at unprecedented rates using the Harris Adaptive Networking Wideband Waveform (ANW2). ANW2 uses innovative, intelligent protocols that do not require the presence of a designated network control station—each radio automatically discovers and joins an authorized network. Ad-hoc networking allows automatic and transparent relay through any available station—and heals the network if any station leaves the network.

The RF-7800M-MP is able to store multiple mission fill files, extending the time between reconfigurations. The radio includes an embedded 12-channel GPS receiver to display local position and to provide automatic position reporting for situational awareness on the battlefield. With over 10 times the processing power of currently fielded manpack radios, the RF-7800M-MP represents state-of-the-art radio technology to ensure software upgradeability well into the future.

The RF-7800M-MP is the wideband tactical radio enabling today's warfighter to take on tomorrow's missions.



Specifications for the RF-7800M-MP

General	
Frequency Range	30 MHz-2 GHz Narrowband (NB): VHF low: 30-90 MHz VHF high: 90-225 MHz UHF low: 225-512 MHz Wideband (WB): UHF 225 MHz-2 GHz
Channel Spacing	NB: 8.33 kHz, 12.5 kHz, 25 kHz WB: 1.2 MHz, 5 MHz
FM Deviation	5 kHz, 6.5 kHz, 8 kHz
Net Presets	100
Data Interfaces	Ethernet, RS-232/RS-422, USB
Control Interfaces	SNMP: Ethernet, RNDIS USB ASCII: RS-232, RS-422, USB
Management Tool	Windows-based radio programming application
Software Environment	SCA v2.2
Internal GPS	12 channel receiver
Frequency Stability	0.5 ppm
Frequency Tuning	10 Hz from 30-512 MHz 100 Hz from 513 MHz-2 GHz

Modes and Waveforms	
Narrowband Waveforms	AM/FM, VHF/UHF LOS Quicklook IA/II
Wideband Waveforms	ANW2 ROVER L-Band Receive (optional)
Voice Modes	Narrowband Analog/PCM AM/FM plain text CVSD ASK/FSK cipher text Wideband 2400 bps MELPe
Data Modes	Narrowband 16 kbps FSK/ASK PT/CT Wideband 64 kbps-3 Mbps GMSK 1-5 Mbps QAM
MAC	TDMA
Manet Protocols	OLSR

Security (NB/WB)	
Encryption Modes	AES, Citadel I/II
Key Length	128/256 bit
Key fill Device	Windows-based radio programming application
Key Storage	180 total keys
Mission Fill Device	Windows-based radio programming application



Power	
Power Input	19-34 VDC
Power Consumption	55 watts max
Battery Types	BA-5590/U, BA-5390/U, BB-590/U, BB-390/U, BB-2590/U

Physical and Environmental	
Size (no handles)	7.4 W x 3.4 H x 8.8 D in. (without battery) (18.8 W x 8.5 H x 22.4 D cm without battery) 7.4 W x 3.4 H x 13.5 D in. (with battery) (18.8 W x 8.5 H x 34.3 D cm with battery)
Weight	3.6 kg (without battery)
Shock/Vibration	MIL-STD-810F for tracked and wheeled vehicles
Immersion	1 meter
EMI/RFI	MIL-STD-461E
Color	CARC green 383

Transmitter	
Power Output	NB: 10 watts WB: 20 watts peak/1-5 watts average
Antenna Outputs	NB: 30-512 MHz WB: 225 MHz-2 GHz
Harmonic Suppression	Greater than 50 dBc

Receiver	
Narrowband Sensitivity (for 10 dB SINAD)	LOS FM 30-512 MHz: -118 dBm LOS AM 90-512 MHz: -110 dBm with 70% modulation
Adjacent Channel Rejection	60 dB referenced to 10 dB SINAD 50 kHz channel VHF: 60 dB (50 kHz off channel) UHF: 50 dB (50 kHz off channel)

Accessories Included with RF-7800M-MP	
10075-1399	H-250 Handset
RF-7800MM-SW001	Communications Planning Application (CPA)
12043-2750-A006	USB Programming Cable
Manuals	Operation Manual, Reference Guide, ANW2 Pocket Guide, Quicklook Pocket Guide

Optional Accessories	
12043-4800-01	Battery box
RF-3150-AT152	VHF, 30 MHz-108 MHz Blade Antenna
RF-3152-AT152	UHF, 30-512 MHz Monopole Blade Antenna
RF-3164-AT122	UHF, 225-450 MHz Dipole Blade Antenna
RF-3165-AT122	225-2000 MHz Wideband Antenna
RF-7800M-DK001	Dismount kit includes a Battery Box, Antenna Bag, VHF, UHF, Wideband and GPS Antennas.
10511-0400-04	GPS Antenna kit (L1 Band)
10372-0349-01	Antenna bag
12043-2710-A006	PPP Data Cable
12043-2730-A006	Data and Remote Control Cable
12043-2740-A006	Digital Retransmission Cable
12043-2760-A006	Ethernet Cable
10553-0100-02	Lightweight Keypad/Display Unit with cable



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