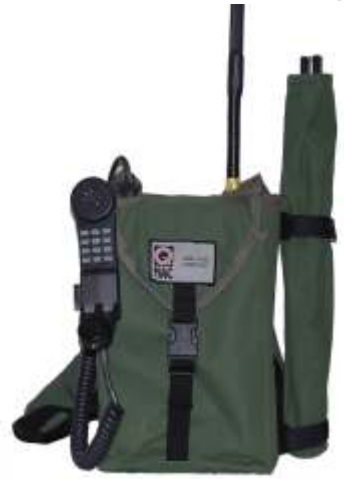
Q-MAC Electronics
MX9000 Ultra-Light HF Manpack



Tactical Communications

Tactical HF Radio

HF-90M

Automatic Tuner

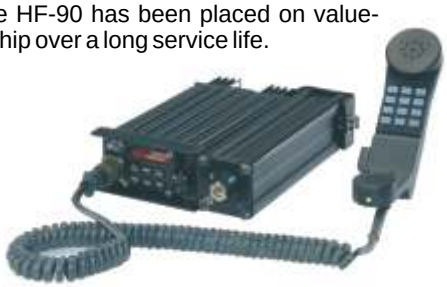
Immersible Transceiver

Secure, Simple to Use, Versatile

The MX9000 Military Manpack is a state of the art communication device specifically designed for tactical military applications. The MX9000 Manpack weighs only 4.5Kg complete with Lithium Ion battery - truly the lightest HF Manpack in the world. The HF-90M utilised in the MX9000 is purpose rated to withstand complete immersion, vibration and temperature tests to Mil-Std 801F.

The HF-90M transceiver is an extremely compact and light weight unit, featuring only essential controls to ensure ease of operation. The HF-90M is available with a secure, jam-resistant ECCM Frequency Hopping option which can be field upgraded after the initial deployment.

Military users will appreciate the solid construction and ease of use of Q-MAC transceivers. The mechanical design of the HF-90M provides the fastest field service time of any transceiver with only 4 fasteners providing access to all modules. Emphasis in the design of the HF-90 has been placed on value-engineering to ensure low cost of ownership over a long service life.



Designed for Tactical Use

The HF-90M has been designed with the tactical military user in mind. Only essential controls are included on the front panel for normal operations. Advanced programming functionality is available in sub-menus. The HF-90M can be either field or PC programmed.

The transceiver has a quality, high specification design. It provides full frequency coverage from 2 - 30 MHz and has capacity for up to 255 programmed channels. The unit can operate at selected power levels up to 50 Watt, whilst achieving the lowest battery consumption compared to other military transceivers . The HF-90M is extremely reliable due to the advanced SMD manufacturing process used and overall mechanical design efficiency.

The technical specification of the HF-90M will enable reliable communications up to distances of 3,000km*. In addition, the transceiver incorporates superior signal handling capability which ensures excellent reception even in the most crowded radio environments.

Features

Light Weight - 4.5Kg complete with battery

Immersible, Vibration & Temperature rated to Mil-Std 810F

50Watt PEP

Auto Tuning

255 Channels

Low Current Consumption

4 Minute MTTR

6000 Hours MTBF

Power Efficient Tuner

Low Cost

Optional Frequency Hopping

MX9000 Package Contents

- HF-90M Military Transceiver
- TA-99 Military Automatic Antenna Tuner
- Military Telephone Handset
- 8 Section Whip Antenna
- Long Wire Antenna
- Tape Whip Antenna
- Light Weight Backpack with Accessory Pockets
- 8.8 AH LiON Battery
- User Manual

Optional Accessories;

- Frequency Hopping Option
- AC Mains Charger
- DC Charger
- DTMF Handset Option
- Solar Panel Charger
- Hand Crank Generator
- End Fed Portable Broadband Antenna
- 17.6Ah LiON Battery

* Subject to antenna configuration, frequency in use and atmospheric conditions.

LIGHT WEIGHT • HIGH POWERED • FREQUENCY HOPPING OPTION • LOW POWER CONSUMPTION • VERSATILE

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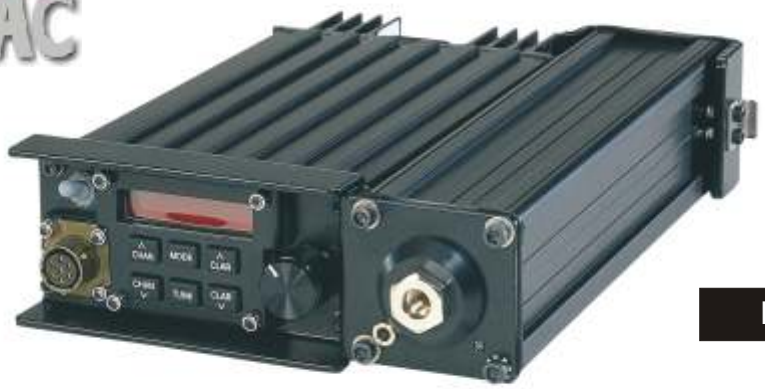


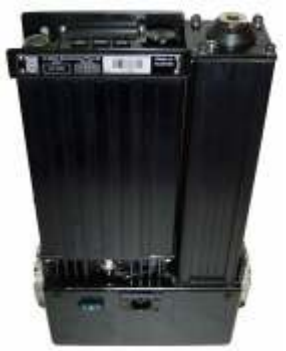
Specifications

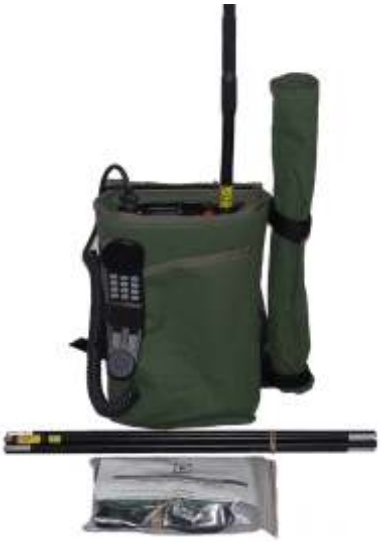
Tactical HF Radio

HF-90M

Automatic Tuner

Immersible Transceiver





GENERAL

Frequency range	2 - 30 MHz
Modes of operation	USB, LSB (J3E), CW (Optional), Hopping(Optional), AM (Rx Only),FSK
Number of channels	255
Channel resolution	100Hz
Supply voltage	12 - 24V DC Nominal
Power consumption	
- Transmit	2A - 10A (subject to pre-set power output)
- Receive	310mA
Frequency stability	± 2ppm (± 1ppm 0°C-40°C)
Antenna impedance	50 Ohms
Antenna connector	BNC
Handsets	Speaker microphone DTMF microphone & telephone handset
Selcall system	Based on CCIR 493-4 (Australian Standard)
Programming	Via front panel & DTMF mic/handset or IBM PC 4800,8,1,N
BITE	Micro, Rx, Tx Tests
MTTR	4 Minutes
MTBF	6000 Hours

PHYSICAL CHARACTERISTICS

Dimensions (mm)	112(W) X 47(H) X 220(D)
Weight	1kg (HF-90M Only)
Construction	All metal extruded sleeve with front panel and heatsink
Finish	Black anodised Aluminium

TA-99 AUTO TUNER SPECIFICATIONS

Supply Voltage	12-18V DC
Frequency range	2-26 MHz
VSWR	Typically less than 2
Antenna type	Short Whip, Long Whip, Wire
Dimensions	205(W) x 50(H) x 50(D)mm
Weight	0.7 Kg
Supply current (idle)	30mA

TRANSMITTER

Power output	50Watt PEP Nominal Tactical Frequencies
Unwanted sideband	Better than -45dB
Carrier suppression	Better than -50dB
Harmonic suppression	Better than -60dB
Audio Response	270Hz - 2800Hz

RECEIVER

Sensitivity	0.25µV @ 10dB S+N/N
Selectivity	2.3kHz @ -6dB
	4.8kHz @ -60dB
Image rejection	Better than -50dB
Intermodulation	Better than -70dB
3rd order intercept	+18dBm(GaAsFETMixer)
Intermediate freq's	83.16MHz,455kHz
AGC	Less than 3dB from 3uV - 1V
Audio response	270Hz - 2800Hz
Audio output	2 Watt
Audio load impedance	8 Ohms

FREQUENCY HOPPING (If option fitted)

Mode	SSB (J3E) speech plus FSK sync
Hop rate	5 hops per sec
Hop channels per band	256
Number of Hop bands	103 contiguous bands (2-30MHz)
Hop sequence	Pseudo-random
Late entry sync time	Average 26 secs
Number of sync channels	8
Hope code entry	11 decimal digits, via DTMF keypad
Hop code binary size	56 bits
Possible codes	7.2×10^{16}
Hop algorithm	Modified DES

ENVIRONMENTAL

Operating temperature	-30°C - 60°C
Storage temperature	-30°C - 80°C
Environmental rating	Comply with MIL-STD 810F Immersion, Drop, Temperature Shock & Vibration

INTERNATIONAL QUALITY MANAGEMENT SYSTEM ISO9002 NATA CERTIFIED

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