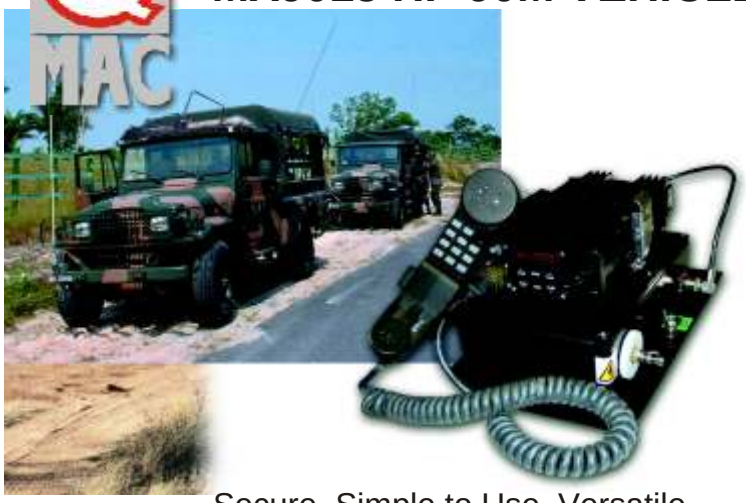
Q-MAC Electronics

MX9015 HF-90M VEHICLE PACKAGE



TACTICAL COMMUNICATIONS

Tactical HF Radio

HF-90M

MIL-STD 810F

FREQUENCY HOPPING

Secure, Simple to Use, Versatile

The MX9015 HF-90M Vehicle Package is a military grade communication set specifically designed for tactical vehicles. The MX9015 is purpose rated to withstand complete immersion, vibration, drop 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 is efficient to use in tactical situations with only essential controls on the front panel. Advanced programming functionality is available in sub-menus or via a PC programming package.

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 HF-90M incorporates superior signal handling capability which ensures excellent reception even in the most crowded radio environments.

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.

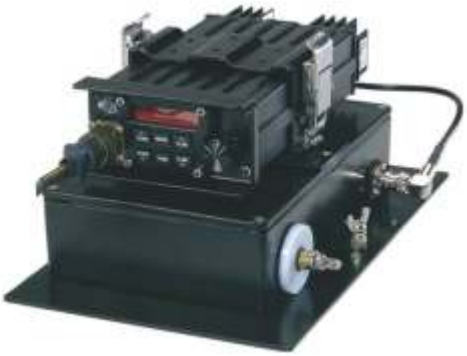
ECCM Frequency Hopping

The HF-90M is available with a secure, jam-resistant ECCM Frequency Hopping option. The development of the HF-90M Frequency Hopping Option represents a significant breakthrough in the field of military HF communications. For the first time, end users have access to a product which is affordable, yet offers a very high grade of voice security.

In short, this revolutionary new transceiver incorporates the very latest in RF design technology, making the HF-90M the most compact, versatile, high performance HF SSB transceiver available in the military market today suitable for Manpack, Vehicle and Base Station applications.

Features

- Low Cost
- Frequency Hopping
- Anti-Jam Algorithm
- Rapid Synchronisation
- Secure Code Entry
- Smart Hopping
- Selcall
- Small Size
- 50Watt PEP
- Auto Tuning
- 255 Channels



MX9015i Integrated Tuner & Transceiver

Optional Sectional Antenna and Base

MX9015 Package Contents

- HF-90M Military Transceiver
- TA-90 Military Automatic Antenna Tuner
- Military Telephone Handset
- Vehicle Whip Antenna
- Vehicle Mounting Hardware
- Cables and Connectors
- User Manual

Optional Accessories;

- Frequency Hopping Option
- DTMF Handset Option
- Military Grade Sectional Whip Antenna and Base

MX9015 Vehicle Package is available in two versions;

MX9015 - Separate Tuner and Transceiver Installation
Mx9015i - Integrated Transceiver and Tuner

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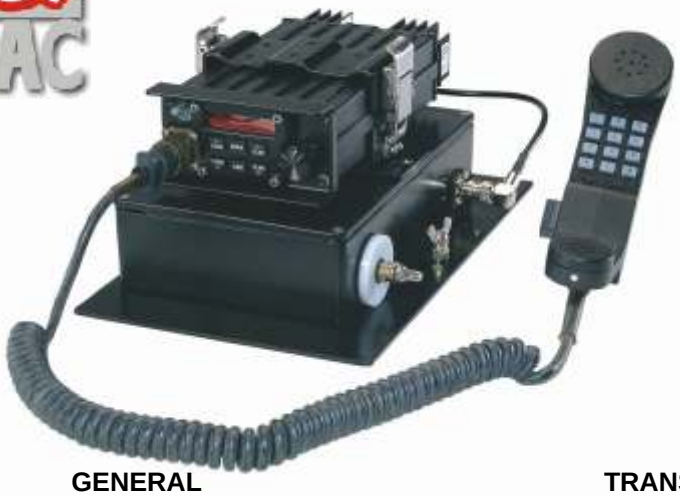

Specifications

Tactical HF Radio

HF-90M

MIL-STD 810F

FREQUENCY HOPPING

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
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-90 Only)
Construction	All metal extruded sleeve with front panel and heatsink
Finish	Black anodised Aluminium

TA-90M AUTO TUNER SPECIFICATIONS

Frequency range	4-20 MHz
VSWR	Typically less than 2
Tuning time	3 Seconds max
Antenna type	Vehicle Whip
Dimensions	221(L) x 146(W) x 56(D) mm
Weight	5Kg
Supply current (idle)	300mA
Input Voltage	12V or 24V DC
Input Impedance	50 Ohm

TRANSMITTER

Power output	50Watt PEP 2-12Mhz (derated above)
Unwanted sideband	Better than -45dB
Carrier suppression	Better than -50dB
Harmonic suppression	Better than -40dB
Audio Response	270Hz - 2800Hz

RECEIVER

Sensitivity	0.25µV For 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 (Optional)

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 (2-30M
Hop sequence	Pseudo-random
Late entry sync time	Average 26 secs
Number of sync channels	8
Hope code entry	11 decimal digits, via DTM
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	Per MIL-STD 810F Immersion Shock & Vibration

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Filename: MX9015 HF-90M Vehicle Package.cdr