



# Q-MAC Electronics

## MX9019 50Watt Integrated HF Base Station



# Tactical Communications

## Tactical HF Radio

HF-90M

Broadband Antenna

Backup Power Supply



### Secure, Simple to Use, Versatile

The Q-MAC HF-90M Integrated Base Station Package is an HF SSB radio communication system designed for fixed base station use. This package incorporates the Q-MAC HF-90M Transceiver (*a detailed description of this product, together with technical specifications, is provided on a separate brochure*).

This package as a whole is characterized by its extremely compact size, ease of use and its adaptability. It incorporates an AC mains power supply unit with battery backup, for use with different AC mains systems (regardless of voltage level or consistency of supply). The antenna included accommodates all frequencies between 2 to 30MHz and offers different mounting configurations.

The HF-90M Integrated Base Station Package is being used worldwide in a variety of applications with organisations including; international aid agencies, military, paramilitary and police.

### Features

- Low Cost
- 50Watt PEP
- 255 Channels
- Selective Calling
- Low Current Consumption
- 4 Minute MTTR
- 6000 Hours MTBF
- PC Programmable
- Optional Frequency Hopping
- Backup Battery

### Designed for Tactical Use

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.

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 Watts.

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.

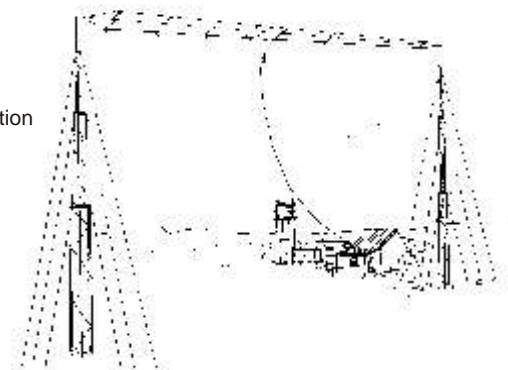
### MX9020 Package Contents

#### Standard Contents:

- HF-90M Military Transceiver
- Military Telephone Handset
- 3 Wire Broadband Antenna
- 7Ah Backup Battery
- AC Mains Power Supply
- Rugged Enclosure
- Speaker with Voice Squelch
- User Manual

#### Optional Accessories:

- Frequency Hopping Option
- DTMF Handset Option



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





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# Specifications



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### 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

### HF-90M 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

### ENVIRONMENTAL

Operating temperature	-30°C - 60°C
Storage temperature	-30°C - 80°C
Environmental rating	HF-90M Comply with MIL-STD 810F Immersion, Drop, Temperature Shock & Vibration

### TRANSMITTER

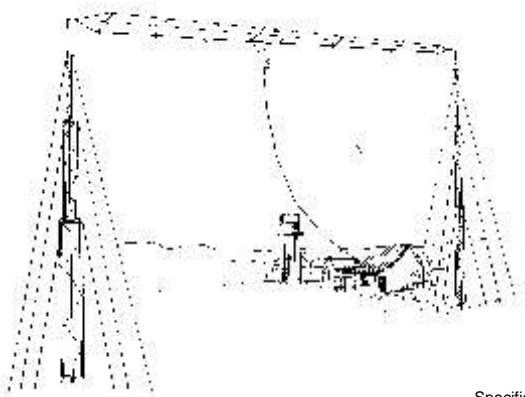
Power output	50Watt PEP Nominal Tactical Frequencies
Unwanted sideband	Better than -45dB
Carrier suppression	Better than -50dB
Harmonic suppression	Better than -60dB
Audio Response	270Hz - 2800Hz

### 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 x 10 <sup>16</sup>
Hop algorithm	Modified DES



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Specifications are subject to change without notice.  
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