



Q-MAC Electronics

MX9011 HF-90M MONOBLOCK MANPACK



TACTICAL COMMUNICATIONS

Tactical HF Radio

HF-90M

MIL-STD 810F

FREQUENCY HOPPING



Secure, Simple to Use, Versatile

The MX9011 HF-90M Monoblock Manpack is a military grade communication device specifically designed for tactical applications. The MX9011 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-menu 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.

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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.

MX9011 Package Contents

- HF-90M Military Transceiver
- TA-99 Military Automatic Antenna Tuner
- Military Telephone Handset
- 6 Section Whip Antenna
- Long Wire Antenna
- Tape Whip Antenna
- Framed Backpack with Accessory Pockets
- 7.2 AH SLA 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
- Lithium Ion Battery (8.8Ah and 17.6Ah)

Features

- Frequency Hopping
- Anti-Jam Algorithm
- Rapid Synchronisation
- Secure Code Entry
- Smart Hopping
- Selcall
- Light Weight
- 50Watt PEP
- Auto Tuning
- 255 Channels

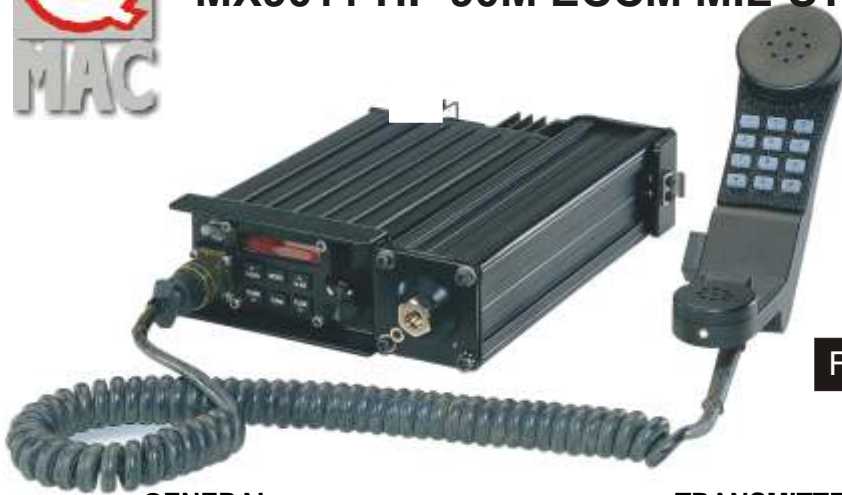




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MX9011 HF-90M ECCM MIL-STD TRANSCEIVER

Specifications



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-99 AUTO TUNER SPECIFICATIONS

| | |
|-----------------------|-----------------------------|
| Frequency range | 3-15 MHz |
| VSWR | Typically less than 2 |
| Tuning time | 2 Seconds max |
| Antenna type | Short Whip, Long Whip, Wire |
| Dimensions | 205(W) x 50(H) x 50(D)mm |
| Weight | 0.6 Kg |
| Supply current (idle) | 30mA |

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 For10dB 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 (2-30MHz) |
| 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 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 |



Q-MAC Electronics Pty Ltd
142 Hasler Road
Osborne Park WA 6017
Australia

Tel + 618 9242 2900
Fax + 618 9242 3900

Email info@qmac.com
Web www.QMAC.com

Specifications are subject to change without notice.
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