

TACTICAL RADIO CATALOGUE

HF

Transceivers



HF-90M HF Transceivers
Frequency Hopping Digital
Encryption Manpack
Packages Mobile
Packages Tank and APC
Packages Base Station
Packages Antenna
Systems



Version 8.0A Effective
July 2008

secure • simple to use • reliable • compact

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1.

CONFIGURING Q-MAC PACKAGES

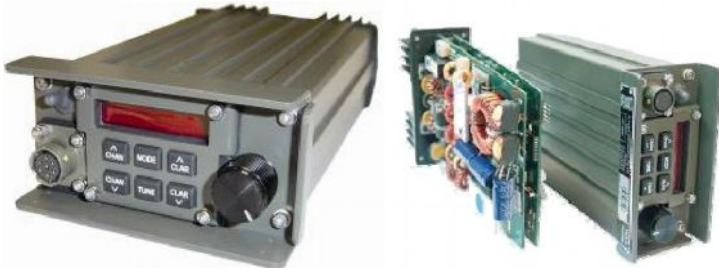
Q-MAC encourages the use of this checklist to ensure end users consider all aspects of their application. This is especially relevant for field deployment where missing items will cause significant inconvenience.



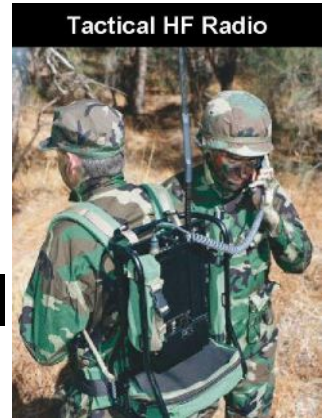
2. HF PRODUCTS

2.1

HF-90M FREQUENCY HOPPING SSB HF TRANSCEIVER



Frequency Hopping



Secure, Simple to Use and Versatile

The HF-90M is a rugged all-purpose HF SSB transceiver designed for manpack, mobile and base station applications. It is an extremely compact and light weight unit, featuring only essential controls to ensure ease of operation.

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 a selected power level of up to 50 Watts, whilst achieving low battery consumption. It is also extremely reliable due to the advanced SMD manufacturing process used and overall design efficiency.

The specifications of the HF-90M enable reliable long-range communications to distances in excess of 3000km. In addition, the transceiver incorporates superior signal handling capability which ensures excellent reception, even in the most crowded radio environments.

The HF-90M Frequency Hopping Option is an integral module within the HF-90M Transceiver. This option enables secure, jam-resistant HF communications to a military standard. 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.

Designed For Tactical Use

Q-MAC Electronics has designed the HF-90M so that it will adapt to multiple configurations. Its compact, light weight size and low battery consumption makes it ideal for manpack applications. With a maximum power output of 50 Watts and full frequency coverage, the HF-90M is also suited to vehicle and base station configurations.

The transceiver is extremely rugged in its construction. The exterior case is made from a tough anodised aluminium extrusion and all connectors and controls are fully protected by the rear heat sink and front panel. The HF-90M is well protected against harsh environments, displaying a high tolerance to extreme temperatures, humidity and dust levels, plus full immersion in water to military standards.

In short, this revolutionary transceiver incorporates the very latest in RF design technology, making the HF-90M the most compact, versatile, high performance HF SSB transceiver available on the tactical HF market today.

Features

- Military Connectors.
- ECCM Capability
- Simple 6 Button & Rotary Control Operation
- Light Weight - Less than 1 kg
- 50 Watt PEP
- 255 Channels
- Selective, Group & Broadcast Calling
- USB/LSB Operation
- Six Digit LED Display (7-segment)
- 4 Minute MTTR
- 6000 Hour MTBF



2.2

MANPACK PACKAGES

2.2.1 MX9000 HF-90M Ultra-Light Manpack

ULTRA LIGHT PACKAGE FOR COMMUNICATING WHILE ON FOOT

The MX9000 Ultra-Light Manpack is ideal for military and paramilitary applications where size and weight are important. The MX9000 is the lightest military Manpack in the world. The Frequency Hopping option provides secure, jam-resistant HF communications.

Includes:

- HF-90M Transceiver with Advanced Option Field Programming Software
- Military Telephone Handset with DTMF Numeric Keypad
- TA-99 Auto Tuner (with coaxial & earth cables)
- Collapsible Whip Antenna (8-section)
- Tape Whip Antenna
- Long Wire Antenna Kit
- Rechargeable 8.8Ah Li-Ion battery
- Ultra-Light Backpack



MX9000 ORDERING INFORMATION

Stock Code Description

MX9000	Standard Manpack - Including Li-Ion battery and Li-Ion battery enclosure	Weight 5.00 kg
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Frequency Hopping/Encryption Options

QM9061	Frequency Hopping Option	0.05 kg
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NOTE: Frequency Hopping and Encryption options are subject to Australian Defence Export Controls and a signed End User Declaration must be provided for their supply.

Recommended Options/Upgrades

QM7005	End-fed Broadband Antenna	1.25 kg
QM8024ML	DC Charger - For vehicle charging; Suits Li-Ion batteries	0.50 kg
QM8000M	AC Mains Charger - Suits lithium batteries; Specify plug type (see section 2.11.4.1)	1.50 kg

These options are the most commonly ordered options and recommended by Q-MAC to provide a comprehensive solution for most Manpack applications.

Miscellaneous Options/Accessories

QM8020M	Solar Panel Charger - Fold up unit; Suits lithium batteries	1.50 kg
QM8035M	Hand Crank Generator - Suits military connector	2.70 kg
QM4016	Telephone Handset - Military grade – No Keypad	0.45 kg
QM8100	Rechargeable 8.8Ah Li-Ion battery and enclosure - Spare battery	1.50 kg
QM8110	Rechargeable 17.6Ah Li-Ion battery and enclosure - Spare battery	2.50 kg
QM9080M	Field Data Terminal - Tactical messaging terminal (see 2.5.1 for other options)	1.50 kg

Note MX9011 Manpack Package with full-frame backpack is available on request
[MX9011 Framed HF Manpack](#)



2.3

MOBILE (VEHICLE) PACKAGES

2.3.1 ML-91 NVIS Roof Rack Antenna Vehicle Package with HF-90M Transceiver

IMPROVED PERFORMANCE FROM A VEHICLE INSTALLATION

The Q-MAC ML-91 Roof Rack Antenna Vehicle Package (fixed transceiver) is ideal for NVIS propagation or applications requiring constant coverage for distances of 0-1000km. The ML-91 package provides significantly more gain than conventional whip antenna systems. The ML-91 is optimised for use in frequencies between 3.3-14 MHz.

Q-MAC's ML-91 NVIS Roof Rack Antenna Vehicle Package (fixed) is ideal for border patrol; search and rescue operations; and peace keeping applications. The ML-91 outperforms whip systems in mountains and valleys where NVIS propagation is essential. The ML-91 is also very effective at overcoming the 'Skip Zone' common with whip antenna systems.

Includes:

- HF-90M Transceiver, complete with DTMF numeric handset and DC power cable
- Transceiver Installation Kit, complete with mounting cradle and external mount speaker with audio mute facility
- ML-91 Auto-Tune Antenna System with cables and connectors
- ML-91 Installation Kit including roof-rack mounting hardware



ML-91 ORDERING INFORMATION

Stock Code	Description	Weight
MX9027	ML-91 50 Watt Fixed Transceiver Package Standard Size 1.8m (L) x 1.25m (W) (This part number requires a rack mounting kit - see below for details)	110.00 kg
MX9027b	ML-91 50 Watt Fixed Transceiver Package Short Size 1.5m (L) x 1.25m (W) (This part number requires a rack mounting kit - see below for details)	100.00 kg
NOTE:	The MX9027 and MX9027b both include a mounting kit. Please order a suitable Roof Rack Mounting Option from the table below.	0.00 kg

ML-91 NVIS Roof Rack Mounting Options Ordering Information

QM3100	Roof Rack Mounting Hardware - Gutter mount	0.00 kg
QM3101	Roof Rack Mounting Hardware - Existing mounting track	0.00 kg
QM3102	Roof Rack Mounting Hardware - Concealed gutter door jam	0.00 kg
QM3103	Roof Rack Mounting Hardware - Track installation and mounting feet	0.00 kg

Frequency Hopping/Encryption Options

QM9061	Frequency Hopping Option	0.05 kg
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NOTE: Frequency Hopping and Encryption options are subject to Australian Defence Export Controls and a signed End User Declaration must be provided for their supply.

Recommended Options/Upgrades

QM4023M	Rugged Military External Loud Speaker	1.00 kg
QM4025M	Rugged Military External Loud Speaker with DSP Noise Reduction	1.00 kg

These options are the most commonly ordered options and recommended by Q-MAC to provide a comprehensive solution for most Vehicle applications.

Miscellaneous Options/Accessories

QM9080M	Field Data Terminal – Tactical messaging terminal (see 2.5.1 for other options)	1.50 kg
QM4016	Telephone Handset - Military grade – No Keypad	0.45 kg

Due to receive characteristics of the ML-91 loop antenna, there is limited frequency range compatibility with the Frequency Hopping Option. The Q-MAC Electronics Pty Ltd ML-91 Vehicle Roof Rack Magnetic Loop Antenna System is protected in design by Australian Patent No 2001100423.

2.3.2 MX9015 HF-90M 50W Vehicle Package with Whip Antenna

A MILITARY GRADE PACKAGE FOR VEHICLE INSTALLATIONS

The Q-MAC HF-90M Vehicle Package is a HF SSB radio communication system designed for long range mobile applications. The small footprint of the HF-90M transceiver makes it highly convenient for tight spaces in military vehicles, simplifying installation by eliminating the requirement to mount a separate control head or run control cabling to a remote control head.

Q-MAC's HF-90M Vehicle Package with whip antenna is ideal for border patrol, defence and paramilitary applications. The Frequency Hopping option provides a secure jam and intercept resistant HF link. With the addition of Anti-Vibration mounting platforms, the HF-90M can also be mounted in tracked vehicles.

Includes:

- HF-90M Transceiver
- Military Grade Telephone Handset with DTMF Numeric Keypad
- Power Cable with military connector
- Vehicle Installation Kit with mounting cradle
- TA-90M Automatic Tuning Whip Antenna System covering 2-20 MHz (for MX9015 50 Watt System)
- 4 Section Military Vehicle Antenna and US/NATO Base
- External Loudspeaker with Voice Squelch



MX9015 ORDERING INFORMATION

Stock Code	Description	Weight
MX9015	HF-90M 50 Watt Vehicle Transceiver Package	15.00 kg

Frequency Hopping/Encryption Options

QM9061	Frequency Hopping Option	0.05 kg
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NOTE: Frequency Hopping and Encryption options are subject to Australian Defence Export Controls and a signed End User Declaration must be provided for their supply.

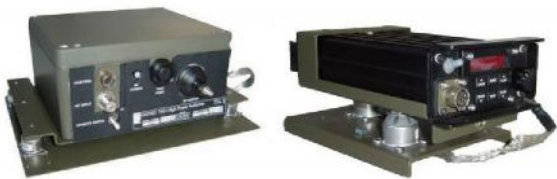
Recommended Options/Upgrades

QM4025M	Rugged Military External Loud Speaker with DSP Noise Reduction	1.00 kg
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These options are the most commonly ordered options and recommended by Q-MAC to provide a comprehensive solution for most Vehicle applications.

Miscellaneous Options/Accessories

QM4016	Telephone Handset - Military grade – No Keypad	0.45 kg
QM7134M	Spare HF Antenna Elements - 3 x 1.32m sections and 1 x 0.66m section; Total length 4.66m For Tracked Military Vehicles Anti-Vibration Mounts are required. These are available on request and will depend on the exact platform equipment is installed in. **	3.00 kg



** AV Mounts for illustration purposes.

2.3.3 MX9115 HF-90M 150W Vehicle Package with Military Whip Antenna System

A MILITARY GRADE PACKAGE FOR VEHICLE INSTALLATIONS

The Q-MAC HF-90M Vehicle Package is a HF SSB radio communication system designed for long-range mobile applications. The small footprint of the HF-90M transceiver makes it ideal for mounting in tight spaces common in military vehicles, simplifying installation by eliminating the requirement to mount a separate control head or run control cabling to a remote control head.

The addition of Q-MAC's HF-150M 150 Watt Amplifier and TA-91M Automatic Tuner increases signal strength and range performance.

Applications:

The Q-MAC HF-90M Vehicle Package with whip antenna is ideal for border patrol, defence and paramilitary applications. The Frequency Hopping option provides a secure jam and intercept resistant HF link. With the addition of Anti-Vibration platforms, the HF-90M can also be mounted in tracked vehicles.

Includes:

- HF-90M Transceiver
- Military Grade Telephone Handset with DTMF Numeric Keypad
- Power Cable with Military Connector
- Mounting Cradle
- TA-91M Tuning Whip Antenna System covering 2-27 MHz (for MX9115 150 Watt System)
- HF-150M 150 Watt SSB Amplifier
- 4 Section Military Vehicle Antenna and US/NATO Base



MX9115 ORDERING INFORMATION

Stock Code	Description	Weight
MX9115	150 Watt Vehicle Transceiver Package with HF-90M, HF-150M & TA-91M - 24V	20.00 kg

Frequency Hopping/Encryption Options

QM9061	Frequency Hopping Option	0.05 kg
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NOTE: Frequency Hopping and Encryption options are subject to Australian Defence Export Controls and a signed End User Declaration must be provided for their supply.

Recommended Options/Upgrades

QM4023M	Rugged Military External Loud Speaker	1.00 kg
QM4025M	DSP Noise Reduction External Loudspeaker - Commercial grade enclosure	1.00 kg

These options are the most commonly ordered options and recommended by Q-MAC to provide a comprehensive solution for most Vehicle applications.

Miscellaneous Options/Accessories

QM9080M	Field Data Terminal - Tactical messaging terminal (see 2.5.1 for other options)	1.50 kg
QM4016	Telephone Handset - Military grade - No Keypad	0.45 kg
QM7134M	Spare HF Antenna Elements - 3 x 1.32m sections and 1 x 0.66m section; Total length 4.66m For Tracked Military Vehicles Anti-Vibration Mounts are required. These are available on request and will depend on the exact platform equipment is installed in. **	3.00 kg



** AV Mounts for illustration purposes.

2.4

BASE STATION PACKAGES

2.4.1 MX9019 50W Integrated HF-90M Base Station

AN INTEGRATED HF-90M TRANSCEIVER BASE STATION

The Q-MAC HF-90M Integrated Base Station is ideal for rapid deployment of a field or fixed base station. The main components, including transceiver, stand-by battery and power supply, are all contained in one integrated housing.

Applications:

Q-MAC's HF-90M Base Station Package is ideal for regional offices, temporary base stations and tactical field command applications.

Includes:

- HF-90M Transceiver
- Tactical Telephone Handset with DTMF Numeric Keypad
- Panel Mounted Speaker with audio mute facility
- AC Mains Power Supply Unit complete with battery backup facility
- Standby Power Rechargeable Battery (7 Ah)
- Fixed Broadband Dipole Antenna - multi wire
- Halyard Kit
- Lightning Surge Arrestor Kit



MX9019 ORDERING INFORMATION

Stock Code	Description	Weight
MX9019	Integrated Base Station	42.00 kg
NOTE:	Please also order an IEC mains cable to suit your region. Refer to Section 2.11.4.2 for details. One cable is included in the price of the MX9019.	0.05 kg

Frequency Hopping/Encryption Options

QM9061	Frequency Hopping Option	0.05 kg
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NOTE: Frequency Hopping and Encryption options are subject to Australian Defence Export Controls and a signed End User Declaration must be provided for their supply.

Recommended Options/Upgrades

QM4026	Upgrades Standard Speaker to DSP Noise Reduction Loudspeaker	0.00 kg
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These options are the most commonly ordered options and recommended by Q-MAC to provide a comprehensive solution for most Base Station applications.

Miscellaneous Options/Accessories

QM8011	Rechargeable 7Ah SLA Spare Battery - Internal back up battery replacement	2.55 kg
QM4016	Telephone Handset - Military grade – No Keypad	0.45 kg
QM9080M	Field Data Terminal - Tactical messaging terminal (see 2.5.1 for other options)	1.50 kg

2.4.2 MX9024 HF-90M 500W High Powered Base Station Package (complete)

A FIXED HF-90M TRANSCEIVER WITH THE 500W OUTPUT POWER

The Q-MAC HF-90M 500W Base Station Package is designed for strategic communications in base station applications. It includes a HF-90M transceiver coupled with solid state, 500 Watt amplifier and power supply, all contained in a versatile 19" equipment rack with casters.

Applications:

The Q-MAC HF-90M 500W Base Station Package is ideal for national or regional headquarters, embassies, military and border patrol applications. With the HF-90M Frequency Hopping Option, secure HF networks can be implemented.

Includes:

- HF-90M Transceiver with advanced software
- 19" 10RU Equipment Rack & Hardware
- Panel Mounted Speaker with audio mute facility
- AC Mains Power Converter Unit 90A/12V DC.
- 500 Watt Amplifier with Fan Kit
- Military Telephone Handset with DTMF Numeric Keypad
- Headphones
- 3 Wire Centre-Fed Broadband Dipole Antenna (QM7003)
- 50m RG213 Coax Cable
- Halyard Kit
- Lightning Surge Arrestor Kit



MX9024 ORDERING INFORMATION

Stock Code	Description	Weight
MX9024	HF-90M 500 Watt High Power Base Station	65.00 kg
NOTE:	Please also order an IEC mains cable to suit your region. Refer to Section 2.11.4.2 for details. One cable is included in the price of the MX9024.	0.05 kg

Frequency Hopping/Encryption Options

QM9061	Frequency Hopping Option	0.05 kg
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NOTE: Frequency Hopping and Encryption options are subject to Australian Defence Export Controls and a signed End User Declaration must be provided for their supply.

Recommended Options/Upgrades

QM4026	Upgrades Standard Speaker to DSP Noise Reduction Loudspeaker	0.00 kg
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These options are the most commonly ordered options and recommended by Q-MAC to provide a comprehensive solution for most Base Station applications.

Miscellaneous Options/Accessories

QM9080M	Field Data Terminal - Tactical messaging terminal (see 2.5.1 for other options)	1.50 kg
QM4016	Telephone Handset - Military grade – No Keypad	0.45 kg

2.5

DATA PRODUCTS

2.5.1 QM9080M Field Data Terminal

A DATA UNIT FOR SIMPLE MESSAGING WITHOUT A PC

Description:

The Field Data Terminal (FDT) is a hand held device that provides error free transmission of text based messages by the HF-90M. The FDT is ideal for tactical applications where text based messaging is required in a simple, easy to use format. The FDT is light weight, self contained and does not require a PC or radio modem. The FDT can be optioned with a GPS receiver to send and receive co-ordinates. The FDT can also be upgraded to encrypt messages to military standards.



Compatibility:

QM9080M FDT is compatible with all HF-90M packages.

Includes:

- Field Data Terminal, Carry Pouch and Quick Reference Card
- Connection Cable to HF-90M
- Mag Light Torch, 1 x 9V Battery and 2 x AA Batteries for night operations

ORDERING INFORMATION

Stock Code	Description	Weight
QM9080M	Field Data Terminal	1.50 kg

Miscellaneous Options/Upgrades

QM9080C	Cryptographic Option - For securing messages with a key	0.01 kg
QM9080G	GPS Option - Includes GPS receiver and software; Requires QM9080C option!	0.50 kg

NOTE: The Cryptographic Option is subject to Australian Defence Export Controls and a signed End User Declaration must be provided for supply of this option.

Situational Awareness Systems – Integrated Systems are available and customised to suit specific requirements. These systems require consultation with Q-MAC systems integration consultants. These can include built in messaging, mapping, tracking and frequency prediction software.



2.6

HF-90M TRANSCEIVER STANDALONE & OPTIONS

2.6.1 QM9101 HF-90M Transceiver (Military Grade)

SPARE TRANSCEIVER TO MAKE UP ADDITIONAL PACKAGES

Includes:

- 2-30 MHz Frequency Coverage
- 50 Watt PEP Power Output
- 12-24V Operating Voltage
- 255 Programmable Channels
- USB/LSB Toggle Switch
- Tune Function
- Clarifier
- Rx Signal Strength Indicator
- Erase Facility
- 6 Digit LED Display
- HF-90M Operation & Installation Guide



ORDERING INFORMATION

Stock Code	Description	Weight
QM9101	Standard HF-90M - Includes military telephone handset with DTMF Numeric Keypad	1.55 kg

Frequency Hopping/Encryption Options

QM9061	Frequency Hopping Option	0.05 kg
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NOTE: Frequency Hopping and Encryption options are subject to Australian Defence Export Controls and a signed End User Declaration must be provided for their supply.

Miscellaneous Options/Accessories

QM9090M	Custom Option - HF-90M power reduction to 20 Watts	0.01 kg
QM9091M	Custom Option - HF-90M 3kHz filter option for data transmission	0.01 kg
QM4016	Telephone Handset - Military grade – No Keypad	0.45 kg

2.7

HF-90M FREQUENCY HOPPING & ENCRYPTION

2.7.1 QM9061 HF-90M Frequency Hopping Option (Factory Fitted)

MILITARY STANDARD PROTECTION AGAINST INTERCEPT AND JAMMING

Includes:

- 5 and 10 hops per second
- 256 kHz bandwidth (1 kHz spacing)
- Synchronization time of 25 seconds (average)
- Pseudo-random hopping sequence
- HF-90M Frequency Hopping User Guide



ORDERING INFORMATION

Stock Code	Description	Weight
QM9061	Frequency Hopping Option - Factory fitted	0.05 kg

NOTE: Frequency Hopping and Encryption options are subject to Australian Defence Export Controls and a signed End User Declaration must be provided for their supply.

2.8 ANTENNA SYSTEMS

2.8.1 NVIS Roof Rack Antenna Systems

2.8.1.1 QM7126 ML-91 Auto-Tuning Antenna System (Rack and Tuner) for Q-MAC, Racal, Codan, Barrett and Icom Transceivers (Up to 125Watt PEP)

INNOVATIVE VEHICLE HF COMMUNICATION SOLUTION

Description:

The Q-MAC ML-91 Roof Rack Antenna System is ideal for NVIS propagation or applications requiring constant coverage for distances of 0-1000km. The ML-91 package provides significantly more gain than conventional whip antenna systems. The ML-91 is optimised for use in frequencies between 3.3-14 MHz.

Q-MAC's ML-91 NVIS Roof Rack Antenna System is ideal for border patrol; search and rescue operations; and peace keeping applications. The ML-91 outperforms whip systems in mountains and valleys where NVIS propagation is essential. The ML-91 is also very effective at overcoming the 'Skip Zone' common with whip antenna systems.

Compatibility:

- Suitable for use with Q-MAC, Racal, Codan™, Barrett Communications™ and Icom™ transceivers *(not included) (Other transceivers available on application)*
- The maximum power rating of the ML-91 is 125W
- Limited frequency range compatibility with Q-MAC Frequency Hopping Option.

ORDERING INFORMATION

Stock Code Description

Stock Code	Description	Weight
QM7126-002	ML-91 Auto-tuning Antenna System Standard Size 1.8m (L) x 1.25m (W) – 12V DC Q-MAC, Codan, Barrett and Icom Transceivers Only	105.00 kg
QM7126-001	ML-91 Auto-tuning Antenna System Short Size 1.5m (L) x 1.25m (W) - 12V DC Q-MAC, Codan, Barrett and Icom Transceivers Only	90.00 kg
QM7126-004	ML-91 Auto-tuning Antenna System Standard Size 1.8m (L) x 1.25m (W) - 24V DC Racal Transceiver Only	105.00 kg
QM7126-003	ML-91 Auto-tuning Antenna System Short Size 1.5m (L) x 1.25m (W) - 24V DC Racal Transceiver Only	90.00 kg
NOTE:	The QM7126-xxx includes a mounting kit and control cable in the package. Please specify a Mounting Option and Control Cable when ordering from the tables below.	0.00 kg

ML-91 NVIS Roof Rack Control Cable Options Ordering Information

Stock Code	Description	Weight
QM5114	ML-91 to Barrett Transceiver Control Cable	0.00 kg
QM5113	ML-91 to Codan Transceiver Control Cable	0.00 kg
QM5115	ML-91 to Icom Transceiver Control Cable	0.00 kg
QM5143	ML-91 to Racal Transceiver Control Cable	0.00 kg
QM5157M-6.0M	Cable PL-259 to BNC for Codan, Icom and Barrett Transceivers	0.00 kg
QM5156M-6.0M	Cable BNC to BNC for Q-MAC and Racal Transceivers	0.00 kg

ML-91 NVIS Roof Rack Mounting Options Ordering Information

Stock Code	Description	Weight
QM3100	Roof Rack Mounting Hardware - Gutter mount	0.00 kg
QM3101	Roof Rack Mounting Hardware - Existing mounting track	0.00 kg
QM3102	Roof Rack Mounting Hardware - Concealed gutter door jam	0.00 kg
QM3103	Roof Rack Mounting Hardware - Track installation and mounting feet	0.00 kg

ML-91 NVIS Roof Rack Spare Parts

Stock Code	Description	Weight
QM5078	ML-91 DC Feed Adaptor Cable - Cable to connect old version HF-90s (without DC feed on antenna socket) to current model ML-91	0.30 kg
95312	ML-91 Replacement Antenna Element - Replacement for damaged folding antenna element	5.00 kg
QM5059	ML-91 Replacement Cable ATU to Ground - Replacement cable to connect automatic antenna tuning unit to ground connection point	1.00 kg
QM5062	ML-91 Replacement High Voltage Cable - Replacement cable to connect automatic antenna tuning unit to antenna	1.00 kg
QM5076	ML-91 Replacement Cable ATU to Feed Box - Replacement cable to connect automatic antenna tuning unit to RF/DC feed box	1.00 kg
95319	ML-91 Wind Deflector Replacement Part	10.00 kg
QM7125-001	ML-91 Automatic Antenna Tuner Unit Only 12V - As supplied with QM7126-002/1	4.50 kg
QM7125-002	ML-91 Automatic Antenna Tuner Unit Only 24V - As supplied with QM7126-004/3	4.50 kg
QM7123	ML-91 Antenna Feed Box Only - As supplied with QM7126 ML-91 NVIS antenna system	1.50 kg



2.8.2 Vehicle Whip Antenna Systems

2.8.2.1 QM7112M TA-90M 50W Auto-Tune Antenna System

Description:

The TA-90M is a compact, fully-automatic antenna tuner in robust metal housing. Designed specifically for use with the HF-90, it allows delivery of maximum power, over 2-20 MHz, to a range of short whip or wire antennas.

Compatibility:

Compatible with HF-90M Frequency Hopping Option/Upgrade in frequency range approximately 4 to 20 MHz. As supplied with the MX9015 HF-90M Vehicle Package.

Includes:

- TA-90 Automatic Antenna Tuner in die-cast metal housing
- Heavy-duty mounting bracket
- Pair of 45mm C-clamps
- Pair of 50mm C-clamps
- Cables
- Military 4 section Whip Antenna and Base System



TA-90 ORDERING INFORMATION

Stock Code	Description	Weight
QM7112M	TA-90M Auto-Tune Antenna System	10.00 kg

Spares And Accessories Ordering Information

QM7121M	TA-90M Tuner - Supplied complete with mounting bracket assembly; As supplied with the TA-90M auto-tune antenna system	2.40 kg
QM6071M	TA-90M Mounting Kit - Kit includes all items as supplied with TA-90 Auto-tune antenna system minus the TA-90M tuner and antenna system	2.45 kg
QM7137	C-Clamps 60mm - To fix TA-90 mounting plate to larger diameter bull-bar	0.30 kg

The TA-90M is partially compatible with HF-90 Frequency Hopping Option/Upgrades from approximately 4 to 20 MHz.

Military Whip Antenna System - Spares and Accessories

QM7134M	Military HF Vehicle Antenna Elements - 3 x 1.32m Section (split configuration) and 1 x 0.66M Section; Military grade rugged aluminium anodized whip antenna; Connected with spring loaded steel bayonet fixing; Mounts to QM7138M; Total length 4.66m	3.00 kg
QM7138M	Military HF Antenna Base - Suits QM7134M; Heavy duty antenna base with spring; NATO and US mounting holes	3.00 kg
QM7139M	Military HF Antenna and Base Combination - 3 x 1.32M and 1 x 0.66M sectional vehicle antenna with antenna base with spring; NATO and US mounting holes	6.00 kg

2.8.2.2 QM7921M TA-91M 150W Antenna Auto Tuner

Description:

The TA-91M is a fully-automatic antenna tuner in robust metal housing, capable of 150W operation between 2 to 30 MHz. It includes a 4.5m control cable and 4.5m coax cable with matching connectors from the TA-91M to HF-150M (HF-150M not included).

Compatibility:

Compatible with the HF-90M Frequency Hopping Option/Upgrade in frequency range approximately 4 to 27 MHz. As supplied with the HF-90M 150W Vehicle Package (MX9115).

Includes:

- Die-cast metal housing
- Cables
- Sectional Military Whip Antenna Systems (3 x 1.32m sections; 1 x 0.66m section)
- US/NATO Standard Antenna Base

24V Version.



TA-91 ORDERING INFORMATION

Stock Code	Description	Weight
QM7921M	TA-91M Tuner (24V Version) - As supplied with the TA-91M Auto-tune Antenna System; Tunes military vehicle whip antenna system from 2-30 MHz	5.00 kg

The TA-91M (24V) is partially compatible with HF-90 Frequency Hopping Option/Upgrades from approximately 4 to 27 MHz.

Military Whip Antenna System - Spares and Accessories

QM7134M	Military HF Vehicle Antenna Elements - 3 x 1.32M section (split configuration) and 1 x 0.66m section; Military grade rugged aluminium anodized whip antenna; Connected with spring loaded steel bayonet fixing; Mounts to QM7138M; Total length 4.66m	3.00 kg
QM7138M	Military HF Antenna Base - Suits QM7134M; Heavy duty antenna base with spring; NATO and US mounting holes	3.00 kg
QM7139M	Military HF Antenna and Base Combination - 3 x 1.32m and 1 x 0.66m sectional vehicle antenna with antenna base with spring. NATO and US mounting holes	6.00 kg

2.8.3 QM9201M HF-150M 150W HF SSB Booster Amplifier

Description:

The Q-MAC HF-150M HF SSB Power Amplifier increases the output power of HF-90M transceivers to 150 Watts PEP across the HF frequency band. When used with the Q-MAC HF-90M transceiver, the amplifier will provide continuous coverage from 2 to 30 MHz and is compatible with the HF-90M Frequency Hopping option. The unit is designed for continuous duty cycle without the need for any forced air cooling. When integrated with the TA-91M Automatic Antenna Tuner, the system is automatically configured, without the need for any special operator input.

Applications:

The HF-150M is designed for applications where medium power tactical communications is required. Applications include land mobile vehicles; tracked vehicles; patrol boats; and base station installations. Anti-vibration mounts may be required for some platforms.

Compatibility:

Compatible with the HF-90M Frequency Hopping Option/Upgrade in the frequency range approximately 4 to 30 MHz.



HF-150 ORDERING INFORMATION

Stock Code	Description	Weight
QM9201M	HF-150M 150W HF SSB Booster Amplifier (24V)	6.50 kg

2.8.4 Manpack Antenna Systems

2.8.4.1 QM2101 TA-99 Automatic Tuner

Description:

Automatic antenna tuning unit, incorporating LED tuning indicator. Supplied with spare coaxial cable.

Compatibility:

The TA-99 Auto Tuner suits collapsible whip, tape and long wire antennas. As supplied in the Manpack packages.



ORDERING INFORMATION

Stock Code	Description
QM2101	TA-99 Automatic Tuner

Weight
0.90 kg

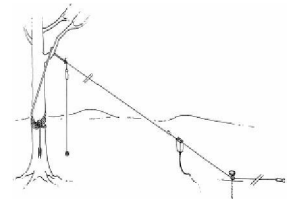
2.8.4.2 QM7005 Portable Broadband Antenna (Standard Version)

Description:

End-fed broadband antenna, 2-30 MHz, 100 Watt rating, made from insulated wire (for easy handling), incorporating counterpoise and earth-clip, complete with 5m RG-58 coaxial cable with connectors, throw cords and earth stake. Antenna is supplied on a shuttle for easy deployment and storage.

Compatibility:

Available as an option for Manpack packages.



ORDERING INFORMATION

Stock Code	Description
QM7005	Portable Broadband Antenna - Standard version

Weight
1.25 kg

2.8.4.3 QM7303 Collapsible Whip Antenna (8-section)

Description:

High efficiency collapsible eight-section whip antenna (3m). As supplied with the MX9000 HF-90M Manpack. The collapsed length is 390mm.

Frequency Coverage:

With TA-99 Automatic Tuner: 2-26 MHz With
TA-99 & Frequency Hopping: 4-26 MHz



ORDERING INFORMATION

Stock Code	Description
QM7303	Collapsible Whip Antenna (8-section)

Weight
0.30 kg

2.8.4.4 QM7301 Collapsible Whip Antenna (6-section)

Description:

High efficiency collapsible six section whip antenna (3m). As supplied with the MX9011 HF-90M Manpack. The collapsed length is 500mm.

Frequency Coverage:

With TA-99 Automatic Tuner: 2-26 MHz With
TA-99 & Frequency Hopping: 4-26 MHz



ORDERING INFORMATION

Stock Code	Description
QM7301	Collapsible Whip Antenna (6-section)

Weight
0.30 kg

2.8.4.5 QM7305 Tape Whip Antenna

Description:

Flexible tape whip antenna (1.10m) complete with flexible goose neck. Suitable for use in jungle and forestry areas. As supplied with the MX9000 and MX9011 HF-90M Manpack packages.

Frequency Coverage:

With TA-99 Automatic Tuner: 3.5-26 MHz With TA-99 & Frequency Hopping: 3.5-26 MHz



ORDERING INFORMATION

Stock Code	Description
QM7305	Tape Whip Antenna

Weight
0.20 kg

2.8.4.6 QM7310 Long Wire Antenna Kit

Description:

Suitable for use with TA-99 Automatic Tuner as a rapid-use antenna system. As supplied with the HF-90M Manpack packages.

Frequency Coverage:

With TA-99 Automatic Tuner: 2-20 MHz



Includes:

- Long Wire Antenna (7m)
- Counterpoise (5m)
- Long Wire Antenna Adaptor (fits TM-90 and TA-99 tuners)
- Throw Rope

ORDERING INFORMATION

Stock Code	Description
QM7310	Long Wire Antenna Kit

Weight
0.45 kg

2.8.5 Base Station Antenna Systems

2.8.5.1 QM7001 Fixed Broadband Dipole Antenna - Single Wire

Description:

Single wire centre-fed broadband dipole, 2-30 MHz, 130 Watt Data, 250 Watt Voice, PEP rating, stainless steel construction, complete with 30 metres RG-58 coaxial cable with connectors. Simple installation.

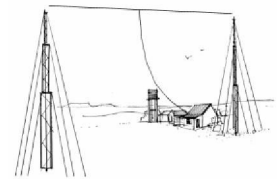
Includes:

Includes Halyard Kit. *Not supplied with installation accessories such as poles and masts.*

ORDERING INFORMATION

Stock Code	Description
------------	-------------

QM7001	Fixed Broadband Dipole Antenna - Single wire
--------	--



Weight
3.00 kg

2.8.5.2 QM7022 Mast Kit for Broadband Dipole Antenna

Description:

Mast kit to suit portable use of a single wire broadband dipole antenna.

Includes:

Comes with canvas bag. *Not supplied with installation accessories such as poles and masts.*

ORDERING INFORMATION

Stock Code	Description
------------	-------------

QM7022	Mast Kit for Broadband Dipole Antenna
--------	---------------------------------------

Weight
13.00 kg

2.8.5.3 QM7002 Fixed Broadband Dipole Antenna - Multi Wire

Description:

3-wire centre-fed broadband dipole, 2-30 MHz, 130 Watt Data, 250 Watt Voice rating, stainless steel construction with fibreglass spreaders complete with 30 metres RG-58 coaxial cable with connectors. As supplied with the HF-90M Integrated Base Station Package.

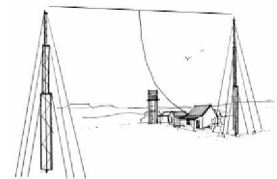
Includes:

Includes parts and instructions to mount in horizontal or inverted V configurations. Includes Halyard Kit. *Not supplied with installation accessories such as poles and masts.*

ORDERING INFORMATION

Stock Code	Description
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QM7002	Fixed Broadband Dipole Antenna - Multi wire
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Weight
12.00 kg

2.8.5.4 QM7003 Fixed Broadband Dipole Antenna - Multi Wire High Power

Description:

3-wire centre-fed broadband dipole, 2-30 MHz, 500 Watt Data, 1000 Watt Voice rating, stainless steel construction with fibreglass spreaders complete with 30 metres RG-58 coaxial cable with connectors. As supplied with the HF-90M 500W High Power Base Station Package.

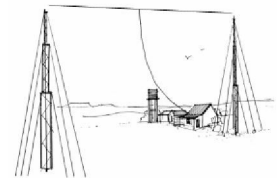
Includes:

Includes parts and instructions to mount in horizontal or inverted V configurations. Includes Halyard Kit. *Not supplied with installation accessories such as poles and masts.*

ORDERING INFORMATION

Stock Code	Description
------------	-------------

QM7003	Fixed Broadband Dipole Antenna - Multi wire high power
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Weight
18.00 kg

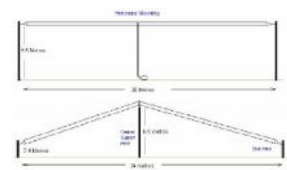
2.8.5.5 QM7004 Fixed Terminated Folded Dipole Broadband Antenna

Description:

Folded Dipole Broadband Antenna 5-18 MHz, 100 Watt Data, 150 Watt Voice rating, stainless steel construction with UV resistant spreaders complete with 30 metres RG-58 coaxial cable with connectors.

Includes:

Includes parts and instructions to mount in horizontal or inverted V configurations. Includes Halyard Kit. *Not supplied with installation accessories such as poles and masts.*



ORDERING INFORMATION

Stock Code	Description
QM7004	Fixed Terminated Folded Dipole Broadband Antenna

Weight
6.00 kg

2.8.5.6 QM7023 Lightning Surge Arrestor Kit

Description:

Ideal for protecting fixed Base Station installations. Included in MX9019 packages.

Includes:

- 1 x Surge Arrestor
- 1 x Earthing Rod, Cable Clamp and Earthing Strap
- 1 x 5m Coaxial Cable



ORDERING INFORMATION

Stock Code	Description
QM7023	Lightning Surge Arrestor Kit

Weight
10.00 kg

2.8.5.7 QM7024 Lightning Surge Arrestor Kit - High Power Base

Description:

Ideal for protecting fixed Base Station installations. Included in MX9024 packages.

Includes:

- 1 x Surge Arrestor
- 1 x Earthing Rod, Cable Clamp and Earthing Strap
- 1 x 5m Coaxial Cable



ORDERING INFORMATION

Stock Code	Description
QM7024	Lightning Surge Arrestor Kit - High power base

Weight
10.00 kg

2.8.5.8 QM7021 Halyard Kit

Description:

Ideal for installing the QM7001, QM7002 and QM7003 Fixed Dipole Broadband Antennas. Included in QM7001, QM7002 and QM7003.

Includes:

- 2 x 30m UV-Stable Rope (6mm)
- 2 x Stainless Steel Pulleys
- 2 X Stainless Steel D Shackles

ORDERING INFORMATION

Stock Code	Description
QM7021	Halyard Kit

Weight
0.60 kg

Other antenna types are available on application.

2.9

POWER SUPPLIES, CHARGERS & ACCESSORIES

2.9.1 QM8100 Mil-Std 8.8Ah Li-Ion Battery Pack

Description:

8.8Ah Lithium Ion (Li-Ion) battery in military grade casing. Suits the MX9000 and MX9011C HF-90M Manpack packages.

Includes custom Li-Ion battery pack.

ORDERING INFORMATION

Stock Code	Description
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QM8100	Mil-Std 8.8Ah Li-Ion Battery Pack
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Weight
1.50 kg

2.9.2 QM8110 Mil-Std 17.6Ah Li-Ion Battery Pack

Description:

17.6Ah Lithium Ion (Li-Ion) battery in military grade casing with military connector.

ORDERING INFORMATION

Stock Code	Description
------------	-------------

QM8110	Mil-Std 17.6Ah Li-Ion Battery Pack
--------	------------------------------------



Weight
2.50 kg

2.9.3 QM8000M AC Mains Li-Ion Charger (2A)

Description:

Compact charger to suit Lithium Ion battery packs - 100-250 Volt AC input, 2A limited current. Supplied with a specified AC mains plug (2-pin). As used with the MX9000 Manpack package.

ORDERING INFORMATION

Stock Code	Description
------------	-------------

QM8000M	AC Mains Li-Ion Charger (2A)
---------	------------------------------

NOTE: Please also order a Figure 8 mains cable to suit your region. Refer to Section 2.11.4.1 for details. One cable is included in the price of the QM8000M.

Weight
1.50 kg
0.05 kg

2.9.4 QM8020ML Fold-Up Solar Panel Charger - Li-Ion Only

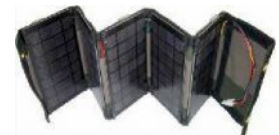
Description:

Suits Q-MAC Lithium Ion Batteries - 10.8 Watt rated power, complete with extension cable and mating connector to suit military grade packages. Unit comprises five panels, which fold into a compact canvas pouch. Suited to the MX9000 package.

ORDERING INFORMATION

Stock Code	Description
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QM8020M	Fold-Up Solar Panel Charger - Li-Ion only
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Weight
1.50 kg

2.9.5 QM8024ML DC Step-Up Battery Charger

Description:

Suits Q-MAC Rechargeable Li-Ion Batteries - Smart DC Li-Ion Battery Charger Volt for charging via vehicle cigarette lighter socket, complete with mating connector for MX9000 HF-90M Manpack.

ORDERING INFORMATION

Stock Code	Description
QM8024ML	DC Step-Up Battery Charger

Weight



0.50 kg

2.9.6 QM8035M Hand Crank Generator (with Mounts)

Description:

Suits Q-MAC SLA Rechargeable Batteries - Output voltage between 13.8-16.2V, output current between 1.15-1.35A (assumes 60RPM and 12 Ohm resistive load). Light weight, yet built from high impact material to meet military standard 810.

Includes:

- Tripod
- Canvas Bag
- Tree Mount (with strap)

ORDERING INFORMATION

Stock Code	Description
QM8035M	Hand Crank Generator - With mounts

Weight



2.70 kg

2.10 CARRY PACKS & CASES

2.10.1 QM6000 UltraLight Backpack

Description:

Custom designed single-unit backpack made from water resistant canvas, padded with compartments to house the HF-90M, TA-99 and Li-Ion battery accessories and antenna. As supplied with the HF-90M MX9000 Package. Standard colour is olive drab.

Dimensions:

335H x 192W x 85D mm (excluding antenna holder).

Note:

Accessories (radio, tuner, battery, handset, antenna, etc) are not included.

ORDERING INFORMATION

Stock Code	Description
QM6000	QM6000 UltraLight Backpack for Monoblock

Weight

1.00 kg



2.11 OTHER PARTS & ACCESSORIES

2.11.1 Installation Accessories

2.11.1.1 QM6052M HF-90M Vehicle Installation Kit

Includes:

- Mounting Cradle (QM6061)
- Coaxial Cable (RG-58) & Connectors (4.5m)
- HRC Fuse (20 Amp) and Holder
- Battery Lugs (Heavy Duty), Cable Ties, Grommets and Self-Amalgamating Tape

As supplied with the HF-90M Vehicle Package.

Note:

QM5001M DC power cable is not included with the HF-90M Vehicle Installation Kit. The DC power cable should be ordered separately if required.

ORDERING INFORMATION

Stock Code	Description	Weight
QM6052M	HF-90M Vehicle Installation Kit	1.30 kg

4.11.1.2 QM6061 Mounting Cradle

Description:

Mounting cradle suited to vehicle and base station applications. As supplied with the HF-90M Vehicle Installation Kit and HF-90M Base Station Package.



ORDERING INFORMATION

Stock Code	Description	Weight
QM6061	Mounting Cradle	0.35 kg

2.11.2 Audio Accessories

2.11.2.1 QM4042M Headphones (Military Grade)

Description:

Military grade headset incorporating 6.25 mm jack plug. Suits CW option and telegraph key.



ORDERING INFORMATION

Stock Code	Description
QM4042M	Headphones - Military grade

Weight
0.45 kg

2.11.2.2 QM4023M Rugged External Mount Speaker (with Audio Mute)

Description:

Rugged external mount speaker incorporating audio mute facility for fixed channel operation.

Weight



ORDERING INFORMATION

Stock Code	Description
QM4023M	Rugged External Mount Speaker - With audio mute

1.00 kg

2.11.2.3 QM4025M Rugged External Mount Speaker (with DSP Noise Reduction)

Description:

Noise eliminating speaker incorporating Digital Signal Processing (DSP) technology to remove unwanted background noise from speech. Fully adaptive noise cancelling. Plug & go - No adjustments necessary.

Weight



ORDERING INFORMATION

Stock Code	Description
QM4025M	Rugged External Mount Speaker - With DSP noise reduction

1.00 kg

2.11.2.4 QM4051M CW Options & Telegraph Key

Description:

External CW option housed in a compact die-cast metal box with telegraph key mounted on top. Incorporates a 6.25 mm mono jack for connection of suitable headphones. Supplied with 1.5m lead.



ORDERING INFORMATION

Stock Code	Description
QM4051M	CW Options & Telegraph Key

Weight
1.00 kg

2.11.3 Telephone Handsets

2.11.3.1 QM4014 DTMF Handset (Military Grade)

Description:

Industry standard, military grade telephone handset with military connector and DTMF keys for use with advanced software features such as Selcall, Beacon Call, Frequency Hopping and Front Panel Programming. For use with Mil-Spec model HF-90M.

ORDERING INFORMATION

Stock Code	Description
QM4014	DTMF Handset - Military grade



Weight
0.45 kg

2.11.3.2 QM4016 Telephone Handset (Military Grade)

Description:

Industry standard, military grade, non-DTMF telephone handset with Mil-Spec connector. For use with Mil-Spec model HF-90M.

ORDERING INFORMATION

Stock Code	Description
QM4016	Telephone Handset - Military grade



Weight
0.45 kg

2.11.3.3 QM4745 Combat Helmet with Integral Audio Headset

Description:

Combat helmet; complete with headset, Y cable and integral ear mount PTT. Helmet is supplied with a connector to fit the front socket of the HF-90M Transceiver.

ORDERING INFORMATION

Stock Code	Description
QM4745	Combat Helmet with Integral Audio Headset



Weight
4.00 kg

2.11.4 Mains Cables




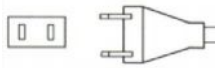


2.11.4.1 Figure 8 Socket Cables

Mains outlets vary across the globe. Summarised below are the most common mains plugs and the Q-MAC part number for ordering.

Mains End	Equipment End	Type A: Continental Europe	Type B: United Kingdom	Type C: Australia, New Zealand, Argentina	Type D: North America	Type E: India, South Africa
		Order Code: QM5087 (0.05 kg)	Order Code: QM5082 (0.05 kg)	Order Code: QM5081 (0.05 kg)	Order Code: QM5083 (0.05 kg)	Order Code: QM5118 (0.05 kg)

2.11.4.2 IEC Socket Cables

Mains outlets vary across the globe. Summarised below are the most common mains plugs and the Q-MAC part number for ordering.

Mains End					
Equipment End	Type A: Continental Europe	Type B: United Kingdom	Type C: Australia, New Zealand, Argentina	Type D: North America	Type E: India, South Africa
 IEC socket	Order Code: QM5085 (0.05 kg)	Order Code: QM5086 (0.05 kg)	Order Code: QM5084 (0.05 kg)	Order Code: QM5119 (0.05 kg)	Order Code: QM5120 (0.05 kg)

2.11.5 Other Cables

2.11.5.1 QM5051M Programming Cable (with Adaptor)

Description:

2m Programming Cable to connect the HF-90M with a computer serial port. Supplied with DB25 connector and adaptor for DB9 connector. For use with the HF-90M Programming Package (see 2.12.1.1).

ORDERING INFORMATION

Stock Code	Description	Weight
QM5051M	Programming Cable - With adaptor	0.30 kg

2.11.6 Miscellaneous Items

2.11.6.1 QM3001 PL259 → BNC Adaptor

In-line adaptor to convert a PL259 fitting to a BNC fitting

ORDERING INFORMATION

Stock Code	Description	Weight
QM3001	PL259 → BNC Adaptor	0.05 kg

2.11.6.2 QM9501M Fan Option (Modular)

Description:

Fan fitting to the rear of the HF-90M. Suited to continuous duty base station applications, such as data transmission.



ORDERING INFORMATION

Stock Code	Description	Weight
QM9501M	Fan Option - Modular	0.07 kg

2.12 DEALER SUPPORT PRODUCTS

2.12.1 Programming Software

2.12.1.1 QM1002M HF-90M Programming Package

IBM compatible software package (Windows Operating System) allows programming of the following functions:

Standard Model HF-90M:
Channel/frequency programming
USB/LSB mode toggle enable/disable
Power output setting Auto-tune enable/disable

Advanced Model HF-90M:
Field programming enable
Selcall ID number
Selcall and scanning on specific channels/frequencies

Includes:

- Programming Cable (Part No. QM5051M)
- Quick Reference Guide: HF-90M Programming Package

Note:

Package is provided on CD as standard. This programming software is for use on radios with Export Version firmware (HF-90E or HF-90H).

ORDERING INFORMATION

Stock Code	Description	Weight
QM1002M	HF-90M Programming Package	1.00 kg

2.12.2 Product Documentation

2.12.2.1 QM1021 HF-90/M Technical Manual

Description:

Detailed manual outlining product specifications, software, maintenance, fault finding and testing.

Note:

Authorised Q-MAC Dealers receive one HF-90/M Technical Manual at no charge with their first purchase of a HF-90 or HF-90M Transceiver. Extra copies must be purchased if required.

ORDERING INFORMATION

Stock Code	Description	Weight
QM1021	HF-90/M Technical Manual	0.35 kg

2.12.3 Replacement Modules

2.12.3.1 96005 HF-90M Front Panel Module

Description:

HF-90M front panel module, including front panel PCB.



ORDERING INFORMATION

Stock Code	Description	Weight
96005	Front Panel Module	0.20 kg

2.12.3.2 96004 HF-90M PASW Module

Description:

Power amplifier and switch mode power supply module, complete with heatsink assembly.



Weight
0.45 kg

ORDERING INFORMATION

Stock Code	Description
96004	HF-90M PASW Module

2.12.3.3 96003 HF-90M RXMP Module

Description:

Receiver and microprocessor module.



Weight
0.15 kg

ORDERING INFORMATION

Stock Code	Description
96003	HF-90M RXMP Module

2.12.4 Test Devices

2.12.4.1 QM4085 HF Test Indicator Unit

Description:

Tests HF-90/M radios and provides indications of RF Output Power Present, DC Power on Coax Present and Tune Interrupt Signal Present. Incorporates a dummy load and signal source. Suitable for testing commercial HF-90 or military HF-90M transceivers.



Weight
1.00 kg

ORDERING INFORMATION

Stock Code	Description
QM4085	HF Test Indicator Unit

2.12.4.2 QM4082 Antenna Current Meter

Description:

Meter for measuring antenna current in whip antenna system. For use where the antenna coaxial cable carries DC voltage to drive an automatic antenna tuner. This device provides an effective method of determining the performance of antenna systems incorporating antenna tuners that require DC on the coaxial cable e.g. TA-99.



Weight
2.00 kg

ORDERING INFORMATION

Stock Code	Description
QM4082	Antenna Current Meter

2.12.4.3 QM4084 DC Blocking Filter

Description:

In line BNC to BNC DC Blocking Filter used when testing the HF-90M with DC enabled on coax.



Weight
0.30 kg

ORDERING INFORMATION

Stock Code	Description
QM4084	DC Blocking Filter

2.12.4.4 QM4072 Asymmetric T Piece

Description:

Asymmetric T Piece with RF Monitor Point. Used for bench testing the HF-90M in line with antenna. Allows monitoring of output wave form on oscilloscope.

ORDERING INFORMATION

Stock Code	Description
QM4072	Asymmetric T Piece



Weight
0.30 kg

2.12.4.5 QM4075 50 Ohm RF Dummy Load

Description:

50 Ohm Dummy Load with QM3001 BNC-PL259 UHF adaptor.

ORDERING INFORMATION

Stock Code	Description
QM4075	50 Ohm RF Dummy Load



Weight
1.00 kg

2.12.4.6 QM4071M Breakout Test Box

Description:

Breakout unit with Audio In, Audio Out and External PTT. Useful for bench testing HF-90Ms.

ORDERING INFORMATION

Stock Code	Description
QM4071M	Breakout Test Box



Weight
0.30 kg

2.12.4.7 QM4081M Voice Enunciator Box

Description:

Device to automatically key and modulate a HF-90M transceiver.

ORDERING INFORMATION

Stock Code	Description
QM4081M	Voice Enunciator Box



Weight
1.00 kg

2.12.5 HF-90M Overhaul Service

2.12.5.1 QM9099M HF-90M Overhaul Service

Includes:

- New front panel keys
- New rotary encoder
- New power switch
- New microphone socket
- New knob and handles
- Thorough clean
- Microprocessor firmware update (to the latest version compatible with the hardware version installed)

Electronic design change updates (to the latest version compatible with the hardware version installed)
Re-test
Repair damaged/suspect components
Re-alignment
Labour charges
Extend warranty for 12 months



Note:

The extended warranty will only apply if the unit has not suffered water damage. The HF-90M Overhaul Service does not apply to radios that have suffered severe irreparable damage and require complete module replacement.

ORDERING INFORMATION

Stock Code	Description
QM9099M	HF-90M Overhaul Service

Weight
2.00 kg

2.12.6 Spares Kits

2.12.6.1 QM1044 Spares Kit (Component Level TA-90M)

Description:

Recommended spares for the maintenance of up to 50 TA-90M ATUs for a service period of 2 to 3 years. Also includes HF-90M Vehicle Power Cable, Coax, HV and Ground Cables. Q-MAC recommends that 5 complete TA-90M units are kept as spares in addition to these component spares (*not included*).

ORDERING INFORMATION

Stock Code	Description
QM1044	Spares Kit - Component level TA-90M



Weight
15.00 kg

2.12.6.2 QM1045 Spares Kit (Component Level TA-99)

Description:

Recommended spares for the maintenance of up to 50 TA-99 ATUs for a service period of 2 to 3 years. Q-MAC recommends that 5 complete TA-99 units are kept as spares in addition to these component spares (*not included*).

ORDERING INFORMATION

Stock Code	Description
QM1045	Spares Kit - Component level TA-99



Weight
5.00 kg

2.12.6.3 QM1047 Spares Kit (Component Level HF-90M)

Description:

Recommended spares for the maintenance of up to 50 HF-90M transceivers for a service period of 2 to 3 years. Q-MAC recommends that 5 complete HF-90M units are kept as spares in addition to these component spares (*not included*).

ORDERING INFORMATION

Stock Code	Description
------------	-------------



Weight

2.12.6.4 QM1048 Spares Kit (Component Level ML-91 ATU)

Description:

Recommended spares for the maintenance of up to 50 ML-91 Automatic Antenna Tuners for a service period of 2 to 3 years. Q-MAC recommends that 5 complete ML-91 ATUs are kept as spares in addition to these component spares *(not included)*. *This spares package does not include roof rack or antenna element spares.*

**ORDERING INFORMATION**

Stock Code	Description
QM1048	Spares Kit - Component level ML-91 ATU

Weight

15.00 kg