



Q-MAC Electronics

QM9020 50W Integrated HF Base Station

Tactical Communications



Tactical HF Radio

HF-90

Broadband Antenna

Backup Power Supply



Simple to Use, Versatile

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

Q-MAC's HF-90 Integrated Base Station Package is self contained and compact, housing the transceiver, AC mains power supply unit **with** the battery backup. Battery backup is ideal for use with AC mains systems where the consistency of supply cannot be guaranteed. The antenna included accommodates all frequencies between 2 to 30MHz and offers different mounting configurations.

The HF-90 Integrated Base Station Package is used worldwide in a variety of applications including; international aid, forestry, telecommunications, mining, military, paramilitary and police.

Simple to Maintain, Secure Frequency Hopping Option

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

Engineers and technicians will appreciate the solid construction and ease of use of Q-MAC transceivers. The mechanical design of the HF-90 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-90 has been designed for use by non-technical operators. Only essential controls are included on the front panel for normal operations. Advanced programming functionality is available in sub-menus. The HF-90 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-90 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.

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

Features

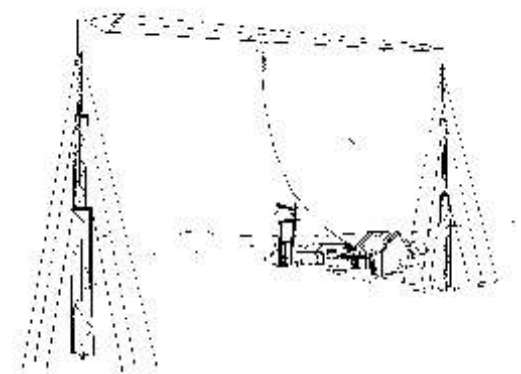
- Low Cost
- 50 Watt PEP
- 255 Channels
- Selective Calling
- Low Current Consumption
- 4 Minute MTTR
- 6000 Hours MTBF
- PC Programmable
- Optional Frequency Hopping
- Backup Battery

Standard Package Contents

- HF-90 Commercial Transceiver
- Fist Microphone
- 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





Q-MAC Electronics

QM9020 50W Integrated HF Base Station

Specifications



Tactical HF Radio

HF-90

Broadband Antenna

Backup Power Supply



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 Microphone/Handset or IBM PC 4800,8,1,N
BITE	Micro, Rx, Tx Tests
MTTR	4 Minutes
MTBF	6000 Hours

HF-90 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

ENVIRONMENTAL

Operating Temperature	- 30°C - 60°C
Storage Temperature	- 30°C - 80°C
Environmental Rating	HF-90 Complies with MIL-STD 810F Temperature, Shock & Vibration

QM9020 INTEGRATED UNIT SPECS

Dimensions	204(W) x 285(H) x 378(D)
Weight	12.5kg
Power	110/240VAC
Finish	Black Powder Coated Aluminium

TRANSMITTER

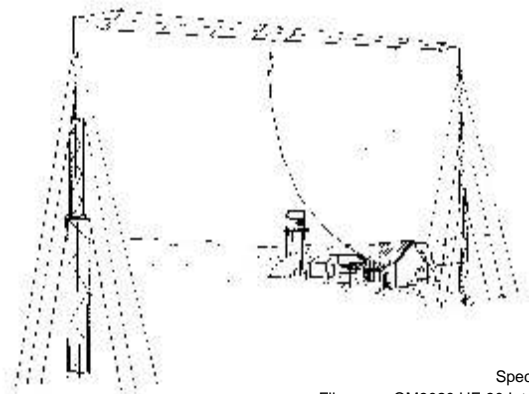
Power Output	50 Watt PEP Nominal Tactical Frequencies
Unwanted Sideband	Better than -45dB
Carrier Suppression	Better than -50dB
Harmonic Suppression	Better than -60dB
Audio Response	270Hz - 2800Hz

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 (GaAsFET Mixer)
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 Second
Hop Channels per Band	256
Number of Hop Bands	103 Contiguous Bands (2-30MHz)
Hop Sequence	Pseudo-random
Late Entry Sync Time	Average 26 Seconds
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



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

Tel + 618 9242 2900
 Fax + 618 9242 3900

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