# INTRODUCING THE COMMERCIAL SERIES MOBILE TWO-WAY RADIOS
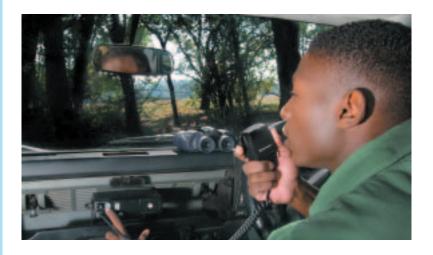
**A MOBILE RADIO THAT FITS YOUR BUSINESS, YOUR BUDGET AND YOUR VEHICLE**

*Benefiting from a 75 year history in the business of communication, Motorola welcomes you to the future of two-way radio with the Commercial Series. Comprising four new mobile radios for powerful in-vehicle or fixed site communications, the family also includes portable radios for workteams that need to keep in touch wherever they are working.*

*Keep the lines of communication open with the Motorola Commercial Series*

### CM140 AND CM340
A simple single-digit display, up to ten channels of communication and two programmable buttons (allowing up to four single-push functions) make the radio easy to use.

### CM160 AND CM360
For those with more sophisticated requirements, these radios have an eight-character display and up to 64 or 100 channels (depending upon radio signalling protocol*). The CM160 features up to four programmable buttons (allowing up to eight single-push functions) and the CM360 has three (for six single-push functions).

Additional features like encryption for increased security or data transfer capabilities can be added to the CM160 and CM360 via PROIS option boards developed by approved Motorola Application Partners. Option boards also allow for the development of customer-specific applications so that organisations can maximise the benefit gained from their radios.

*Some features depend upon the radio communications protocol that is chosen. Commercial Series mobiles are available in 5 Tone/PL and MDC/PL protocols. Let your local Motorola Authorised Dealer guide you through the benefits of the most suitable solution for your organisation.*

*As some of the smallest mobile radios on the market, the robust and rugged Motorola Commercial Series mobile radios offer communicators voice and build quality that will not let them down.*

### QUALITY AND RELIABILITY
Designed and built to the gruelling American standard MIL spec 810F and exceeding the exacting IP54 standard for environmental protection, all Commercial Series radios have also passed the Motorola Accelerated Life Test which replicates five years of hard use in the field.

Motorola's voice-compression technology, called X-Pand™, offers users excellent audio quality at the touch of a button.

### CONTINUOUS COMMUNICATION
The 'repeater talkaround' function allows users to stay in touch should the radio repeater for their area stop working or when users work beyond its range. Repeater talkaround is particularly useful where the electricity supply can be unreliable – often when communication is most important.

### BUDGET-CONSCIOUS
Not only does the Commercial Series offer a fantastic range of features in one of the smallest packages on the market, but users of other Motorola mobile radios like the GM300, GM350 and GM900, can reuse many of their existing accessories, saving time and money. All radios are supplied with a microphone, mounting bracket and power cable.

# MOTOROLA PROVIDES YOUR ORGANISATION WITH THE TOOLS TO COMMUNICATE

A stolen vehicle's radio can be 'stunned' to prevent usage and 'unstunned' upon retrieval.

### TARGETED COMMUNICATION
Selective calling lets users talk one-to-one without disturbing the rest of the team, ideal when sensitive issues occur. The CM360 also displays the caller's identity and when a call is missed, the caller's identity is stored for retrieval at a convenient time.

### INSTALLATION VERSATILITY
The Commercial Series mobile radios are truly DIN-mountable and offer a number of other mounting options.

For added security, the keylock mount guards against unauthorised removal. A desktop tray with integrated speaker is also available for use in an office or control room.

### INTELLIGENT AND CUSTOMISABLE
The Commercial Series is supported by a range of accessories that personalises an individual's radio. These include microphones and steering wheel mountable and foot-operated PTT buttons for safe usage of driver-operated radios.

### OTHER FEATURES
Nuisance channel delete
Monitor
System Scan

### A MOBILE RADIO THAT FITS YOUR BUSINESS
The versatile Commercial Series mobile radios are particularly suitable for the cost-conscious and fast-moving taxi and courier/distribution markets where data capabilities allow quick transmission of passenger and delivery information.

For agricultural and environmental organisations, lone workers are protected by built-in safety features so that help and advice from colleagues is only a button-press away.

Within local government operations, one-to-one calling is ideal for contact between supervisor and team member without disturbing busy colleagues.

### EASY-TO-USE
Users benefit from an intuitive menu system and large, clearly-labelled buttons. Radios have either a simple single-character display or a clear eight-character starburst display with ten simple-to-understand icons.

### PROTECTING USERS AND EQUIPMENT
Looking after employees and resources is paramount to stay ahead. With this in mind, the radios feature 'emergency mode'. A single button press is all it takes to alert colleagues or base that assistance is required.

With 'lone worker' function, the radio can be set up to request a response from a user at regular intervals. If the user is unable to give the 'okay' message then a defined emergency procedure is activated.

*Black Desk Microphone*

*Keypad Microphone*

*Mag One Microphone*

*Desktop Tray without Speaker*

*13W External Speaker*

*Keylock Mount*

## TECHNICAL SPECIFICATIONS

| General Specifications | Mid Band | VHF | UHF |
|---|---|---|---|
| Channel Capacity | CM340 10, CM360 100 | CM140 8, CM160 64, CM340 10, CM360 100 | |
| Frequency | 66-88MHz | VHF1 136-162MHz | UHF1 403-440MHz |
| | | VHF2 146-174MHz | UHF2 438-470MHz |
| Power | 1-25W | 1-25W, 25-45W | 1-25W, 25-40W |
| Channel Spacing | 12.5/20/25KHz | | |
| Dimensions (HxWxL) | 44x169x118mm | | |
| Weight | 1.02Kg | | |
| Antenna Connector | BNC | | |
| Current Drain – Standby | 0.3A | | |
| – Rx@ rated, external 8ohm speaker | 1.5A | | |
| – Transmit (25W, max) | 7A | 8A | 8A |

| Receiver | Mid Band | VHF | UHF |
|---|---|---|---|
| Frequency Stability (-30°C +60°C, +25°C) | ± 5 ppm | ± 2.5 ppm | |
| Sensitivity (12db Sinad) | 0.35µV (12.5KHz) 0.3µV (25KHz) typical | | |
| Intermodulation | 65dB | | |
| Adjacent Channel Selectivity | 60dB (12.5KHz) 70dB (25KHz) | 65dB (12.5KHz) 75dB (25KHz) | 60dB (12.5KHz) 70dB (25KHz) |
| Spurious Rejection | 70dB | 75dB | 70dB |
| Rated Audio (external audio with 4 ohm speaker) | 4W internal 13W external | | |
| Audio Distortion | 3% typical | | |
| Hum and Noise | -40dB (12.5KHz) -45dB (25KHz) | -40dB (12.5KHz) -45dB (25KHz) | -35dB (12.5KHz) -40dB (25KHz) |
| Audio Response | TIA603 | | |
| Conducted Spurious Emission | -57dBm < 1GHz | -47dBm > 1GHz | |

| Transmitter | Mid Band | VHF | UHF |
|---|---|---|---|
| Frequency Stability ( -30°C +60°C, +25°C) | ± 5ppm | ± 2.5ppm | |
| Modulation Limiting | ± 2.5KHz (12.5KHz) ± 4KHz (20KHz) ± 5KHz (25KHz) | | |
| FM Hum & Noise | -40dB (12.5KHz) | -40dB (12.5KHz) | -35dB (12.5KHz) |
| | -45dB (25KHz) | -45dB (25KHz) | -40dB (25KHz) |
| Conducted Spurious Emissions | -36dBm < 1GHz | -30dBm > 1GHz | |
| Adjacent Channel Power | -60dB (12.5KHz) | -70dB (25KHz) | |
| Audio Response | TIA603 | | |
| Audio Distortion | 3% typical | | |

## MODEL NUMBERS

| Name | Model Number | Signalling | Channels | Frequency | Power |
|---|---|---|---|---|---|
| CM140 | MDM50JNC9AA2_N | PL | 8 | VHF1 136-162MHz | 1-25W |
| CM140 | MDM50KNC9AA2_N | PL | 8 | VHF2 146-174MHz | 1-25W |
| CM140 | MDM50QNC9AA2_N | PL | 8 | UHF1 403-440MHz | 1-25W |
| CM140 | MDM50RNC9AA2_N | PL | 8 | UHF2 438-470MHz | 1-25W |
| CM160 | MDM50JNF9AA2_N | PL | 64 | VHF1 136-162MHz | 1-25W |
| CM160 | MDM50KNF9AA2_N | PL | 64 | VHF2 146-174MHz | 1-25W |
| CM160 | MDM50QNF9AA2_N | PL | 64 | UHF1 403-440MHz | 1-25W |
| CM160 | MDM50RNF9AA2_N | PL | 64 | UHF2 438-470MHz | 1-25W |
| CM140 | MDM50KQC9AA2_N | PL | 8 | VHF2 146-174MHz | 25-45W |
| CM140 | MDM50RPC9AA2_N | PL | 8 | UHF2 438-470MHz | 25-40W |
| CM160 | MDM50JQF9AA2_N | PL | 64 | VHF1 136-162MHz | 25-45W |
| CM160 | MDM50KQF9AA2_N | PL | 64 | VHF2 146-174MHz | 25-45W |
| CM160 | MDM50QPF9AA2_N | PL | 64 | UHF1 403-470MHz | 25-40W |
| CM160 | MDM50RPF9AA2_N | PL | 64 | UHF2 438-470MHz | 25-40W |
| CM340 | MDM50FNC9AN2_N | 5 Tone | 10 | MB 66-88MHz | 1-25W |
| CM340 | MDM50KNC9AN2_N | 5 Tone | 10 | VHF2 146-174MHz | 1-25W |
| CM340 | MDM50RNC9AN2_N | 5 Tone | 10 | UHF2 438-470MHz | 1-25W |
| CM360 | MDM50FNF9AN2_N | 5 Tone | 100 | MB 66-88MHz | 1-25W |
| CM360 | MDM50JNF9AN2_N | 5 Tone | 100 | VHF1 136-162MHz | 1-25W |
| CM360 | MDM50KNF9AN2_N | 5 Tone | 100 | VHF2 146-174MHz | 1-25W |
| CM360 | MDM50QNF9AN2_N | 5 Tone | 100 | UHF1 403-440MHz | 1-25W |
| CM360 | MDM50RNF9AN2_N | 5 Tone | 100 | UHF2 438-470MHz | 1-25W |

## ENVIRONMENTAL SPECIFICATIONS & STANDARDS

| | |
|---|---|
| Operating Temperature | - 20°C to + 55°C |
| Storage Temperature | - 40°C to + 85°C |
| Thermal Shock | - 40°C to + 80°C |
| Humidity | 95%RH @ 50°C for 8 hr |
| Dust & Water Intrusion | IP54 |
| Mobile Military Standards 810F | |

Conforms to CE Directives:
 – RTTE Directive 1999/5/EC
 – Automotive Directive 72/245/EEC (95/54/EC)
 – Applicable EN Standards EN300086, EN301489 01/05, EN60950, EN300113
ISO 9001 Standard – Compliance with ISO 9001, an international quality system assurance on design, development, production, installation and servicing of a product.

*All specifications are subject to change without notice.*

## ACCESSORIES

| Microphones | |
|---|---|
| HMN3413 | Compact Microphone |
| HMN1035 | Heavy Duty Microphone |
| MDRMN5018 | Mag One Microphone |
| MDRMN5029 | Keypad Microphone |
| MDRMN5019 | Mag One Keypad Microphone |
| MDREX4617 | Telephone Style Handset |
| **Handsfree Communication** | |
| GMMN4065 | Omni-directional Visor Microphone |
| RLN4856 | Footswitch with Remote PTT |
| RLN4857 | Pushbutton with Remote PTT |
| RLN4858 | Gooseneck PTT |
| RLN4836 | External PTT with Emergency Footswitch |
| **In-Vehicle Mounting** | |
| FTN6083 | DIN Mount |
| GLN7324 | Low Profile Mounting Bracket |
| GLN7317 | High Profile Mounting Bracket |
| RLN4779 | Keylock Mount |
| **Desktop Solutions** | |
| HMN3000 | Black Desk Microphone |
| RLN5390 | Desktop Tray with Speaker |
| RLN5391 | Desktop Tray without Speaker |
| **Speakers** | |
| HSN8145 | 7.5W External Speaker |
| RSN4001 | 13W External Speaker |
| **Specialist Solutions** | |
| HLN9328 | External Alarm Relay Cable |
| GLN7282 | Buzzer Kit |

For more information contact your local Motorola authorised two-way radio dealer:

CM-FB-RE (10/04)

# MOTOROLA

www.motorola.com