GM600
User Guide

Contents

Page:

General Information 2
Radio Care 2
Safety Information 2
Radio Controls 3
Audio Tones 4
Display Icons 4
Display 5
Getting Started 5
- Turning the Radio On/Off 5

Outgoing Calls 6
- Shortform Dialling 6
- Dedicated Calls 6
- Last Number Redial 6

Incoming Calls 7
- Call in Absence 7
- Call Diversion 8
- Talkgroup Select 8

Page:

Special Calls 8
- Status Calls 8
- Priority Calls 8
- Emergency Calls 9
- Broadcast Calls 9

Cancelling Calls 9
Ending Calls 9
External Alarm 9
Conventional Mode 9
Computer Software Copyright 10

General Information

This user guide covers the operation of the GM600 Series mobile radios used on MPT1327 Trunked Radio Systems. Please note that not all types of call may be possible on your system, please contact your network manager for further information on the calls available on your particular system.

This user guide describes the operation of radios with and without a display. On radios **without** a display certain types of call described below may not possible.

WARNING: **Ensure the radio is switched off when installing or removing the mobile radio from the vehicle.**

Radio Care

If cleaning is required, the radio housing should be cleaned with a cloth dampened with clean water and a mild liquid soap solution.

Caution: **The use of chemicals such as detergents, alcohol, aerosol sprays, and petroleum products may be harmful and damage the radio housing.**

Safety Information

Every radio, when transmitting, radiates energy into the atmosphere which may, under certain conditions, cause the generation of a spark.

All users of vehicles fitted with radios should be aware of the following warnings:

WARNING: **Do not operate the radio near inflammable liquids or in the vicinity of explosive devices.**

During normal use, the radio will subject you to radio energy substantially below the level where any kind of harm is reported.

To ensure personal safety, please observe the following simple rules:

- ☐ **DO NOT** transmit when the antenna is very close to, or touching, exposed parts of the body, especially the face and eyes.
- ☐ **DO NOT** hold the transmit (PTT) key in when not actually desiring to transmit.
- ☐ **DO NOT** allow children to play with any radio equipment containing a transmitter.
- ☐ **DO NOT** operate the radio whilst driving. It should also be noticed that the use of a hand held microphone while driving could constitute an offence under the Road Traffic Regulation.

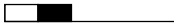
Radio Controls

The numbers refer to the illustrations on the inside front cover.

1. **On/Off Button**
   Turns the radio on/off.
2. **Microphone Connector**
3. **Volume Up/Down Control**
4. **Three Colour Indicators** (LEDs)
   Green, Flashing: Scanning.
   Green, Continuous: Power On.
   Yellow, Slow Flashing: Call setup requested.
   Yellow, Fast Flashing: Call acknowledged or Emergency call.
   Yellow, Continuous: Call In Progress.
   Red, Continuous: Radio Transmitting.
   Red, Flashing: Channel Busy (Conventional).
5. **Scroll Up/Down**
   Used to scroll through the shortform dial entries and radio idents to select for call.
6. **Numeric Display**
   Three characters and icons.
   Programmable backlighting.
7. **Clear Button**
   For cancelling a call, clearing down at the end of a call or Carrier Monitor (Conventional).
8. **Base Call Button**
   For making calls to a commonly used, preprogrammed number.
9. **Select Buttons A,B,C,D**
   The select buttons A to C are either programmed to operate as their assigned select/deselect modes or to operate as a dedicated call. Select button D can only be programmed to operate as a dedicated call.
   The select buttons A to D are programmed to operate in the following way:
   A - Conventional Mode Select/Deselect, otherwise a dedicated call button (if programmed).
   B - Call in Absence Interrogate mode Select/Deselect (display radio only), Call in Absence Callback (non-display radio only), otherwise a dedicated call button (if programmed).
   C - External Alarm Select/Deselect, otherwise a dedicated call button (if programmed).
   D - Dedicated call button (if programmed).
10. **Select Button LEDs**
    If the select buttons are programmed to operate as their assigned modes the LEDs function as follows:
    A - On, continuous, indicates Conventional mode selected. The LED will flash whilst changing mode.
    B - On, flashing, indicates Call in Absence message in stack (non-display radio).
    C - On, continuous, indicates External Alarm selected.
    D - Not Used.
11. **Transmit (PTT) Button**
    Push to talk, release to listen.

Audio Tones

High pitched tone ☐ Low pitched tone ■

Self test:  Sounded on power up or selecting between trunked and conventional Mode.

Tone A: Call clear indication.

Tone B: Speech channel allocated and PTT/Mic/ Loudspeaker enabled.

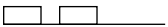
Tone C1: System busy.

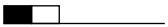
Tone C2: Unavailable.

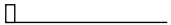
Tone C3: Called party busy.

Tone C4: Invalid number.

Tone D: Call set up in progress, wait for further indications.

Tone E:  Incoming call, press PTT, then wait for further indications.

Tone F:  Transaction confirmed, called unit will call back.

Tone G:  Look at display for call set up or system information.

Tone H: Invalid entry.

Key click: Confidence tone when any key pressed/speech limitation warning.

Fail tone: Hardware error or call timed out.

Display Icons

The icons which appear on the display are:

- Scanning.
- Control Channel Confirmed or in Conventional mode -Carrier Monitor Selected.
- Call In Absence Received.
- Tx Frequency=Rx Frequency (Conventional Mode).
- External Alarm Selected.
- Loudspeaker Open.
- ▼ Above button A - Conventional mode selected.
  Above button B - Call in absence interrogate selected.
  Above button C - External alarm selected.

Display

The display, showing icon locations, is as follows:

In the IDLE state the display shows the radio's identity number. On making a call the display will show the called number followed by the transmit timer, see ***Outgoing calls***:

Note that status is represented, in the display, by a bar.

Getting Started

Turning the Radio On/Off

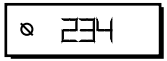
Turn the radio on by pressing the ON/OFF button. The radio then enters a self test routine. During the test the display will be activated, the self test tone will sound, and the green LED will light. If the radio fails the self test a continuous low tone will sound and the red or yellow LED will flash. The radio is turned off by depressing the ON/OFF button for 2 seconds.

Note: If the radio fails the self test routine, consult your dealer.

When the self-test is complete the radio displays its identity number (display radio only).

After this the radio scans for a radio system, with the green LED flashing and the scanning icon lit.

When a control channel is acquired, the green LED will go on and the scanning icon will be replaced by the registered icon . The display will also show the radio identity number. This is known as the IDLE STATE.



The radio must be in this state before you can make or receive a call (except for emergency calls).

Outgoing Calls

The radio is capable of making a variety of calls including calls to individual radios or group of radios. The radio can select calls by using either the **Shortform Dial** up/down scroll keys, the **Select Buttons A to D** (if they are programmed to function as a dedicated call button), or the **Base Call Button**.

When making a call note that the radio has a maximum call duration timer. This appears on the display, replacing the radio identity number.

The counter is bi-directional and when counting down the radio displays the remaining call time. Ten seconds before the radio returns to the IDLE state the keyclick tone sounds. When counting up the maximum duration of the call is determined by the system. Please contact your network manager for further information.

Shortform Dialling

When the radio is in the IDLE state shortform dialling may be used. This allows quick access to preprogrammed numbers using the shortform dial up/down scroll keys. The radio scrolls through the shortform dial list, the in-fleet unit numbers and then the group unit numbers.

On selecting the required number the call request is sent by pressing the PTT. If the scroll keys are pressed, but no call is preprogrammed, tone H sounds and the display reverts to the IDLE state.

Dedicated Calls

The Base Call Button and the Select Buttons A to D may be preprogrammed to make a dedicated call. Press the Base Call Button or a Select Button for a short period to make a call to a preprogrammed number. The number is then displayed and the call initiated to the requested number.

Last Number Redial

The last number called is stored in the memory of the radio. For status calls only the called number is stored, not the status message. This feature is accessed by pressing the PTT from the IDLE state.

Incoming Calls

There are two types of systems that the radio may be used on, Off Air Call Set Up (OACSU) and Full Off Air Call Set Up (FOACSU).

If you are in any doubt about which system you are operating on, consult your network manager.

Receiving a call on an OACSU system -
When the radio is called tone D will sound and the yellow LED flashes. This will then be followed by tone B.

Receiving a call on an FOACSU system -
When the radio is called tone E will sound and the yellow LED flashes. Press the PTT to accept the call. Tone D will sound until a speech channel is allocated, then tone B sounds.

Note: The system may have a limited call time and the call may be terminated automatically if this call time is exceeded.

Call In Absence

Call in Absence only applies to radios if preprogrammed, please consult your network manager.

If programmed, when a call is not answered within a set amount of time, the call is stored by the radio. Group calls are ignored.

Up to 5 calls can be stored. If the same radio calls more than once, the call is only stored once. When 5 calls have been stored by the radio the sixth call received overwrites the first.

Note: The calls in the stack are deleted when the radio is turned off. It is not possible to call back status calls.

Display Radios

When a call has been stored by the radio, tone G sounds every ten seconds. The call in absence icon ☐ will be lit to indicate there is a call in the stack.

To view/interrogate the calls in the stack press the Select Button B and use the up/down scroll keys to view numbers in the stack.

The most recent call stored by the radio is displayed first. Select the up/down scroll keys to display calls in the stack. If the stack is empty tone H sounds.

To exit the call in absence interrogate mode press Select Button B again.

Press the PTT button to make a call to the number displayed. On a successful call set-up, the entry is automatically deleted from the stack. Unanswered calls may be deleted from the stack at any time by pressing the Clear Button.

Non-Display Radios

When a call has been stored by a non-display radio, LED B (above Select Button B) will flash.
Press Select Button B to make a call to the oldest entry in the stack. On a successful call set-up, the entry is automatically deleted from the stack.
Unanswered calls may be deleted from the stack at any time by pressing the Clear Button. LED B will continue to flash while unanswered calls remain in the stack.
If Select Button B is pressed and there are no entries in the stack, Tone H is sounded.

Call Diversion

Incoming speech calls or status calls can be diverted either from your radio or from another radio. Call Diversion/Cancellation is only possible if programmed in the shortform dial list. Please contact your network manager for further information.

If a call is made to a radio whose calls are currently being diverted, tone D will sound. A call will then automatically be set up to the radio which is receiving the diverted calls.

Talkgroup Select

Talkgroup Select only applies to display radios if preprogrammed, please consult your network manager.

If the user is a member of many talk groups, this feature can be used to select one of the talk groups only. This is particularly beneficial if working at different sites where each site has a different talkgroup. In this case each site/talkgroup can be tied to a ‘channel’ on the Shortform Dial Position Selector. If Talkgroup Select is programmed into your radio it is very likely that Last Number Re-Dial will be disabled, in which case pressing the PTT will make a call to the currently selected position of the Shortform Dial Position Selector. Please consult your network manager for more details.

Special Calls

The following calls are only available if preprogrammed to function via the Base Call Button or the Shortform Dial up/down scroll keys. They are also available via the Select Buttons A to D if programmed as additional dedicated calls.

Status Calls

A status is a code for transmitting prearranged messages, e.g. status “05” may indicate “return to base”.

Priority Calls

A priority call allows you to gain priority over other users of the system when requesting a call.

Emergency Calls

An emergency call allows you the highest form of priority calling and normally takes precedence over all other calls.

Broadcast Calls

A broadcast call allows you to make broadcast calls to groups of radios. Note that on a broadcast call, only the calling radio can talk and there is no indication that any radios have received the call.

Cancelling Calls

At any time while setting up a call it may be cancelled by pressing the clear button or by replacing the microphone into the holder.

Ending Calls

A call should always be ended by pressing the clear button or by replacing the microphone into the holder.

External Alarm

The external alarm activates the vehicle horn and/or lights to inform you a call is being received.

Press Select Button C to enable and disable this feature. When activated the display will show the 🔔 icon, and the ▼ icon above button C (on display radio) or the LED above button C (non-display radio).

When activated, pressing any key will deactivate the vehicle horn and/or lights.

Conventional Mode

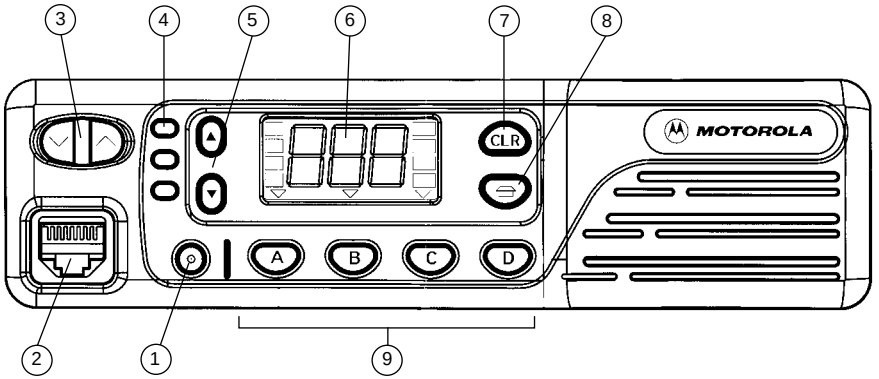
In the conventional mode the radio operates as a standard two-way radio. Press the select button A to select this mode. The Select Button LED will light, permanently. Use the up/down scroll keys to display the desired conventional channel.

Prior to transmission always make sure that the channel is free (red LED not flashing). Press the PTT to transmit, release it to listen. The red LED lights while the radio transmits and flashes if the channel is busy. Some channels may be monitored for activity by pressing the clear button. The ⦸ icon will be lit, and the radio will stay in this mode, until the channel is changed, the clear button is pressed again or the microphone is replaced.

In the conventional mode the radio is equipped with a maximum transmit duration timer. This is programmed to start whenever the PTT is pressed. Tone G sounds five seconds before the transmitter is switched off. If the timer expires whilst still transmitting, transmission will cease and a continuous fail tone will sound until the PTT is released.

Computer Software Copyright

The products described in this manual may include copyrighted computer programmes stored in semiconductor memories or other media. Laws in the United States of America and other countries preserve for Motorola Europe and Motorola Inc. certain exclusive rights for copyrighted computer programmes, including the right to copy or reproduce in any form the copyrighted computer programme. Accordingly, any copyrighted computer programmes contained in the products described in this manual may not be copied or reproduced in any manner without the express written permission of the holders of the rights. Furthermore, the purchase of these products shall not be deemed to grant either directly or by implication, estoppel, or otherwise, any licence under the copyrights, patents, or patent applications of the holders of the rights, except for the normal non-exclusive royalty free licence to use that arises by operation of the law in the sale of the product.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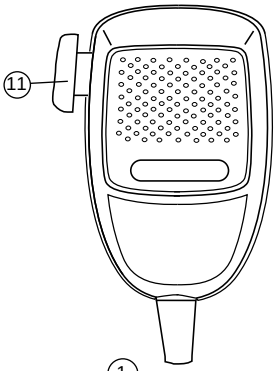
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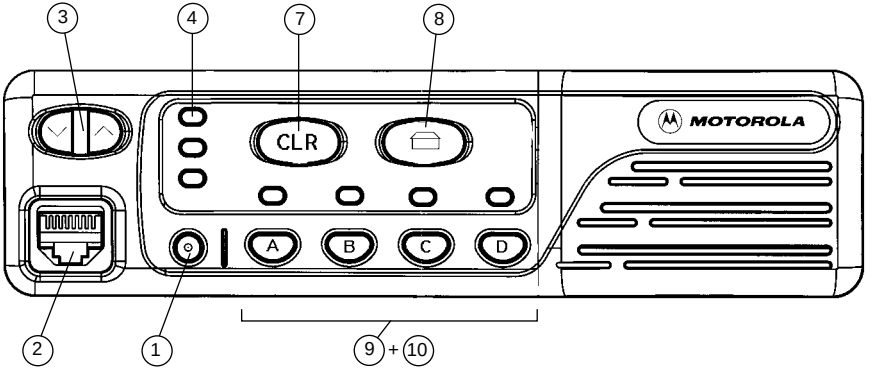
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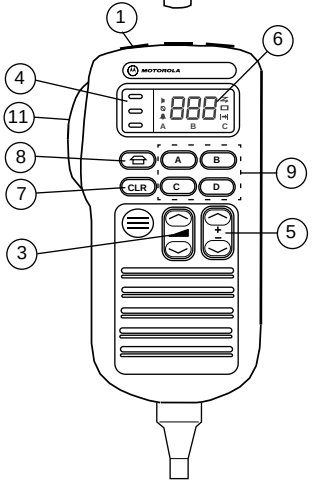
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