PROFESSIONAL DIGITAL TWO-WAY RADIOS

MOTOTRBO™ DM1400 NUMERIC DISPLAY MOBILE USER GUIDE

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Important Safety Information

RF Energy Exposure and Product Safety Guide for Mobile Two-Way Radios

ATTENTION!

This radio is restricted to Occupational use only. Before using the radio, read the RF Energy Exposure and Product Safety Guide for Mobile Two-Way Radios which contains important operating instructions for safe usage and RF energy awareness and control for Compliance with applicable standards and Regulations.

For a list of Motorola-approved antennas and other accessories, visit the following website:

http://www.motorolasolutions.com

Software Version

All the features described in the following sections are supported by the radio's software version **R01.01.01**.

Please check with your dealer or system administrator for more details of all the features supported.

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U.S. Pat. Nos. #5,870,405, #5,826,222, #5,754,974, #5,701,390, #5,715,365, #5,649,050, #5,630,011, #5,581,656, #5,517,511, #5,491,772, #5,247,579, #5,226,084 and #5,195,166.

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Getting Started

Take a moment to review the following:

How to Use This Guide . . . . . page 1
What Your Dealer/System Administrator Can Tell You . page 1
Powering Up the Radio . . . . . page 2
Adjusting the Volume. . . . . page 2

How to Use This Guide

This User Guide covers the basic operation of the MOTOTRBO Mobiles with Numeric Display.

However, your dealer or system administrator may have customized your radio for your specific needs. Check with your dealer or system administrator for more information.

Throughout this publication, the icons below are used to indicate features supported in either the conventional Analog mode or conventional Digital mode:



Indicates a conventional **Analog Mode-Only** feature.



Indicates a conventional **Digital Mode-Only** feature.

For features that are available in **both** Analog and Digital modes, **no** icon is shown.

What Your Dealer/System Administrator Can Tell You

You can consult your dealer or system administrator about the following:

- Is your radio programmed with any preset conventional channels?
- Which buttons have been programmed to access other features?
- What optional accessories may suit your needs?
- What are the best radio usage practices for effective communication?
- What maintenance procedures will help promote longer radio life?

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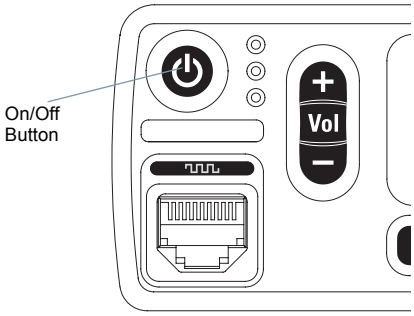
Powering Up the Radio

Press the **On/Off Button** briefly.

The green LED blinks and the numeric display screen lights up.

A brief tone sounds, indicating that the power up test is successful.



NOTE: There is no power up tone if the radio tones/alerts function is disabled (see ***Turning Radio Tones/Alerts On or Off*** on page 29).

If your radio does not power up, contact your dealer.

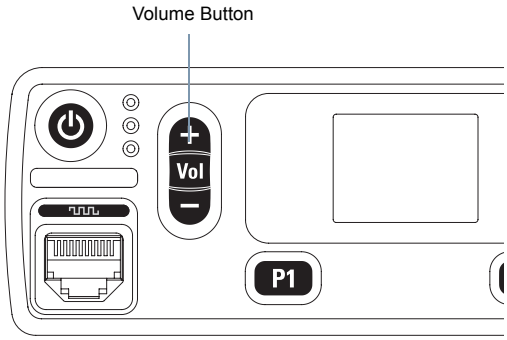
To turn off the radio, press and hold the On/Off Button.

NOTE: If the radio is locked up and unresponsive to button presses, press and hold the On/Off Button for at least 7 seconds. This will force a radio reset.

Your radio may take up to 7 seconds to completely turn off.

Adjusting the Volume

To increase the volume, press the volume **" + "** button.



*To decrease the volume, press the volume **" – "** button.*

NOTE: Your radio can be programmed to have a minimum volume offset where the volume level cannot be turned past the programmed minimum volume. Check with your dealer or system administrator for more information.

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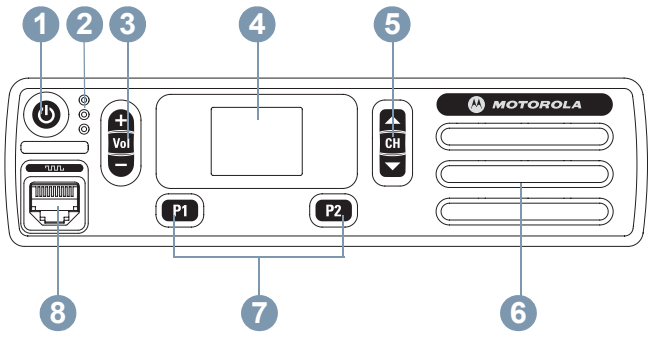
Identifying Radio Controls

Take a moment to review the following:

Radio Controls . . . . . page 3
Programmable Buttons . . . . . page 4
Push-To-Talk (PTT) Button . . . . . page 5
Switching Between Conventional Analog and Digital Mode . . . . . page 6

Radio Controls



1. On/Off Button
2. LED Indicators
3. Volume Up/Down Button
4. Display
5. Channel Up/Down Button
6. Speaker
7. Front Programmable Buttons*
8. Accessory Connector

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Programmable Buttons

Your dealer can program the programmable buttons as shortcuts to **radio functions** or up to a maximum of six (6) **preset channels/groups** depending on the duration of a button press:

- Short press – Pressing and releasing rapidly.
- Long press – Pressing and holding for the programmed duration.
- Hold down – Keeping the button pressed.

The programmed duration of a button press is applicable for all assignable radio/utility functions or settings.

Assignable Radio Functions

Analog Scrambling – Toggles analog scrambling on or off.

Emergency – Depending on the programming, initiates or cancels an emergency.

Mic AGC On/Off – Toggles the internal microphone automatic gain control (AGC) on or off.

Nuisance Channel Delete – Temporarily removes an unwanted channel, except for the Selected Channel, from the scan list. The Selected Channel refers to the user's selected zone/channel combination from which scan is initiated.

One Touch Access – Directly initiates a predefined Private, Group Call, a Call Alert or a Quick Text message, or returns the user to a preset channel.

Permanent Monitor– Monitors a selected channel for all radio traffic until function is disabled.

Privacy – Toggles privacy on or off.

Repeater/Talkaround – Toggles between using a repeater and communicating directly with another radio.

Scan – Toggles scan on or off.

Trill Enhancement On/Off – Toggles trill enhancement on or off.

Voice Operating Transmission (VOX) – Toggles VOX on or off.

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Assignable Settings/Utility Functions

All Tones/Alerts – Toggles all tones on or off.

Analog Scrambling Codes – Toggles scrambling codes between 3.29KHz and 3.39KHz.

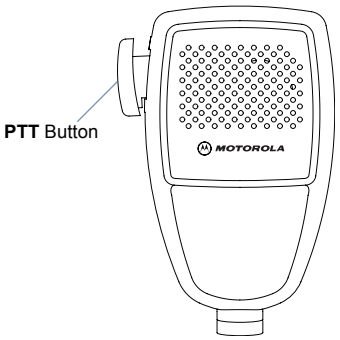
Channel Up/Down – Depending on the programming, changes channel to previous or next channel.

Power Level – Toggles transmit power level between high and low.

Squelch – Toggles squelch level between normal and tight.

Push-To-Talk (PTT) Button

The **PTT** button on the side of the microphone serves two basic purposes:



- While a call is in progress, the **PTT** button allows the radio to transmit to other radios in the call.

  Press and hold down **PTT** button to talk. Release the **PTT** button to listen.

  The microphone is activated when the **PTT** button is pressed.
- While a call is not in progress, the **PTT** button is used to make a new call (see ***Making a Radio Call*** on page 12).

*Depending on programming, if the Talk Permit Tone or the **PTT** Sidetone is enabled, wait until the short alert tone ends before talking.*

*During a call, if the Channel Free Indication feature is enabled on your radio (programmed by your dealer), you hear a short alert tone the moment the target radio (the radio that is receiving your call) releases the **PTT** button, indicating the channel is free for you to respond.*

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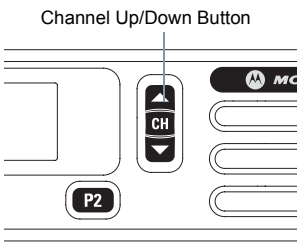
You will also hear a continuous talk prohibit tone, if your call is interrupted, indicating that you should release the PTT button, for example when the radio receives an Emergency Call.

Switching Between Conventional Analog and Digital Mode

Each channel in your radio can be configured as a conventional analog or conventional digital channel.

NOTE: For Analog-only radios, each channel can only be configured as a conventional analog channel.



When switching from digital to analog mode, certain features are unavailable.

To switch between an analog or a digital channel, use the

- **Channel Up/Down Button**, or
- programmed **Channel Up** or **Channel Down** buttons

Your radio also has features available in both analog and digital mode. However, the minor differences in the way each feature works does **NOT** affect the performance of your radio.

Your radio also switches between digital and analog modes during a dual mode scan (see *Scan* on page 16).
To use the programmed Channel Up or Channel Down buttons, press Channel Up or Channel Down to select the required channel.

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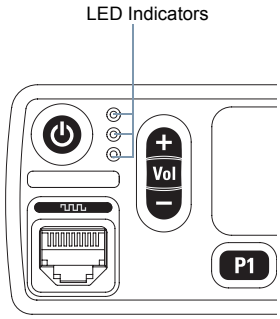
Identifying Status Indicators

Your radio indicates its operational status through the following:

LED Indicators . . . . . page 7
Audio Tones . . . . . page 8
Indicator Tones . . . . . page 8

LED Indicators

LED indicators show the operational status of your radio.



Blinking red – Radio is receiving an emergency transmission or has failed the self-test upon powering up, or has moved out of range if radio is configured with Auto-Range Transponder System.

Solid yellow – Radio is monitoring a conventional channel.

Blinking yellow – Radio is scanning for activity or receiving a Call Alert.

Double blinking yellow – Indicates radio has yet to respond to a group call alert, or radio is locked.

Solid green – Radio is powering up, or transmitting.

Blinking green – Radio is receiving a non-privacy-enabled call or data, or detecting activity over the air.

Double blinking green – Radio is receiving a privacy-enabled call or data.

NOTE: While in conventional mode, when the green LED blinks, it indicates the radio detects activity over the air. Due to the nature of the digital protocol, this activity may or may not affect the radio's programmed channel.

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Indicator Tones

High pitched tone Low pitched tone



Positive Indicator Tone



Negative Indicator Tone

Audio Tones

Alert tones provide you with audible indications of the radio's status or the radio's response to data received.

Continuous Tone A monotone sound. Sounds continuously until termination.



Periodic Tone Sounds periodically depending on the duration set by the radio. Tone starts, stops, and repeats itself.



Repetitive Tone A single tone that repeats itself until it is terminated by the user.



Momentary Tone Sounds only once for a short period of time defined by the radio.



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Receiving and Making Calls

Once you understand how your MOTOTRBO Mobile is configured, you are ready to use your radio.

Use this navigation guide to familiarize yourself with the basic Call features:

Selecting a Channel . . . . . page 9
Receiving and Responding to a Radio Call . . . . . page 10
Making a Radio Call . . . . . page 12
Talkaround . . . . . page 15
Permanent Monitor . . . . . page 15

Selecting a Channel

Transmissions are sent and received on a channel. Depending on your radio's configuration, each channel may have been programmed differently to support different groups of users or supplied with different features. You can select the channel required to transmit or receive on.

Procedure:

Use the **Channel Up/Down Button** in channel selection state to select the number that represents the required channel.
OR
Press the programmed **Channel Up** or **Channel Down** button to select the number that represents the required channel.
OR
Press the programmed **One Touch Access** button to select the preset channel assigned to the button.

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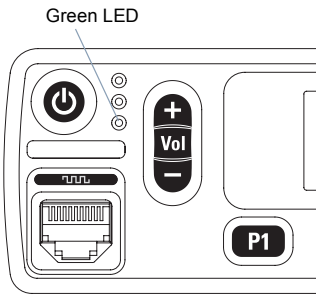
Receiving and Responding to a Radio Call

Once the channel, radio ID, or group ID is set, you can proceed to receive and respond to calls.

The green LED lights up while the radio is transmitting and blinks when the radio is receiving.



The green LED lights up while the radio is transmitting and double blinks rapidly when the radio is receiving a privacy-enabled call.

To unscramble a privacy-enabled call, your radio must have the same Privacy Key, OR the same Key Value and Key ID (programmed by your dealer) as the transmitting radio (the radio you are receiving the call from).

NOTE: See ***Privacy*** on page 24 for more information.

Receiving and Responding to a Group Call

To receive a call made to a group of users, your radio must be configured as part of that group.

Procedure:
When you receive a Group Call:

1. The green LED blinks. Your radio unmutes and the incoming call sounds through the radio's speaker.
2. If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond.
3. Press the **PTT** button to respond to the call.
   The green LED lights up.
4. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.
   OR
   Wait for the **PTT** Sidetone to finish (if enabled) and speak clearly into the microphone.
5. Release the **PTT** button to listen.
6. If there is no voice activity for a predetermined period of time, the call ends.

*See **Making a Group Call** on page 13 for details on making a Group Call.*

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Receiving and Responding to a Private Call

A Private Call is a call from an individual radio to another individual radio.

Procedure:

When you receive a private call:

1. The green LED blinks. Your radio unmutes and the incoming call sounds through the radio's speaker.
2. If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond.
3. Press the **PTT** button to respond to the call.
   The green LED lights up.
4. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.
5. Release the **PTT** button to listen.
6. If there is no voice activity for a predetermined period of time, the call ends.

*See **Making a Private Call** on page 13 for more details on making a private call.*

Receiving an All Call

An All Call is a call from an individual radio to every radio on the channel. It is used to make important announcements requiring the user's full attention.

Procedure:

When you receive an All Call:

1. A tone sounds and the green LED blinks. Your radio unmutes and the incoming call sounds through the radio's speaker.
2. Once the All Call ends, the radio returns to the previous screen before receiving the call. An All Call does not wait for a predetermined period of time before ending.
   If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is now available for use.

You cannot respond to an All Call.

NOTE: The radio stops receiving the All Call if you switch to a different channel while receiving the call.
During an All Call, you are **not** able to use any programmed button functions until the call ends.

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Receiving and Responding to a Selective Call

A Selective Call is a call from an individual radio to another individual radio. It is a Private Call on an analog system.

Procedure:
When you receive a Selective Call:

1. The green LED blinks. Your radio unmutes and the incoming call sounds through the radio's speaker.
2. Press the **PTT** button to respond to the call.
3. The LED lights up solid green.
4. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.
5. Release the **PTT** button to listen.
6. If there is no voice activity for a predetermined period of time, the call ends.

See ***Making a Selective Call*** on page 14 for details on making a Selective Call.

Making a Radio Call

After selecting your channel, you can select a radio alias or ID, or group alias or ID by using:

- **Volume Up/Down Button**
- **Channel Up/Down Button**
- A programmed **One Touch Access** button

NOTE: Your radio must have the Privacy feature enabled on the channel to send a privacy-enabled transmission. Only target radios with the same Privacy Key OR the same Key Value and Key ID as your radio is are able to unscramble the transmission.

See ***Privacy*** on page 24 for more information.

The One Touch Access feature allows you to make a Group, or Private Call to a predefined ID easily. This feature can be assigned to a short or long programmable button press.You can **ONLY** have one ID assigned to a **One Touch Access** button. Your radio can have multiple **One Touch Access** buttons programmed.

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Making a Group Call

To make a call to a group of users, your radio must be configured as part of that group.

Procedure:

1. Select the channel with the active group alias or ID. See ***Selecting a Channel*** on page 9.
   OR
   Press the programmed **One Touch Access** button.
2. Press the **PTT** button to make the call. The green LED lights up.
3. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.
   OR
   Wait for the **PTT** Sidetone to finish (if enabled) and speak clearly into the microphone.
4. Release the **PTT** button to listen. When the target radio responds, the green LED blinks.
5. If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the target radio releases the **PTT** button, indicating the channel is free for you to respond. Press the **PTT** button to respond.
   OR
   If there is no voice activity for a predetermined period of time, the call ends.

Making a Private Call

While you can receive and/or respond to a Private Call initiated by an authorized individual radio, your radio must be programmed for you to initiate a Private Call.

There are two types of Private Calls. The first type, where a radio presence check is performed prior to setting up the call, while the other sets up the call immediately.

Only **one** of these call types can be programmed to your radio by your dealer.

You hear a negative indicator tone, when you make a Private Call via the **One Touch Access** button or the **Channel Up/ Down** buttons, if this feature is not enabled.

Use the Quick Text Message or Call Alert features to contact an individual radio. See ***Text Messaging Features*** on page 24 or ***Call Alert Operation*** on page 19 for more information.**Procedure:**

1. Select the channel with the active radio alias or ID. See ***Selecting a Channel*** on page 9.
   OR
   Press the programmed **One Touch Access** button.
2. Press the **PTT** button to make the call. The green LED lights up.
3. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.

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4 Release the **PTT** button to listen. When the target radio responds, the green LED blinks.

5 If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the target radio releases the **PTT** button, indicating the channel is free for you to respond. Press the **PTT** button to respond.
OR
If there is no voice activity for a predetermined period of time, the call ends.

Making a Selective Call

Just like a Private Call, while you can receive and/or respond to a Selective Call initiated by an authorized individual radio, your radio must be programmed for you to initiate a Selective Call.

Procedure:

1 Select the channel with the active radio alias or ID. See ***Selecting a Channel*** on page 9.

2 Press the **PTT** button to make the call. The green LED lights up.

3 Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.

4 Release the **PTT** button to listen. When the target radio responds, the green LED blinks.

5 If there is no voice activity for a predetermined period of time, the call ends.

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Talkaround

You can continue to communicate when your repeater is not operating, or when your radio is out of the repeater's range but within talking range of other radios. This is called "talkaround".

Procedure:

1. Press the programmed **Repeater/Talkaround** button.
2. You hear a positive indicator tone, indicating the radio is in Talkaround mode.
   OR
   You hear a negative indicator tone, indicating the radio is in Repeater mode.

The Talkaround setting is retained even after powering down.

Permanent Monitor

Use the Permanent Monitor feature to continuously monitor a selected channel for activity.

Procedure:

1. Press the programmed **Permanent Monitor** button.
2. Radio sounds alert tone, and the yellow LED lights up.
3. Press the programmed **Permanent Monitor** button to remove the radio from permanent monitor mode.
4. Radio sounds an alert tone and the yellow LED turns off.

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Advanced Features

Use this navigation guide to learn more about advanced features available with your radio:

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Text Messaging Features . . . . . page 24
Privacy . . . . . page 24
Lone Worker . . . . . page 25
Password Lock Features . . . . . page 26
Auto-Range Transponder System (ARTS) . . . . . page 27
Utilities . . . . . page 27

Scan Lists

Scan lists are created and assigned to individual channels/groups. Your radio scans for voice activity by cycling through the channel/group sequence specified in the scan list for the current channel.

Your radio supports up to 250 scan lists, with a maximum of 16 members in a list. Each scan list shall support a mixture of both analog and digital entries.

Scan

When you start a scan, your radio cycles through the programmed scan list for the current channel looking for voice activity. The yellow LED blinks.

During a dual mode scan, if you are on a digital channel, and your radio locks onto an analog channel, it automatically switches from digital mode to analog mode for the duration of the call. This is also true for the reverse.

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There are two types of scans:

- **Main Channel Scan (Manual)**: Your radio scans all the channels/groups in your scan list. On entering scan, your radio may – depending on the settings – automatically start on the last scanned “active” channel/group or on the channel where scan was initiated.
- **Auto Scan (Automatic)**: Your radio automatically starts scanning when you select a channel/group that has Auto Scan enabled.

Starting and Stopping Scan

Procedure:

1. Press the programmed **Scan** button.
   OR
   Use the **Channel Up**/**Down** button to select a channel with Auto Scan enabled.
2. When Scan is enabled, the yellow LED blinks and you hear a positive indicator tone.
   OR
   When Scan is disabled, the LED turns off and you hear a negative indicator tone.

Responding to a Transmission During a Scan

During scanning, your radio stops on a channel/group where activity is detected. The radio stays on that channel for a programmed time period known as “hang time”.

Procedure:

1. If the Channel Free Indication feature is enabled, you hear a short alert tone the moment the transmitting radio releases the **PTT** button, indicating the channel is free for you to respond.
2. Press the **PTT** button during hang time. The green LED lights up.
3. Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.
   OR
   Wait for the **PTT** Sidetone to finish (if enabled) and speak clearly into the microphone.
4. Release the **PTT** button to listen.
5. If you do not respond within the hang time, the radio returns to scanning other channels/groups.

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Deleting a Nuisance Channel

If a channel continually generates unwanted calls or noise (termed a “nuisance” channel), you can temporarily remove the unwanted channel from the scan list.

This capability does not apply to the channel designated as the Selected Channel.

Procedure:

1. When your radio “locks on to” an unwanted or nuisance channel, press the programmed **Nuisance Channel Delete** button until you hear a tone.
2. Release the **Nuisance Channel Delete** button. The nuisance channel is deleted.

Restoring a Nuisance Channel

Procedure:
To restore the deleted nuisance channel, do **one** of the following:

- Turn the radio off and power it on again, **OR**
- Stop and restart a scan via the programmed **Scan** button, **OR**
- Change the channel via the **Volume/Channel Knob** or **Channel Up/Down** buttons.

Vote Scan

Vote Scan provides you with wide area coverage in areas where there are multiple base stations transmitting identical information on different analog channels.

Your radio scans analog channels of multiple base stations and performs a voting process to select the strongest received signal. Once that is established, your radio unmutes to transmissions from that base station.

The yellow LED blinks during Vote Scan.

*To respond to a transmission during a Vote Scan, follow the same procedures as **Responding to a Transmission During a Scan** on page 17.*

Call Indicator Settings

You can turn on or off the ringing tones for a received Private Call (see ***Turning Radio Tones/Alerts On or Off*** on page 29).

Escalating Alarm Tone Volume

Your radio can be programmed by your dealer to continually alert you when a radio call remains unanswered. This is done by automatically increasing the alarm tone volume over time.

This feature is known as Escalert.

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Call Alert Operation

Call Alert paging enables you to alert a specific radio user to call you back when they are able to do so.

This feature is accessible via a programmed **One Touch Access** button.

Receiving and Responding to a Call Alert

Procedure:

When you receive a Call Alert page:

1. You hear a repetitive tone. The yellow LED blinks.
2. Press the **PTT** button within four (4) seconds of receiving a Call Alert page to respond to the Private Call.

Making a Call Alert with the One Touch Access Button

Procedure:

1. Press the programmed **One Touch Access** button to make a Call Alert to the predefined ID.
2. The green LED lights up when your radio is sending the Call Alert.
3. If the Call Alert acknowledgement is received, two chirps sound.
   OR
   If the Call Alert acknowledgement is not received, a low-pitched tone sounds.

Emergency Operation

An Emergency Alarm is used to indicate a critical situation. You are able to initiate an Emergency at any time, in any state, even when there is activity on the current channel.

Your dealer can set the duration of a button press for the programmed **Emergency** button, except for long press, which is similar with all other buttons:

- Short press – Between 0.05 seconds and 0.75 seconds
- Long press – Between 1.00 second and 3.75 seconds

The **Emergency** button is assigned with the Emergency On/ Off feature. Check with your dealer for the assigned operation of the **Emergency** button.

*If short press the **Emergency** button is assigned to turn on the Emergency mode, then long press the **Emergency** button is assigned to exit the Emergency mode.*

*If long press the **Emergency** button is assigned to turn on the Emergency mode, then short press the **Emergency** button is assigned to exit the Emergency mode.*

Your radio supports **three** Emergency Alarms:

- Emergency Alarm
- Emergency Alarm with Call
- Emergency Alarm with Voice to Follow

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In addition, each alarm has the following types:

- **Regular** – Radio transmits an alarm signal and shows audio and/or visual indicators.
- **Silent** – Radio transmits an alarm signal without any audio or visual indicators. Radio receives calls without any sound through the radio's speaker, until you press the **PTT** button to initiate the call.
- **Silent with Voice** – Radio transmits an alarm signal without any audio or visual indicators, but allow incoming calls to sound through the radio's speaker.

Only **one** of the Emergency Alarms above can be assigned to the programmed **Emergency** button or the **Emergency** footswitch.

Receiving an Emergency Alarm

When your radio receives an Emergency Alarm, a tone sounds and the LED blinks red until you exit the Emergency mode. Perform one of the following actions to silence the tone:

- Press the **PTT** button to call the group of radios which received the Emergency Alarm.
- Press any programmable button.
- Exit Emergency mode.

NOTE: Your radio automatically acknowledges the Emergency Alarm (if enabled).

Exiting Emergency Mode After Receiving the Emergency Alarm

Exit the Emergency mode by performing one of the following actions:

- Changing the channel.
- Powering down the radio.
- Pressing the **Emergency Off** button.
- Pressing the **Emergency On** button. This action clears the alarm indication and initiates an emergency transmission.

Sending an Emergency Alarm

This feature allows you to send an Emergency Alarm, a non-voice signal, which triggers an alert indication on a group of radios.

Procedure:

1. Press the programmed **Emergency On** button or the **Emergency** footswitch.
2. The green LED lights up.
3. When an Emergency Alarm acknowledgment is received, the Emergency tone sounds. The green LED blinks.
   OR
   If your radio does not receive an Emergency Alarm acknowledgement, and after all retries have been exhausted, a low-pitched tone sounds.

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4 Radio exits the Emergency Alarm mode.

If your radio is set to Silent, it does not display any audio or visual indicators during Emergency mode.

Sending an Emergency Alarm with Call

This feature allows you to send an Emergency Alarm to a group of radios. Upon acknowledgement by a radio within the group, the group of radios can communicate over a programmed Emergency channel.

Procedure:

1 Press the programmed **Emergency On** button or press the **Emergency** footswitch.

2 The green LED lights up.

3 When an Emergency Alarm acknowledgment is received, the Emergency tone sounds. The green LED blinks.

4 Press the **PTT** button to make the call. The green LED lights up.

5 Wait for the Talk Permit Tone to finish (if enabled) and speak clearly into the microphone.
OR
Wait for the **PTT** Sidetone to finish (if enabled) and speak clearly into the microphone.

6 Release the **PTT** button to listen.

7 When the channel is free for you to respond, a short alert tone sounds (if the Channel Free Indication feature is enabled). Press the **PTT** button to respond.
OR
Once your call ends, press the programmed **Emergency Off** button to exit the Emergency mode.

*If your radio is set to Silent, it does not display any audio or visual indicators during Emergency mode, or allow any received calls to sound through the radio's speaker, until you press the **PTT** button to initiate the call.*

*If your radio is set to Silent with Voice, it does not display any audio or visual indicators during Emergency mode, but allow incoming calls to sound through the radio's speaker. The indicators only appear once you press the **PTT** button to initiate, or respond to, the call.*

Sending an Emergency Alarm with Voice to Follow

This feature allows you to send an Emergency Alarm to a group of radios. Your radio's microphone is automatically activated, allowing you to communicate with the group of radios without pressing the **PTT** button.

This activated microphone state is also known as "hot mic".

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NOTE: Some accessories may not support “hot mic”. Check with your dealer or system administrator for more information.

If your radio has Emergency Cycle Mode enabled, repetitions of hot mic and receiving period are made for a programmed duration.

NOTE: During Emergency Cycle Mode, received calls sound through the radio’s speaker.

If you press the **PTT** button during the programmed receiving period, you will hear a prohibit tone, indicating that you should release the PTT. The radio ignores the **PTT** press and remains in Emergency mode.

NOTE: If you press the **PTT** button during hot mic, and continue to press it after the hot mic duration expires, the radio continues to transmit until you release the **PTT** button.

Procedure:

1. Press the programmed **Emergency On** button or the **Emergency** footswitch.
2. The green LED lights up.
3. Once a tone sounds, speak clearly into the microphone.
   When hot mic has been enabled, the radio automatically transmits without a **PTT** press until the hot mic duration expires.
   While transmitting, the green LED lights up.
4. The radio automatically stops transmitting when:
   Once the cycling duration between hot mic and receiving calls expires, if Emergency Cycle Mode is enabled.
   OR
   Once the hot mic duration expires, if Emergency Cycle Mode is disabled.
5. To transmit again, press the **PTT** button.
   OR
   Press the programmed **Emergency Off** button to exit the Emergency mode.

*If your radio is set to Silent, it does not display any audio or visual indicators during Emergency mode, or allow any received calls to sound through the radio’s speaker, until the programmed hot mic transmission period is over, and you press the **PTT** button.*

*If your radio is set to Silent with Voice, it does not display any audio or visual indicators during Emergency mode when you are making the call with hot mic, but allow sound through the radio’s speaker when the target radio responds after the programmed hot mic transmission period is over. The indicators only appear when you press the **PTT** button.*

NOTE: If the Emergency Alarm request fails, the radio does not retry to send the request, and enters the hot mic state directly.

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Reinitiating an Emergency Mode

NOTE: This feature is only applicable to the radio sending the Emergency Alarm.

There are two instances where this can happen:

- You change the channel while the radio is in Emergency mode. This exits the Emergency mode. If Emergency Alarm is enabled on this new channel, the radio reinitiates Emergency.
- You press the programmed **Emergency On** button during an Emergency initiation/transmission state. This causes the radio to exit this state, and to reinitiate Emergency.

Exiting an Emergency Mode After Sending the Emergency Alarm

NOTE: This feature is only applicable to the radio sending the Emergency Alarm.

Your radio exits Emergency mode when **one** of the following occurs:

- Emergency Alarm acknowledgement is received (for **Emergency Alarm** only), **OR**
- An Emergency Exit Telegram is received, **OR**
- All retries to send the alarm have been exhausted, **OR**
- The **Emergency Off** button is pressed, **OR**
- Turn the radio off and then power it on again if your radio has been programmed to remain on the Emergency Revert channel even after acknowledgement is received.

NOTE: If your radio is powered off, it exits the Emergency mode. The radio does not reinitiate the Emergency mode automatically when it is turned on again.

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Text Messaging Features

Sending a Quick Text Message

You can send Quick Text messages, programmed by your dealer, via the programmable button.

Procedure:

1. Press the programmed **One Touch Access** button to send a predefined Quick Text message to a predefined ID.
2. The green LED lights up.
3. Two chirps indicate that the message is sent successfully.
   OR
   A low-pitched tone indicates that the message cannot be sent.

Privacy

If enabled, this feature helps to prevent eavesdropping by unauthorized users on a channel by the use of a software-based scrambling solution. The signaling and user identification portions of a transmission are not scrambled.

Your radio must have privacy enabled on the channel to send a privacy-enabled transmission, although this is not a necessary requirement for receiving a transmission. While on a privacy-enabled channel, the radio is still able to receive clear (unscrambled) transmissions. Your radio only supports **Basic Privacy.**

To unscramble a privacy-enabled call or data transmission, your radio must be programmed to have the same Privacy Key (for Basic Privacy) as the transmitting radio.

If your radio receives a scrambled call that is of a different Privacy Key, OR a different Key Value and Key ID, you will hear a garbled transmission (Basic Privacy).

The LED lights up solid green while the radio is transmitting and blinks green rapidly when the radio is receiving an ongoing privacy-enabled transmission.

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NOTE: Some radio models/locations may not offer this Privacy feature. Check with your dealer or system administrator for more information.

Procedure:
Press the programmed **Privacy** button to toggle privacy on or off.

Analog Scrambling

Analog Scrambling is an analog-only feature designed to prevent eavesdropping by unauthorized users on a channel by the use of a software-based scrambling solution. The signaling and user identification portions of a transmission are not scrambled.

Your radio must have analog scrambling enabled on the channel to send and receive an analog scrambling-enabled transmission. While on an analog scrambling-enabled channel, the radio is **NOT** able to receive clear (unscrambled) transmissions.

Your radio supports **TWO** analog scrambling codes that can be toggled via the programmable button.

Procedure:
Press the programmed **Analog Scrambling** button to enable or disable this function.

Lone Worker

This feature prompts an emergency to be raised if there is no user activity, such as any radio button press or activation of the channel selector, for a predefined time.

Following no user activity for a programmed duration, the radio pre-warns the user via an audio indicator once the inactivity timer expires.

If there is still no acknowledgment by the user before the predefined reminder timer expires, the radio initiates an Emergency Alarm.

Only **one** of the following Emergency Alarms is assigned to this feature:

- Emergency Alarm
- Emergency Alarm with Call
- Emergency Alarm with Voice to Follow

The radio remains in the emergency state allowing voice messages to proceed until action is taken. See ***Emergency Operation*** on page 19 on ways to exit Emergency.

This feature is limited to radios with this function enabled. Check with your dealer or system administrator for more information.

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Password Lock Features

If enabled, this feature allows you to access your radio via password upon powering up.

Accessing the Radio from Password

Procedure:
Power up the radio.

1. You hear a continuous tone.
2. Press the **Channel Up/Down** buttons to select a digit and Front Button **P2** to confirm the selected digit. Enter the remaining digits of the password in the same manner.
3. When the last digit of the four-digit password is entered, your radio automatically checks the validity of the password.
   If the password is correct:
   Your radio proceeds to power up. See ***Powering Up the Radio*** on page 2.
   OR
   If the password is incorrect:
   You hear a continuous tone. Repeat Steps 1 and 2.
   OR
   After the third incorrect password, your radio enters into locked state. A tone sounds and the yellow LED double blinks.

*Your radio enters into locked state for 15 minutes, and responds to inputs from **On/Off** button.*

NOTE: The radio is unable to receive any call, including emergency calls, in locked state.

The use of **Emergency** footswitch cancels out password input to access the radio.

Unlocking the Radio from Locked State

Procedure:
Wait for 15 minutes. Repeat Steps 1 to 3 in ***Accessing the Radio from Password*** on page 26.
OR
Power up the radio, if you have powered down the radio during locked state:

1. A tone sounds and the yellow LED double blinks.
2. Wait for 15 minutes. Repeat Steps 1 to 3 in ***Accessing the Radio from Password*** on page 26.

Your radio restarts the 15 minutes timer for locked state when you power up.

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Auto-Range Transponder System (ARTS)

ARTS is an analog-only feature designed to inform you when your radio is out-of-range of other ARTS-equipped radios.

ARTS-equipped radios transmit or receive signals periodically to confirm that they are within range of each other. Your dealer can program your radio to transmit or receive the ARTS signal.

Your radio provides indications of states as follows:

- **First-Time Alert** – A tone sounds.
- **ARTS-in-Range Alert** – A tone sounds, if programmed.
- **ARTS-Out-of-Range Alert** – A tone sounds, and the LED rapidly blinks red.

Utilities

Setting the Squelch Level

You can adjust your radio's squelch level to filter out unwanted calls with low signal strength or channels that have a higher than normal background noise.

Settings: Normal is the default. **Tight** filters out (unwanted) calls and/or background noise. However, calls from remote locations may also be filtered out.

Procedure:

1. Press the programmed **Squelch** button.
2. You hear a positive indicator tone, indicating the radio is operating in tight squelch.
   OR
   You hear a negative indicator tone, indicating the radio is operating in normal squelch.

Setting the Power Level

You can customize your radio’s power setting to high or low for each channel.

Settings: High enables communication with radios located at a considerable distance from you. **Low** enables communication with radios in closer proximity.

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Procedure:

1 Press the programmed **Power Level** button.

2 You hear a positive indicator tone, indicating the radio is transmitting at low power.
OR
You hear a negative indicator tone, indicating the radio is transmitting at high power.

Turning the Voice Operating Transmission (VOX) Feature On or Off

This feature allows you to initiate a hands-free voice activated call on a programmed channel. The radio automatically transmits, for a programmed period, whenever the microphone on the VOX-capable accessory detects voice.

NOTE: You may need to turn off the radio and power it up again after detaching the VOX-capable microphone to allow the radio to switch to another valid accessory. The microphone source must be preconfigured and the VOX-capable accessory attached to the preconfigured port.

Pressing the **PTT** button during radio operation disables VOX. To re-enable VOX, do **one** of the following:

- Turn the radio off and power it on again, **OR**
- Change the channel via the **Channel Up/Down Buttons**, **OR**
- Follow the procedure below.

NOTE: Turning this feature on or off is limited to radios with this function enabled. Check with your dealer or system administrator for more information.

Procedure:
Press the programmed **VOX** button to toggle the feature on or off.

If the Talk Permit Tone feature is enabled, use a trigger word to initiate the call. Wait for the Talk Permit Tone to finish before speaking clearly into the microphone.

Turning Horns/Lights On or Off

Your radio is able to notify you of an incoming call via the horns and lights feature. When activated, an incoming call sounds your vehicle's horn and turns on its lights.

This feature needs to be installed through your radio's rear accessory connector by your dealer.

Procedure:

1 Press the programmed **Horns/Lights** button.

2 You hear a positive indicator tone, indicating the horns and lights feature is on.
OR
You hear a negative indicator tone, indicating the horns and lights feature is off.

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Turning Radio Tones/Alerts On or Off

You can enable and disable all radio tones and alerts (except for the incoming Emergency alert tone) if needed.

Procedure:

1. Press the programmed **All Tones/Alerts** button.
2. You hear a positive indicator tone, indicating all tones and alerts are on.
   OR
   You hear a negative indicator tone, indicating all tones and alerts are off.

Voice Announcement

This feature enables the radio to audibly indicate the current Zone or Channel the user has just assigned, or programmable button press. This audio indicator can be customized per customer requirements. This is typically useful when the user is in a difficult condition to read the content shown on the display.

Use the following features to toggle Voice Announcement on or off.

Procedure:

Press the programmed **Voice Announcement** button.

Turning Trill Enhancement On or Off

You can enable this feature when you are speaking in a language that contains many words with alveolar trill (rolling “R”) pronunciations.

Use the following features to toggle Trill Enhancement on or off.

Procedure:

Press the programmed **Trill Enhancement On/Off** button.

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Limited Warranty

MOTOROLA COMMUNICATION PRODUCTS

I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG:

MOTOROLA SOLUTIONS, INC. (“MOTOROLA”) warrants the MOTOROLA manufactured Communication Products listed below (“Product”) against defects in material and workmanship under normal use and service for a period of time from the date of purchase as scheduled below:

DM1400 Mobile Radios	Two (2) Years
Product Accessories	One (1) Year

MOTOROLA, at its option, will at no charge either repair the Product (with new or reconditioned parts), replace it (with a new or reconditioned Product), or refund the purchase price of the Product during the warranty period provided it is returned in accordance with the terms of this warranty. Replaced parts or boards are warranted for the balance of the original applicable warranty period. All replaced parts of Product shall become the property of MOTOROLA.

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This warranty gives specific legal rights, and there may be other rights which may vary from state to state.

IV. HOW TO GET WARRANTY SERVICE:

You must provide proof of purchase (bearing the date of purchase and Product item serial number) in order to receive warranty service and, also, deliver or send the Product item, transportation and insurance prepaid, to an authorized warranty service location. Warranty service will be provided by MOTOROLA through one of its authorized warranty service locations. If you first contact the company which sold you the Product (e.g., dealer or communication service provider), it can facilitate your obtaining warranty service.

V. WHAT THIS WARRANTY DOES NOT COVER:

A) Defects or damage resulting from use of the Product in other than its normal and customary manner.

B) Defects or damage from misuse, accident, water, or neglect.

C) Defects or damage from improper testing, operation, maintenance, installation, alteration, modification, or adjustment.

D) Breakage or damage to antennas unless caused directly by defects in material workmanship.

E) A Product subjected to unauthorized Product modifications, disassembles or repairs (including, without limitation, the addition to the Product of non-MOTOROLA supplied equipment) which adversely affect performance of the Product or interfere with MOTOROLA's normal warranty inspection and testing of the Product to verify any warranty claim.

F) Product which has had the serial number removed or made illegible.

G) Rechargeable batteries if:

(1) any of the seals on the battery enclosure of cells are broken or show evidence of tampering.

(2) the damage or defect is caused by charging or using the battery in equipment or service other than the Product for which it is specified.

H) Freight costs to the repair depot.

I) A Product which, due to illegal or unauthorized alteration of the software/firmware in the Product, does not function in accordance with MOTOROLA’s published specifications or the FCC certification labeling in effect for the Product at the time the Product was initially distributed from MOTOROLA.

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A) that MOTOROLA will be notified promptly in writing by such purchaser of any notice of such claim;

B) that MOTOROLA will have sole control of the defense of such suit and all negotiations for its settlement or compromise; and

C) should the Product or parts become, or in MOTOROLA's opinion be likely to become, the subject of a claim of infringement of a United States patent, that such purchaser will permit MOTOROLA, at its option and expense, either to procure for such purchaser the right to continue using the Product or parts or to replace or modify the same so that it becomes non-infringing or to grant such purchaser a credit for the Product or parts as depreciated and accept its return. The depreciation will be an equal amount per year over the lifetime of the Product or parts as established by MOTOROLA.

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