

PROFESSIONAL DIGITAL TWO-WAY RADIO SYSTEM

MOTOTRBO™ DP 3400/DP 3401 MPT1327 FOR PORTABLE RADIOS USER GUIDE



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Contents

This User Guide covers only the functional operation of the **MPT1327 Generic Option Board (GOB)** installed in MOTOTRBO Series Portables.

Important Safety Information	iii
Product Safety and RF Exposure Compliance	...iii
Software Version	iii
Option Board Part Number	iii
Computer Software Copyrights	iv
Getting Started	1
How to Use This User Guide	1
What Your Dealer/System Administrator Can Tell You	1
Additional Performance Enhancement	2
Tone Private Line (TPL)	2
Preparing Your Radio for Use	2
Charging the Battery	2
Attaching the Battery	3
Attaching the Antenna	4
Attaching the Belt Clip	4
Attaching the Universal Connector Cover (Dust Cover)	

Powering Up the Radio	5
Adjusting the Volume	6
Identifying Radio Controls	6
Radio Controls	7
Programmable Buttons	8
Assignable Radio Functions	8
Identifying Status Indicators	9
LED Indicators	9
Audio Tones	9
Indicator Tones	10
MPT Personality and Radio Zones	10
MPT	11
Talkgroup	11
Fixed and Dynamic Groups	11
Announcement Group	11
Personality Selection	12
Zone Selection	12
Radio Calls	13
Making a Call	13
Dedicated Calls	13
Contact List	14
Last Number Redial	14
Receiving a Call	15

Notes

Receiving a Call on an OACSU System	15
Receiving a Call on a FOACSU System	15
Cancelling a Call	15
Ending a Call	15
Missed Calls	16
Deleting Missed Call List	16
Call Diversion	17
Emergency Calls	17
Notes	17

Important Safety Information

Product Safety and RF Exposure Compliance



Caution

Before using this product, read the operating instructions for safe usage contained in the Product Safety and RF Exposure booklet enclosed with your radio.

ATTENTION!

This radio is restricted to occupational use only to satisfy FCC/ICNIRP RF energy exposure requirements. Before using this product, read the RF energy awareness information and operating instructions in the Product Safety and RF Exposure booklet enclosed with your radio (Motorola Publication part number 6864117B25) to ensure compliance with RF energy exposure limits.

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

<http://www.motorola.com/governmentandenterprise>

Software Version

All the features described in the following sections are supported by the radio's software version **R01.08.20** or later.

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

Option Board Part Number

All the features described in the following sections are supported by the radio's MPT1327 Generic Option Board kit number **PMLN5743_S**.

Computer Software Copyrights

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This voice coding Technology is licensed solely for use within this Communications Equipment. The user of this Technology is explicitly prohibited from attempting to decompile, reverse engineer, or disassemble the Object Code, or in any other way convert the Object Code into a human-readable form.

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.

Getting Started

Take a moment to review the following:

How to Use This User Guide	page 1
What Your Dealer/System Administrator Can Tell You	page 1
Additional Performance Enhancement	page 2

■ How to Use This User Guide

This User Guide covers only the functional operation of the **MPT1327 Generic Option Board (GOB)** installed in MOTOTRBO Portables.

For the complete operation of the MOTOTRBO Portables, refer to the specific User Guides for each radio.

■ 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?

NOTE: Specifications may vary for different radio models. Check with your dealer or system administrator for more information.

■ Additional Performance Enhancement

The following are some of the latest creations designed to enhance the security, quality and efficiency of your radio.

Tone Private Line (TPL)

TPL prevents any channel or radio out of MPT system to disturb the transmission in MPT system. TPL code are embedded in the traffic channels to prevent noise when the radio is receiving TPL voice or data signals. To run this feature fully, your MPT base station and radios need to be enabled to receive and transmit TPL signals. Only the radios with TPL feature enabled are able to encode or decode the TPL signal.

..... **Preparing Your Radio for Use**

Assemble your radio by following these steps:

Charging the Battery	page 2
Attaching the Battery	page 3
Attaching the Antenna	page 4
Attaching the Belt Clip	page 4
Attaching the Universal Connector	
Cover (Dust Cover)	page 5
Powering Up the Radio	page 5
Adjusting the Volume	page 6

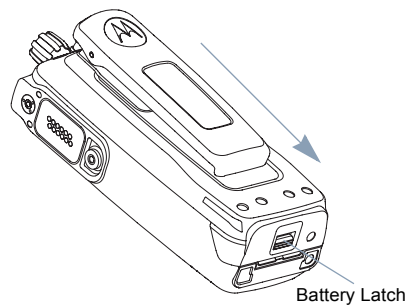
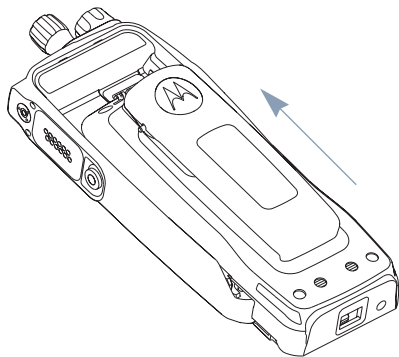
■ Charging the Battery

Your radio is powered by a Nickel Metal-Hydrde (NiMH) or Lithium-Ion (Li-Ion) battery. To avoid damage and comply with warranty terms, charge the battery using a Motorola charger *exactly* as described in the charger user guide.

Charge a new battery for 14 to 16 hours before initial use for best performance.

■ Attaching the Battery

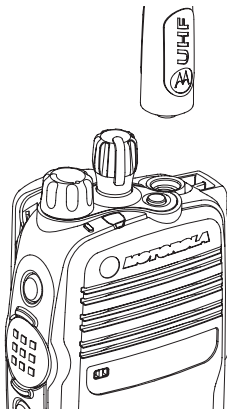
Align the battery with the rails on the back of the radio. Press the battery firmly, and slide upward until the latch snaps into place. Slide battery latch into lock position.



To remove the battery, turn the radio off. Move the battery latch into unlock position and hold, and slide the battery down and off the rails.

■ Attaching the Antenna

With the radio turned off, set the antenna in its receptacle and turn clockwise.



To remove the antenna, turn the antenna counterclockwise. Make sure you turn off the radio and remove the universal connector cover (dust cover) first.



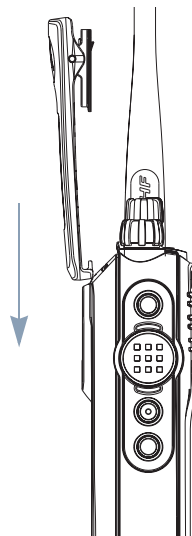
Caution

If antenna needs to be replaced, ensure that only MOTOTRBO antennas are used. Neglecting this damages your radio.

■ Attaching the Belt Clip

Align the grooves on the clip with those on the battery and press downward until you hear a click.

To remove the clip, press the belt clip tab away from the battery using a key. Then slide the clip upward and away from the radio.



■ Attaching the Universal Connector Cover (Dust Cover)

The universal connector is located on the antenna side of the radio. It is used to connect MOTOTRBO accessories to the radio.



Place the universal connector cover loop over the attached antenna. Slide it all the way down to the base of the antenna.

Insert the hooked end of the cover into the slots above the universal connector. Press downward on the cover to seat the lower tab properly into the RF connector.

Turn the thumbscrew clockwise to secure the connector cover to the radio.

To remove the universal connector cover, press down on the cover and turn the thumbscrew counterclockwise. Lift the cover up, slide the connector cover loop upwards, and remove it from the attached antenna.

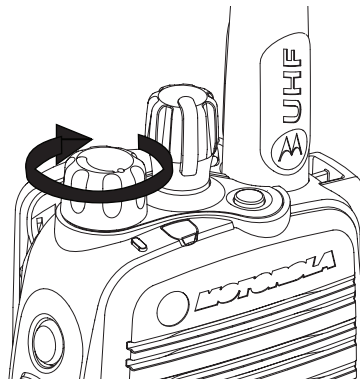
Replace the dust cover when the universal connector is not in use.

■ Powering Up the Radio

Rotate the On/Off/Volume Control Knob clockwise until you hear a click. The LED blinks green.

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

If your radio does not power up, check your battery. Make sure that it is charged and properly attached. If your radio still does not power up, contact your dealer.



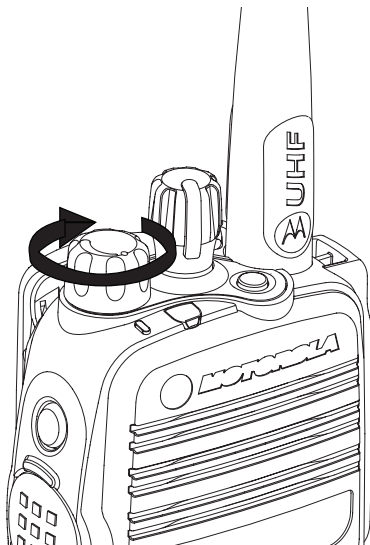
To turn off the radio, rotate this knob counterclockwise until you hear a click.

■ Adjusting the Volume

To increase the volume, turn the **On/Off/Volume Control Knob** clockwise.

To decrease the volume, turn this knob counterclockwise.

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



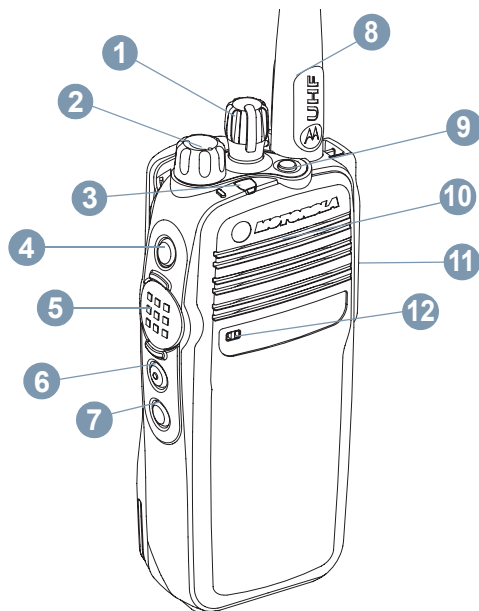
Identifying Radio Controls

Take a moment to review the following:

Radio Controls page 7

Programmable Buttons page 8

Radio Controls



- 1 Channel Selector Knob
- 2 On/Off/Volume Control Knob
- 3 LED Indicator

- 4 Side Button 1*
- 5 Push-to-Talk (**PTT**) Button
- 6 Side Button 2*
- 7 Side Button 3*
- 8 Antenna
- 9 Emergency Button*
- 10 Speaker
- 11 Universal Connector for Accessories
- 12 Microphone

** These buttons are programmable.*

■ Programmable Buttons

The Customer Programming Software (CPS) can program the programmable buttons as shortcuts to **radio functions** or **preset channels/groups** depending on the duration of a button press:

- Short press – Pressing and releasing rapidly (between 0.05 and 0.75 second).
- Long press – Pressing and holding for the programmed duration (between 1.00 second and 3.75 seconds).
- Hold down – Keeping the button pressed.

Assignable Radio Functions

Clear – Allows cancelling an incoming or outgoing call (Only available on Side Button 1).

Dedicated Call/Emergency/Help – To make a call to a pre-determined number, effectively activating an Emergency, Priority, Speech, Status, Data, or a normal call.

Personality – Shortcut to the personality menu option to select one of four MPT personalities (provided by MPT1327 GOB) or Conventional Zones (provided by TRBO radio).

Help Call – Call the Help number as predefined via the CPS.

SFD/Talkgroup Toggling – Press to toggle between SFD and Talkgroup mode.

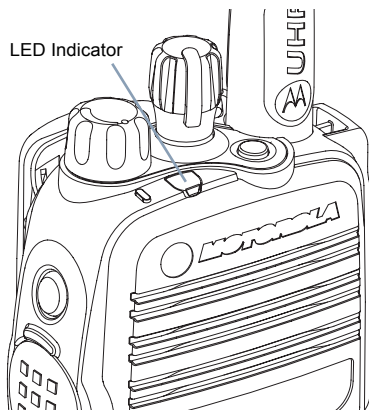
Identifying Status Indicators

Your radio indicates its operational status through the following:

LED Indicators	page 9
Audio Tones	page 9
Indicator Tones	page 10

■ LED Indicators

The LED indicator shows the operational status of your radio.



Solid red – Radio is transmitting.

Blinking red – Channels are currently busy.

Blinking green – No service.

■ 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.



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.



Indicator Tones

High pitched tone 

Low pitched tone 



Positive Indicator Tone



Negative Indicator Tone

MPT Personality and Radio Zones

Use this guide to understand the personalities programmed into your radio:

MPT	page 11
Talkgroup	page 11
Personality Selection	page 12
Zone Selection	page 12

The personalities described below are programmed into your radio by your dealer and are accessible either via the personality button or via the menu.

An MPT personality contains data such as frequencies, display text, alert tones, permitted calls etc. which determines the mode of operation of your radio. Your radio may be programmed with up to 4 different MPT personalities.

■ MPT

This personality permits the radio to operate in a trunked mode. Incoming and outgoing calls are set up using a defined set of rules or protocol between your radio and a controller in a similar manner to your home telephone.

■ Talkgroup

Talkgroup is an MPT personality following the same rules or protocol, but is primarily for talkgroup calls. In talkgroup personality, talkgroups are contained in a Talkgroup list, similar to the Contact list, which is scrolled and selected using the Channel Selector Knob. On selection of a talkgroup, you may send and receive calls as described below.

Fixed and Dynamic Groups

These groups form part of the **Talkgroup Personality**, such that when this personality is selected your talkgroup list shows only these groups.

A **fixed** group is a group of users, the address (number) of which is preprogrammed into your radio by your dealer.

A **dynamic** group is a group of users, the address (number) of which is sent to your radio 'over air' at any time via the system controller.

Therefore at any time you may become a member of a dynamic group, able to receive calls and (depending on how your radio is programmed) send calls to that group.

Incoming calls to fixed and dynamic group numbers are detailed in Receiving a Call and displayed under Receiving a Call.

To make an outgoing call to a selected talkgroup, press the **PTT** and speak after the Talk Permit Tone.

Calls are cleared in the normal manner.

If the system is busy, an engaged tone will be heard, release the **PTT** and wait for the Talk Permit Tone. You may then proceed with the call by pressing the **PTT**.

When in Talkgroup personality, you can still make an individual or status call using the keypad or entering the Contact List via the menu. See "Contact List" on page 14.

Announcement Group

The users which in an announcement group could receive this announcement group despite their radio is in any of the talkgroup.

The radio supports up to 15 announcement group entries.

■ Personality Selection

The Personality menu provides access to all MPT personalities and radio defined zones.

Use the following procedure to select a personality.

Procedure:

- 1 Ensure radio is in IDLE STATE.
- 2 Press the preprogrammed Personality button.

You hear a positive indicator tone, indicating the radio has switched from non-MPT mode to MPT mode.

OR

You hear a negative indicator tone, indicating the radio has switched from MPT mode to non-MPT mode.

■ Zone Selection

A zone is a group of channels. Your radio supports up to 250 zones, with a maximum of 16 channels and Capacity Plus personalities per zone.

Use the following procedure to select a zone.

Procedure:

- 1 Ensure radio is in IDLE STATE.
- 2 Press the preprogrammed button (for zone).

You hear a positive indicator tone, indicating the radio has switched from Zone 1 to Zone 2.

OR

You hear a negative indicator tone, indicating the radio has switched from Zone 2 to Zone 1.

Radio Calls

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

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

Making a Call.	page 13
Receiving a Call.	page 15
Cancelling a Call.	page 15
Ending a Call.	page 15
Missed Calls.	page 16
Call Diversion.	page 17
Emergency Calls.	page 17

Making a Call

The radio is capable of making a variety of calls, including calls to individual radios, groups of radios and calls to private and public telephone systems.

Before you can make a call the radio must be in IDLE STATE, i.e. a personality has been selected and no call is in progress.

The radio can make calls by using the **Dedicated Calls or Contact List**.

Dedicated Calls

Dedicated calls can be made from either a preprogrammed button (for Dedicated Call).

Press the preprogrammed button (for Dedicated Call) to make a call to the most commonly used preprogrammed number. The call may also be programmed as an Emergency Call, Priority Call or Status Call.

Contact List

The contact list allows access to up to 16 preprogrammed numbers using the Channel Selector Knob.

Procedure:

To make a call using contact list:

- 1** Ensure radio is in IDLE STATE.

- 2** Turn the Channel Selector Knob to select the required contact.

- 3** Press PTT button to initiate radio call. The radio sends out its ID and sounds a tone.

- 4** Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.

- 5** Press PTT button to make the call.

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

- 7** Release the PTT button to listen.

- 8** If there is no voice activity for a predetermined period of time, the call ends.
OR
 Press preprogrammed button (for Clear) to end a call. A momentary tone sounds.

If a contact list number is selected but no call request is sent, the radio is held until a momentary tone sounds and then reverts to the IDLE STATE.

Last Number Redial

The last number dialed by the radio is stored in the memory of the radio.

Procedure:

To redial last number:

- 1** Ensure radio is in IDLE STATE.

- 2** Press the preprogrammed button (redial key) to make the call. The radio sends out its ID and sounds a tone.

- 3** Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.

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

- 5** If there is no voice activity for a predetermined period of time, the call ends.
OR
 Press preprogrammed button (for Clear) to end a call. A momentary tone sounds.

Last number redial does not function when Talkgroup personality is selected. See "Talkgroup" on page 11.

■ Receiving a Call

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

If you are in doubt about which system you are operating on, please consult your dealer.

Receiving a Call on an OACSU System

When the radio is called:

- 1 A repetitive tone sounds. The red LED lights up. Call is being set up.
- 2 A momentary tone sounds. The call ends.

Receiving a Call on a FOACSU System

When the radio is called:

- 1 The ring tone sounds. The red LED lights up.
- 2 Press the **PTT** button to accept call (unless in talkgroup personality, when radio unmutes automatically for fixed and dynamic group calls).
- 3 A repetitive tone sounds. The red LED lights up. Call is being set up.
- 4 A momentary tone sounds. The call ends.

■ Cancelling a Call

At any time while setting up a call it may be cancelled.

To cancel a call:

- 1 Press preprogrammed (for Clear) button. A repetitive tone sounds.

■ Ending a Call

At any time while a call is in progress it may be ended.

To end a call:

- 1 Press preprogrammed (for Clear) button. A repetitive tone sounds.

■ Missed Calls

If a call remains unanswered, the call is stored by the radio, provided that missed calls have been programmed into your radio.

Only one call can be stored. If the same radio calls more than once the call is only stored once. When the calls have been stored by the radio, any further calls received overwrite the stored call.

When a call has been stored by the radio, a momentary tone sounds every ten seconds.

The Missed Call List can also be entered directly by pressing the Missed Call button (if programmed) when the radio is in the IDLE STATE.

Calling Missed Call List

To make a call back to the number in the Missed Call list:

- 1 Ensure radio is in IDLE STATE.
 - 2 Press the **PTT** button to make the call. The radio sends out its ID and sounds a tone.
 - 3 Hold the radio vertically 1 to 2 inches (2.5 to 5.0 cm) from your mouth.
 - 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.

OR

Press preprogrammed button (for Clear) to end a call. A momentary tone sounds.

Deleting Missed Call List

On a successful call setup, the entry is automatically deleted from the stack and the radio returns to the IDLE STATE.

An unanswered call may be deleted from the Missed Call list at any time.

To delete a number in the Missed Call List:

- 1 Ensure radio is in IDLE STATE.
 - 2 Press preprogrammed button (for Missed Calls).
 - 3 Press preprogrammed button (for Clear).
-

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

■ Call Diversion

Incoming speech calls or status calls can be diverted **from** your radio or **to** your radio.

Call diversion and cancellation may be programmed into the Contact List. Please contact your network manager or dealer for further information.

■ Emergency Calls

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

Your radio can be programmed to give you a one-button quick access to call a particular radio or centre (predefined by your dealer) in emergency situations.

Procedure:

To initiate an emergency call:

- 1 Press the **Emergency** button. A repetitive tone sounds.
-

Emergency can be stopped by one of the following:

- Switching the radio **Off** and **On** again.
- The emergency time duration is reached.

NOTE: The emergency time duration is programmed into your radio by your dealer. Your radio may receive an emergency call when a repetitive tone sounds.

Notes



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