



PRO3100™
Radio Móvil
Rádio Móvel
Mobile Radio

contacto



control

Guía del usuario
Manual do usuário
User Guide

Radios Profesionales

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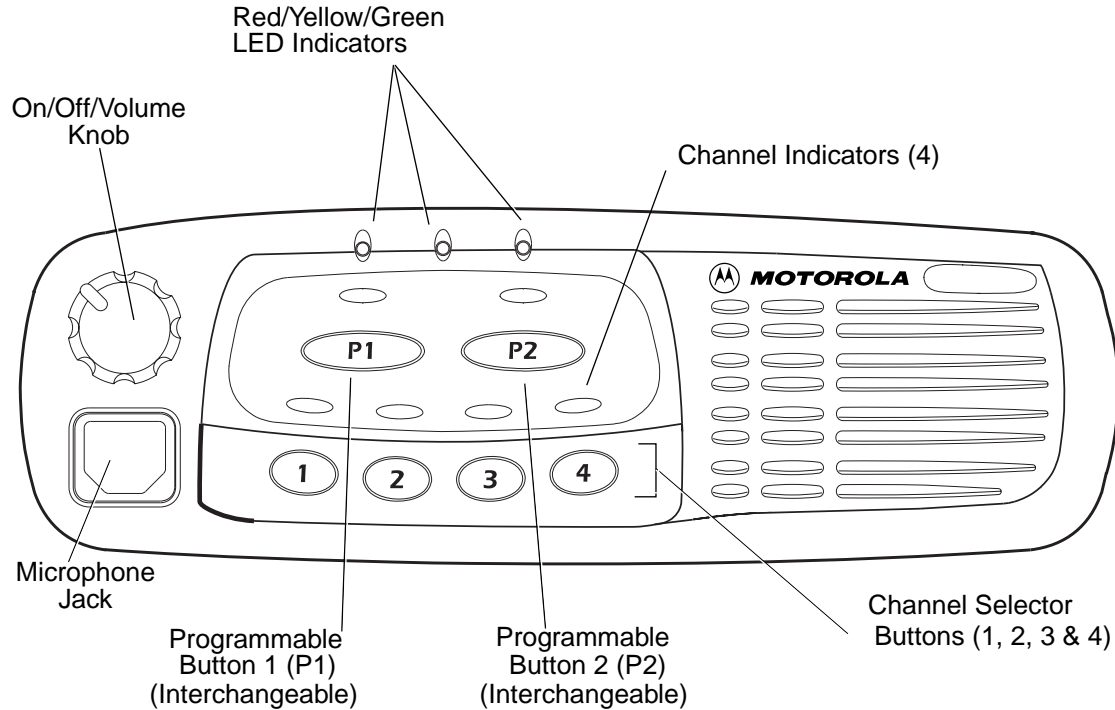
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RADIO OVERVIEW

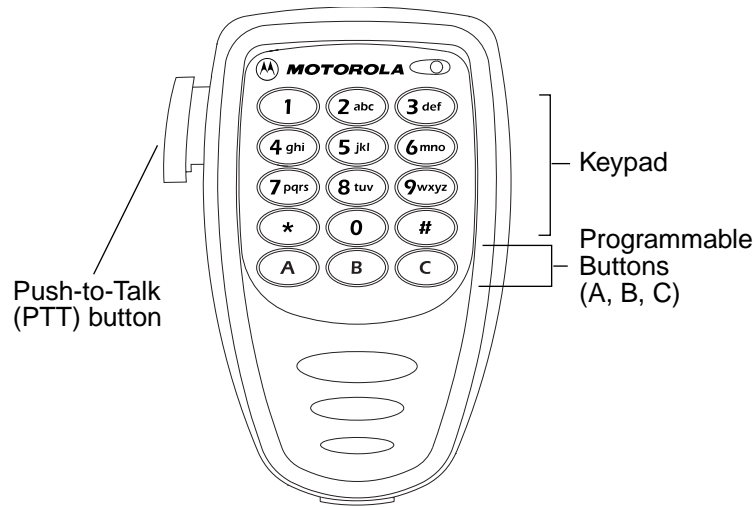
PARTS OF THE RADIO



Optional Enhanced Keypad Microphone (RMN4026)

Your radio may be ordered with an optional DTMF (Dual-Tone Multi-Frequency) microphone that has a direct entry keypad.

This keypad microphone has three buttons (A, B, C) below the keypad that can be programmed to conveniently activate select radio features.



On/Off/Volume Knob

Turns the radio on or off, and adjusts the radio's volume.

Channel Indicators

Four LEDs (one per channel) that indicate the active or selected channel.

Channel Selector Buttons

① or ② or ③ or ④

Used for channel selection. Pressing a (programmed) channel selector button causes its associated channel indicator to light.

LED Indicators

Indicates channel, scan, and monitor status.

Programmable Buttons

Your radio has two programmable buttons. Your dealer can program these buttons as shortcuts to various radio features.

Check with your dealer for a complete list of functions your radio supports.

Programmable buttons include the ① and ② buttons (see page 1).

Some buttons can access up to two features, depending on the type of button press:

- short press—quickly pressing and releasing the programmable buttons
- long press—pressing and holding the programmable buttons for a period of time (default 1 1/2 seconds or programmed value)
- hold down—pressing and holding down the programmable buttons while checking status or making adjustments

A summary of programmable radio features and corresponding page references appears beginning on page 4.

In the “Button” column, have your dealer record the name of the programmable button next to the feature that has been programmed to it.

The dealer can use the abbreviations (P1, P2) shown in the radio illustration on page 1.

Also, where appropriate, have your dealer indicate whether the button press requires a short press, a long press, or needs to be held down.

Function	Short Press	Long Press	Hold Down	Page	Button
Volume Set	—	—	Sound a tone for adjusting your radio's volume level.	7	
PRTT (Priority Request-to-Talk)	Sends a priority access request to the dispatcher.		—	8	
Repeater/Talkaround	Toggle between using a repeater or transmitting directly to another radio.†		—	9	
Power Level	Toggle transmit power level between High and Low.†		—	10	
Scan/Nuisance Channel Delete	Toggle scan on and off.	Delete a nuisance channel while scanning.	—	11	
Phone	Access Phone Mode.†		—	13	
Speed Dial	Access your phone list directly.†		—	13	
Monitor	Toggle silent monitor operation (also turn off open squelch monitor when it has been activated).	Turn on open squelch monitor.	—	—	
Option Board (if one is installed)	Toggle between activating and deactivating the option board.†		—	—	
Auxiliary Control (1/2)	Activates or deactivates a pin on the accessory connector.† (See your dealer.)		—	—	

† This function is activated by EITHER a short OR a long press, but not both.

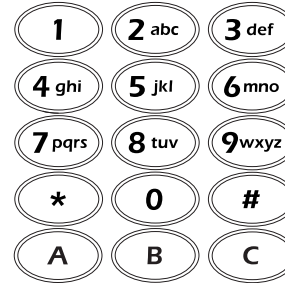
Push-to-Talk (PTT) Button

Press and hold down this button to talk; release it to listen.

Microphone

Hold the microphone 1 to 2 inches (2.5 to 5 cm) from your mouth, and speak clearly into it.

Use with Enhanced Keypad Microphone (RMN4026)



These keys are used to:

- Dial a phone number
- Directly access preprogrammed features

AUDIO INDICATORS FOR PROGRAMMABLE BUTTONS



Low-High Tone



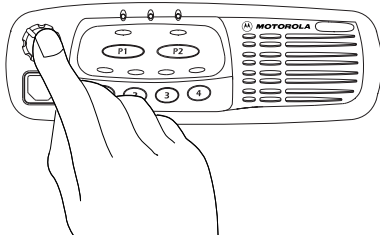
High-Low Tone



Some programmable buttons use tones to indicate one of two modes:

Button	Low-High Tone	High-Low Tone
Scan	Start scan	Stop scan
Power Level	High power selected	Low power selected
Option Board	Enabled	Disabled
Repeater/ Talkaround	Does not use repeater	Uses repeater

GETTING STARTED

TURNING THE RADIO ON OR OFF



ON	OFF
<p>Push the On/Off/Volume Control knob until you hear a click. If power-up is successful, you will hear the Self-Test Pass Tone if programmed.</p>  <p>If the radio fails to power up, you will hear the Self-Test Fail Tone .</p>	<p>Push the On/Off/Volume Control knob until you hear a click and the LED indicators turn off.</p>

ADJUSTING THE VOLUME

Turn the **On/Off/Volume Control** knob clockwise to increase the volume, or counterclockwise to decrease the volume.

—Or—

- 1 Hold down the **Volume Set** button (see page 4). You will hear a continuous tone.
- 2 Turn the **On/Off/Volume Control** knob to the desired volume level.
- 3 Release the **Volume Set** button.

SELECTING A RADIO CHANNEL

Your radio offers 4 channels.

Note: Due to government regulations, some channels may not be programmed. See your dealer for more information.

To select a channel:

Press the desired **Channel Selector** button (1), (2), (3) or (4).

SENDING A CALL

- 1 Turn your radio on.
- 2 Select the desired channel.
- 3 Hold the microphone vertically 1 to 2 inches (2.5 to 5 cm) from your mouth. Press the **PTT** to talk; release it to listen.

If your system uses the request-to-talk feature, use the following method to send a call:

- 1 Turn your radio on.
- 2 Select the desired channel.
- 3 Press the **PTT** (for priority requests to talk, the **PRTT** button) and wait for the talk permit tone.
- 4 Hold the microphone vertically 1 to 2 inches (2.5 to 5 cm) from your mouth. Press the **PTT** to talk; release it to listen.

RECEIVING A CALL

- 1 Turn your radio on.
- 2 Adjust the radio's volume, if necessary (see page 7).
- 3 Select the desired channel.
- 4 To respond, hold the microphone vertically 1 to 2 inches (2.5 to 5 cm) from your mouth.

RADIO CALLS

SELECTIVE RADIO INHIBIT

Your radio is equipped with a security feature that can temporarily render the unit inoperative when an inhibit signal is sent from the base station.

This feature is commonly used to disable radios:

- In case of theft
- When your vehicle is being serviced
- For system control reasons

Note: When your radio has been disabled by the base station, all controls will be inoperative except for the **On/Off** button.

REPEATER OR TALKAROUND MODE

Talkaround Mode enables you to communicate with another radio when either:

- The repeater is not operating
- or–
- Your radio is out of the repeater's range but within communicating distance of another radio. An audible indicator is heard when changing between modes.

To select either Repeater Mode or Talkaround Mode:

Press the preprogrammed **Repeater/Talkaround** button (see page 4) to toggle between Repeater Mode and Talkaround Mode.

SETTING THE POWER LEVEL

Each channel in your radio has a predefined transmit power level that can be changed.

- High power
- Low power

To set the power level, press the preprogrammed **Power Level** button (see page 4) to toggle between *low* and *high*.

SCAN

Your radio can monitor multiple channels in a scan list. Your dealer can program up to four different channels into each scan list. When your radio detects activity on a scan list channel, it will automatically switch to that channel.

Note: The same channels can be assigned to different scan lists.

STARTING OR STOPPING SCAN

The green LED indicator blinks during a scan operation and stops blinking when the radio switches to a channel.

You can start or stop a scan operation by: pressing the preprogrammed **Scan** button (see page 4).

TALKBACK

The Talkback feature allows you to respond to a transmission while scanning. If transmission is detected on a channel while scanning, the radio will stop on that channel for a preprogrammed period of time. During this “hangtime” you may respond by pressing the **PTT**.

Note: If transmission ceases or if the **PTT** is not pressed for a preprogrammed duration, the radio continues to scan. The LED scan indicator stops blinking while the radio is in hangtime.

DELETING A NUISANCE CHANNEL

If a channel continually generates unwanted calls or noise (a “nuisance” channel), use the **Scan** button to temporarily delete the channel from the scan list.

Note: You cannot delete a priority channel or the last remaining channel in a scan list.

- 1 While the radio is on the nuisance channel, hold down the **Scan** button until you hear a tone.
- 2 Release the **Scan** button. The nuisance channel is deleted.

Restoring a Channel to the Scan List

To restore a previously deleted channel to the scan list, restart the scan operation or turn your radio off and on again.

PHONE

If your radio has access to a telephone system, you can make a phone call. To do this, your radio must send an access code to a station that connects it to a phone line. (Ask your dealer for more details.) After completing a call, your radio must send a deaccess code to hang up.

MAKING A PHONE CALL

You can make a phone call using the preprogrammed **Phone** button (see page 4). To initiate a phone call (an enhanced keypad microphone is required):

- 1 Press the **Phone** button.
- 2 You will hear a series of tones indicating that an access code is being sent automatically.
–or–
enter your access code using the keypad.

- 3 When you hear a dial tone, enter the phone number using the keypad.
–or–
Press and release the preprogrammed **Speed Dial** button (see page 4) to use the Speed Dial feature.
- 4 Press the key (1 to 8) corresponding to the number you want to call.
–or–
Press “0” if you want to call the last number dialed.

Note: If you entered the access code using the keypad, the last number redial feature will not be available. However, if the access code was entered automatically, press the **Phone** button.

To end a phone call:

- 1 If your radio has the deaccess code preprogrammed, proceed to step 2.
–or–
Enter the deaccess code using the keypad.
- 2 Press the **Phone** button to exit Phone Mode.

Notes

PHONE

SAFETY AND WARRANTY

SAFE AND EFFICIENT OPERATION OF MOTOROLA TWO-WAY RADIOS

Exposure to Radio Frequency Energy

National and International Standards and Guidelines

Your Motorola Two-Way Radio, which generates and radiates radio frequency (RF) electromagnetic energy (EME), is designed to comply with the following National and International Standards and Guidelines regarding exposure of human beings to radio frequency electromagnetic energy:

- Federal Communications Commission Report and Order No. FCC 96-326 (August 1996)
- American National Standards Institute (C95.1 - 1992)
- National Council on Radiation Protection and Measurements (NCRP - 1986)
- International Commission on Non-Ionizing Radiation Protection (ICNRP - 1986)

- European Committee for Electrotechnical Standardisation (CENELEC):

ENV. 50166-1 1995 E Human Exposure to Electromagnetic Fields Low Frequency (0Hz to 10kHz)

ENV. 50166-2 1995 E Human Exposure to Electromagnetic Fields High Frequency (10kHz to 300GHz)

Proceedings of SC211/8 1996 Safety Considerations for Human Exposure to E.M.F.s from Mobile Telecommunications Equipment (M.T.E.) in the Frequency Range 30MHz - 6GHz (E.M.F. - Electromagnetic Fields)

To assure optimal radio performance and that human exposure to radio frequency electromagnetic energy is within the guidelines set forth in the above standards, always adhere to the following procedures:

ELECTROMAGNETIC INTERFERENCE/COMPATIBILITY

Note: Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, designed, or otherwise configured for electromagnetic compatibility.

- To avoid electromagnetic interference and/or compatibility conflicts, turn off your radio in any facility where posted notices instruct you to do so. Hospitals or health care facilities may be using equipment that is sensitive to external RF energy.
- When instructed to do so, turn off your radio when on board an aircraft. Any use of a radio must be in accordance with airline regulations or crew instructions.

OPERATIONAL WARNINGS



WARNING

Vehicles with an Air Bag

Do not place a radio in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a radio is placed in the air bag deployment area and the air bag inflates, the radio may be propelled with great force and cause serious injury to occupants of the vehicle.

Potentially Explosive Atmospheres

Turn off your two-way radio when you are in any area with a potentially explosive atmosphere, unless it is a radio type especially qualified for use in such areas (for example, Factory Mutual or CENELEC approved). Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death.

Blasting Caps and Blasting Areas

To avoid possible interference with blasting operations, turn off your radio when you are near electrical blasting caps, in a blasting area, or in areas posted: "Turn off two-way radio." Obey all signs and instructions.

Note: The areas with potentially explosive atmospheres referred to above include fueling areas such as: below decks on boats; fuel or chemical transfer or storage facilities; areas where the air contains chemicals or particles, such as grain dust, or metal powders; and any other area where you would normally be advised to turn off a vehicle engine. Areas with potentially explosive atmospheres are often but not always posted.

Mobile Radio Operation and EME Exposure

To assure optimal radio performance and that human exposure to radio frequency electromagnetic energy is within the guidelines referenced earlier in this document, transmit only when people inside and outside the vehicle are at least the minimum distance away from a properly installed, externally mounted antenna.

Table 1 lists the minimum distance for several different ranges of radiated power.

Table 1: Radiated Power and Distance

Radiated Power of Vehicle-installed Mobile Two-way Radio	Minimum Distance From Transmitting Antenna
7 to 15 Watts	1 Foot (30.5 cm)
16 to 50 Watts	2 Feet (61 cm)
More than 50 Watts	3 Feet (91.5 cm)

Mobile Antenna Installation

Install the vehicle antenna *external* to the vehicle and in accordance with:

- The requirements of the antenna manufacturer/supplier
- Instructions in the Radio Installation Manual

CONTROL STATION OPERATION

When radio equipment is used to operate as a control station, it is important that the antenna be installed outside the building and away from places where people may be in close proximity.

Note: Refer to Table 1 on page 17 for rated power and minimum distant values for transmitting antennas.

LIMITED WARRANTY

MOTOROLA COMMUNICATION PRODUCTS

I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG:

MOTOROLA 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:

PRO3100 Mobile Units	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.

This express limited warranty is extended by MOTOROLA to the original end user purchaser only and is not assignable or transferable to any other party. This is the complete warranty for the Product manufactured by MOTOROLA. MOTOROLA assumes no obligations or liability for additions or modifications to this warranty unless made in writing and signed by an officer of MOTOROLA. Unless made in a separate agreement between MOTOROLA and the original end user purchaser, MOTOROLA does not warrant the installation, maintenance or service of the Product.

MOTOROLA cannot be responsible in any way for any ancillary equipment not furnished by MOTOROLA which is attached to or used in connection with the Product, or for operation of the Product with any ancillary equipment, and all such equipment is expressly excluded from this warranty. Because each system which may use the Product is unique, MOTOROLA disclaims liability for range, coverage, or operation of the system as a whole under this warranty.

II. GENERAL PROVISIONS:

This warranty sets forth the full extent of MOTOROLA's responsibilities regarding the Product. Repair, replacement or refund of the purchase price, at MOTOROLA's option, is the exclusive remedy. THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY. IN NO EVENT SHALL MOTOROLA BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT, FOR ANY LOSS OF USE, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS, LOST PROFITS OR SAVINGS OR OTHER INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE SUCH PRODUCT, TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW.

III. 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.

IV. 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, disassemblies 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 Freight costs to the repair depot.
- H 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 type acceptance labeling in effect for the Product at the time the Product was initially distributed from MOTOROLA.
- I Scratches or other cosmetic damage to Product surfaces that does not affect the operation of the Product.
- J Normal and customary wear and tear.

V. PATENT AND SOFTWARE PROVISIONS:

MOTOROLA will defend, at its own expense, any suit brought against the end user purchaser to the extent that it is based on a claim that the Product or parts infringe a United States patent, and MOTOROLA will pay those costs and damages finally awarded against the end user purchaser in any such suit which are attributable to any such claim, but such defense and payments are conditioned on the following:

- 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.

MOTOROLA will have no liability with respect to any claim of patent infringement which is based upon the combination of the Product or parts furnished hereunder with software, apparatus or devices not furnished by MOTOROLA, nor will MOTOROLA have any liability for the use of ancillary equipment or software not furnished by MOTOROLA which is attached to or used in connection with the Product. The foregoing states the entire liability of MOTOROLA with respect to infringement of patents by the Product or any parts thereof.

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VI. GOVERNING LAW:

This Warranty is governed by the laws of the State of Illinois, USA.

ACCESSORIES

Motorola offers a number of accessories to enhance the productivity of your two-way radio. Many of the available accessories are listed below. For a complete list, see your Motorola dealer.

AUDIO

RMN4025	Compact Remote Speaker Microphone
RMN4026	Enhanced Keypad Microphone
RMN4038	Heavy Duty Microphone
RSN4001	External Speaker 13W
HSN8145	External Speaker 7.5W

MOUNTING

GLN7324	Low Profile Trunnion
RLN4780	High Profile Trunnion
HLN8097*	Removable Slide Mount
RLN4779	Key Lock Mount
RLN4782	DIN Mounting Kit (in dash)
RKN4077	Remote Mount Cable - 3 m
RKN4078	Remote Mount Cable - 5 m
RKN4079	Remote Mount Cable - 7 m

ANTENNAS

HAD4006A	VHF 136-144 MHz, 1/4 Wave Roof Mount
HAD4007A	VHF 146-150.8 MHz, 1/4 Wave Roof Mount
HAD4008A	VHF 150.8-162 MHz, 1/4 Wave Roof Mount
HAD4009A	VHF 162-174 MHz, 1/4 Wave Roof Mount
HAD4014A	VHF 146-172 MHz, 3.0dB Gain Roof Mount
HAE4002A	UHF 403-430 MHz, 1/4 Wave Roof Mount
HAE4003A	UHF 450-470 MHz, 1/4 Wave Roof Mount
HAE4010A	UHF 406-420 MHz, 3.5dB Gain Roof Mount
HAE4011A	UHF 450-470 MHz, 3.5dB Gain Roof Mount
HAE4019A	UHF 450-470 MHz, 5dB Gain Roof Mount
HAE4004A	UHF 470-512 MHz, 1/4 Wave Roof Mount
HAE4012A	UHF 470-494 MHz, 3.5dB Gain Roof Mount
09-02105F01	BNC Connector

CONTROL STATION

GPN6145	Desktop Power Supply 1-25W (EMC)
HPN4002	Desktop Power Supply 1-25W
GPN6149	Desktop Power Supply 25-45W (EMC)
HPN4001	Desktop Power Supply 25-45W
RMN4030	Desktop Microphone
GLN7318	Desktop Tray without Speaker
GLN7326	Desktop Tray with Speaker

Note: A variety of interchangeable buttons are available for use in the P1-P2 locations on your radio (page 1). See your dealer for further details.

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