



MOTOROLA

GP68



Operation Guide



- Basic operation 1
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- Dealer operation
- Programming
- Special Mode
- Editing SPM
- Selective Call
- Cloning
- DTMF
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**MOTOROLA**

GP68 Special Programming Mode

The Special Programming mode (SPM) allows you to edit all user-modifiable parameters within your radio, such as the Channel Scan list, Phone Access/Deaccess codes, and Alert Tone Settings. Certain parameters (such as the Selective Call Tone Status) are only accessible with the installation of an option board. Upon entry to the Special Programming mode, the radio initiates the SPM Browse menu which provides you with a menu of available parameters and their current settings.

To Enter the Special Programming Mode

1. Turn the radio on while holding down  and keep  holding until the radio sounds a ringing SPM start-up tone (takes about 3 seconds). At power-up, all display segments light for about 2 seconds.
2. If the battery voltage level is low, the display indicates and the 'BATT' Indicator flashes. The radio also sounds a low battery alert tone. You must turn off the radio and replace, or recharge, the batteries.
3. If the batteries are above the threshold level, the radio enters the SPM Browse menu and the LCD displays the first menu item (i.e., the first parameter that can be modified). The first menu item is Edit Channel Scan List (ScnL .St).
4. When In the SPM Browse menu, rotate the selector switch clockwise or counter clockwise to view the available parameters

To Exit the Special Programming Mode



1. To exit the Special Programming mode, you must turn the radio off then on again.

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Edit the Channel Scan List

1. Rotate the selector switch to select the St menu item.
2. Use  or  to scroll through the channels (01 to 20).




A flashing channel number indicates that the channel is excluded from the scan list. A channel number that lights continuously indicates the channel is included in the scan list. For example, a display showing . with flashing digits indicates that channel 1B is excluded from the scan list.

3. Press the Toggle Light/Enter Button to toggle the state of a channel in the scan list from included to excluded, or from excluded to Included.
4. To exit the scan list edit mode, select another menu item by turning the selector switch.



Edit Phone Access/Deaccess Codes

1. Rotate the selector switch to select the appropriate menu item.
2. Press any key (except the Toggle Light/Enter Button) to enter the edit mode. The LCD displays the currently programmed access/deaccess code. For a code which exceeds the 6-digit display length, the rightmost digit flashes to indicate more digits exist on the right.

You can now change or enter digits as required, up to a maximum of 8, using any of the numeric keys, as well as the *,#,A,B,C, and D keys. The flashing cursor indicates the position of the next digit to be entered.

3. To change the access/deaccess code, Use  or  to scroll through the existing code's digits and  to erase unwanted digits then enter the new digits.

The display shows the new digits as they are being entered. When the flashing cursor is under a digit the maximum number has been entered.



4. One or more 'pause' digits can be entered between successive digits of phone access /deaccess codes by pressing  immediately followed by . A pause digit is displayed as '-' (a dash). A pause digit causes the radio to wait in between transmission of the DTMF tones programmed before and after the pause.
5. Press the Toggle Light/Enter Button to store the new code and return to the SPM Browse menu.
6. To abort the data entry, select another menu item by turning the selector switch or wait until the edit mode times-out (after 5 seconds of inactivity).

Edit Time Out Timer

This menu item allows you to select the Time Out Timer length.

1. Rotate the selector switch to select the Edit Time Out Timer menu item. The



01,-02,...,-10. The default display of tot. 01 shows the time out timer setting of one minute.

2. Use  or  to change the current status.

3. To exit this menu, select another menu item by turning the selector switch.

Set Selective Call Tone Status



1. Rotate the selector switch. to choose the 'Selective Call Tone Status' menu item. The LCD immediately indicates the current SelCall Tone status as either Sc-On (On) or Sc-OFF (Off).

2. Use  or  to toggle between 'On' and 'Off' The new (displayed) status is saved immediately.

3. To exit this menu, select another menu item by turning the selector switch.

Set Sidetones Status



1. Rotate the selector switch to select the 'Sidetone Status' menu item. The LCD immediately indicates the current Sidetone status as either St-On (on) St-OFF (Off)

2. Use  or  to toggle between 'On' and 'off' as required. The new (displayed) status is saved immediately.

3. To exit this menu, select another menu item by turning the selector switch.

Set Alert Tone Volume

1. Rotate the selector switch to select the 'Alert Tone' menu item. The LCD immediately indicates the current Alert Tons status as either Rt-OFF (Off) or Rt-On (On).

2. Use  or  to change the current status The new (displayed) status is saved immediately

3. To exit menu, select another menu item by turning the selector switch.

If your radio is equipped with the Voice Selective Call option, your radio can be called individually by another user, or as part of a small group.

Receiving a Voice Selective Call

1. When the radio decodes a Voice Selective Call, the LCD indicates the type of SelCall message being received as follows:



In the case of an Individual Call, you hear two short ringing tones. For other calls, you hear two medium pitched 'beeps'.

NOTE: Alert tones are not heard if either SelCall Tone Status or Alert Tone VoP ume is set to 'Off'.

2. For an Individual Cal, the radio automatic ally transmits an Acknowledgement message back to the calling radio, If an Acknowledgement ID has been preprogrammed by the dealer. When the radio decodes a Voice Selective Call, it enters the carrier squelch mode for a period of time. If there is no receive activity the radio do resumes the selected squelch mode and the LCD reverts 20 the appropriate ate receive mode display.

IMPORTANT: If you change the selector switch or press any buttons while the Selective Call signal is in progress, the SelCall message disappears and the Selective Call is lost.

Sending a Voice Selective Call

1. Press and hold PTT, then dial the required Selective Call ID.
2. Release PTT and await a response.

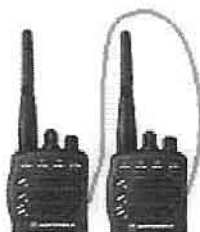
NOTE: For an Individual Call,, the redo Indicates that the call was received with two short ringing tone.

Cloning duplicates the contents of Radio 1 (master radio) into Radio 2 (slave radio). OnSy current radio configuration, channels and phone numbers are copied from one radio to another. Tuning and alignment information are not affected by cloning. You need a cloning cable in order to perform this operation.

SCI

SCI stands for Serial Communications Interface; it is used to configure the GP68 radio and for radio to radio cloning. The SCI port is located at the side of the GP68 radio below the accessory connector

To Clone a Radio



1. Lift the flap covering the SCI port of the master radio.
2. Insert the cloning cable jack into the SCI port
3. Repeat steps one and two with the other end of the cloning cable and the slave radio. This connects both the master and slave radios.

4. Turn on the slave radio.

5. Turn on the master radio while pressing

6. The master radio will display the following message if cloning can proceed, otherwise an error message will be shown (refer to "Error Conditions" on page 40)



7. The slave radio displays the following message while it is being programmed.



If battery level is low, the slave radio will display and you will need to replace or recharge the battery before repeating the procedure.

8. When cloning is completed, both radios will reset automatically.

9. Disconnect radios from the cloning cable and they are ready for operation.



placing a Telephone Call


To place a call using manual access/ deaccess codes:

1. Press and hold PTT and then dial the access code using the DTMF keys.

2. Release PTT and wait for a dial tone.

3A. After dial tone is heard press and hold PTT and dial telephone number

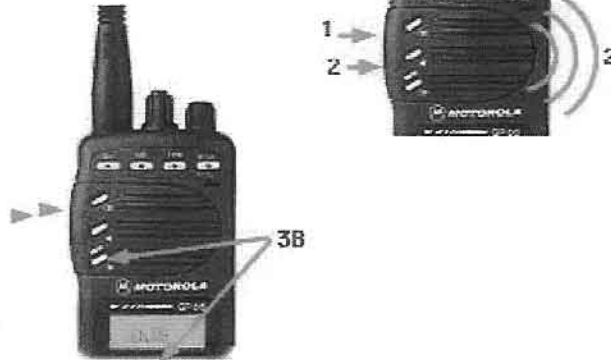
Or

3B. If your radio has preprogrammed telephone numbers, press and hold PTT, press  then press the



number button that stores your preprogrammed telephone number

4. Conduct conversation with other party. Press PTT to talk release PTT to listen.

5. To hang up, press and hold PTT and then dial the deaccess code.




To place a call using preprogrammed access/deaccess codes:

1. Press and hold PTT, press  and then press  to send the preprogrammed access code.



2. Release PTT and wait for a dial tone.

3A. After dial tone is heard, press and hold PTT and dial phone number

OR


3B. If your radio has preprogrammed telephone numbers press and hold PTT, press , then press the number button that stores your preprogrammed telephone number

4. Conduct conversation with other party. Press PTT to talk release PTT to listen.

5. To hang up, press and hold PTT, press  and then press  to send the preprogrammed deaccess code.




To Store a Phone Number

1. Press and hold  until the radio sounds a second valid keypress tone (takes about 2 seconds)



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The LCD display indicates that the radio is ready to accept a one-digit entry.


2. To store a phone number, enter a phone number location, in the range 1 to 9, using the numeric keypad. To store the access code press . To store the deaccess





code, press .

3. Enter the phone number (up to 12 digits long), or access/deaccess code (up to 6 digits long), using the numeric keypad. Valid digits are DTMF digits 0 to 9, the characters A, B, C, D, * and #, and 'pause' digits (see next step). AG undefined digits are represented by underscores on the LCD. A flashing cursor (underscore) indicates the position for the next number entry if you reach the maximum number of entries, the cursor position is under the last digit

4. One or more pause digits can be entered between successive digits of the phone number (or access /deaccess code) by pressing  immediately followed by . A pause digit is displayed as '-' (a dash), and causes the radio to wait in between transmission of the digits programmed before and after the pause.

5. If you make a mistake, use  to scroll the cursor to the left and erase the incorrect entry.

6. To view a numeric sequence more than 6 digits use  or  to scroll the cursor to the left or right

7. Press the Toggle Light/Enter Button to store the phone number (or access/deaccess code) into the designated location and return to normal operator.

Last Number Redial



Manually dialed phone numbers (up to 16 digits long) are stored in numeric location for quick redial capabilities.

They are sent exactly as preprogrammed telephone numbers are. After you receive a dial tone, press and hold PTT, press  then press the number button '0'

To Display a Stored Phone Number

1. Press  momentarily in the receive mode.

2. Enter a one-digit phone number location, in the range 0 to 9, using the numeric keypad. To view the access code press

 To view the deaccess code, press .


If the keypad entry is valid, the LCD displays the first 6 digits of the stored phone number or code. For number sequences greater than 6 digits, after 2 seconds the number begins autoscrolling to the left in 1 second increments until the last digit is displayed




MOTOROLA | **GP68 Scan Operation**

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To Scan Channels

1. Press  momentarily to begin channel scanning.


When the 'SCAN' indicator flashes, channel scanning is in progress and the 'Home' channel is displayed (until activity is received on another channel).



2. Initially, the channels are scanned in an increasing order (from lowest to highest). To scan in a decreasing order, rotate the selector switch counter-clockwise. To change the direction back to an increasing order, rotate the selector switch clockwise.

The radio scans through all channels that are in the seen list. If receive activity is detected on a channel, the 'SCAN' indicator remains on, the channel number is displayed and the conversation can be heard, provided the PL/DPL code (if required) is correct for that channel.

The display reverts to the 'Home' channel and scanning resumes when activity is over and a 7-second 'hang time' has expired.

3. To stop scan operation, press  momentarily.

The 'SCAN' indicator turns off to indicate scanning is terminated and the radio displays the 'Home' channel.

To Transmit During Scanning

1. When keying the radio or responding to a received message during channel scanning, press PTT as you normally would.

Talk Back Scan

The Talk Back Scan feature is used when PTT is pressed while the radio has stopped on a channel. When transmit or receive activity ceases on a scanned channel, a "hang time" of approximately 7 seconds occurs prior to the radio resuming scan. This hang time gives the radio time to receive again or gives you time to respond to a call on the locked channel before scanning resumes.

Home Revert Scan

If you press PTT while the radio is scanning (i.e. the scanner is not locked on any channel), transmission occurs on the "Home" channel (i.e. the channel that was active when the scan operation was initiated). After Home transmit and receive activity ceases, the radio resumes channel scanning after the hang time has expired.

Nuisance Channel Delete in Scan

When the radio scans to a channel that you do not wish to hear, you can temporarily remove the channel from the scan list using the Nuisance Channel Delete feature.

1. With the scanner locked on the unwanted signal, press and hold for about



2 seconds.

2. To add a deleted channel back into the scan list, you must exit and reenter the scan function or turn the radio off and on.



Turn Radio On

Rotate rotary knob clockwise to turn radio on.

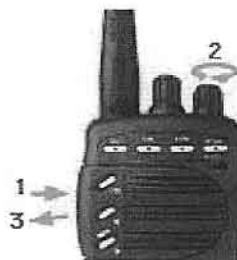


Turn Radio Off

Rotate rotary knob counter-clockwise until a click is heard to turn radio off.

Adjust Volume

1. If there is no receive audio, press and hold the Monitor Button until you hear background noise.
2. Continue to hold the Monitor Button and adjust rotary Knob for desired volume level.
3. Release the Monitor Button to squelch radio again





To Select a Channel

1. Rotate the selector switch clockwise to increase or counter-clockwise to decrease, the channel number.




The channel number increments, or decrements according to the available programmed memory channels (i.e.. empty channels are NOT displayed).

Locking/Unlocking the Keypad

1. Press and hold  to lock (or unlock) the keypad and selector switch (takes about 2 seconds).
2. If you attempt to press a key other than  or rotate the selector switch while the keypad is locked, the LCD displays and no action is taken.



High/Low Power Output

1. Press  to toggle between High and Low power output levels.



The LOW Indicator is on when the radio is set for Low power Output mode and off when the radio is set for High power output mode.



The BATT indicator in the LCD continuously flashes whenever the radio has a low battery condition (in receive or transmit mode).



A low battery condition is also indicated by three low-pitched beeps, repeated every two minutes.


Display Backlight

The LCD has a backlight which is activated when the toggle Light/Enter Button is pressed. The LCD backlight turns off 5 sec. onds after the last user activity or, if Toggle Light/Enter Button is pressed, the backlight turns off immediately (pressing Toggle Light/Enter Button will always toggle the status of the backlight).

PTT ID

If programmed, the radio transmits a DTMF identification code (unit ID), indicating which portable is in operation.

During a conversation, the code is normally sent only on the initial PTT press (unless PTT ID has been disabled). The 'TX' indicator lights for the duration of the PTT ID. If there is no PTT or receive activity for 7 seconds, or if you change the channel (or scan resumes), the PTT ID is once again transmitted on the next PTT press.

NOTE: PTT ID can be enabled/disabled by pressing and holding .

Upon pressing the button you will hear a beep; hold the button down until you hear a second beep, indicating that the PTT ID status has been changed, then release the button. When PTT ID is disabled the 'dot' indicator flashes on the display.

To Transmit

1. Depending on the mode of operation, select the desired channel (refer to the next section for details on selecting a channel).
2. Do not interrupt another user. If the selected Channel is programmed to receive PL, press and hold the Monitor Button to enter monitor mode. and listen for channel activity. The channel must be clear before transmitting.
3. Press PTT.
The "Tx" indicator lights up whenever radio transmits, and goes off when PTT is released.
4. Hold radio upright while speaking clearly into the microphone.



To Receive

1. Release PTT to hear voice activity on selected channel.



To Change Squelch Modes

Carrier squelch (CSQ), Tone Private-Line (PL) and Digital Private-Line (DPL) operations are available on a per channel basis. As an option, Signaling squelch (SelCall) operation is available on a per channel basis.



You can override the default receive squelch mode for the channel temporarily.

To override squelch mode:

1. Press to change between CSQ,, Coded (PL/DPL) and Signaling squelch modes.



To Set Squelch Level

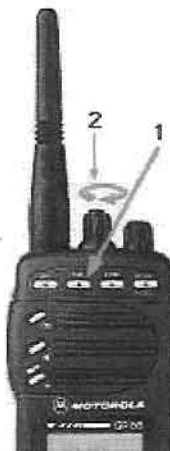
1. Press  to enter the squelch edit mode.



The squelch is displayed in the range '00' (open squelch) to '15' (tight squelch). In the following example, the squelch level is '02':

2. Rotate the selector switch clockwise to increase, or counter clockwise to decrease the displayed squelch level.

3. Press the Toggle Light/ Enter Button momentarily (or any other button) to adopt the selected squelch level and return to normal operating mode (the radio automatically does this after 5



The new squelch level is adopted.

When 'TCSS' is off, the radio operates in CSQ mode.

When "CTCSS' is on continuously, the radio operates in Coded (PL/DPL) squelch mode.

When "CTCSS' is flashing (which requires an optional Selective Call board), the radio operates in Signalling squelch mode, and unmutes only after a valid Voice Selective Call (SelCall) has been decoded.

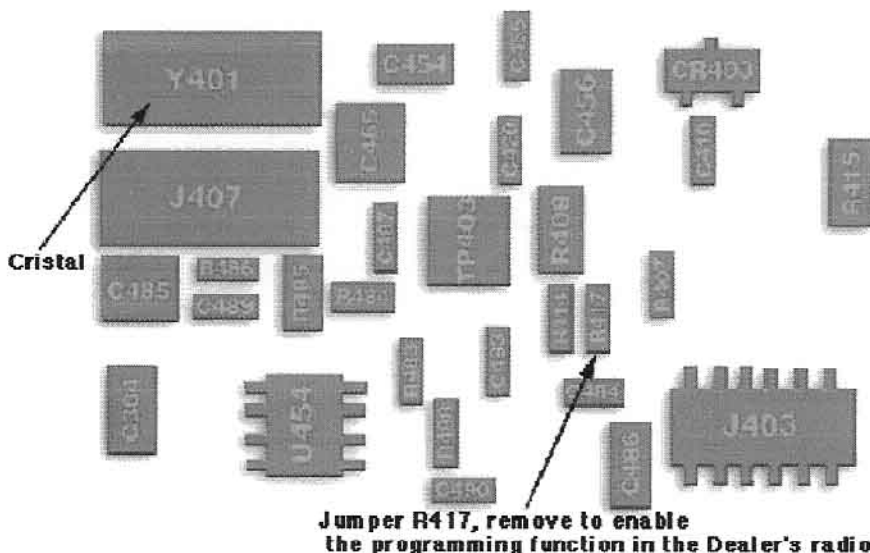
- To Enter Dealer Programming Mode
 - Switch Radio Off
 - Hold Down the PTT Monitor and Scan Buttons While Turning the Radio On
 - Proceed to Program Radio
- When Programming is Complete
- Exit Dealer Programming Mode
 - Switch Radio Off
 - Hold Down the PTT, Monitor and Enter Buttons While Turning the Radio On

Note:

- When the GP68 is in programming mode it is still fully operation i.e transmit and receive e.t.c
- When the GP68 is in programming mode it will not transmit or receive until you exit from dealer programming mode

Overview of the Programming Process

The following procedures assume that you have read and understood the basic operation of of the GP68 from the GP68 User's Manual. A Dealer's radio is the radio where all the necessary options are programmed into. A User's radio is the radio whose options are cloned from the Dealer's radio; it is this radio that is given to the customer. Remove jumper R417, only if you want the radio to stay in programming mode. Do not forget to replace jumper R417 in order to exit programming mode.



IMPORTANT

If the Dealer's radio is to be given to the customer, remember to place R417 with a 51K resistor to disable the programming function



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To Select the Receive PL/DPL Code

1. Press and hold until the LCD displays 'rPL" followed by the active Receive PL code number (takes about 3 seconds). In the following example (Figure 4-13), the



Receive PL/DPL code is 014.

2. Rotate the selector switch clockwise to increase, or counter clockwise to decrease, the active Receive PL/DPL code.


3. Momentarily press any key to immediately adopt the selected Receive PL/DPL code and return to normal operating mode (the radio automatically does this after 3 seconds of inactivity).




The new Receive PL/DPL code is adopted.

To Select the Transmit PL/DPL Code

1. Press and hold  until the LCD displays 'rPL." followed by the active Receive

PL code number (takes about 3 seconds). Press  momentarily to toggle the

display to 'tPL." followed by the active Transmit PL code number You can toggle between editing of the Receive and Transmit PL/DPL by pressing

 momentarily. In the following example (Figure 4-16), the Transmit PL/DPL

code is 020.

rPL XXX	PL FREQ	EQUIV.	rPL XXX	EQUIV.	rPL XXX	EQUIV.
tPL XXX	(Hz)	PL CODE	tPL XXX	PL CODE	tPL XXX	PL CODE
000	CSQ	-	043	23	084	311
001	67.0	XZ	044	25	085	315
002	69.3	WZ	045	26	086	331
003	71.9	XA	046	31	087	343
004	74.4	WA	047	32	088	346
005	77.0	XB	048	43	089	351
006	79.7	WB	049	47	090	364
007	82.5	YZ	050	51	091	365
008	85.4	YA	051	54	092	371
009	88.5	VB	052	65	093	411



010	91.5	ZZ	053	71	095	413
011	94.8	ZA	054	72	096	423
012	97.4	ZB	055	73	097	431
013	100.0	1Z	056	74	098	432
014	103.5	1A	057	114	099	445
015	107.2	1B	058	115	100	464
016	110.9	2Z	059	116	101	465
017	114.8	2A	060	125	102	466
018	118.8	2B	061	131	103	503
019	123.0	3Z	062	132	104	506
020	127.3	3A	063	134	105	516
021	131.8	3B	064	143	106	532
022	136.5	4Z	065	152	107	546
023	141.3	4A	066	155	108	565
024	146.2	4B	067	156	109	606
025	151.4	5Z	068	162	110	612
026	156.7	5A	069	165	111	624
027	162.2	5B	070	172	112	627
028	167.9	6Z	071	174	113	631
029	173.8	6A	072	205	114	632
030	179.9	6B	073	223	115	645
031	186.2	7Z	074	226	116	654
032	192.8	7A	075	243	117	662
033	203.5	M1	076	244	118	664
034	206.5	8Z	077	245	119	703
035	210.7	M2	078	251	120	712
036	218.1	M3	079	261	121	723
037	225.7	M4	080	263	122	731
038	229.1	9Z	081	265	123	732
039	233.6	M5	082	271	124	743
040	241.8	M6	083	306	125	734
041	250.3	M7			126	754
042	254.1	-				

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GP68 Special Programming Mode

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To Enter the Special Programming Mode

1. Turn the radio on while holding down  and keep  holding until the radio sounds a ringing SPM start-up tone (takes about 3 seconds). At power-up, all display segments light for about 2 seconds.
2. If the battery voltage level is low, the display indicates and the 'BATT' Indicator flashes. The radio also sounds a low battery alert tone. You must turn off the radio and replace, or recharge, the batteries.
3. If the batteries are above the threshold level, the radio enters the SPM Browse menu and the LCD displays the first menu item (i.e., the first parameter that can be modified). The first menu item is Edit Channel Scan List (ScnL .St).
4. When In the SPM Browse menu, rotate the selector switch clockwise or counter clockwise to view the available parameters

To Exit the Special Programming Mode

1. To exit the Special Programming mode, you must turn the radio off then on again.

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