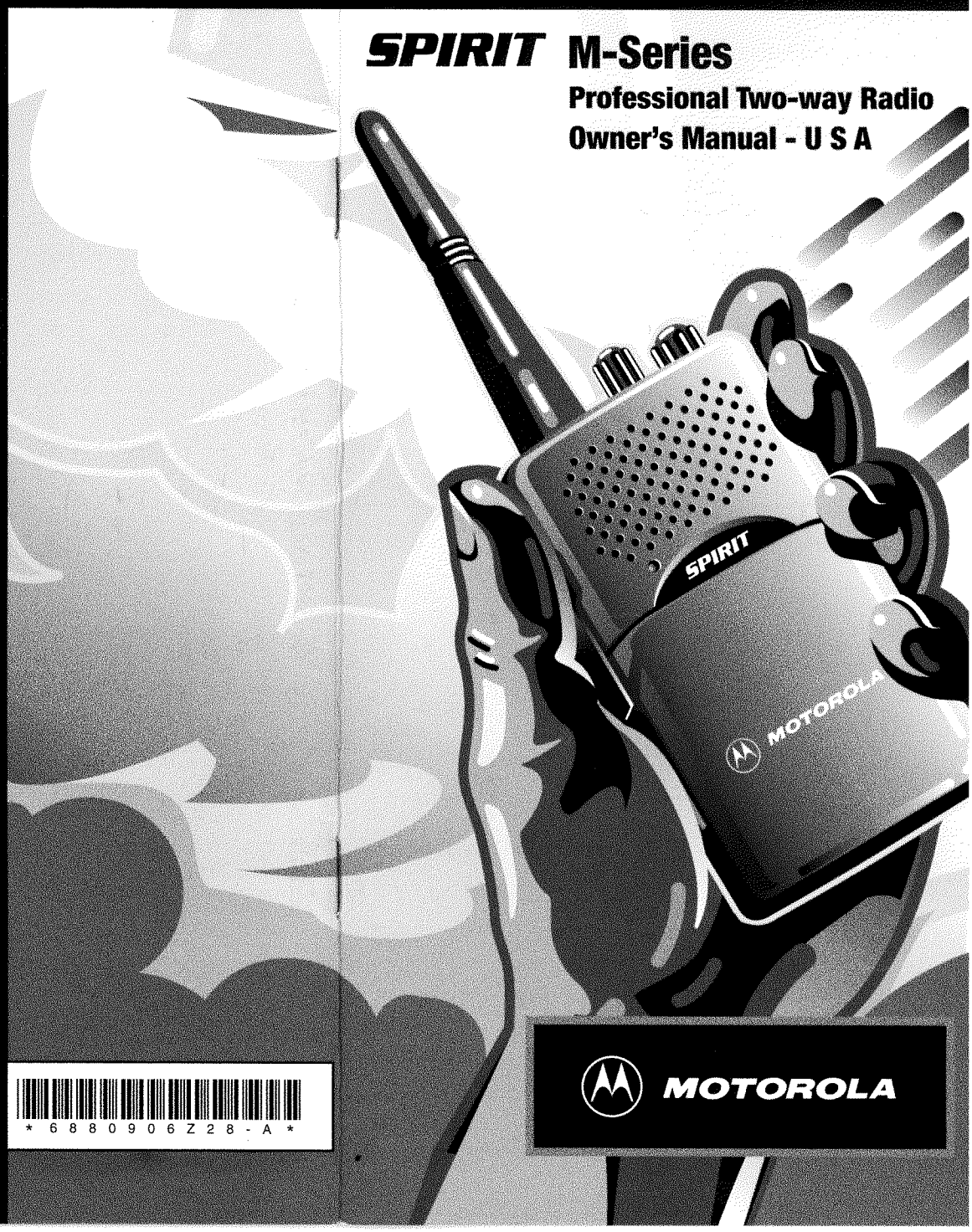
Communication Solutions for Workgroups

MOTOROLA

Multi-channel model shown on cover.

SPIRIT M-Series

Professional Two-way Radio Owner's Manual - U S A



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To help you easily locate important information in this manual, the following icons are used to signal warnings and cautions.

Here's what the symbols mean:

⚠ CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

⚠ WARNING

Indicates a potentially hazardous situation which, if not avoided, may result in death or serious injury.

Please see pages 20 and 21 for complete information.

MOTOROLA

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FCC Licensing Information

Your Motorola radio operates on FM radio communication frequencies and is subject to the Rules and Regulations of the Federal Communications Commission (FCC). The FCC requires that all operators using Private Land Mobile frequencies obtain a radio license before operating their equipment. Application for your FCC license is made on FCC Form 600 and schedules D, E, and G.

To have the forms faxed to you by the FCC, call the FCC Fax-On-Demand system at 1-202-418-0177 from your Fax machine and request document 000600 for all forms and instructions.

To have the forms mailed to you, call the FCC forms hotline at:

1-800-418-FORM
(1-800-418-3676)

For questions concerning the license application, contact the FCC at:

1-888-CALL-FCC
(1-888-225-5322)

For forms via the Internet:

http://www.fcc.gov/formpage.html

Before filling out your application, you must decide which frequency(ies) you can operate on. See frequency tables on page 10.

For questions on determining your radio frequency, please call Motorola Product Services at:

1-800-448-6686

Your New Radio

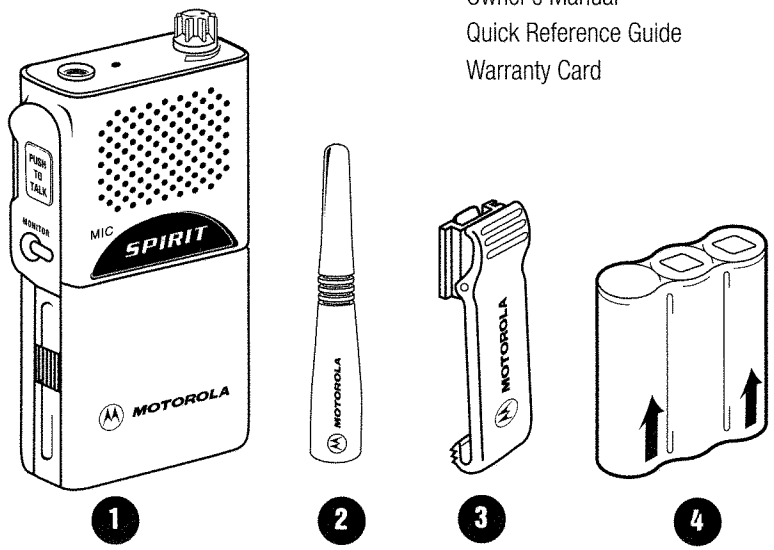
Thank you for purchasing a Motorola Spirit radio. Your radio is a product of Motorola's 70 years of experience as a world leader in the designing and manufacturing of communications equipment. With proper care and use, your Motorola radio should give you years of reliable communication.

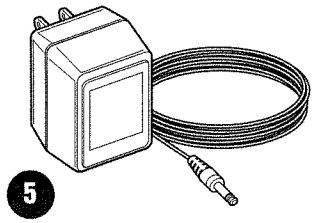
Please read this manual carefully to ensure you know how to properly operate the radio before use.

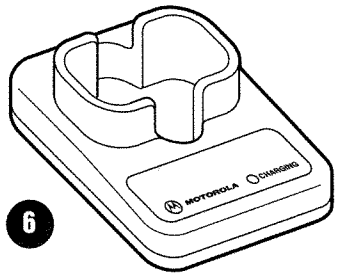
Contents of Package

1. Radio (1 channel model shown)
2. Antenna (UHF shown)
3. Belt Clip
4. Ni-Cad Battery Pack
5. 10 Hour Charger Adapter
6. 10 Hour Desktop Charger (Optional)

Literature (Not shown)
- Owner's Manual
- Quick Reference Guide
- Warranty Card



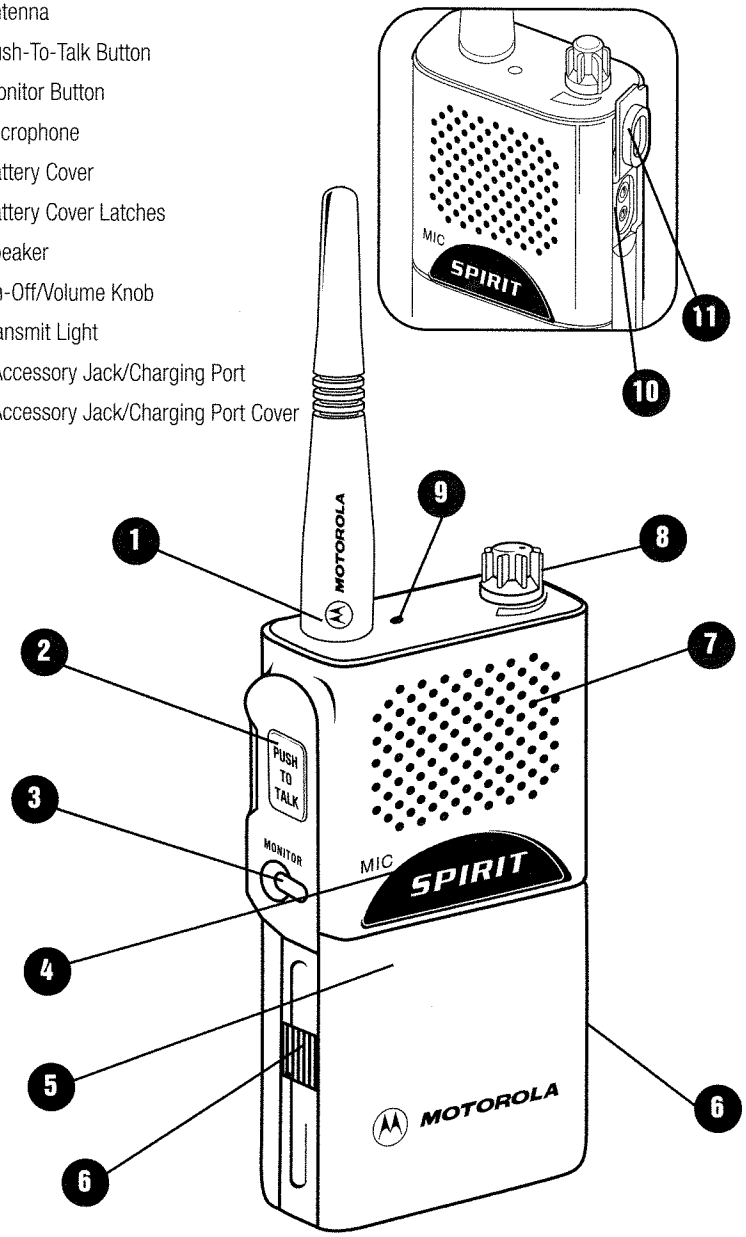




The 10 Hour Desktop Charger is optional and may not be included in your package.

Spirit M-Series Radio

1. Antenna
2. Push-To-Talk Button
3. Monitor Button
4. Microphone
5. Battery Cover
6. Battery Cover Latches
7. Speaker
8. On-Off/Volume Knob
9. Transmit Light
10. Accessory Jack/Charging Port
11. Accessory Jack/Charging Port Cover



Multi-channel models have a Channel Selector Knob on top of the radio.

To Attach/Remove Antenna

To attach the antenna, rotate the antenna clockwise onto the top of the radio until hand tight. Reverse to remove. Fig. A

Note: The antenna should always be installed when operating the radio. Operating the radio without an antenna greatly reduces the range of the radio.

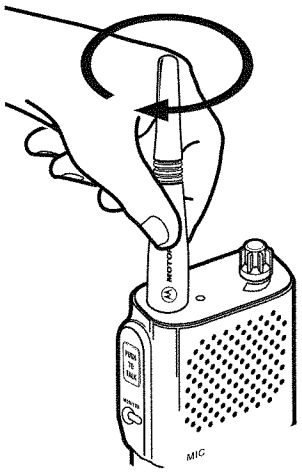


FIG. A

To Attach/Remove Belt Clip

1. Align the belt clip to the mounting rails on the back of the radio. Fig. B
2. Push the belt clip down until it clicks into place.
3. To remove, pull tab on belt clip away from radio to release. Fig. C
4. Slide belt clip up and off.

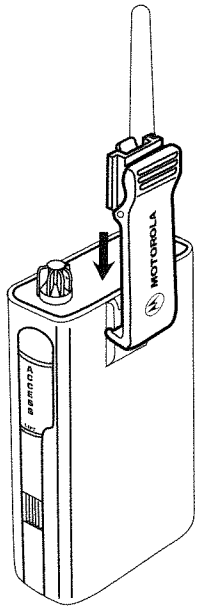


FIG. B

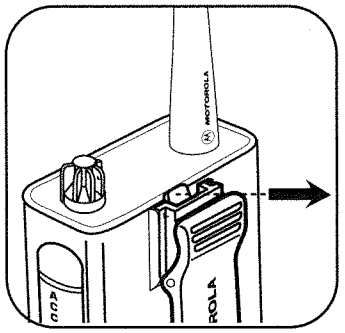


FIG. C

Batteries

The Ni-Cad battery ships uncharged, it must be fully charged for 16 hours before use (first charge only). It is recommended that only Motorola batteries and chargers are used with the radio.

The Ni-Cad rechargeable battery pack will provide approximately 8 hours of operation for a 2 watt radio and 10 hours of operation for a 1 watt radio with normal use (5% sending messages, 5% receiving messages and 90% in standby mode).

Low Battery Alert

When the battery is low, the radio will beep:

- 3 to 4 seconds after turning power on
- Every 10 minutes in standby mode
- After release of the Push-To-Talk button

Recharge the battery pack immediately to avoid interrupted use.

Note: Remove battery pack before storing your radio for extended periods. Batteries may corrode over time if left in radio and can cause permanent damage to your radio.

To Install/Remove Batteries

Note: Radio must be OFF before installing/removing battery.

1. Push back both battery cover latches until you see the orange tabs.
2. Slide battery cover down and lift to remove. Fig. D

To replace/install battery, insert the battery pack with arrows pointing towards the top of the radio. Fig. E

3. Replace battery cover and lock latches.
4. To remove battery, remove cover, turn the radio over and tap the battery end of the radio against the palm of your hand. The battery will drop into your hand. Fig. F

Note: Do not remove the plastic wrap from the battery pack. This will permanently damage the battery.

To Charge Battery With Charger Adapter

1. Turn the radio off.
2. Lift accessory cover and plug the Charger Adapter firmly into the small jack (lower hole). Fig. G
3. Plug the charger into an electric outlet. The light on the charger will glow continuously if charging properly.
4. Allow 10 hours for the battery to fully charge.

Notes:

- For optimum battery life, the battery should not be left charging for prolonged periods after reaching full charge. Charging the battery over the weekend is acceptable, but no more than 60 hours.
- Do not transmit while radio is charging. Transmitting while radio is charging can cause the radio transmitter or the charger to operate improperly.
- Turn radio off when charging. If radio is on while charging, at least twice as much time is required to charge the battery.

To Charge Battery With 10 Hour Desktop Charger

Note: The Desktop Charger is optional and may not be included in your package.

1. Connect Desktop Charger and Charger Adapter. Fig. H
2. Charge the battery while inside the radio by placing the radio in the Desktop Charger with radio facing towards you.

   You can also charge the battery by removing battery from radio and placing it in Desktop Charger. Silver contacts must face down and arrow points toward front of charger. Fig. H
3. The light on top of the Desktop Charger will glow continuously when radio / battery is inserted. If light does not come on, check radio / battery to see if it is properly inserted. Also, check battery/ charger contacts to be sure they are clean. Battery and radio contacts can be cleaned with a pencil eraser. The light will continue to glow until the radio / battery is removed from Desktop Charger.
4. Allow 10 hours for the battery to fully charge.

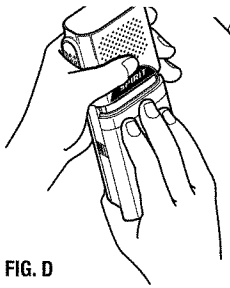


FIG. D

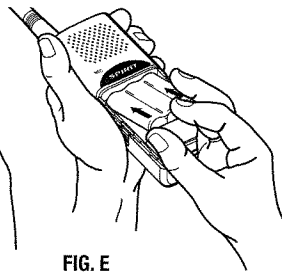


FIG. E

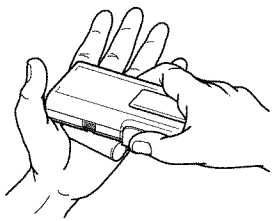


FIG. F

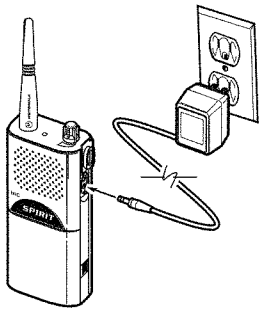


FIG. G

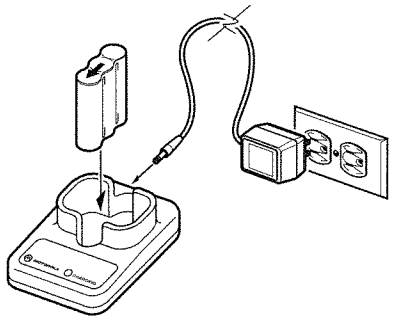


FIG. H

Understanding Frequencies, Codes and Bands

Frequencies:
Your radio operates on a group of frequencies (see page 10 for listing). You access frequencies through radio channels. You can operate on any of your radio's frequencies, but each must be licensed through the FCC (page 2).

Interference Eliminator Codes:
Codes filter out static, noise and unwanted chatter on radio channels (see page 11 for complete listing). When operating on a frequency with a code set, you block out most interference on the frequency, resulting in clearer communication. Remember, since radio frequencies can be monitored, codes will not make your conversations private.

- **For compatibility with radios that do not have codes, the radio can be set to Code "Off" (page 11).**

IMPORTANT

To talk to others in your group all radios must be set to the same channel and code.

There are settings programmed into your radio for frequencies and codes. If it is necessary to confirm settings or to change them for licensing purposes, the radio will audibly guide you through a series of programming steps. If you have questions, please call Motorola Product Services at 1-800-448-6686.

Bandwidth:
Spirit M-Series radios are pre-set to 12.5 kHz bandwidth on selected frequencies, the channel spacing allocated/regulated by the FCC.

Previous Spirit models are pre-set to 25kHz bandwidth on all frequencies. Spirit radios with a 25kHz bandwidth may encounter performance issues (poor audio quality) when trying to communicate with a 12.5 kHz Spirit radio due to this difference in bandwidths.

Due to increased usage and popularity of these radios, the FCC has allocated additional frequencies on the 12.5 kHz bandwidth.

To Change Frequency and Code Settings

1 Channel Models

1. Radio's power must be off.

2. Hold Push-To-Talk button down while turning radio on. Fig. J

Radio announces current frequency setting. Example: "frequency two"

3. Release the Push-To-Talk button.

4. Press Push-To-Talk button to scroll through frequencies.Fig. K

Radio announces each frequency as you scroll. Example: "three...four..."

5. Release Push-To-Talk when you have reached desired frequency.

6. Press Monitor button to select and save new frequency setting. Fig. L

Radio announces current code setting. Example: "code one"

7. Press Push-To-Talk to scroll through codes.

Radio announces each code as you scroll. Example: "two...three" (To turn code off, scroll to "OFF")

8. Release Push-To-Talk when you have reached desired code.

9. Press Monitor button to select and save new code setting.

Radio "beeps" to indicate it has exited programming and is ready for use.

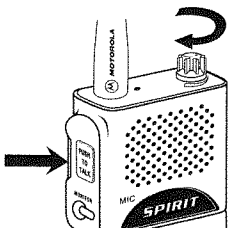


FIG. J 1 Channel Model

2 and 4 Channel Models

1. Radio's power must be off.

2. Turn Channel Selector knob to channel 1. Fig. I

3. Hold Push-To-Talk button down while turning radio on. Fig. J

Radio announces current frequency setting for that channel. Example: "frequency two"

4. Press Push-To-Talk button to scroll through frequencies. Fig. K

Radio announces each frequency as you scroll. Example: "three...four..."

5. Release Push-To-Talk when you have reached desired frequency.

6. Turn Channel Selector knob to channel 2 and repeat steps 3 and 4 above.

4 Channel Models: Repeat to set channels 3 and 4.

7. Press Monitor button to select and save new frequency setting. Fig. L

Radio announces current code setting. Example: "code one"

8. Press Push-To-Talk button to scroll through codes.

Radio announces each code as you scroll. Example: "two...three" (To turn code off, scroll to "OFF")

9. Release Push-To-Talk when you have reached desired code.

10. Press Monitor button to select and save new code setting.

Radio "beeps" to indicate it has exited programming and is ready for use.

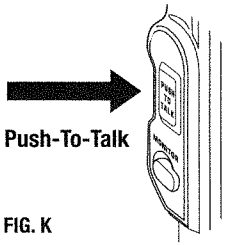


FIG. K

Channel Selector Knob

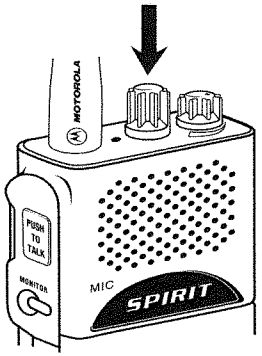


FIG. I 2 or 4 Channel Model

Notes:

- To use this radio with other Spirit models, please see tables on pages 12-15.
- Code numbers with two digits (10-38) will be announced "one zero...three eight".
- You can only scroll forward when selecting frequency or code.
- When you are changing frequency or code, you can not send messages.
- The code setting applies to all channels. You can not select a different code for each channel.
- For Radios With Scan: The radio will sound a warning tone if you accidentally switch to the "s" position while programming. See page 16 for more information.

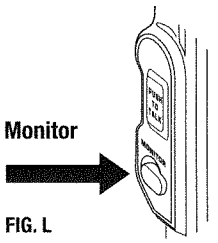


FIG. L

M-SERIES RADIO FREQUENCY INFORMATION

Your new Spirit M-Series radios are pre-set to 12.5 kHz bandwidth on selected frequencies which is the channel spacing allocated/regulated by the FCC.

Previous Spirit models are pre-set to 25kHz bandwidth on all frequencies. A Spirit radio with a 25kHz bandwidth may encounter performance issues (i.e. poor audio quality) when trying to communicate with a 12.5 kHz Spirit radio due to this difference in bandwidths.

Due to the popularity and increased usage of these radios, the FCC has allocated additional frequencies mandated on the 12.5 kHz bandwidth (channel spacing).

If you have other Spirit radios in your group besides Spirit M-Series radios, please review pages 12-15.

Your new Spirit M-Series Radio operates on the following frequencies:

UHF MODELS*

Old Band	Freq. No.	Freq. MHz	Freq. Color	New Band
25	1	464.5000	Brown	25
25	2	464.5500	Yellow	25
25	3	467.7625	J	12.5
25	4	467.8125	K	12.5
25	5	467.8500	Silver Star	25
25	6	467.8750	Gold Star	25
25	7	467.9000	Red Star	25
25	8	467.9250	Blue Star	25

Your M-Series UHF radio is pre-set to these frequencies:

Channel 1: Freq. 2 **Channel 2:** Freq. 8
Channel 3: Freq. 5 **Channel 4:** Freq. 6

**Radios with a 25kHz bandwidth may encounter poor audio quality when com municating with 12.5kHz radios due to bandwidth difference.

***Series number begins with MU (see front of radio).**

VHF MODELS***

Old Band	Freq. No.	Freq. MHz	Freq. Color	1-Watt New Band	2-Watt New Band
25	1	151.6250	Red	25	25
25	2	151.9550	Purple	25	25
25	3	154.5700	Blue	25	25
25	4	154.6000	Green	25	25
25	5	151.7000	N/A	12.5	12.5
25	6	151.7600	N/A	12.5	12.5
25	7	151.8200	N/A	12.5	N/A
25	8	151.8800	N/A	12.5	N/A
25	9	151.9400	N/A	12.5	N/A

***Series number begins with MV (see front of radio).**

If the 3rd digit is a 1 (example: MV11C), your new 1-Watt M-Series radio can be set to Frequencies 1 through 9.

If the 3rd digit is a 2 (example: MV21CV), your new 2-2-Watt M-Series radio can be set to Frequencies 1 through 6 only.

Your M-Series VHF radio is pre-set to these frequencies:

Channel 1: Freq. 3 **Channel 2:** Freq. 4
Channel 3: Freq. 1 **Channel 4:** Freq. 2

Important Notes:

- **Current Two-Way Radio Users:** Please set your new M-Series radio to the same frequency as the other radios in your group (VHF Frequencies 1 through 4). See pages 12-13 to set frequencies the same on all radios.

  Frequencies 5 through 9 can not be used by other Spirit 1 or 2-Watt radios, Spirit 4 or 5-Watt radios and some M-Series radios (those without red dots in the Spirit Logo on the front of the radio).

- **New Two-Way Radio Users:** If all radios in your group are M-Series radios with red dots in the Spirit logo on the front of the radio, you can:
  –Select VHF Frequencies 1 through 9 for 1-Watt radios.
  –Select VHF Frequencies 1 through 6 for 2-Watt radios.

M-SERIES RADIO CODE INFORMAT

Your M-Series radio operates on the following interfer eliminator codes:

Code No.	Freq. Hz
1	67.0
2	71.9
3	74.4
4	77.0
5	79.7
6	82.5
7	85.4
8	88.5
9	91.5
10	94.8
11	97.4
12	100.0
13	103.5
14	107.2
15	110.9
16	114.8
17	118.8
18	123.0
19	127.3
20	131.8
21	136.5
22	141.3
23	146.2
24	151.4
25	156.7
26	162.2
27	167.9
28	173.8
29	179.9
30	186.2
31	192.8
32	203.5
33	210.7
34	218.1
35	225.7
36	233.6
37	241.8
38	250.3
OFF	None

None = Interference Eliminator Code is off.

This allows you to monitor all activity on the channel you are using and to communicate with other Spirit radios that do not have interference elimina-tor. See below for instructions.

To turn Interference Eliminator "OFF":

1. Hold Push-To-Talk button down while turning the radio on.
   Radio announces current frequency setting.
   Example: "frequency two"
2. Press monitor button.
   Radio announces current code setting.
   Example: "code one"
3. Press Push-To-Talk until you reach "OFF."
   Radio announces each code as you scroll.
   Example: "two...three"
   "OFF" setting is immediately after "three eight." (Code 38)
4. Release Push-To-Talk when you have reached "OFF."
5. Press Monitor button to select and save "OFF" setting.
   Radio "beeps" to indicate it has completed programming and is ready for use.

Note:

- The code on your M-Series radio is pre-set to code 1.
- Set all radios to the same frequency(ies) and interference eliminator code.

SET ALL SPIRIT RADIOS TO THE SAME FREQUENCY

All radios must be set to the same frequency(ies) and code to communicate.

Please review these pages 12-15 if you have additional Spirit radios other than M-Series radios.

If after completing these steps your radios do not communicate, see trouble-shooting on pages 18-19 or call at 1-800-448-6686.

Other Spirit 1 or 2-Watt Radios (Fig. M)

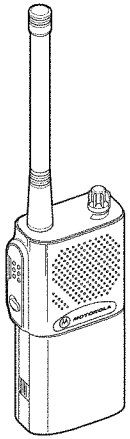


Fig. M

- Lift the battery tray out and look for a bank of **4 DIP switches** (see Fig. N).
- Change the frequency on the new M-Series radio to match the frequency setting on your other radio. (See frequency tables on page 13.)

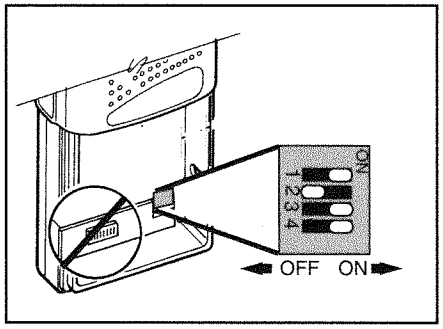


Fig. N

Note: M-Series radios do not have DIP switches. Do not remove battery tray from M-Series radios.

Spirit 4 or 5-Watt Radios (Fig. O)

Fig. O

- Turn the radio on and look at the front display for frequency (channel) setting. (see Fig. P).

NOTE: Spirit 4 or 5-watt radios only use select frequencies

- Change the frequency on the new M-Series radio to match the frequency setting on your other radio. (See frequency tables on page 13.)

Fig. P

FREQUENCY TABLES

Use tables to match the frequency(ies) on all radios.

Spirit M-Series Radios

UHF models – Series begins with MU

Frequency Number	Frequency MHz	Frequency Color
1	464.5000	Brown
2	464.5500	Yellow
3	467.7625	J
4	467.8125	K
5	467.8500	Silver Star
6	467.8750	Gold Star
7	467.9000	Red Star
8	467.9250	Blue Star

VHF models – Series begins with MV

Frequency Number	Frequency MHz	Frequency Color
1	151.6250	Red
2	151.9550	Purple
3	154.5700	Blue
4	154.6000	Green

Please set your new VHF M-Series radio to the same frequency as the other radios in your group (use only VHF frequencies 1-4).

Other Spirit 1 or 2-Watt Radios

1 Channel UHF*

Freq. MHz	Color	DIP Switch Positions S1	S2	S3	S4
464.5000	Brown	OFF	OFF	ON	ON
464.5500	Yellow	ON	ON	OFF	OFF
467.7625	J	ON	ON	ON	ON
467.8125	K	OFF	OFF	OFF	OFF
467.8500	Silver Star	ON	ON	ON	OFF
467.8750	Gold Star	OFF	OFF	OFF	ON
467.9000	Red Star	ON	OFF	OFF	OFF
467.9250	Blue Star	OFF	ON	ON	ON

1 Channel VHF**

Freq. MHz	Color	DIP Switch Positions S1	S2	S3	S4
151.6250	Red	ON	ON	OFF	OFF
151.9550	Purple	OFF	OFF	ON	ON
154.5700	Blue	OFF	OFF	OFF	OFF
154.6000	Green	ON	ON	ON	ON

2 Channel UHF*

Channel 1 Freq. MHz	Color	Channel 2 Freq. MHz	Color	Dip Switch Positions S1	S2	S3	S4
464.5500	Yellow	464.5000	Brown	OFF	OFF	OFF	OFF
467.7625	J	464.5000	Brown	OFF	ON	OFF	OFF
464.5500	Yellow	467.8125	K	OFF	OFF	ON	OFF
467.7625	J	467.8125	K	OFF	ON	ON	OFF
467.8500	Silver	467.8125	K	OFF	OFF	OFF	ON
464.5500	Yellow	467.9250	Blue Star	OFF	ON	OFF	ON
467.7625	J	467.9250	Blue Star	OFF	OFF	ON	ON
467.8500	Silver	467.9250	Blue Star	OFF	ON	ON	ON

2 Channel VHF**

Channel 1 Freq. MHz	Color	Channel 2 Freq. MHz	Color	DIP Switch Positions S1	S2	S3	S4
151.6250	Red	154.6000	Green	OFF	OFF	OFF	OFF
151.6250	Red	154.5700	Blue	OFF	ON	OFF	OFF
151.6250	Red	151.9550	Purple	OFF	OFF	ON	OFF
154.6000	Green	154.5700	Blue	OFF	ON	ON	OFF

*Series number begins with SU or states Spirit Pro +.
**Series number begins with SV, AV, PC, CS,CV or states Spirit 2-Way or Spirit Pro.

Spirit 4 or 5-Watt Radios

UHF Model SU42

Channel	Frequency MHz	Color
1	464.5000	Brown
2	464.5500	Yellow

VHF Model SV52

Channel	Frequency MHz	Color
1	151.6250	Red
2	151.9550	Purple

Please review these pages 12-15 if you have additional Spirit radios other than M-Series radios.

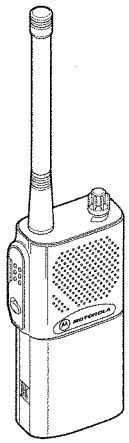


Fig. Q

Other Spirit 1 or 2-Watt Radios (Fig. Q)

- You have interference eliminator—if you lift the battery tray out and find a bank of **8 DIP switches** (Fig. R&S). *You don't have interference eliminator if you don't see a bank of 8 DIP switches.*
- Change code on your M-Series radio to match the code on your other radios. (See code table on page 15.)

Fig. R

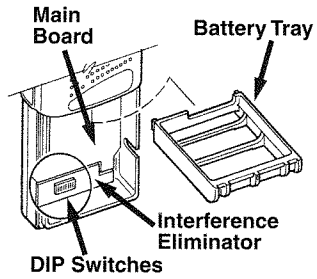


Fig. S

Note: M-Series radios do not

Some "other Spirit 1 or 2-Watt radios" (Fig. Q) do not have Interference Eliminator.

If you do not have Interference Eliminator, you will need to turn off Interference Eliminator on your new M-Series radio (see page 11).

Or, upgrade your other Spirit radio by purchasing an Interference Eliminator Kit (Refer to part #HLN3039). Please call your place of purchase or 1-800-448-6686 for information.

Fig. T

Spirit 4 or 5-Watt Radios (Fig. T)

- **All 4 and 5-Watt radios have Interference Eliminator.**

  Turn the radio on and press down the PL button for 1 second. The code number will be displayed on the lens (Fig. U).
- Change the code on your M-Series radio to match the code on your 4 or 5-Watt radio. (See code table on page 15.)

Note: Spirit 4 or 5-Watt radio has **32 codes** and M-Series radio has **38 codes**. Select one of the 32 codes common to both radios.

Fig. U

CODE TABLES

Use table to match the Interference Eliminator Code on all radios.

M-Series Radios

Code No.	Freq. Hz
1	67.0
2	71.9
3	74.4
4	77.0
5	79.7
6	82.5
7	85.4
8	88.5
9	91.5
10	94.8
11	97.4
12	100.0
13	103.5
14	107.2
15	110.9
16	114.8
17	118.8
18	123.0
19	127.3
20	131.8
21	136.5
22	141.3
23	146.2
24	151.4
25	156.7
26	162.2
27	167.9
28	173.8
29	179.9
30	186.2
31	192.8
32	203.5
33	210.7
34	218.1
35	225.7
36	233.6
37	241.8
38	250.3
OFF	None

Other Spirit Radios

1 & 2 Watt Models

Code No.	Freq. Hz	DIP Switch Positions S1	S2	S3	S4	S5	S6	S7	S8
XZ	67.0	D	D	D	D	D	D	U	U
XA	71.9	U	D	D	D	D	D	U	U
WA	74.4	D	D	D	D	D	U	U	U
XB	77.0	U	U	D	D	D	D	U	U
WB	79.7	D	D	D	D	U	D	U	U
YZ	82.5	U	D	D	D	D	U	U	U
YA	85.4	D	D	D	D	U	U	U	U
YB	88.5	U	U	D	D	D	U	U	U
ZZ	91.5	D	D	D	U	D	D	U	U
ZA	94.8	U	D	D	D	U	D	U	U
ZB	97.4	D	D	D	U	D	U	U	U
1Z	100.0	U	U	D	D	U	D	U	U
1A	103.5	U	D	D	D	U	U	U	U
1B	107.2	U	U	D	D	U	U	U	U
2Z	110.9	U	D	D	U	D	D	U	U
2A	114.8	U	U	D	U	D	D	U	U
2B	118.8	U	D	D	U	D	U	U	U
3Z	123.0	U	U	D	U	D	U	U	U
3A	127.3	U	D	D	U	U	D	U	U
3B	131.8	U	U	D	U	U	D	U	U
4Z	136.5	U	D	D	U	U	U	U	U
4A	141.3	U	U	D	U	U	U	U	U
4B	146.2	U	D	U	D	D	D	U	U
5Z	151.4	U	U	U	D	D	D	U	U
5A	156.7	U	D	U	D	D	U	U	U
5B	162.2	U	U	U	D	D	U	U	U
6Z	167.9	U	D	U	D	U	D	U	U
6A	173.8	U	U	U	D	U	D	U	U
6B	179.9	U	D	U	D	U	U	U	U
7Z	186.2	U	U	U	D	U	U	U	U
7A	192.8	U	D	U	U	D	D	U	U
M1	203.5	U	U	U	U	D	D	U	U
M2	210.7	U	D	U	U	D	U	U	U
M3	218.1	U	U	U	U	D	U	U	U
M4	225.7	U	D	U	U	U	D	U	U
M5	233.6	U	U	U	U	U	D	U	U
M6	241.8	U	D	U	U	U	U	U	U
M7	250.3	U	U	U	U	U	U	U	U
—	None	X	X	X	X	X	X	X	D

Other Spirit Radios

4 & 5 Watt Models

Code (PLXXX)	Freq. Hz
001	67.0
002	71.9
N/A	N/A
003	77.0
N/A	N/A
004	82.5
N/A	N/A
005	88.5
N/A	N/A
006	94.8
N/A	N/A
N/A	N/A
007	103.5
008	107.2
009	110.9
010	114.8
011	118.8
012	123.0
013	127.3
014	131.8
015	136.5
016	141.3
017	146.2
018	151.4
019	156.7
020	162.2
021	167.9
022	173.8
023	179.9
024	186.2
025	192.8
026	203.5
027	210.7
028	218.1
029	225.7
030	233.6
031	241.8
032	250.3
000	None

Your Spirit M-Series radio is pre-set to code 1.

CODE TABLE KEY

D = Down
U = Up
X = Either Up or Down
N/A = Not Available
None = Interference Eliminator Code is off. This allows you to monitor all activity on the channel you are using.

Turn the Radio On/Off

Turn the On-Off/Volume knob clockwise. You will hear a beep and see the Transmit Light flash momentarily to indicate the radio is on. To turn the radio off, turn the On-Off/Volume knob counterclockwise. You will hear a click to indicate the radio is turned off.

Adjust the Volume

Hold Monitor button down to listen to audio level while rotating On-Off/Volume knob. Rotate knob clockwise to increase and counterclockwise to decrease volume.

To Send/Receive Messages

Check channel activity by pressing Monitor button. You will hear static if the channel is clear to use. Do not transmit if someone is talking on channel.

1. To send messages, press and hold Push-To-Talk and speak into radio. (To maximize clarity, hold radio 2 to 3 inches from mouth). Fig. V
2. The Transmit Light will glow continuously when sending messages.
3. To listen for messages, release the Push-To-Talk button.

FIG. V

See page 19 for range information.

Time-out Timer:

The Time-out Timer feature prevents channel congestion and helps extend battery life. The radio will sound a warning tone if the Push-To-Talk button is pressed for 60 continuous seconds and will stop transmitting.

Scan (Optional)

Some M-Series models have Scan. Scan allows you to monitor the radio's programmed channels and code. When the radio detects someone talking, it stops scanning and locks in on the active channel. It allows you to listen and talk back automatically to the person transmitting without having to switch channels.

Note: To communicate in scan, your radio must be set to the same frequency and code as the other radio(s) in your group.

To Use Scan Feature

1. Move the Channel Selector knob to the "s" position (Fig. W). The radio will scan the radio's programmed channels and code in sequential order.
2. When the radio detects someone talking, you will hear the message.
3. Press Push-To-Talk button to talk back on the channel.

In scan, you will always transmit back to the channel which last sent a message.

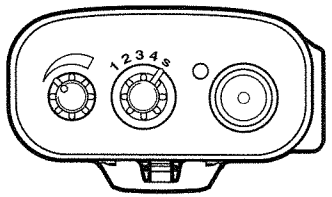


FIG. W 4 Channel Model

Notes:

- In scan, after you receive a message, the radio will remain on that channel for three seconds before returning to scan mode.
- If you set the Channel Selector knob to the "s" position (scan mode) and no activity is detected, you will transmit on channel 1 when you press the Push-To-Talk button.

Built-In VOX (Optional)

Some M-Series models have built-in VOX (Voice Activated Transmission). This feature allows hands-free operation of your radio. The sound of your voice activates transmission when the radio is used with a Headset With Swivel Boom Mic (HMN9038) or Earpiece With Microphone (HMN9039) (Both headset and earpiece are sold separately).

To Use VOX Feature

1. Turn the radio off.
2. Open Accessory Jack Cover and plug accessory's connector firmly into jack. Fig. O.
3. Turn radio on and lower volume before placing accessory on head or in ear. Press Monitor button while rotating Volume knob to adjust volume to a comfortable listening level.
4. To transmit, speak into accessory microphone. To receive, stop talking.

There will be a one second delay between when you start or stop talking and radio transmission.

Exit VOX Feature

1. Press Push-To-Talk button once.
2. To transmit, press Push-To-Talk button.
3. To receive messages, release Push-To-Talk button.
4. To return to VOX mode, turn the radio off, then on again.

Note: The Accessory Jack Cover is not detachable and should be closed when not in use.

Accessories

There are many audio, charging and carrying accessories (sold separately) available for Spirit M-Series radios. Accessories allow you to customize radios to suit your business communication needs. The right accessory can enhance productivity and that can help you increase customer satisfaction.

For information, contact your place of purchase or contact Motorola at:

1-800-448-6686

http: // www.motorola.com/spirit

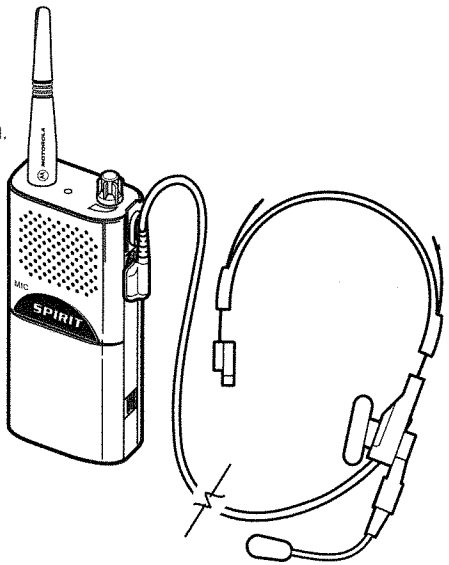


FIG. X Headset Sold Separately

TROUBLESHOOTING

Radio Has No Power	Reposition or charge battery pack.
Battery Does Not Charge or Last Long Enough	If using Charger Adapter, make sure the plug is firmly connected into jack and the light on the adapter glows indicating correct charging status. If Desktop Charger is used, make sure battery is positioned properly and light on tray is on. Radio should be turned off when charging. Charge time will be longer if it is left on. Heavy usage may require a spare battery or recharging.
Message Not Transmitted	Make sure the Push-To-Talk button is completely pressed and the Transmit Light is on while you talk. Insert, reposition or charge battery pack.
Message Not Received	Confirm radios are set on the same Channel and Interference Eliminator Code settings. See pages 8-15. VHF M-Series frequencies 5 through 9 can not be selected by all versions of Spirit radios. Obstructions, operating indoors or in vehicles may interfere with communication. Change your location. Check to make sure the radio is on and the volume is set to a comfortable listening level. The code must be set to "OFF" on your M-Series radio to receive a message from a radio without code capability. See page 11. Make sure Push-To-Talk is not inadvertently being pressed on receiving radio.
Hearing Other Conversations or Noise on Radio	Check that your Interference Eliminator Code is set (Active settings are 1 - 38). Other users may be using channel - change code. If you are part of a group, change the code on all radios.
Limited Talk Range	Steel/concrete structures, heavy foliage and use in buildings and in vehicles will decrease range, check for clear line of sight to improve transmission. Wearing radio close to body such as in a pocket or on a belt will decrease range, change location of radio. Radios too far apart. Obstacles interfere with transmission. Talk range is up to 5 miles in clear unobstructed conditions.
Cannot Change Frequency or Code Setting	Make sure that the Push-To-Talk (PTT) button is completely pressed while turning the radio on. Insert, reposition or charge battery pack. Press the Monitor button to save your frequency or code selection. You will hear a confirmation "beep" when Monitor button is pressed. There are **no DIP switches** in the new M-Series radio. Change frequency and code through voice-assisted programming. See pages 8 and 9. (cont. next page)

Cannot Change Frequency or Code Setting	**Review and follow these steps to program your radio:** **1.** Hold Push-To-Talk button down and turn the radio on. **2.** Set frequency: • Press Push-To-Talk button to hear choices (Multi-channel: repeat per channel) • Press Monitor button to select and save **3.** Set code: • Press Push-To-Talk to hear choices • Press Monitor button to select and save Please see pages 8 and 9 for more information.

If the radio still doesn't work properly, contact your place of purchase or call Motorola Product Services.

1-800-448-6686

Radio Care

- To clean the radio housing, wipe with a soft cloth dampened with water.
- Don't use cleaners or solvents on the radio, they can harm the body and leak inside, causing permanent damage.
- For preventive maintenance, clean battery contacts with a pencil eraser.

Spirit Talk Range

Spirit radios can communicate at distances of up to 5 miles. But, range will decrease as the surroundings become more obstructive.

Buildings and vehicles as well as trees and heavy foliage will limit range.

Radio Range	VHF		UHF	
	1 Watt	2 Watt	1 Watt	2 Watt
Maximum Range				
Outdoor-Flat Ground with no Obstructions	Up To 4 Miles	Up To 5 Miles	Up To 4 Miles	Up To 5 Miles
Medium Range				
Outdoor-Near Residential Buildings	Up To 2 Miles	Up To 2.5 Miles	Up To 1.5 Miles	Up To 2 Miles
Minimum Range				
Indoor-Steel and Concrete Reinforced Buildings	Up To 150,000 Sq. Ft.	Up To 180,000 Sq. Ft.	Up To 200,000 Sq. Ft.	Up To 250,000 Sq. Ft
Indoor-Multi-Level Buildings	Up To 8 Floors	Up To 10 Floors	Up To 15 Floors	Up To 20 Floors

Note: The talk ranges above are averages based on field study. Actual radio range may vary.

Safe and Efficient Operation of Motorola Two-Way

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 Standardization (CENELEC)

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

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

  -Proceedings of SC211/8 1996 - Safety Considerations for Human Exposure to E.M.Fs 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:

Portable Radio Operation and EME Exposure

- When transmitting with a portable radio, hold the radio in a vertical position with its microphone 2 to 3 inches (5.0 to 7.0 centimeters) away from your mouth. Keep antenna at least 1 inch (2.5 centimeters) from your head and body.
- If you wear a portable two-way radio on your body, ensure that the antenna is at least 1 inch (2.5 centimeters) from your body when transmitting.

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.

⚠ WARNING

FOR VEHICLES WITH AN AIR BAG

Do not place a portable radio in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a portable 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 Approved). Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death.

These radios are not Intrinsically Safe according to OSHA Standards. If you need an Intrinsically Safe radio, contact our Radius Division, toll free, at 1-888-567-7347.

BATTERIES

Do not replace or charge batteries in a potentially explosive atmosphere. Contact sparking may occur while installing or removing batteries and cause an explosion.

BLASTING CAPS AND 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 your vehicle engine. Areas with potentially explosive atmospheres are often but not always posted.

⚠ CAUTION

DAMAGED ANTENNAS

Do not use any portable two-way radio that has a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn can result.

BATTERIES

All batteries can cause property damage and/or bodily injury such as burns if a conductive material such as jewelry, keys, or beaded chains touch exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.

⚠ CAUTION

CHARGERS AND POWER CORD

- Never alter the AC cord and plug provided with the unit. If the plug will not fit in the outlet, have a proper outlet installed by a qualified electrician. An improper condition can result in risk of an electric shock.
- To reduce risk of damage to electric plug and cord, pull by the plug rather than the cord when disconnecting the charger.
- Make sure cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
- Do not operate charger with damaged cord or plug, replace them immediately. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; contact place of purchase or call 1-800-448-6686.
- Do not expose chargers to rain or snow.

An extension cord should not be used unless absolutely necessary. Use of an improper extension cord may result in a fire or electric shock. However, if an extension cord must be used, make sure:

- That pins and plug of extension cord are the same number, size and shape as those on the plug of the charger.
- That extension cord is properly wired and in good condition.
- Cord size is 18AWG for lengths of up to 100 feet, and 16AWG for lengths up to 150 feet.
- Do not disassemble charger; contact place of purchase or call 1-800-448-6686 if charger is not functioning. Incorrect reassembly can result in electric shock or fire.
- To reduce risk of injury, charge only Motorola Ni-Cad rechargeable batteries. Other types of batteries may burst, causing personal injury and damage.
- Use of an attachment not sold or recommended by Motorola can result in a risk of fire, electric shock, or injury to personnel.
- To reduce risk of electric shock, unplug charger from outlet before cleaning. Turning off controls does NOT reduce this risk.

ONE YEAR LIMITED WARRANTY

Spirit M-Series radios and accessories have a one (1) year limited warranty.

Limited Warranty Motorola Communication Products

This warranty applies within the fifty (50) United States and the District of Columbia.

I.WHAT THIS WARRANTY COVERS AND FOR HOW LONG:

MOTOROLA INC. ("MOTOROLA") warrants the MOTOROLA products listed below in the product warranty schedule section of this warranty document ("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:

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.STATE LAW RIGHTS:

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY.

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:

To receive warranty service, deliver or send the Product item, transportation and insurance prepaid, to the place of purchase along with your proof of purchase or lease and Product item serial number. For other locations, alternatively call:

1-800-448-6686

MOTOROLA

, Motorola, Radius and Spirit are registered trademarks of Motorola, Inc.

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, liquid, 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) 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 type acceptance labeling in effect for the Product at the time the Product was initially distributed from Motorola.

j) Scratches or other cosmetic damage to Product surfaces that does not effect operation of the Product.

k) Normal and customary wear and tear.

VI.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 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 Unites 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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VII.PRODUCT WARRANTY SCHEDULE:

Spirit Radios:One (1) year **Spirit Accessories: One (1) year.**

Rechargeable Batteries will be replaced during the applicable warranty period if:

a) the battery capacity falls below 80% of rated battery capacity or,

b) the battery develops leakage.

Recycling of Nickel-Cadmium Batteries

Nickel-cadmium (Ni-Cad) rechargeable batteries can be recycled. However, recycling facilities may not be available in all areas. Under various U.S. state laws and the laws of several other countries, Ni-Cad batteries must be recycled or disposed of properly and cannot be disposed of in landfills or incinerators. Contact your local waste management agency for specific requirements.

Motorola fully endorses and encourages the recycling of Ni-Cad batteries. In the U.S. and Canada, Motorola participates in the nationwide Rechargeable Battery Recycling Corporation (RBRC) program for nickel-cadmium battery collection and recycling. Many retailers and dealers participate in the program. For the location of the drop-off facility closest to you, see RBRC's website at www.rbrc.com or call 1-800-8-BATTERY. This internet site and number also provides other useful information for consumers, businesses and governmental agencies concerning recycling options.

Patent Notice:

This product is covered by one or more of the Unites States Patents:

586472	5893027	D383745
5789098	5894292	D387758
5699006	5894592	D389827
5734975	5896277	D389139
5742484	D395882	D389158
5861850	D399821	

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What You Should Know Before Using

To use your Spirit M-Series radio with any other two-way radio, make sure they are programmed to the same frequency and interference eliminator code. *(See frequency and code tables in owner's manual.)*

What does interference eliminator do?

Interference eliminator codes block out unwanted channel chatter. Your Spirit M-Series radio is preset to code 1. You can change to another code or turn off interference eliminator with a push of a button. *(See programming steps in owner's manual)*

For optimal performance, please operate with a code between 1 and 20.

With Other Spirit Radios

Do my radios have interference eliminator?

Interference eliminator is built into **all Spirit M-Series radios** (series begins with "M") and **Spirit 4 & 5 watt radios** (series SU42 and SV52). You can change codes with a push of a button and turn of a knob on these radios.

Other Spirit models may use **DIP switches** to program interference eliminator codes. Lift the battery tray out and see if you have a bank of 8 DIP switches (see figure 1 on the back of this card).

What if my radios don't have interference eliminator?

If your other Spirit radios don't have the bank of 8 DIP switches pictured (see figure 1), you can upgrade your radio by purchasing an Interference Eliminator Kit (Part Number: HLN3039). You'll need this upgrade if you want to use the interference eliminator feature on all of your radios. Otherwise, you'll need to turn off the interference eliminator on your new M-Series radios. *(See programming steps in owner's manual)*

For More Information

See your place of purchase, owner's manual or
call Motorola at 1-800-448-6686

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Setting your new M-Series Radio to talk to other Radios

M-Series Radio to another M-Series Radio

(Series begins with "M")

•Set all radios to the same frequency(ies) and interference eliminator code. *(See frequency and code tables in your owner's manual)*

M-Series Radio to other Spirit 1-Watt and 2-Watt Radios

(Series begins with SV, SU, Spirit Pro, AV, CV, PC (not including SV52/SU42))

•Determine if your other Spirit radio (not M-Series) has interference eliminator by lifting the battery tray out and looking for a bank of 8 DIP switches. (Figure 1) If you have a bank of 8 DIP switches, the radio has interference eliminator (also known as coded squelch or PL).

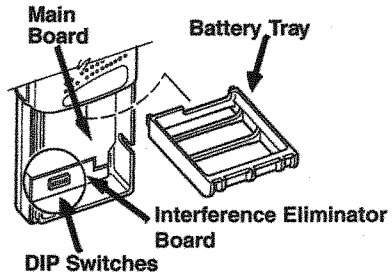

Figure 1 - Interference Eliminator DIP Switches

•**If you have interference eliminator,** set all radios to the same frequency(ies) and code. *(See frequency and code tables in owner's manual.)*

•**If you do not have interference eliminator,** set all radios to the same frequency(ies) and turn off interference eliminator on the M-Series. **Or,** you can upgrade your other Spirit radio(s) with an interference eliminator kit. (Part Number: HLN3039)

M-Series Radio to Spirit 4-Watt and 5-Watt Radios

(Series begins with "SU42 or SV52")

•Set all radios to the same frequency(ies) and interference eliminator code. (See frequency and code tables in owner's manual.)

M-Series Radio to Spirit I, II, III or Other Brand Radio

Please see your place of purchase or **call 1-800-448-6686.**

OTHER SPIRIT RADIO FREQUENCIES

1 AND 2 WATT MODELS

To program your M-Series radio to the same frequencies as other Spirit 1 and 2 watt radios, please use the tables below.

Freq. MHz	Color	Dip Switch Positions S1	S2	S3	S4
1 Channel UHF †					
464.5000	Brown	OFF	OFF	ON	ON
464.5500	Yellow	ON	ON	OFF	OFF
467.7625	J	ON	ON	ON	ON
467.8125	K	OFF	OFF	OFF	OFF
467.8500	Silver Star	ON	ON	ON	OFF
467.8750	Gold Star	OFF	OFF	OFF	ON
467.9000	Red Star	ON	OFF	OFF	OFF
467.9250	Blue Star	OFF	ON	ON	ON
1 Channel VHF ††					
151.6250	Red	ON	ON	OFF	OFF
151.9550	Purple	OFF	OFF	ON	ON
154.5700	Blue	OFF	OFF	OFF	OFF
154.6000	Green	ON	ON	ON	ON

CHANNEL 1 Freq. MHz	Color	CHANNEL 2 Freq. MHz	Color	Dip Switch Positions S1	S2	S3	S4
2 Channel UHF †							
464.5500	Yellow	464.5000	Brown	OFF	OFF	OFF	OFF
467.7625	J	464.5000	Brown	OFF	ON	OFF	OFF
464.5500	Yellow	467.8125	K	OFF	OFF	ON	OFF
467.7625	J	467.8125	K	OFF	ON	ON	OFF
467.8500	Silver	467.8125	K	OFF	OFF	OFF	ON
464.5500	Yellow	467.9250	Blue Star	OFF	ON	OFF	ON
467.7625	J	467.9250	Blue Star	OFF	OFF	ON	ON
467.8500	Silver	467.9250	Blue Star	OFF	ON	ON	ON
2 Channel VHF ††							
151.6250	Red	154.6000	Green	OFF	OFF	OFF	OFF
151.6250	Red	154.5700	Blue	OFF	ON	OFF	OFF
151.6250	Red	151.9550	Purple	OFF	OFF	ON	OFF
154.6000	Green	154.5700	Blue	OFF	ON	ON	OFF

†Series number begins with SU or states Spirit Pro +. ††Series number begins with SV, AV, PC, CS, CV or states Spirit 2-Way or Spirit Pro.

4 AND 5 WATT MODELS

To program your M-Series radio to the same frequencies as Spirit 4 and 5 watt radios, please use the tables below.

Channel	Frequency MHz	Color
Spirit UHF Model SU42		
1	464.5000	Brown
2	464.5500	Yellow

Channel	Frequency MHz	Color
Spirit VHF Model SV52		
1	151.6250	Red
2	151.9550	Purple

SPIRIT CODE TABLES

Spirit M-Series radios operate on these codes (see M-Series column). To program your M-Series radio to the same codes as other Spirit radios, please use the table below.

Code Freq.	M-Series Radios	Other Spirit Radios 1 & 2 Watt								4 & 5 Watt
		Dip Switch Positions								
Freq Hz	Code	Code	S1	S2	S3	S4	S5	S6	S7 S8	Code (PLXXX)
67.0	1	XZ	D	D	D	D	D	D	U U	001
71.9	2	XA	U	D	D	D	D	D	U U	002
74.4	3	WA	D	D	D	D	D	U	U U	N/A
77.0	4	XB	U	U	D	D	D	D	U U	003
79.7	5	WB	D	D	D	D	U	D	U U	N/A
82.5	6	YZ	U	D	D	D	D	U	U U	004
85.4	7	YA	D	D	D	D	U	U	U U	N/A
88.5	8	YB	U	U	D	D	D	U	U U	005
91.5	9	ZZ	D	D	D	U	D	D	U U	N/A
94.8	10	ZA	U	D	D	D	U	D	U U	006
97.4	11	ZB	D	D	D	U	D	U	U U	N/A
100.0	12	1Z	U	U	D	D	U	D	U U	N/A
103.5	13	1A	U	D	D	D	U	U	U U	007
107.2	14	1B	U	U	D	D	U	U	U U	008
110.9	15	2Z	U	D	D	U	D	D	U U	009
114.8	16	2A	U	U	D	U	D	D	U U	010
118.8	17	2B	U	D	D	U	D	U	U U	011
123.0	18	3Z	U	U	D	U	D	U	U U	012
127.3	19	3A	U	D	D	U	U	D	U U	013
131.8	20	3B	U	U	D	U	U	D	U U	014

Code Freq.	M-Series Radios	Other Spirit Radios 1 & 2 Watt								4 & 5 Watt
		Dip Switch Positions								
Freq Hz	Code	Code	S1	S2	S3	S4	S5	S6	S7 S8	Code (PLXXX)
136.5	21	4Z	U	D	D	U	U	U	U U	015
141.3	22	4A	U	U	D	U	U	U	U U	016
146.2	23	4B	U	D	U	D	D	D	U U	017
151.4	24	5Z	U	U	U	D	D	D	U U	018
156.7	25	5A	U	D	U	D	D	U	U U	019
162.2	26	5B	U	U	U	D	D	U	U U	020
167.9	27	6Z	U	D	U	D	U	D	U U	021
173.8	28	6A	U	U	U	D	U	D	U U	022
179.9	29	6B	U	D	U	D	U	U	U U	023
186.2	30	7Z	U	U	U	D	U	U	U U	024
192.8	31	7A	U	D	U	U	D	D	U U	025
203.5	32	M1	U	U	U	U	D	D	U U	026
210.7	33	M2	U	D	U	U	D	U	U U	027
218.1	34	M3	U	U	U	U	D	U	U U	028
225.7	35	M4	U	D	U	U	U	D	U U	029
233.6	36	M5	U	U	U	U	U	D	U U	030
241.8	37	M6	U	D	U	U	U	U	U U	031
250.3	38	M7	U	U	U	U	U	U	U U	032
None	OFF	----	X	X	X	X	X	X	X D	000

CODE TABLE KEY

D = Down
U = Up
X = Either Up or Down
N/A = Not Available
None = Interference Eliminator Code is off. This allows you to monitor all activity on the channel you are using.

SPIRIT M-Series

Quick Reference Guide

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TO CHANGE FREQUENCY AND CODE SETTINGS

1 Channel Models

1. Hold down Push-To-Talk button while turning radio on.
   Radio announces current frequency setting.
2. Press Push-To-Talk to scroll through frequencies. Fig. A
   Radio announces each frequency as you scroll.
3. Release Push-To-Talk when you reach desired frequency.
4. Press Monitor button to select and save new frequency setting. Fig. B
   Radio announces current code setting.
5. Press Push-To-Talk to scroll through codes.
   Radio announces each code as you scroll.
6. Release Push-To-Talk when you reach desired code.
7. Press Monitor button to select and save new code.
   Radio "beeps" to indicate it has completed programming and is ready for use.

IMPORTANT

To talk to others in your group all radios must be set to the same frequency and code.

2 and 4 Channel Models

1. Turn Channel Selector knob to channel 1. Fig. C
2. Hold down Push-To-Talk button while turning radio on.
   Radio announces current frequency setting for that channel.
3. Press Push-To-Talk to scroll through frequencies. Fig. A
   Radio announces each frequency as you scroll.
4. Release Push-To-Talk when you have reached desired frequency.
5. Turn Channel Selector knob to channel 2 and repeat steps 3 and 4 above.

   4 Channel Models: Repeat to set channels 3 and 4.

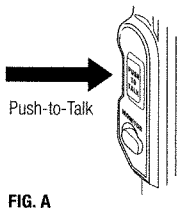

FIG. A

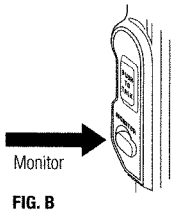

FIG. B

6. Press Monitor button to select and save new frequency setting. Fig. B
   Radio announces current code setting.
7. Press Push-To-Talk button to scroll through codes.
   Radio announces each code as you scroll.
8. Release Push-To-Talk when you reach desired code.
9. Press Monitor button to select and save new code.
   Radio "beeps" to indicate it has completed programming and is ready for use.

Channel Selector Knob

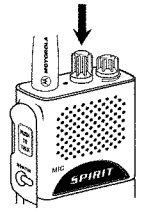

FIG. C 2 or 4 Channel Models

Notes:

- To use this radio with other Spirit models, please see tables on back of this card. VHF M-Series frequencies can not be selected by all versions of Spirit radios.
- Code numbers with two digits (10-38) will be announced "one zero...three eight".
- You can only scroll forward when selecting frequency or code.
- When you are changing frequency or code, you can not send messages.
- The Code setting applies to all channels. You can not select a different code for each channel.
- For Radios With Scan: The radio will sound a warning tone if you accidentally switch to the "s" position while programming.

For further details and safety information, please read your Owner's Manual.

If you encounter difficulties when setting the Frequency and Code, call Motorola Product Services at:

1-800-448-6686

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M-SERIES RADIO FREQUENCIES

Spirit M-Series radios operate on these frequencies. To program your M-Series radio to the same frequencies as your other Spirit radios, please use the compatibility tables on the back of this guide.

M-Series Model	Freq. No.	Freq. MHz	Freq. Color
UHF: Series number begins with MU			
New FCC licensees should not use frequencies 467.7625 MHz (J) and 467.8125 MHz (K). Call 1-888-CALL-FCC (1-888-225-5322) with questions.	1	464.5000	Brown
	2	464.5500	Yellow
	3	467.7625	J
	4	467.8125	K
	5	467.8500	Silver Star
	6	467.8750	Gold Star
	7	467.9000	Red Star
	8	467.9250	Blue Star
VHF: Series number begins with MV			
• 1-watt radios can be set to freq. 1-9	1	151.6250	Red
• 2-watt radios can be set to freq. 1-6	2	151.9550	Purple
	3	154.5700	Blue
	4	154.6000	Green
	5	151.7000	N/A
	6	151.7600	N/A
	7	151.8200	N/A
	8	151.8800	N/A
	9	151.9400	N/A

* 6 8 8 0 9 0 6 Z 2 9 - O *