



MOTOROLA

Level 1 and 2 Service Manual

6809497A98-O

V3c

Digital Wireless Telephone



V3c CDMA 1900 MHz, CDMA 800 MHz

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Introduction

Motorola® Inc. maintains a worldwide organization that is dedicated to provide responsive, full-service customer support. Motorola products are serviced by an international network of company-operated product-care centers as well as authorized independent service firms.

Available on a contract basis, Motorola Inc. offers comprehensive maintenance and installation programs that enable customers to meet requirements for reliable, continuous communications.

To learn more about the wide range of Motorola service programs, contact your local Motorola products representative or the nearest Customer Service Manager.

Product Identification

Motorola products are identified by the model number on the housing. Use the entire model number when inquiring about the product. Numbers are also assigned to chassis and kits. Use these numbers when requesting information or ordering replacement parts.

Product Names

Product names are subject to change without notice. Some product names, as well as some frequency bands, are available only in certain markets.

Regulatory Agency Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

- This device may not cause any harmful interference
- This device must accept interference received, including interference that may cause undesired operation

This class B device also complies with all requirements of the Canadian Interference-Causing Equipment Regulations (ICES-003).

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Computer Program Copyrights

The Motorola products described in this manual may include Motorola computer programs stored in semiconductor memories or other media that are copyrighted with all rights reserved worldwide to Motorola. Laws in the United States and other countries preserve for Motorola, Inc. certain exclusive rights to the copyrighted computer programs, including the exclusive right to copy, reproduce, modify, decompile, disassemble, and reverse-engineer the Motorola computer programs in any manner or form without Motorola's prior written consent. Furthermore, the purchase of Motorola products shall not be deemed to grant either directly or by implication, estoppel, or otherwise, any license or rights under the copyrights, patents, or patent applications of Motorola, except for a nonexclusive license to use the Motorola product and the Motorola computer programs with the Motorola product.

About this Service Manual

Using this service manual and the suggestions contained in it assures proper installation, operation, and maintenance. Refer questions about this manual to the nearest Customer Service Manager.

Audience

This service manual aids service personnel in testing and repairing V3c telephones. Service personnel should be familiar with electronic assembly, testing, and troubleshooting methods, and with the operation and use of associated test equipment.

Use of this manual assures proper installation, operation, and maintenance of Motorola products and equipment. It contains all service information required for the equipment described and is current as of the printing date.

Scope

This manual provides basic information relating to V3c Series telephones, and also to provides procedures and processes for repairing the units at Level 1 and 2 service centers including:

- Unit swap out
- Repairing of mechanical faults
- Basic modular troubleshooting
- Testing and verification of unit functionality
- Initiate warranty claims and send faulty modules to Level 3 or 4 repair centers

Conventions

The following special characters and typefaces are used in this manual to emphasize certain types of information.



Note: Emphasizes additional information pertinent to the subject matter.




Caution: Emphasizes information about actions that may result in equipment damage.



Warning: Emphasizes information about actions that may result in personal injury.



Keys to be pressed are represented graphically. For example, instead of “Press the Menu Key”, you will see “Press ”.

Information from a screen is shown in text as similar as possible to what displays on the screen. For example, `ALERTS` or `ALERTS` or `ALERTS`.

Information that you need to type is printed in **boldface type**.

Warranty Service Policy

The product is sold with the standard 12-month warranty terms and conditions. Accidental damage, misuse, and extended warranties offered by retailers are not supported under warranty. Non warranty repairs are available at agreed fixed repair prices.

Out-of-Box Failure Policy

The standard out of box failure criteria applies. Customer units that fail very early on after the date of sale, are to be returned to Manufacturing for root cause analysis, to guard against epidemic criteria. Manufacturing will bear the costs of early life failure.

Product Support

Customer's original units will be repaired but not refurbished as standard. Appointed Motorola Service Hubs will perform warranty and non-warranty field service for level 2 (assemblies) and level 3 (limited PCB component). The Motorola High Technology Centers will perform level 4 (full component) repairs.

Customer Support

Customer support is available through dedicated Call Centers and in-country help desks. Product Service training is available through the local Motorola Support Center.

Parts Replacement

When ordering replacement parts or equipment, include the Motorola part number and description used in the service manual or supplement.

When the Motorola part number of a component is not known, use the product model number or other related major assembly along with a description of the related major assembly and of the component in question.

In the U.S.A., to contact Motorola, Inc. on your TTY, call: 800-793-7834

Accessories and Aftermarket Division (AAD)

Order replacement parts, test equipment, and manuals from AAD.

U.S.A.

Phone: 800-814-0601

FAX: 800-622-6210

Website: <http://businessonline.motorola.com>

Outside U.S.A.

Phone: 847-538-8023

FAX: 847-576-3023

EMEA

Phone: +49 461 803 1404

Website: <http://emeaonline.motorola.com>

Asia

Phone: +65 648 62995

Website: <http://asiaonline.motorola.com>

Specifications

General Function	Specification
Frequency Range 1900 MHz PCS	1931.250 -1988.750 MHz Rx 1851.250 -1908.750 MHz Tx
Frequency Range 800 MHz CDMA	869.70 - 893.31 Rx (CDMA) 824.70 - 848.31 Tx (CDMA)
Channel Spacing	50 kHz PCS 30 kHz CDMA
Channels	1150 PCS 788 CDMA 800
Modulation	1M25F9W (1.25 MHz bandwidth) CDMA 3G1XRTT (1.25 MHz bandwidth) CDMA-1X
Duplex Spacing	80 MHz PCS 45 MHz CDMA 800
Frequency Stability	± 150 Hz (CDMA)
Power Supply	3.6V Li Ion 740 mAh battery
Average Transmit Current	310 mA at +13dBm)
Average Stand-by Current (slot cycle 1)	4.18 mA
Dimensions (with 740 mAh Li ion battery)	53mm x 98mm x 14.5mm
Size (Volume)	67 cc
Weight	≤115g (3.88 oz) with battery
Operating Temperature Range	-30° C to +60° C (-22° F to +140° F)
Humidity	80% Relative Humidity at 50° C (122° F)
Battery Life, 740 mAh Li Ion Battery	Digital Talk Time: 180 Minutes for 740mAh and (IS95/IS2000 Cell/PCS, CDG Suburban Profile with 40% VAF ~ + 110.6dBm) Digital Standby Time: 195 Hours (IS95/IS2000 Cell/PCS Slot Cycle 1)
	All talk and standby times are approximate and depend on network configuration, signal strength, and features selected.

Transmitter Function	Specification
RF Power Output	0.30 watts +25 dBm into 50 ohms (CDMA/PCS nominal)
Spurious Emissions	- 18.5 dBm (max) from 0.03 to 19 GHz
Input/Output Impedance	50 ohms (nominal)
Transmit Audio Response	6 dBm/octave pre-emphasis
Modulation	1M25F9W (1.25 MHz bandwidth) CDMA 40K0F8W, 40K0F1D AMPS
CDMA Transmit Waveform Quality (Rho)	0.94

Receiver Function	Specification
Receive Sensitivity	-116 dBm -104 dBm (CDMA/PCS, 0.5% Static FER) 0.5% or less
Audio Distortion	Less than 5% at 1004 Hz, +/- 8 kHz peak frequency deviation (transmit and receive)

Product Overview

Motorola V3c mobile telephones feature Code Division Multiple Access (CDMA) technology. The mobile telephone uses a simplified icon and Graphical user interface (GUI) for easier operation, allow Short Message Service (SMS) text messaging, and include clock, alarm, datebook, calculator, and caller profiling personal management tools. The V3c telephones include a built in camera. The phone provides 32 Embedded ring tones including VibraCall vibrating alert and 32 Downloadable/Customizable iMelody ring tones. The V3c telephones are dual band that allows roaming within the CDMA 800 MHz and PCS 1900 MHz bands.

The V3c CDMA phones consist of a main housing assembly and a flip assembly. The main circuit board, battery, headset jack, and accessory connector are located in the main housing assembly. The camera on the V3c phones is located in the hinged flip assembly.

The flip assembly contains the entire hinge mechanism. It is attached to the main housing by four screws. The main display is on the inside of the flip assembly and a one line LED display on the outside of the flip assembly. The main display on the V3c phones is a 176 x 220 pixel 65k TFT LCD . The external CLI display is a 96 x 80 pixel 65K CSTN LCD. The camera module is a 1.3 mega-pixel, VGA CMOS camera.

The main housing assembly includes a battery cover, chassis, main circuit board, keypad plastic front housing, and internal antenna.

The main circuit board contains the Receiver, Transmitter, Synthesizer and Control Logic Circuitry which together comprise the dual band tri-mode phone electronics.

The telephones are made of polycarbonate plastic. The display and speaker, as well as the 18-key keypad, transceiver printed-circuit board (PCB), microphone, charger and headphone connectors, and power button are contained within the flip form-factor housing. The 740 mAh Lithium Ion (Li Ion) battery provides up to 180 minutes of talk time in CDMA mode with up to 195 hours of standby time¹.

Features

V3c telephones use advanced, self-contained, sealed, custom integrated circuits to perform the complex functions required for CDMA communication. Aside from the space and weight advantage, microcircuits enhance basic reliability, simplify maintenance, and provide a wide variety of operational functions.

Features available in this family of telephones include:

- Built in VGA Camera (1.3 Mega-pixel)
- Video capture and playback
- 65K Thin Film Transistor (TFT) Active Color Display
- External color CLI Display
- Enhanced VST - Speaker independent calling
- Speaker Phone
- Stereo Headset support
- Class 2 Bluetooth™
- 40MB User Memory

1. All talk and standby times are approximate and depend on network configuration, signal strength, and features selected.

Wireless Access Protocol (WAP) 1.1 Compliance

In the WAP environment, access to the Internet is initiated in wireless markup language (WML), which is derived from hypertext markup language (HTML). The request is passed to a WAP gateway which retrieves the information from the server in standard HTML (subsequently filtered to WML) or directly in WML if available. The information is then passed to the mobile subscriber via the mobile network.

The V3c microbrowser can be configured for baud, idle timeout, line type, phone number, and connection type.



Bitmap image data will download as text. If the image is larger than the screen, only part of the image will display.



When the user receives a call while in browser mode, the browser will pause and allow the user to resume after completing the call.

Simplified Text Entry

There are three different ways to enter text using the phone keypad:

- iTAP™ predictive text entry. Press a key to generate a character and a dynamic dictionary uses this to build and display a set of word or name options. The iTAP™ feature may not be available on the phone in all languages.
- Tap. Press a key to generate a character.
- Numeric. The keypad produces numeric characters only. For some text areas this is the only method available; for example, phone numbers.

Caller Line Identification

Upon receipt of a call, the calling party's phone number is compared to the phone book. If the number matches a phone book entry, that name will be displayed. If there is no phone book entry, the incoming phone number will be displayed. In the event that no caller identification information is available, the Incoming Call message is displayed.



User must subscribe to a caller line identification service through their service provider.

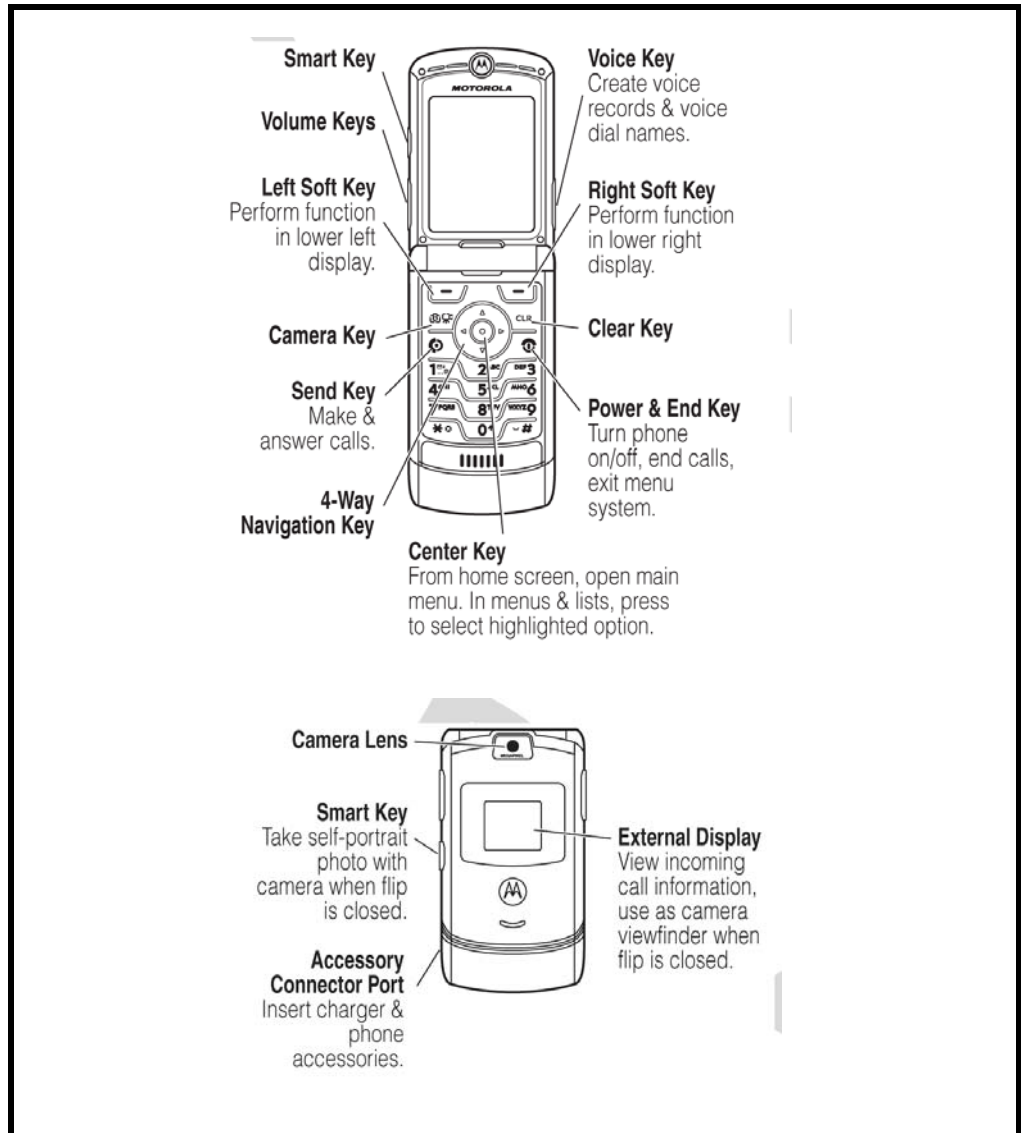
Other Features

Detailed descriptions of these and other V3c features can be found in the appropriate user's guide listed in the "Related Publications" section toward the end of this manual.

General Operation

Controls, Indicators, and Input / Output (I/O) Connections

The V3c series telephone's controls are located on the sides of the flip and on the keypad. Indicators, in the form of icons, are displayed on the LCD (see Figure 2). V3c phones have an audible alert transducer at the bottom and I/O connectors, consisting of a charger/accessory port, located on the side of the phone. See Figure 1.



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Figure 1. Controls, indicators, and I/O

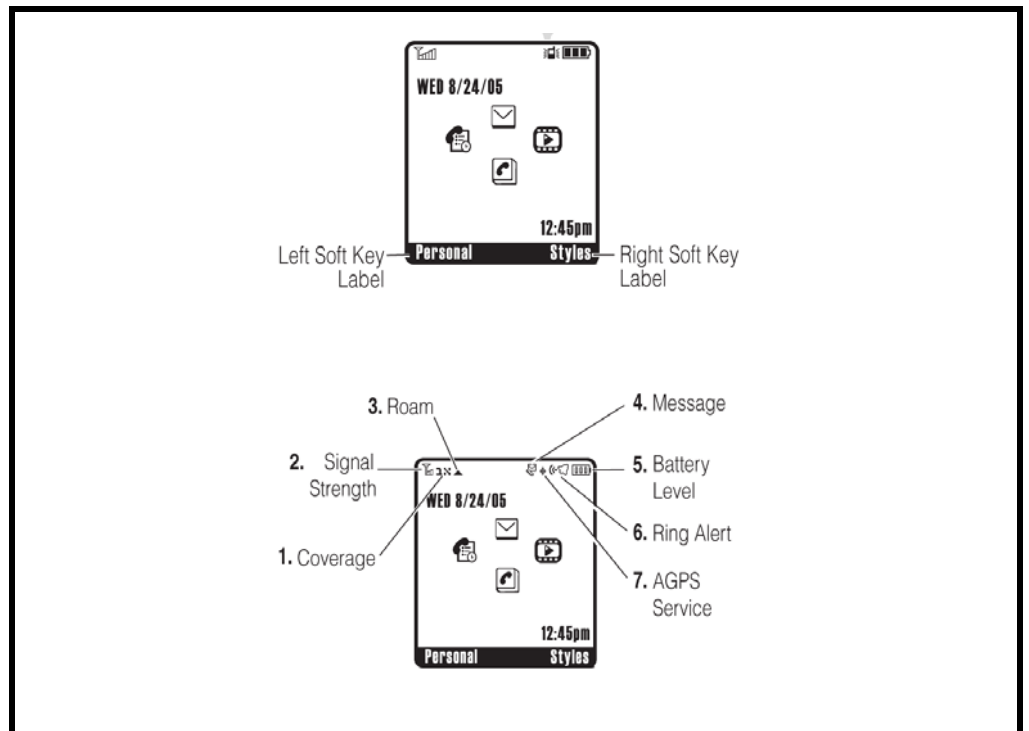
“Soft keys” refer to non-labeled keys that correspond to text options displayed on the screen. The left and right soft keys perform the function shown in the corners

of the display. The right key will usually select an option whereas the left key will usually exit a function or return to a previous screen.

Color Display

The V3c wireless phones feature a 65k color Thin Film Transistor (TFT) 176 x 220 pixel display.

Display animation makes the phone's menus move smoothly as the user scrolls up and down. Turn animation off to conserve the battery.



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Figure 2. Icon Indicators



Whether a phone displays all indicators depends on the programming and services to which the user subscribes.

Figure 2 shows some common icons displayed on the LCD.

- **In Use Indicator.** Appears when a call is in progress.
- **Signal Strength Indicator.** Shows the strength of the phone's connection with the network. Calls cannot be sent or received when the "no signal" indicator is displayed.
- **Roam Indicator.** Appears when the phone uses another network system outside the user's home network. When leaving the home network area, the phone roams, or seeks another network.
- **Message Waiting Indicator.** Appears when the phone receives a text message. This is a network-dependent feature.
- **Battery Level Indicator.** Shows the amount of charge left in the battery. The more segments visible, the greater the charge. Recharge the battery as soon as

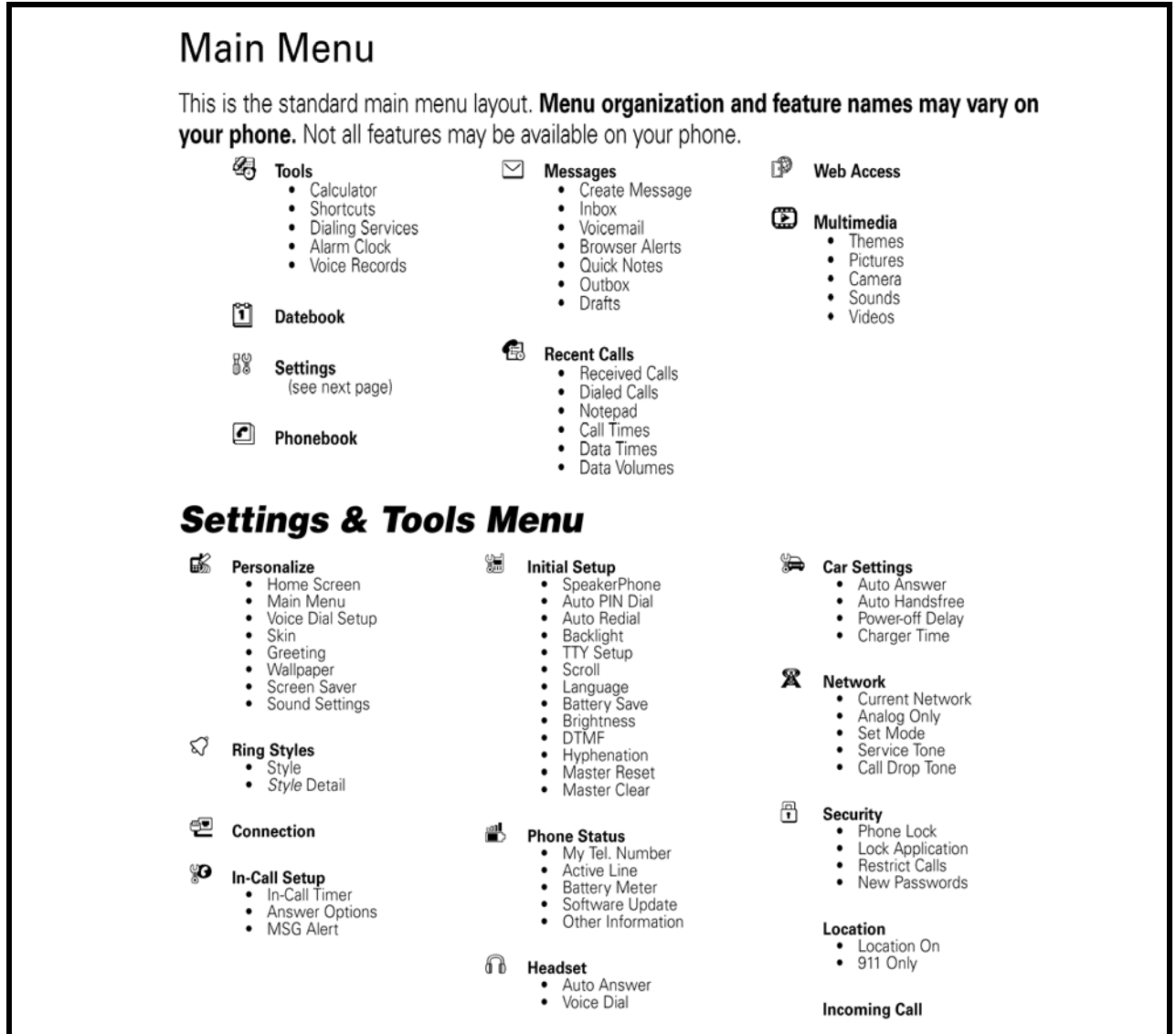
possible when the Low Battery warning message appears.

- **Voice Message Waiting Indicator.**² Appears when a voicemail message is received. This is a network-dependent feature.
- menu.
- **Alert Setting Indicator.** Shows the current selected alert. The default alert setting is a ringer.
- **GPS Indicator.**

2. Network, subscription service provider dependent feature. Not available in all areas.

User Interface Menu Structure

Figure 3 shows the telephone menu structure.



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Figure 3. Menu Structure

Alert Settings

V3c telephones include up to 32 preset alert tones and vibrations that can be applied to all alert events at the same time.



Pressing either volume key will mute the alert.

Battery Function

Battery Gauge

The telephone displays a battery level indicator icon in the idle screen to indicate the battery charge level. The gauge shows four levels: 100%, 66%, 33%, and Low Battery.

Battery Removal

Removing the battery causes the device to immediately shut down and any pending work (for example, partially entered phone book entries or outgoing messages) is lost.



To ensure proper memory retention, turn OFF the phone before removing the battery. Immediately replace the old battery with a fresh battery.



If the battery is removed while receiving a message, the message will be lost.

Operation

For detailed operating instructions, refer to the appropriate User's Guide listed in the Related Publications section toward the end of this manual.

Tools and Test Equipment

The following table lists tools and test equipment recommended for disassembly and reassembly of V3c telephones. Use either the listed items or equivalents.

Table 1. General Test Equipment and Tools

Motorola Part Number ¹	Description	Application
RSX4043-A	Torque Driver	Used to remove and replace screws
--	T-5 Torx bit	Used with torque driver
—	Torque Driver Bit T-6 Plus, Apex 440-6IP Torx Plus or equivalent	Used with torque driver
See Table 7	Rapid Charger	Used to charge battery and to power device
0180386A82	Antistatic Mat Kit (includes 66-80387A95 antistatic mat, 66-80334B36 ground cord, and 42-80385A59 wrist band)	Provides protection from damage to device caused by electrostatic discharge (ESD)
0-00-00-30005	Disassembly tool, plastic with flat and pointed ends (manual opening tool) from AMS	Used during assembly/disassembly of device
	Tweezers, plastic	Used during assembly/disassembly
—	Digital Multimeter, HP34401A ²	Used to measure battery voltage

1. To order in North America, contact Motorola Aftermarket and Accessories Division (AAD) at (800) 814-0601 or FAX (800) 622-6210; Internationally, AAD can be reached by calling (847) 538-8023 or faxing (847) 576-3023.

2. Not available from Motorola. To order, contact Hewlett Packard at (800) 452-4844.

AMS Software & Elektronik GmbH
 c/o Holger Grube
 Lise-Meitner-Straße 9
 D-24914 Flensburg Tel.: +49-461-90398-0
 Fax: +49-461-90398-50

Disassembly

The procedures in this section provide instructions for the disassembly of V3c telephones. Tools and equipment used for the phone are listed in Table 1, preceding.



Many of the integrated devices used in this equipment are vulnerable to damage from electrostatic discharge (ESD). Ensure adequate static protection is in place when handling, shipping, and servicing the internal components of this equipment.



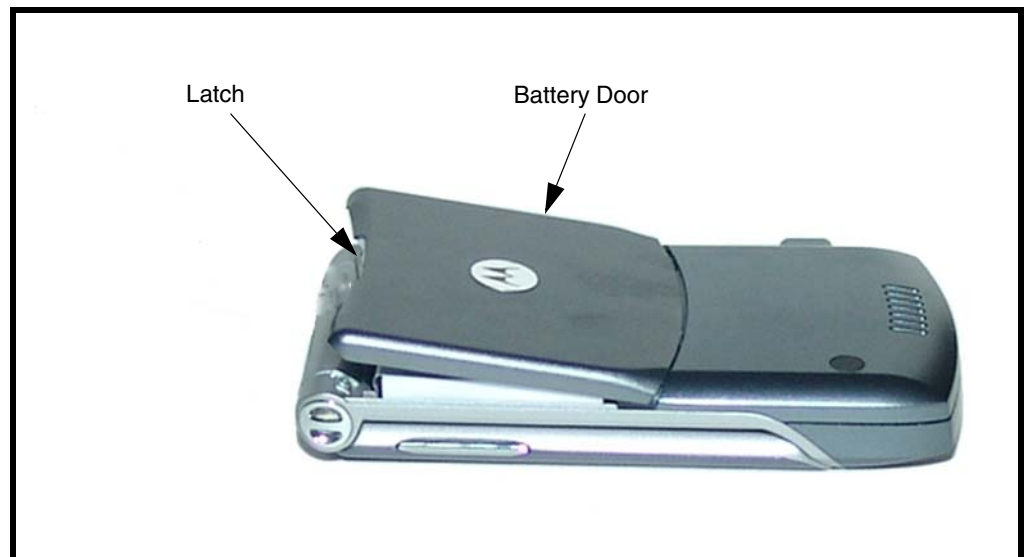
Avoid stressing the plastic in any way to avoid damage to either the plastic or internal components.

Removing and Replacing the Battery Cover and Battery



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.

1. Ensure the phone is turned off.
2. Press in and hold the battery door latch as shown in Figure 1.

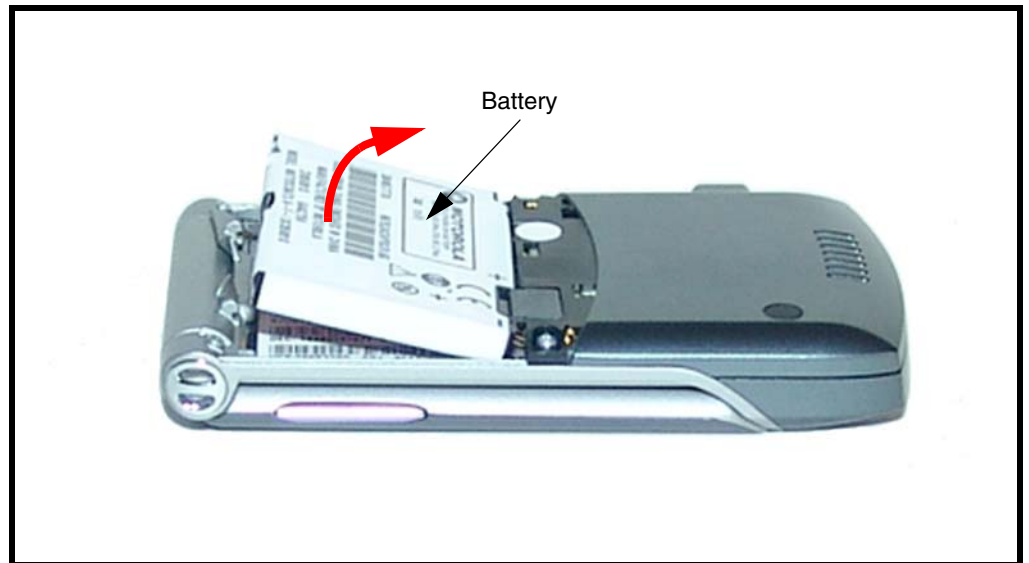


051341o

Figure 1. Removing the Battery Cover

3. Rotate the battery cover upward and lift it completely off the phone.

4. Lift the end of the battery first, then remove it from the phone. See Figure 2.



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Figure 2. Removing the battery



There is a danger of explosion if the Lithium Ion battery is replaced incorrectly. Replace only with the same type of battery or equivalent as recommended by the battery manufacturer. Dispose of used batteries according to the manufacturer's instructions.

5. To replace, Align the battery with the battery compartment so the contacts on the battery match the battery contacts in the phone.
6. Insert the battery, contacts side first, into the battery compartment and push down followed by the opposite edge of the battery.
7. Insert the bottom edge of the of the battery cover into the rear housing, then push the top edge of the cover down and snap it into place.

Removing and Replacing the Rear Housing



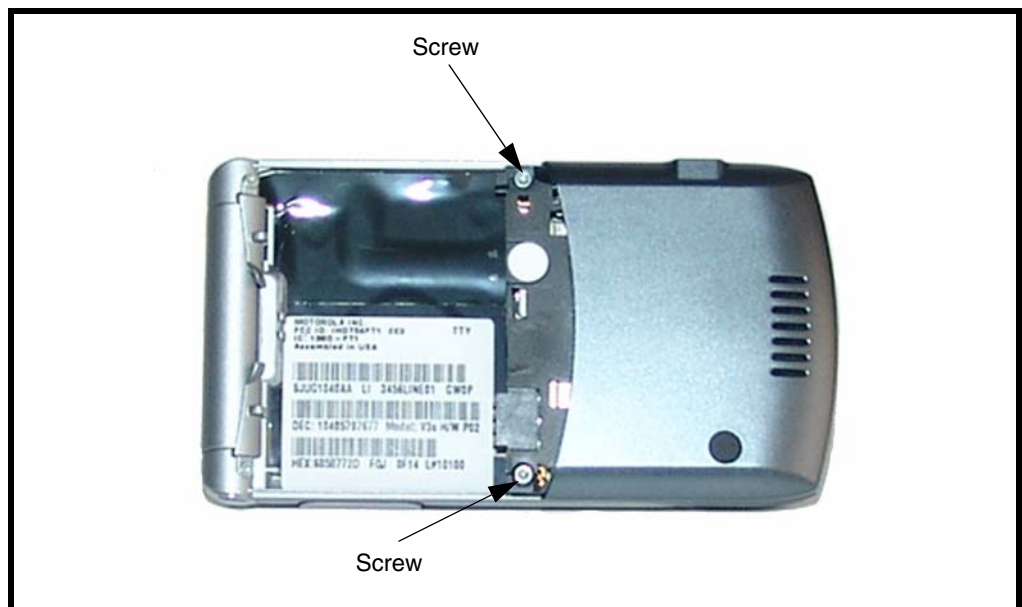
This product contains static-sensitive devices. Use anti-static handling procedures to prevent electrostatic discharge (ESD) and component damage.

1. Remove the battery cover, and battery as described in the procedures.



In addition to 2 screws, the rear housing assembly is fastened with plastic latches. These are fragile and should be released with care.

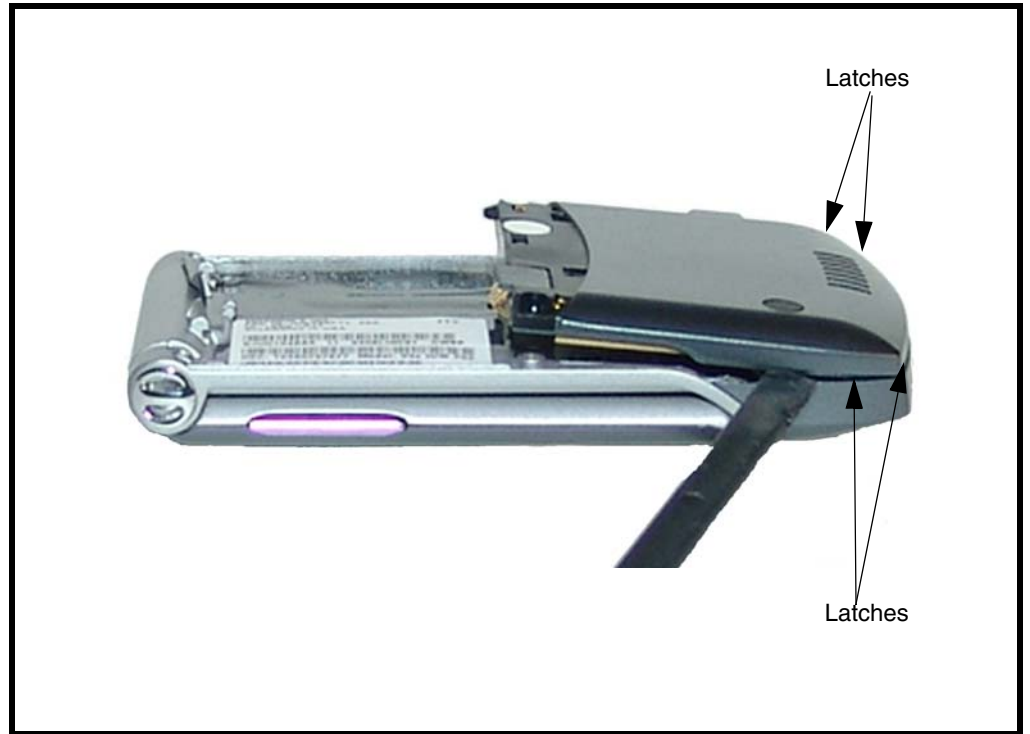
2. Using a Torx driver with a T-6 bit, remove the screws at each side of the phone. Retain the screws for reassembly. See Figure 3.



051343o

Figure 3. Removing the rear housing screws

3. Release the 4 housing latches by inserting the pointed end of the plastic disassembly tool into the openings on the rear housing.



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Figure 4. Removing the Rear Housing Latches

- Carefully rotate the rear housing away from the front housing and flip assembly.



Figure 5. Removing the Rear Housing Assembly

051345o



The flexible printed cable (FPC) (flex) is easily damaged. Exercise extreme care when handling.

- Use the disassembly tool to unseat the flex connector from its socket.
- Lift the rear housing assembly away from the phone.
- To replace, carefully align the flex connector to its socket on the rear housing assembly, then gently press down on the flex connector until it is properly seated in its socket.
- Rotate the rear housing assembly so it sits over the phone.
- Align the housing latches with the corresponding openings on the front housing. Gently press the housings together until the catches snap into place.
- Replace the 2 housing screws and tighten to a final torque setting of 16 Ncm (1.5 inch pounds). Do not over tighten.
- Replace the antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Antenna

1. Remove the battery cover, battery, and rear housing assembly as described in the procedures.
2. Use the metal tweezers to grasp the rubber antenna grommets and carefully remove them from the antenna assembly. See Figure 6. Set the rubber grommets aside for reuse.

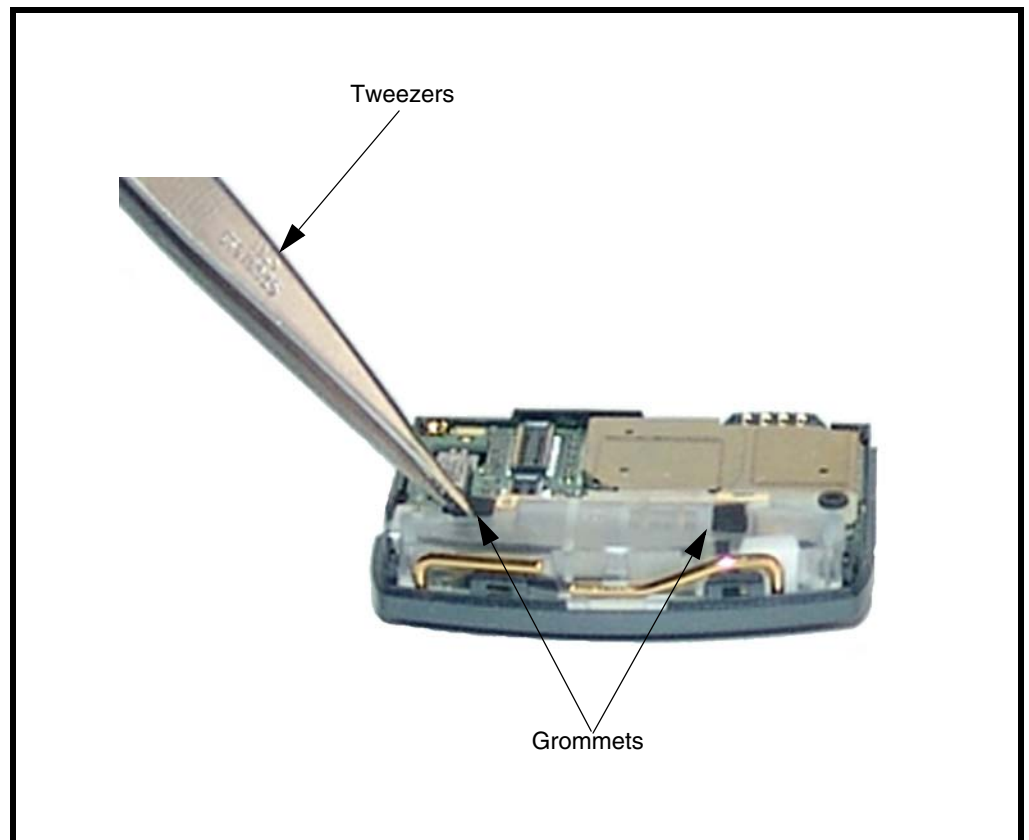
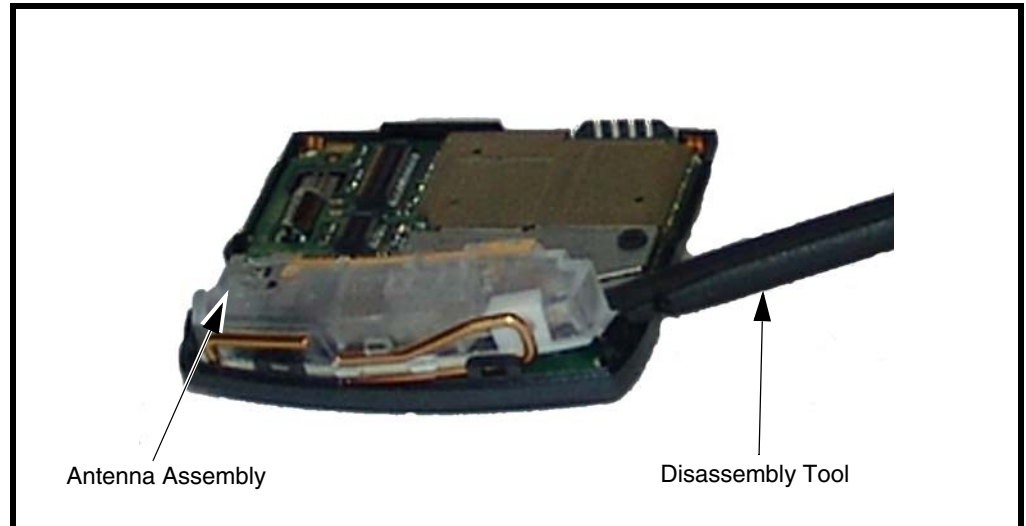


Figure 6. Removing the Antenna Grommets

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3. Use the disassembly tool to release the antenna assembly starting from the right side as shown in Figure 7.



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Figure 7. Removing the Antenna Assembly

4. Carefully lift the antenna assembly away from the phone.
5. To replace, align the antenna assembly to the phone.
6. Carefully press the antenna assembly into position starting from the left side until the antenna assembly latches snap into position.
7. Reinstall the rubber antenna assembly grommets into their slots. Each antenna grommet is uniquely shaped to fit into its respective position.
8. Replace the rear housing assembly, battery and battery cover as described in the procedures.

Removing and Replacing the Transceiver Board Assembly



This product contains static-sensitive devices. Use anti-static handling procedures to prevent electrostatic discharge (ESD) and component damage.

1. Remove the battery cover, battery, antenna, rear housing and battery tray as described in the procedures.
2. Lift the transceiver board assembly out of the front housing with the disassembly tool. See Figure 8.

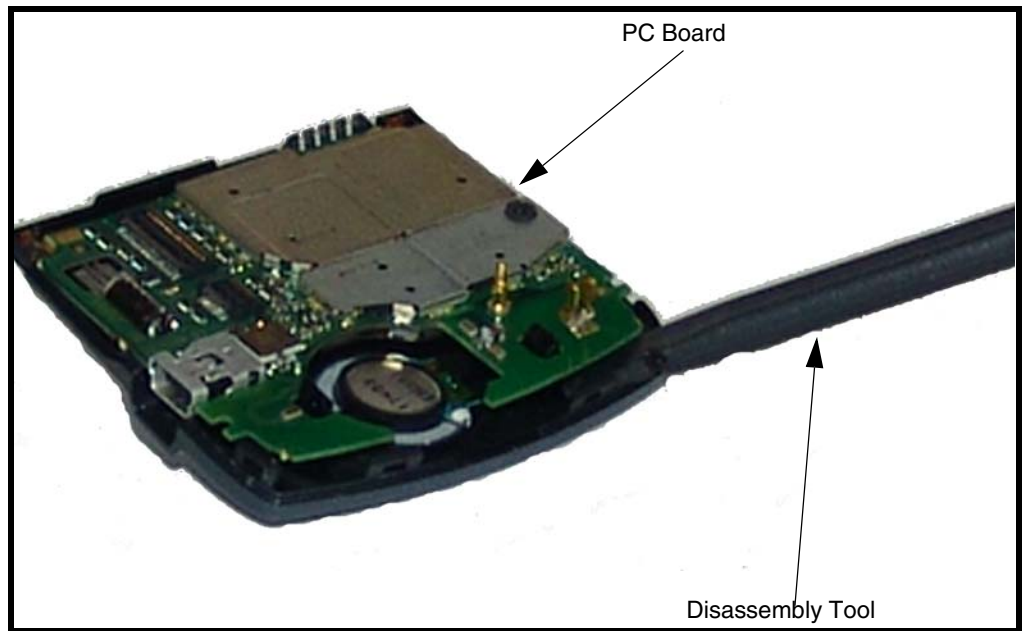
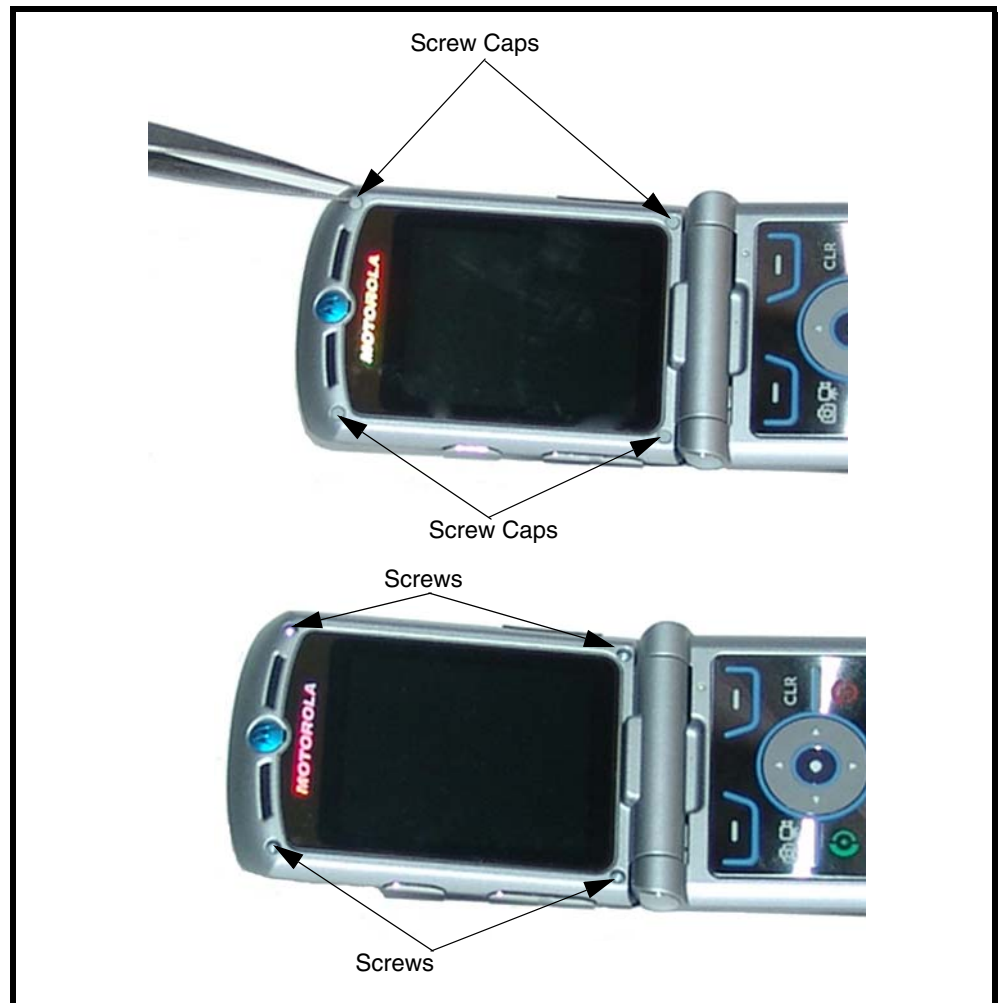


Figure 8. Removing the Transceiver PC board Assembly

3. To replace, insert the transceiver board assembly into the rear housing.
4. Carefully and gently press the transceiver board into position and until it snaps into place.
5. Replace the antenna assembly, rear housing, battery, and battery cover as described in the procedures.

Removing and Replacing the Flip Assembly Cover and CLI Lens

1. Remove the battery cover, battery, antenna, rear housing, and transceiver board assembly as described in the procedures.
2. Remove the 4 flip assembly screw caps.
3. Use the T-5 driver to remove the 4 screws from the flip assembly (see Figure 9). Retain the screws for re-assembly.

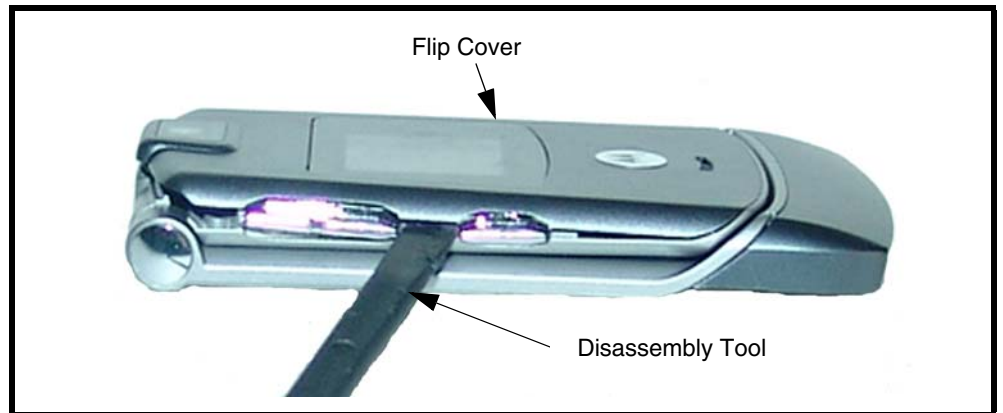


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Figure 9. Removing the Flip Assembly Screws

4. Before removing the flip cover, note the locations of the smart buttons on the sides of the flip assembly.
5. Use the disassembly tool to gently pry off the flip cover (see Figure 10).

6.



051351o

Figure 10. Separating the Flip Assembly Cover

7. Remove the smart buttons on the side of the flip assembly. Set them aside for reassembly.
8. Lift the flip cover away from the flip assembly. Be careful not to damage the display flex cable.
9. Use the disassembly tool to gently pry off the CLI Lens (see Figure 11).

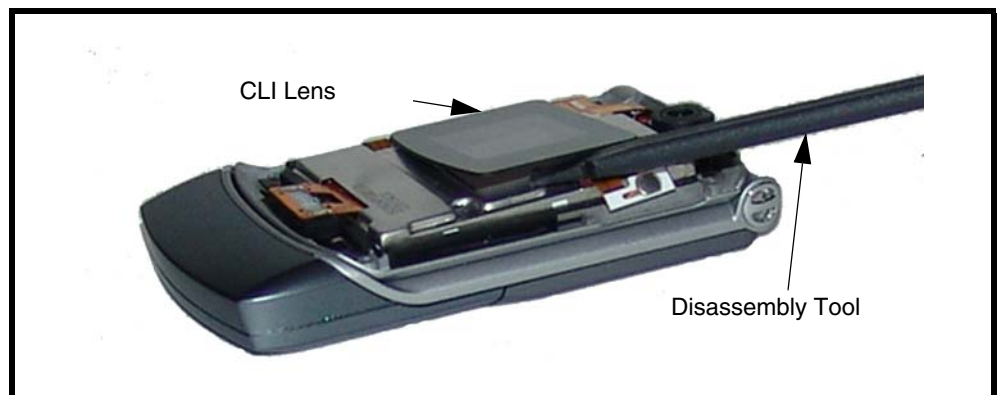


Figure 11. Separating the CLI Lens from the PCB

10. To replace, align the CLI Lens and press it into place and insert the smart buttons into the phone. Ensure the buttons contact their respective switches on the display assembly.
11. Align the flip cover to the flip assembly, gently press the flip cover onto the flip assembly until the flip cover latches engage.
12. Insert and tighten the 4 screws to 1.5 in lbs to secure the flip cover to the flip assembly. Avoid damage to the flex cable.
13. Insert the 4 rubber screw caps over the flip assembly screws.
14. Replace the transceiver board assembly, rear housing, antenna assembly, battery, and battery cover as described in the procedures.

Removing and Replacing the Camera Assembly

1. Remove the battery cover, battery, antenna, rear housing, and transceiver board assembly, flip assembly cover, and CLI lens cover as described in the procedures.



The flexible printed cable (FPC) (flex) is easily damaged. Exercise extreme care when handling.

2. Unlock the ZIF connector and remove the camera assembly flex connector.
3. Carefully lift the camera assembly and flex out of the flip assembly (see Figure 12).

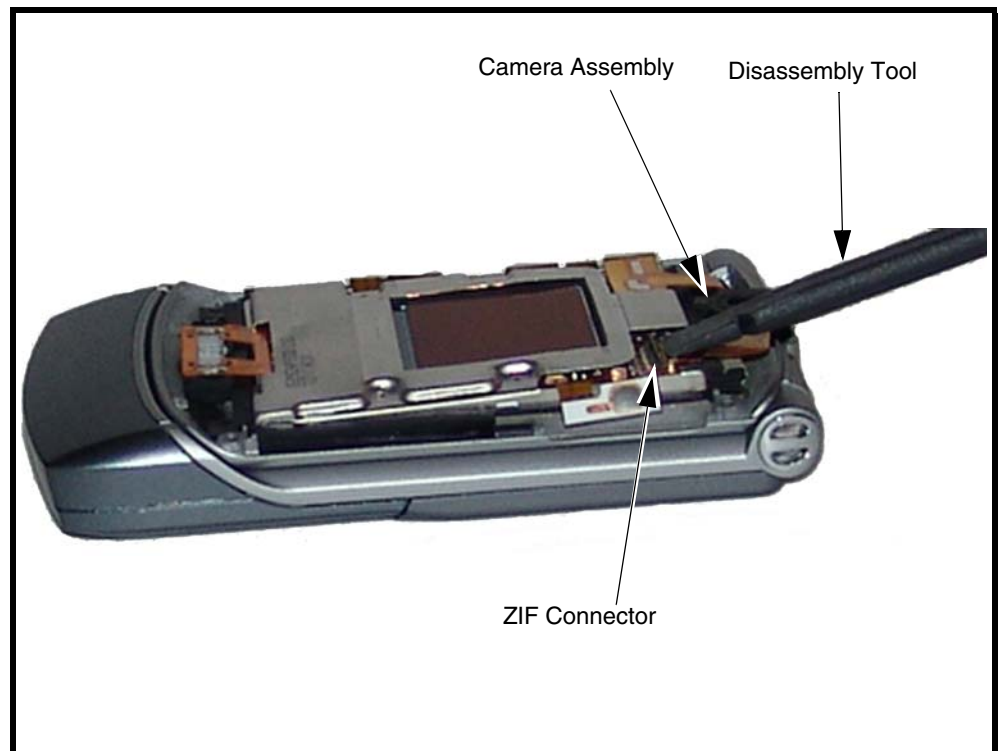


Figure 12. Camera Assembly Removal

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4. To replace, carefully press the camera assembly into its slot in the flip assembly.
5. Insert the end of the camera assembly flex cable into its slot in the ZIF connector on the flip display assembly. Avoid damage to the flex cable.
6. Replace the flip assembly cover, transceiver board, rear housing, antenna, battery, and battery cover as described in the procedures.

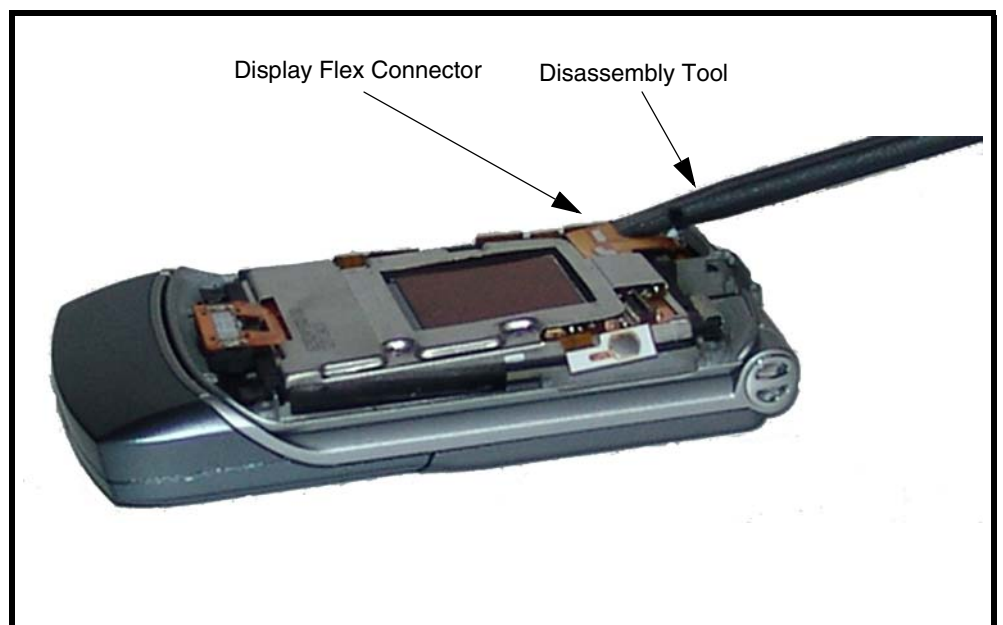
Removing and Replacing the Display Module Assembly

1. Remove the battery cover, battery, rear housing, antenna, transceiver board assembly, flip assembly cover, and camera assembly, as described in the procedures.



The flexible printed cable (FPC) (flex) is easily damaged. Exercise extreme care when handling.

2. Use the disassembly tool to unseat the display module assembly flex connector from its socket (see Figure 13)



051353o

Figure 13. Display Module Assembly Flex Connector

3. Carefully and gently lift one corner of the display module assembly out of the flip assembly.
4. Avoid damage to the electrical components on the flex while carefully removing the display module assembly from the flip assembly.

5. Carefully lift the display assembly away from the flip assembly.

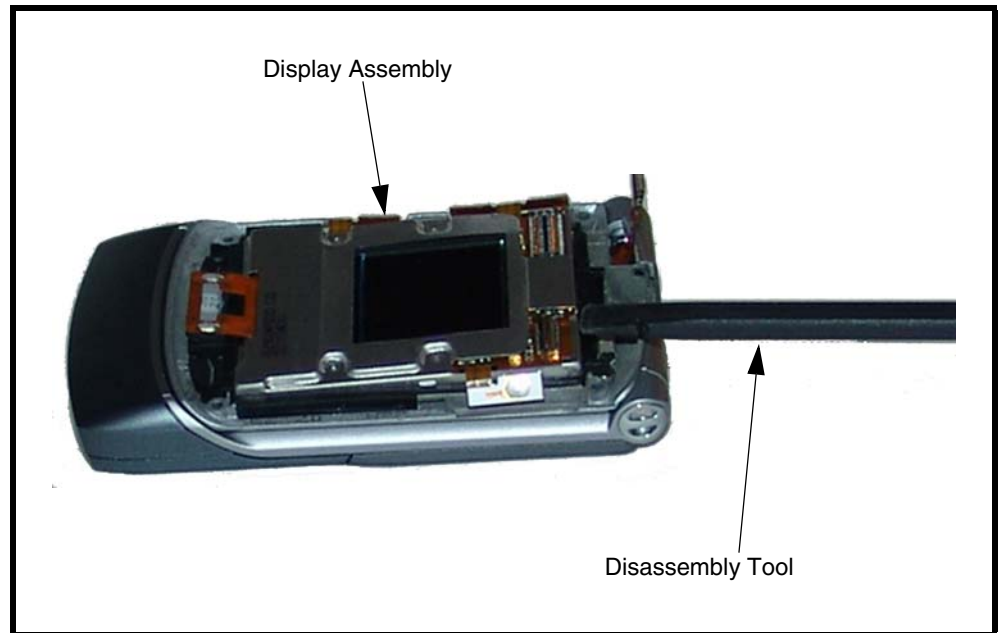


Figure 14. Removing the Display Module Assembly

6. To replace, align the display module assembly to the flip assembly.
7. Carefully lower the display module into the flip assembly. Ensure that all of the display none of the display assembly components are damaged.
8. align the flip display flex to the flex connector on the flip display assembly and gently press down on the flex connector until properly seated.
9. Replace the camera assembly, flip assembly cover, transceiver board, rear housing, antenna, battery, and battery connector as described in the procedures.

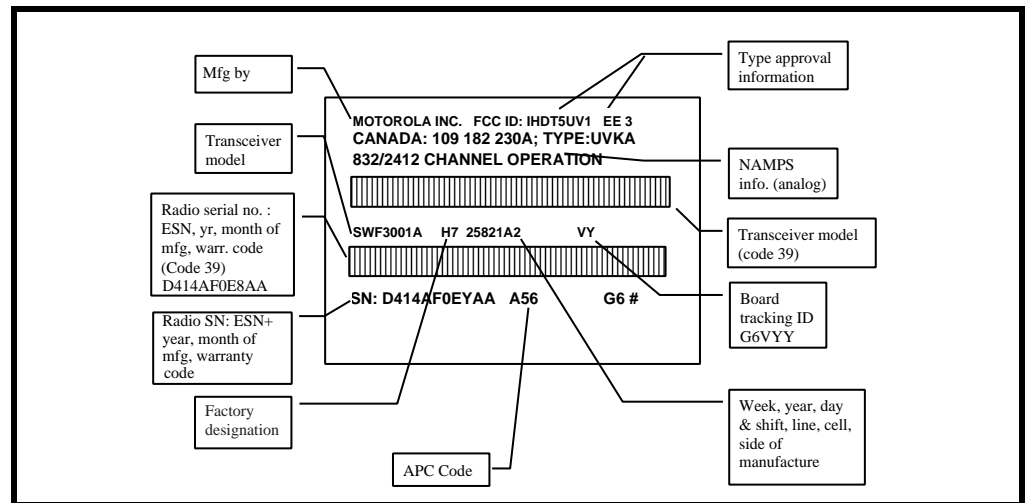
Phone Identification

Personality Transfer

A personality transfer is required when a phone is express exchanged or when the main board is replaced. Personality transfers reproduce the customer's original personalized details such as menu and stored memory such as phone books, or even just program a unit with basic user information such as language selection.

Identification

Each Motorola CDMA phone is labeled with a variety of identifying numbers. Figure 15 describes the current identifying labels.



020463o

Figure 15. CDMA Telephone Identification Label

Troubleshooting Chart

Table 2. Level 1 and 2 Troubleshooting Chart

SYMPTOM	PROBABLE CAUSE	VERIFICATION AND REMEDY
1. Telephone will not turn on or stay on.	a) Battery either discharged or defective.	Measure battery voltage across a 50 ohm (>1 Watt) load. If the battery voltage is <3.25 Vdc, recharge the battery using the appropriate battery charger. If the battery will not recharge, replace the battery. If battery is not at fault, proceed to b.
	b) Battery connectors open or misaligned.	Visually inspect the battery connectors on both the battery and the telephone. Realign and, if necessary, either replace the battery or refer to a Level 3 Service Center for the battery connector replacement. If battery connectors are not at fault, proceed to c.
	c) Transceiver board assembly defective.	Remove the transceiver board assembly. Substitute a known good assembly and temporarily reassemble the unit. Press and hold the PWR button; if unit turns on and stays on, disconnect the dc power source and reassemble the telephone with the new transceiver board assembly. Verify that the fault has been cleared.
2. Telephone exhibits poor reception or erratic operation such as calls frequently dropping or weak or distorted audio.	a) Antenna assembly defective.	Check to make sure that the antenna pin is properly connected to the transceiver board assembly. If connected properly, substitute a known good antenna. If the fault is still present, proceed to b.
	b) Transceiver board assembly defective.	Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board assembly.
3. Display is erratic, or provides partial or no display.	a) Transceiver board connections faulty.	Remove rear chassis assembly from unit, check general condition of flexible printed cable (flex). If the flex is good, check that the flex connector is fully pressed down. If not, check connector to transceiver board connections. If faulty connector, replace the transceiver board assembly. If connector is not at fault, proceed to b.
	b) Flip assembly defective.	Temporarily replace the flip assembly with a known good assembly. If fault has been cleared, reassemble with the new flip assembly. If fault not cleared, proceed to c.
	c) Transceiver board assembly defective.	Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board assembly.
4. Incoming call alert transducer audio distorted or volume is too low.	Faulty transceiver board assembly.	Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board assembly.
5. Telephone transmit audio is weak. (usually indicated by called parties complaining of difficulty in hearing voice).	a) Microphone obstructed by user while holding the phone.	If the transmit audio quality is still weak and the microphone is not obstructed proceed to b.

Table 2. Level 1 and 2 Troubleshooting Chart (Continued)

SYMPTOM	PROBABLE CAUSE	VERIFICATION AND REMEDY
	b) Microphone is defective.	Replace the microphone as described in the procedures. If the fault is not cleared, proceed to c.
	c) Transceiver board is defective	Replace the transceiver board as described in the procedures.
6. Receive audio from earpiece speaker is weak or distorted.	a) Connections to or from transceiver board assembly defective.	Gain access to the transceiver board assembly as described in the procedures. Check flex and the flex connector from the flip assembly to the transceiver board assembly. If flex is at fault, replace flip assembly. If flex connector is at fault, proceed to d. If connection is not at fault, proceed to b.
	b) Flip assembly defective.	Temporarily replace the flip assembly with a known good assembly. If fault has been cleared, reassemble with the new flip assembly. If fault not cleared, proceed to c.
	c) Antenna assembly defective.	Check to make sure the antenna is installed correctly. If the antenna is installed correctly, substitute a known good antenna assembly. If this does not clear the fault, reinstall the original antenna assembly and proceed to d.
	d) Transceiver board assembly defective.	Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble with the new transceiver board assembly.
7. Telephone will not recognize or accept SIM.	a) SIM defective.	Check the SIM contacts for dirt. Clean if necessary and check if fault has been cleared. If the contacts are clean, insert a known good SIM into the telephone. Power up the unit and confirm that the SIM has been accepted. If the fault no longer exists, replace the defective SIM. If the SIM is not at fault, proceed to b.
	b) Transceiver board assembly defective.	Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board assembly.
8. Phone does not sense when flip is opened or closed (usually indicated by inability to answer incoming calls by opening the flip, or inability to make outgoing calls).	a) Flip assembly defective.	Temporarily replace the flip assembly with a known good assembly. If fault has been cleared, reassemble with the new flip assembly. If fault not cleared, proceed to b.
	b) Transceiver board assembly defective.	Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board assembly.

Table 2. Level 1 and 2 Troubleshooting Chart (Continued)

SYMPTOM	PROBABLE CAUSE	VERIFICATION AND REMEDY
9. Vibrator feature not functioning.	Transceiver board assembly defective.	Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board assembly.
10. Internal Charger not working.	Faulty charger circuit on transceiver board assembly.	Test a selection of batteries in the rear pocket of the desktop charger. Check LED display for the charging indications. If these are charging properly, then the internal charger is at fault. Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board assembly.
11. Real Time Clock resetting when standard battery is removed.	Lithium button cell in the display board may be depleted.	Refer service to a Level 3 service center for replacement.

Programming: Software Upgrade and Flexing

Contact your local technical support engineer for information about equipment and procedures for flashing and flexing. Part Numbers

The following information is provided as a reference for the parts associated with V3c telephones.

Related Publications

Motorola V3c User's Guide, English

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Exploded View Diagram

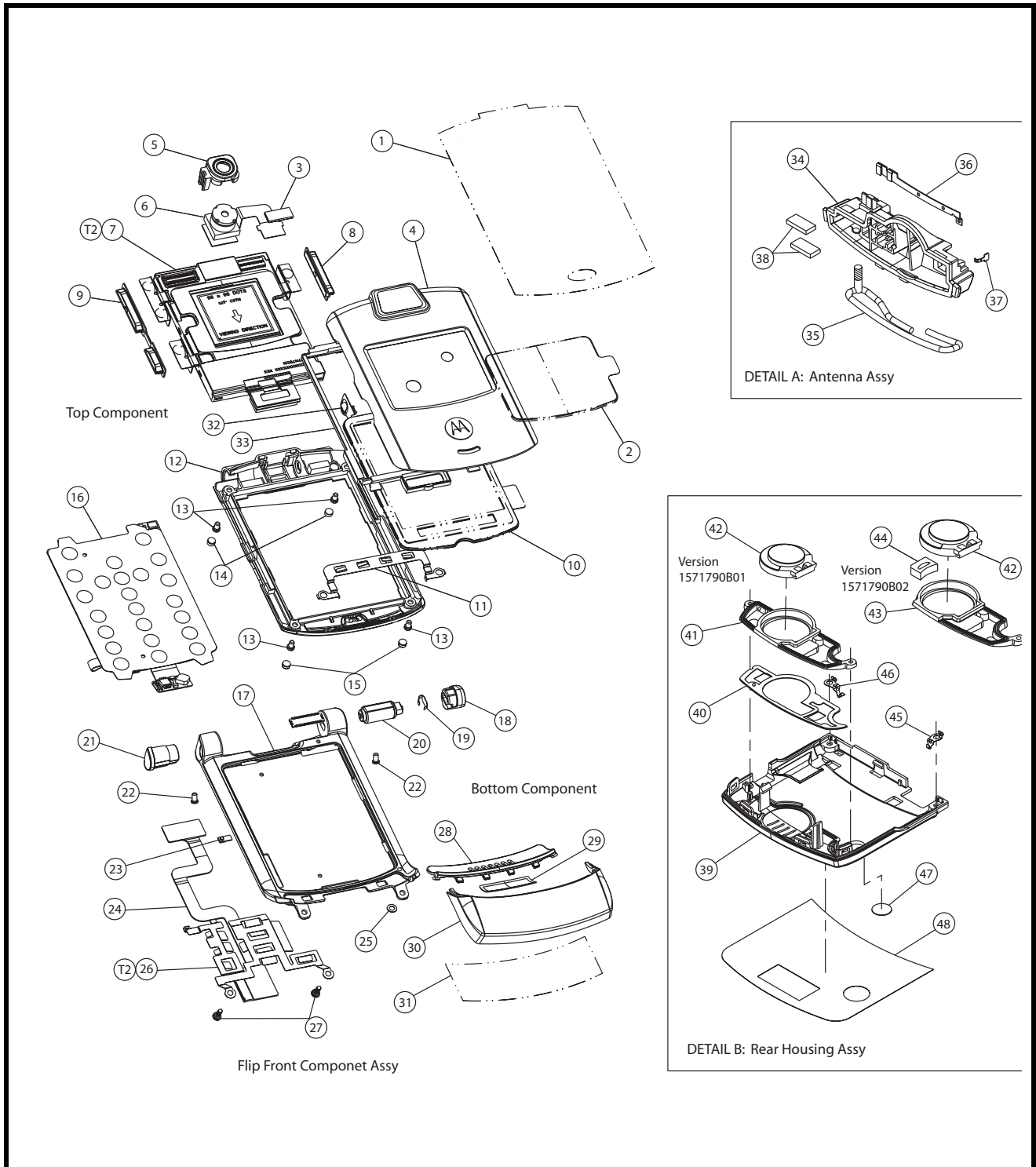


Figure 16. Exploded View Diagram

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Exploded View Parts List

Table 3. Exploded View Parts List

Item Number	Part Number	Description
1	1188679Y01	Liner, Protective Cover
2	6171833B01	CLI Lens
3	1471770B01	Camera Insulator Cushion
4	0771765B01	Flip Outer Assy
5	0571690B01	Grommet, Upper Camera
6	8471774B01	Camera
7	7271134C01	LCD Module
8	3871811B01	Button VR
9	387180B01	Button, Volume Control
10	6171773B01	Lens, Main Display
11	3971851B01	Contact, Grounding Flip Boot Strap
12	1571777B01	Housing, Flip Inner Assy
13	0387726M02	Screw, Pan head
14	3271771B01	Bumper Knuckle
15	3271188C01	Bumper Nose
16	8471141C01	Keypad Flex Assy
17	1571781B02	Front Housing
18	1371867B01	Housing End Cap Hinge
19	4271816B01	Grounding Clip
20	5590242N02	Hinge Cam
21	1371866B01	Housing, End Cap Shaft
22	0387726M08	Screw, End Cap Pan Head
23	1587841Y01	Light Guide
24	8471775B01	Hinge Flex

Item Number	Part Number	Description
25	3587505Y01	Mic Screen
26	3971543C01	Contact, Grounding Boot Strap
27	0371764B01	Screw, Gatwick, Pan Head
28	1571787B02	Housing, Front Antenna Cover
29	3587330Y01	Grill Screen
30	1571786B02	Housing, Front Antenna Cover
31	1188679Y02	Liner, Antenna, Outer
32	4271691B01	Contact, Ground, Hinge
33	0571694B02	Gasket, Display
34	1571801B01	Housing, Bladder
35	8571975B01	Antenna, Main
36	8571977B01	Antenna, GPS
37	8587839Y01	Antenna, Bluetooth
38	3987839Y01	Contact, Speaker
39	1571791B02	Housing, Rear
40	3587321Y01	Acoustic Screen
41	0590053N01	Grommet
42	5088017N02	Speaker
43	0590053N03/No4	Grommet
44	3271849C01	Acoustic Gasket
45	3971861B01	Right Ground Clip
46	397419Y01	Left Ground Clip
47	5485042F01	Water Detect Label
48	1188432Z04	Protective Liner

To order parts please use the following Link:

https://wissc.motorola.com/wissc_root/main/BrowserOK.html

(Password is Required)

For information on ordering parts please contact EMEA at + 49 461 803 2690.



There is a danger of explosion if the Lithium Ion battery pack is replaced incorrectly. Replace only with the same type of battery or equivalent as recommended by the battery manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Accessories

Table 4. Accessories

Part Description	Part Number
Headset, FM stereo radio	SYN8609
Headset, with send/end button	SYN8419
Headset, retractable	SYN8284
Neckloop, hands-free (compatible with T-coil hearing aids)	SYN7875
Holster	SYN8454

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