



MOTOROLA

Level 2 Service Manual

6809507A01-O

V323i V325i

Digital Wireless Telephone



CDMA 1900 MHz, CDMA 800 MHz, Analog 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 listed on the front cover. 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 V323i/V325i 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 V323i/V325i 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 End 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, **PHONEBOOK**.

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

Replacement Parts Service Division (RPSD)

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

U.S.A.

Phone: 800-422-4210

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/ AMPS	869.70 - 893.31 Rx (CDMA) 869.04 - 893.97 Rx (AMPS) 824.70 - 848.31 Tx (CDMA) 824.04 - 848.97 Tx (AMPS)
Channel Spacing	50 kHz PCS 30 kHz CDMA/AMPS
Channels	1150 PCS 788 CDMA 800 832 AMPS
Modulation	1M25F9W (1.25 MHz bandwidth) CDMA 3G1XRTT (1.25 MHz bandwidth) CDMA-1X F3 +12 kHz for 100% at 1 kHz AMPS
Duplex Spacing	80 MHz PCS 45 MHz AMPS
Frequency Stability	± 150 Hz (CDMA) ± 2.5 ppm (AMPS)
Power Supply	3.6V Li Ion 880 mAh (810 mAh for V323) battery
Average Transmit Current	310 mA at +13dBm)
Average Stand-by Current (slot cycle 1)	4.18 mA
Dimensions (with 880 mAh Li ion battery)	48.65mm x 91mm x 23.7mm 1.83 in. x 3.58 in. x 0.89 in.
Size (Volume)	88 cc (4.88 in. ³) without antenna
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, 880 mAh (810 mAh V323) Li Ion Battery	Digital Talk Time: 197 Minutes for 880mAh and 181 Minutes for 810mAh (IS95/IS2000 Cell/PCS, CDG Suburban Profile with 40% VAF ~ at 10.7dBm) Digital Standby Time: 200 Hours (IS95/IS2000 Cell/PCS Slot Cycle 1) Analog Talk Time: 65 Minutes (AMPS Power Step 2) Analog Standby Time: 15 Hours (AMPS DRX)
	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) 0.60 watts +27.8 dBm into 50 ohms (AMPS 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

Transmitter Function (Continued)	Specification
Modulation	1M25F9W (1.25 MHz bandwidth) CDMA 40K0F8W, 40K0F1D AMPS
CDMA Transmit Waveform Quality (Rho)	0.94

Receiver Function	Specification
Receive Sensitivity	-116 dBm (AMPS, SINAD, C-MSG weighted) Sinad 12dB or greater -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)
Adjacent and Alternate Channel Desensitization (AMPS)	Channel Selectivity with 3dB higher than Sensitivity; 16dB of Adjacent (30kHz) and 60dB for Alternative (60kHz)
IM (AMPS)	Greater than 65 dB

Product Overview

Motorola V323i/V325i 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 V323i/V325i telephones include a built in camera. Both phones provide 32 Embedded ring tones including VibraCall vibrating alert and 32 Downloadable/Customizable iMelody ring tones. The V323i/V325i telephones are dual band that allows roaming within the CDMA 800 MHz, PCS 1900 MHz, and Analog 800 MHz bands.

The V323i/V325i 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 V323i/V325i 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 V323i/V325i phones is either a 176 x 220 65k TFT LCD . The external CLI display is a 96 x 32 NB LCD. The camera module is a 350K pixel, VGA CMOS Sensor Camera.

The main housing assembly includes a battery cover, chassis, main circuit board, keypad plastic front housing, and retractable 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 880 mAh (810 mAh for V323) Lithium Ion (Li Ion) battery provides up to 178 minutes of talk time in CDMA mode with up to 264 hours of standby time¹.

Features

V323i/V325i 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:

- Integrated VGA Camera
- Qualcomm MSM 6100 Chipset
- BREW 3.1
- Location Based Services Capable
- Multimedia Messaging Service
- Office Quality Speakerphone
- Speaker Independent Voice Dial
- Consumer Postponable Housings

1. All talk and standby times are approximate and depend on network configuration, signal strength, and features selected. Standby times are quoted as a range from DRX=2 to DRX=9. Talk times are quoted as a range from DTX off to DTX on.

-
- AFLT/aGPS location services²

Simplified Text Entry

iTAP™ predictive text entry allows you to press a key to generate a character. A dynamic dictionary uses this to build and display a set of word or name options. The iTAP™ feature may not be available in all languages.

Personal Information Management

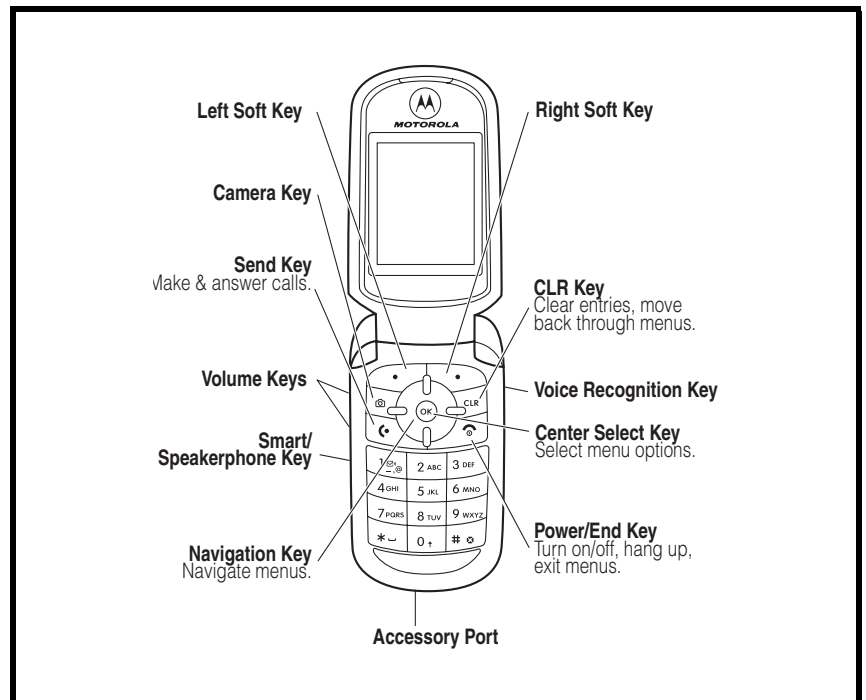
The V323i/V325i telephones contain a built in date book with alarm reminders message center and a 500 number capacity phonebook.

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

General Operation

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

The V323i/V325i telephone controls are on the front and side of the device, and on the keyboard as shown in Figure 1. Other hardware features are shown in Figure 2.



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Figure 1. Controls and Indicators Locations



050852o

Figure 2. Hardware Features

Menu Navigation

V323i/V325i telephones have a simple icon and Graphic User Interface (GUI). The phone also features a 5-way navigation key allows you to move easily through menus.

Color Display

The phones feature a 176 x 220 65K TFT display. The display provides constant graphical representations of battery capacity and signal strength, as well as the real-time clock.

Display animation makes the phone's icon menu move smoothly as the user scrolls up and down.



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

Figure 3 shows the LCD display.

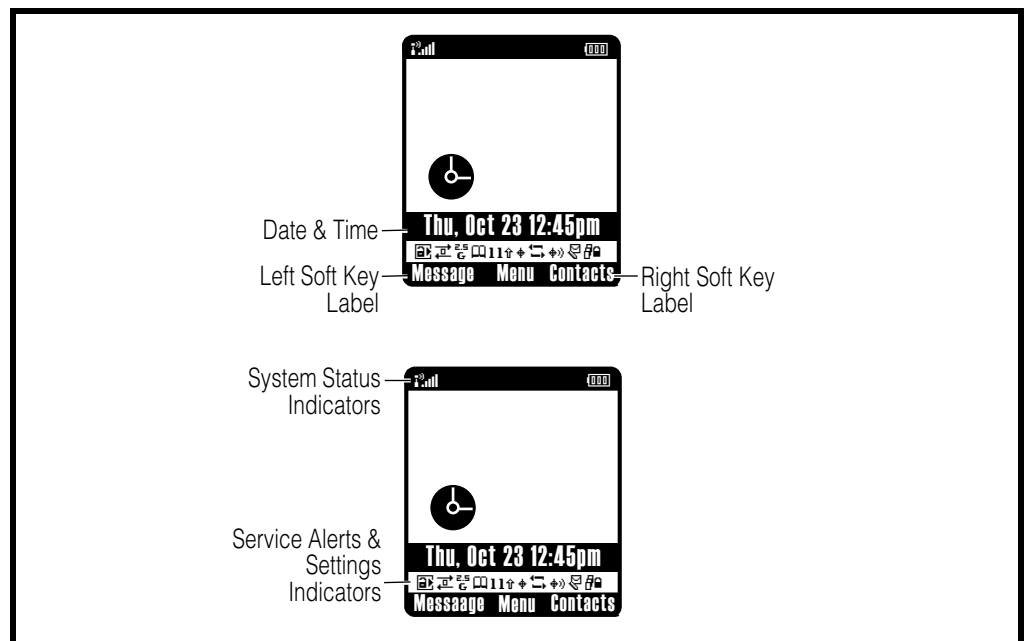


Figure 3. LCD Display

Alert Settings

In addition to preset ring tones, the user can download additional ring tones. (Availability is carrier and Network dependant).

Motorola wireless phones incorporate the VibraCall[®] discreet vibrating alert that avoids disturbing others when a ringing phone is unacceptable.

Alerts can be set to ring only, vibrate only, vibrate then ring, or no ring or vibrate.

Additionally, the profiling feature allows users to identify incoming calls by a specific ringer tone.

Battery Function

Battery Charge Indicator

The telephone displays a battery charge 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 shut down immediately and lose any pending work (partially entered phone book entries or outgoing messages, for example).



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.



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



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

Operation

For detailed operating instructions, refer to the appropriate User 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 V323i/V325i 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
—	Torque Driver Bit T-6, Apex 440-6IP Torx or equivalent	Used with torque driver
See Table 7	Rapid Charger	Used to charge battery and power phone
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 phone
	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 by fax (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 a V323i/V325i telephone. Procedures are applicable to both phones except where indicated. Tools and equipment used for the phone are listed in Table 1, preceding.



Many of the integrated devices used in this phone 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 the Battery Cover

1. Ensure the phone is turned off.
2. Press the battery cover latch as shown in Figure 4.
3. Slide the battery cover away from the antenna.
4. Lift the battery cover away from the phone.

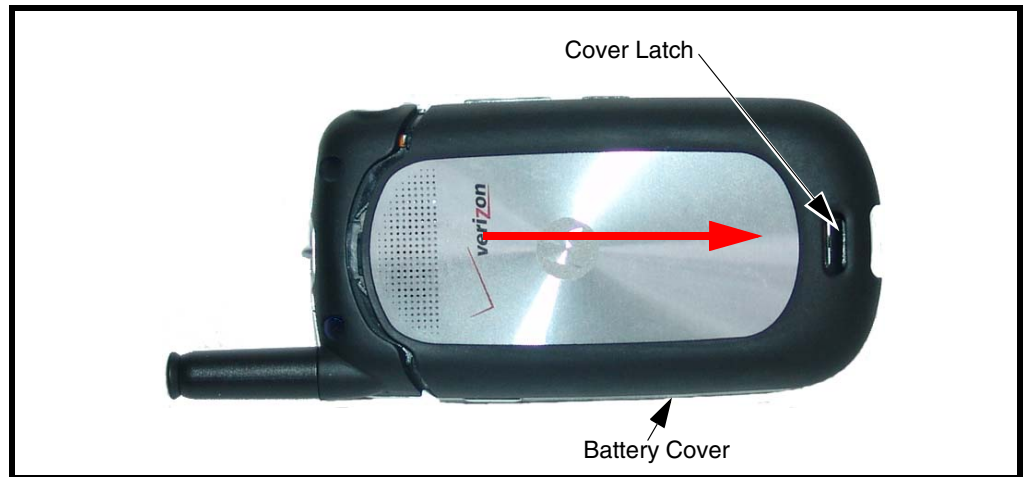


Figure 4. Removing the Battery Cover

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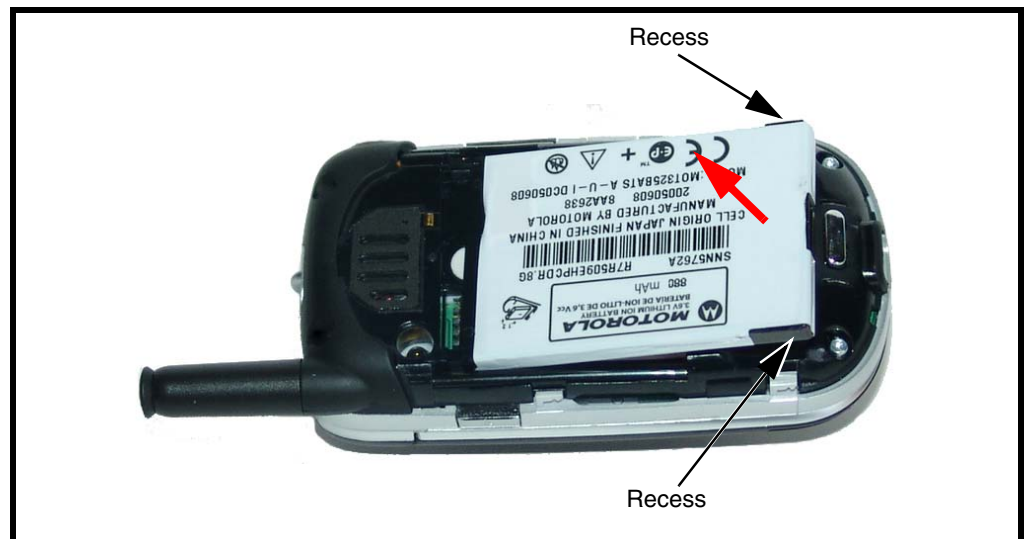
5. To replace, align the battery cover to the phone.
6. Slide the battery cover into the phone until battery cover latch snaps into place.

Removing and Replacing the 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. Remove the battery cover as described in the procedures.
3. Lift up the bottom of the battery by the 2 recesses near the bottom edge of the phone and remove it from the battery compartment as shown in Figure 5.
4. Lift the battery out of the phone.



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Figure 5. Removing the Battery

5. To replace, align the battery with the battery compartment so the contacts on the battery align with the battery contacts in the phone.
6. Insert the battery into the battery compartment, contacts side down.
7. Insert the bottom end of the battery into the base of the phone.
8. Replace the battery cover as described in the procedures.

Removing and Replacing the Antenna

1. Remove the battery cover, and battery as described in the procedures.
2. By hand, rotate the antenna base counterclockwise, as indicated by the red arrows until loose.
3. When the antenna threads are completely disengaged, slide the antenna out of the housing. See Figure 6.



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Figure 6. Removing the Antenna



Ensure antenna threads are properly engaged before tightening to prevent damage to the antenna or housing.

4. To replace, insert the threaded end of the antenna carefully into the housing and, after ensuring the threads are properly engaged, rotate clockwise. Tighten firmly by hand.
5. Replace the battery, and battery cover as described in the procedures.

Removing and Replacing the Rear Housing

1. Remove the battery cover, battery, and antenna, as described in the procedures.
2. Using tweezers, carefully remove the two screw caps from the back of the phone near the top. Use care not to mar or damage the back housing or screw caps if they are to be reused.
3. Use a Torx T6 driver to remove the four housing screws. Set the screws aside for reuse.

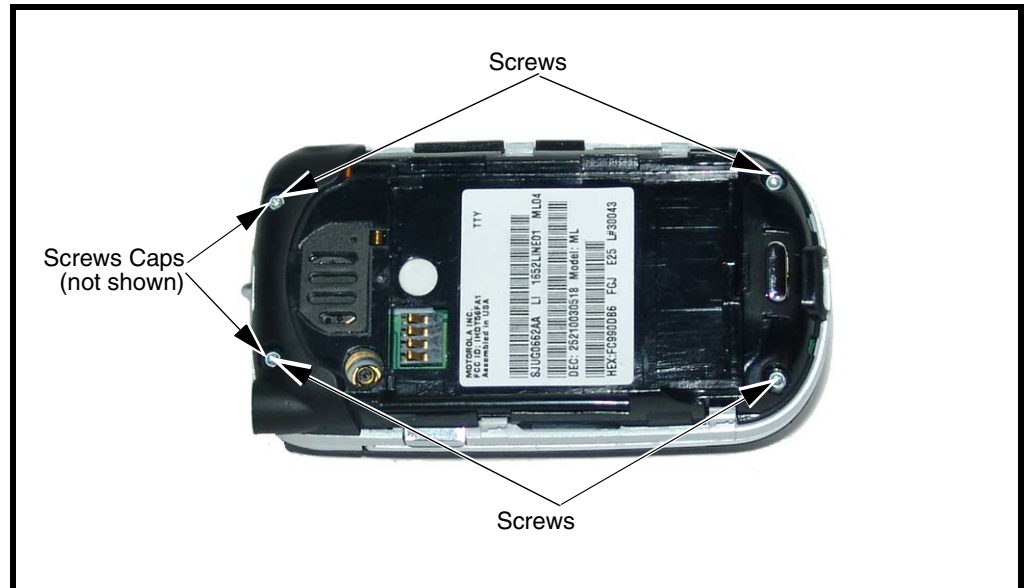
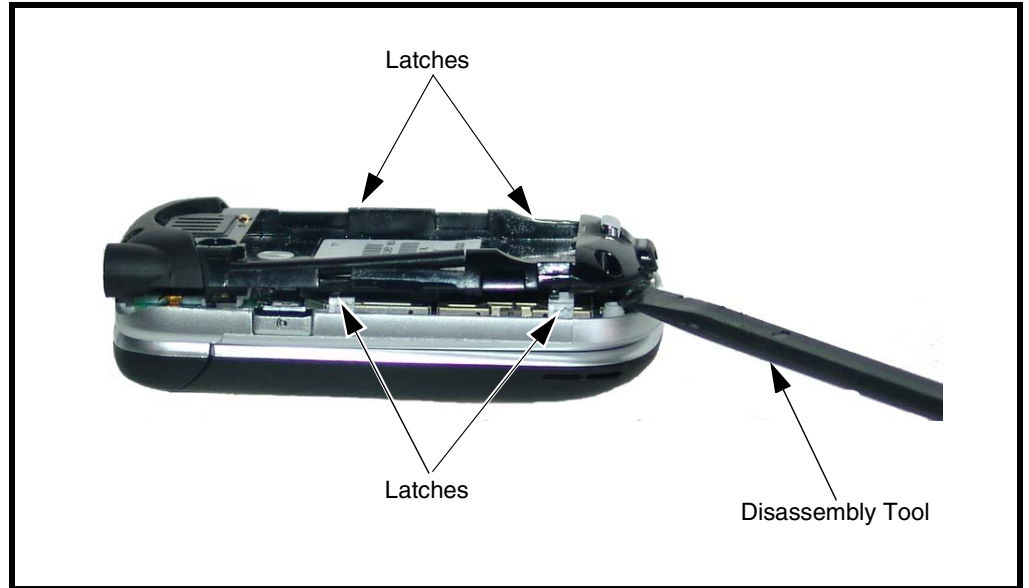


Figure 7. Removing the Rear Housing

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- Carefully use the disassembly tool and gently bend the housing latches outward starting from the right side of the rear housing to release the four snaps on the sides of the housing (See Figure 7).



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Figure 8. Disconnecting the Housing Latches

- When all four snaps have been released, carefully lift the rear housing away from the phone.
- To replace, align rear housing to the phone.
- Carefully press the rear housing starting from the left side into the phone until all of the the snaps engage.
- Insert and tighten the four housing screws to a torque setting of 1.5 ± 0.2 in-lbs. Replace the two screw caps.
- Replace the antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Transceiver Board

1. Remove the battery cover, battery, antenna, and rear housing as described in the procedures.
2. Use the disassembly tool to disconnect the flip assembly flex connector. (See Figure 9).

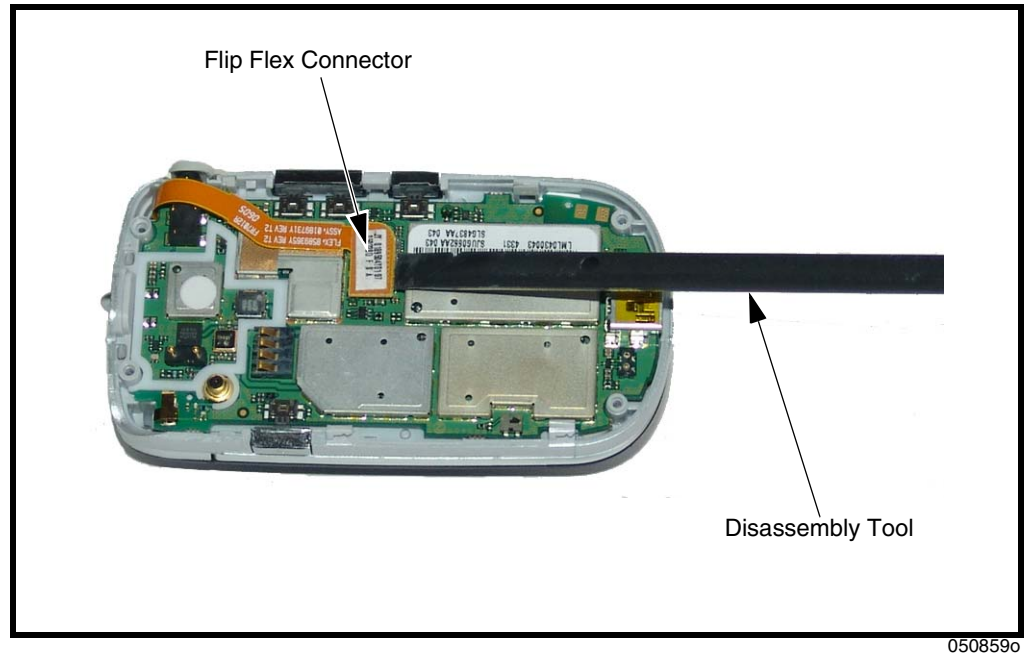


Figure 9. Removing the Flip Assembly Flex Connector

3. Carefully lift the transceiver PC board up and away from the phone. Avoid damage to the flip assembly flex cable (See Figure 10).



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

4. Lift the transceiver board away from the rear housing.

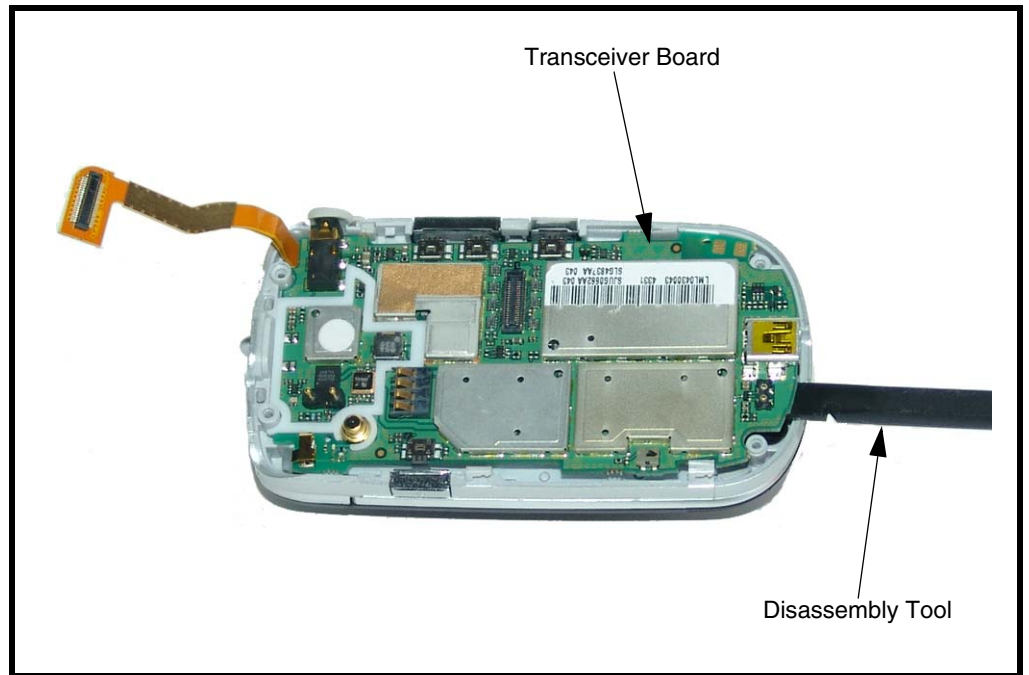


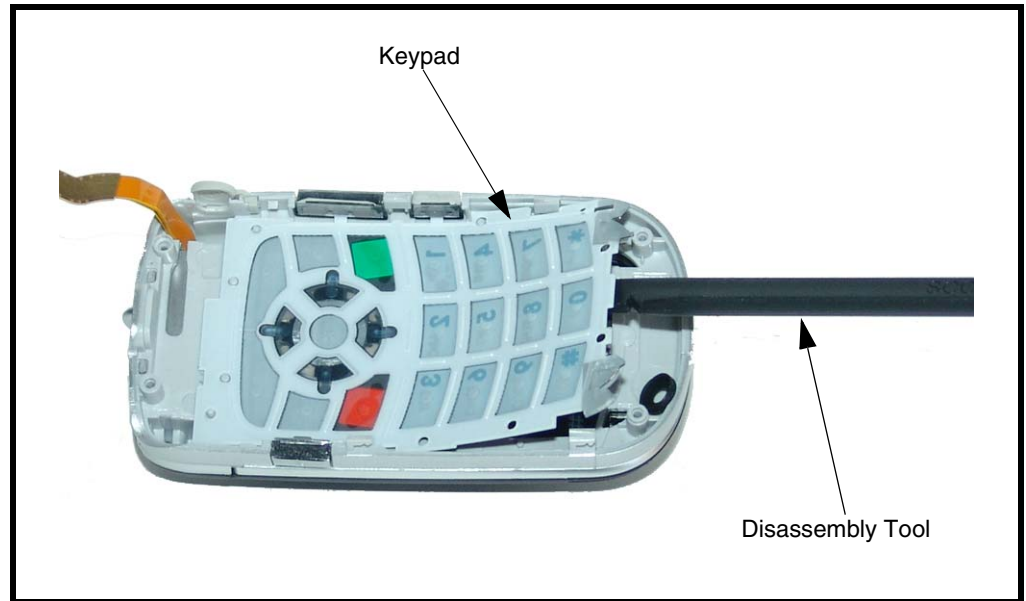
Figure 10. Removing the Transceiver Board

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5. To replace, align the transceiver board to the front housing assembly and lower it into place.
6. Align the flip assembly flex connector to its socket on the transceiver PC board.
7. Firmly and gently press the flex connector onto the socket until the connector is properly seated.
8. Replace the rear housing, antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Keypad

1. Remove the battery cover, battery, antenna, rear housing, and transceiver board as described in the procedures.
2. Using the disassembly tool lift the keypad from the front housing as shown in Figure 11.



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Figure 11. Removing the Keypad

3. To replace, insert the keypad into the front housing, ensuring the keys align properly with the openings in the front housing.
4. Replace the transceiver board, rear housing, antenna battery, and battery cover as described in the procedures.

Removing and Replacing the Flip Assembly

1. Remove the battery cover, battery, antenna, transceiver board, and keypad as described in the procedures.



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

2. Disengage the flip hinge from the front housing by pushing the hinge in the direction of the arrow with a small screwdriver.

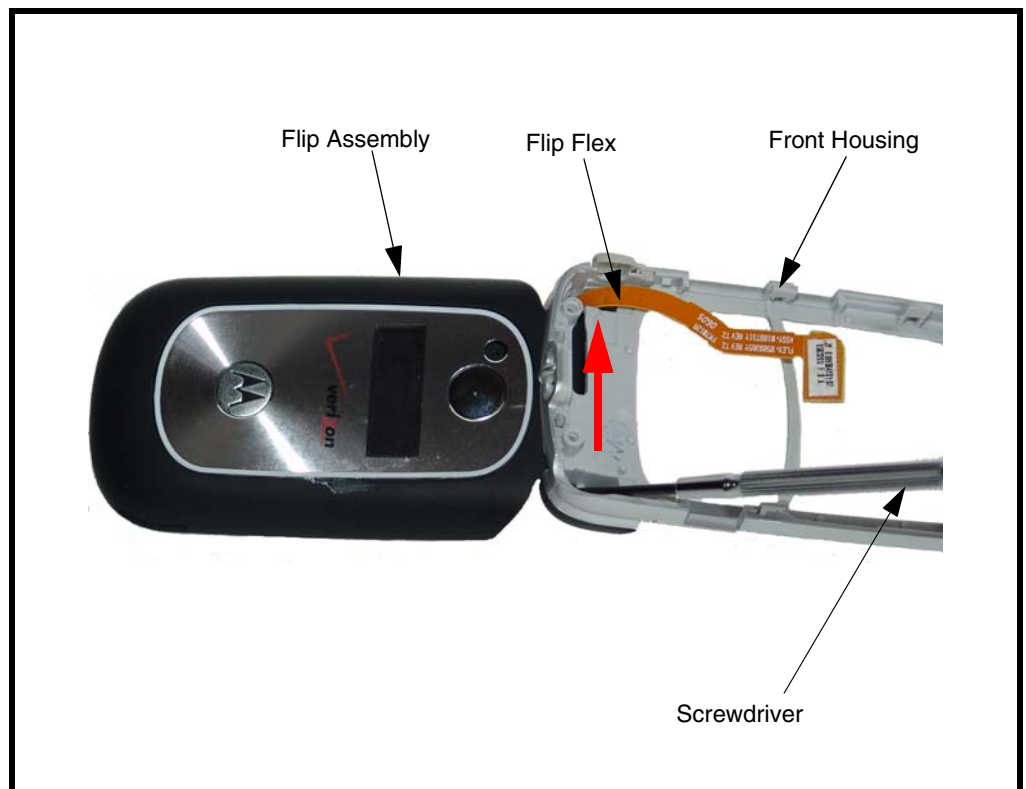
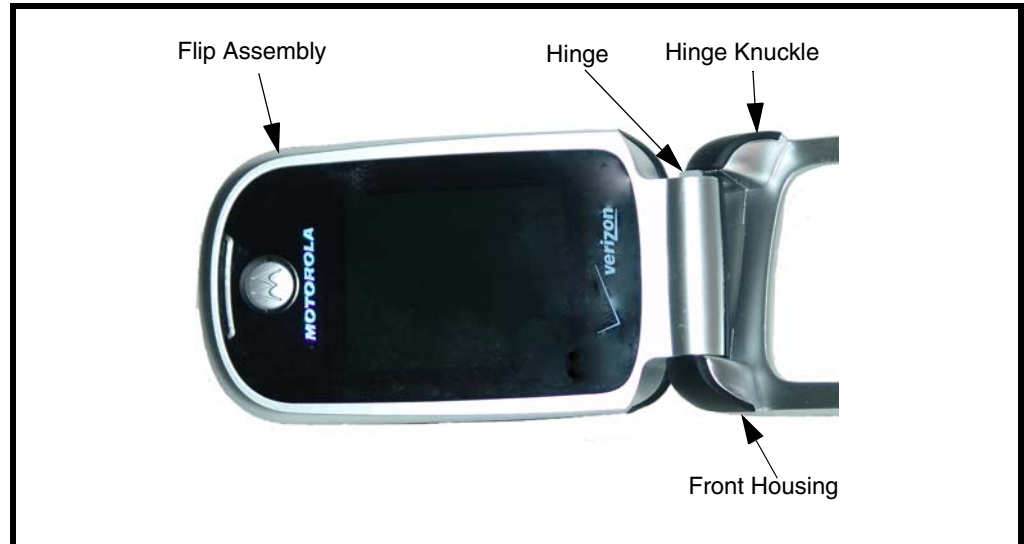


Figure 12. Disengaging the Flip Hinge.

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3. Carefully disengage the hinge from front housing hinge knuckle.
4. Carefully slide the display flex through the opening in the front housing. Avoid damage to the display flex (see Figure 13).



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Figure 13. Removing the Flip Assembly.

5. To replace, carefully insert the display flex into the opening in the front housing.
6. Insert the left side of the hinge into the front housing knuckle and snap the right side of the hinge into the front housing knuckle.
7. Replace the keypad, transceiver board, rear housing, antenna battery, and battery cover as described in the procedures.

Removing and Replacing the Flip Display Lens

1. Remove the battery cover, battery, antenna, rear housing, transceiver board, keypad, and flip assembly as described in the procedures.
2. Insert the flat end of the disassembly tool between the main display lens and the flip and separate the lens from the flip (see Figure 14).

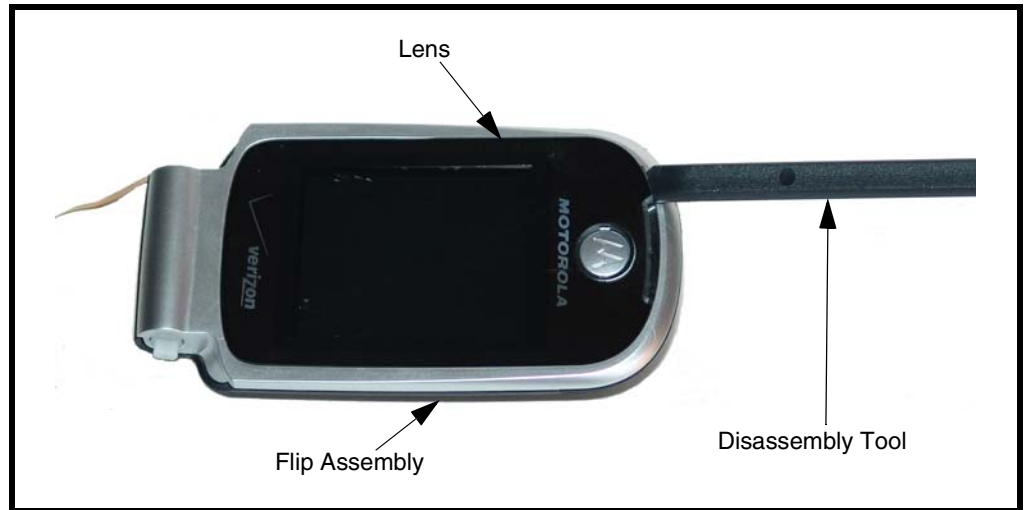
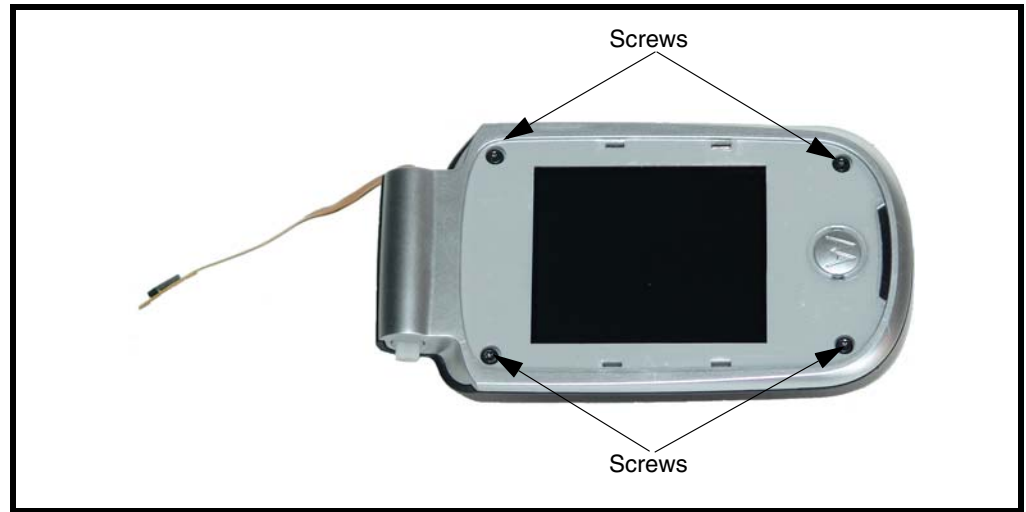


Figure 14. Removing the Flip Display Lens

3. To replace, remove the adhesive backing from the display lens and align the display lens to the flip assembly. Carefully press the display lens into position on the flip assembly.
4. Replace the flip assembly, keypad, transceiver board, rear housing, antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Flip Cover

1. Remove the battery cover, battery, antenna, rear housing, transceiver board, keypad, flip assembly and display lens as described in the procedures.
2. Use a Torx T6 driver to remove the four flip cover screws. Set the screws aside for reuse (see Figure 15).



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Figure 15. Removing the Flip Cover Screws

3. Using the disassembly tool disengage the flip cover latches and remove the flip cover from the flip assembly.



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Figure 16. Removing the Flip Cover

4. To replace, align the flip cover on the flip assembly and press it into place.
5. Insert and tighten the four housing screws to a torque setting of 1.5 ± 0.2 in-lbs.
6. Replace the flip lens, flip assembly, keypad, transceiver board, rear housing, antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Flip Assembly Shield

1. Remove the battery cover, battery, antenna, rear housing, transceiver board, keypad, flip assembly, flip lens and flip cover as described in the procedures.
2. The shield is secured to the flip assembly by 4 plastic latches. Insert a small flat blade screwdriver directly under the latch slot and gently pry up to disengage the latch.
3. It is only necessary to disengage 2 of the 4 latches to remove the flip assembly shield from the flip assembly.

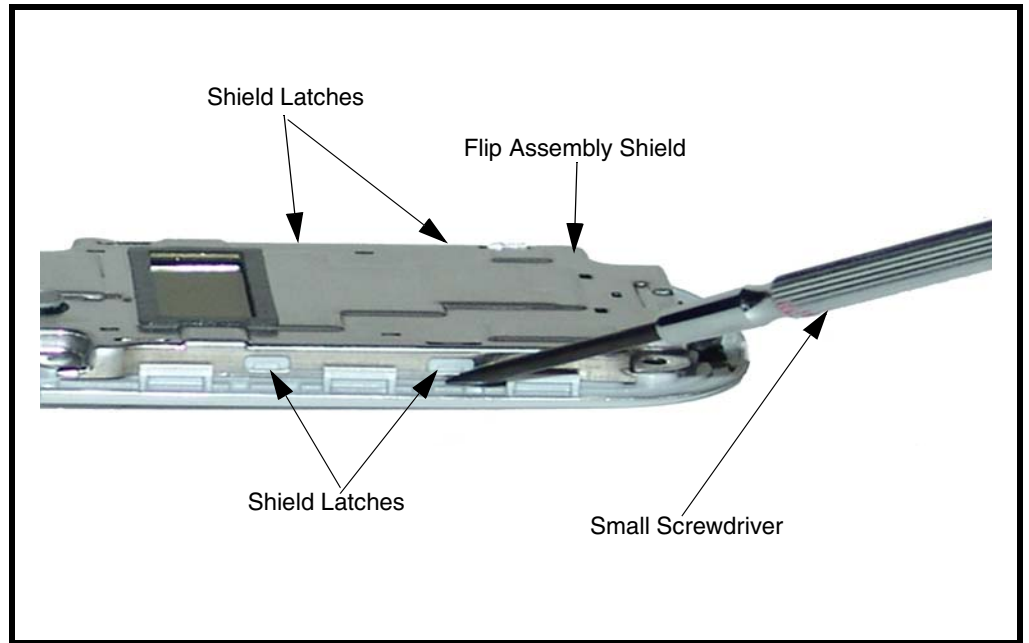


Figure 17. Removing the Flip Assembly Shield.

4. To replace, place the flip assembly shield onto the flip assembly.
5. Replace the flip cover, flip lens, flip assembly, keypad, transceiver board, rear housing, antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the External Display

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

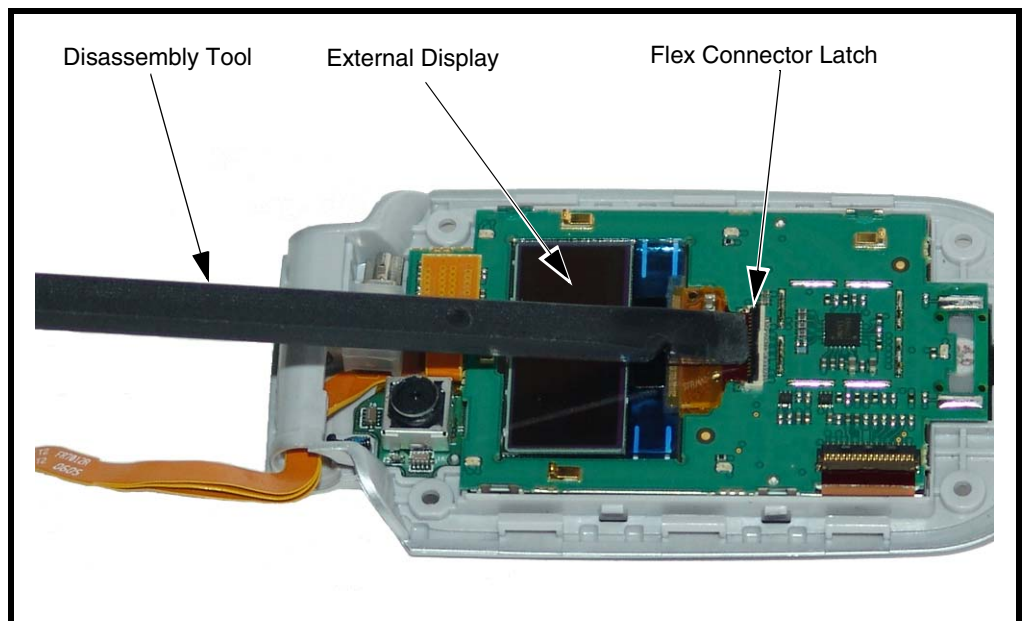


The flexible printed cable (FPC) (flex) is easily damaged. Exercise extreme care when handling.

2. Using the disassembly tool lift up the display flex connector latch and disconnect the external display flex from the flex connector (see Figure 18)
3. Using the disassembly tool carefully pry up the external display from main display assembly.



Exercise extreme care when prying up the external display. Breaking the glass display could cause injury.



0508690

Figure 18. Removing the External Display.

4. To replace, insert the external display flex into the display flex connector and press the flex connector latch closed.
5. Replace the flip assembly shield, flip cover, flip lens, flip assembly, keypad, transceiver board, rear housing, antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Display PC Board

1. Remove the battery cover, battery, antenna, rear housing, transceiver board, keypad, flip assembly, flip lens, flip cover, flip assembly shield, and external display 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 carefully lift the speaker screen away from the housing starting at the top edge of the flip, peeling the screen under the earpiece speaker.
3. Use the disassembly tool to disconnect the display flex from its connector and lift out the display PC board from the flip housing (see Figure 19).

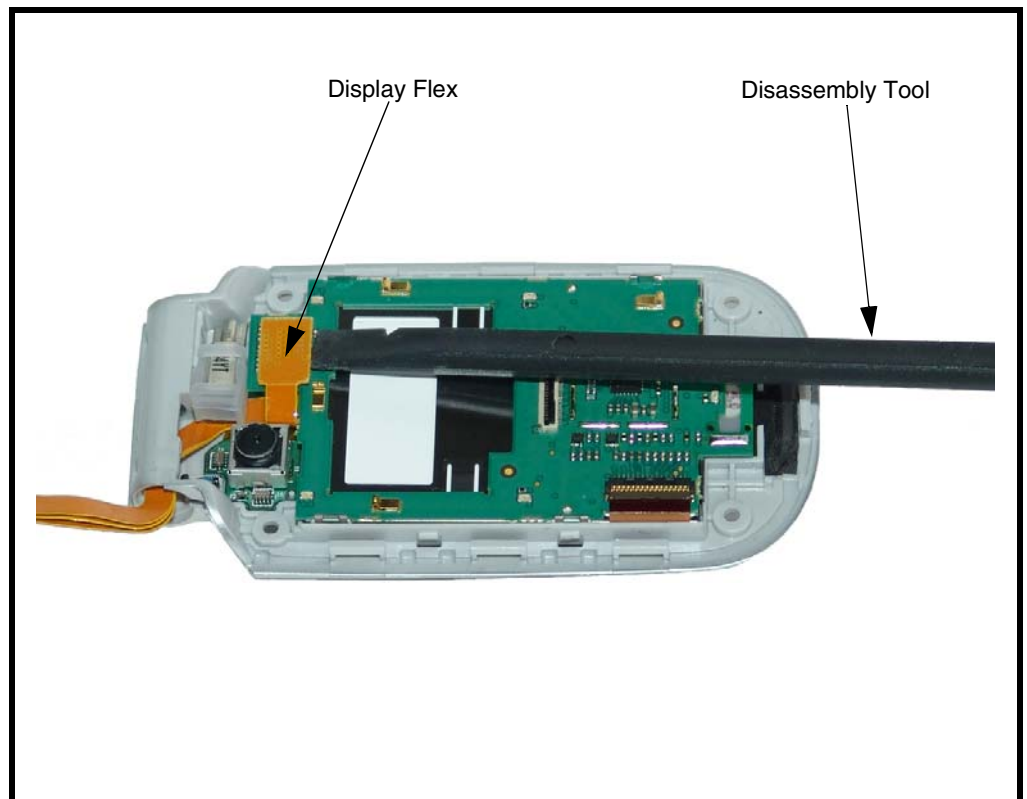


Figure 19. Removing the Display PC Board.

4. To replace, align the display PC board with the flip housing and press it into place.
5. Align the display flex with its connector and press it into place.
6. Replace the external display, flip assembly shield, flip cover flip lens, flip assembly, keypad, transceiver board, rear housing, antenna, battery, and battery cover as described in the procedures.

Removing the Display Module

1. Remove the battery cover, battery, antenna, rear housing, transceiver board, keypad, flip assembly, flip lens, flip assembly shield, and display PC board 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 lift up the display module flex connector latch.
3. Use the disassembly tool to release the latches on each side of the display PC board and carefully remove the display module from the display PC board (see Figure 20).

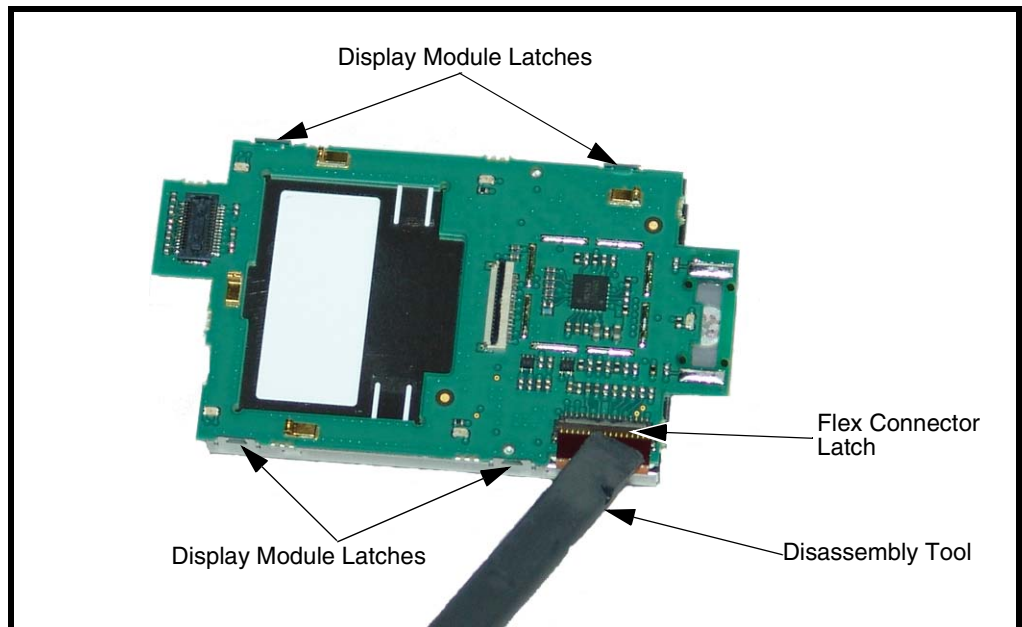
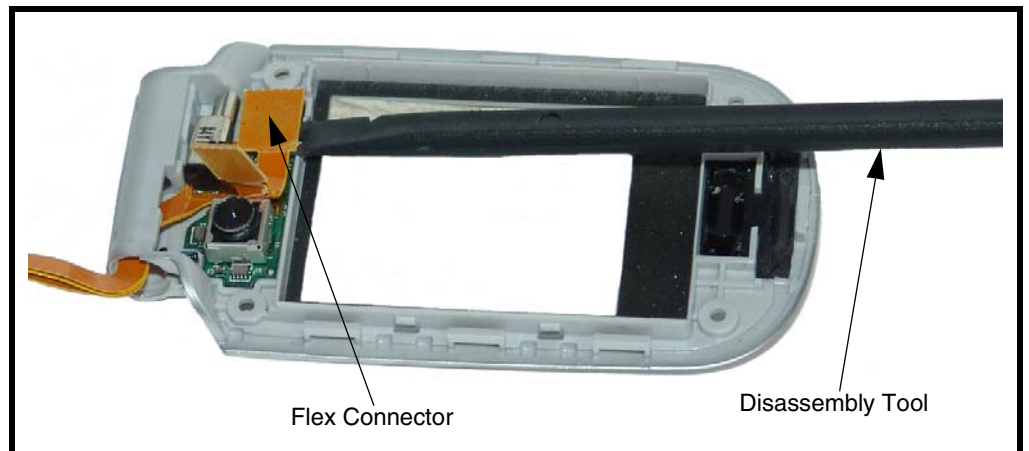


Figure 20. Removing the Display Module

4. Carefully re-connect the flex connector and press the flex connector latch closed.
5. Turn the display PC board over and place the display module onto the display PC board and secure the display latches on the display PC board.
6. Replace the display PC board, flip assembly shield, flip cover, flip lens, flip assembly, keypad, transceiver board, rear housing, antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Vibrator/Flex Assembly

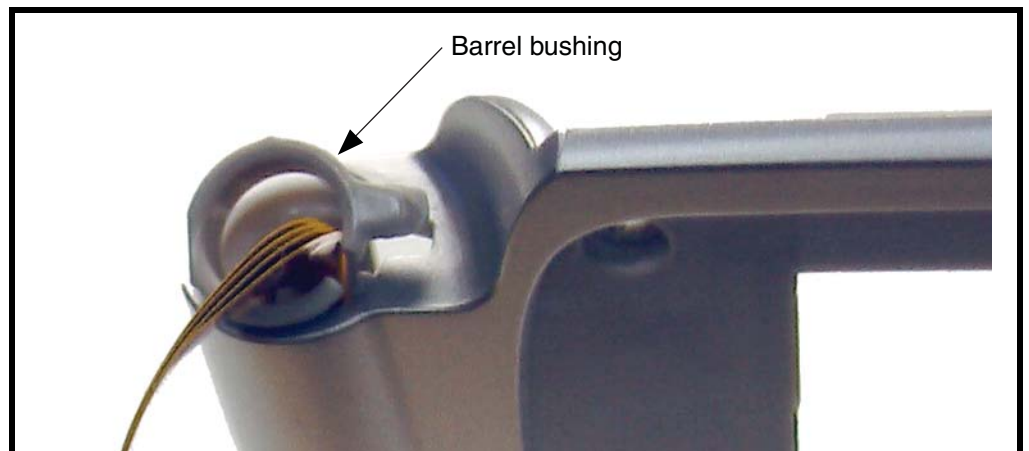
1. Remove the battery cover, battery, antenna, rear housing, transceiver board, keypad, flip assembly, flip lens flip cover, flip assembly shield and display PC board, as described in the procedures.
2. Use the disassembly tool to disconnect the flex from the camera PC board assembly.



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Figure 21. Removing the Vibrator/Flex Assembly

3. Remove the barrel bushing, and then carefully remove the vibrator/flex assembly from the opening in the flip housing.



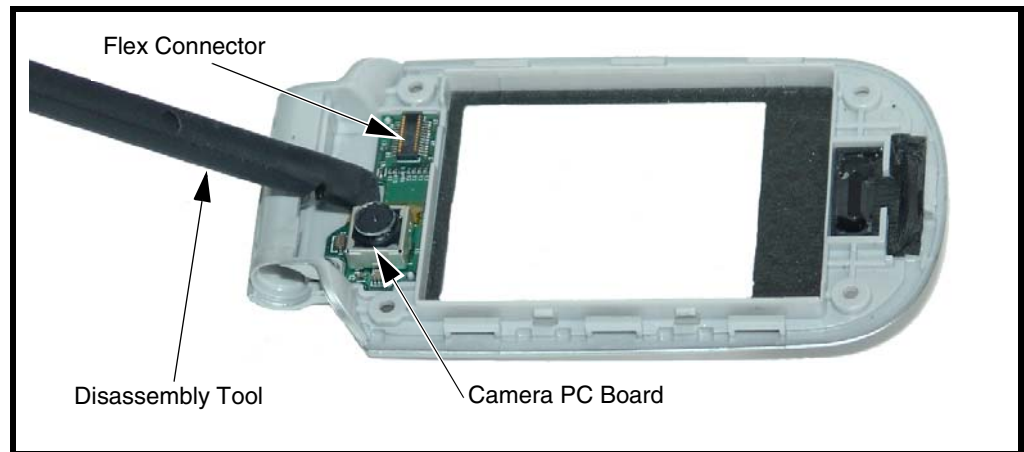
0612830

Figure 22. Removing the Vibrator/Flex Assembly

4. To replace, carefully slide the vibrator/flex assembly through the opening in the flip housing, attach the barrel bushing, and press the flex onto its connector.
5. Replace the display PC board, flip assembly shield, flip cover, flip lens, flip assembly, keypad, transceiver board, rear housing, antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Camera PC Board Assembly

1. Remove the battery cover, battery, antenna, rear housing, transceiver board, keypad, flip assembly, flip lens, flip cover, flip assembly shield, display PC board and the vibrator/flex assembly as described in the procedures.
2. Use the disassembly tool to lift the camera PC board from the flip housing.



0508730

Figure 23. Removing the Camera PC Board Assembly

3. To replace, align and press the camera PC board assembly into the flip housing.
4. Replace the vibrator/flex assembly, display PC board, flip assembly shield, flip cover, flip lens, flip assembly, keypad, transceiver board, rear housing, antenna, battery, and battery cover as described in the procedures.

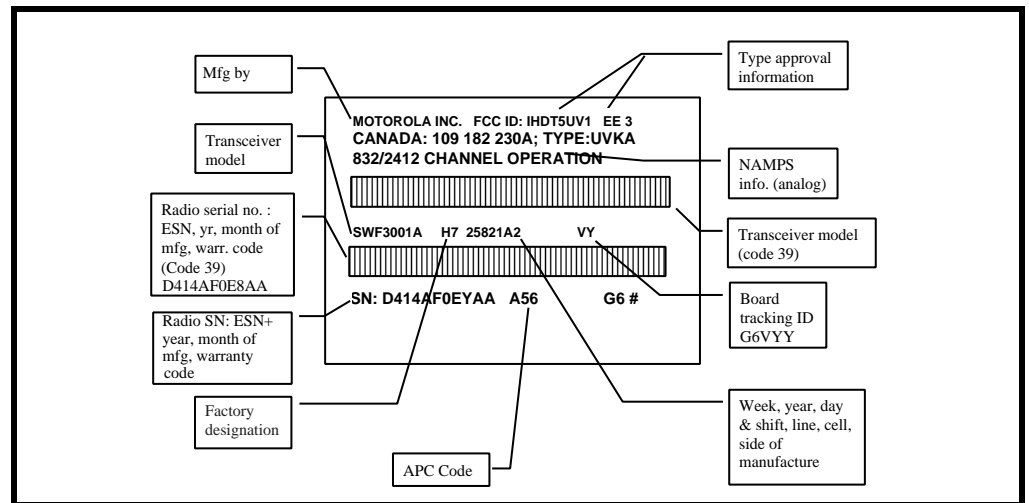
Phone Identification

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 24 describes the current identifying labels.



020463o

Figure 24. CDMA Telephone Identification Label

Troubleshooting

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 defective.	Remove the transceiver board. Substitute a known good transceiver board and temporarily reassemble the unit. Press the PWR button; if unit turns on and stays on, disconnect the dc power source and reassemble the telephone with the new transceiver board. Verify that the fault has been cleared. If the fault has not been cleared then proceed to d.
	d) keyboard assembly failure.	Replace the keyboard assembly. Temporarily connect a +3.6 Vdc supply to the battery connectors. Depress the PWR button. If unit turns on and stays on, disconnect the dc power source and reassemble with the new keyboard assembly.
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 defective.	Replace the transceiver board (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board.
3. Display is erratic, or provides partial or no display.	a) Connections to or from transceiver board defective.	Check general condition of flex and flex connector. If the flex and connector are good, check that the flex connector is fully connected. If not, check connector to transceiver board connections. If faulty connector, replace the transceiver board. 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 (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board.
4. Incoming call alert transducer audio distorted or volume is too low.	Faulty transceiver board assembly.	Replace the transceiver board (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board.
5. Telephone transmit audio is weak. (usually indicated by called parties complaining of difficulty in hearing voice).	a) Microphone connections to the transceiver board assembly defective.	Gain access to the microphone as described in the procedures. Check connections. If connector is faulty proceed to c; if the connector is not at fault, proceed to b.

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

Symptom	Probable Cause	Verification and Remedy
	b) Microphone defective.	Gain access to microphone. Disconnect and substitute a known good microphone. Place a call and verify improvement in transmit signal as heard by called party. If good, reassemble with new microphone. If microphone is not at fault, reinstall original microphone and 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.
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. 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.
8. Vibrator feature not functioning.	Vibrator/Motor assembly defective.	Replace the Vibrator/Motor assembly. Verify that the fault has been cleared and reassemble the unit with the new Vibrator/Motor assembly.
9. 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. No or weak audio when using headset.	a) Headset not fully pushed home.	Ensure the headset plug is fully seated in the jack socket. If fault not cleared, proceed to b.
	b) Faulty jack socket on 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.

Programming: Software Upgrade and Flexing

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

V323i/V325i Exploded View Diagram

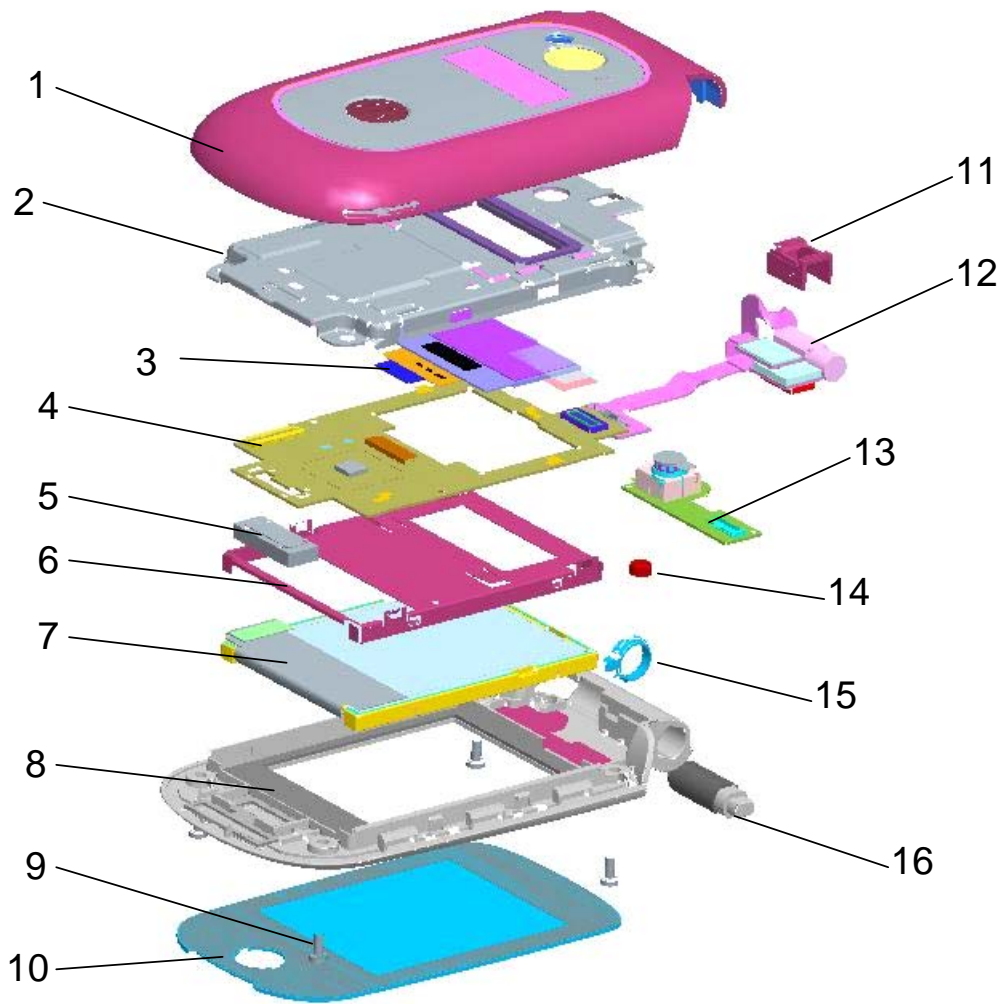


Figure 25. Flip Exploded View

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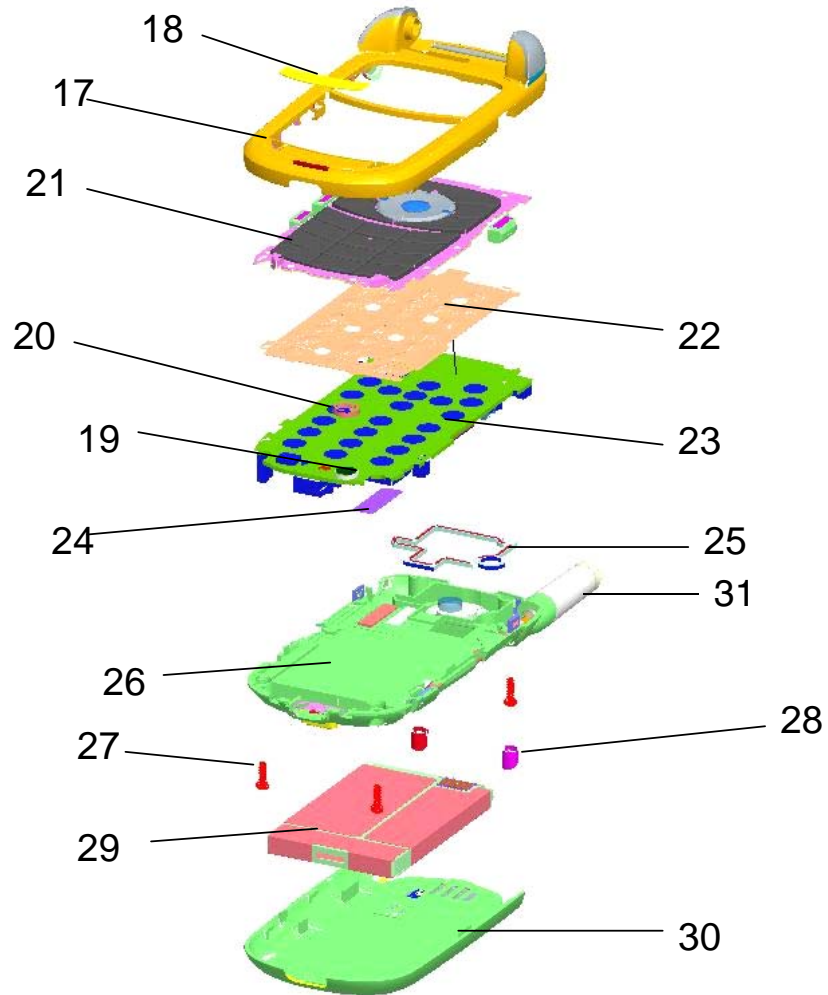


Figure 26. Base Exploded View

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V323i/V325i Parts List

Part numbers are only provided for reference. Please contact your local Motorola parts organization for current part number information.

Table 3. Part Numbers

Item Number	Motorola Part Number		Description
	V323i	V325i	
1	0189537Y03	0189537Y04	Flip Outer Housing Assembly
2	0189536Y01	0189536Y01	Flip Display Chassis Assembly
3	7287952Y01	7287952Y01	CLI Module
4	0189584Y01	0189584Y01	Flip PCB Assembly
5	5089574N02	5089574N02	Speaker, Earpiece
6	1389490Y01	1389490Y01	Main Display Bezel
7	7289284Y01	7289284Y01	LCD Module
8	0189535Y01	0189535Y01	Flip Inner Housing Assembly
9	0389001N07	0389001N07	Screw, Flip
10	6189527Y02	6189527Y03	Main Lens
11	0589545Y01	0589545Y01	Grommet Vibrator
12	0189731Y01	0189731Y01	Personality FPCB Assembly
13	0189583Y01	0189583Y01	Camera Module Assembly
14	5988515L01	5988515L01	Magnet
15	4389788Y01	4389788Y01	Barrel Bushing
16	5587736N01	5587736N01	Hinge
17	0189538Y05	0189538Y05	Base Front Housing Assembly
18	1389506Yxx	1389506Y06	Escutcheon Label
19	5089288Y01	5089288Y01	Microphone
20	3887624Y01	3887624Y01	Microphone Grommet
21	3889522Y06	3889522Y05	Keypad
22	4089421Y02	4089421Y02	Mylar Dome Assembly
23	--	--	Engine Board Assembly
24	1189692Y01	1189692Y01	Conductive Mesh Tape
25	1489511Y01	1489511Y01	Base Rear Acoustic Rubber Seal
26	0189539Y03	0189539Y03	Base Rear Housing Assembly
27	0389367Y03	0389367Y03	Screw (1.5x5.7mm)
28	3889525Y03	3889525Y03	Screw Cap
29	SYN5771A	1589498Y06	Battery, Slim
30	0189540Y04	0189540Y05	Battery Door Slim Assembly
31	8589592Y07	8589592Y07	Main Antenna

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