



MOTOROLA

Level 1 & 2 Service Manual

6809505A64-O

V6

Digital Wireless Telephone



UMTS 2100, GSM 900/1800/1900 GPRS

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Mobile Devices Business,
Sawgrass International Concourse
789 International Parkway
Room S2C
Sunrise, FL 33325-6220

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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 which 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 a label usually located under the battery. 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.

Product Changes

When electrical, mechanical or production changes are incorporated into Motorola products, a revision letter is assigned to the chassis or kit affected, for example; -A, -B, or -C, and so on.

The chassis or kit number, complete with revision number is imprinted during production. The revision letter is an integral part of the chassis or kit number and is also listed on schematic diagrams, and printed circuit board layouts.

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, and
- 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 com-

puter 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 of V6 telephones. Refer questions about this manual to the nearest Customer Service Manager. This manual contains mechanical service information required for the equipment described and is current as of the printing date.

Audience

This document aids service personnel in testing and repairing V6 telephones. Service personnel should be familiar with electronic assembly, testing, and troubleshooting methods, and with the operation and use of associated test equipment.

Scope

This manual provides basic information relating to V6 telephones, and also to provide 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

Special characters and typefaces, listed and described below, are used in this publication to emphasize certain types of information.



Note: Emphasizes additional information pertinent to the subject matter.




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



Warning: Emphasizes information about actions which 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 appears in the display. For example, **MESSAGE**.*

*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 phones 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 to bear the costs of early life failure.

Product Support

Customer's original phones 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). Motorola High Tech 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 should be arranged through the local Motorola Support Center.

Parts Replacement

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

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: 800-422-4210

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 EGSM	TX: 880 - 915 MHz Frequency (MHz) = $890 + (0.2 \times n)$ where: $0 \leq n \leq 124$ Frequency (MHz) = $890 + (0.2 \times (n - 1024))$ where: $955 \leq n \leq 1023$ RX: 925 - 960 MHz Frequency (MHz) = $935 + (0.2 \times n)$ where: $0 \leq n \leq 124$ Frequency (MHz) = $935 + (0.2 \times (n - 1024))$ where: $955 \leq n \leq 1023$
Frequency Range DCS	TX: 1710 to 1785 MHz Frequency (MHz) = $1710.2 + (0.2 \times (n - 512))$ where: $512 \leq n \leq 885$ RX: 1805.2 to 1879.8 MHz Frequency (MHz) = $1805.2 + (0.2 \times (n - 512))$ where: $512 \leq n \leq 885$
Frequency Range PCS	TX: 1850 to 1910 MHz Frequency (MHz) = $1850.2 + (0.2 \times (n - 512))$ where: $512 \leq n \leq 810$ RX: 1930 to 1990 MHz Frequency (MHz) = $1930.2 + (0.2 \times (n - 512))$ where: $512 \leq n \leq 810$
Frequency Range UMTS	TX: 1920 to 1980 MHz Frequency (MHz) = $UARFCN^1 \div 5$, where: $9612 \leq UARFCN^1 \leq 9888$ UARFCN ¹ in increments of 25 RX: 2110 to 2170 MHz Frequency (MHz) = $UARFCN^1 \div 5$, where: $10562 \leq UARFCN^1 \leq 10838$ UARFCN ¹ in increments of 25
Channel Spacing	200 kHz (GSM, DCS, PCS), 5 MHz UMTS
Channels	174 EGSM, 374 DCS, 274 PCS carriers with 8 channels per carrier, 11 UMTS
Duplex Spacing	45 MHz GSM, 95 MHz DCS, 80 MHz PCS, 190 MHz UMTS
Modulation	GMSK AT BT = 0.3 (GSM, DCS, PCS), QPSK (UMTS)
Transmitter Phase Accuracy	5 degrees RMS, 20 Degrees peak
Frequency Error	± 0.1 ppm
Input/Output Impedance	50 ohms (nominal)
Nominal Operating Voltage	3.6 Vdc +10% (battery) +4.4 Vdc +10% (external connector)
Dimensions	~ 104.5 x 15.45 x 53mm
Size	75cc
Weight	~ 105g
Display	Main Display: 260K color TFT, 320 x 240, 2.2" CLI Display: 65K color TFT, 120x160, 1.3"
Battery Life (940mAh) ²	GSM : Talk time: Up to 255 minutes GSM : Standby time: Up to 516 hours WCDMA Talk time: 197 hours WCDMA Standby time: 330 hours WCDMA Video talk time: Up to 136 minutes

General Function	Specification
Nominal Operating Temperature Range	-10° C to +55° C

GSM System Functions	Specification
Speech Coding Type	Regular Pulse excitation / linear predictive coding with long term prediction (RPE LPC with LTP)
Bit Rate	13.0 kbps
RF Power Output	32.5 dBm for G900 and 29 dBm for DCS/PCS and 22.9 dBm for WCDMA max power
Spurious Emissions	-36 dBm from 0.1 to 1 GHz, -30 dBm from 1 to 4 GHz
Receive Sensitivity	-102 dBm GSM, -102 dBm DCS / PCS
RX Bit Error Rate	< 2%

UMTS System Functions	Specification
Speech Coding Type	Adaptive Multirate (AMR)
RF Power Output	21 dBm
Spurious Emissions	-36 dBm from 0.1 to 1 GHz, -30 dBm from 1 to 4 GHz
Error Vector Magnitude	< 17.5%
PN9 Bit Error Rate (VER)	0.1% @12.2K, -106.7 dBm
ACLR	-33 dBm @+5 MHz, -43 dBm @+10 MHz

Product Overview

Motorola V6 telephones deliver 3G features in a small and lightweight package. These Global System for Mobile communications (GSM) General Packet Radio Service (GPRS) Wireless Application Protocol (WAP)-enabled mobile phones incorporate an icon based User Interface (UI) for easier operation, allows Short Message Service (SMS) text messaging, Multi-media Messaging Services (MMS), and includes Personal Information Manager (PIM) functionality. V6 is a tri-band phones that allow roaming within the GSM 900 MHz, 1800 MHz Digital Cellular System (DCS), and PCS 1900 MHz bands, in addition to the UMTS WCDMA 2100 MHz band.

V6 telephones have a clam form factor. They feature an externally viewable 120 x 160 65K color TFT CLI display for caller identification with date/time, and an internal 320 x 240 262K TFT color display located in the flip. The bottom part of the clam (front housing) contains the keypad, transceiver printed circuit board (PCB), microphone, flex connection, external accessory connector, smart button, volume buttons, and voice button. The standard 940 mAh Lithium Ion (Li Ion) battery fits behind a removable back cover and provides up to 255 minutes of talk time and 516 hours of standby time in GSM mode. The battery provides up to 197 minutes of talk time, and up to 330 hours of standby time in WCDMA mode.

The phone accepts 3V Subscriber Identity Module (SIM) cards that fit into the SIM holder under the battery. The antenna is a fixed stub type antenna. Inexpensive direct connection to a computer or handheld device through USB for data and fax calls, and for synchronizing phonebook entries with Motorola mobile Phone Tools™ software, can be accomplished using the optional data cable and soft modem.

Features

V6 telephones use advanced, self-contained, sealed, custom integrated circuits to perform the complex functions required for WCDMA communication. Aside from the space and weight advantage, microcircuits enhance basic reliability, simplify maintenance, and provide a wide variety of operational functions.

Other features available in this family of telephones include:

- WCDMA 2100 MHz, GSM/GPRS 900/1800/1900 MHz
- Bluetooth Class 2

Physical

- Width 53mm
- Height 104.5m
- Depth 15.5 mm
- Volume 75 cc
- Weight 105.0 grams
- 50 MB User Memory
- No Touch Sensitive MP3 Controls

Audio

- AAC, AAC+, AAC+ Enhanced
- WAV
- MP3
- XM
- RA v9
- MIDI

Video

- MPEG4 Video clip playback

Display

- Main display 320 x 240 pixel 260k TFT
 - CLI Display: 65K color TTN, 120x160, 1.3"
-

Memory

- 64 MB internal RAM
- 64 MB internal ROM
- 64 MB internal ROM user memory
- Accepts removable TransFlash memory (16, 32 64, 128, 256, 512MB or 1 GB) modules

Imaging

- Primary camera resolution 2.0 MP
- Secondary camera resolution VGA
- Dedicated camera key

Wireless Access Protocol (WAP) 2.0 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.



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



If 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

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.

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, an incoming call message is displayed.



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

SIM Toolkit™ - Class 2

SIM Application Toolkit is a value-added service delivery mechanism that allows GSM operators to customize the services they offer their customers, from the occasional user who requests sports news and traffic alerts, to a high call time business user who receives stock alerts and checks flight times. Operators can now create their own value-added services menu quickly and easily in the phone. The customized menu will appear as the first menu and may be updated over-the-air with new services when customers request them.

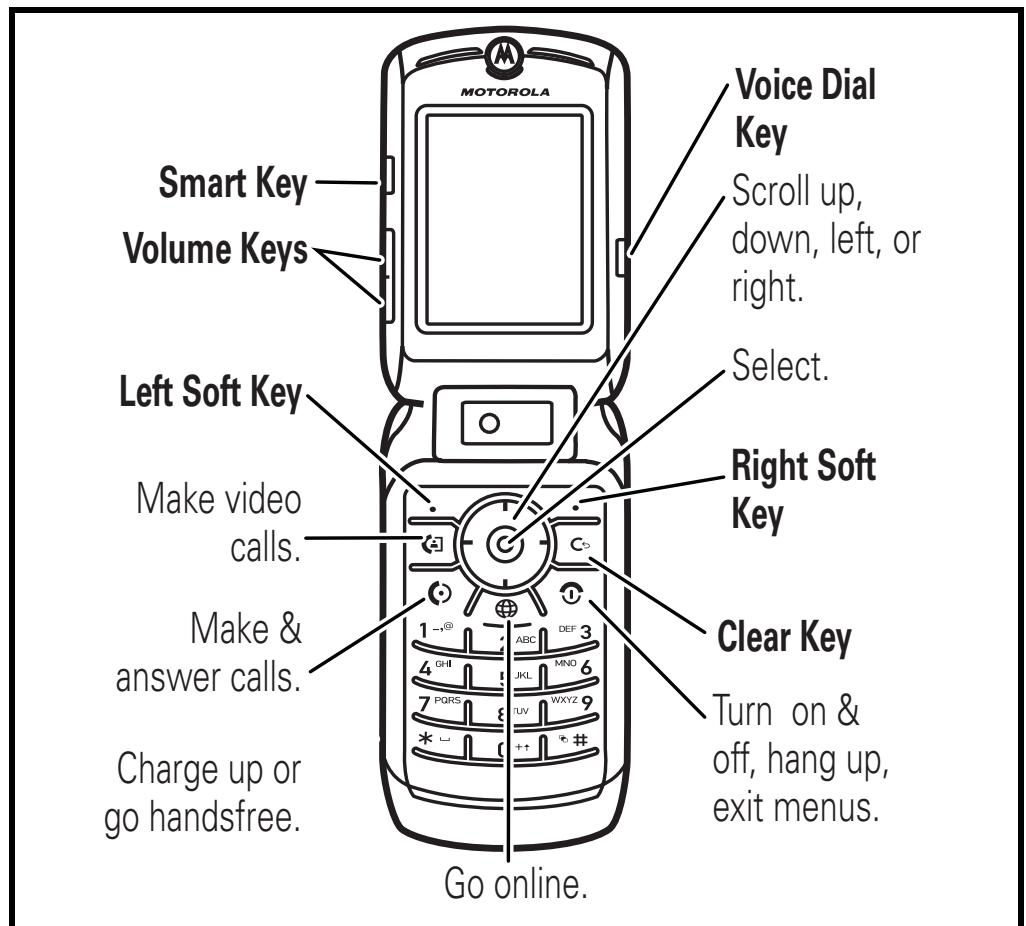
Other Features

Detailed descriptions of these and other V6 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) Connectors


The V6 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). V6 phones have an audible alert transducer on the top and I/O connectors, consisting of a charger/accessory port, located on the side of the phone. See Figure 1.



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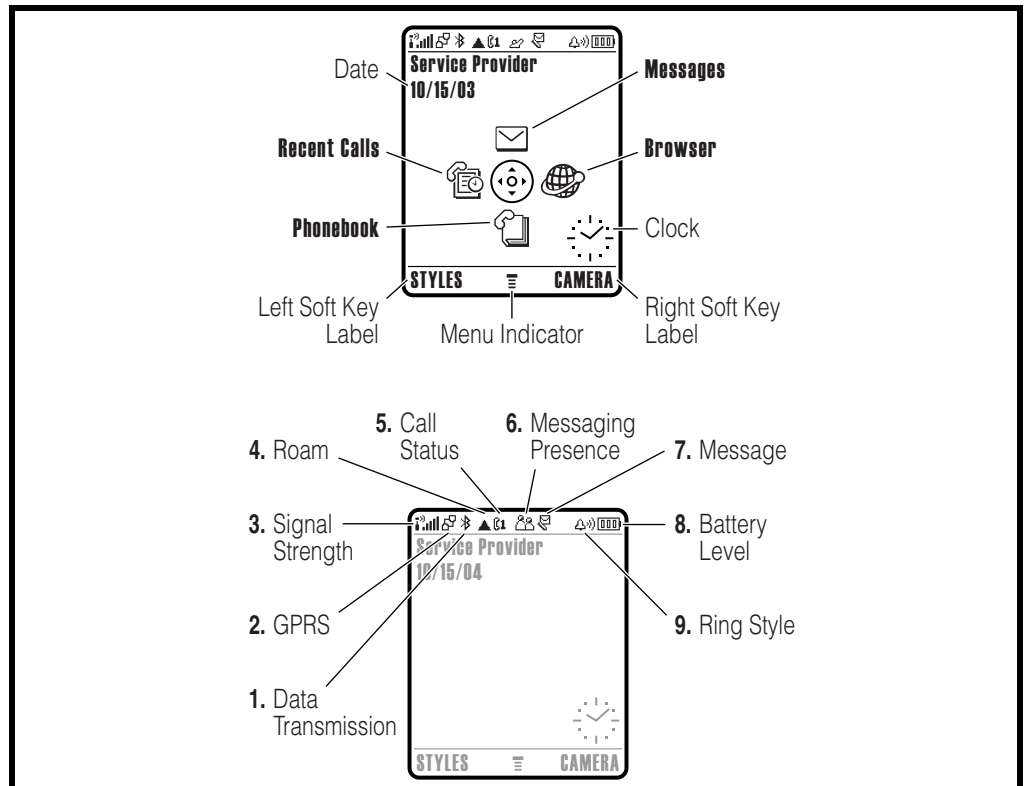
Figure 1. Telephone Controls and Indicators Locations (Front)

“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.

The menu key opens the initial menu structure, or allows access to a submenu whenever  appears on the display.

Color Display

The V6 wireless phones feature a 64k color Thin Film Transistor (TFT) 176x220 pixel display. Display animation makes the phone's menus move smoothly as the user scrolls up and down. Indicators, in the form of icons, are displayed on the LCD (see Figure 2).



061420o

Figure 2. Main Screen Icon Display



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

Turn animation off to conserve the battery.

Figure 2 shows some common icons displayed on the LCD.

- **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.
- **In Use Indicator.** Appears when a call is in progress.
- **Roam Indicator.**⁵ 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.**⁵ Appears when the phone receives a text message. This is a network-dependent feature.
- **Voice Message Waiting Indicator.**¹ Appears when a voicemail message is received. This is a network-dependent feature.

1. Network, subscription and SIM card or service provider dependent feature. Not available in all areas.

- **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.
- **Clock.** Shows the current date and time.
- **Menu Indicator.** Indicates the user can press the menu soft key to open a menu.
- **Alert Setting Indicator.** Shows the current selected alert. The default alert setting is a ringer.

Alert Settings

V6 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 Information

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 immediately shut down and any pending work (partially entered phone book entries or outgoing messages, for example) is lost.



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 will be lost.



To ensure proper memory retention, turn the phone OFF before removing the battery.

Tools and Test Equipment

The following table lists tools and test equipment recommended for disassembly and reassembly of V6 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 Plus, T-5 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 (AMS) ²	Disassembly tool, plastic with flat and pointed ends (manual opening tool)	Used during assembly/disassembly of device
	Tweezers, plastic	Used during assembly/disassembly
—	Digital Multimeter, HP34401A ²	Used to measure battery voltage
0-00-00-40810 (AMS) ²	GSM / DCS Test SIM	Used to enable manual test mode

1. To order in North America, contact Motorola Aftermarket and Accessories Division (AAD) at (800) 422-4210 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: AMS Software & Elektronik GmbH, c/o Holger Grube, Lise-Meitner-Straße9 D-24941 Flensburg Tel.: +49-461-90398-0 Fax: +49-461-90398-50.

Disassembly

The procedures in this section provide instructions for the disassembly of v6 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.



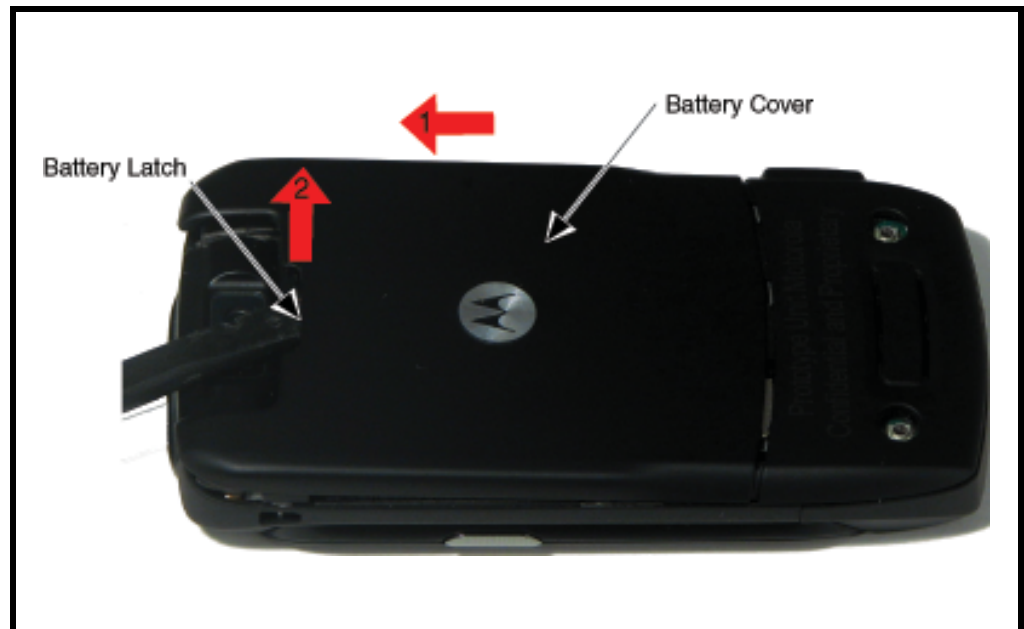
Avoid stressing the plastic in any way to avoid damage to either the plastic or internal components.

Removing and Replacing the Battery Door 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 cover latch, as shown in Figure 1.

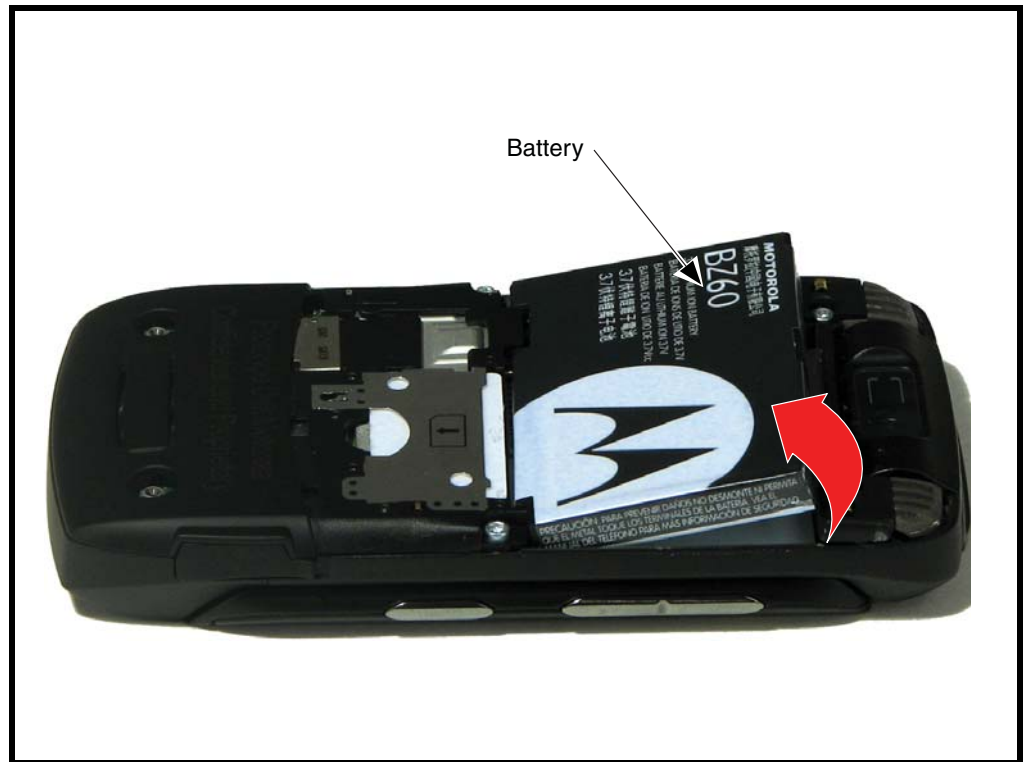


040698c

Figure 1. Removing the Battery Door

3. Slide the battery cover and lift it completely off the phone.

4. Lift the end of the battery and remove it completely. See Figure 2.



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Figure 2. Removing the Battery

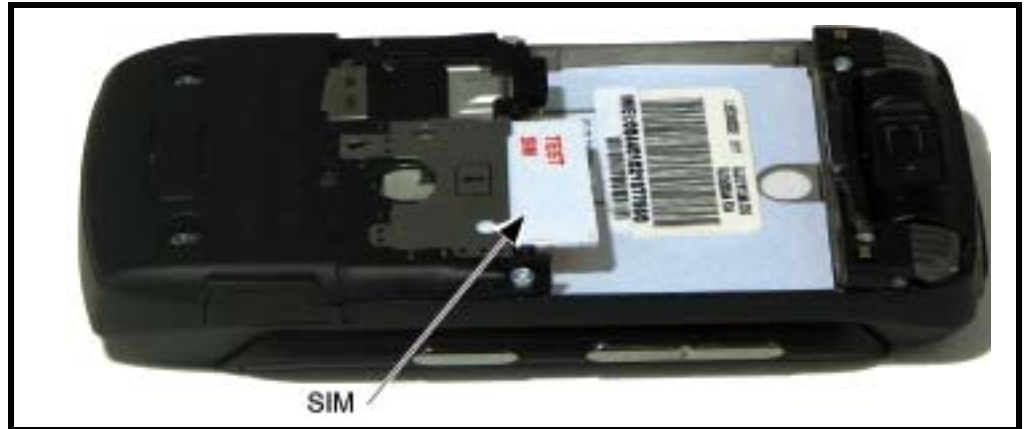


There is a danger of explosion if the Lithium Ion battery is replaced incorrectly. Replace only with the same type of battery or equivalent as recommended by the battery manufacturer. Dispose of used batteries according to the manufacturer's instructions.

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.
7. Insert the ridge at the bottom of the battery housing into the base of the phone, then push the cover down and snap it into place.

Removing and Replacing the Subscriber Identity Module (SIM)

1. Remove the battery door and battery as described in the procedures.



0318290

Figure 3. Removing the SIM

2. Slide the SIM away from the SIM holder, as shown in Figure 3.
3. Carefully lift the SIM from the phone.
4. To replace, insert the SIM into the holder, ensuring the keyed corner of the SIM faces the outward edge of the phone.
5. Replace the battery and battery door as described in the procedures.

Removing and Replacing the Rear Housing

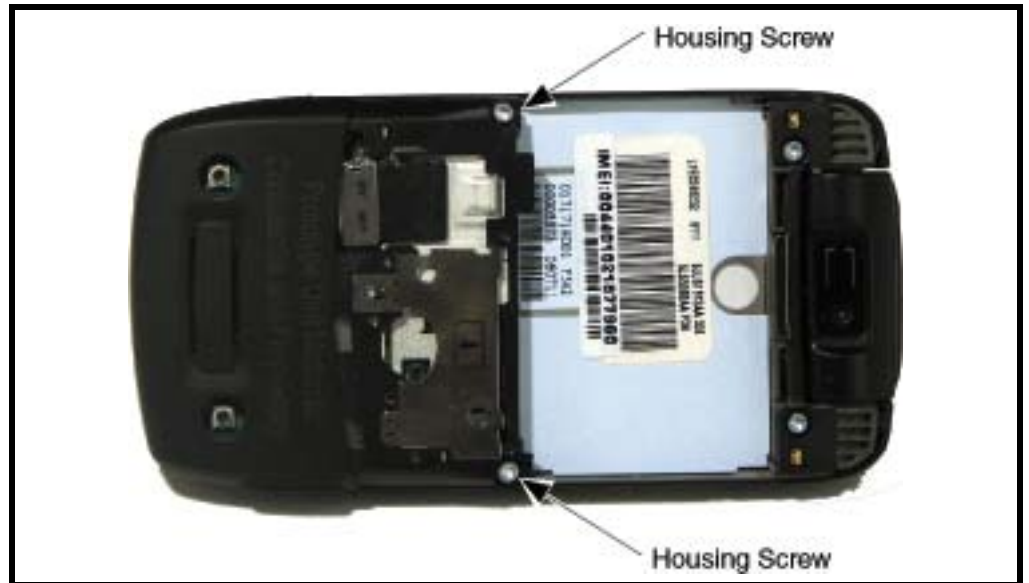


This product contains static-sensitive devices. Use anti-static handling procedures to prevent electrostatic discharge (ESD) and component damage.

1. Remove the battery cover, battery, and SIM as described in the procedures.
2. Using a Torx driver with a T-6 bit, remove the screws at each side of the phone. Retain the screws for reassembly.



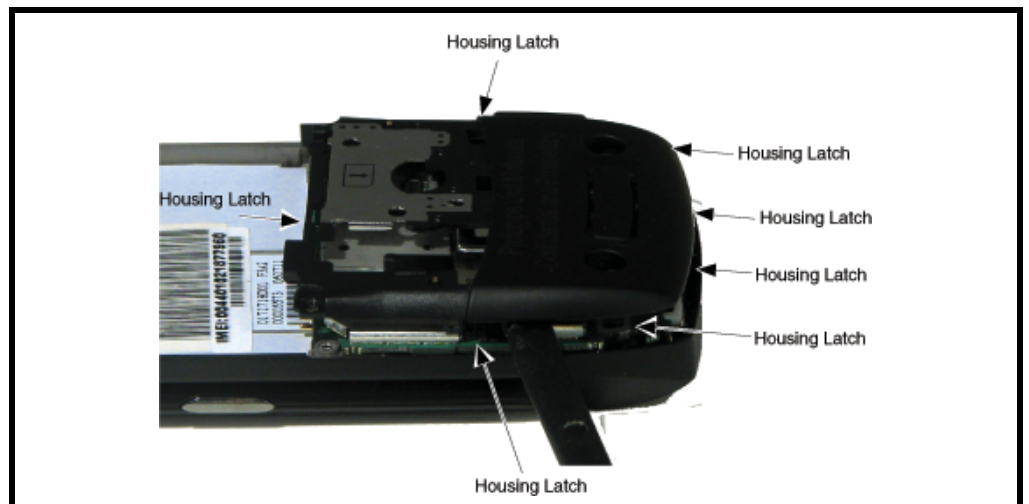
In addition to 2 screws, the rear chassis assembly is fastened with plastic catches. These are fragile and should be released with care.



040701o

Figure 4. Removing the Rear Housing Screws

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



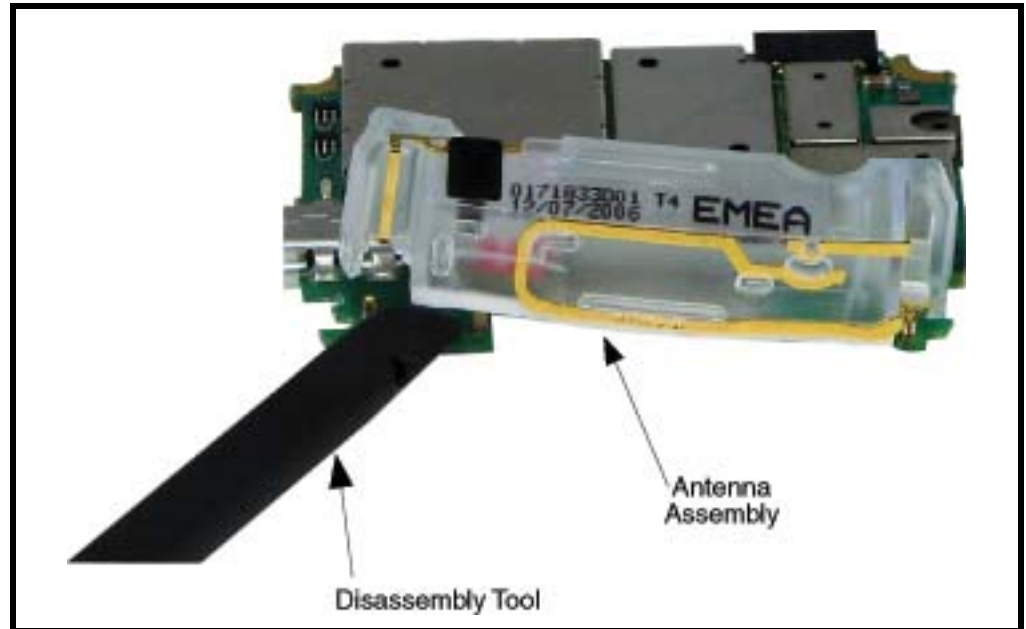
040701o

Figure 5. Removing the Rear Housing Latches

4. Carefully remove the rear housing away from the front housing and flip assembly.
5. Lift the rear housing assembly away from the phone.
6. To replace, align the housing latches with the corresponding openings on the front housing. Gently press the housings together until the catches snap into place.
7. Replace the 2 housing screws and tighten to a final torque setting of 1.7 inch pounds. Do not over tighten.
8. Replace the antenna, SIM, battery, and battery cover as described in the procedures.

Removing and Replacing the Antenna

1. Remove the battery cover, battery, SIM, and rear housing assembly as described in the procedures.
2. Use the disassembly tool to release the antenna assembly. See Figure 6.



040712o

Figure 6. Removing the Antenna Assembly

3. Carefully lift the antenna assembly away from the phone.
4. To replace, align assembly starting near accessory connector, then snap opposite end.
5. Carefully press the antenna assembly into position until the antenna assembly latches snap into position.
6. Replace the rear housing assembly, SIM, battery and battery cover as described in the procedures.



Ensure antenna connector is properly engaged before tightening to prevent damage to the antenna or housing.

Removing and Replacing the Transceiver Board Assembly



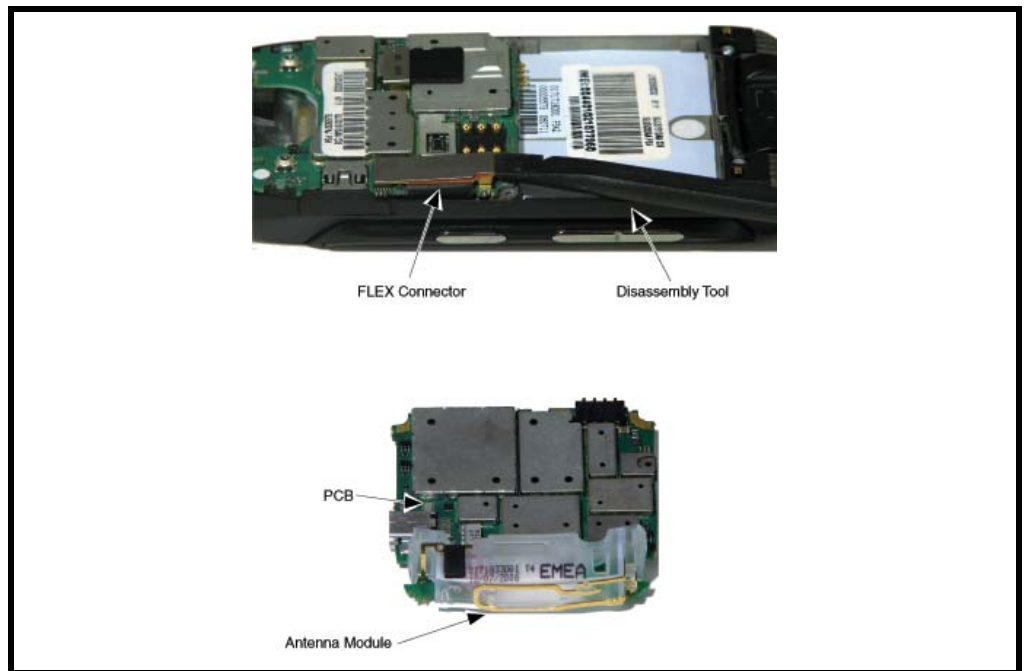
This product contains static-sensitive devices. Use anti-static handling procedures to prevent electrostatic discharge (ESD) and component damage.

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



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

2. Carefully work the flat end of the disassembly tool under the flex connector and remove the connector from the transceiver board.
3. Lift the transceiver board assembly from the front housing. See Figure 7.



0407100

Figure 7. Removing the Rear Housing Assembly

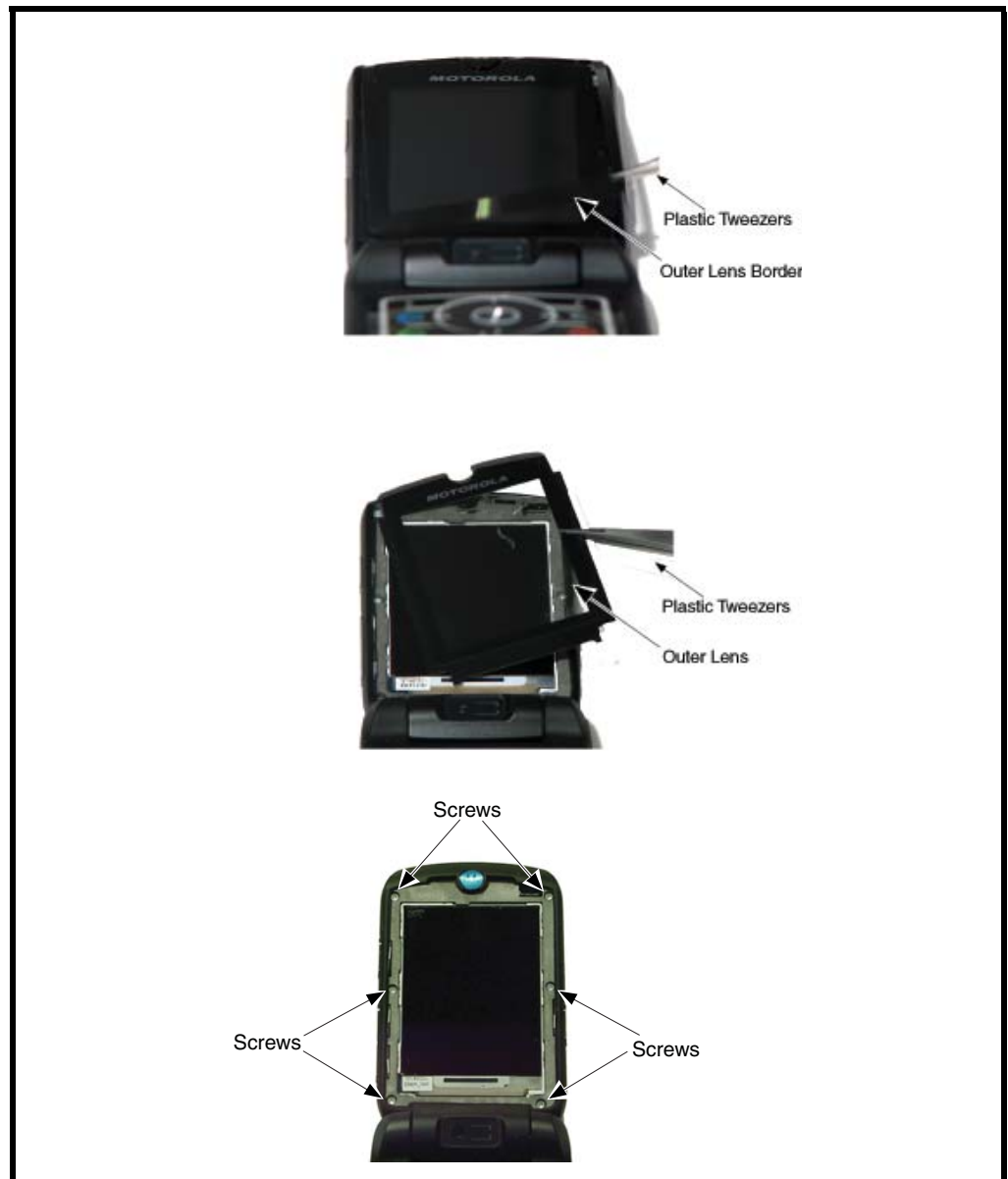
4. To replace, insert the acoustic module on to the transceiver board assembly.
5. Then the flex connector should be mated with the PCB still held in hand.
6. The PCB should then be rotated into position into the front housing.
7. Replace the rear housing, SIM, battery, and battery cover as described in the procedures.



Be sure the volume / smart buttons and voice button are correctly positioned in relation to the corresponding switches on the transceiver board. Verify operation of the buttons after replacing the transceiver board and rear chassis assembly.

Removing and Replacing the Flip Assembly Cover

1. Remove battery housing, battery, SIM, antenna, rear housing, and transceiver board assembly as described in the procedures.
2. Remove the main lens to have access to the screws.
3. Use the T-5 driver to remove the 6 screws from the flip assembly (see Figure 8). Retain the screws for re-assembly.



031838o

Figure 8. 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 9).

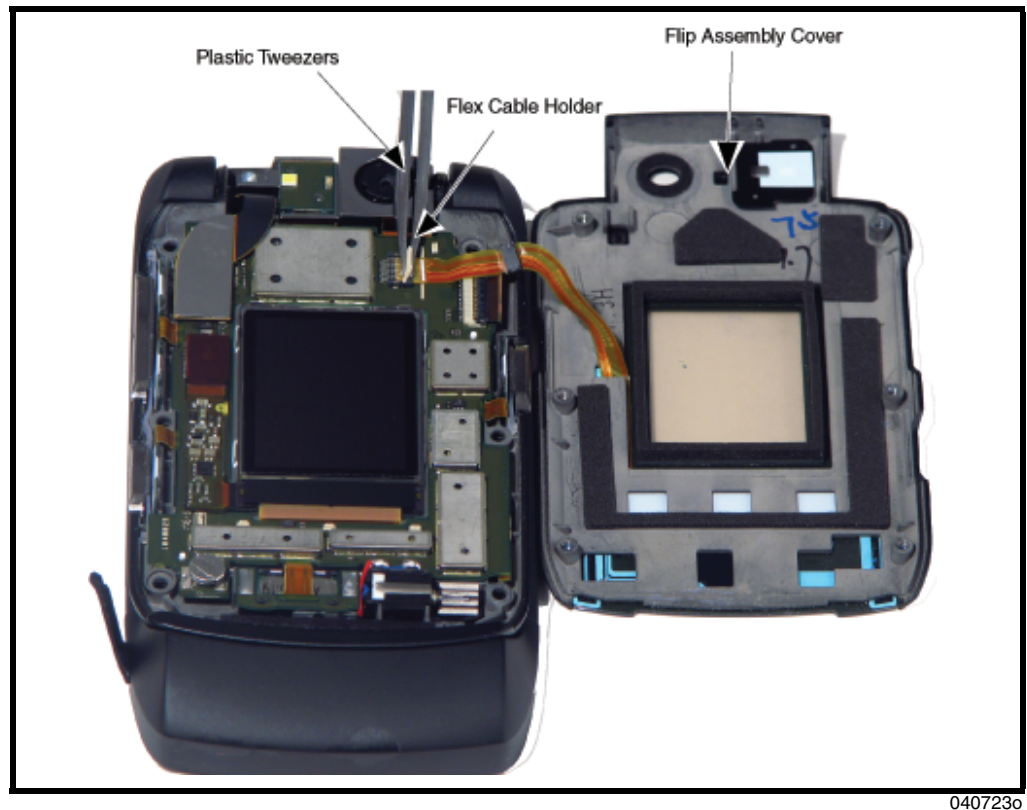


040722o

Figure 9. Separating the Flip Assembly Cover

6. Remove the smart buttons on the side of the flip assembly. Set them aside for reassembly.

7. Lift the flip cover away from the flip assembly. Be careful not to damage the display flex cable (see Figure 10).



0407230

Figure 10. Removing the Flip Assembly Cover

8. Use the plastic tweezers to unseat the flex connector from its socket.
9. To replace, insert the smart buttons into the phone. Ensure the buttons contact their respective switches on the display assembly.
10. Align the flip cover to the flip assembly, gently press the flip cover onto the flip assembly until the flip cover latches engage.
11. Insert the 6 screws and tighten to a final torque setting of 1.5 inch pounds. Do not over tighten. Avoid damage to the flex cable.
12. Use the main lens press to assemble the main lens. Press lens at 16.0 kgf and hold for 20 seconds.
13. Replace the transceiver board assembly, rear housing, antenna assembly, SIM, battery, and battery cover as described in the procedures.

Removing and Replacing the Display Module Assembly

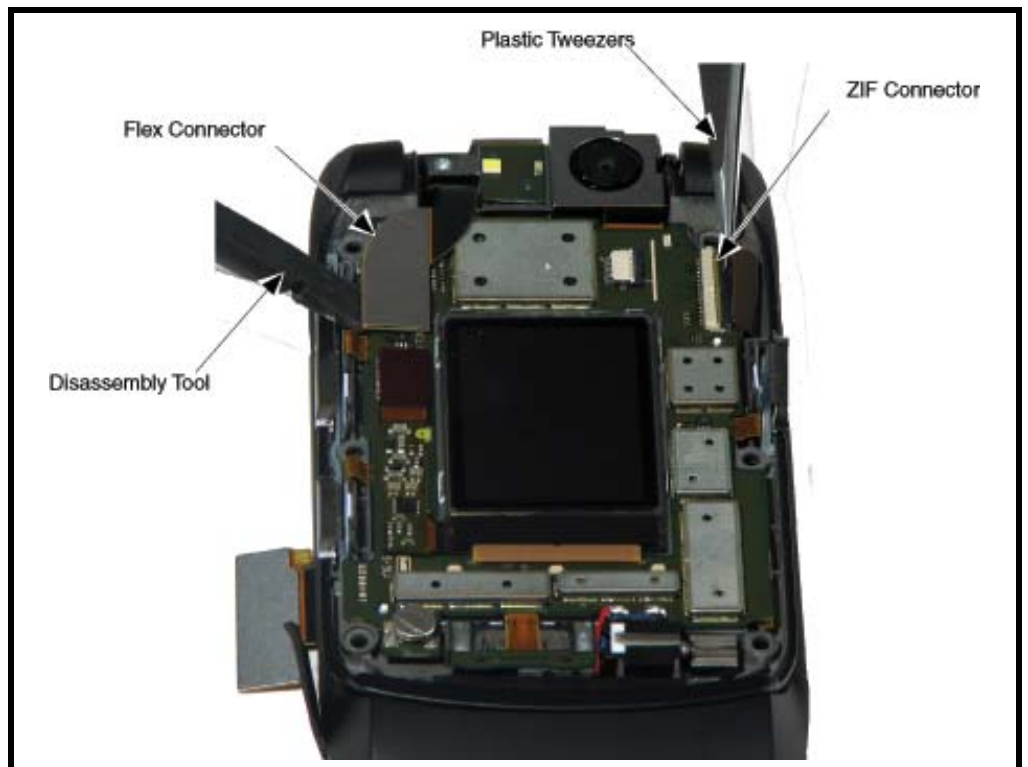


This product contains static-sensitive devices. Use anti-static handling procedures to prevent electrostatic discharge (ESD) and component damage.

1. Remove the battery cover, battery, SIM, 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.



061430o

Figure 11. Removing and Replacing the Display Module Assembly

2. Remove the two T5 screws for mounting the 2MP imager bracket.



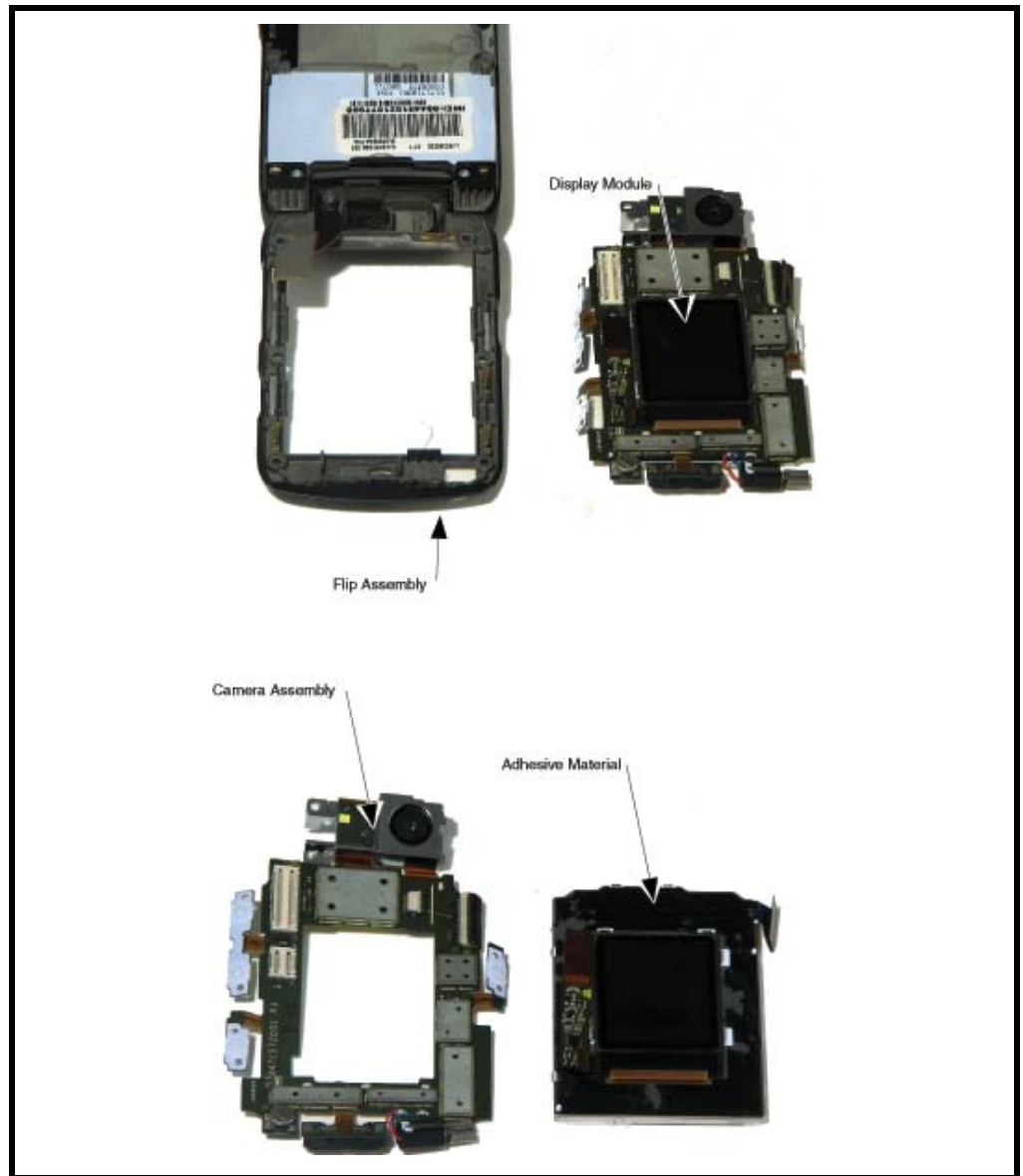
0614300

Figure 12. Display Module Assembly Flex Connector

3. Use the disassembly tool to unseat the vibe motor before removing display module assembly flex connector (see Figure 12).
4. Use the disassembly tool to unseat the display module assembly flex connector from its socket (see Figure 12).
5. Carefully and gently lift one corner of the display module assembly out of the flip assembly.
6. Avoid damage to the electrical components on the flex while carefully removing the display module assembly from the flip assembly.

➡ *Be sure the volume / smart buttons and voice button are correctly positioned in relation to the corresponding switches on the transceiver board. Verify operation of the buttons after replacing the transceiver board and rear chassis assembly.*

- Carefully lift the display lens away from the flip assembly.



0614300

Figure 13. Removing the Display Module Assembly

- To replace, align the display module assembly to the flip assembly.
- Carefully lower the display module into the flip assembly. Ensure that all of the display none of the display assembly components are damaged.
- 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.
- Insert the 2MP imager mounting screws and tighten to a torque of 0.6 inch-pounds.
- Replace the camera assembly, flip assembly cover, transceiver board, rear housing, antenna, SIM, battery, and battery connector as described in the procedures.

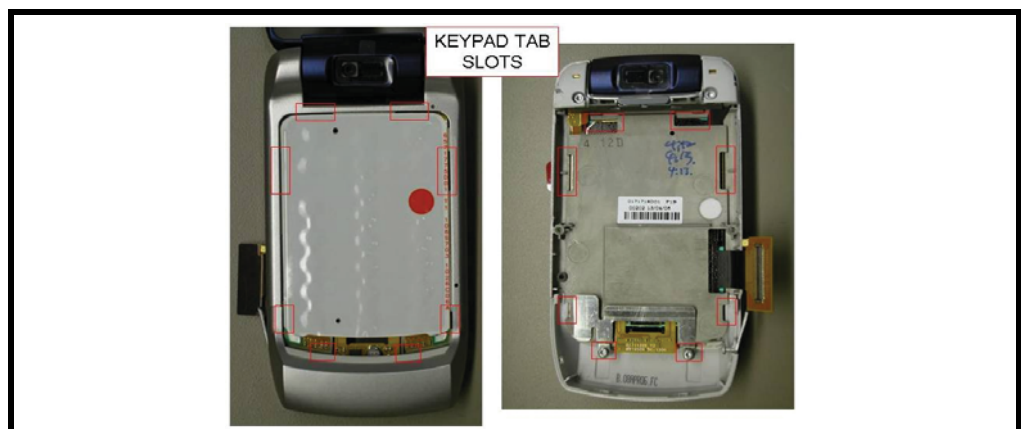
Removing and Replacing the Keypad Assembly

1. Remove the battery cover, battery, SIM, 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. Disassemble the keypad from the transceiver front housing by removing the two bottom tabs from the slots in the housing. Rotate the keypad in place such that the remaining 6 tabs are removed from the remaining slots.



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Figure 14. Removing and Replacing the Keypad Assembly



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Figure 15. Removing and Replacing the Keypad Assembly

3. To replace, assemble the keypad into the transceiver front housing by aligning the two bottom tabs to the slots in the housing. Rotate the keypad in place such that the remaining 6 tabs are inserted into the remaining slots.
4. Ensure the 6 tabs are fully inserted into the transceiver housing.
5. With the flip open, place the assembly in the press fixture with the keypad/flip facing down. Operate the press. The keypads flex tail and connector should be folded away from the front housing.

Removing and Replacing the Flip Hinge 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, SIM, 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. Remove the T3 screw used to secure the hinge.
3. Remove the two T6 screws used for securing the flip hinge bracket and the third screw in the flip inner that is used to lock the hinge in place.

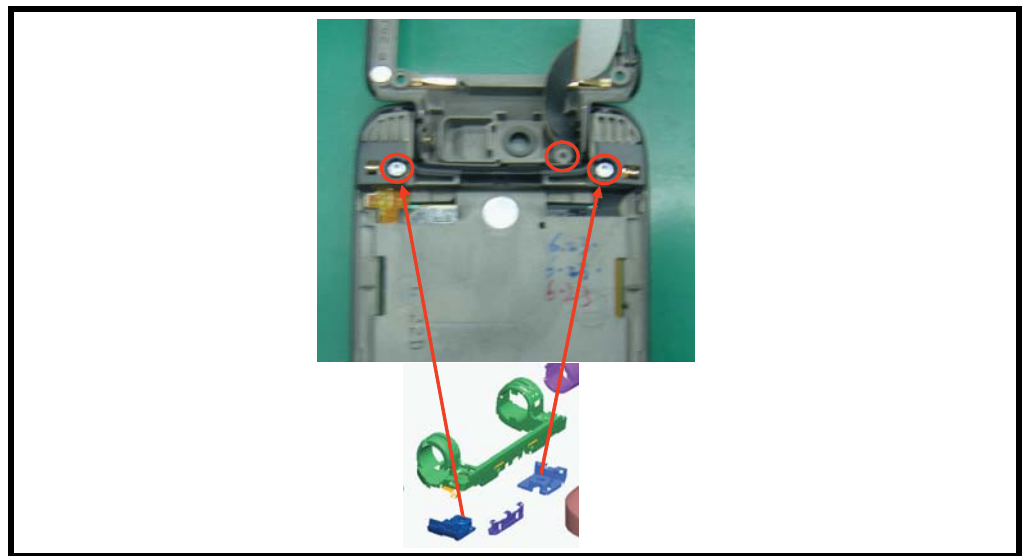


Figure 16. Removing the Flip Hinge Assembly Screws

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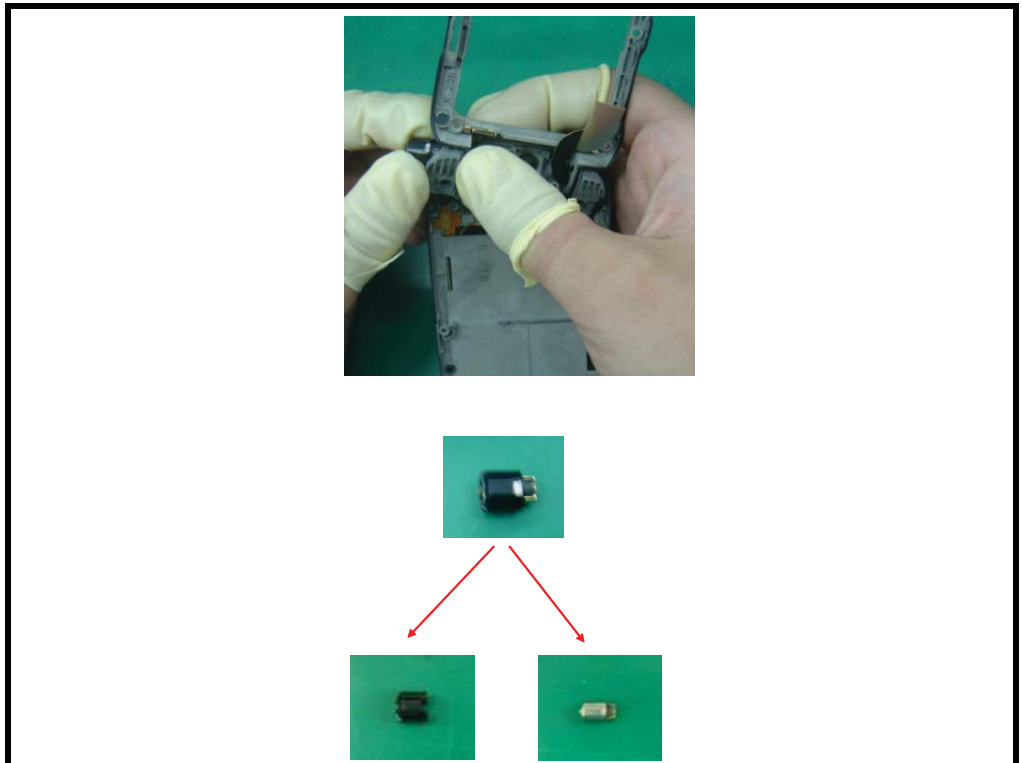
- Carefully grip the hinge assembly and make sure that the flex cable will not be damaged.



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Figure 17. Removing the Flip Hinge Assembly

- Unseat the hinge spring as shown in figure 18.



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Figure 18. Removing the Flip Hinge Assembly Hinge Spring

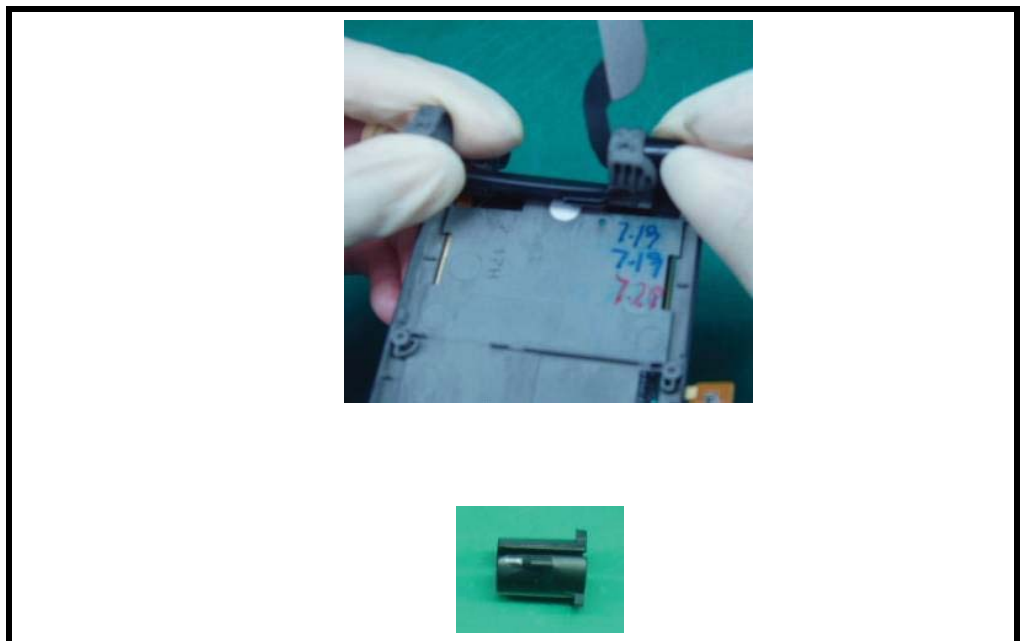
6. Carefully remove the flex cable from the flip. See figure 19.



0614300

Figure 19. Removing the Flex Cable from the Flip Hinge Assembly

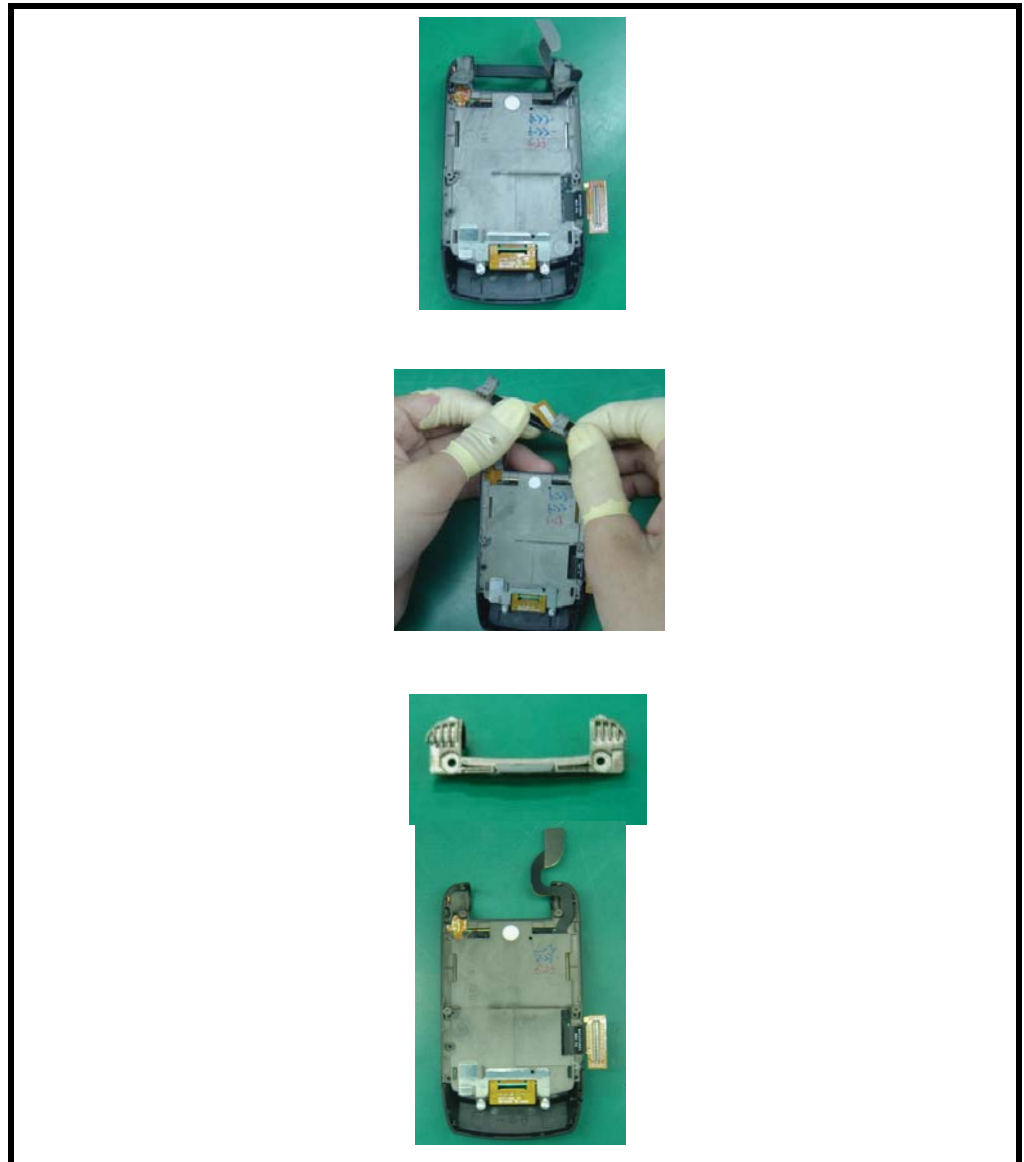
7. Remove the plastic barrel guide from the flip hinge assembly.



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Figure 20. Removing the Flip Hinge Assembly Barrel Guide

- Carefully remove the flip hinge bracket from the back housing. Be careful not to damage the flex cable.



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Figure 21. Removing the Flip Hinge Bracket

- To replace, align the flip hinge bracket to the back housing.
- Insert the plastic barrel guide to the flip hinge assembly.
- Carefully insert the flex cable through the flip assembly.
- Assemble and insert the hinge spring.
- Replace the screw used to secure the hinge. Tighten to a torque of 0.7 inch pounds.
- Replace the two screws used for securing the flip hinge bracket. Tighten to a torque of 1.7 inch pounds.
- Replace the camera assembly, flip assembly cover, transceiver board, rear housing, antenna, SIM, battery, and battery connector as described in the procedures.

Subscriber Identity Module (SIM) and Identification

SIM

A SIM is required to access the existing local GSM network, or remote networks when traveling (if a roaming agreement has been made with the provider).

The SIM contains:

- All the data necessary to access GSM services.
- The ability to store user information such as phone numbers.
- All information required by the network provider to provide access to the network.

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. E6 telephones use TrueSync® synchronization software to effect a personality transfer.

Identification

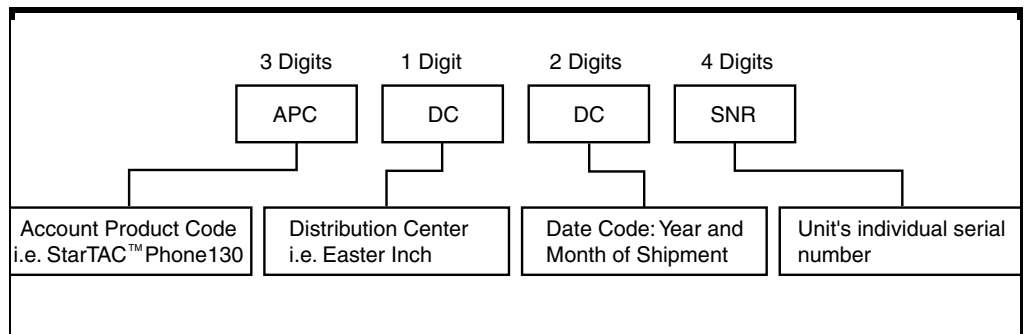
Each Motorola GSM device is labeled with a variety of identifying numbers. The following information describes the current identifying labels.

Mechanical Serial Number (MSN)

The Mechanical Serial Number (MSN) is an individual unit identity number and remains with the unit throughout the life of the unit.

The MSN can be used to log and track a unit on Motorola's Service Center Database.

The MSN is divided into 4 sections, as shown in Figure 22.



000807a

Figure 22. MSN Label Breakdown

International Mobile Station Equipment Identity (IMEI)

The International Mobile station Equipment Identity (IMEI) number is an individual number unique to the PCB and is stored within the unit's memory.

The IMEI uniquely identifies an individual mobile station and thereby provides a means for controlling access to GSM networks based on mobile station types or individual units. The full IMEI structure is listed in Table 2.

Table 2. IMEI Number Breakdown

TAC	Serial Number	Check Digit
NNXXXXXX	ZZZZZZ	A

Where

TAC Type Allocation Code, formerly known as Type Approval Code

NN Reporting body identifier

XXXXXX Type Identifier

ZZZZZZ Individual unit serial number

A Phase 1 = 0.

Phase 2 = check digit defined as a function of all other IMEI digits

Other label number configurations present are:

- **TRANSCIVER NUMBER:** Identifies the product type. Normally the SWF number. (i.e. V100).
- **PACKAGE NUMBER:** Identifies the equipment type, mode, and language in which the product is shipped.

Troubleshooting

Manual Test Mode

Motorola V6 telephones are equipped with a manual test mode capability. This allows service personnel to verify functionality and perform fault isolation by entering keypad commands.

To enter the manual test command mode, a GSM / DCS test SIM must be used.

1. Press **Ⓞ** to turn the phone OFF.
2. Remove the battery as described in the procedures.
3. Remove the customer's SIM card from the phone as described in the procedures.
4. Insert the test SIM into the SIM slot.
5. Replace the battery as described in the procedures.
6. Press **Ⓞ** to turn the phone ON.

Manual Test Mode Commands

Table 3. Manual Test Commands

Key Sequence	Test Function/Name	Remarks
<Menu>048263*	Enter manual test mode	
"End" Key	Exit manual test mode	
54*	Suspend	Required for all Test Mode Operations
0*0*0	Select tone 0	
0*0*1	Select tone 1	
0*0*2	Select tone 2	
0*0*3	Select tone 3	
0*0*4	Select tone 4	
0*0*5	Select tone 5	
0*0*6	Select tone 6	
0*0*7	Select tone 7	
0*0*8	Select tone 8	
0*0*9	Select tone 9	
0*1*X	Disable tone X	
3*0*1	Enable vibrator	
3*0*0	Disable vibrator	
5*0*0	Set audio level 0	
5*0*1	Set audio level 1	
5*0*2	Set audio level 2	
5*0*3	Set audio level 3	
5*0*4	Set audio level 4	
5*0*5	Set audio level 5	
5*0*6	Set audio level 6	
5*0*7	Set audio level 7	
5*0*8	Set audio level 8	
5*0*9	Set audio level 9	

Table 3. Manual Test Commands (Continued)

Key Sequence	Test Function/Name	Remarks
5*0*10	Set audio level 10	
5*0*11	Set audio level 11	
5*0*12	Set audio level 12	
5*0*13	Set audio level 13	
5*0*14	Set audio level 14	
5*0*15	Set audio level 15	
6*2*2*0*0	Set Audio Path. Int Mic, IntSpk, RX unmute, TX unmute	
6*4*6*0*0	Set Audio Path. Boom Mic, Boom Spk, RX unmute, TX unmute	
10*0*3	Set band GSM 900	
10*0*4	Set band DCS 1800	
10*0*5		
10*0*6	Set dual band GSM 900 / 1800	
10*1*0	Read band	3= GSM 4= DCS 5= PCS 6 =GSM/DCS
18*0	Initialize non-volatile memory (Master Reset)	
18*1	Initialize non-volatile memory (Master Clear)	
55*2*001	Test Display. All pixels ON	
55*2*000	Test Display. All pixels OFF	
55*2*002	Test Display. Checkerboard pattern A	
55*2*003	Test Display. Checkerboard pattern B	
55*2*004	Test Display. Border pixels ON	
*#06#	IMEI Check	No Test Mode Required
Phone Set up --> Phone Status --> Other Information	Flex Version / Technology / S-W Version / Readiness Status	No Test Mode Required

Troubleshooting Chart

Table 4. : 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.	Forward to an authorized level 3 service center.
	d) keyboard assembly failure.	Replace the keyboard assembly. Temporarily connect a +3.6 Vdc supply to the battery connectors. Press and hold 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 assembly defective.	Forward to an authorized level 3 service center.
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.	Forward to an authorized level 3 service center.
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	Verify transmit audio quality. If transmit audio quality is still weak and microphone is not obstructed, proceed to b.
	b) Microphone defective.	Replace the microphone as described in the procedures. If fault is not cleared, proceed to c.
	c) Transceiver board defective.	Forward to an authorized level 3 service center.
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.

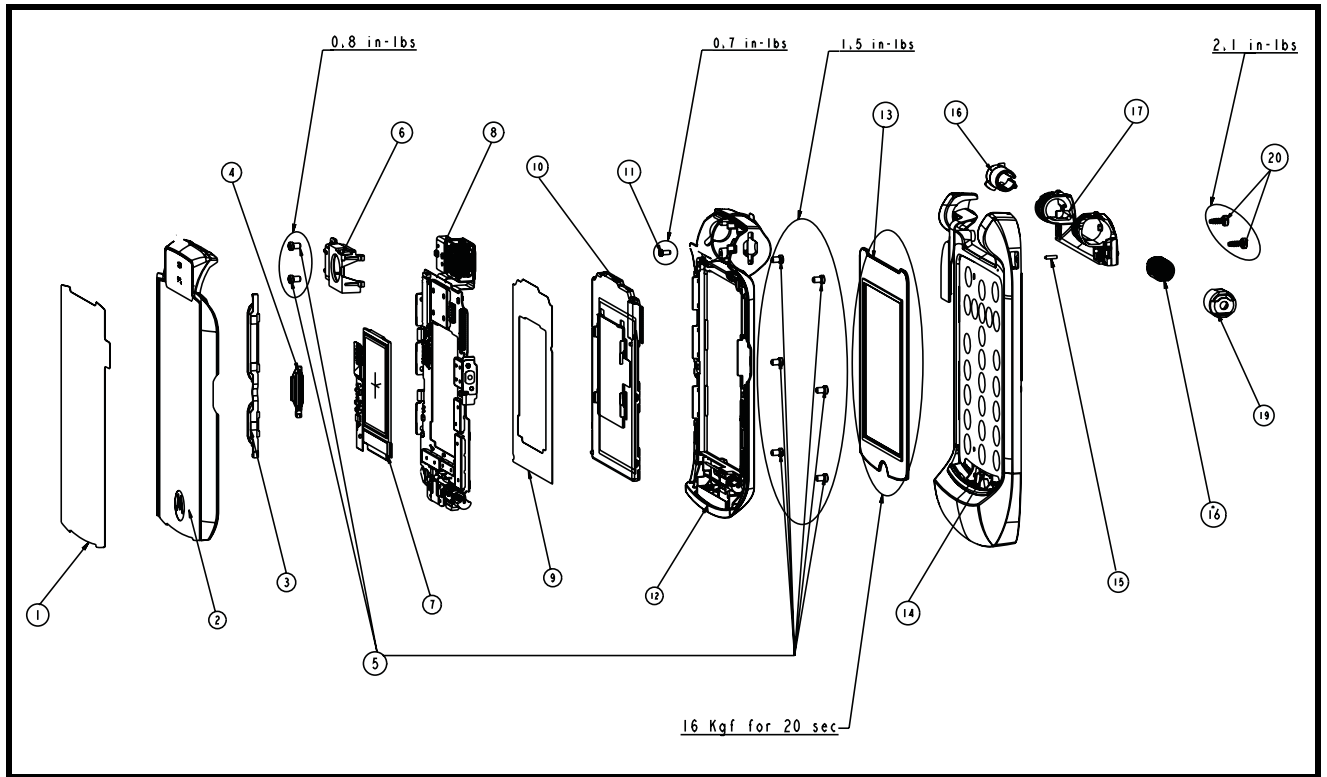
Table 4. : Level 1 and 2 Troubleshooting Chart

SYMPTOM	PROBABLE CAUSE	VERIFICATION AND REMEDY
	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.	Forward to an authorized level 3 service center.
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) 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.	Forward to an authorized level 3 service center.
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.	Forward to an authorized level 3 service center.
9. Vibrator feature not functioning.	Transceiver board assembly defective.	Forward to an authorized level 3 service center.
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.
12. 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.

Exploded View Diagram



061438o

Figure 23. Exploded View Diagram

Exploded View Parts List (Main assembly)

The following part number table is provided only for reference. Please contact your local Motorola parts organization for current part number information.

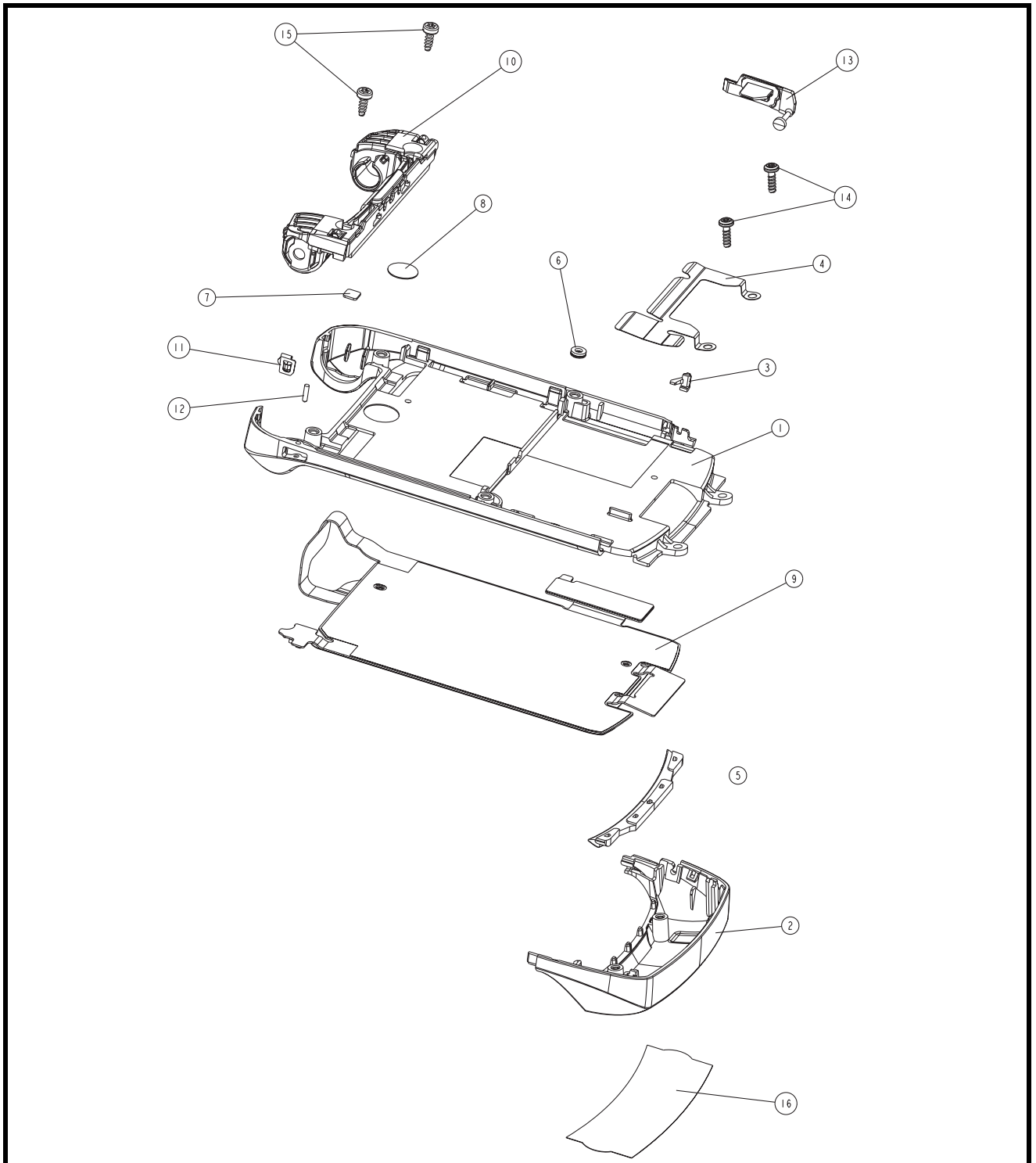
Table 5. Exploded View Parts List (Main Assembly)

ASSEMBLY DESCRIPTION			GENERIC - LATIN (LICORICE)	VODAFONE - LATIN (DARK NAVY)	HUTCHISON - LATIN (LICORICE)	VODAFONE - PARTNER (DARK NAVY)	TIM (LICORICE)	VODAFONE - LICORICE	TELSTRA (LICORICE)
ITEM #	PART DESCRIPTION	QUANTITY	PART NUMBER						
STATUS			ACTIVE	ACTIVE	OBSOLETE	ACTIVE	ACTIVE	ACTIVE	ACTIVE
	FLIP FRONT ASSEMBLY		0171718D01	0171718D02	0171718D03	0171718D05	0171718D06	0171718D07	0171718D08
1	LINER, FRONT, CLI LENS	1	1171005F01	1171005F01	1171005F01	1171005F01	1171005F01	1171005F01	1171005F01
2	FLIP OUTER ASSEMBLY	1	1571788C01	1571788C02	1571788C03	1571788C06	1571788C04	1571788C01	1571788C05
3	SIDE KEY, VOL UP/DOWN&SMART, PLATED	1	3871815C02	3871815C02	3871815C02	3871815C02	3871815C02	3871815C02	3871815C02
4	SIDE KEY, CAMERA BUTTON, PLATED	1	3871816C02	3871816C02	3871816C02	3871816C02	3871816C02	3871816C02	3871816C02
5	SCREW, M1.6 X 2.5MM, T5 MAG FLIP	8	0387726M09	0387726M09	0387726M09	0387726M09	0387726M09	0387726M09	0387726M09
6	ASM, IMAGER BRACKET	1	0171256E01	0171256E01	0171256E01	0171256E01	0171256E01	0171256E01	0171256E01
7	DISPLAY, CLI	1	7271830E01	7271830E01	7271830E01	7271830E01	7271830E01	7271830E01	7271830E01
8	ASM, RIGID LCD FLEX	1	0171841D01	0171841D01	0171841D01	0171841D01	0171841D01	0171841D01	0171841D01
9	ADHESIVE, CONDUCTIVE, BOARD-BEZEL	1	1171817D01	1171817D01	1171817D01	1171817D01	1171817D01	1171817D01	1171817D01
10	DISPLAY, 240 X 320, 2.2" OVGA 1-MODULE W/LG & BEZEL	1	7271830D01	7271830D01	7271830D01	7271830D01	7271830D01	7271830D01	7271830D01
11	SCREW, M1.2 X 2.5.2MM, STAR FLT STL	1	0371841E01	0371841E01	0371841E01	0371841E01	0371841E01	0371841E01	0371841E01
12	ASM, VOLANS FLIP INNER	1	1571791C01	1571791C02	1571791C01	1571791C02	1571791C01	1571791C01	1571791C01
13	ASM, LENS MAIN W/ADH W/LINER	1	6171021F03	6171021F05	6171021F07	6171021F01	6171021F03	6171021F03	6171021F03
14	ASM, FRONT HSG VOLANS XCVR	1	1571782C01	1571782C02	1571782C01	1571782C02	1571782C01	1571782C01	1571782C01
15	PIN, LANYARD	1	2271837D01	2271837D01	2271837D01	2271837D01	2271837D01	2271837D01	2271837D01
16	SLEEVE, FLEX SHAFT	1	3771478D02	3771478D02	3771478D02	3771478D02	3771478D02	3771478D02	3771478D02
17	ASM, HOUSING, ENDO	1	0171831D01	0171831D02	0171831D01	0171831D02	0171831D01	0171831D01	0171831D01
18	HINGE VOLANS	1	5571453D03	5571453D03	5571453D03	5571453D03	5571453D03	5571453D03	5571453D03
19	SLEEVE, HINGE	1	1571882C01	1571882C01	1571882C01	1571882C01	1571882C01	1571882C01	1571882C01
20	SCREW, M1.6 X 3MM, T6 MAG	2	0387473K08	0387473K08	0387473K08	0387473K08	0387473K08	0387473K08	0387473K08



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.

Exploded View Diagram (Front Housing)



0318260

Figure 24. Exploded View Diagram (Front Housing)

Exploded View Parts List (Front Housing)

The following part number table is provided only for reference. Please contact your local Motorola parts organization for current part number information.

Table 6. Exploded View Parts List (Front Housing)

	DESCRIPTION	QTY	PART NUMBERS	
			1571782C01	1571782C02
1	FRONT HOUSING, PAINTED	1	1571473D01	1571473D02
2	CHIN HOUSING, PAINTED	1	1571475D01	1571475D02
3	SOL LIGHTGUIDE	1	6171881D01	6171881D01
4	GROUNDING STRAP	1	4271890D01	4271890D01
5	KEYPAD BUMPER	1	7571794D01	7571794D02
6	MICROPHONE GASKET	1	3271807C01	3271807C01
7	LIGHT SENSOR LENS	1	6171819C01	6171819C01
8	WATER DETECT LABEL	1	5485042F01	5485042F01
9	KEYPAD FLEX ASSEMBLY	1	0171160E02	0171160E02
10	ENDO HOUSING ASSEMBLY	1	0171831D01	0171831D02
11	HINGE GND CLIP	1	3271232E02	3271232E02
12	LANYARD PIN	1	2271837D01	2271837D01
13	EMU GROMMET	1	0571777C01	0571777C02
14	SCREW, M1.5x0.67x4.5	2	0387347Y03	0387347Y03
15	SCREW, MGI.5x0.70x4.2	2	0387473K08	0387473K08
16	CHIN HOUSING LINER	1	1171006F01	1171006F01



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 (Optional)

Table 7. Accessories	
Part Description	Part Number
Audio and Media	
Bluetooth Headset (Green) HS820	SYN0945
Bluetooth Headset - H700	SYN1311
Bluetooth Headset - HS805	SYN0986
Bluetooth Headset (Pearl Dark Gray) - H300	SYN1297
Bluetooth Headset (Pink) - H300	SYN1417
Bluetooth Headset (Pure White) - H300	SYN1416
Bluetooth Headset (Refresh - Dk Blue) - HS815	SYN1201
Bluetooth Headset - Glossy Black - HS820	SYN9951
Bluetooth Headset - Grey - HS820	SYN1106
Bluetooth Headset - H605	SYN1303
Bluetooth Headset - HS850 (Refresh - Black)	SYN1107
Bluetooth Headset - HS850 (Refresh - Blue)	SYN1226
Bluetooth Module (Stereo Music and Telephony)	SYN1447
Bluetooth Mono Headset, Nickel- H500	SYN1290
Bluetooth Stereo Headset HT820	SYN0948
Bluetooth Stereo Transceiver DC800	SYN1001
DJ Headset - Bluetooth - Music and Telephony	SYN1673
H3 Bluetooth Headset Cherry Red	SYN1736
H3 Bluetooth Headset Dark Pearl Grey	SYN1507
H350 Bluetooth Headset Dark Pearl Grey	SYN1763
H350 Bluetooth Headset Sapphire Blue	SYN1738
H350 Bluetooth Headset Silver Quartz	SYN1765
H350 Bluetooth Headset Silver Sail	SYN1764
H350 BT Headset Black	SYN1439
H500 Bluetooth Headset Black Soft Touch Japan	SYN1685
H500 Bluetooth headset Black Softtouch	SYN1374
H500 Bluetooth Headset Bubble Gum	SYN1671
H500 Bluetooth Headset Celery	SYN1732
H500 Bluetooth Headset Cosmic Blue	SYN1617
H500 Bluetooth Headset Fire Red	SYN1667
H500 Bluetooth Headset Hot Pink	SYN1525
H500 Bluetooth Headset iPod Blue	SYN1523
H500 Bluetooth Headset iPod Gold	SYN1524

Table 7. Accessories(Continued)	
Part Description	Part Number
H500 Bluetooth Headset Oi	SYN1735
H500 Bluetooth Headset Pumpkin	SYN1733
H500 Bluetooth Headset Spa Blue	SYN1527
H500 Bluetooth Headset Steel Teal	SYN1734
H500 Bluetooth Headset White	SYN1526
H500 Gloss Black	SYN1375
H500 Nickel Japan	SYN1441
H500 Pink	SYN1436
Headset Mono One Touch w/ Send-End (EMU)	SYN0896
RAZR H3 Black	SYN1437
RAZR H3 Silver	SYN1438
Stereo Headset - EMU	SYN1301
Bluetooth Car Kit - Asia/Americas	S9642
Bluetooth Car Kit - Euro	S9643
Bluetooth Car Kit - HF850	98675H
Bluetooth Car Kit - IHF1000 -Americas/Asia	98676J
Bluetooth Car Kit - IHF1000 - EMEA	CFLN1232AB
Bluetooth Speaker (Quadrant Refresh) -HF820	SYN0736
Self Install Car Kit Universal - Mandarin -Smart Drive+	SYN0888
Self Install Car Kit Universal - Smart Car Kit - Smart Drive	SYN0890
128MB microSD card & Mot SD adapter	SYN1403
1GB microSD card & Mot SD adapter	SYN1406
256MB microSD card & Mot SD adapter	SYN1404
32MB microSD card & Mot SD adapter	SYN1401
512MB microSD card & Mot SD adapter	SYN1405
64MB microSD card & Mot SD adapter	SYN1402
Bluetooth Class 1 USB Adapter PC850	SYN1244
Bluetooth TXTR Keyboard (champagne gold)	SYN1664
Bluetooth TXTR Keyboard (silver)	SYN1391
TransFlash Card with SD Adapter - 128MB	SYN0943
TransFlash Card with SD Adapter - 16MB	SYN0940
TransFlash Card with SD Adapter - 256MB	SYN0944
TransFlash Card with SD Adapter - 32MB	SYN0941

Table 7. Accessories(Continued)	
Part Description	Part Number
TransFlash Card with SD Adapter - 512MB	SYN1293
TransFlash Card with SD Adapter - 64MB	SYN0942
USB 2.0 SD Card Reader	SYN1045
Data Cable Mini USB/USB/Serial	SKN6371
Mobile Phone Tools	Region-specific
Bluetooth Helmet Adapter (Mage) - HS830	SYN0996
Bluetooth Helmet Headset - HS830 (Mage)	SYN0997
Oakley RAZRWIRE (Mercury: NA) - H7	98679H
Oakley RAZRWIRE (Pewter/Black: NA) - H7	98677H
Oakley RAZRWIRE (Plantinum/Rootbeer: NA) - H7	98678H
Reverb (Oakley Stereo Bluetooth Eyewear - BLK)	SYN1552
Reverb (Oakley Stereo Bluetooth Eyewear - WHT)	SYN1553
REVERB (Oakley Stereo Bluetooth Eyewear Br. Sm.)	SYN1554
Battery BZ60 Li-Ion 840mAh	SNN5789B
Battery-Only-Charger for PF batteries, HongKong plug	SYN1491A
Battery-Only-Charger for PF batteries, PRC plug	SYN1489A
Battery-Only-Charger for PF batteries, Taiwan plug	SYN1490A
Battery-Only-Charger for PF batteries, US/Euro plug	SYN1488A
Charger Adapter EMU/CE (Y-cable)	SKN6185
Charger Adapter EMU/EMU (Y-cable)	SKN6222
P790 Power on the Go	SPN5353
Power On The Go - Verizon	SYN1435
Smart Cable EMU - Motorola	SYN1003
Standard Car Charger EMU - P310	SYN1630
Travel Charger EMU Mid-Rate Switcher -Argentina	SPN5192
Travel Charger EMU Mid-Rate Switcher -Australia	SPN5193
Travel Charger EMU Mid-Rate Switcher -BRAZIL	SPN5187
Travel Charger EMU Mid-Rate Switcher -EURO	SPN5189
Travel Charger EMU Mid-Rate Switcher -INDIA	SPN5194
Travel Charger EMU Mid-Rate Switcher -JAPAN	SPN5274
Travel Charger EMU Mid-Rate Switcher -MEXICO	SPN5186
Travel Charger EMU Mid-Rate Switcher -PRC	SPN5188

Table 7. Accessories(Continued)	
Part Description	Part Number
Travel Charger EMU Mid-Rate Switcher -TWN	SPN5216
Travel Charger EMU Mid-Rate Switcher -UK/HK	SPN5190
Travel Charger EMU Mid-Rate Switcher -US ENG	SPN5185
Travel Charger EMU Rapid Switcher -Argentina	SPN5197
Travel Charger EMU Rapid Switcher -BRAZIL	SPN5196
Travel Charger EMU Rapid Switcher - HK	SPN5199
Travel Charger EMU Rapid Switcher -Japan	SPN5275
Travel Charger EMU Rapid Switcher -MEXICO	SPN5200
Travel Charger EMU Rapid Switcher -PRC	SPN5198
Travel Charger EMU Rapid Switcher - US	SPN5202
Travel Charger EMU Rapid TWN	SPN5270
Vehicle Power Adapter EMU - VC700	SYN0847

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