MOTOROLA

V551/V555 GSM
Quad-Band Wireless Telephone

GSM 850/900/1800/1900 MHz

EDGE

Contents

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 name included in V551/V555 telephone is 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, and
- 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 of the V551/V555 telephone. Refer questions about this manual to the nearest Customer Service Manager.

Audience

This manual aids service personnel in testing and repairing the V551/V555 telephone. 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

The scope of this manual is to provide basic information relating to the V551/V555 telephone, and provide procedures and processes for repairing the phone at Level 1 and 2 service centers including:

• Unit swap out
• Repairing of mechanical faults
• Basic modular troubleshooting
• Testing and verification of phone 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 manual to emphasize certain types of information.

▶ *Note: Emphasizes additional information pertinent to the subject matter.*

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

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

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

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

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

Warranty Service Policy

This 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 will bear the costs of early life failure.

Product Support

Customer's original phone 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 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 the 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)

Replacement parts, test equipment, and manuals can be ordered from AAD.

U.S.A.	**Outside U.S.A.**
Phone: 800-422-4210	Phone: 847-538-8023
FAX: 800-622-6210	FAX: 847-576-3023

To order spare parts in EMEA region call +49 461 803 1638.

To order spare parts in Asia region call +65 648 62995.

Specifications

General Function	Specification
Frequency Range GSM 850	824-848 MHz Tx 869-893 MHz Rx
Frequency Range GSM 900	880-915 MHz Tx (with EGSM) 925-960 MHZ Rx
Frequency Range DCS 1800	1710-1785 MHz Tx 1805-1880 MHz Rx
Frequency Range PCS 1900	1850-1910 MHz Tx 1930-1990 MHz Rx
Channel Spacing	200 kHz
Channels	174 EGSM, 374 DCS, 374 PCS, carriers with 8 channels per carrier
Modulation	GMSK at BT = 0.3
Transmitter Phase Accuracy	5 Degrees RMS, 20 Degrees peak
Duplex Spacing	45 MHz GSM, 95 MHz DCS, 80 MHz PCS
Frequency Stability	± 0.10 ppm of the downlink frequency (Rx)
Operating Voltage	+3.0V dc to +4.2V dc (cell) +4.4V dc to +6.6V dc (external charger jack with 2.4 K ohm resistor)
Average Transmit Current	310 mA max
Average Stand-by Current	4.0 mA max (DRX2), 3.0 mA max (DRX9)
Dimensions	108mm x 46mm x 20.5mm (4.25 inches x 1.81 inches x 0.81 inches)
Size (Volume)	89 cc (5.43 in^3)
Weight	110 gm (3.5 oz) with cell
Temperature Range	-10° C to +55° C (+15° F to +130° F)
Battery Life, 790 mAh Li Ion Battery	Talk time 220 - 425 mins Standby time 180 - 225 Hrs.
	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 50% DTX high power to low power.

Transmitter Specification	
RF Power Output	33 dBm nominal GSM 850 33 dBm nominal GSM 900 30 dBm nominal GSM 1800 30 dBm nominal GSM 1900
Output Impedance	50 ohms nominal
Spurious Emissions	-36 dBm from 0.1 to 1 GHz, -30 dBm from 1 to 4 GHz

Receiver Specification	
Receive Sensitivity	-106 dBm GSM 900, -104 dBm GSM 1800, -104 dBm PCS
RX bit error rate (100k bits) Type II	< 2%
Channel Hop Time	500 microseconds

Receiver Specification	
Time to Camp	Approximately 5-10 seconds

Speech Coding Function	Specification
Speech Coding Type	Regular pulse excitation / linear predictive coding with long term prediction (RPE LPC with LTP)
Bit Rate	13.0 kbps
Frame Duration	20 ms
Block Length	260 bits
Classes	Class 1 bits = 182 bits; Class 2 bits = 78 bits
Bit Rate with FEC Encoding	22.8 kbps

Product Overview

Motorola V551/V555 telephones are small and lightweight global system for mobile communications (GSM) general packet radio service (GPRS) wireless application protocol (WAP)-enabled mobile phones and enhanced Data Rate for Global Evolution (EDGE). The V551/V555 incorporate a new user interface (UI) for easier operation, allows short message service (SMS) text messaging, and includes personal information manager (PIM) functionality.

The V551/V555 is a quad-band phone that allows roaming within the GSM 900 MHz, (DCS) 1800 MHz digital cellular system, the GSM 850 MHz, and PCS 1900 MHz bands.

V551/V555 telephones support EDGE in addition to traditional circuit switched transport technologies.

V551/V555 telephones have a clam form factor. They feature an externally viewable 96 x 32 pixel display for caller identification and date/time, an internal 176 x 220 pixel display, and single speakers 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 790 mAh Lithium Ion (Li Ion) battery fits behind a removable back cover.

The phone accepts both 1.875V and 3V mini subscriber identity module (SIM) cards which fit into the SIM holder underneath the battery. The antenna is a fixed stub type antenna. Inexpensive direct connection to a computer or handheld device via RS232 or USB for data and fax calls, and for synchronizing phonebook entries with TrueSync® software, can be accomplished by using the optional data cable and soft modem.

Features

V551/V555 telephones use advanced, self-contained, sealed, custom integrated circuits to perform the complex functions required for EDGE 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 high audio hands-free speakerphone
- Dedicated on off speakerphone button
- Quad-Band
- Multi-Media Messaging (MMS)
- Integrated digital camera (VGA quality) with zoom and brightness adjustment
- One polyphonic speaker w/ MP3, MIDI, & WAV ringers
- Stylish and Ergonomic design
- 5 megabytes of end user memory
- Large, active color display (176 x 220, 65K)
- External CLI display (96x32, with blue backlight)
- Games (embedded & downloadable)
- PIM functionality with Picture Caller ID
- Downloadable themes (ringers, images, animations)

Personal Information Management

The V551/V555 telephone contains a built-in datebook with alarm reminders, message center, and a phonebook.

Other Features

Detailed descriptions of other features available for the V551/V555 wireless telephone are in the appropriate V551/V555 GSM 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 V551/V555 telephone controls are on the front of the device and on the keyboard as shown in Figure 1. Indicator icons are displayed on the LCD (see Figure 2).
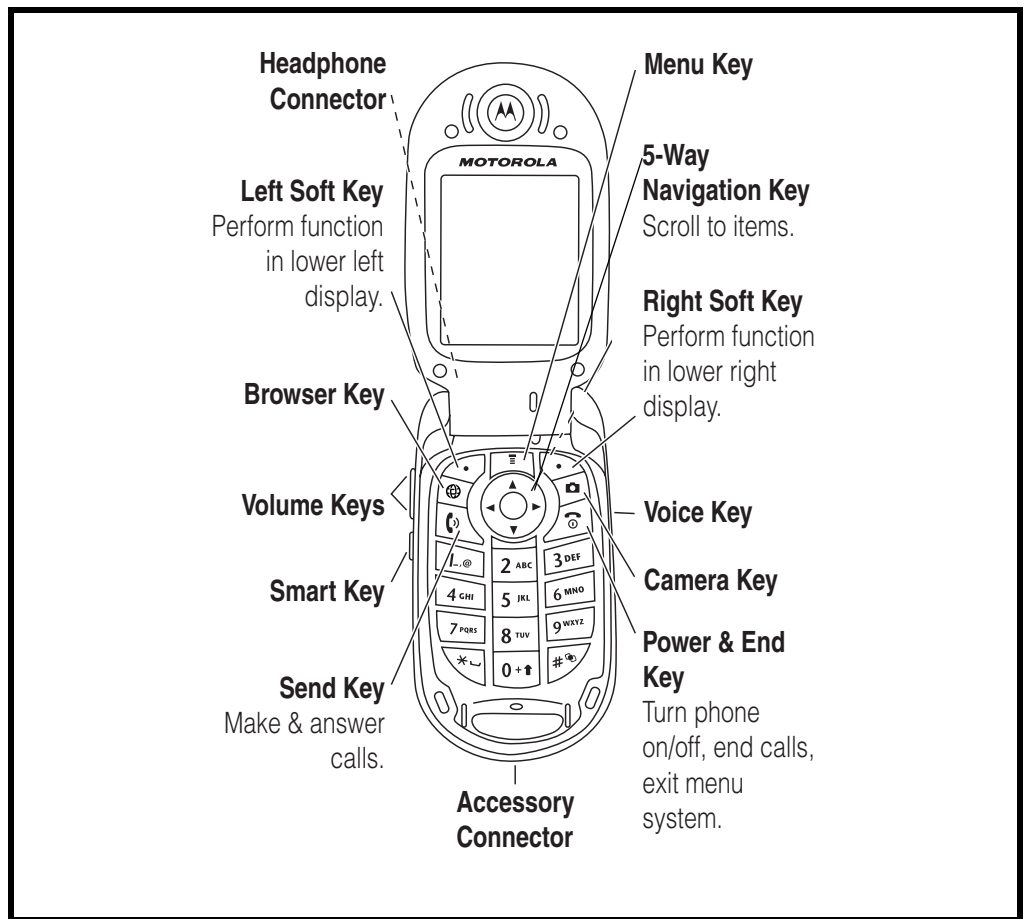
Figure 1. Controls and Indicators

Menu Navigation

The V551/V555 telephone has a simplified icon and GUI. See Figure 3 for the V551/V555 menu structure. A scroll key allows you to move easily through menus.

Liquid Crystal Display (LCD)

The V551/V555 phone features a 176 x 220 color display offering 3 lines of text, 1 line of icons, and 1 line of prompts. 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 you scroll up and down.

▶ *Whether a phone displays all indicators depends on the programming and services to which the user subscribes.*
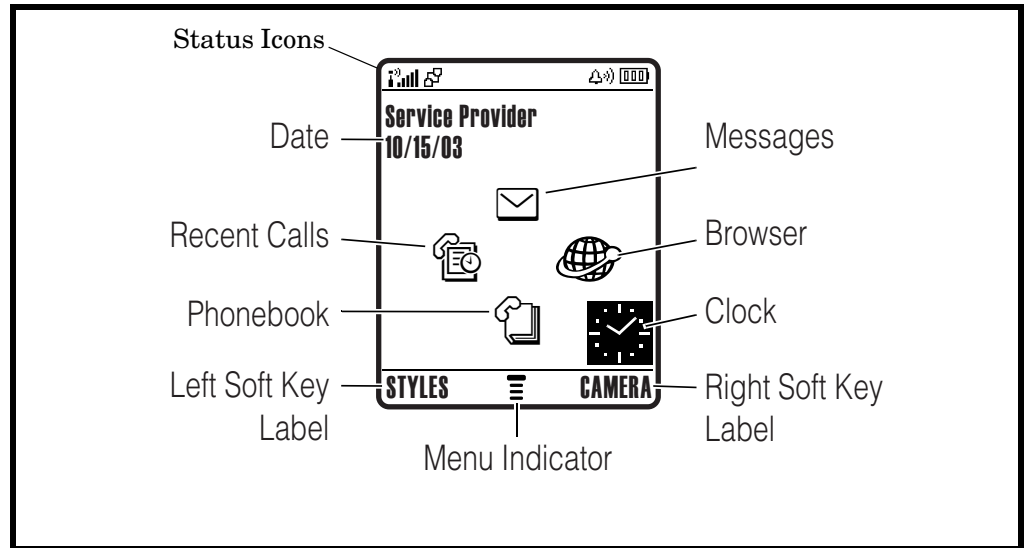
Figure 2 shows common icons displayed on the LCD.

Figure 2. V551/V555 Display Idle Screen

1. **Status Icons** show the status of your phone.
2. **Real-Time Clock** shows the current time.
3. **Date** shows the current date.
4. **Soft Key Labels** provide selectable options in screen display.

User Interface Menu Structure

Figure 3 shows the V551/V555 telephone menu structure.

Menu Map

1 Main Menu

🖳 **Phonebook**
📒 **Recent Calls**
- Received Calls
- Dialed Calls
- Notepad
- Call Times
- Call Cost *
- Data Times
- Data Volumes

✉ **Messages**
- Create Message
- Email Msgs
- Message Inbox
- Voicemail
- Browser Msgs
- Info Services *
- Quick Notes
- Outbox
- Drafts
- MMS Templates

📇 **Office Tools**
- SIM Tool Kit Apps *
- Calculator
- Datebook
- Shortcuts
- Voice Records
- Alarm Clock
- Dialing Services
  - Fixed Dial
  - Service Dial *
  - Quick Dial *
- Chat

🎮 **Games & Apps**

2

🌐 **Web Access**
- Browser
- Web Shortcuts
- Stored Pages
- History
- Go To URL
- Browser Setup
- Web Sessions

🎞 **Multimedia**
- Themes
- Camera
- Pictures
- Sounds
- MotoMixer
- Videos

📨 **IM**
- Sign On
- Offline Conversations
- Offline Settings
- Help

🔧 **Settings**
- (see next page)

* optional features

This is the standard main menu layout. Menu organization and feature names may vary on your phone. Not all features may be available on your phone.

3 Settings Menu

✏ **Personalize**
- Home Screen
- Main Menu
- Skin
- Greeting
- Wallpaper
- Screen Saver
- Quick Dial

🔔 **Ring Styles**
- Style
- *style* Detail

🖥 **Connection**
- Bluetooth Link
- Sync

↪ **Call Forward**
- Voice Calls
- Fax Calls
- Data Calls
- Cancel All
- Forward Status

📞 **In-Call Setup**
- In-Call Timer
- Call Cost Setup *
- My Caller ID
- Talk and Fax
- Answer Options
- Call Waiting

🔧 **Initial Setup**
- Time and Date
- 1-Touch Dial
- Display Timeout
- Backlight
- TTY Setup
- Scroll
- Language
- Battery Save
- Brightness
- DTMF
- Master Reset
- Master Clear

📶 **Phone Status**
- My Tel. Numbers
- Credit Info/Available *
- Active Line *
- Battery Meter
- Other Information

4

🎧 **Headset**
- Auto Answer
- Voice Dial

🚗 **Car Settings**
- Auto Answer
- Auto Handsfree
- Power-off Delay
- Charger Time

📡 **Network**
- New Network
- Network Setup
- Available Networks
- My Network List
- Service Tone
- Call Drop Tone

🔒 **Security**
- Phone Lock
- Lock Application
- Fixed Dial
- Restrict Calls
- SIM PIN
- New Passwords
- Certificate Mgmt

📱 **Java Settings**
- Java System
- Delete All Apps
- App Vibration
- App Volume
- App Priority
- App Backlight
- Set Standby App
- DNS IP

* optional features

Figure 3. V551/V555 Menu Structure

Alert Settings

The Motorola V551/V555 phone incorporates the VibraCall® discreet vibrating alert that helps to avoid 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.

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 4 levels: 100%, 66%, 33%, and Low Battery.

Battery Removal

Removing the battery causes the phone to shut down immediately and loose any pending work. For example, (partially entered phonebook entries or outgoing messages).

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 when 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's Guide listed in the Related Publications section toward the end of this manual.

Tools and Test Equipment

Table 1 lists the tools and test equipment used on the V551/V555 telephone. Use either the listed items or equivalents.

Table 1. General Test Equipment and Tools

Motorola Part Number[1]	Description	Application
See Table 5.	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 phone caused by electrostatic discharge (ESD).
6680388B67	Disassembly Tool, plastic with flat and pointed ends (manual opening tool)	Used during assembly/disassembly.
6680388B01	Tweezers, plastic	Used during assembly/disassembly.
RSX4043-A	Torque Driver	Used to remove and replace screws.
—	Torque Driver Bit T-6 Plus, Apex 440-6IP Torx Plus or equivalent	Used with torque driver.
HP34401A[2]	Digital Multimeter	Used to measure battery voltage.

1. To order in North America, contact Motorola Aftermarket and Accessories Division (AAD) by phone at (800) 422-4210 or FAX (800) 622-6210; Internationally, you can reach AAD by phone at (847) 538-8023 FAX (847) 576-3023.
2. Not available from Motorola. To order, contact Hewlett Packard at (800) 452-4844.

Disassembly

This section describes how to disassemble a V551/V555 telephone. Tools and equipment used are listed in Table 1.

⚠️ *Many of the integrated devices used in this phone are vulnerable to damage from ESD. Ensure adequate static protection is in place when handling, shipping, and servicing any internal components.*

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

Removing and Replacing the Battery Cover

1. Ensure the phone is turned off.
2. Press down on the battery cover latch on the bottom of the phone, and gently slide the battery cover back away from the phone and lift it off (see Figure 4).
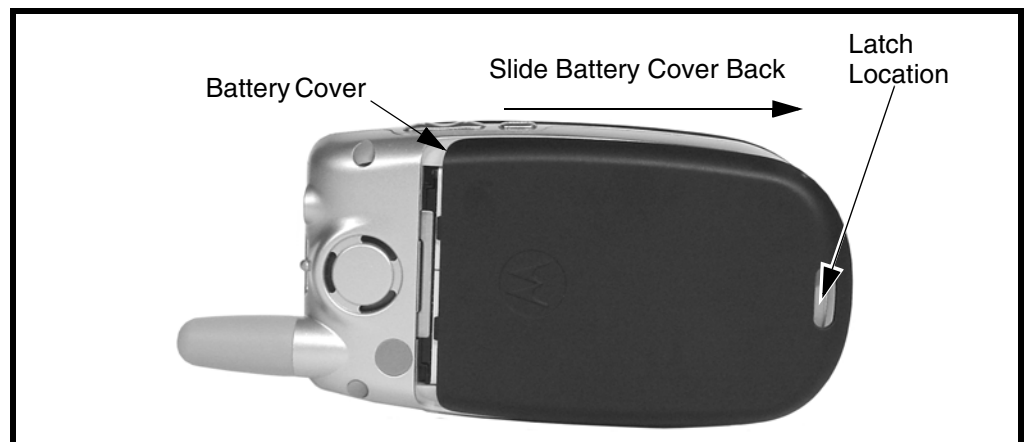
Figure 4. Removing the Battery Cover   041130

3. To replace, align the battery cover with the rear housing.
4. Place the battery cover on the rear housing and gently slide the battery cover up into position until it snaps into place.

Removing and Replacing the Battery

1. Remove the battery cover as described in the procedures.
2. Lift the top end of the battery as indicated by the arrow in Figure 5.
3. Lift the battery up and out of the battery compartment.

Figure 5. Removing and Replacing the Battery   041131

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.

4. To replace, insert the bottom of the battery into the battery compartment with contacts facing downward.
5. Press the top of the battery into the battery compartment.
6. Replace the battery cover as described in the procedures.

Removing and Replacing the SIM Card

1.   Remove the battery cover and battery as described in the procedures.
2.   Slide the SIM card clip forward and lift the SIM card out
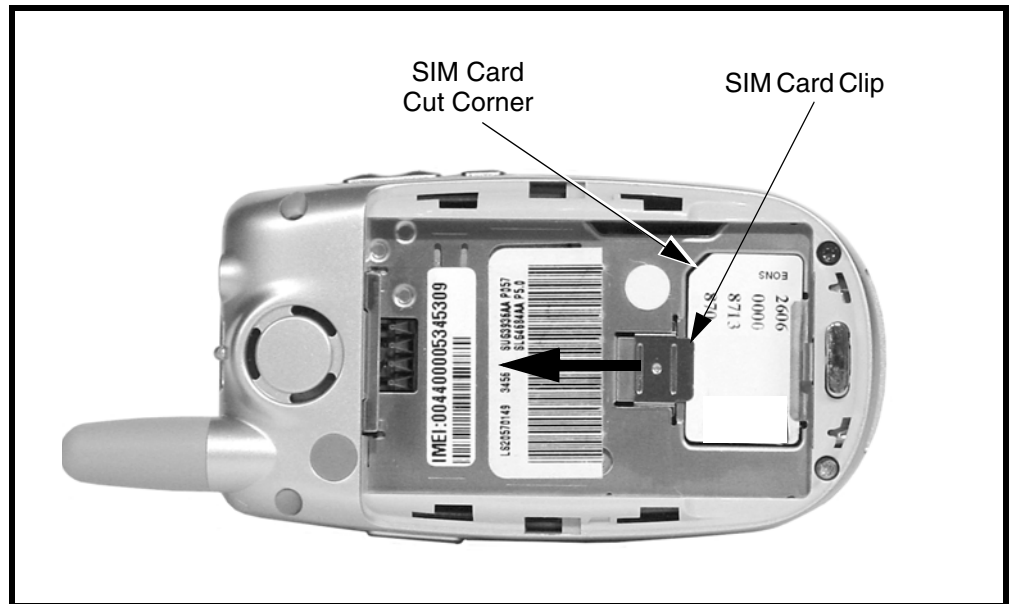
Figure 6. Removing and Replacing the SIM Card   041132

3.   To replace, insert the SIM card into the SIM card holder with the "cut" corner located as shown and slide the SIM card clip back down, locking the SIM card in place.
4.   Replace the battery and battery cover as described in the procedures.

Removing and Replacing the Antenna

1. Remove the battery cover, battery, and SIM card as described in the procedures.
2. Unscrew the antenna counterclockwise as shown in Figure 7.
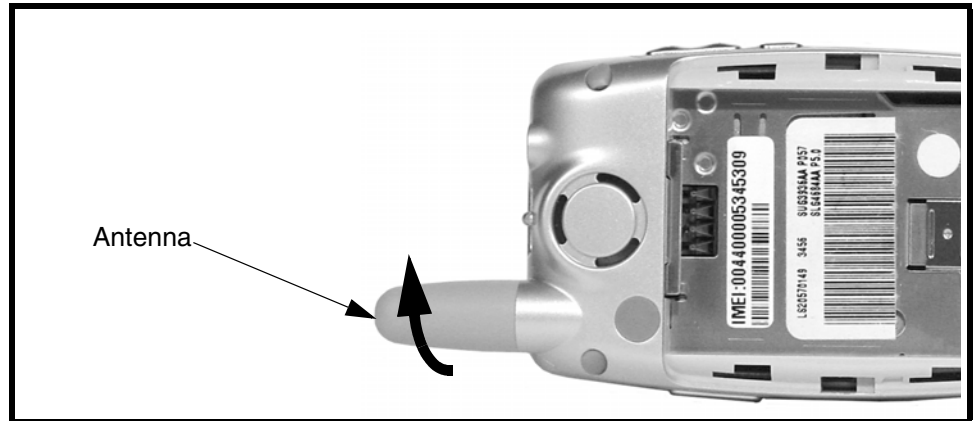
Figure 7. Removing and Replacing the Antenna   041132

3. To replace, insert the antenna and screw it in clockwise.
4. Replace the SIM card, battery, and battery cover as described in the procedures.

Removing and Replacing the Rear Housing

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

Note: The antenna must be removed before the rear housing can be removed.

2. Remove the 2 rubber screw covers and using a Torx® driver with a T-6 bit, remove the 4 screws from the rear housing (see Figure 8).

3. Using a small screwdriver, disengage the 2 side housing latches.

4. Carefully separate the rear housing from the front housing and lift the rear housing up and away from the front housing to remove.

4 Screw Locations

(Remove Antenna Before Back Housing)

2 Housing Latches

Rear Housing

Lift Rear Housing Up and Off Front Housing
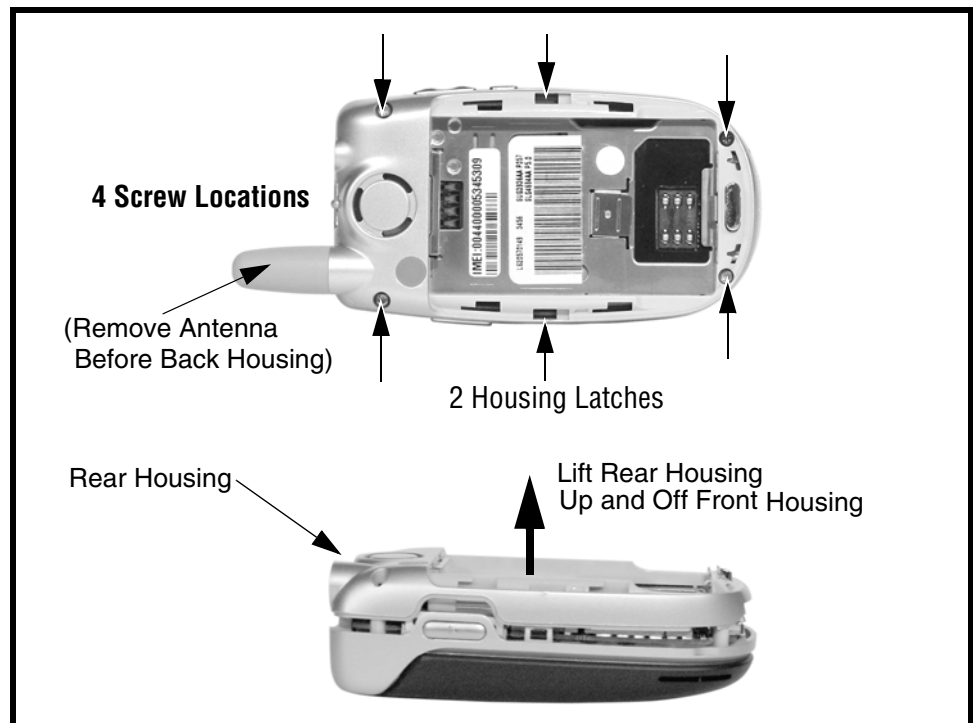
Figure 8. Removing and Replacing the Rear Housing   041133/04134

5. To replace, align the rear housing on the front housing and gently press the 2 housings together until the 2 side housing latches snap securely.

6. Insert and torque the 4 screws to 2.6 in. pounds.

7. Replace the 2 rubber screw covers over the top screws.

8. Replace the antenna, Sim card, battery, and battery cover as described in the procedures.

Removing and Replacing the Transceiver PC Board

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

> ⚠ *This product contains static-sensitive devices. Use anti-static handling procedures to prevent ESD and component damage.*

2. Insert the flat end of the disassembly tool under the flip flex connector and gently pry up as shown in Figure 9.
3. Insert the flat end of the disassembly tool between the front housing and the transceiver PC board as shown in Figure 9.
4. Gently pry up and lift the transceiver PC board out of the front housing.
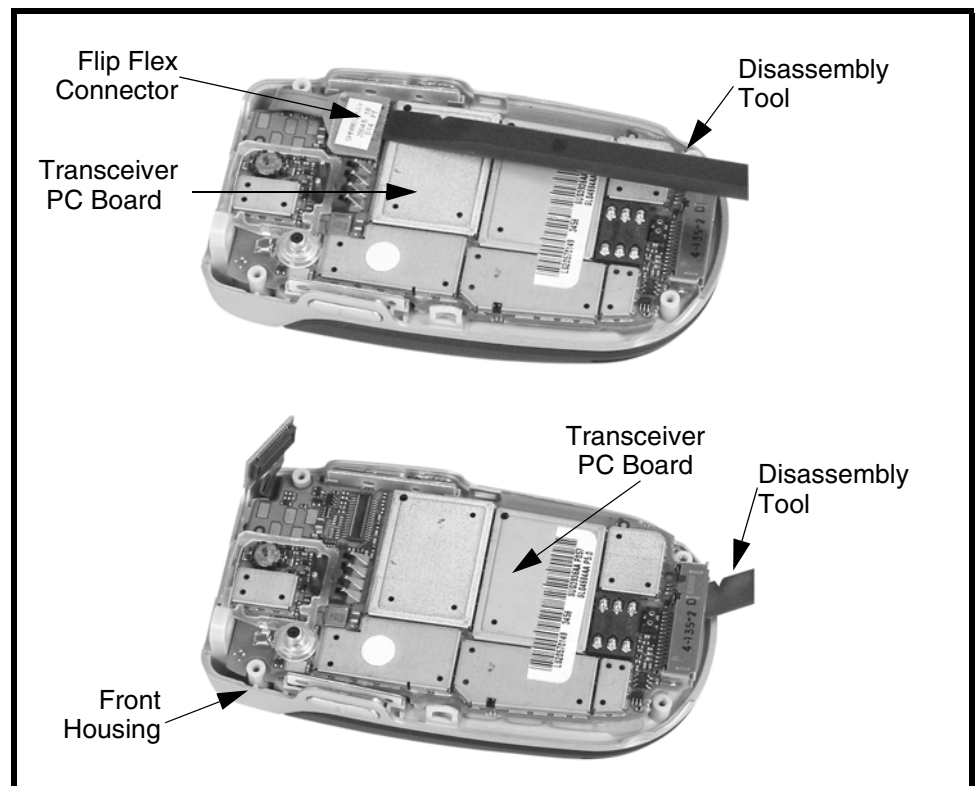
Figure 9. Removing and Replacing the Transceiver PC Board   041135/041136

5. To replace, insert the top of the circuit board into the top of the front housing and gently press the bottom of the circuit board into the front housing.
6. Align the flip flex connector onto the transceiver board connector and gently press it into place.
7. Replace the rear housing, SIM card, battery, antenna and battery cover as described in the procedures.

Removing and Replacing the Keypad

1. Remove the battery cover, battery, SIM card, antenna, rear housing, and transceiver PC board, as described in the procedures.
2. Using plastic tweezers, gently lift up the keypad and remove it from the front housing as shown in Figure 10.

Keypad   Plastic Tweezers
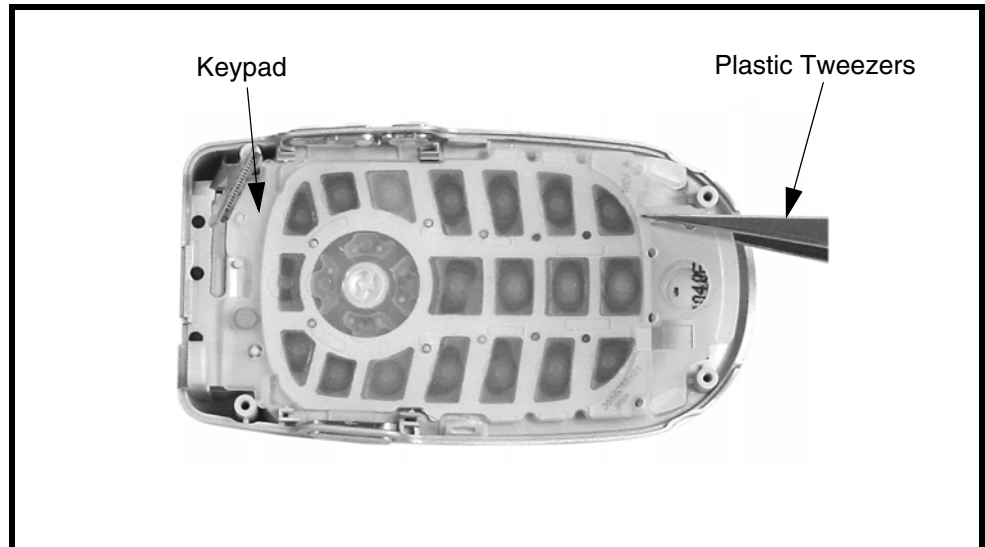
Figure 10. Removing and Replacing the Keypad   041137

3. To replace, align the keypad with the front housing and press it into place.
4. Replace the transceiver PC board, rear housing, SIM card, antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Microphone

1. Remove the battery cover, battery, SIM card, antenna, rear housing, and the transceiver PC board as described in the procedures.
2. Use plastic tweezers remove the microphone grommet.
3. Use the plastic tweezers to unplug the microphone from the transceiver board as shown in Figure 11.
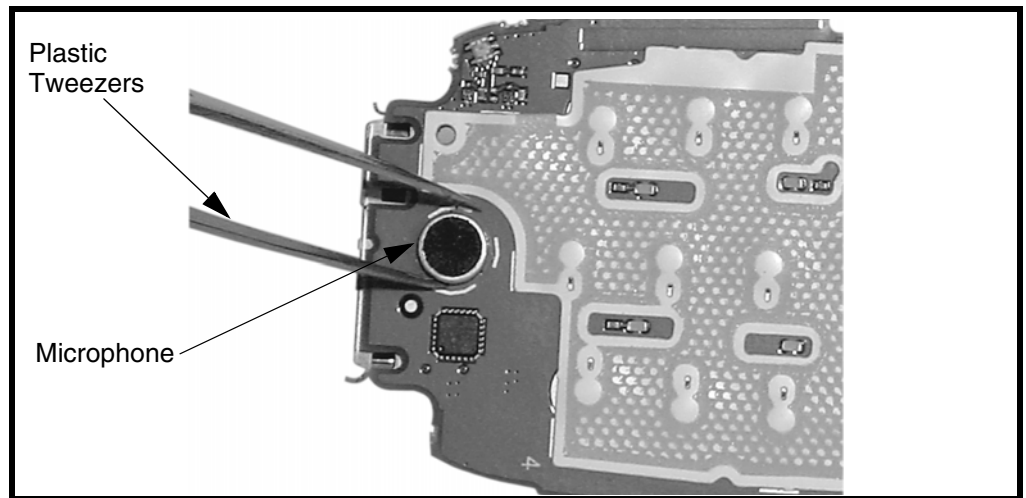
Figure 11. Removing and Replacing the Microphone   041138

4. To replace, align the 2 microphone pins into the microphone contact holes. Press the microphone firmly in place.
5. Replace the microphone grommet over the microphone.
6. Replace the transceiver PC board in the front housing, replace the rear housing, SIM card, antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Flip Assembly

1. Remove the battery cover, battery, SIM card, antenna, rear housing, and transceiver board assembly as described in the procedures.
2. Insert a small screw driver between the flip assembly and the flip knuckle.
3. Carefully and gently bend the front housing knuckle away from the flip assembly hinge to separate the flip assembly from the front housing as shown in Figure 12.
4. Carefully lift the flip assembly away from the front housing assembly.
5. Carefully thread the flip assembly flex cable through the slot in the front housing assembly.
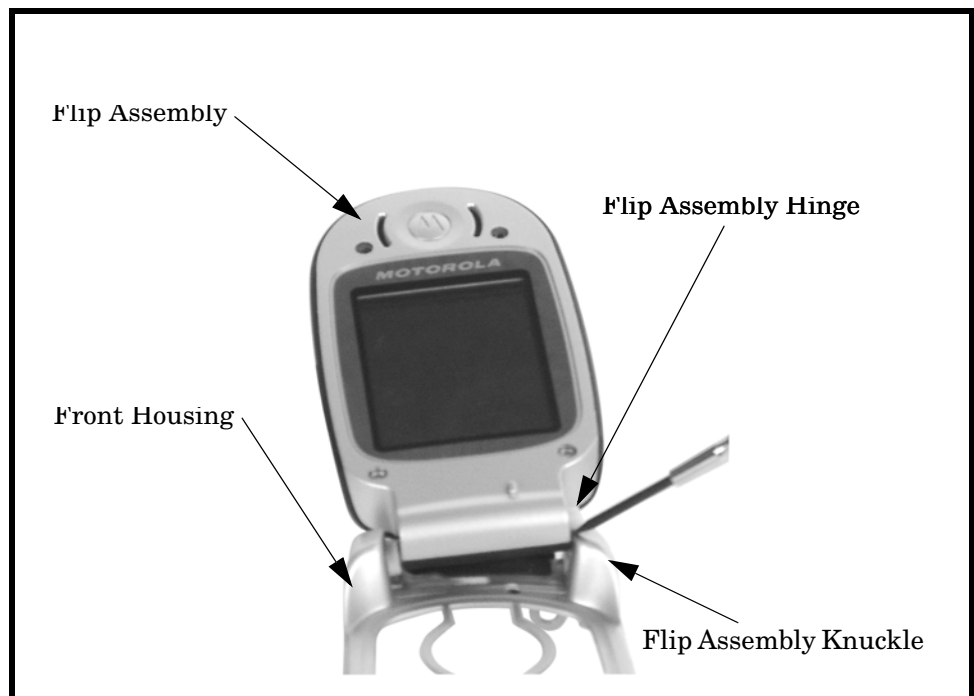
Figure 12. Removing the Flip Assembly   041139

6. To replace, carefully thread the display flex cable through the slot in the front housing.
7. Insert the side of the hinge of the flip assembly with the flex cable into the knuckle.
8. Gently slide the other end of the flip hinge into position into the knuckle.
9. Replace the transceiver board assembly, rear housing, SIM card, antenna, battery, and battery cover as described in the procedures.

Removing and Replacing the Front Flip Cover

1. Remove the battery cover, battery, SIM card, antenna, rear housing, and transceiver board assembly, and flip assembly as described in the procedures.
2. Use tweezers, remove the 4 rubber screw covers from the flip. Retain the screw covers for reassembly.
3. Using a Torx driver with a T-6 bit, remove the 4 screws at each corner of the flip. Retain the screws for reassembly. See Figure 13.
4. Using a small screw driver, gently pry the front flip cover off of the flip assembly
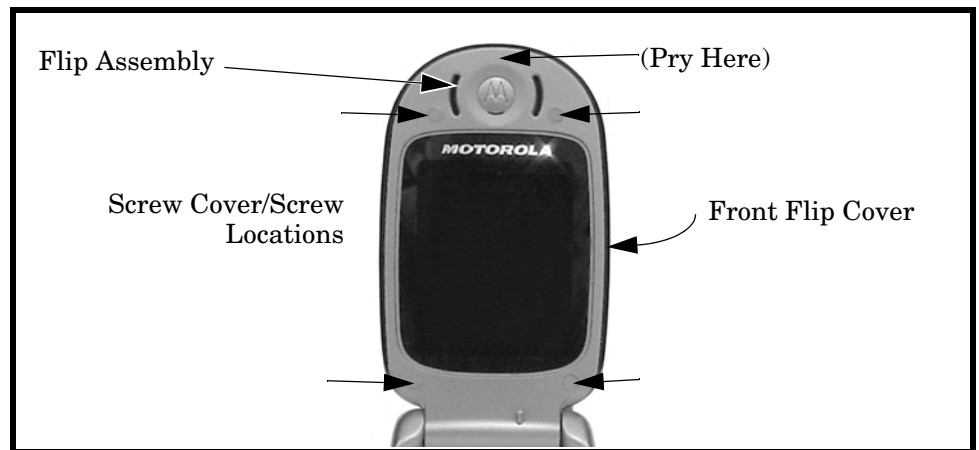
Figure 13. Removing the Front Flip Cover 041140

5. To replace, align the 2 hooks at the hinge side of the front flip cover on the flip assembly and snap it into place.Replace the 4 screws and tighten to a final torque setting of 1.5 inch pounds. Do not over tighten.
6. Replace 4 rubber screw covers.
7. Replace the flip assembly, transceiver board assembly, rear housing, antenna, SIM card, battery, and battery cover as described in the procedures.

Removing and Replacing the Metal Flip Shield

1. Remove the battery cover, battery, SIM card, antenna, rear housing, and transceiver board assembly, flip assembly and the front flip cover as described in the procedures.
2. Using a small screw driver, gently pry the metal flip shield off of the flip assembly, exposing the rubber gasket.
3. Remove the rubber gasket.
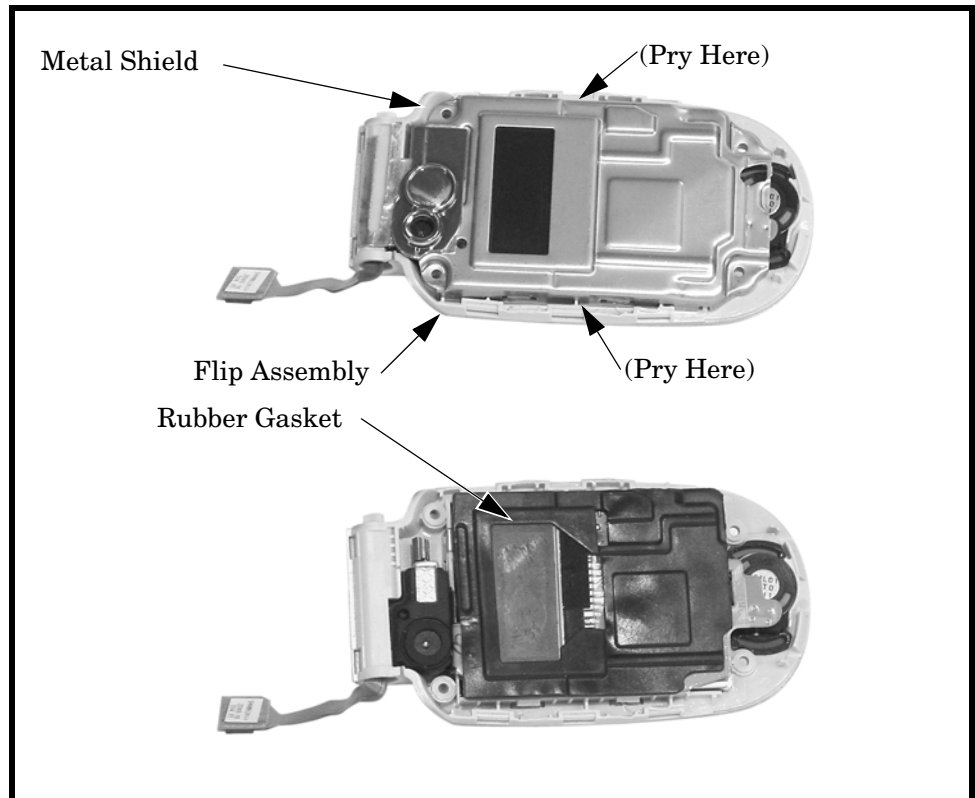
Figure 14. Removing the Metal Flip Shield   041141/041142

4. To replace, align the rubber gasket onto the flip assembly and press in place.
5. Align the metal shield over the gasket and snap it in place.
6. Replace the flip front cover, flip assembly, transceiver board assembly, rear housing, antenna, SIM card, battery, and battery cover as described in the procedures.

Removing and Replacing the Camera

1. Remove the battery cover, battery, SIM card, antenna, rear housing, and transceiver board assembly, flip assembly, the front flip, metal flip shield and rubber gasket as described in the procedures.
2. Using a small screw driver, gently pry the camera flex connector lock tab and unplug the camera flex from the connector.
3. Remove the camera and camera grommet.
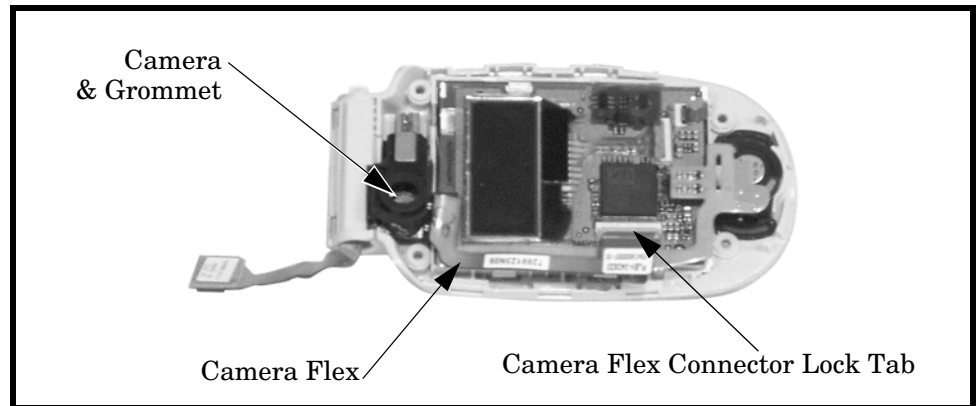
Figure 15. Removing the Camera   041143

4. To replace, align camera with the grommet and press it in place.
5. Plug the camera flex into the flex connector and press down the flex connector lock tab securing the flex connection.
6. Replace the rubber gasket, metal shield, flip front cover, flip assembly, transceiver board assembly, rear housing, antenna, SIM card, battery, and battery cover as described in the procedures.

Removing and Replacing the Flip/Vibrator Motor Flex

1. Remove the battery cover, battery, SIM card, antenna, rear housing, and transceiver board assembly, flip assembly, the front flip, metal flip shield, rubber gasket and the camera flex as described in the procedures.
2. Using the disassembly tool, gently pry up the flip/vibrator motor flex connector fro the display board.
3. Remove the flip/vibrator motor flex from the flip assembly.
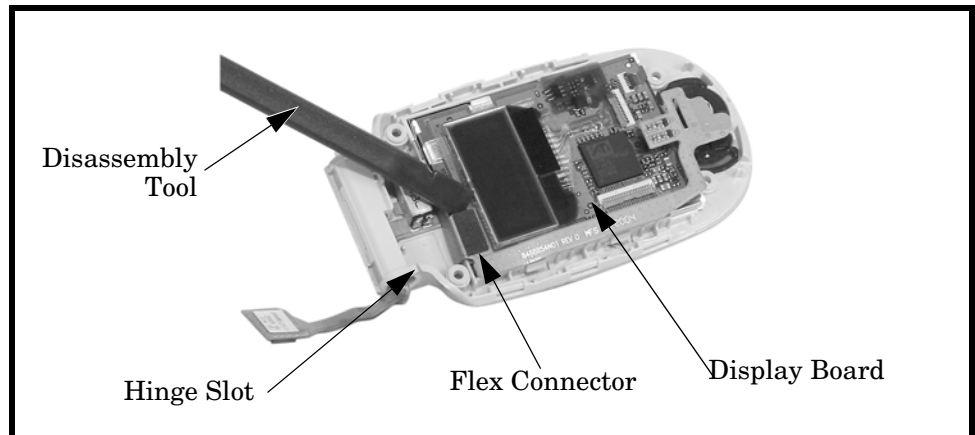
Figure 16. Removing the Flip/Vibrator Motor Flex 041144

4. To replace, insert the flex through the slot in the flip hinge, align the flex connector with the display connector and press it in place.
5. Replace the camera flex, rubber gasket, metal shield, flip front cover, flip assembly, transceiver board assembly, rear housing, antenna, SIM card, battery, and battery cover as described in the procedures.

Removing and Replacing the Display Assembly

1. Remove the battery cover, battery, SIM card, antenna, rear housing, and transceiver board assembly, flip assembly, the front flip, metal flip shield, rubber gasket, camera flex, and the flip/vibrator motor flex as described in the procedures.
2. Using the disassembly tool, gently pry up the display assembly from the flip housing.
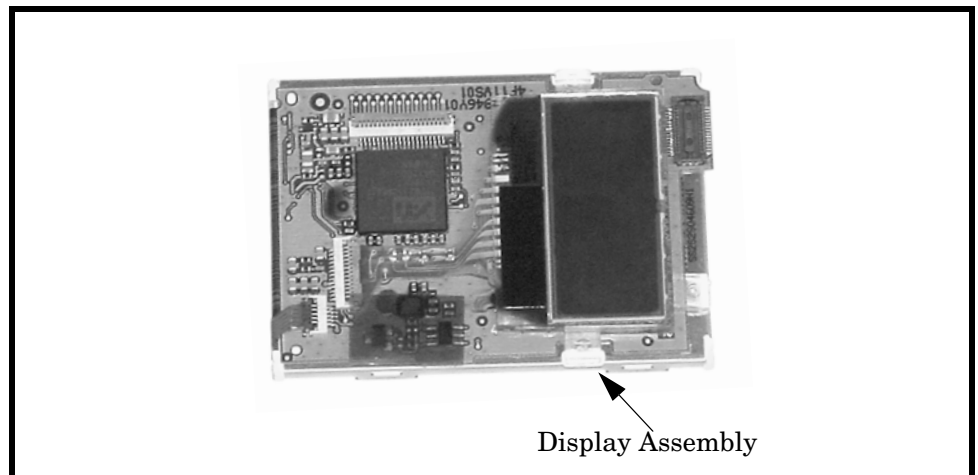
Display Assembly

Figure 17. Removing the Display Assembly   041145

3. To replace, insert the display assembly into the flip housing (large display screen down) and press it in place.
4. Replace the flip/vibrator motor flex, camera flex, rubber gasket, metal shield, flip front cover, flip assembly, transceiver board assembly, rear housing, antenna, SIM card, battery, and battery cover as described in the procedures.

Telephone Identification

Identification Label

Each Motorola GSM phone is labeled with a variety of identifying numbers. Figure 16 describes the current identifying labels.
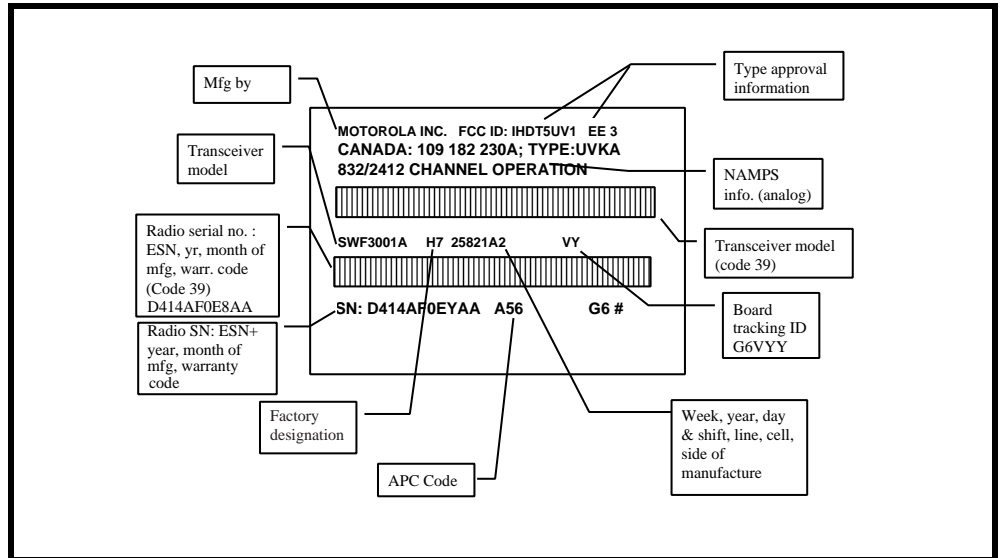
Figure 18. Telephone Identification Label

Troubleshooting

Manual Test Mode

Motorola V551/V555 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.   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.   Turn the phone ON.

Manual Test Mode Commands

Table 2. 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	

Table 2. Manual Test Commands (Continued)

Key Sequence	Test Function/Name	Remarks
5*0*8	Set audio level 8	
5*0*9	Set audio level 9	
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 3. Level 1 and 2 Troubleshooting Chart

SYMPTOM	PROBABLE CAUSE	VERIFICATION AND REMEDY
1. Telephone will not turn on or stay on.	a) Battery either discharged or defective.	Measure battery voltage across a 50 ohm (>1 Watt) load. If the battery voltage is <3.25 Vdc, recharge the battery using the appropriate battery charger. If the battery will not recharge, replace the battery. If battery is not at fault, proceed to b.
	b) Battery connectors open or misaligned.	Visually inspect the battery connectors on both the battery and the telephone. Realign and, if necessary, either replace the battery or refer to a Level 3 Service Center for the battery connector replacement. If battery connectors are not at fault, proceed to c.
	c) Transceiver board assembly defective.	Remove the transceiver board assembly. Substitute a known good assembly and temporarily reassemble the unit. Press and hold the PWR button; if unit turns on and stays on, disconnect the dc power source and reassemble the telephone with the new transceiver board assembly. Verify that the fault has been cleared. 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. 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.	Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board assembly.
3. Display is erratic, or provides partial or no display.	a) Transceiver board connections faulty.	Remove rear chassis assembly from unit, check general condition of flexible printed cable (flex). If the flex is good, check that the flex connector is fully pressed down. If not, check connector to transceiver board connections. If faulty connector, replace the transceiver board assembly. If connector is not at fault, proceed to b.
	b) Flip assembly defective.	Temporarily replace the flip assembly with a known good assembly. If fault has been cleared, reassemble with the new flip assembly. If fault not cleared, proceed to c.
	c) Transceiver board assembly defective.	Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board assembly.

Table 3. Level 1 and 2 Troubleshooting Chart (Continued)

SYMPTOM	PROBABLE CAUSE	VERIFICATION AND REMEDY
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 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.
	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. Telephone will not recognize or accept SIM.	a) SIM defective.	Check the SIM contacts for dirt. Clean if necessary and check if fault has been cleared. If the contacts are clean, insert a known good SIM into the telephone. Power up the unit and confirm that the SIM has been accepted. If the fault no longer exists, replace the defective SIM. If the SIM is not at fault, proceed to b.
	b) Transceiver board assembly defective.	Replace the transceiver board assembly (refer to 1c). Verify that the fault has been cleared and reassemble the unit with the new transceiver board assembly.
8. Phone does not sense when flip is opened or closed (usually indicated by inability to answer incoming calls by opening the flip, or inability to make outgoing calls).	a) Flip assembly defective.	Check the keypad contacts for dust or change the keypad to a known good one proceed to b.

Table 3. Level 1 and 2 Troubleshooting Chart (Continued)

SYMPTOM	PROBABLE CAUSE	VERIFICATION AND REMEDY
	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.
9. Vibrator feature not functioning.	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.
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.

Part Numbers

The following section provides a reference for the parts associated with V551/V555 telephones.
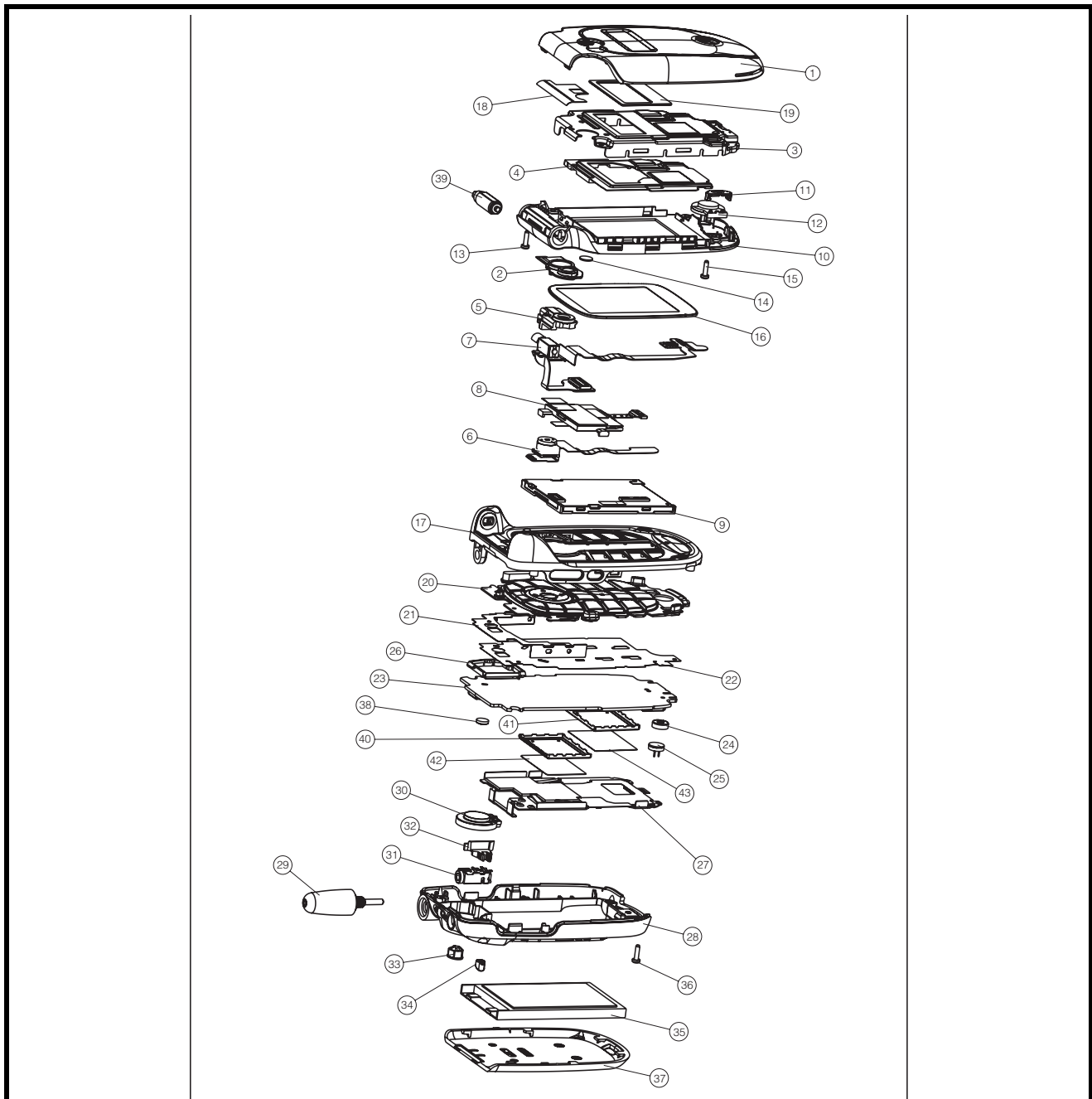
Exploded View Diagram

Figure 19. V551/V555 Exploded View Diagram   041146

Exploded View Parts List

Table 4. Exploded View Parts List

Item Number	Motorola Part Number	Description	Item Number	Motorola Part Number	Description
1	0188162Y01	Housing Flip Cover	23	8489806N01	Main Board
2	0188163Y01	Camera Lens Bezel	24	1486604K01	Microphone Grommet
3	0788807N01	Chassis	25	5087974K02	Microphone
4	7490125N01	Display Snubber	26	3288911N01	Acoustic Gasket
5	3290122N01	Flip Inner Housing	27	0188940N03	Plate Assembly
6	7289123N09	Camera Flex	28	1588817N01	Outside Base Housing
7	0188928N01	Hinge Audio Flex	29	8588912N01	Antenna
8	7289559N01	Display Mod Caller ID	30	5088017N01	Speaker
9	7289238N03	Display Mod	31	0987921N02	Audio Jack
10	0188869N01	Flip Inner Housing	32	1589156N01	Audio Jack Bracket
11	3987819M02	Earpiece Speaker Elastomeric	33	3889146N01	50 Ohm Plug
12	5089081L01	Inside Base Housing	34	3889149N01	Screw Hole Plug
13	0389001N04	Flip Tall Head Screws	35	0188927N01	Battery
14	3889187N02	Cover Screws	36	0387791L01	Torx 6 Screws
15	0389001N03	Flip Standard Screws	37	1588972N07	Battery Cover
16	6188811N01	Display Assembly	38	6087603L01	Battery
17	0188197Y01	Inside Base Housing	39	5587736N01	Cam Hinge
18	8489461N01	Antenna Flex	40	2688413Y01	Replacement Cap
19	3288577Y01	Dust Gasket	41	2688414Y01	Cap
20	3888098Y03	Keypad	42	2688120Y01	Shield D
21	8488139Y01	Side Button Flex	43	2688121Y01	Shield E
22	4089226N03	Popple Dome			

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.

To order parts please use the following link:

https://accesssecure.mot.com

(Password is required)

Accessories

Table 5. List of Accessories

Description	Part Number
Power Solutions:	
Battery, P2K4 Slim Li-Ion - Ltd Hi Cap Capacity (820mAH)	SNN5683 (US)
Charger, desktop w/no additional battery slot	SPN5204
Charger, desktop w/additional battery slot	SPN5210
Travel Charger	SPN5037
Travel Charger Linear U.S.	SPN4992
Travel Charger mid Rate U.S.	SPN4940
Travel Charger Rapid U.S.	SPN5049
In Vehicle Solutions:	

Bluetooth car kit
  US
  EMEA
Hang-Up Cup (HUC)
	S9642C
	S9643B
	SYN0689

Bluetooth Quadrant Speakerphone	SYN0736
Retractable Self Install Car Kit	SNY0613

Universal Self Install
  Egret Style Base Unit
  Razorbill Style Base Unit
  Adapter Motorola CE Bus
	SYN0890
	SYN0888
	SYN1004

Vehicle Power Adapter	SYN0707
Audio & Connectivity:	
Bluetooth Headset HS820	SYN0945
Retractable Headset	SYN9050
Mono Headset	SYN9350
Over The Ear Headset	SYN8908
USB Data Cable	SKN6311
Bluetooth PC USB Adapter	SYN0717
Consumer Personalization	
Lanyard	SYN9951

Related Publications

V551 User Guide   6809486A96

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