



**MOTOROLA**

# Level 1 and 2 Service Manual

6809501A51

## W200

### Digital Wireless Telephone



W200  
CDMA 800MHz

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## Introduction

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

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

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

## Product Identification

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

## Product Names

The product name is listed on the front cover. The product name is 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
- 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 product 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 Introduction 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 W200 Alameda telephones. It contains all service information required for the equipment described and is current as of the printing date. Refer questions about this manual to the nearest Customer Service Manager.

### Audience

This document aids service personnel in testing and repairing W200 Alameda telephone 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 W200 Alameda telephones, and also provides procedures and processes for repairing the units at Level 1 and 2 service centers, including:

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

## Conventions

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 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

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

The 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 Transceiver 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.

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## 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.

Phone: 800-814-0601

FAX: 800-622-6210

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

#### Outside U.S.A.

Phone: 847-538-8023

FAX: 847-576-3023

#### EMEA

Phone : +49 461 803 1404

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

#### Asia

Phone : +65 6486 2995

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

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## Specifications

General Function	Specification
Frequency Range 800 MHz CDM	Tx: 824-849MHz Rx: 869-894MHz
Channel Spacing	1.25MHz
Channel	991-1023, 1-799
Modulation	QPSK
Transmitter Phase Accuracy	0.15 radians
Duplex Spacing	45MHz
Frequency Stability	±300Hz
Operating Voltage	3.2-4.2V
Average Transmit Current	240mA
Average Standby Current	4.98mA
Dimensions (with 920mAh Li Ion battery)	100.8mm x 45.8mm x 22m
Size (Volume)	<80CC
Weight	Not exceed 85 g
Temperature Range	-10~55°C
Battery Life	Talking: IS-95: 230mins/1x:200mins Standby: 140hours IS-95&1x:230hours
Battery Charge time	<240mins
Alert Volume	>95dBA

<b>Tx function Sequence</b>	<b>Specification</b>
RF Power Output	24dBm
Input/Output Impedance	50 ohms
Transmit Audio Response	<2% at 89dB SPL with nominal level at 1KHz
Modulation	QPSK
Transmit spurious emission	<-42dBC, for 885kHz< f <1.98MHz <-54dBC, for 1.98MHz< f <4MHz
CDMA transmit waveform quality	0.944

<b>Receive function sequence</b>	<b>Specification</b>
Receive Sensitivity	101dBm
Audio Distortion	<2% at 1kHz levels up to 100dB SPL <5% at 1kHz levels up to 110dB SPL
Intermodulation Distortion	The FER shall not exceed 1.0% with 95% confidence
Single tone desensitization	-30dBm at +/- 900kHz away from carrier



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## Product Overview

The Motorola W200 Alameda features a "Code Division Multiple Access" (CDMA) technology. It also features a simplified icon and graphical user interface (UI) for easier operation in addition to short message service text messaging (SMS), an alarm, a calculator, games, and an address book.

The telephone is made of polycarbonate plastic with a metal enclosure. The display and speaker, as well as the 21-key keypad, transceiver printed circuit board (PCB), microphone, charger and headphone connectors, and power button are contained within the bar type housing. The user-replaceable 940 mAh Lithium-Ion (Li-Ion) battery provides up to 230 minutes of talk time with up to 140 hours of standby time. The phone accepts 2.55/2.75/2.85/3.0V mini user identity module (UIM) card that fits into the UIM holder next to the battery. This telephone features a 96 x 64 pixel graphics display and an internal antenna.

## Features

W200 Alameda telephone uses advanced, self-contained, sealed, custom integrated circuits to perform the complex functions required for CDMA communication. Aside from the space and weight advantage, microcircuits enhance basic reliability, simplify maintenance, and provide a wide variety of operational functions.

Features available in this telephone include:

- A 96 x 64 pixel graphics display
- Internal antenna
- Lower voltage technology that provides increased standby and talk times
- Tri-coder/decoder (CODEC) that allows full rate, half rate, and enhanced full rate modes of transmission
- Display animation
- VibraCall® vibrating alert
- 5-Way navigation key
- UIM Toolkit™ (UTK) (Network, subscription and UIM card or service provider dependent feature. Not available in all areas.)
- Backlight
- Personal management tools calculator with currency converter, real time clock with date, reminders, and caller profiling
- Other features

### 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.

### UIM Toolkit™

UIM Application Toolkit is a value-added service delivery mechanism that allows the CDMA 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.

# General Functions

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

The W200 telephone’s controls are located on the front side of the device and on the keyboard as shown in Figure 1. Indicators icons are displayed on the LCD.

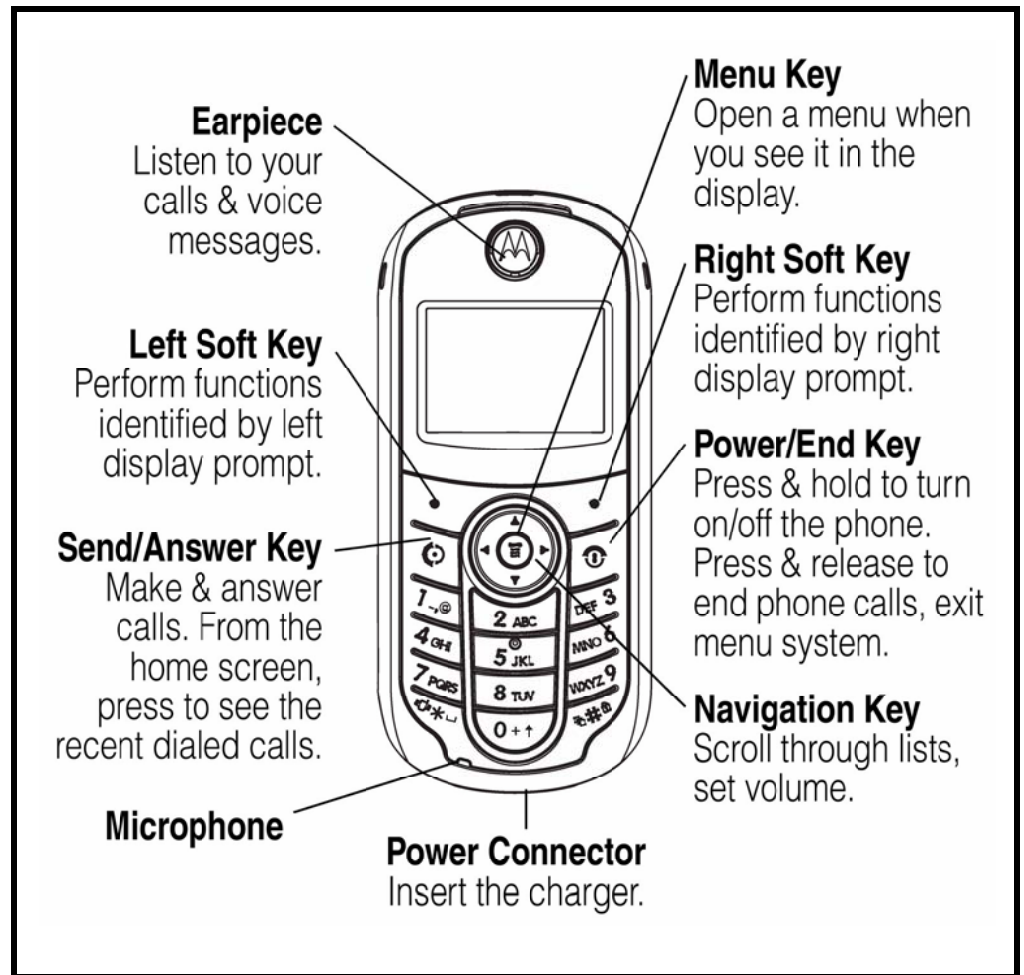


Figure 1. W200 Alameda Control and Indicators Location

### Menu Navigation

W200 Alameda telephone are equipped with a simplified icon and graphical-based user interface. See the table below for details of the W200 Alameda menu structure. A five-way navigation key allows you to move easily through menus and confirm your selection.

### Liquid Crystal Display (LCD)

The LCD provides a 700 square millimeter multicolor backlit color display with user-adjustable contrast settings for optimum readability in all light conditions. The bit-map 96 x 94 pixel display includes up to 3 lines of text, 1 line of icons, and 1 line of prompts.

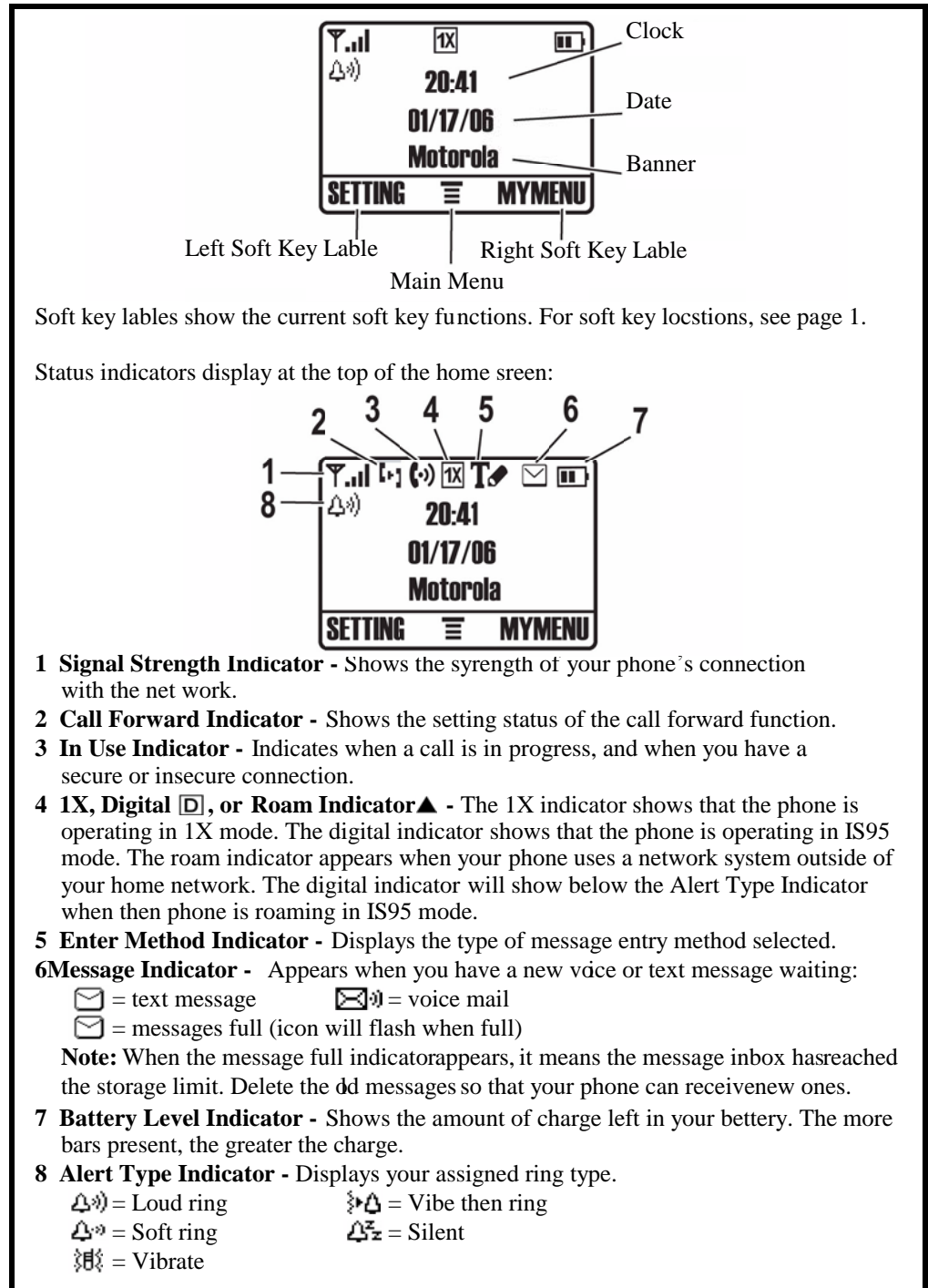


Figure 2. W200 Alameda Display Icon Indicators

## User Interface Menu Structure

The table below shows a portion of the W200 telephone menu structure.

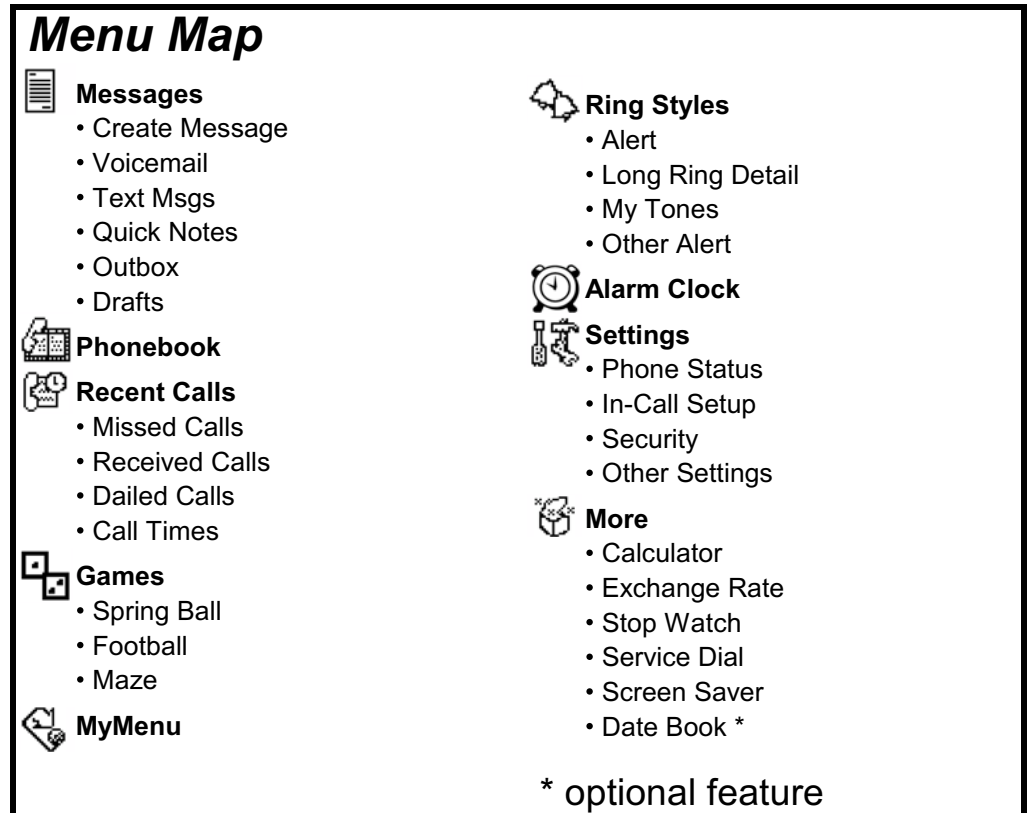


Figure 3. W200 Alameda Menu Structure

## Battery Function

### Battery Charge Indicator

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

### Battery Removal

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



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



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



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

## Tools and Test Equipment

The table below lists the tools and test equipment used on W200 Alameda telephone. Use either the listed items or equivalents.

**Table 1: General Test Equipment and Tools**

Motorola Part Number <sup>1</sup>	Description	Application
See Table 6	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)
8102430Z04	GSM / DCS / PCS Test UM	Used to enable manual test mode
6680388B67	Disassembly tool, plastic with flat and pointed ends (manual opening tool)	Used during assembly/disassembly
6680388B01	Tweezers, plastic	Used during assembly/disassembly
-	Torque Driver Bit T-5 Plus, Apex 440-6IP Torx Plus or equivalent	Used with torque driver
HP34401A <sup>2</sup>	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, AAD can be reached by calling (847) 538-8023 or by fax (847) 576-3023.

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

AMS Software & Elektronik GmbH c/o Holger Grube  
Lise-Meitner-Straße 9  
D-24914 Flensburg  
Tel: +49 461 903 980  
Fax : +49 461 903 850

**Please wear ESD protection wrist orgloves in the entire procedure**



**Figure 4. Antistatic wrist band and Antistatic glove**



**Figure 5. A screwdriver (T5), a pair of tweezers, and a wedge tool**

## Disassembly

This section describes how to disassemble a W200 Alameda telephone. Tools and equipment used are listed in Table 1, preceding page & in Figure 4.



*Many of the integrated devices used in this phone are vulnerable to damage from electrostatic discharge (ESD). Ensure adequate static protection is in place when handling, shipping, and servicing 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 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 touches exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.

1. Ensure the phone is turned off.
2. Remove the battery cover by sliding it away from the battery compartment as shown in Figure 6.



**Figure 6. Removing the Battery cover**

3. Slide the battery away from the battery compartment & lift it away from the phone as shown in Figure 7.



**Figure 7. 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.

4. To replace, insert the battery with 2 tabs on its bottom end into the battery slots of the phone as shown in Figure 7.
5. Click the battery into place, then slip the battery cover over it.

## Removing and Replacing the UIM Card

1. Remove the battery cover & battery as described in the procedures.
2. Remove the UIM from its holder by sliding it in the direction shown below.

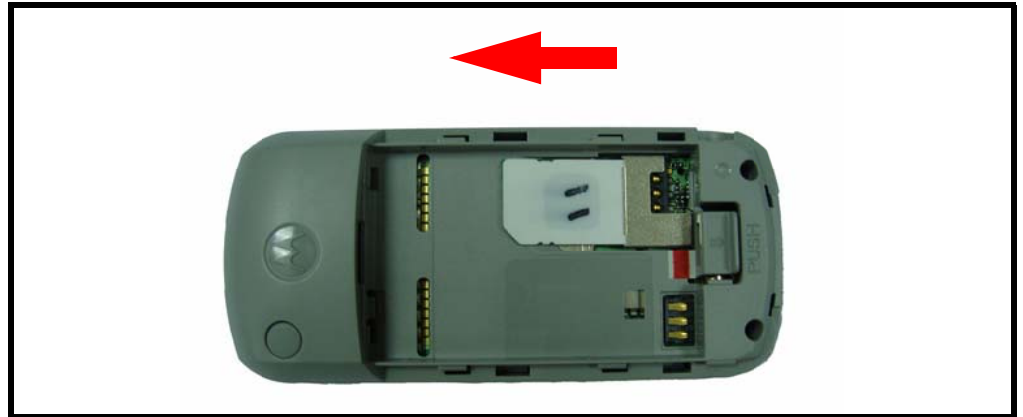


Figure 8. Removing the UIM

3. To replace, carefully slide the UIM into position in its socket. The latch secures the UIM when correctly positioned over the terminals in the phone.
4. Replace the battery and battery cover as described in the procedures.

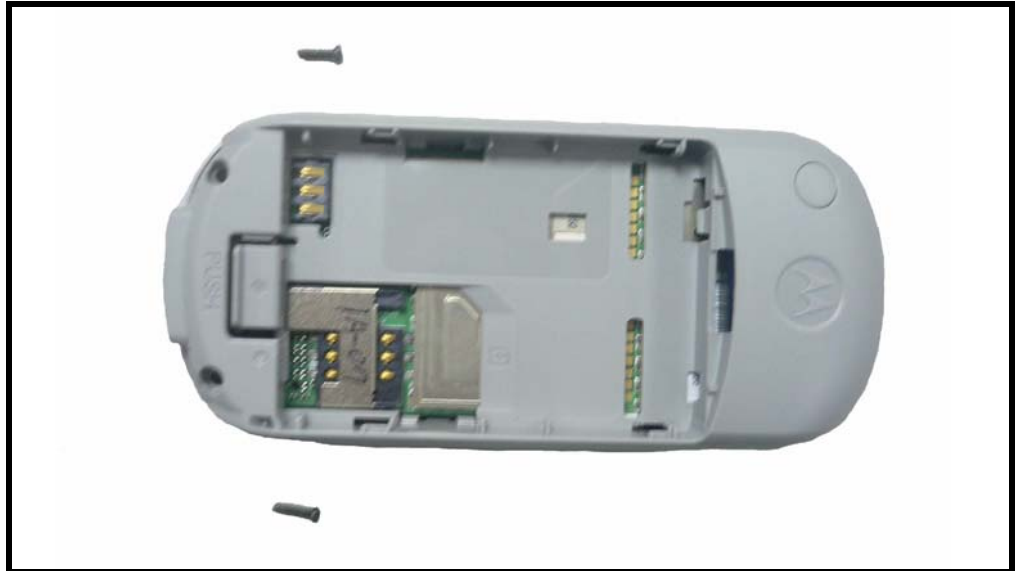
## Removing and Replacing the Front Housing



*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 UIM as described earlier.
2. Remove the 2 T5 screws at the bottom of the phone, as shown in Figure 9.





**Figure 9. Removing 2 screws**

3. Grip the phone firmly with one hand.
4. Use a flat wedge tool to pry the case open along the central seam.



**Figure 10. Use a flat wedge tool to pry the case**

5. Remove the front housing.



**Figure 11. Remove the front housing**

6. (Optional) Remove and replace the rubber keypad if it slips out of the front housing.



**Figure 12. Remove and replace the rubber keypad**

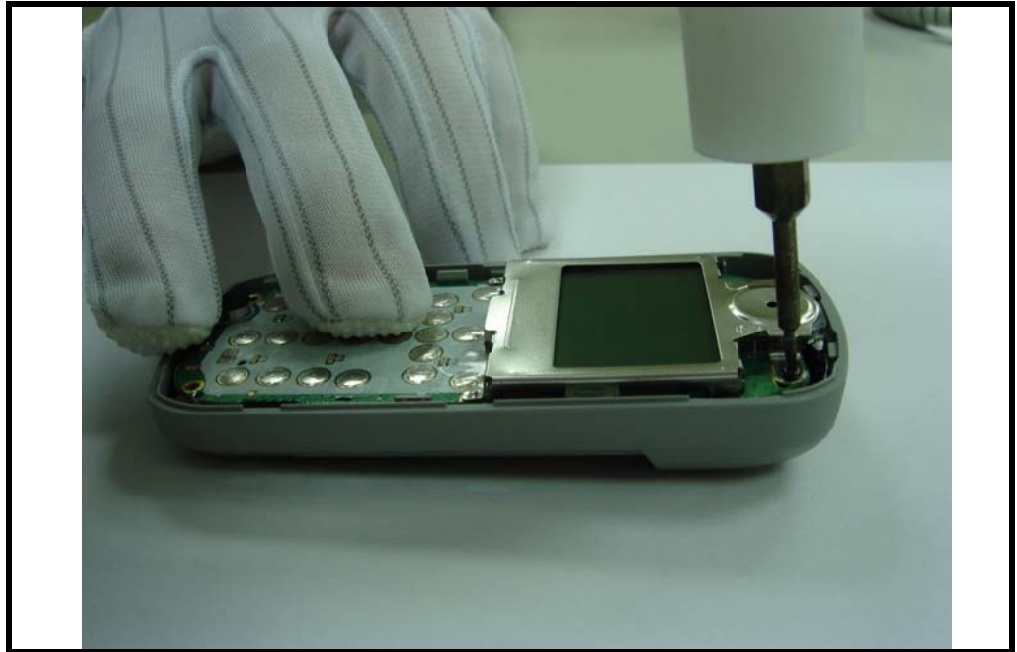
7. To replace, carefully snap back the front housing to the rear housing. Insert and tighten the two screws with a torque force of 1.4 kgf-cm.
8. Replace the UIM, battery & battery cover as described in the procedures.

## Removing and Replacing the Tranceiver



*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, UIM card and the front housing as described earlier.
2. Using a size T5 screwdriver, remove 2 screws from the Tranceiver board mounted in the back housing.



**Figure 13. Removing 2 screws**

3. Pry open the side latches securing the Transceiver board to the back housing and then remove the Transceiver board.



**Figure 14. Pry open the side latches securing the Transceiver board to the back housing**

4. To replace, mount the Transceiver board in the back housing until the side latches snap into place, insert & tighten the 2 screws at the speaker area with a torque force of 1.4 kgf-cm.
5. Restore the front housing and other parts with the procedures described earlier.

## Removing and Replacing the Vibrator Motor

1. Remove the battery cover, battery, UIM card, front housing and transceiver as described in the procedures.
2. Gently pry up the vibrator motor on the inside of the back housing then remove it.



**Figure 15. Gently pry up the vibrator motor on the inside of the back housing**



*Note: Care should be taken to ensure that the contact leads of the vibrator are not bent during the replacing process.*

3. To replace it, gently insert the vibrator into the slot, then press down until it sits firmly in the back housing.
4. Restore the transceiver, front housing, UIM card, battery & battery cover as described in the procedures.

## Removing and Replacing the Antenna Module

1. Remove the battery cover, battery, UIM card, front housing and transceiver as described earlier.
2. Gently unlatch the catches of the antenna module from the Transceiver board.



**Figure 16. Gently off the antenna module from the Transceiver board**

3. To replace it, gently snap the antenna module into place on the Transceiver board.
4. Restore the transceiver, front housing, UIM card, battery & battery cover as described in the procedures.

## Removing and Replacing the LCD Screen

1. Remove the battery cover, battery, UIM card, front housing, transceiver, antenna module as described earlier.
2. Gently pry the LCD screen away from the Transceiver board. Seven latches hold it in place (three on each side and one by the speaker at the top).

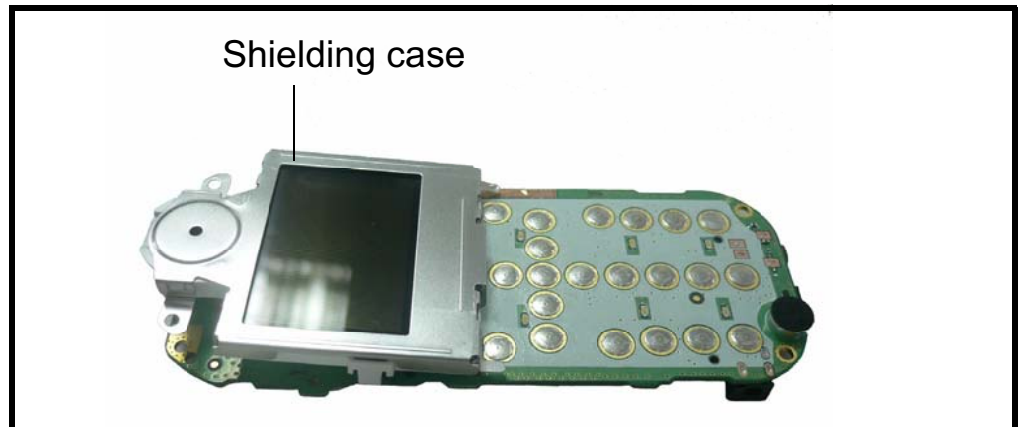


**Figure 17. Pry the LCD screen away from the Transceiver board**

3. Detach the cable connecting the LCD screen to the Transceiver board.
4. To replace it, gently solder the cable to the Transceiver board then mount the LCD.
5. Restore the antenna module, transceiver, front housing, UIM card, battery & battery cover as described earlier.

## Removing and Replacing the LCD Shielding Case

1. Remove the battery cover, battery, UIM card, front housing, transceiver, antenna module as described earlier.
2. Gently pry the LCD shielding case away from the LCD screen.



**Figure 18. Pry the LCD shielding case away**



*Note: Care should be taken to prevent breaking the LCD glass panel during the replacing process.*

3. To replace it, mount the LCD shielding case over the LCD screen.
4. Restore the LCD screen and other parts.

## Removing & Replacing the Receiver

1. Remove the LCD shielding case as described earlier.



**Figure 19. Removing LCD shielding case**

2. Pop out the receiver resting in the circular space atop the LCD screen.



**Figure 20. Pop out the receiver**

3. To replace it, gently insert the receiver into the circular space atop the LCD screen.
4. Restore the LCD shielding case other parts.

# Removable User Identity Module (R-UIM) and Identification Label

## R-UIM

The R-UIM is a smart card for CDMA cellular application. R-UIM provides personal authentication information that allows the MS or handset, to be connected with the network. The R-UIM card enables handset independence for the user. The R-UIM card can be inserted into any CDMA R-UIM equipped handset, allowing the user to receive or make calls and receive other subscribed services from any R-UIM equipped handset.

## Identification Label

Each Motorola CDMA phone is labeled with a variety of identifying numbers.

Figure 1. describes the current identifying labels.

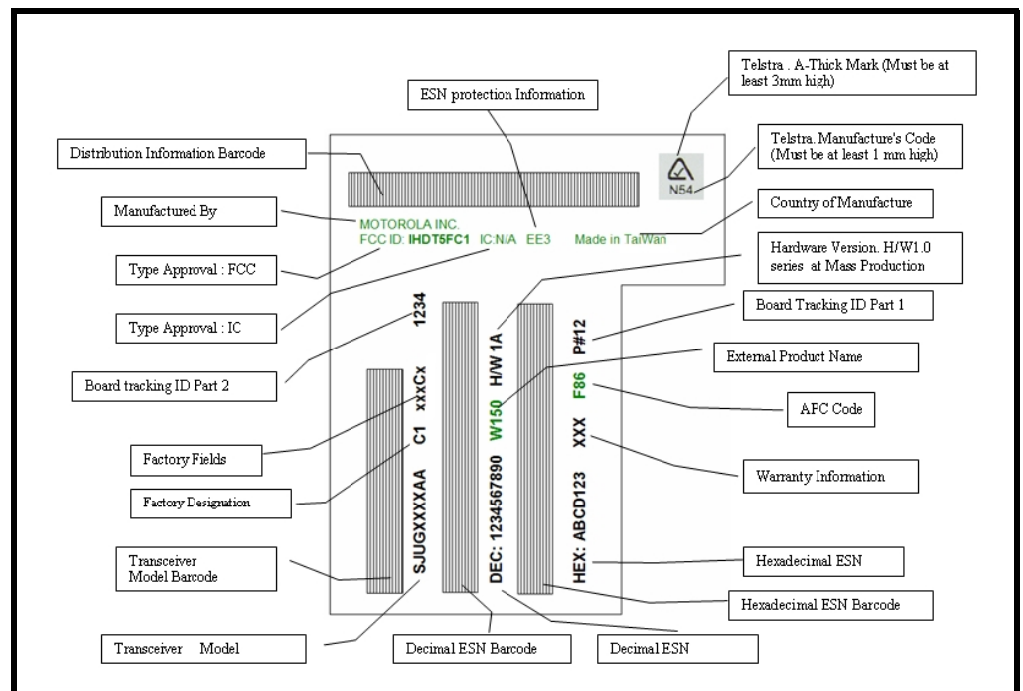


Figure 21. Identification label

### Electronic Serial Number (ESN)



Electronic Serial Number (ESN). A 32-bit number assigned by the mobile station manufacturer, uniquely identifying the mobile station equipment.



# Troubleshooting

## Manual Test Mode

Motorola W200 telephone are equipped with a manual test mode capability. This allows service personnel to verify functionality and perform fault isolation by entering keypad commands.

1. Press and hold  to turn the phone OFF.
2. Remove the battery as described in the procedures.
3. Remove the customer's UIM card from the phone as described in the procedures.
4. Replace the battery as described in the procedures.
5. Press and hold  to turn the phone ON.

Key Sequence	Test Function / Name
#02#	Phone information
#09#	Simple Test Mode: test keypad, vibrator, LCM, buzzer, voice loopback
**090#	Simple Test Mode Menu: test keypad, vibrator, LCM, buzzer, voice loopback , you can select which one you want test
Menu 073887*	Programming Menu
**0102#	Formatting EFS
#00#	Failure Byte Information
**0108#	Failure Byte Counter
**0105#	Engineering Mode ON/OFF. Only #02# and #09# is available when engineering mode is off.
**0109#	TFT counter clear

## Troubleshooting Chart

**Table 2: Level 1 and 2 Troubleshooting Chart**

Symptom	Probable Cause	Verification and Remedy
1. Telephone will not turn on or stay on.	a) Battery either discharged or defective.	Measure battery voltage across a 50 ohm (>1 Watt) load. If the battery voltage is <3.25V/dc, 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 terminals open or misaligned.	Visually inspect the battery terminals 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 terminals are not at fault, proceed to c.
	c) keypad defective.	Replace the keypad. Temporarily connect a +3.6 Vdc supply to the battery terminals. Press and hold the PWR button. If unit turns on and stays on, disconnect the dc power source and reassemble with the new keypad.
2. Telephone exhibits poor reception or erratic operation such as calls frequently dropping or weak or distorted audio.	Connections to or from lower PCB defective.	Check connection between the antenna and the lower PCB.
3. Display is erratic, or provides partial or no display.	LCM defective.	Replace the LCM. Verify that the fault has been cleared and reassemble the unit with the new LCM.
4. Incoming call alert transducer audio distorted or volume is too low.	Speaker defective.	Replace the speaker as described in the procedures. Verify that the fault has been cleared and reassemble the unit with the new speaker.
5. Telephone transmit audio is weak. (usually indicated by called parties complaining of difficulty in hearing voice).	Microphone defective.	Replace the microphone as described in the procedures. Verify that the fault has been cleared and reassemble the unit with the new microphone.
6. Receive audio from earpiece speaker is weak or distorted.	a) Connections to or from lower PCB defective.	Check connection between the antenna and the lower PCB. If the connection is OK, proceed to b.
	b) Speaker defective.	Temporarily replace the speaker with a known good speaker. Ensure good connection. Place a call and verify improvement in earpiece audio. If fault is cleared, reassemble the telephone with the good speaker.

**Table 2: Level 1 and 2 Troubleshooting Chart (Continue)**

Symptom	Probable Cause	Verification and Remedy
7. Keypad not functioning.	Keypad defective.	Use alcohol to wipe the keypad metal dome. Check if fault has been cleared. If the fault is still present, either replace the keypad or refer to a Level 3 Service Center for the keypad metal dome replacement.
8. Vibrator feature not functioning.	a) Vibrator faulty.	Check general condition of vibrator. If it is good, proceed to b.
	b) Vibrator defective.	Replace the defective vibrator.
9. No or weak audio when using headset.	Headset plug not fully pushed.	Ensure the headset plug is fully seated in the jack.

### Programming: Software Upgrade and Flexing

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

# Part Number Charts

The following section provides a reference for the parts associated with W200 Alameda telephone.

## Exploded View Diagram

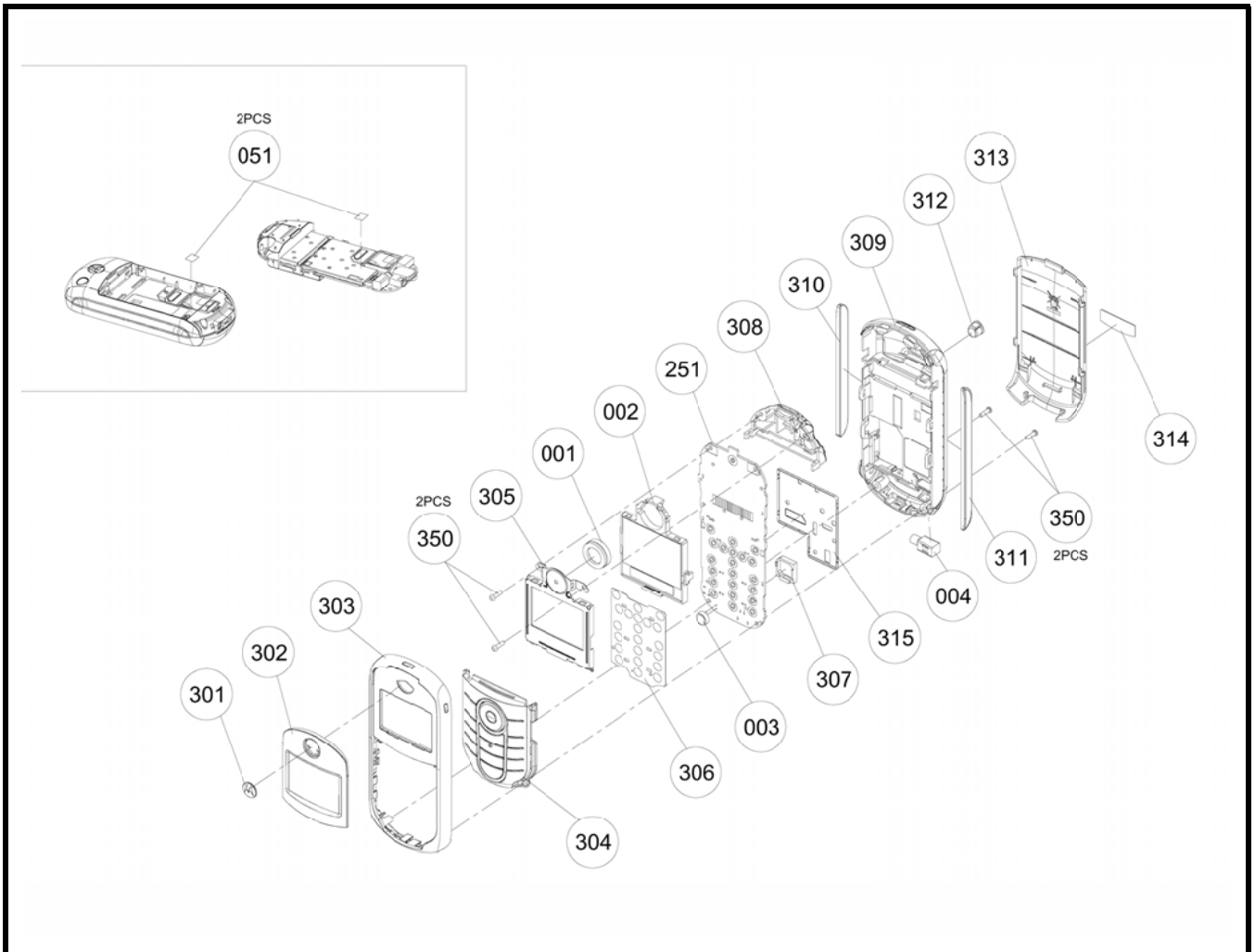


Figure 22. W200 Alameda Exploded View Diagram

## Exploded View Parts List

Item Number	Part Number	Description
	<b>77C0013001W</b>	<b>SYS33</b>
001	2240133203W	RECEIVER
002	76300014B4W	LCM
003	2220602204W	MIC
004	3930408014W	SPR-VIB
051	82C6960001W	LABEL
051	82C6960001W	LABEL
251	691C010001W	F/WMB 00
301	2545E58001W	MARK
302	2541A66001W	LCD-LENS
303	2511A66001W	UPP-ASSY
304	3104A66011W	DIAL-KEY
305	3013A66001W	LCMBRAASY
306	3109E88001W	MET-DOME
307	3035E88001W	BUZ-SPON
308	2300A66001W	I-ANTENNA
309	2523A66001W	LOW-CASE
310	254FA66001W	DECORATE
311	254FA66002W	DECORATE
312	3028A66001W	RF-COV
313	252AA66001W	BATT-COV
314	3062A66001W	NAMEPLATE
315	3052A66002W	SHIELD-C
350	3501760104W	SCREW_G
350	3501760104W	SCREW_G
350	3501760104W	SCREW_G
350	3501760104W	SCREW_G



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

## Accessories

Table 3: List of Accessories

Accessory Description	Kit Number
Power Solutions	
Battery BD60 (CR5) Li-Ion 940mAh	SNN5749
Travel Charger LCA 3.0 Standard Switcher - INDIA	SPN5290
Travel Charger LCA 3.0 Standard Switcher - MEXICO	SPN5291
Travel Charger LCA 3.0 Standard Switcher - BRAZIL	SPN5293
Travel Charger LCA 3.0 Standard Switcher - AUSTRALIA	SPN5295
Travel Charger LCA 3.0 Standard Switcher - EURO	SPN5296
Travel Charger LCA 3.0 Standard Switcher - US	SPN5298
Travel Charger LCA 3.0 Standard Switcher - ARGENTINA	SPN5305
Travel Charger LCA 3.0 Mid-Rate Linear - Aus/NZ	AAPN4063
Travel Charger LCA 3.0 Mid-Rate Linear - Brazil	SPN5035
Travel Charger LCA 3.0 Mid-Rate Linear - Euro	AAPN4064
Travel Charger LCA 3.0 Mid-Rate Linear - India	AAPN5114
Travel Charger LCA 3.0 Mid-Rate Linear - Mexico	SPN5073
Travel Charger LCA 3.0 Mid-Rate Linear - Thailand/Philippines	AAPN4066
Travel Charger LCA 3.0 Mid-Rate Linear - US/TWN	AAPN4062
Travel Charger LCA 3.0 Mid-Rate Switcher - Argentina	SPN5167
Travel Charger LCA 3.0 Mid-Rate Switcher - Australia	SPN5168
Travel Charger LCA 3.0 Mid-Rate Switcher - Brazil	SPN5165
Travel Charger LCA 3.0 Mid-Rate Switcher - Euro	SPN5166
Travel Charger LCA 3.0 Mid-Rate Switcher - India	SPN5169
Travel Charger LCA 3.0 Mid-Rate Switcher - Mexico	SPN5163
Audio & Connectivity	
Headset Mono Earbud - Universal (Black)	SYN8390
Headset Mono Earbud - Universal (Silver)	AAYN4264
Consumer Personalization	
Lanyard - Silver*	AAYN4402
Belt Clip - All Plastic - Cost Reduced (Black)	SYN9853
Carry Case URL <a href="http://compass.mot.com/go/160713604">http://compass.mot.com/go/160713604</a>	Licensee
Cleaner - Screen - V3	SYN1223
Wristyard - Silver*	AAYN4403
In-Vehicle Solutions	
Vehicle Power Adapter LCA 3.0	SYN9324

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