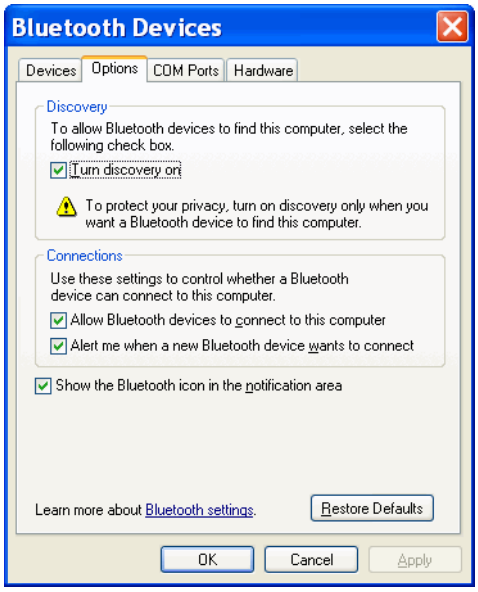

Figure 5-11 *Computer Bluetooth Devices Window*

6. On the **COM Ports** tab, click **Add**.
7. Select the **Incoming (device initiates the connection)** option, then click **OK**.

   Note the number of the COM port that was added.
8. Click **OK**.
9. Click **Start** > **All Programs** > **Microsoft ActiveSync**.
10. Click **File** > **Connection Settings**.

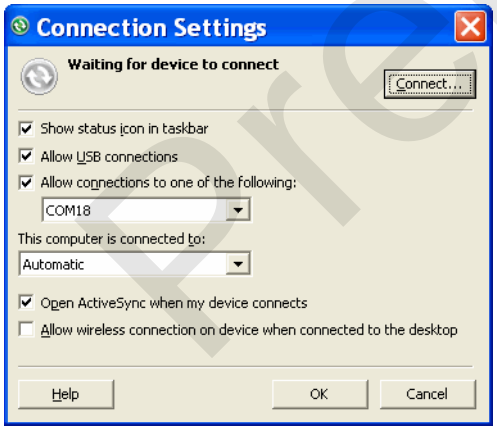

Figure 5-12 *ActiveSync Connection Settings*

11. On the **Allow connections to one of the following** drop-down list, select the COM port with the number you noted earlier.
12. On the MC65, tap **Start** > **Programs** > **ActiveSync**.
13. Tap **Menu** > **Connect via Bluetooth**.

    Synchronization is automatically initiated. The **ActiveSync** icon appears on the lower right corner of the **Today** screen.

If an Authentication is required, the **Enter Passcode** screen appears, type an alphanumeric passkey (PIN code), then tap **Next**; enter the same passkey on the other device.

The passkey is recommended for enhanced security. Your passkey must be between 1 to 16 alphanumeric characters.

If you do not want to use a passkey, tap **Next**.

14. To disconnect the ActiveSync connection, tap the **ActiveSync** icon on the Today screen.
15. Tap **Disconnect**.

Phone Book Access Profile Services

Phone Book Access profile (PBAP) is used to synchronize contacts between a remote device and the MC65. To establish an PBAP synchronization:

1. Ensure that Bluetooth is enabled and discoverable on both devices.
2. Ensure that the two devices are within 30 feet (10 meters) of one another.
3. Tap **Start** > **Settings** > **Connection** tab > **Bluetooth** icon > **Devices** tab.
4. Tap **Add New Device**.The MC65 searches for a Bluetooth device, such as a Car Kit.
5. Select a device from the list.
6. Tap **Next**. The **Enter Passcode** window appears.

> ***NOTE*** If Smart-pairing is configured and the device is requesting one of the pre-defined PINs, the **Enter Passcode** window does not appear.

7. Enter the Passcode and the tap **Next**. The device is added to the Bluetooth list.
8. A dialog box appears requesting if you want to transfer contacts to the car kit.
9. Select **Yes** or **No**.
10. If **Yes** is selected, contacts from the MC65 are transferred to the car kit.

Chapter 6 Accessories

Introduction

MC65 accessories, listed below, provide a variety of product support capabilities.

- Four Slot Charge Only Cradle - Charges up to four MC65 devices.
- Four Slot Ethernet Cradle - Charges the MC65 main battery and connects the MC65 to an Ethernet network.
- Single Slot USB Cradle - Charges the MC65 main battery and a spare battery. Synchronizes the MC65 with a host computer through a USB connection.
- Vehicle Cradle - Provides secure mounting of the MC65 in a vehicle and charges the MC65.
- Vehicle Holder - Provides an alternative mounting for the MC65 in a vehicle. Requires the Auto Charge cable for charging the MC65 battery.
- Four Slot Battery Charger - Charges standard and high capacity batteries.
- Auto Charge Cable - Plugs into a vehicle cigarette lighter to charge the MC65 while on the road.
- USB Charging Cable - Provides power to the MC65 and USB communication with a host computer.
- Charge Only Cable - Provides power to the MC65.
- Belt Mounted Rigid Holster - Holds the MC65 when not in use.
- Belt Mounted Soft Holster - Holds the MC65 when not in use.
- Single Slot Ethernet/Modem/USB Cradle -
- Magnetic Stripe Reader -
- DEX Cable -

Single Slot USB Cradle

This section describes how to use a Single Slot USB cradle with the MC65. For USB communication setup procedures refer to the *MC65 Integrator Guide.*

The Single Slot USB Cradle:

- Provides 5.4 VDC power for operating the MC65.
- Synchronizes information between the MC65 and a host computer. Refer to the *MC65 Integrator Guide* for information on setting up a partnership between the MC65 and a host computer.
- Charges the MC65's battery.
- Charges a spare battery.

Charging the MC65 Battery

Connect the cradle to power. Insert the MC65 into the slot to begin charging.

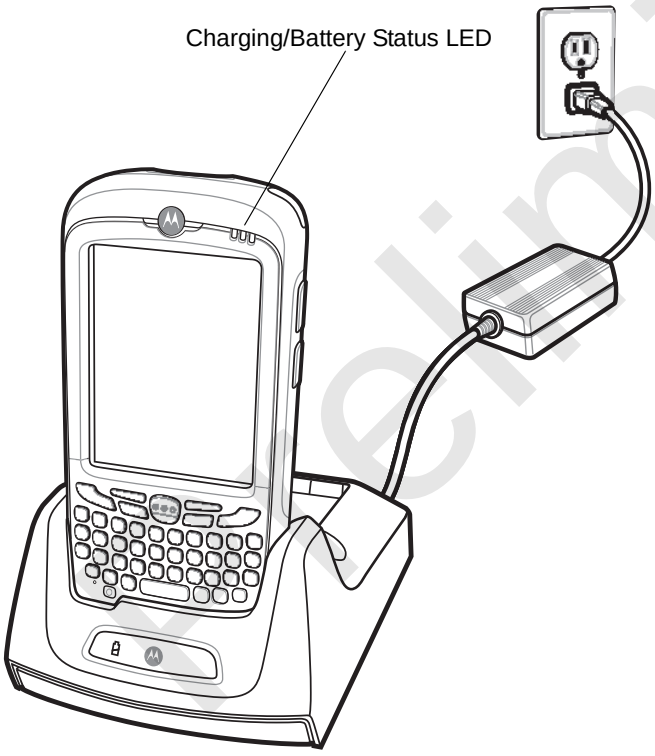

Figure 6-1 *MC65 Battery Charging*

Charging the Spare Battery

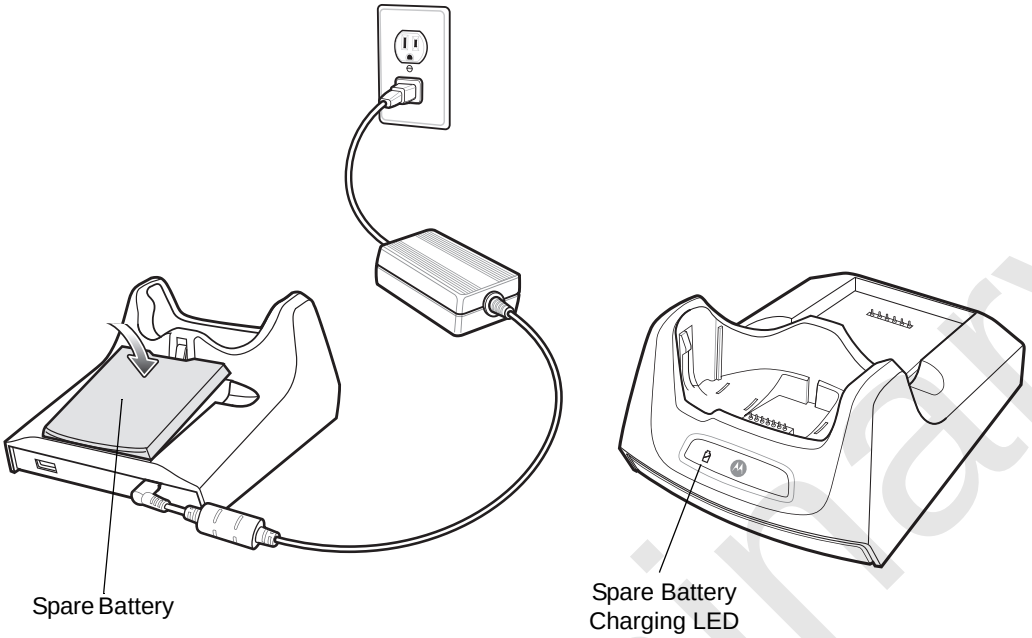

Figure 6-2 *Spare Battery Charging*

Battery Charging Indicators

The Single Slot USB Cradle charges the MC65's main battery and a spare battery simultaneously.

The MC65's charge LED indicates the status of the battery charging in the MC65. See *Table 1-2 on page 1-8* for charging status indications.

The spare battery charging LED on the cradle indicates the status of the spare battery charging in the cradle. See *Table 6-1* for charging status indications.

The 2400 mAh battery fully charges in less than four hours and the 3600 mAh battery fully charges in less than six hours.

Charging Temperature

Charge batteries in temperatures from 0°C to 40°C (32°F to 104°F). Charging is intelligently controlled by the MC65.

To accomplish this, for small periods of time, the MC65 or accessory alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC65 or accessory indicates when charging is disabled due to abnormal temperatures via its LED. See *Table 1-2 on page 1-8* and *Table 6-1*.

Table 6-1 *Spare Battery LED Charging Indicators*

Spare Battery LED (on cradle)	Indication
Off	Battery is not charging; battery is not inserted correctly in the cradle; cradle is not powered
Slow Blinking Amber	Spare battery is charging.
Solid Amber	Charging complete.
Fast Blinking Amber	Charging error.

Four Slot Charge Only Cradle

This section describes how to set up and use a Four Slot Charge Only cradle with the MC65.

The Four Slot Charge Only cradle:

- Provides 5.4 VDC power for operating the MC65.
- Simultaneously charges up to four MC65 devices.

Charging

Insert the MC65 into a slot to begin charging.

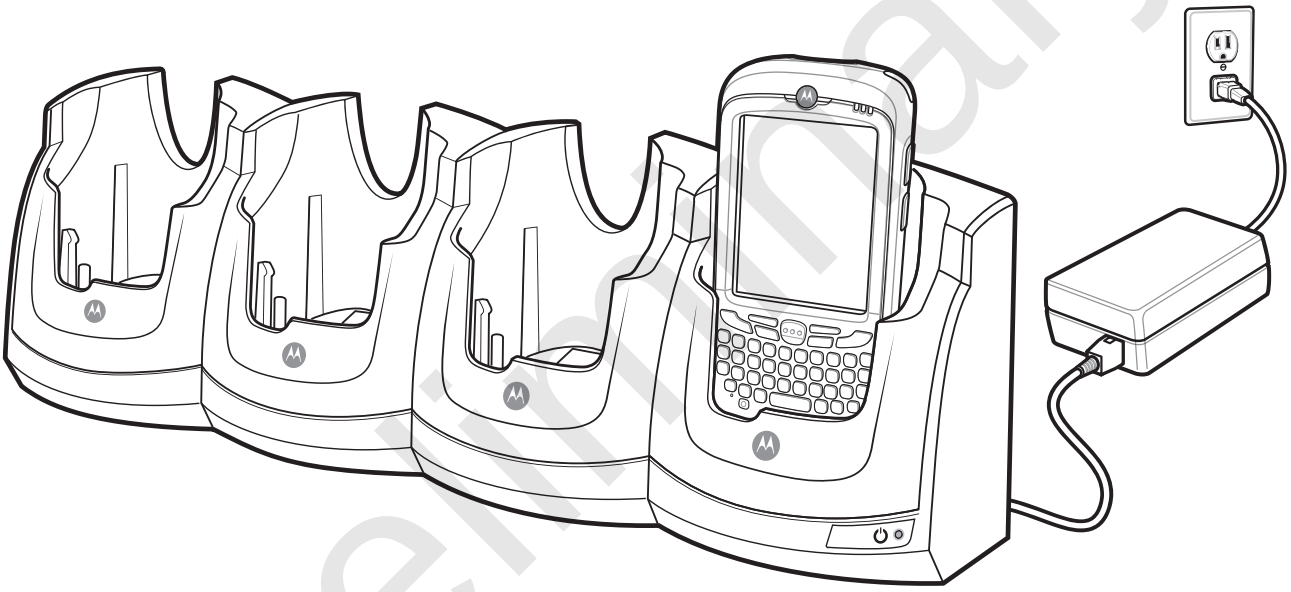

Figure 6-3 *MC65 Battery Charging*

Battery Charging Indicators

The MC65's charge LED shows the status of the battery charging in the MC65. See *Table 1-2 on page 1-8* for charging status indications.

The 2400 mAh battery fully charges in less than four hours and the 3600 mAh battery fully charges in less than six hours.

Charging Temperature

Charge batteries in temperatures from 0°C to 40°C (32°F to 104°F). Charging is intelligently controlled by the MC65.

To accomplish this, for small periods of time, the MC65 or accessory alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC65 or accessory indicates when charging is disabled due to abnormal temperatures via its LED. See *Table 1-2 on page 1-8*.

Four Slot Ethernet Cradle

This section describes how to set up and use a Four Slot Ethernet cradle with the MC65. For cradle communication setup procedures refer to the *MC65 Integrator Guide*.

The Four Slot Ethernet cradle:

- Provides 5.4 VDC power for operating the MC65.
- Connects the MC65 (up to four) to an Ethernet network.
- Simultaneously charges up to four MC65 devices.

Charging

Insert the MC65 into a slot to begin charging.

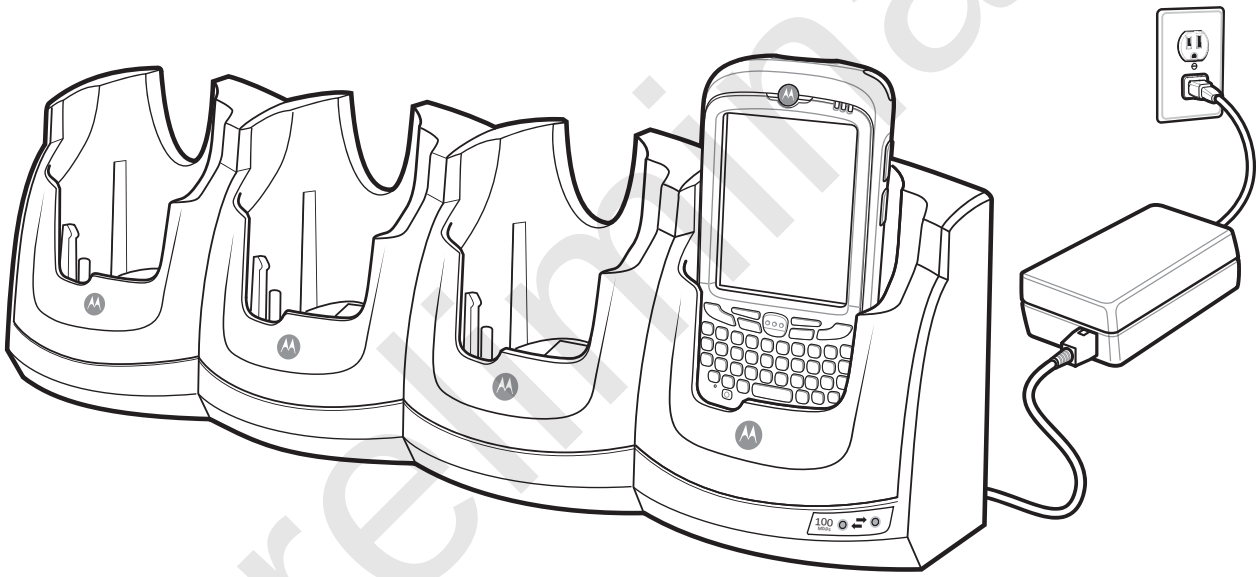

Figure 6-4 *MC65 Battery Charging*

Battery Charging Indicators

The MC65's charge LED shows the status of the battery charging in the MC65. See *Table 1-2 on page 1-8* for charging status indications.

The2400 mAh battery fully charges in less than four hours and the 3600 mAh battery fully charges in less than six hours.

Charging Temperature

Charge batteries in temperatures from 0°C to 40°C (32°F to 104°F). Charging is intelligently controlled by the MC65.

To accomplish this, for small periods of time, the MC65 alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC65 indicates when charging is disabled due to abnormal temperatures via its LED. See *Table 1-2 on page 1-8*.

VCD5000 Vehicle Cradle

This section describes how to use a VCD5000 vehicle cradle with the MC65. For cradle installation and communication setup procedures refer to the *MC65 Integrator Guide*.

Once installed in a vehicle, the cradle:

- holds the MC65 securely in place
- provides power for operating the MC65
- re-charges the battery in the MC65.

Charging the MC65 Battery

Insert the MC65 into the vehicle cradle to begin charging. A click indicates that the MC65 button release locking mechanism is enabled and the MC65 is locked in place.

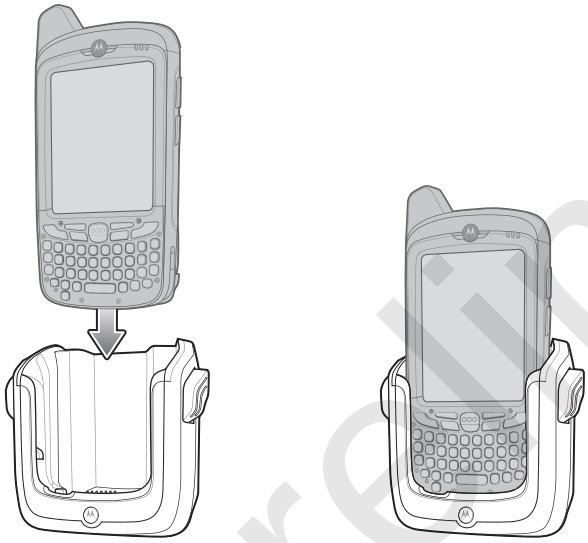

Figure 6-5 *MC65 Battery Charging*

CAUTION Ensure the MC65 is fully inserted in the cradle. Lack of proper insertion may result in property damage or personal injury. Motorola is not responsible for any loss resulting from the use of the products while driving.

Removing the MC65

To remove the MC65, hold back the release lever on the cradle and pull the MC65 up and out of the cradle.

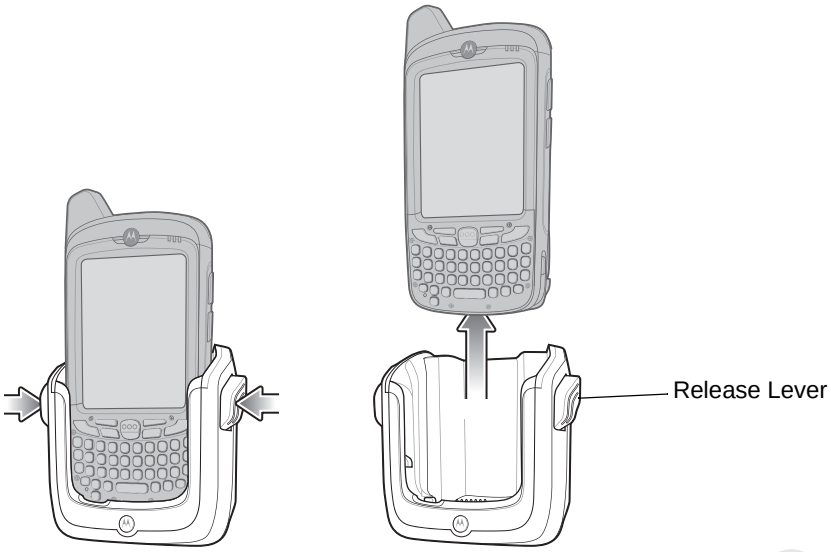

Figure 6-6 *Removing the MC65*

Battery Charging Indicators

The MC65's charge LED indicates the status of the battery charging in the MC65. See *Table 1-2 on page 1-8* for charging status indications.

The 2400 mAh battery fully charges in less than four hours and the 3600 mAh battery fully charges in less than six hours.

Charging Temperature

Charge batteries in temperatures from 0°C to 40°C (32°F to 104°F). Charging is intelligently controlled by the MC65.

To accomplish this, for small periods of time, the MC65 alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC65 indicates when charging is disabled due to abnormal temperatures via its LED. See *Table 1-2 on page 1-8*.

Four Slot Battery Charger

This section describes how to use the Four Slot Battery Charger to charge up to four MC65 batteries.

Battery Charging

1. Connect the charger to a power source.
2. Insert the battery into a battery charging well and gently press down on the battery to ensure proper contact.

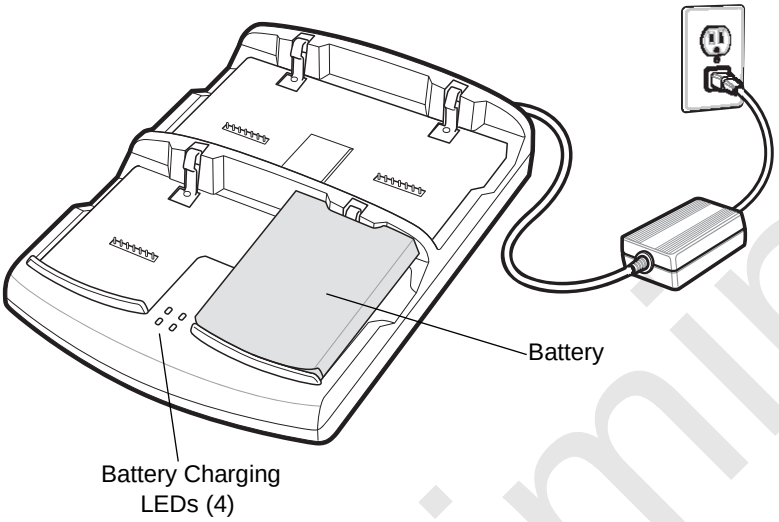

Figure 6-7 *Four Slot Battery Charger*

Battery Charging Indicators

The charger has an amber LED for each battery charging well. See *Table 6-2* for charging status indications. The 2400 mAh battery fully charges in less than four hours and the 3600 mAh battery fully charges in less than six hours.

Charging Temperature

Charge batteries in temperatures from 0°C to 40°C (32°F to 104°F). Charging is intelligently controlled by the MC65.

To accomplish this, for small periods of time, the charger alternately enables and disables battery charging to keep the battery at acceptable temperatures. The charger indicates when charging is disabled due to abnormal temperatures via its LED. See *Table 6-2*.

Table 6-2 *Battery LED Charging Indicators*

LED	Indication
Off	No battery in slot; battery is not charging; battery is not inserted correctly in the charger; charger is not powered.

Table 6-2 *Battery LED Charging Indicators (Continued)*

LED	Indication
Slow Blinking Amber	Battery is charging.
Solid Amber	Charging complete.
Fast Blinking Amber	Charging error.

Cables

This section describes how to set up and use the cables. The cables are available with a variety of connection capabilities.

The following communication/charge cables are available:

- USB Charging cable
  - Provide the MC65 with operating and charging power when used with the Motorola approved power supply.
  - Synchronize information between the MC65 and a host computer. With customized or third party software, it can also synchronize the MC65 with corporate databases.
- Charge Only cable
  - Provide the MC65 with operating and charging power when used with the Motorola approved power supply.
- Auto Charge cable.
  - Provide the MC65 with operating and charging power when used with the Motorola approved power supply.

Battery Charging and Operating Power

The communication/charge cables can charge the MC65 battery and supply operating power.

To charge the MC65 battery:

1. Connect the communication/charge cable power input connector to the Motorola approved power source.
2. Slide the bottom of the MC65 into the connector cup end of the communication/charge cable and gently press in until it latches into the MC65.
3. Slide the two locking tabs up until they both lock into position.

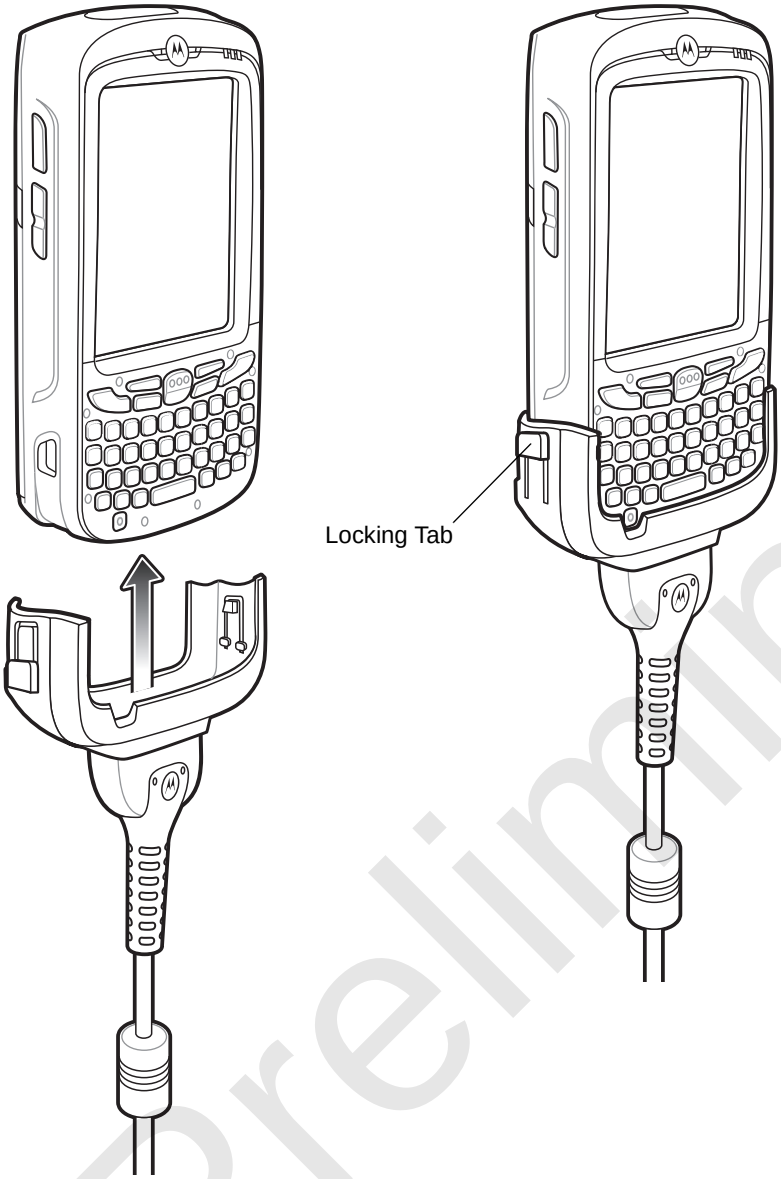

Figure 6-8 *Cable Cup Locking Tabs*

The MC65 amber Charge LED indicates the MC65 battery charging status. The 2400 mAh standard battery charges in less than four hours and the 3600 mAh standard battery charges in less than six hours. See *Table 1-2 on page 1-8* for charging status indications.

4. When charging is complete, push the two locking tab down and remove the cable from the MC65.

LED Charge Indications

The amber Charge LED on the MC65 indicates battery charging status. See *Table 1-2 on page 1-8* for charging status indications.

Charging Temperature

Charge batteries in temperatures from 0°C to 40°C (32°F to 104°F). Charging is intelligently controlled by the MC65.

To accomplish this, for small periods of time, the MC65 or accessory alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC65 or accessory indicates when charging is disabled due to abnormal temperatures via its LED. See *Table 1-2 on page 1-8*.

Vehicle Holder

WARNING! **Some countries prohibit the mounting of any electronic device in any location on the vehicle dashboard. Be sure to check your local laws acceptable mounting areas before installing the auto mounting kit.**

Installation Reminders

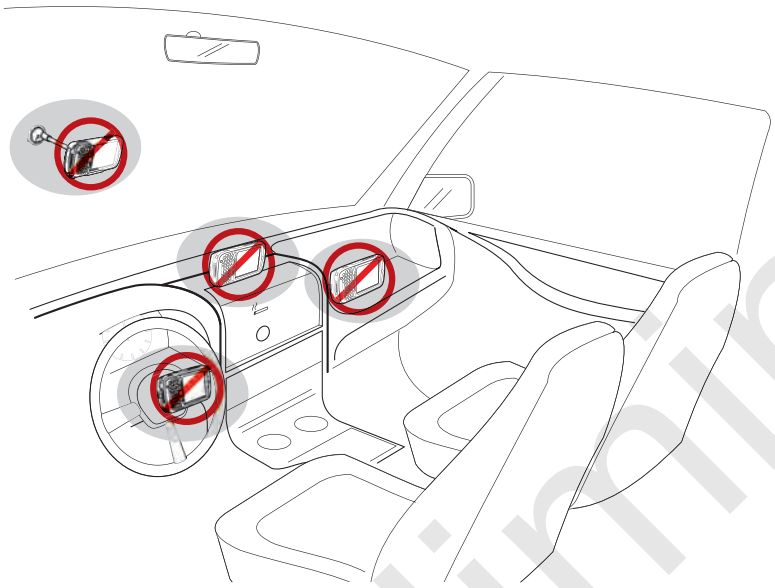

Figure 6-9 *Vehicle Holder Mounting*

- Do not mount the vehicle holder where it will obscure the driver's view of the road.
- Do not mount the vehicle holder near the driver seat air bag deployment area.
- Do not place the MC65 on top of the dashboard or anywhere without securing it in the vehicle holder.
- Do not mount the vehicle holder near the passenger seat air bag deployment area.
- Install the vehicle holder on the surface of your vehicle that is reasonably flat and free of dirt and oil.

Device Mounting Precautions

- Some countries prohibit the mounting of any electronic device in any location on the vehicle dashboard. Be sure to check your local laws acceptable mounting areas before installing the vehicle holder.
- The heating and cooling cycle of a vehicle's interior will in some cases loosen the adhesion of the suction cup. Check the vacuum seal of the vehicle mount kit for adequate adhesion each time you use the unit, and reinstall if necessary.
- If the vehicle holder has problems staying on, clean the plastic suction cup with alcohol, then reinstall.

Installation

Install the vehicle mount on the surface of your vehicle that is reasonably flat and free of dirt and oil. Clean the mounting surface with a glass cleaner and a clean cotton cloth. Install the vehicle mount on the windshield or other flat car surface using the supplied mounting disc.

Assembly

1. Insert the vehicle holder's cradle plate to the holes on the back of the cradle.
2. Push the cradle down until both parts are engaged.

Windshield Installation

1. Fix the suction cup mount to the selected area with the suction lever facing up.

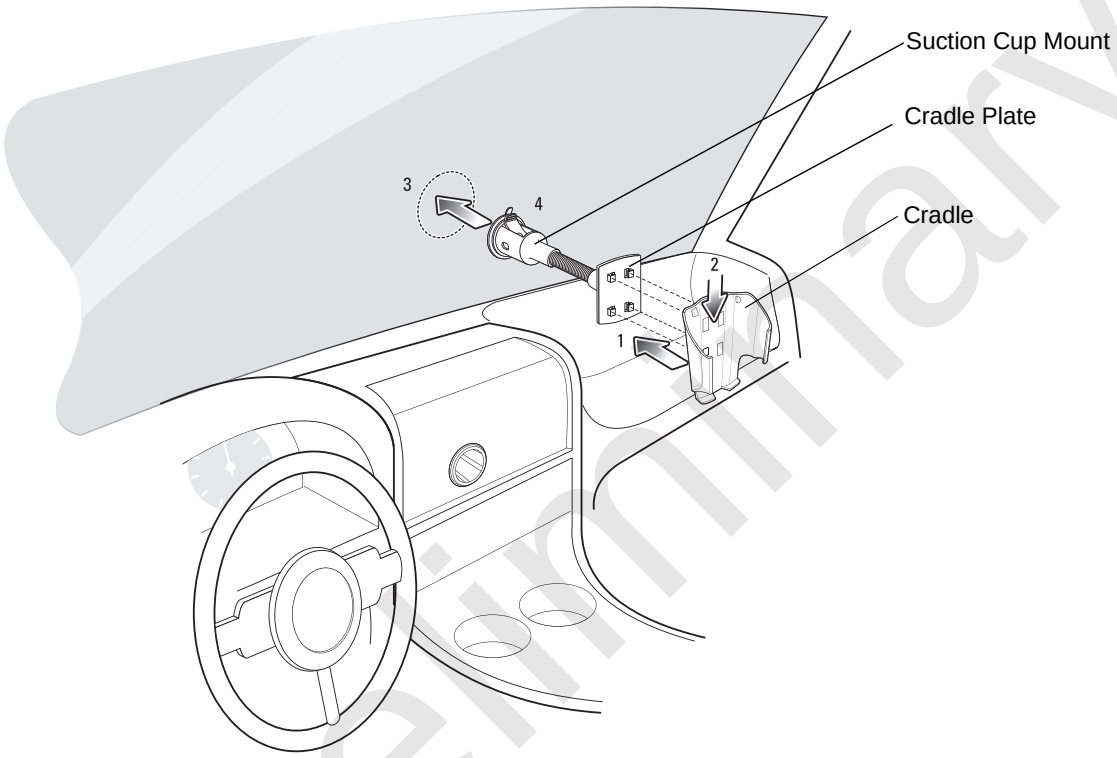

Figure 6-10 *Windshield Installation*

2. Flip the lever down to create a vacuum between the suction cup and the mounting surface.
3. Make sure that the suction bond is strong enough before proceeding to the next step.
4. Slide the MC65 into the cradle.

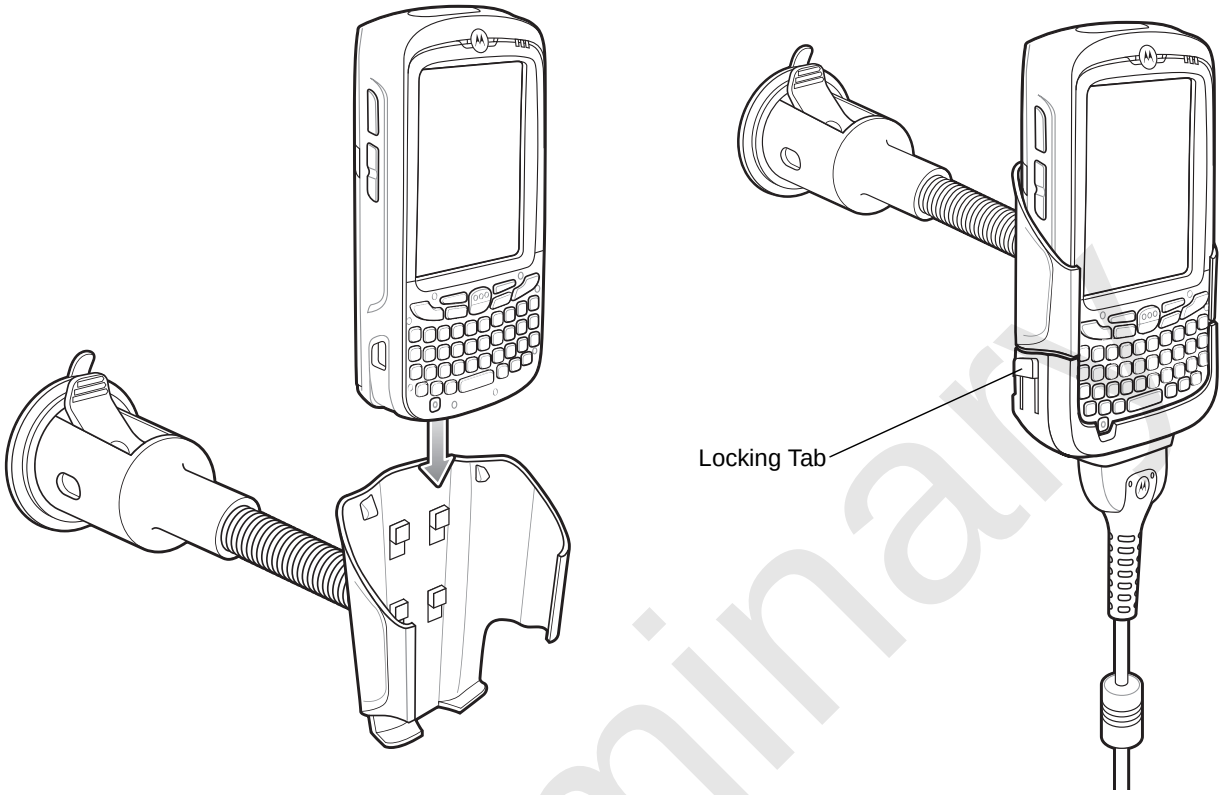

Figure 6-11 *Insert MC65 into Vehicle Holder*

5. Connect the auto charger cable to the MC65 and slide the two locking tabs up to secure the cable cup to the MC65.
6. Connect the other end to the cigarette lighter socket.

   The LED indicator on the right side of the touch screen lights up orange during charging.

Flat Surface Installation

1. Remove the plastic sheet on the bottom of the mounting disc.
2. Place the disc, sticky side down, on a clean flat surface.

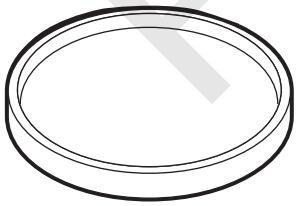

Figure 6-12 *Mounting Disc*

3. Fix the suction cup mount to the disc with the suction lever facing up.
4. Flip the lever down to create a vacuum between the suction cup and the disc.
5. Make sure that the suction bond is strong enough before proceeding to the next step.
6. Slide the MC65 into the cradle.

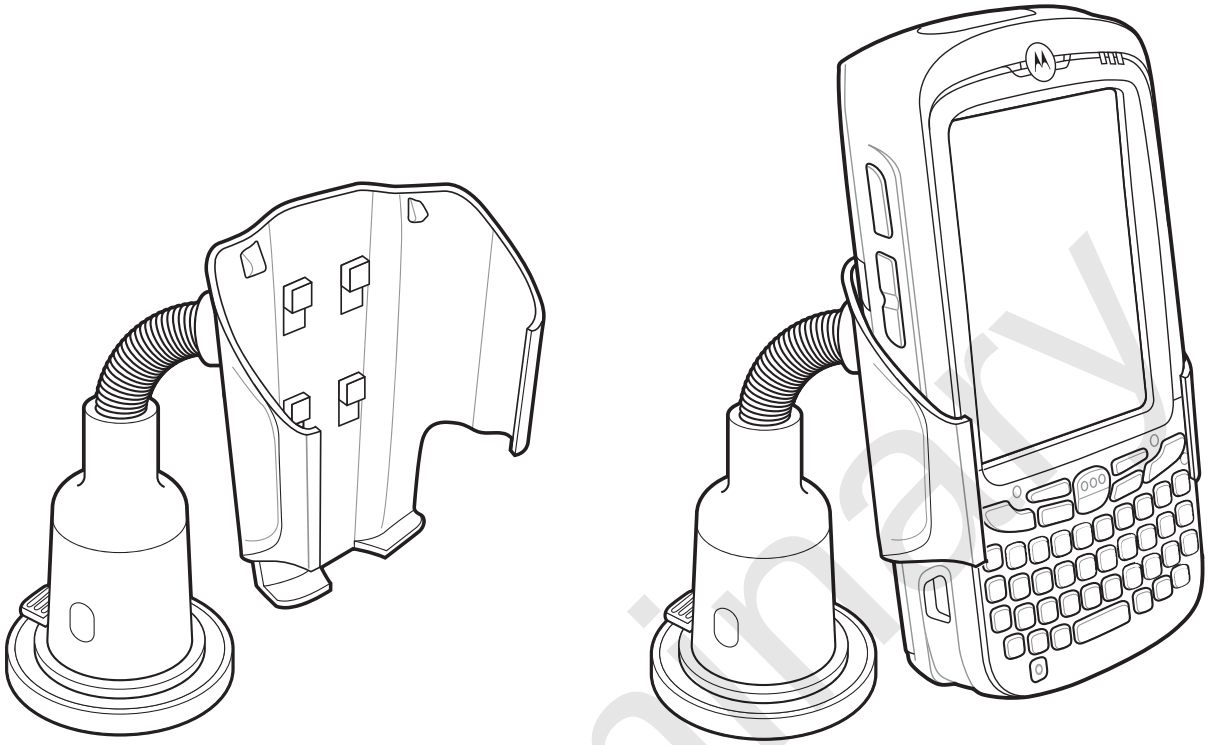

Figure 6-13 *Vehicle Holder Mounted on Flat Surface*

7. Connect the auto charger cable to the MC65 and slide the two locking tabs up to secure the cable cup to the MC65.
8. Connect the other end to the cigarette lighter socket.

   The LED indicator on the right side of the touch screen lights up orange during charging.

Chapter 7 Maintenance & Troubleshooting

Introduction

This chapter includes instructions on cleaning and storing the MC65, and provides troubleshooting solutions for potential problems during MC65 operation.

Maintaining the MC65

For trouble-free service, observe the following tips when using the MC65:

- Do not scratch the screen of the MC65. When working with the MC65, use the supplied stylus or plastic-tipped pens intended for use with a touch-sensitive screen. Never use an actual pen or pencil or other sharp object on the surface of the MC65 screen.

  Motorola recommends using a screen protector, p/n KT-67525-01R.
- The touch-sensitive screen of the MC65 is glass. Do not to drop the MC65 or subject it to strong impact.
- Protect the MC65 from temperature extremes. Do not leave it on the dashboard of a car on a hot day, and keep it away from heat sources.
- Do not store or use the MC65 in any location that is dusty, damp, or wet.
- Use a soft lens cloth to clean the MC65. If the surface of the MC65 screen becomes soiled, clean it with a soft cloth moistened with a diluted window-cleaning solution.
- Periodically replace the rechargeable battery to ensure maximum battery life and product performance. Battery life depends on individual usage patterns.

- A screen protector is applied to the MC65. Motorola recommends using this to minimize wear and tear. Screen protectors enhance the usability and durability of touch screen displays. Benefits include:
  - Protection from scratches and gouges
  - Durable writing and touch surface with tactile feel
  - Abrasion and chemical resistance
  - Glare reduction
  - Keeping the device's screen looking new
  - Quick and easy installation.

Removing the Screen Protector

A screen protector is applied to the MC65. Motorola recommends using this to minimize wear and tear. Screen protectors enhance the usability and durability of touch screen displays.

To remove the screen protector, lift the corner using a thin plastic card, such as a credit card, then carefully lift it off the display.

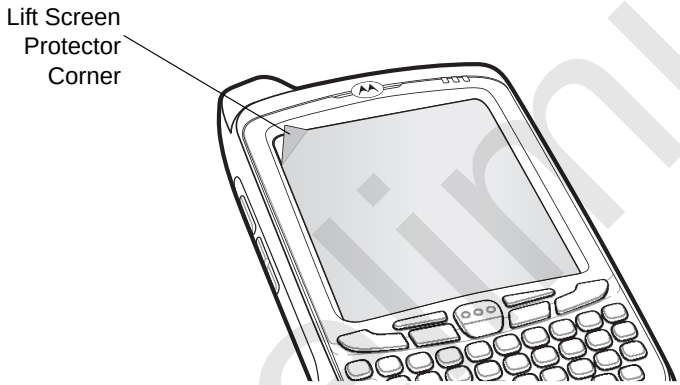

Figure 7-1 *Removing the Screen Protector*

CAUTION Do not use a sharp object to remove the protector. Doing so can damage the display.

NOTE Not using a screen protector can affect warranty coverage. To purchase replacement protectors, contact your local account manager or Motorola, Inc. These include screen protector installation instructions. Part number: KT-67525-01R Screen Protector 3/pk.

Battery Safety Guidelines

- The area in which the units are charged should be clear of debris and combustible materials or chemicals. Particular care should be taken where the device is charged in a non commercial environment.
- Follow battery usage, storage, and charging guidelines found in the user's guide.
- Improper battery use may result in a fire, explosion, or other hazard.

- To charge the mobile device battery, the battery and charger temperatures must be between +32 ºF and +104 ºF (0 ºC and +40 ºC)
- Do not use incompatible batteries and chargers. Use of an incompatible battery or charger may present a risk of fire, explosion, leakage, or other hazard. If you have any questions about the compatibility of a battery or a charger, contact Motorola Enterprise Mobility support.
- For devices that utilize a USB port as a charging source, the device shall only be connected to products that bear the USB-IF logo or have completed the USB-IF compliance program.
- To enable authentication of an approved battery, as required by IEEE1725 clause 10.2.1, all batteries will carry a Motorola hologram. Do not fit any battery without checking it has the Motorola authentication hologram.
- Do not disassemble or open, crush, bend or deform, puncture, or shred.
- Severe impact from dropping any battery-operated device on a hard surface could cause the battery to overheat.
- Do not short circuit a battery or allow metallic or conductive objects to contact the battery terminals.
- Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids, or expose to fire, explosion, or other hazard.
- Do not leave or store the equipment in or near areas that might get very hot, such as in a parked vehicle or near a radiator or other heat source. Do not place battery into a microwave oven or dryer.
- Battery usage by children should be supervised.
- Please follow local regulations to properly dispose of used re-chargeable batteries.
- Do not dispose of batteries in fire.
- In the event of a battery leak, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with large amounts of water and seek medical advice.
- If you suspect damage to your equipment or battery, contact Motorola Enterprise Mobility support to arrange for inspection.

Cleaning

CAUTION Always wear eye protection.

Read warning label on compressed air and alcohol product before using.

If you have to use any other solution for medical reasons please contact Motorola for more information.

WARNING! **Avoid exposing this product to contact with hot oil or other flammable liquids. If such exposure occurs, unplug the device and clean the product immediately in accordance with these guidelines.**

Materials Required

- Alcohol wipes
- Lens tissue
- Cotton tipped applicators

- Isopropyl alcohol
- Can of compressed air with a tube.

Cleaning the MC65

Housing

Using the alcohol wipes, wipe the housing including keys and in-between keys.

Display

The display can be wiped down with the alcohol wipes, but care should be taken not to allow any pooling of liquid around the edges of the display. Immediately dry the display with a soft, non-abrasive cloth to prevent streaking.

Scanner Exit Window

Wipe the scanner exit window periodically with a lens tissue or other material suitable for cleaning optical material such as eyeglasses.

Connector

1. Remove the main battery from mobile computer. See *Replacing the Battery on page 1-10*.
2. Dip the cotton portion of the cotton tipped applicator in isopropyl alcohol.
3. Rub the cotton portion of the cotton tipped applicator back-and-forth across the connector on the bottom of the MC65. Do not leave any cotton residue on the connector.
4. Repeat at least three times.
5. Use the cotton tipped applicator dipped in alcohol to remove any grease and dirt near the connector area.
6. Use a dry cotton tipped applicator and repeat steps 4 through 6.
7. Spray compressed air on the connector area by pointing the tube/nozzle about ½ inch away from the surface. CAUTION: Do not point nozzle at yourself and others, ensure the nozzle or tube is away from your face.
8. Inspect the area for any grease or dirt, repeat if required.

Cleaning Cradle Connectors

To clean the connectors on a cradle:

1. Remove the DC power cable from the cradle.
2. Dip the cotton portion of the cotton tipped applicator in isopropyl alcohol.
3. Rub the cotton portion of the cotton tipped applicator along the pins of the connector. Slowly move the applicator back-and-forth from one side of the connector to the other. Do not let any cotton residue on the connector.
4. All sides of the connector should also be rubbed with the cotton tipped applicator.
5. Spray compressed air in the connector area by pointing the tube/nozzle about ½ inch away from the surface. CAUTION: do not point nozzle at yourself and others, ensure the nozzle or tube is pointed away from your face.

6. Ensure that there is no lint left by the cotton tipped applicator, remove lint if found.
7. If grease and other dirt can be found on other areas of the cradle, use lint free cloth and alcohol to remove.
8. Allow at least 10 to 30 minutes (depending on ambient temperature and humidity) for the alcohol to air dry before applying power to cradle.

   If the temperature is low and humidity is high, longer drying time is required. Warm temperature and dry humidity requires less drying time.

Cleaning Frequency

The cleaning frequency is up to the customer's discretion due to the varied environments in which the mobile devices are used. They may be cleaned as frequently as required. However when used in dirty environments it may be advisable to periodically clean the scanner exit window to ensure optimum scanning performance.

Troubleshooting

MC65

Table 7-1 *Troubleshooting the MC65*

Problem	Cause	Solution
When pressing the power button the MC65 does not turn on.	Battery not charged.	Charge or replace the battery in the MC65.
	Battery not installed properly.	Install the battery properly. See *Installing the Battery on page 1-6*.
	System crash.	Perform a warm boot. If the MC65 still does not turn on, perform a cold boot. See *Resetting the MC65 on page 2-16*.
When pressing the power button the MC65 does not turn on but two LEDs blink.	Battery charge is at a level where data is maintained but battery should be re-charged.	Charge or replace the battery in the MC65.
Rechargeable battery did not charge.	Battery failed.	Replace battery. If the MC65 still does not operate, perform a warm boot, then a cold boot. See *Resetting the MC65 on page 2-16*.
	MC65 removed from cradle while battery was charging.	Insert MC65 in cradle. The 3600 mAh battery fully charges in less than six hours.
	Extreme battery temperature.	Battery does not charge if ambient temperature is below 0°C (32°F) or above 40°C (104°F).
Cannot see characters on display.	MC65 not powered on.	Press the **Power** button.

Table 7-1 *Troubleshooting the MC65 (Continued)*

Problem	Cause	Solution
During data communication, no data transmitted, or transmitted data was incomplete.	MC65 removed from cradle or disconnected from host computer during communication.	Replace the MC65 in the cradle, or reattach the communication cable and re-transmit.
	Incorrect cable configuration.	See the system administrator.
	Communication software was incorrectly installed or configured.	Perform setup. Refer to the *MC65 Integrator Guide* for details.
No sound.	Volume setting is low or turned off.	Adjust the volume. See *Adjusting Volume on page 2-12*.
MC65 shuts off.	MC65 is inactive.	The MC65 turns off after a period of inactivity. If the MC65 is running on battery power, set this period from 1 to 5 minutes, in one-minute intervals. If the MC65 is running on external power, set this period to 1, 2, 5, 10, 15, or 30 minutes. Check the *Power* window by selecting **Start** > **Settings** > **System** tab and tapping the **Power** icon. Select the **Advanced** tab and change the setting for a longer delay before the automatic shutoff feature activates.
	Battery is depleted.	Replace the battery.
	Battery is not inserted properly.	Insert the battery properly. See *Installing the Battery on page 1-6*.
Tapping the window buttons or icons does not activate the corresponding feature.	Screen is not calibrated correctly.	Re-calibrate the screen. Press **Blue** key - **Backspace** key or tap **Start** > **Settings** > **System** tab > **Screen** icon > **Align Screen** button.
	The system is not responding.	Warm boot the system. See *Resetting the MC65 on page 2-16*.
A message appears stating that the MC65 memory is full.	Too many files stored on the MC65.	Delete unused memos and records. If necessary, save these records on the host computer (or use an SD card for additional memory).
	Too many applications installed on the MC65.	Remove user-installed applications on the MC65 to recover memory. Select **Start** > **Settings** > **System** tab and tap the **Remove Programs** icon. Select the unused program and tap **Remove.**
The Charging/Battery Status LED flashes with the Power button is pressed and the MC65 does not turn on.	The MC65's battery is low.	Recharge the battery.

Table 7-1 *Troubleshooting the MC65 (Continued)*

Problem	Cause	Solution
Camera application does not launch.	DataWedge application running.	Stop DataWedge application. Tap **Start** > **Settings** > **System** > **Task Manager**. Select DataWedge application and tap **End Task**.
The MC65 does not decode with reading bar code.	Scanning application is not loaded.	Load a scanning application on the MC65. See your system administrator.
	Unreadable bar code.	Ensure the symbol is not defaced.
	Distance between exit window and bar code is incorrect.	Place the MC65 within proper scanning range.
	MC65 is not programmed for the bar code.	Program the MC65 to accept the type of bar code being scanned. Refer to the EMDK or Control Panel application.
	MC65 is not programmed to generate a beep.	If the MC65 does not beep on a good decode, set the application to generate a beep on good decode.
	Battery is low.	If the scanner stops emitting a laser beam upon a trigger press, check the battery level. When the battery is low, the scanner shuts off before the MC65 low battery condition notification. Note: If the scanner is still not reading symbols, contact the distributor or Motorola.

Bluetooth Connection

Table 7-2 *Troubleshooting Bluetooth Connection*

Problem	Cause	Solution
MC65 cannot find any Bluetooth devices nearby.	Too far from other Bluetooth devices.	Move closer to the other Bluetooth device(s), within a range of 10 meters.
	The Bluetooth device(s) nearby are not turned on.	Turn on the Bluetooth device(s) to find.
	The Bluetooth device(s) are not in discoverable mode.	Set the Bluetooth device(s) to discoverable mode. If needed, refer to the device's user documentation for help.
When trying to connect a Bluetooth phone and MC65, the phone thinks a previously paired MC65 is used.	The phone remembers the name and address of the MC65 it last paired with via the Bluetooth radio.	Manually delete the pairing device and name from the phone. Refer to the phone's user documentation for instructions.

Single Slot USB Cradle

Table 7-3 *Troubleshooting the Single Slot USB Cradle*

Symptom	Possible Cause	Action
LEDs do not light when MC65 or spare battery is inserted.	Cradle is not receiving power.	Ensure the power cable is connected securely to both the cradle and to AC power.
	MC65 is not seated firmly in the cradle.	Remove and re-insert the MC65 into the cradle, ensuring it is firmly seated.
	Spare battery is not seated firmly in the cradle.	Remove and re-insert the spare battery into the charging slot, ensuring it is firmly seated.
MC65 battery is not charging.	MC65 was removed from cradle or cradle was unplugged from AC power too soon.	Ensure cradle is receiving power. Ensure MC65 is seated correctly. Confirm main battery is charging under **Start** > **Settings** > **System** > **Power**. The 3600 mAh battery fully charges in less than six hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	The MC65 is not fully seated in the cradle.	Remove and re-insert the MC65 into the cradle, ensuring it is firmly seated.
	Extreme battery temperature.	Battery does not charge if ambient temperature is below 0°C (32°F) or above 40°C (104°F).
Spare battery is not charging.	Battery not fully seated in charging slot.	Remove and re-insert the spare battery in the cradle, ensuring it is firmly seated.
	Battery inserted incorrectly.	Re-insert the battery so the charging contacts on the battery align with the contacts on the cradle.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
During data communication, no data transmits, or transmitted data was incomplete.	MC65 removed from cradle during communications.	Replace MC65 in cradle and retransmit.
	Communication software is not installed or configured properly.	Perform setup as described in the *MC65 Integrator Guide.*

Four Slot Ethernet Cradle

Table 7-4 *Troubleshooting the Four Slot Ethernet Cradle*

Symptom	Cause	Solution
Attempt by the MC65 to ActiveSync failed.	MC65 removed from the cradle while the LED was blinking green.	Wait one minute and reinsert the MC65 in the cradle. This allows the cradle to attempt another synchronization.
	Using an outdated version of ActiveSync.	Visit http://www.microsoft.com for the latest ActiveSync software.
	ActiveSync on the host computer has not yet closed the previous ActiveSync session.	Wait one minute and reinsert the MC65 in the cradle. This allows the cradle to attempt another synchronization.
	Incorrect cable configuration.	Ensure the correct cable (Ethernet) is used with the cradle.
	Communication software improperly configured.	Perform setup as described in the *MC65 Integrator Guide*.
	MC65 ActiveSync disabled or not configured to accept network connection.	On the MC65, tap **Start** > **ActiveSync** > **Tools** > **Options** > **Options** button. Then, uncheck the **Enable PC sync using this connection:** check box.
	Host ActiveSync disabled or not configured to accept network connection.	On the host computer, check **File** > **Connection Settings** > **Allow network (Ethernet) Server Connection with this desktop computer.**
During communication, no data transmits, or transmitted data was incomplete.	MC65 removed from cradle during communications.	Replace MC65 in cradle and retransmit.
	MC65 has no active connection.	An icon is visible in the status bar if a connection is currently active.

Table 7-4 *Troubleshooting the Four Slot Ethernet Cradle (Continued)*

Symptom	Cause	Solution
Battery is not charging.	MC65 removed from the cradle too soon.	Replace the MC65 in the cradle. The 3600 mAh battery fully charges in less than six hours. Tap **Start** > **Settings** > **System** > **Power** to view battery status.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	MC65 is not inserted correctly in the cradle.	Remove the MC65 and reinsert it correctly. Verify charging is active. Tap **Start** > **Settings** > **System** > **Power** to view battery status.
	Ambient temperature of the cradle is too warm.	Move the cradle to an area where the ambient temperature is between 0°C (32°F) and 35°C (95°F).

Vehicle Cradle

Table 7-5 *Troubleshooting the Vehicle Cradle*

Symptom	Possible Cause	Action
MC65 battery charging LED does not light up.	Cradle is not receiving power.	Ensure the power input cable is securely connected to the cradle's power port.
MC65 battery is not recharging.	MC65 was removed from the cradle too soon.	Replace the MC65 in the cradle. The 2400 mAh battery fully charges in four hours and the 3600 mAh battery fully charges in less than six hours.
	Battery is faulty.	Replace the battery.
	MC65 is not placed correctly in the cradle.	Remove the MC65 from the cradle, and re-insert correctly. If the battery still does not charge, contact customer support. The MC65 battery charging LED slowly blinks amber when the MC65 is correctly inserted and charging.
	Ambient temperature of the cradle is too warm.	Move to an area where the ambient temperature is between 0^{o}C and 35^{o}C.

Four Slot Battery Charger

Table 7-6 *Troubleshooting The Four Slot Battery Charger*

Symptom	Possible Cause	Action
Battery not charging.	Battery was removed from the charger or charger was unplugged from AC power too soon.	Re-insert the battery in the charger or re-connect the charger's power supply. The 3600 mAh battery fully charges in less than six hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	Battery contacts not connected to charger.	Verify that the battery is seated in the battery well correctly with the contacts facing down.

Cables

Table 7-7 *Troubleshooting the Cables*

Symptom	Possible Cause	Action
MC65 battery is not charging.	MC65 was disconnected from AC power too soon.	Connect the power cable correctly. Confirm main battery is charging under **Start** > **Settings** > **System** > **Power**. The 3600 mAh battery fully charges in less than six hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	The MC65 is not fully attached to power.	Detach and re-attach the power cable to the MC65, ensuring it is firmly connected.
During data communication, no data transmits, or transmitted data was incomplete.	Cable was disconnected from MC65 during communications.	Re-attach the cable and retransmit.
	Incorrect cable configuration.	See the system administrator.
	Communication software is not installed or configured properly.	Perform setup as described in the *MC65 Integrator Guide.*

Magnetic Stripe Reader

Table 7-8 *Troubleshooting the Magnetic Stripe Reader*

Symptom	Possible Cause	Action
MSR cannot read card.	MSR removed from MC65 during card swipe.	Reattach MSR to MC65 and reswipe the card.
	Faulty magnetic stripe on card.	See the system administrator.
	MSR application is not installed or configured properly.	Ensure the MSR application is installed on the MC65. Ensure the MSR application is configured correctly.
MC65 battery is not charging.	MC65 was removed from MSR or MSR was unplugged from AC power too soon.	Ensure MSR is receiving power. Ensure MC65 is attached correctly. Confirm main battery is charging under **Start** > **Settings** > **System** > **Power**. The 3600 mAh battery fully charges in less than six hours.
	Battery is faulty.	Verify that other batteries charge properly. If so, replace the faulty battery.
	The MC65 is not fully attached to the MSR.	Detach and re-attach the MSR to the MC65, ensuring it is firmly connected.
During data communication, no data transmits, or transmitted data was incomplete.	MC65 detached from MSR during communications.	Reattach MC65 to MSR and retransmit.
	Incorrect cable configuration.	See the system administrator.
	Communication software is not installed or configured properly.	Perform setup as described in the *MC65 Integrator Guide.*

Appendix A Technical Specifications

MC65 Technical Specifications

The following tables summarize the EDA's intended operating environment and technical hardware specifications.

MC65

Table A-1 *MC65 EDA Technical Specifications*

Item	Description
Physical Characteristics	
Dimensions	Height: 15.2 cm (6.0 in.) Width: 7.7 cm (3.03 in.) Depth: 2.7 cm (1.10 in.)
Weight	336 g (11.8 oz.) with 2400 mAh battery 359 g (12.5 oz.) with 3600 mAh battery
Display	Transflective color 3.5" QVGA with backlight, TFT-LCD, 65K colors, 240 W x 320 L
Touch Panel	Glass analog resistive touch
Backlight	LED backlight
Battery Pack	Rechargeable Lithium Ion 3.7V, 2400 or 2600 mAh Smart battery
Expansion Slot	User accessible microSD slot.
Network Connections	Full-speed USB, host or client, Bluetooth and WiFi. USB host mode available with appropriate cables only.
Notification	LED and audible alert

Table A-1 *MC65 EDA Technical Specifications (Continued)*

Item	Description
Keypad Options	26 key numeric; 44 key QWERTY, 44 key AZERTY, 44 key QWERTZ; PIM
Audio	Speaker, receiver, microphone, software support for full duplex capability, Bluetooth stereo.
Performance Characteristics	
CPU	XScale™ Bulverde PXA270 processor at 520 MHz
Operating System	Microsoft® Windows Mobile™ 6.5 Professional
Memory	128MB RAM/256MB Flash
Interface/Communications	USB 1.1 Full-speed
Output Power	USB: 5 VDC @ 200 mA max.
User Environment	
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Charging Temperature	32°F to 104°F / 0° C to 40° C
Humidity	95% non-condensing
Drop Specification	4 ft. drop to concrete, two drops per six sides over operating temperature range.
Tumble	250 0.5 m (1.6 ft.) tumbles (500 drops)
Electrostatic Discharge (ESD)	+/-15kVdc air discharge, +/-8kVdc direct discharge, +/-8kVdc indirect discharge
Sealing	IP54
Wireless WAN Data and Voice Communications	
Wireless Wide Area Network (WWAN) radios	GSM: GPRS/EDGE (850, 900, 1800 and 1900 MHz) CDMA:
Antenna	External
Wireless LAN Data and Voice Communications	
Wireless Local Area Network (WLAN) radio	Tri-mode IEEE® 802.11a/b/g
Data Rates Supported	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
Operating Channels	Chan 1-13 (2412-2472 MHz), Chan 14 (2484 MHz) Japan only; actual operating channels/frequencies depend on regulatory rules and certification agency

Table A-1 *MC65 EDA Technical Specifications (Continued)*

Item	Description
Security	WEP (40 or 128 bit), TKIP, AES, WPA (Personal or Enterprise), WPA2 (Personal or Enterprise), 802.1x, EAP-TLS, TTLS (CHAP, MS-CHAP, MS-CHAPv2, PAP or MD5), PEAP (TLS, MSCHAPv2, EAP-GTC), LEAP, EAP-FAST (TLS, MS-CHAPv2, EAP-GTC)
Spreading Technique	Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM) (Verify)
Antenna	Internal
Voice Communication	Voice-over-IP ready (with P2P, PBX, PTT clients), Wi-Fi™-certified, IEEE 802.11 a/b/g direct sequence wireless LAN
Wireless PAN Data and Voice Communications	
Bluetooth	Class II, v 2.0 EDR; on-board antenna. Supports Microsoft Bluetooth stack.
Global Positioning System	
GPS	SiRF III. on-board antenna.
Regulatory	
Electrical Safety	Certified to UL/cUL 60950-1, IEC / EN60950-1 IEEE 1725
Environmental	RoHS-compliant
WLAN and Bluetooth (PAN)	**USA:** FCC Part 15.247, 15.407 **Canada:** RSS-210, RSS 310 **EU:** EN 300 328, EN 300 440-2, EN 301 893 **Japan:** ARIB STD-T33, ARIB STD-T66, ARIB STD-T70 & T71 **Australia:** AS/NZS 4268
Wireless Wide Area Network	Quad Band GSM/ EDGE **Global:** 3GPP TS 51.010, GCF approved module **USA:** FCC Part 22, Part 24 **Canada:** RSS-132, RSS-133 **EU:** EN301 511 **Australia:** AS/ACIF S024.1 & 3
RF Exposure	**USA:** FCC Part 2, FCC OET Bulletin 65 Supplement C **Canada:** RSS-102 **EU:** EN 50392 **Australia:** Radio communications Standard 2003
EMI/RFI	**North America:** FCC Part 15, Class B **Canada:** ICES 003 Class B **EU:** EN55022 Class B, EN 301 489-1, EN 301 489-17, EN 301 489-19, EN 60601-1-2 **Australia:** AS/NZS CISPRA-22

Table A-1 *MC65 EDA Technical Specifications (Continued)*

Item	Description
Laser Safety	IEC/Class 2/FDA II in accordance with IEC60825-1/EN60825-1
Data Capture Specifications	
Options	1D laser scanner 2D imager 1D laser scanner and color camera 2D imager and color camera
Linear 1D Scanner (SE950) Specifications	
Optical Resolution	0.005 in. minimum element width
Roll	+/- 30° from vertical
Pitch Angle	+/- 65° from normal
Skew Tolerance	+/- 60° from normal
Ambient Light	Sunlight: 8,000 ft. candles (86,112 Lux) Artificial Light: 450 ft. candles (4,844 Lux)
Shock	2,000 +/- 5% G
Scan Rate	50 (+/- 6) scans/sec (bidirectional)
Scan Angle	46.5° (typical)
Laser Power	1.0 mW nominal
2D Imager Engine (SE4400) Specifications	
Field of View	Horizontal - 32.2° Vertical - 24.5°
Optical Resolution	640 H x 480 V pixels (gray scale)
Roll	360°
Pitch Angle	+/- 60° from normal
Skew Tolerance	+/- 50° from normal
Ambient Light	Total darkness to 9,000 ft. candles (96,900 Lux)
Shock	2,000 +/- 5% G
Focal Distance from Front of Engine	Near: 5 inches Far: 9 inches
Aiming Element (VLD)	650 nm +/- 5 nm

Table A-1 *MC65 EDA Technical Specifications (Continued)*

Item	Description
Illumination Element (LED)	635 nm +/- 20 nm
Camera Specifications	
Resolution	2 Mega pixel with flash and auto focus.

Table A-2 *Data Capture Options*

Item	Description		
Laser Decode Capability	Code 39	Code 128	Code 93
	Codabar	Code 11	Discrete 2 of 5
	Interleaved 2 of 5	EAN-8	EAN-13
	MSI	UPCA	UPCE
	UPC/EAN supplementals	Coupon Code	Trioptic 39
	Webcode	Chinese 2 of 5	GS1 DataBar
	GS1 DataBar Truncated	GS1 DataBar Limited	GS1 DataBar Stacked
	GS1 DataBar Expanded	GS1 DataBar Expanded Stacked	
	GS1 DataBar Stacked Omni		

Table A-2 *Data Capture Options (Continued)*

Item	Description		
Imaging Decode Capability	Code 39 Codabar Discrete 2 of 5 EAN-13 UPC/EAN supplementals Webcode Composite C Macro PDF-417 Data Matrix US Planet Canadian 4-state Chinese 2 of 5 microQR GS1 DataBar Truncated GS1 DataBar Expanded GS1 DataBar Stacked Omni	Code 128 Code 11 MSI UPCA Coupon Code TLC39 Micro PDF-417 (Macro) Micro PDF-417 Maxi Code UK 4-state Japanese 4-state USPS 4-state (US4CB) GS1 DataBar GS1 DataBar Limited GS1 DataBar Expanded Stacked	Code 93 Interleaved 2 of 5 EAN-8 UPCE Trioptic 39 Composite AB PDF-417 QR Code US Postnet Australian 4-state Dutch Kix Aztec GS1 DataBar Stacked
Camera Decode Capability	Code 39 Codabar Discrete 2 of 5 EAN-13 UPC/EAN supplementals Webcode Composite C Macro PDF-417 Data Matrix US Planet Canadian 4-state GS1 DataBar GS1 DataBar Truncated GS1 DataBar Expanded GS1 DataBar Stacked Omni	Code 128 Code 11 MSI UPCA Coupon Code TLC39 Micro PDF-417 (Macro) Micro PDF-417 Maxi Code UK 4-state Japanese 4-state GS1 DataBar Limited GS1 DataBar Expanded Stacked	Code 93 Interleaved 2 of 5 EAN-8 UPCE Trioptic 39 Composite AB PDF-417 QR Code US Postnet Australian 4-state Dutch Kix GS1 DataBar Stacked

MC65 Accessory Specifications

Single Slot USB Cradle

Table A-3 *Single Slot USB Cradle Technical Specifications*

Feature	Description
Dimensions	Height: 7.1 cm (2.80 in.) Width: 11.0 cm (4.33 in.) Depth: 15.0 cm (5.91 in.)
Weight	210 g (7.41 oz)
Input Voltage	12 VDC
Power Consumption	30 watts
Interface	USB
Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Charging Temperature	0°C to 40°C (32°F to 104°F)
Humidity	5% to 95% non-condensing
Drop	76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact

Four Slot Battery Charger

Table A-4 *Four Slot Battery Charger Technical Specifications*

Feature	Description
Dimensions	Height: 4.7 cm (1.85 in.) Width: 15.5 cm (6.10 in.) Depth: 21.0 cm (8.27 in.)
Weight	384 g (13.55 oz)
Input Voltage	12 VDC
Power Consumption	30 watts
Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Charging Temperature	0°C to 40°C (32°F to 104°F)

Table A-4 *Four Slot Battery Charger Technical Specifications (Continued)*

Feature	Description
Humidity	5% to 95% non-condensing
Drop	76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact

Four Slot Charge Only Cradle

Table A-5 *Four Slot Charge Only Cradle Technical Specifications*

Feature	Description
Dimensions	Height: 13.7 cm (5.39 in.) Width: 46.8 cm (18.43 in.) Depth: 9.9 cm (3.90 in.)
Weight	1115 g (39.33 oz)
Input Voltage	12 VDC
Power Consumption	100 watts
Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Charging Temperature	0°C to 40°C (32°F to 104°F)
Humidity	5% to 95% non-condensing
Drop	76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact

Four Slot Ethernet Cradle

Table A-6 *Four Slot Ethernet Cradle Technical Specifications*

Feature	Description
Dimensions	Height: 13.7 cm (5.39 in.) Width: 46.8 cm (18.43 in.) Depth: 9.9 cm (3.90 in.)
Weight	1115 g (39.33 oz)
Power	12 VDC
Operating Temperature	0°C to 50°C (32°F to 122°F)

Table A-6 *Four Slot Ethernet Cradle Technical Specifications (Continued)*

Feature	Description
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Charging Temperature	0°C to 40°C (32°F to 104°F)
Humidity	5% to 95% non-condensing
Drop	76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact

Magstripe Reader

Table A-7 *Magstripe Reader (MSR) Technical Specifications*

Feature	Description
Dimensions	TBD
Weight	TBD
Interface	Serial with baud rate up to 19,200
Format	ANSI, ISO, AAMVA, CA DMV, user-configurable generic format
Swipe Speed	5 to 50 in. (127 to 1270 mm) /sec, bi-directional
Decoders	Generic, Raw Data
Mode	Buffered, unbuffered
Track Reading Capabilities	Tracks 1 and 3: 210 bpi Track 2: 75 and 210 bpi, autodetect
Operating Temperature	32° to 122° F (0° to 50° C)
Storage Temperature	-40° to 158° F (-40° to 70° C)
Humidity	5% to 95% non-condensing
Drop	4 ft. (1.22 m) drops to concrete
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact

Vehicle Cradle

Table A-8 *Vehicle Cradle Technical Specifications*

Feature	Description
Dimensions	Height: 10.4 cm (4.09 in.) Width: 11.1 cm (4.37 in.) Depth: 6.9 cm (2.72 in.)
Weight	240 g (8.47 oz)
Power	9- 32 VDC
Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Charging Temperature	0°C to 40°C (32°C to 104°F)

Table A-8 *Vehicle Cradle Technical Specifications (Continued)*

Feature	Description
Humidity	10% to 95% non-condensing
Drop	76.2 cm (30.0 in.) drops to vinyl tiled concrete at room temperature
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact

Cables

Table A-9 *USB Charging Cable Technical Specifications*

Feature	Description
Length	161.9 cm (63.74 in.)
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Humidity	10% to 95% non-condensing
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact

Table A-10 *Charge Only Cable Technical Specifications*

Feature	Description
Length	28.0 cm (11.00 in.)
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Humidity	10% to 95% non-condensing
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact

Table A-11 *Auto Charge Cable Technical Specifications*

Feature	Description
Length	169.0 cm (66.54 in.)
Input Voltage	12 - 24 VDC
Operating Temperature	-10°C to 50°C (14°F to 122°F)

Table A-11 *Auto Charge Cable Technical Specifications (Continued)*

Feature	Description
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Humidity	10% to 95% non-condensing
Electrostatic Discharge (ESD)	+/- 15 kV air +/- 8 kV contact

Glossary

A

API. (Application Programming Interface) An interface by means of which one software component communicates with or controls another. Usually used to refer to services provided by one software component to another, usually via software interrupts or function calls

AZERTY. A standard keyboard commonly used on French keyboards. “AZERTY” refers to the arrangement of keys on the top row of keys.

AKU. (Adaptation Kit Update) Updates to the Windows Mobile operating system.

AFH. Adaptive Frequency Hopping

ActiveSync. ActiveSync is a data synchronization program developed by Microsoft for use with Windows Mobile operating systems.

B

Bar Code. A pattern of variable-width bars and spaces which represents numeric or alphanumeric data in machine-readable form. The general format of a bar code symbol consists of a leading margin, start character, data or message character, check character (if any), stop character, and trailing margin. Within this framework, each recognizable symbology uses its own unique format. See **Symbology**.

Bit. Binary digit. One bit is the basic unit of binary information. Generally, eight consecutive bits compose one byte of data. The pattern of 0 and 1 values within the byte determines its meaning.

Bits per Second (bps). Bits transmitted or received.

Bluetooth. A wireless protocol utilizing short-range communications technology facilitating data transmission over short distances.

boot or boot-up. The process a computer goes through when it starts. During boot-up, the computer can run self-diagnostic tests and configure hardware and software.

bps. See **Bits Per Second**.

Byte. On an addressable boundary, eight adjacent binary digits (0 and 1) combined in a pattern to represent a specific character or numeric value. Bits are numbered from the right, 0 through 7, with bit 0 the low-order bit. One byte in memory is used to store one ASCII character.

C

CDRH. Center for Devices and Radiological Health. A federal agency responsible for regulating laser product safety. This agency specifies various laser operation classes based on power output during operation.

CDRH Class 1. This is the lowest power CDRH laser classification. This class is considered intrinsically safe, even if all laser output were directed into the eye's pupil. There are no special operating procedures for this class.

CDRH Class 2. No additional software mechanisms are needed to conform to this limit. Laser operation in this class poses no danger for unintentional direct human exposure.

Character. A pattern of bars and spaces which either directly represents data or indicates a control function, such as a number, letter, punctuation mark, or communications control contained in a message.

Codabar. A discrete self-checking code with a character set consisting of digits 0 to 9 and six additional characters: (“-”, “$”, “:”, “/”, “.” and “+”).

Code 128. A high density symbology which allows the controller to encode all 128 ASCII characters without adding extra symbol elements.

Code 3 of 9 (Code 39). A versatile and widely used alphanumeric bar code symbology with a set of 43 character types, including all uppercase letters, numerals from 0 to 9 and 7 special characters (“-”, “.”, “/”, “+”, “%”, “$” and space). The code name is derived from the fact that 3 of 9 elements representing a character are wide, while the remaining 6 are narrow.

Code 93. An industrial symbology compatible with Code 39 but offering a full character ASCII set and a higher coding density than Code 39.

Cold Boot. A cold boot restarts the mobile computer and erases all user stored records and entries.

COM port. Communication port; ports are identified by number, e.g., COM1, COM2.

Cradle. A cradle is used for charging the terminal battery and for communicating with a host computer, and provides a storage place for the terminal when not in use.

D

DCP. See **Device Configuration Package**.

Decode. To recognize a bar code symbology (e.g., UPC/EAN) and then analyze the content of the specific bar code scanned.

Decode Algorithm. A decoding scheme that converts pulse widths into data representation of the letters or numbers encoded within a bar code symbol.

Decryption. Decryption is the decoding and unscrambling of received encrypted data. Also see, **Encryption** and **Key**.

Depth of Field. The range between minimum and maximum distances at which a scanner can read a symbol with a certain minimum element width.

Device Configuration Package. The Symbol Device Configuration Package provides the Product Reference Guide (PRG), flash partitions, Terminal Configuration Manager (TCM) and the associated TCM scripts. With this package hex images that represent flash partitions can be created and downloaded to the mobile computer.

Discrete 2 of 5. A binary bar code symbology representing each character by a group of five bars, two of which are wide. The location of wide bars in the group determines which character is encoded; spaces are insignificant. Only numeric characters (0 to 9) and START/STOP characters may be encoded.

E

EAN. European Article Number. This European/International version of the UPC provides its own coding format and symbology standards. Element dimensions are specified metrically. EAN is used primarily in retail.

EMDK. Enterprise Mobility Developer's Kit.

ESD. Electro-Static Discharge

F

File Transfer Protocol (FTP). A TCP/IP application protocol governing file transfer via network or telephone lines. See **TCP/IP.**

Flash Memory. Flash memory is nonvolatile, semi-permanent storage that can be electronically erased in the circuit and reprogrammed.

FHSS (Frequency Hopping Spread Sprectrum)**.** A method of transmitting radio signals by rapidly switching a carrier among many frequency channels, using a pseudorandom sequence known to both transmitter and receiver.

H

Hard Reset. See **Cold Boot**.

Hz. Hertz; A unit of frequency equal to one cycle per second.

Host Computer. A computer that serves other terminals in a network, providing such services as computation, database access, supervisory programs and network control.

I

IEC. International Electrotechnical Commission. This international agency regulates laser safety by specifying various laser operation classes based on power output during operation.

IEC (825) Class 1. This is the lowest power IEC laser classification. Conformity is ensured through a software restriction of 120 seconds of laser operation within any 1000 second window and an automatic laser shutdown if the scanner's oscillating mirror fails.

IEEE Address. See **MAC Address**.

Input/Output Ports. I/O ports are primarily dedicated to passing information into or out of the terminal's memory. MC65 mobile computers include USB ports.

Interleaved 2 of 5. A binary bar code symbology representing character pairs in groups of five bars and five interleaved spaces. Interleaving provides for greater information density. The location of wide elements (bar/spaces) within each group determines which characters are encoded. This continuous code type uses no intercharacter spaces. Only numeric (0 to 9) and START/STOP characters may be encoded.

Internet Protocol Address. See **IP**.

I/O Ports. The connection between two devices, defined by common physical characteristics, signal characteristics, and signal meanings. Types of interfaces include RS-232 and USB.

IP. Internet Protocol. The IP part of the TCP/IP communications protocol. IP implements the network layer (layer 3) of the protocol, which contains a network address and is used to route a message to a different network or subnetwork. IP accepts "packets" from the layer 4 transport protocol (TCP or UDP), adds its own header to it and delivers a "datagram" to the layer 2 data link protocol. It may also break the packet into fragments to support the maximum transmission unit (MTU) of the network.

IP Address. (Internet Protocol address) The address of a computer attached to an IP network. Every client and server station must have a unique IP address. A 32-bit address used by a computer on a IP network. Client workstations have either a permanent address or one that is dynamically assigned to them each session. IP addresses are written as four sets of numbers separated by periods; for example, 204.171.64.2.

IPX/SPX. Internet Package Exchange/Sequential Packet Exchange. A communications protocol for Novell. IPX is Novell's Layer 3 protocol, similar to XNS and IP, and used in NetWare networks. SPX is Novell's version of the Xerox SPP protocol.

ISM. Industry Scientific and Medical

K

Key. A key is the specific code used by the algorithm to encrypt or decrypt the data. Also see, **Encryption** and **Decrypting**.

L

LASER. Light Amplification by Stimulated Emission of Radiation.The laser is an intense light source. Light from a laser is all the same frequency, unlike the output of an incandescent bulb. Laser light is typically coherent and has a high energy density.

laser scanner. A type of bar code reader that uses a beam of laser light.

LCD. See **Liquid Crystal Display**.

LED Indicator. A semiconductor diode (LED - Light Emitting Diode) used as an indicator, often in digital displays. The semiconductor uses applied voltage to produce light of a certain frequency determined by the semiconductor's particular chemical composition.

Light Emitting Diode. See **LED**.

Liquid Crystal Display (LCD). A display that uses liquid crystal sealed between two glass plates. The crystals are excited by precise electrical charges, causing them to reflect light outside according to their bias. They use little electricity and react relatively quickly. They require external light to reflect their information to the user.

M

MC. Mobile Computer.

MDN. Mobile Directory Number. The directory listing telephone number that is dialed (generally using POTS) to reach a mobile unit. The MDN is usually associated with a MIN in a cellular telephone -- in the US and Canada, the MDN and MIN are the same value for voice cellular users. International roaming considerations often result in the MDN being different from the MIN.

MIN. Mobile Identification Number. The unique account number associated with a cellular device. It is broadcast by the cellular device when accessing the cellular system.

Mobile Computer. In this text, *mobile computer* refers to the MC65. It can be set up to run as a stand-alone device, or it can be set up to communicate with a network, using wireless radio technology.

N

Nominal. The exact (or ideal) intended value for a specified parameter. Tolerances are specified as positive and negative deviations from this value.

NVM. Non-Volatile Memory.

O

Open System Authentication. Open System authentication is a null authentication algorithm.

P

PAN . Personal Area Network. Using Bluetooth wireless technology, PANs enable devices to communicate wirelessly. Generally, a wireless PAN consists of a dynamic group of less than 255 devices that communicate within about a 33-foot range. Only devices within this limited area typically participate in the network.

PING. (Packet Internet Groper) An Internet utility used to determine whether a particular IP address is online. It is used to test and debug a network by sending out a packet and waiting for a response.

Q

QWERTY. A standard keyboard commonly used on European keyboards. “QWERTY” refers to the arrangement of keys on the top row of keys.

QWERTZ. A standard keyboard commonly used on German keyboards. “QWERTZ” refers to the arrangement of keys on the top row of keys.

R

RAM. Random Access Memory. Data in RAM can be accessed in random order, and quickly written and read.

RF. Radio Frequency.

ROM. Read-Only Memory. Data stored in ROM cannot be changed or removed.

Router. A device that connects networks and supports the required protocols for packet filtering. Routers are typically used to extend the range of cabling and to organize the topology of a network into subnets. See **Subnet**.

S

Scanner. An electronic device used to scan bar code symbols and produce a digitized pattern that corresponds to the bars and spaces of the symbol. Its three main components are: 1) Light source (laser or photoelectric cell) - illuminates a bar code,; 2) Photodetector - registers the difference in reflected light (more light reflected from spaces); 3) Signal conditioning circuit - transforms optical detector output into a digitized bar pattern.

SDK. Software Development Kit

Shared Key. Shared Key authentication is an algorithm where both the AP and the MU share an authentication key.

Soft Reset. See **Warm Boot**.

Space. The lighter element of a bar code formed by the background between bars.

Specular Reflection. The mirror-like direct reflection of light from a surface, which can cause difficulty decoding a bar code.

Start/Stop Character. A pattern of bars and spaces that provides the scanner with start and stop reading instructions and scanning direction. The start and stop characters are normally to the left and right margins of a horizontal code.

Subnet. A subset of nodes on a network that are serviced by the same router. See **Router**.

Subnet Mask. A 32-bit number used to separate the network and host sections of an IP address. A custom subnet mask subdivides an IP network into smaller subsections. The mask is a binary pattern that is matched up with the IP address to turn part of the host ID address field into a field for subnets. Default is often 255.255.255.0.

Substrate. A foundation material on which a substance or image is placed.

Symbol. A scannable unit that encodes data within the conventions of a certain symbology, usually including start/stop characters, quiet zones, data characters and check characters.

Symbol Aspect Ratio. The ratio of symbol height to symbol width.

Symbol Height. The distance between the outside edges of the quiet zones of the first row and the last row.

Symbol Length. Length of symbol measured from the beginning of the quiet zone (margin) adjacent to the start character to the end of the quiet zone (margin) adjacent to a stop character.

Symbology. The structural rules and conventions for representing data within a particular bar code type (e.g. UPC/EAN, Code 39, PDF417, etc.).

T

TCP/IP. (Transmission Control Protocol/Internet Protocol) A communications protocol used to internetwork dissimilar systems. This standard is the protocol of the Internet and has become the global standard for communications. TCP provides transport functions, which ensures that the total amount of bytes sent is received correctly at the other end. UDP is an alternate transport that does not guarantee delivery. It is widely used for real-time voice and video transmissions where erroneous packets are not retransmitted. IP provides the routing mechanism. TCP/IP is a routable protocol, which means that all messages contain not only the address of the destination station, but the address of a destination network. This allows TCP/IP messages to be sent to multiple networks within an organization or around the world, hence its use in the worldwide Internet. Every client and server in a TCP/IP network requires an IP address, which is either permanently assigned or dynamically assigned at startup.

Telnet. A terminal emulation protocol commonly used on the Internet and TCP/IP-based networks. It allows a user at a terminal or computer to log onto a remote device and run a program.

Terminal. See **Mobile Computer**.

Terminal Emulation. A “terminal emulation” emulates a character-based mainframe session on a remote non-mainframe terminal, including all display features, commands and function keys. The VC5000 Series supports Terminal Emulations in 3270, 5250 and VT220.

TFTP. (Trivial File Transfer Protocol) A version of the TCP/IP FTP (File Transfer Protocol) protocol that has no directory or password capability. It is the protocol used for upgrading firmware, downloading software and remote booting of diskless devices.

Tolerance. Allowable deviation from the nominal bar or space width.

Transmission Control Protocol/Internet Protocol. See **TCP/IP.**

Trivial File Transfer Protocol. See **TFTP.**

U

UDP. User Datagram Protocol. A protocol within the IP protocol suite that is used in place of TCP when a reliable delivery is not required. For example, UDP is used for real-time audio and video traffic where lost packets are simply ignored, because there is no time to retransmit. If UDP is used and a reliable delivery is required, packet sequence checking and error notification must be written into the applications.

UPC. Universal Product Code. A relatively complex numeric symbology. Each character consists of two bars and two spaces, each of which is any of four widths. The standard symbology for retail food packages in the United States.

V

Visible Laser Diode (VLD). A solid state device which produces visible laser light.

W

Warm Boot. A warm boot restarts the mobile computer by closing all running programs. All data that is not saved to flash memory is lost.

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