MC55X

Mobile Computer

User Guide

ZEBRA

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Revision History

Changes to the original guide are listed below:

Change	Date	Description
-01 Rev A	9/2017	Initial release.

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About This Guide

Introduction

This guide provides information about using the MC55X (MC55E0 configurations) mobile computer and accessories.

✓ **NOTE:** Screens and windows pictured in this guide are samples and can differ from actual screens.

Configurations

This guide covers the following configurations:

Table 1   Configurations

Configuration	Radios	Display	Memory	Data Capture Options	Operating System	Keypads
MC55E0	WLAN: 802.11 a/b/g/n WPAN: Bluetooth v2.1 EDR	3.5" VGA Color	512 MB RAM/ 2 GB Flash	2D imager or 2D imager and camera	Windows Embedded Handheld 6.5 Classic	Numeric or QWERTY
MC55E0-HC	WLAN: 802.11 a/b/g/n WPAN: Bluetooth v2.1 EDR	3.5" VGA Color	512 MB RAM/ 2 GB Flash	2D imager or 2D imager and camera	Windows Embedded Handheld 6.5 Classic	Numeric or QWERTY

Software Versions

This guide covers various software configurations and references are made to operating system or software versions for:

- Adaptation Kit Update (AKU) version
- OEM version
- Fusion software.

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AKU Version

To determine the Adaptation Kit Update (AKU) version:

Tap > **Settings** > **System** > **About** > **Version**.

The second line lists the operating system version and the build number. The last part of the build number represents the AKU number. For example, Build 29058.5.3.12.8 indicates that the device is running AKU version 5.3.12.8.

OEM Version

To determine the OEM software version:

Tap > **Settings** > **System** > **System Info** > **System**.

Fusion Software

To determine the Fusion software version:

Tap **> Wireless Companion > Wireless Status > Versions**.

Chapter Descriptions

Topics covered in this guide are as follows:

- Getting Started provides information on getting the MC55X up and running for the first time.
- Using the MC55X provides basic instructions for using the MC55X, including powering on and resetting the MC55X.
- Data Capture provides instructions for capturing data.
- Using WLAN provides information for connection the MC55X to a WLAN.
- Messaging provides information for using Email.
- Bluetooth explains Bluetooth functionality on the MC55X.
- Settings provides basic instructions for using the MC55X phone.
- Accessories describes the available accessories and how to use them with the MC55X.
- Maintenance & Troubleshooting includes instructions on cleaning and storing the MC55X, and provides troubleshooting solutions for potential problems during MC55X operation.
- Technical Specifications provides the technical specifications for the MC55X.
- Keypads Provides information on the various keypad configuration.

Notational Conventions

The following conventions are used in this document:

- Mobile computer refers to the MC55X series of hand-held computers and all MC55E0 configurations..

- **Bold** text is used to highlight the following:
  - Chapters and sections in this and related documents
  - Icons on a screen.
  - Dialog box, window, and screen names
  - Drop-down list and list box names
  - Check box and radio button names
  - Key names on a keypad
  - Button names on a screen.
- Bullets (•) indicate:
  - Action items
  - Lists of alternatives
  - Lists of required steps that are not necessarily sequential
- Sequential lists (e.g., those that describe step-by-step procedures) appear as numbered lists.

Related Documents

- MC55X Quick Start Guide, p/n MN-003059-xx.
- MC55X Regulatory Guide, p/n MN-003061-xx.
- MC55X Integrator Guide, p/n MN-003058-xx.
- Mobility Services Platform User Guide, p/n 72E-100158-xx.
- Enterprise Mobility Developer Kits (EMDKs), available at: http://www.zebra.com/support.
- Latest ActiveSync or Windows Mobile Device Center software, available at: http://www.microsoft.com.

For the latest version of this guide and all guides, go to: http://www.zebra.com/support.

Service Information

If the user has a problem with the equipment, contact Zebra Global Customer Support in the region. Contact information is available at: http://www.zebra.com/support.

When contacting support, please have the following information available:

- Serial number of the unit (found on manufacturing label)
- Model number or product name (found on manufacturing label)
- Software type and version number.

Manufacturing label
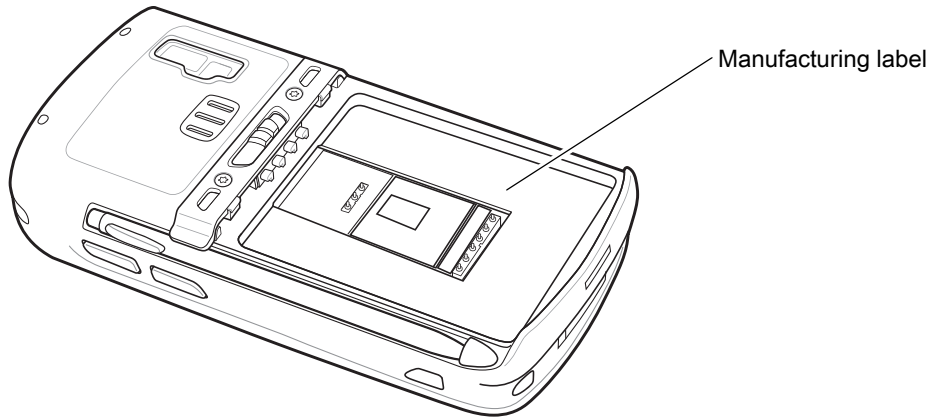
Zebra responds to calls by email, telephone or fax within the time limits set forth in support agreements.

If the problem cannot be solved by Zebra Global Customer Support, the user may need to return the equipment for servicing and will be given specific directions. Zebra is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty. Remove the microSD card from the MC55X before shipping for service.

If the device was purchased from a Zebra business partner, contact that business partner for support.

Getting Started

Introduction

This chapter lists the parts of the MC55X and explains how to set up the MC55X for the first time.

Figure 1 MC55X Front View
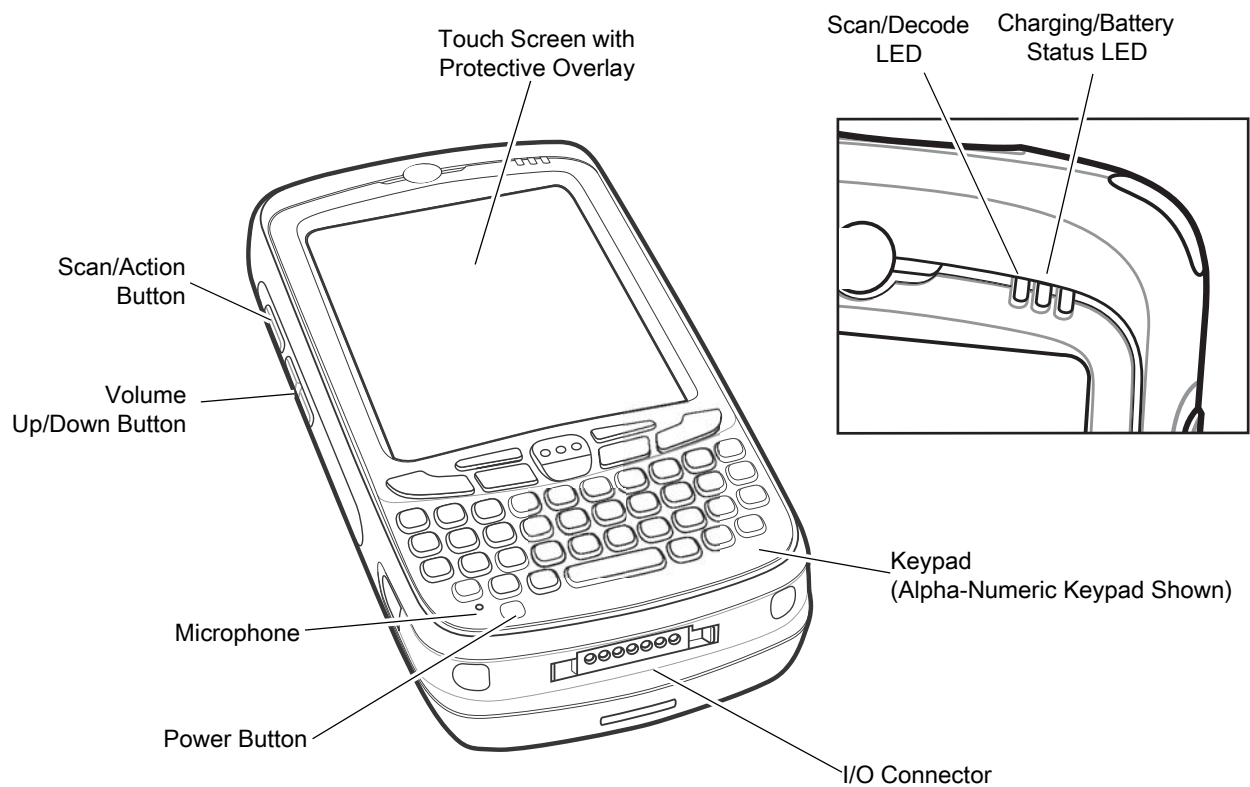
Figure 2   MC55X Rear View
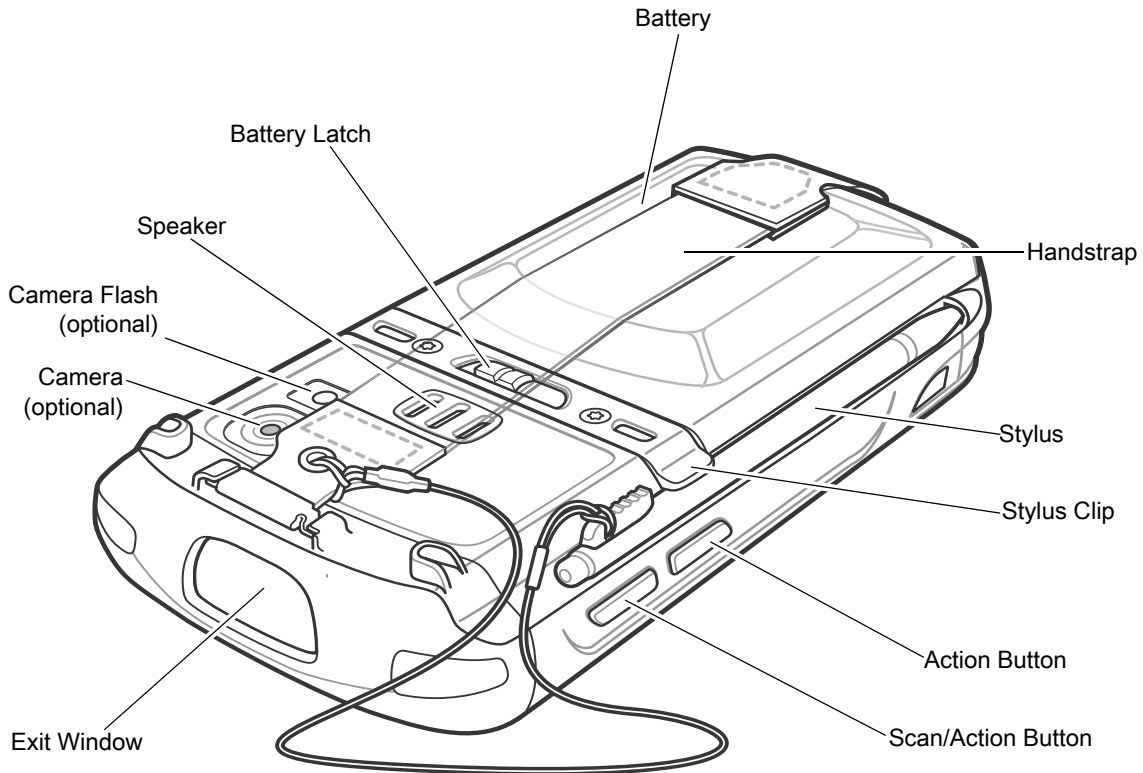
Unpacking

Carefully remove all protective material from the MC55X and save the shipping container for later storage and shipping.

Verify that you received the following:

- MC55X EDA
- 3600 mAh Lithium-ion battery
- stylus with tether (installed)
- screen protector, installed on display window
- Regulatory Guide.

Inspect the equipment for damage. If any equipment is missing or damaged, contact the Zebra Support center immediately. See Service Information on page 11 for contact information.

Prior to using the MC55X for the first time, remove the protective shipping film that covers the scan window, display and camera window.

Getting Started

To start using the MC55X for the first time:

- Install a microSD card (optional)
- Install the main battery.

- Charge the MC55X.
- Power on the MC55X.

Installing a microSD Card

The microSD card slot provides secondary non-volatile storage. The slot is located under the battery. Refer to the documentation provided with the card for more information, and follow the manufacturer's recommendations for use.

> ⚠️ **CAUTION:** Follow proper ESD precautions to avoid damaging the SD card. Proper ESD precautions include, but are not limited to, working on an ESD mat and ensuring that the operator is properly grounded.

To install the microSD card:

1. Lift rubber access door.
2. Slide the SIM card holder door up to unlock.
3. Lift SIM card holder door.

Figure 3   Lift SIM Slot Holder Door
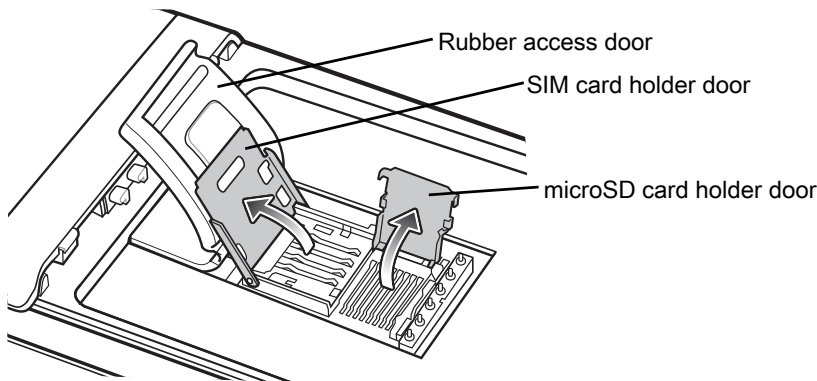
4. Lift microSD card holder door.
5. Insert the microSD card into card holder door ensuring that the card slides into the holding tabs on each side of the door.

Figure 4   Insert microSD Card in Holder
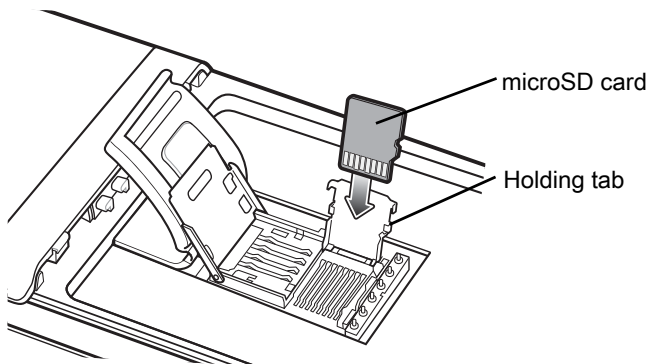
6. Close the card holder door and push down until it is securely into place.
7. Close SIM card holder door and slide down until it locks into place.
8. Close rubber access door.

Installing the Battery

To install the battery.

1. Insert the battery, bottom first, into the battery compartment in the back of the MC55X.
2. Press the battery down into the battery compartment until the battery release latch snaps into place.

Figure 5   Inserting the Battery
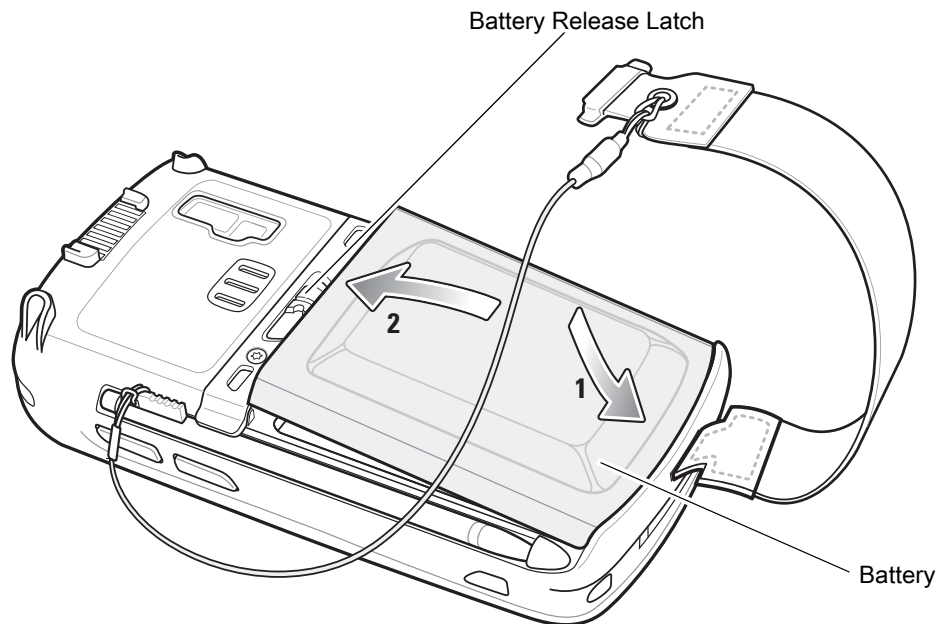
The MC55X powers up automatically after inserting the battery if the battery has been charged previously.

Charging the Battery

> **⚠ CAUTION:** Ensure that you follow the guidelines for battery safety described in Battery Safety Guidelines on page 122.

Charging the Main Battery

Before using the MC55X for the first time, charge the main battery until the amber Charging/Battery Status LED remains lit (see Table 2 on page 17 for charge status indications). To charge the MC55X, use a cable or a cradle with the appropriate power supply. For information about the accessories available for the MC55X, see Accessories.

The MC55X is equipped with a memory backup battery which automatically charges from the fully-charged main battery. When using the MC55X for the first time, the backup battery requires approximately 40 hours to fully charge. This is also true any time the backup battery is discharged, which occurs when the main battery is removed for several hours. The backup battery retains RAM data in memory for at least 15 minutes (at room temperature) when the MC55X's main battery is removed. When the MC55X reaches a very low battery state, the combination of main battery and backup battery retains RAM data in memory for at least 48 hours.

For cable and cradle setup and charging procedures refer to the MC55X Integrator Guide.

- USB Charging Cable
- Charge Only Cable

- Single-slot USB Cradle
- Single-slot Ethernet/Modem/USB Cradle
- Four-slot Charge Only Cradle.

To charge the main battery:

1. Connect the charging accessory to the appropriate power source.
2. Insert the MC55X into a cradle or attach to a cable. The MC55X begins charging. The Charging/Battery Status LED blinks amber while charging, then turns solid amber when fully charged. See Table 2 for charging indications.

The 3600 mAh battery charges in less than six hours.

Table 2   LED Charge Indicators

Charging/Battery Status LED	Indication
Off	MC55X is not charging. MC55X is not inserted correctly in the cradle or connected to a power source. Charger/cradle is not powered.
Slow Blinking Amber (1 blink every 2 seconds)	MC55X is charging.
Solid Amber	Charging complete. Note: When the battery is initially inserted in the MC55X, the amber LED flashes once if the battery power is low or the battery is not fully inserted.
Fast Blinking Amber (2 blinks/second)	Charging error, e.g.: • Temperature is too low or too high. • Charging has gone on too long without completion (typically eight hours).
Single Blink Amber (when Power button pressed)	Battery depleted.
Blinking Amber (when Power button pressed)	Battery over-temperature condition.

Charging Spare Batteries

See Accessories for information on using accessories to change spare batteries.

Charging Temperature

Charge batteries in temperatures from 0°C to 40°C (32°F to 104°F). Note that charging is intelligently controlled by the MC55X.

To accomplish this, for small periods of time, the MC55X or accessory alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC55X or accessory indicates when charging is disabled due to abnormal temperatures via its LED. See Table 2.

Powering On the MC55X

After inserting the battery or when turning the MC55X on for the first time, the splash screen displays for about a minute as the MC55X initializes its flash file system, then the calibration window appears. Note that these windows also appear upon cold boot.

Calibrating the Screen

NOTE: The Calibration screen can be accessed by pressing **Blue** key then **Backspace** key.

To calibrate the screen so the cursor on the touch screen aligns with the tip of the stylus:

1. Remove the stylus from its holder on the side of the MC55X.
2. Carefully press and briefly hold the tip of stylus on the center of each target that appears on the screen.
3. Repeat as the target moves around the screen, then tap the screen to continue.

Checking Battery Status

NOTE: To check battery status, remove the MC55X from any AC power source (cradle, cables, etc.)

To check the charge status of the main battery in the MC55X, tap 🪟 > **Settings** > **System** > **Power** to display the **Power** window.

To save battery power, tap the **Advanced** tab and set the MC55X to turn off after a specified number of minutes.

Replacing the Battery

1. Press the red **Power** button to suspend the MC55X. The **PowerKey Action** window appears.
2. Tap **Safe Battery Swap**. The Decode LED lights red and then turns off.
3. Unlatch the handstrap.
4. Use finger or stylus to slide the battery latch to the right releasing the battery. The battery ejects slightly.

Figure 6   Removing the Battery
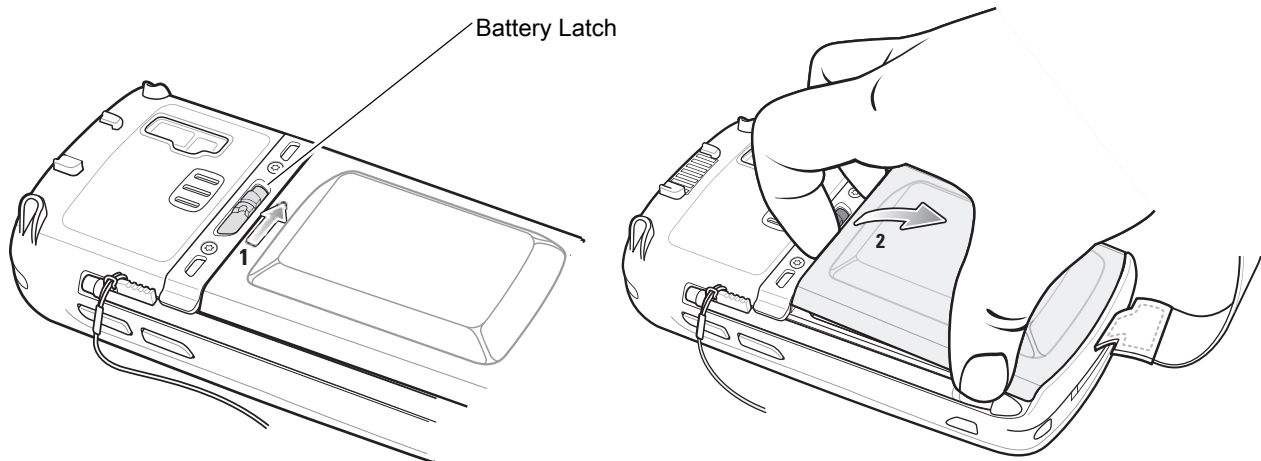
5. Lift the battery from the MC55X.
6. Insert the replacement battery, bottom first, into the battery compartment in the back of the MC55X.
7. Press the battery down until the battery release latch snaps into place.
8. Re-attach the handstrap.

Removing the microSD Card

To remove an microSD card:

1. Press the red **Power** button to suspend the MC55X. The **PowerKey Action** window appears.
2. Tap **Safe Battery Swap**. The Decode LED lights red and then turns off.
3. Unlatch the handstrap.
4. Remove the battery.
5. Lift the rubber access door.
6. Slide SIM card holder door up to unlock.
7. Lift SIM Card holder door.
8. Lift the microSD card holder door.
9. Remove microSD card from holder.
10. Close microSD card holder door.
11. Close SIM card holder door.
12. Slide SIM card holder door down to lock into place.
13. Close the rubber access door.
14. Replace the battery.
15. Re-attach the handstrap.

Battery Management

Observe the following battery saving tips:

- Leave the MC55X connected to AC power at all times when not in use.
- Set the MC55X to turn off after a short period of non-use.
- Set the backlight to turn off after a short period of non-use.
- Turn off all wireless activities when not in use.

Changing the Power Settings

To set the MC55X to turn off after a short period of non-use:

1. Tap > **Settings** > **System** > **Power** > **Advanced** tab.
2. Select the **On battery power: Turn off device if not used for** check box and select a value from the drop-down list.
3. Select **OK**.

Changing the Backlight Settings

To change the backlight settings in order to conserve more battery power:

1. Tap > **Settings** > **System** > **Backlight** > **Battery Power**.
2. Select the **Disable backlight if device is not used for** check box and select a value from the drop-down list.
3. Select **Brightness**.

4. Tap the **Disable backlight** check box to turn off the display backlight, or use the slider to set a low value for the backlight.

5. Select **OK**.

Changing the Keypad Backlight Settings

To change the keypad backlight settings in order to conserve more battery power:

1. Tap > **Settings** > **System** > **Keylight** > **Battery Power**.

2. Select the **On battery power: Disable keylight if device if not used for** check box and select a value from the drop-down list.

3. Select **Advanced**.

4. Tap the **Disable keylight** check box to turn off the keypad backlight.

5. Select **OK**.

Turning Off the Radios

To open **Wireless Manager**, tap status bar and then select the **Connectivity** icon.

Figure 7   Opening Wireless Manager

Connectivity icon

Select **Wireless Manager***.*

Figure 8   Wireless Manager Window

To enable or disable a wireless connection, tap the specific button.

To enable or disable all wireless connections, tap and hold the **All** button.

To configure settings for a connection, tap **Menu**.

Handstrap Replacement

Removal

To remove the handstrap:

1. Press the red **Power** button to suspend the MC55X. The **PowerKey Action** window appears.
2. Tap **Safe Battery Swap**. The Decode LED lights red and then turns off.
3. Slide the handstrap clip out of the handstrap slot.

Figure 9   Handstrap Clip Removal
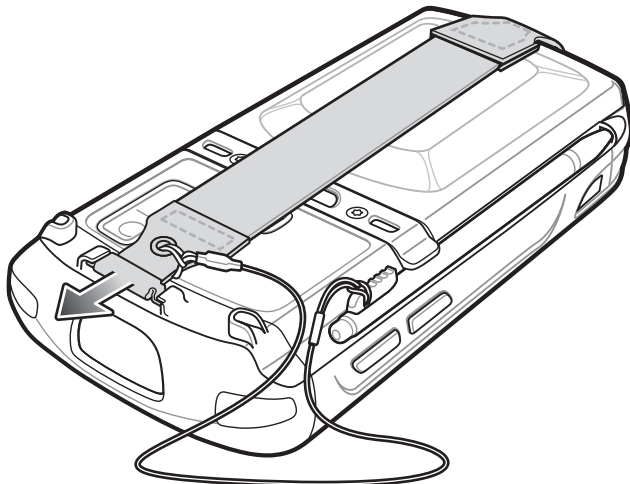
4. Remove the stylus tether from the handstrap.
5. Remove the battery.

⚠️ **CAUTION:** When removing handstrap pin, be carefully not to damage handstrap mounting area.

6. Using a small flat screwdriver, push the head of the screwdriver between the handstrap pin and the bottom of the housing as shown below.
7. Pry the handstrap and pin up and out of the handstrap mounting area.

Figure 10   Handstrap and Pin Removal
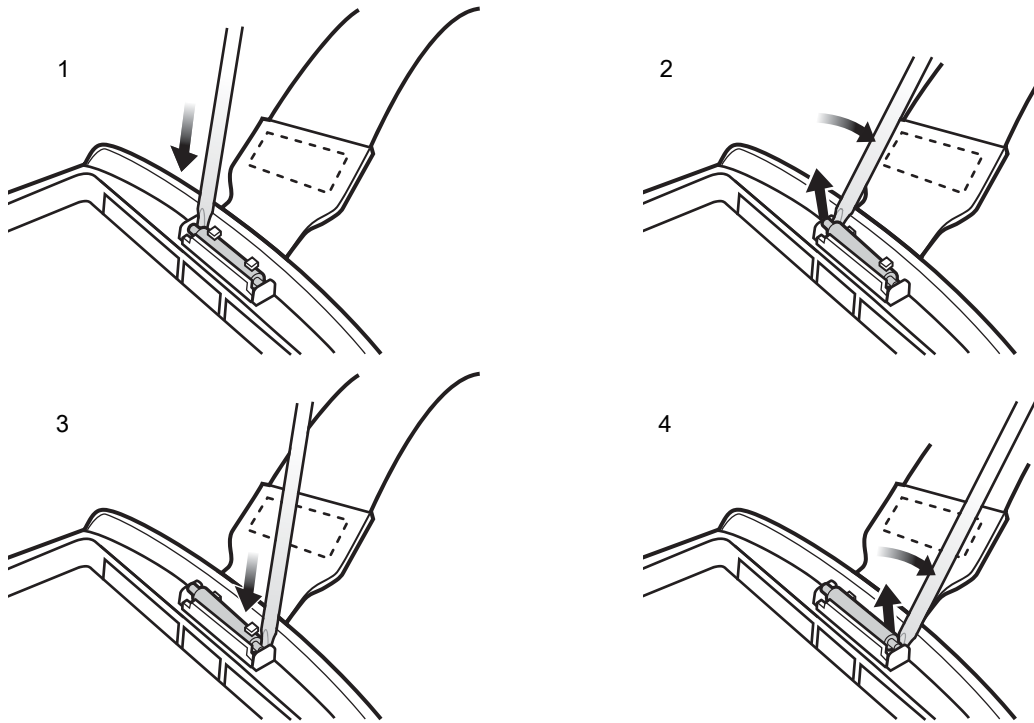
8. Repeat for the other side of the handstrap.

9. Remove the pin from the handstrap.

Figure 11   Pin Removal
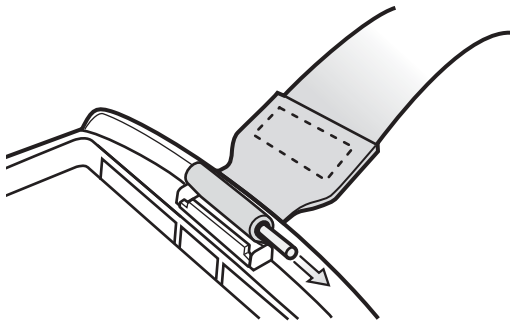
10. Pull the handstrap through the handstrap slot.

Installation

To install the handstrap:

1. Feed the bottom end of the handstrap into the handstrap slot on the bottom of the MC55X.

Figure 12   Feed Handstrap into Handstrap Slot
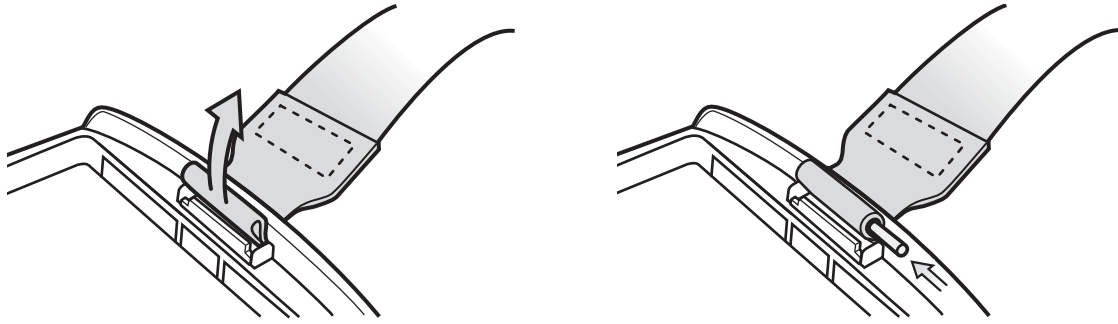
2.   Slide the pin into the bottom of the handstrap.

3.   Center the pin in the handstrap loop.

> **NOTE:** Handstrap and pin should fit securely into the handstrap mounting area. When pulling on handstrap use enough force to engage pin into place.

4.   Pull the handstrap so that the pin and bottom of the handstrap slide into position in the mounting area.

Figure 13   Pin and Handstrap in Mounting Area
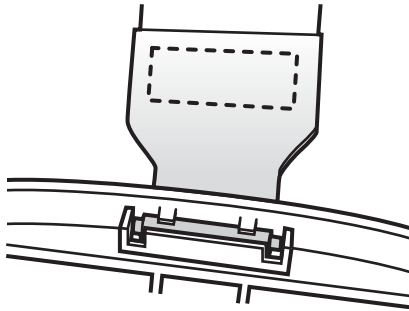
5.   Replace the battery.

6.   Replace the stylus tether onto the handstrap.

Figure 14   Slide Handstrap and Tether Over Handstrap Mount
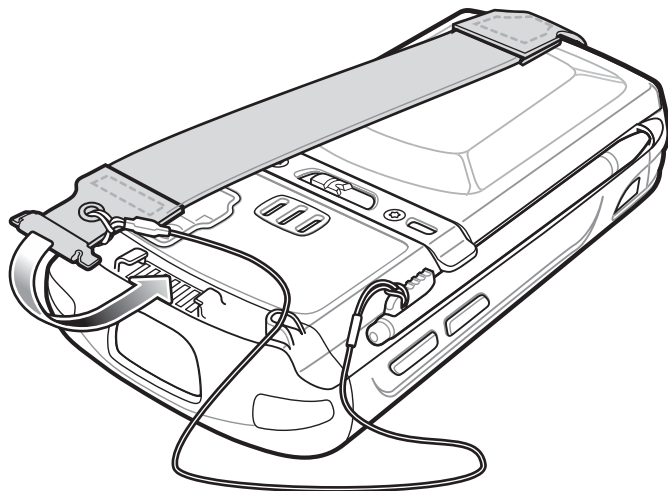
7.   Insert the handstrap clip into the slot on the MC55X. Ensure that it is securely in place.

Using the MC55X

Introduction

This chapter explains the buttons, status icons, and controls on the MC55X, and provides basic instructions for using the MC55X, including powering on and resetting.

Finger Scrolling

Finger scrolling can be used to scroll up and down web pages, documents, and lists such as the contacts list, file list, message list, calendar appointments list, and more.

When finger scrolling, swipe or flick a finger on the screen.

To scroll down, swipe a finger upward on the screen. To scroll up, swipe a finger downward on the screen.

To auto-scroll, flick a finger upward or downward on the screen. Touch the screen to stop scrolling.

Home Screen

The default home screen on the MC55X is the Windows Embedded Handheld Home screen. The Home screen contains a Status Bar at the top of the screen and a Tile Bar at the bottom of the screen.

The Home screen is scrollable and contains a list of application plug-ins and an Information Status bar. The Information Status bar highlights the application plug-in that is under it and provides additional information.

Figure 15   Windows Embedded Handheld Home Screen
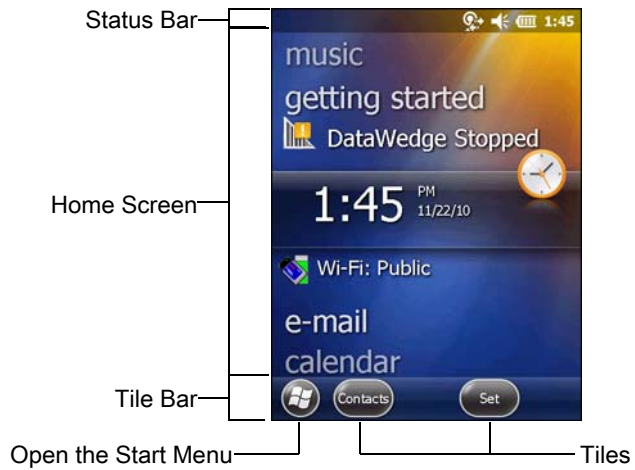
Touch and hold the screen with a finger and move the Home screen up and down. As the application names move under the Information Status bar, information relevant to that application appear in the bar.

Figure 16   Moving Today Screen

Also touch and hold the Information Status bar and move it up and down over an application name. Remove finger and the Information Status bar and application name center in the screen.

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Figure 17   Moving Information Status Bar

Figure 18   Information Bar Example

Application Icon

Application Information
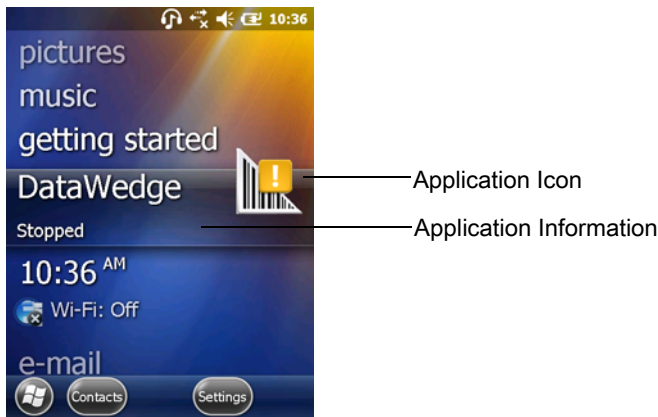
To customize the **Home** screen, tap [icon] > **Settings** > **Today**. On the horizontal scroll, use **Appearance** to customize the background and the **Items** to change the display format.

Classic Today Screen

The user can change to the classic Today screen layout that is used in Windows Mobile 6.1.

Figure 19   Classic Today Screen

Status Bar

Today Screen

Task Tray

Tile Bar
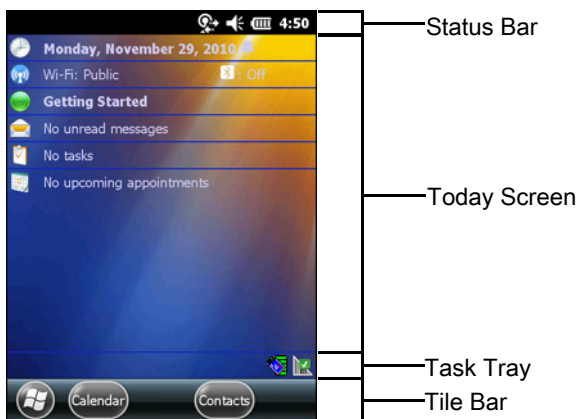
To change to the classic view tap [icon] > **Settings** > **Home** > **Items**.

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Figure 20 Home Screen Settings
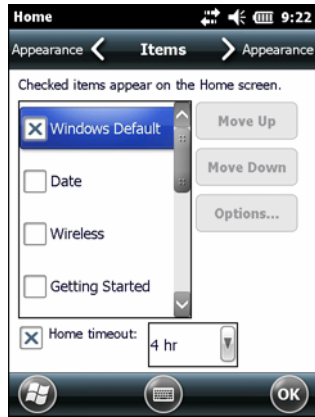
Deselect the **Windows Default** checkbox and select any of the other checkboxes.

Tap .

The task bar at the bottom of the screen can contain the task tray icons listed in Table 3.

Table 3 Task Tray Icons

Icon	Name	Description
	Wireless connection status	Wireless connection status icon. Indicates wireless local area network (WLAN) signal strength and opens the Wireless Applications menu.
	Bluetooth Enabled	The **Bluetooth Enabled** icon appears in the task tray and indicates that the Bluetooth radio is on (Displays only if the StoneStreet One Bluetooth stack is enabled).
	Bluetooth Disabled	The **Bluetooth Disabled** icon appears in the task tray and indicates that the Bluetooth radio is off (Displays only if the StoneStreet One Bluetooth stack is enabled).
	Bluetooth Communication	The **Bluetooth Communication** icon appears in the task tray and indicates that the mobile computer is communicating with another Bluetooth device (Displays only if the StoneStreet One Bluetooth stack is enabled).

Status Bar

The **Status Bar** at the top of the screen displays the status icons listed in Table 4.

Figure 21 Status Bar Icons
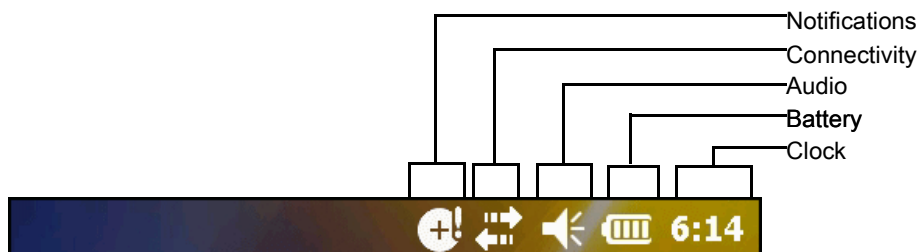
Table 4 Status Bar Icons

Icon	Description	Icon	Description
Notifications			
	Indicates a reminder of an upcoming calendar event.		Notification that one or more instant messages were received.
	Notification that one or more e-mail/text messages were received.		There are more notification icons than can be displayed.
	Indicates that the backup battery is very low.		Indicates that a wireless stereo headset is connected to the MC55X.
Connectivity			
	Connection is active.		Connection is not active.
	Synchronization is occurring.		Wi-Fi available.
	Wi-Fi in use.		
Audio			
	All sounds are on.		All sounds are off.
	Vibrate is on.		
Battery			
	Battery is charging.		Battery has a full charge.
	Battery has a high charge.		Battery has a medium charge.
	Battery has a low charge.		Battery has a very low charge.

Tap the Status Bar to display an icon bar. Tap an icon to get additional notification or status information.

Figure 22   Icon Bar

Icon Bar

Table 5   Task Tray Icons

Icon	Name	Description
	Magnify	Enlarges the screen.
	Low Backup Battery	Indicates that the backup battery is low.
	Notifications	Indicates that notifications are available.
	Headset	Indicates that a wireless stereo headset is connected to the MC55X.
	Connectivity	Displays the **Connectivity** dialog box.
	Volume	Displays the **Volume** dialog box.
	Power	Displays the **Power** window.
	Clock & Alarms	Opens the **Clocks & Alarms** window.

Tile Bar

The **Tile Bar**, located at the bottom of the screen, contains the **Start** tile to open the **Start Menu**. It also displays tiles that vary depending upon the open application.

Figure 23   Tile Bar Examples

Table 6 Programs Available on the Start Menu

Icon	Description	Icon	Description
	Home - Closes the Start menu and displays the Home screen.		**Text** - Send an text message.
	E-mail - Send an Email.		**Battery Swap** - Properly shuts down the MC55X during battery replacement.
	Contacts - Keep track of friends and colleagues.		**Internet Explorer** - Browse Web sites as well as download new programs and files from the Internet.
	Calendar - Keep track of appointments and create meeting requests.		**Settings** - Opens the Settings folder. See Settings for more information.
	Getting Started - Launch the Getting Started application.		**Alarms** - Set the clock to the date and time of the current location. Alarms can also be set at specified days and times of a week.
	Pictures & Videos - View and manage pictures and video files.		**Windows Media** - Play back audio and video files.
	Messenger - Use the mobile version of Windows Live Messenger.		**MSN Weather** - Check the local weather.
	Windows Live - Use the mobile version of Windows Live ™ to find information on the web.		**MSN Money** - Keep track of finances.
	Calculator - Perform basic arithmetic and calculations, such as addition, subtraction, multiplication, and division.		**Games** - Play games.
	Notes - Create handwritten or typed notes, drawings, and voice recordings.		**Tasks** - Keep track of tasks.
	File Explorer - Organize and manage files on the device.		**ActiveSync** - Synchronize information between the MC55X and a host computer or the Exchange Server.
	Internet Sharing - Connect a notebook computer to the Internet using the MC55X's data connection.		**Task Manager** - Enables viewing of memory and central processing unit (CPU) allocations and stops running processes.
	Search Phone - Search contacts, data, and other information on the MC55X. Refer to the Microsoft Applications for Windows Mobile 6 User Guide for more information.		**Help** - Access on-line Help topics.

Table 6   Programs Available on the Start Menu (Continued)

Icon	Description	Icon	Description
	Debug - Contains the **RIL Logger** and **RTLogExport** applications. Use when instructed to by Zebra support personnel.		**Office Mobile 2010** - Provides access to Excel Mobile, PowerPoint Mobile, OneNote Mobile, SharePoint WorkSpace Mobile and Word Mobile applications.
	Wireless Companion - Opens the Wireless Companion folder.		**Adobe Reader** - View pdf files.
	Battery Health - Installs the Zebra Battery Health application. See Battery Health Application on page 36.		**BTScanner CtlPanel** - Set com port to use with a Bluetooth scanner.
	BTExplorer - Manages StoneStreet One Bluetooth connections. See Bluetooth for more information. Appears only if the StoneStreet One Bluetooth stack is enabled.		**BTUI** - Use to set Bluetooth options and configuration.
	DataWedge Demo - Provides a way to demonstrate the data capture features using the imager.		
	MobiControl Stage – Opens the MobiControl Stage application to stage the device.		**MSP Agent** - Enables management of the MC55X from an Mobility Services Platform (MSP) Server. Requires the purchase of an appropriate MSP client license per device to suit the level of management functionality required.
	Rapid Deployment Client - Allows the MC55X user to stage a device for initial use by initiating the deployment of settings, firmware, and software. Requires the purchase of an Mobility Services Platform (MSP) client license per device.		**Remote Desktop Mobile** - Log onto Windows NT server type computers and use all of the programs that are available on that computer from the MC55X.
	RTlogEvent - Use when instructed by Zebra support personnel.		

Adjusting Volume

To adjust the system volume:

1. Press the volume buttons on the right side of the MC55X to increase and decrease the system volume. The **Volume** dialog box appears.

2. As the user increases or decreases the volume, the slider moves accordingly. The user can also move the slider to adjust the volume.

3. Select the **Vibrate radio button to turn off the system audio and enable the MC55X to vibrate upon system notifications.**

4. Select **Off** radio button to turn off all system audio notifications.

Resetting the MC55X

There are two reset functions, warm boot and cold boot. A warm boot restarts the MC55X by closing all running programs. A cold boot also restarts the MC55X, and also initializes some drivers. Data saved in flash memory or a memory card is not lost.

If the MC55X is not functioning properly, perform a warm boot first. If the MC55X still does not respond, perform a cold boot.

Performing a Warm Boot

Hold down the red **Power** button for approximately five seconds. As soon as the MC55X starts to boot (splash screen displays) release the **Power** button.

Performing a Cold Boot

To perform a cold boot:

- On a numeric keypad, simultaneously press the red **Power** button and the [1] and [9] keys.

- On an alphanumeric keypad, simultaneously press the red **Power** button and the (W) and (C) keys.

Locking the MC55X

Locking the MC55X turns off keyboard and touch screen functionality. This is helpful when the MC55X is turned on and to prevent accidental key presses.

To lock the MC55X, tap 🪟 > 🔒.

To unlock the MC55X, **side the Lock button to the left or right.**

Figure 24   Unlock Device Window
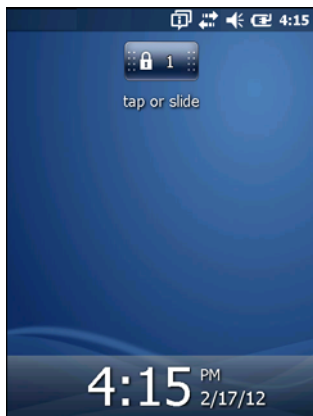
If the MC55X was locked with a PIN or password, a prompt appears.

Un-locking with Simple PIN

When the MC55X is locked, the **Lock** screen appears.

Figure 25   Simple PIN Lock Screen
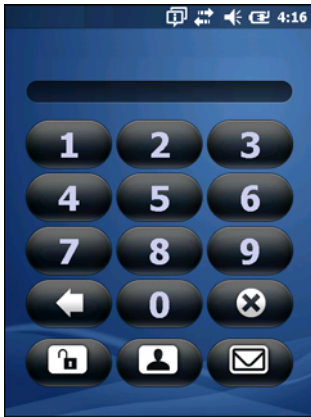
Enter the password to un-lock the device.

Tap the **Unlock** button to unlock the device and go to the Home screen, or tap the **Contact** button to unlock the device and go to the Contacts window or tap the **Email** button to unlock the device and go to the **Messaging** window.

Un-locking with Strong Password

When the MC55X is locked, the **Lock** screen appears.

Figure 26   Strong Password Lock Screen

Enter the strong password and then tap **Unlock**.

> **NOTE:**   If the user enters an incorrect password eight times, the user is requested to enter a code before trying again.
>
> If the user forgets the password, contact the system administrator.

Battery Status Indications

Battery icons appear on the Status bar indicating the battery power level. When the main battery power falls below a predetermined level the icon indicates the status and a battery dialog box appears indicating the status of the battery. When the backup battery is low an icon appears in the Status bar and a battery dialog box appears indicating the status of the backup battery.

Figure 27   Battery Status Dialog Boxes
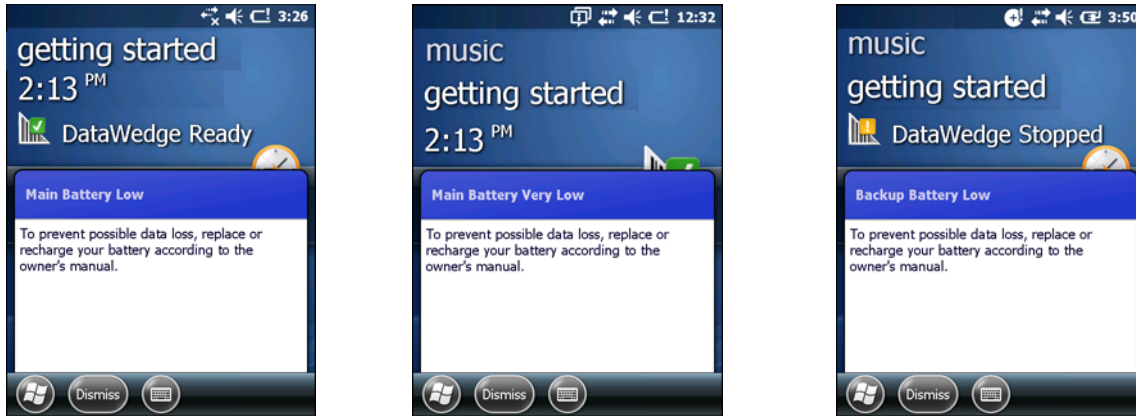
The **Battery** icon always appears in the **Status bar**. The icon indicates the battery power level. The message displays until the **Dismiss** button is pressed.

Also view the battery status using the **Power** window. Either:

- Tap the Status bar and then the **Battery** icon.

- Tap > **Settings** > **System** > **Power**.

Figure 28   Settings Power Window
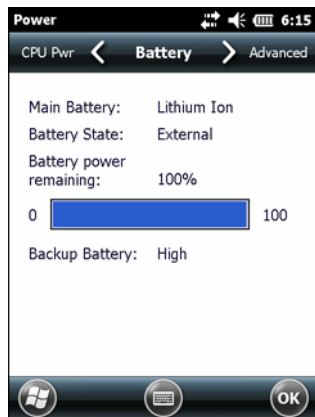
Battery Reserve Options

If the charge of the battery reaches a critical threshold, the MC55X shuts down. This threshold can be changed but affects the amount of time that data can be retained.

1.   Tap > **Settings** > **System** > **Power** > **RunTime**. A warning message appears.

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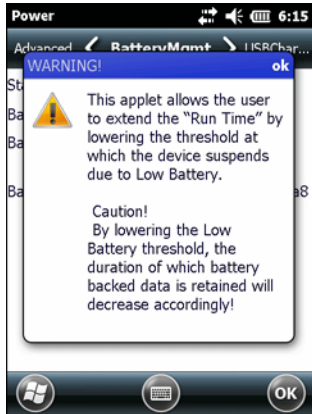
Figure 29   Warning Message

2.   Read the warning message and tap **OK**.

Figure 30   RunTime Tab
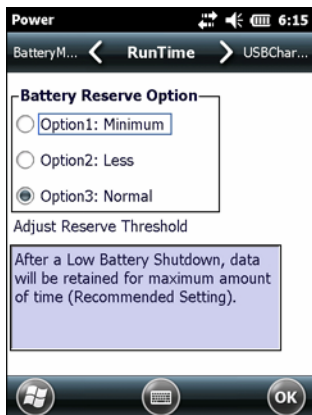
3.   Select one of the **Battery Reserve Options**.

- **Option 1: Minimum** - After a low battery shutdown, data will be retained for minimum amount of time. Battery should be replaced immediately to avoid data loss.

- **Option 2: Less** - After a low battery shutdown, data will be retained for less than normal amount of time.

- **Option 3: Normal** - After a low battery shutdown, data will be retained for maximum amount of time.

4.   Tap **OK**.

Main Battery Temperature Notifications

The temperature notification system implements three levels of notification when the temperature within the battery exceeds specific temperature thresholds:

- **Level 1: Temperature Watch**; this level is similar to main battery low warning. It indicates that the battery temperature has reached the first threshold level. The user should move to an environment within proper operating temperature.

- **Level 2: Temperature Warning**; this level is similar to main battery very low warning. It indicates the battery temperature has reached the second threshold level. The user should close all running applications and stop using the MC55X.

- **Level 3: Temperature Error**; this level indicates the battery has reached an unusable temperature threshold and immediately suspends the MC55X. This level does not have any graphical notification associated with it.

Figure 31   Main Battery Temperature Watch Dialog Box

Figure 32   Main Battery Temperature Warning Dialog Box

NOTE: The **Temperature Warning** dialog box remains visible until the user taps **Hide**.

Battery Health Application

The **Battery Health** dialog box is accessible from the Status Bar. Touch the Status Bar and then the Battery icon.

Figure 33   Status Bar
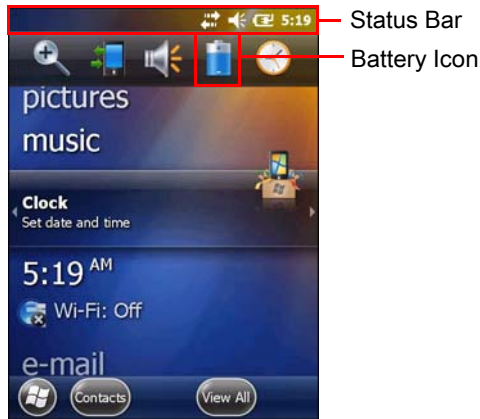
Touch the Battery icon to view the **Battery Health** dialog box.

Figure 34   Battery Health Dialog Box

- **Battery Power** - Indicates the current battery power, represented as a percentage of the total battery capacity.
- **Battery Health** - Indicates the battery health using a five star-rating system based on a predefined battery usage count threshold value. If the battery falls below any of these values, it is assigned to a lower star-rating.
- **Cycle Count** - Displays the current battery usage count of the battery (configurable).

The background color also indicates the battery health.

Figure 35   Battery Background Color

- Green - Indicates that the battery is healthy.
- Yellow - Indicates that the battery is reaching the end of its useful life.
- Red - Indicates that the battery should be replaced.

The inside of the battery icon indicated the battery charge level. The white area indicates the current charge status of the battery used.

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After a pre-defined time period, the dialog box disappears.

The Battery health dialog box can be set to appear after the device resumes from suspend mode or depending upon the health status. See Battery Management Configuration - WinMobile.

Interactive Sensor Technology

The Interactive Sensor Technology (IST) supports the following features:

- **Power Management** – manages power by configuring IST to control switching on/off the backlight, control suspend mode of the MC55X by monitoring motion and orientation.
- **Display Orientation** – switches the screen orientation to either landscape or portrait depending on the MC55X orientation.
- **Free Fall Detection** – monitors free fall duration and records the time and type of the drop event.

The MC55X is equipped with sophisticated and powerful sensors to sense and react to environmental changes, motion, orientation and user input. These sensors include accelerometer, magnetometer, gyroscope, and temperature sensor.

The accelerometer and gyroscope measure the linear acceleration and angular velocity. The magnetometer measures the magnetic field intensity experienced by the MC55X. This information can be used to derive the motion state and the orientation of the device. For example, an MC55X can automatically rotate the display from portrait to landscape mode to match the device orientation, enter suspend mode or switch off backlight to save power when display is placed face down.

See IST Settings on page 97 for more information.

Power Management

The MC55X orientation and motion sensitive data can be used as an indicator of MC55X usage and can be used to manage the battery power of the mobile computer. For example, IST can be configured to control the backlight on and off functionality or go into suspend according to a user gesture by placing screen facing down. It can also be used to keep the MC55X active while it is in movement to prevent it from quickly going into suspend mode while in use.

Display Orientation

The screen can be rotated between portrait and landscape modes automatically, depending on the physical orientation of the MC55X. For example, if the MC55X is rotated 90° counterclockwise, IST rotates the display counterclockwise 90° so that the screen display appears correct.

This functionality is achieved by monitoring screen angle and rotating the display to counter any changes. IST only rotates the screen in multiples of 90°.

Free Fall Detection

IST continuously monitors gravitational force on the MC55X according to its current position. When the MC55X free falls, IST detects the absence of gravitational force and records the event data if it detects a free fall more than 450 ms, which may indicates nearly a one meter drop. This data can be used as an indicator of potential abuse or misuse.

Stylus

Use the MC55X stylus to select items and enter information. The stylus functions as a mouse.

- Tap: Touch the screen once with the stylus to press option buttons and open menu items.

- Tap and Hold: Tap and hold the stylus on an item to see a list of actions available for that item. On the pop-up menu that appears, tap the action to perform.

- Drag: Hold the stylus on the screen and drag across the screen to select text and images. Drag in a list to select multiple items.

CAUTION: To prevent damage to the screen, do not use any device other than the Zebra-provided stylus.

Entering Data

When entering data on the keypad, use either the single-hand method or the two-hand method as shown in Figure 36.

Figure 36   Entering Data on the Keypad
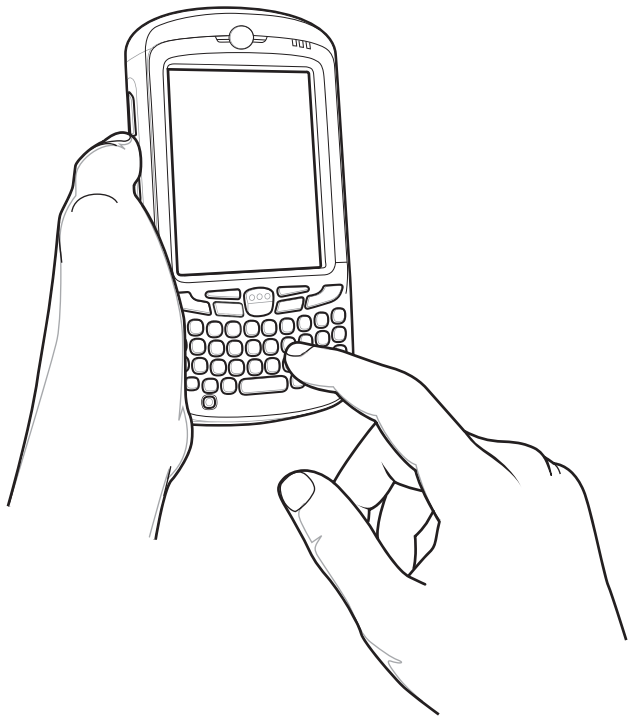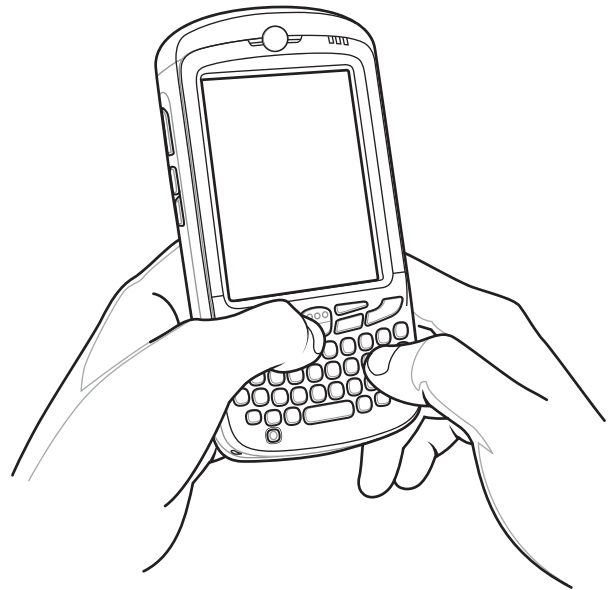
Single-hand Method   Two-hand Method

Data Capture

Introduction

The MC55X offers three types of data capture options:

- Imaging
- Digital camera (optional)
- RS507 Hands-free imager.

Imaging

The MC55X with an integrated imager has the following features:

- Omnidirectional reading of a variety of bar code symbologies, including the most popular linear, postal, PDF417, and 2D matrix code types.
- The ability to capture and download images to a host for a variety of imaging applications.
- Advanced intuitive laser aiming cross-hair and dot aiming for easy point-and-shoot operation.

The imager uses imaging technology to take a picture of a bar code, stores the resulting image in its memory, and executes state-of-the-art software decoding algorithms to extract the bar code data from the image.

Operational Modes

The MC55X with an integrated imager supports three modes of operation, listed below. Activate each mode by pressing the **Scan** button.

- **Decode Mode**: In this mode, the MC55X attempts to locate and decode enabled bar codes within its field of view. The imager remains in this mode as long as the user holds the scan button, or until it decodes a bar code.

NOTE: To enable Pick List Mode, configure in DataWedge or set in an application using a API command.

- **Pick List Mode**: This mode allows the user to selectively decode a bar code when more than one bar code is in the MC55X's field of view. To accomplish this, move the aiming crosshair or dot over the required bar code to decode only this bar code. This feature is ideal for pick lists containing multiple bar codes and manufacturing or transport labels containing more than one bar code type (either 1D or 2D).

- **Image Capture Mode**: Use this mode to capture an image within the MC55X's field of view. This is useful for capturing signatures or images of items like damaged boxes.

Digital Camera

The MC55X with an integrated camera based bar code scanning solution has the following features:

- Omnidirectional reading of a variety of bar code symbologies, including the most popular linear, postal, PDF417, and 2D matrix code types.
- Advanced intuitive aiming for easy point-and-shoot operation
- Taking photos and recording videos.

The solution uses the advanced camera technology to take a digital picture of a bar code, and executes state-of-the-art software decoding algorithms to extract the data from the image.

Scanning Considerations

Typically, scanning is a simple matter of aim, scan, and decode and a few quick trial efforts master it. However, consider the following to optimize scanning performance:

- Range

  Any scanning device decodes well over a particular working range — minimum and maximum distances from the bar code. This range varies according to bar code density and scanning device optics.

  Scanning within range brings quick and constant decodes; scanning too close or too far away prevents decodes. Move the scanner closer and further away to find the right working range for the bar codes being scanned.

- Angle

  Scanning angle is important for promoting quick decodes. When laser beams reflect directly back into the scanner from the bar code, this specular reflection can "blind" the scanner.

  To avoid this, scan the bar code so that the beam does not bounce directly back. But don't scan at too sharp an angle; the scanner needs to collect scattered reflections from the scan to make a successful decode. Practice quickly shows what tolerances to work within.

- Hold the MC55X farther away for larger symbols.
- Move the MC55X closer for symbols with bars that are close together.

NOTE: Scanning procedures depend on the application and MC55X configuration. An application may use different scanning procedures from the one listed above.

Imager Scanning

To read a bar code, a scan-enabled application is required. The MC55X contains the **DataWedge** application that allows the user to enable the imager, decode the bar code data and display the bar code content.

1. Enable **DataWedge**. See .
2. Launch an application that supports text inputs, such as **Word Mobile 2010** or **Excel Mobile 2010**.
3. Point the exit window on the top of the MC55X at a bar code.

Figure 37   Imager Scanning
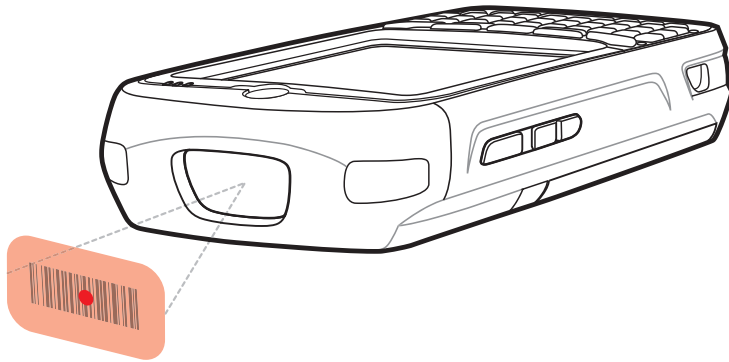
4. Press and hold the scan button.

    The red LED aiming pattern turns on to assist in aiming. Ensure the bar code is within the area formed by the aiming pattern. The aiming dot is used for increased visibility in bright lighting conditions.

    The Scan/Decode LED lights green and a beep sounds, by default, to indicate the bar code was decoded successfully. Note that when the MC55X is in Pick List Mode, the imager does not decode the bar code until the aiming dot touches the bar code.

Figure 38   Aiming Pattern
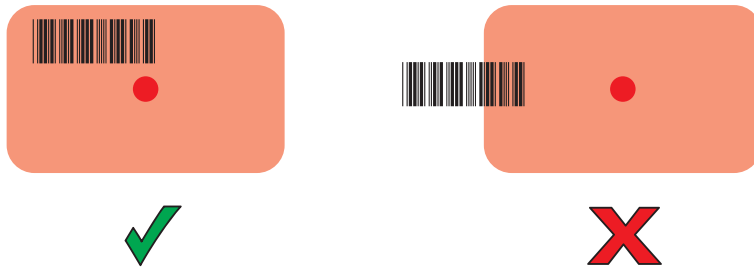
Figure 39   Pick List Mode with Multiple Bar Codes in Aiming Pattern
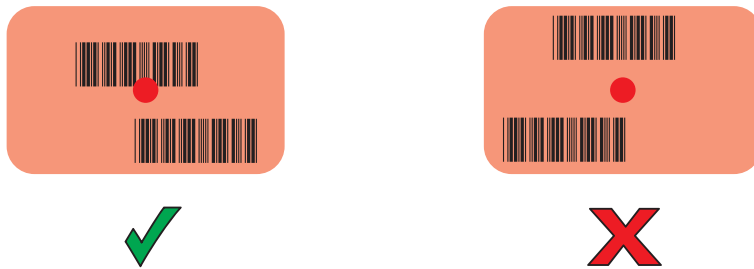
5. Release the scan button.

NOTE: Imager decoding usually occurs instantaneously. The MC55X repeats the steps required to take a digital picture (image) of a poor or difficult bar code as long as the scan button remains pressed.

6. Disable **DataWedge**. See .

Digital Camera Scanning

To read a bar code, a scan-enabled application is required. The MC55X contains the **DataWedge** application that allows the user to enable the camera, decode the bar code data and display the bar code content.

1. Enable **DataWedge**. See Enable DataWedge on page 44.

2. Launch an application that supports text inputs, such as **Word Mobile 2010** or **Excel Mobile 2010**.

3. Point the camera lens on the back of the MC55X at a bar code.

Figure 40   Camera Scanning
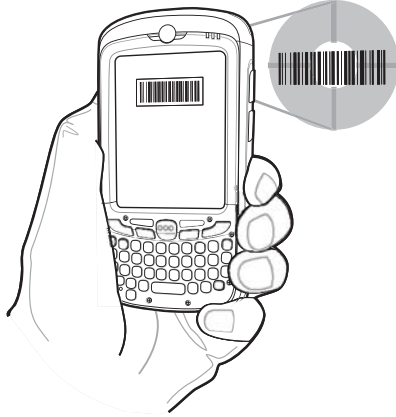
4. Press and hold 📟. A preview window appears on the display window.

5. Move the MC55X until the red aiming pattern is on top of the barcode.

   The Scan/Decode LED lights green and a beep sounds, by default, to indicate the bar code was decoded successfully. Note that when the MC55X is in Pick List Mode, the imager does not decode the bar code until the aiming pattern touches the barcode.

6. The bar code content data displays in the text field.

Using the RS507 Hands-free Imager

An RS507 Hands-free Imager can be used with the MC55X to capture bar code data.

NOTE: Only one RS507 can be paired with the MC55X at a time.

To set up the RS507:

1. Tap **Start** > **BTScannerCtlPanel**.

2. If required, select the **BT Scanner** checkbox and then select the appropriate Com port from the drop-down list.

3. Tap **Save and Exit**.

4. Tap **Start** > **MotoBTUI**.

5. Tap **Pairing Barcode**. A bar code displays.

6. Point the RS507 at the bar code. The RS507 reads the bar code and begins pairing with the MC55X.

Refer to the RS507 Hands-free Imager Product Reference Guide for more information.

DataWedge

Enable DataWedge

To enable DataWedge:

1. Tap > **Settings** > **System** > **DataWedge**.
2. Tap **Basic configuration**.
3. Tap **1. Barcode input**.
4. Tap one of the following:
    a. **1. MegaPixel Imager** (for scanning using the imager).
    b. **2. Camera Scanner Driver** (for scanning using the camera).
    c. **3. Bluetooth SSI Scanner Driver** (for scanning using the RS507, see Using the RS507 Hands-free Imager on page 120).
5. Ensure that a check mark is next to **1. Enabled**. If not, tap **1. Enabled**.
6. Tap **0. Back**.
7. Tap **0. Back**.
8. Tap **0. Exit** and then tap **OK**.
9. Tap **Running** to start the DataWedge process. The DataWedge Status changes to **Ready**.
10. Tap **OK**.

Disable DataWedge

To disable DataWedge:

1. Tap > **Settings** > **System** > **DataWedge**.
2. Tap the **Running** option to end the DataWedge process. The DataWedge Status changes to **Stopped**.
3. Tap **OK**.

Taking Pictures

To take a picture:

1. Tap > **Pictures & Videos**.
2. Tap **Camera**.

Figure 41   Camera Window

The Camera window displays the view finder. Information about the current settings or the remaining number of pictures that can be saved to the MC55X are displayed on the lower right corner of the screen.

3.   Check the image on the view finder, adjust if necessary.

4.   Press the **Enter** key to take the picture.

Burst Mode

Burst mode is a way to take a series of quick pictures.

1.   Tap 🔲 > **Pictures & Videos**.

2.   Tap **Camera**.

3.   Tap **Menu > Mode > Burst**.

4.   Check the image on the view finder, adjust if necessary.

5.   Press the **Enter** key to take the picture.

To stop a burst of pictures before all pictures have been taken tap **OK**.

Timer Mode

To take pictures using the timer:

1.   Tap 🔲 > **Pictures & Videos**.

2.   Tap **Camera**.

3.   Tap **Menu > Mode > Timer**.

> **NOTE:** By default, the self timer delay is set at five seconds.

4.   Check the image on the view finder, adjust if necessary.

5.   Press the **Enter** key to take the picture.

Editing Pictures

Rotate, crop, zoom, and adjust the brightness and color contrast pictures.

1.   Tap 🔲 > **Pictures & Videos**.

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2. Tap the thumbnail of the picture to view.

3. Tap **Menu > Zoom** to display the Zoom panel, used to zoom in or out of a picture. Tap **Menu > Zoom** again to close the Zoom panel.

4. To rotate a picture 90 degrees counter-clockwise, tap **Menu > Edit**, then tap **Rotate**.

5. To crop a picture, tap **Menu > Edit**, then tap **Menu > Crop.** Drag the stylus across the screen to select the crop area. Tap inside the area to crop the picture, or outside of the area to cancel cropping.

Setting a Picture as Wallpaper

To add a custom look to the Home screen of the MC55X (using the Windows Home screen); apply a wallpaper using any image. To set an image as a Home wallpaper:

1. Tap and hold a thumbnail, then select **Set as Home Background**.

2. Tap the up or down arrows to set the transparency level.

3. Tap **OK**.

Camera Configuration

To configure the camera settings:

1. Tap 🪟 > **Pictures & Videos**.

2. Tap **Menu**, then configure the device settings.
   - **Video** - Tap to switch to video mode.
   - **Mode** - Select from the following modes to take the picture:
     - **Normal** - Takes picture using the default settings.
     - **Burst** - Takes picture consecutively in continuous mode.
     - **Timer** - Takes picture five seconds after pressing the **Enter** key.
   - **Brightness** - Set the camera brightness level.
   - **Resolution** - Set the camera resolution level. Note that selecting a high resolution picture increases the size of the file significantly.
   - **Flash** - Turns flash on and off.
   - **Auto Focus** - Turns auto focus on and off.
   - **Full Screen** - Toggles the viewfinder between full screen and window modes.
   - **Options** - Displays the camera options window.

3. Tap **OK** to exit.

Recording a Video

To record a video:

1. Tap 🪟 > **Pictures & Videos**.

2. Tap **Camera**.

3. Tap **Menu > Video**.

Figure 42 Video Window

The available recording time displays on the screen.

NOTE: By default, the time limit for recording videos is set to 30 seconds.

4. Press the **Enter** key to begin recording.

5. Press the **Enter** key to stop recording.

Video Configuration

To configure the video settings:

1. Launch the **Video** application.

2. Tap **Menu**, then configure the device settings.

- Still - Tap to switch to still (camera) mode.
- Brightness - Set the video brightness level.
- Quality - Set the quality (video resolution and sound fidelity) and size of the video clips. Video clips of higher quality require more memory.
- Full Screen - Toggles the viewfinder between full screen and window modes.
- Options - Displays the video options window.

3. Tap **OK** to exit.

Viewing Pictures and Videos

To view a picture or video:

1. Tap > **Pictures & Videos**.

2. Tap the thumbnail of the picture or video:

- Tap the **Show** drop-down list to browse folders.
- Tap the **Sort By** drop-down list to sort the files by name, date or size.

Figure 43   Pictures & Videos
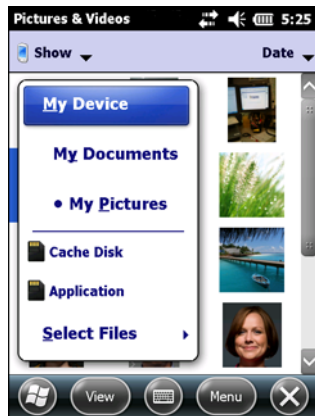
Customizing Pictures & Videos

Using the **Options** command to set preference settings on how to use **Pictures & Videos**.

To customize **Pictures & Videos**:

1. On either thumbnail or full screen mode, tap **Menu > Options**.
2. On the **General** tab, set the following options:

    •   Select the size of the pictures to send through e-mail. Only pictures sent through an e-mail message is resized, the original picture remains unchanged.

    •   Resize pictures for faster e-mail transfer.

    •   Rotate pictures towards left or right.

3. On the **Slide Show** tab, set the following options:

    •   Select the **Portrait pictures** or **Landscape pictures** radio button to set slide show orientation.

    •   Select the **Play a screen saver when connected to my PC and idle for 2 minutes** check box to set the image files in the **My Pictures** folder as a screen saver whenever the device is connected to the USB sync cable and is idle for 2 minutes.

4. On the **Camera** tab, set the following options:

    •   In the **Type filename prefix** text box, enter the prefix to be used as a default title for the image file.

    •   In the **Save files to** drop-down list, select to save image files to onboard memory or built-in storage.

    •   In the **Still image compression level** drop-down list, set a compression level when saving the image. The high quality setting provides the best image quality but more memory is required.

5. On the **Video** tab, set the following options:

    •   Select the **Include audio when recording video files** check box to record audio along with video.

    •   In the **Time limit for videos** drop-down list, set the amount of time for recording video.

Using WLAN

Introduction

Wireless Local Area Networks (WLANs) allow the MC55X to communicate wirelessly inside a building. Before using the MC55X on a WLAN, the facility must be set up with the required hardware to run the WLAN (sometimes known as infrastructure). The infrastructure and the MC55X must both be properly configured to enable this communication.

Refer to the documentation provided with the infrastructure (access points (APs), access ports, switches, Radius servers, etc.) for instructions on how to set up the infrastructure.

Once the infrastructure is set up to enforce the chosen WLAN security scheme, use the Fusion Wireless Companion software to configure the MC55X to match.

Fusion Overview

The Fusion Wireless Companion software contains applications with which to create wireless profiles. Each profile specifies the security parameters to use for connecting to a particular WLAN as identified by its Extended Service Set Identification (ESSID). The Fusion Wireless Companion software also allows the user to control which profile out of a set of profiles is used to connect. Other Fusion Wireless Companion applications allow the user to monitor the status of the current WLAN connection and to invoke diagnostic tools for troubleshooting.

To access Fusion Wireless Companion, tap 🔵 > **Wireless Companion** > **Wireless Launch**.

Figure 44   Wireless Launch Window
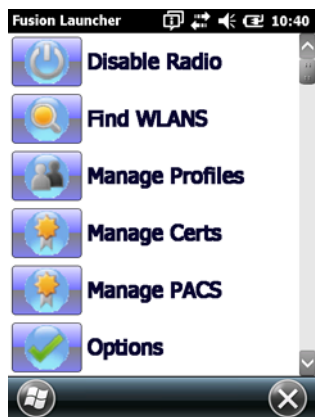
Refer to the Wireless Fusion Enterprise Mobility Suite User Guide for Version X2.xx for detailed information on using and configuring Fusion Wireless Companion.

To access the on-device Fusion Help tap > **Wireless Companion** > **Fusion Help**.

Connecting to the Internet

To connect to the Internet on a WLAN when using Fusion Wireless Companion, ensure that the network card settings is set to Internet:

1. Ensure Fusion is enabled and a profile is configured.

2. Tap > **Settings** > **Connections** > **Wi-Fi**.

3. In the **My network card Connects to** drop-down list, select **The Internet**.

4. Tap **OK**.

Supported Applications

The Fusion menu items and their corresponding applications are summarized in Table 7.

Table 7   Supported Applications

Application	Description
Find WLANs	Invokes the **Find WLANs** application which displays a list of the WLANs active in the area.
Manage Profiles	Invokes the **Manage Profiles** application (which includes the **Profile Editor Wizard**) to manage and edit the list of WLAN profiles.
Manage Certs	Invokes the **Certificate Manager** application which allows the user to manage certificates used for authentication.
Manage PACs	Invokes the **PAC Manager** application which helps the user manage the list of Protected Access Credentials used with Extensible Authentication Protocol-Flexible Authentication via Secure Tunneling (EAP-FAST) authentication.
Options	Invokes the **Options** application which allows the user to configure the Fusion option settings.
Wireless Status	Invokes the **Wireless Status** application which allows the user to view the status of the current wireless connection.
Wireless Diagnostics	Invokes the **Wireless Diagnostics** application which provides tools with which to diagnose problems with the wireless connection.
Log on/off	Invokes the **Network Login** dialog which allows the user to log on to a particular profile or to log off from the currently active profile
Fusion Help	Invokes Fusion Help application which provides on-device Help.

Fusion Setup

For detailed WLAN setup using Fusion, refer to the Wireless Fusion Enterprise Mobility Suite User Guide for Version X2.xx.

To setup WLAN using Fusion:

> **NOTE:** Obtain the proper WLAN configuration information from the system administrator prior to performing the Fusion setup procedures.
>
> The following setup procedure example shows setup of a WLAN using Wired Equivalent Privacy (WEP) encryption.

1. Tap the > **Wireless Companion** > **Wireless Launch** > **Manage Profiles**. The **Manage Profiles** window appears.

2. Tap and hold in the window and select **Add** from the pop-up menu. The **Wireless LAN Profile Entry** window appears.

3. In the **Profile Name** text box enter a name for the profile.

4. In the **ESSID** text box enter the ESSID.

Figure 45   Profile ID Dialog Box

5. Tap **Next.** The **Operating Mode** dialog box displays.

6. In the **Operating Mode** drop-down list, select **Infrastructure or Ad-hoc**.

Figure 46   Operating Mode Dialog Box

7. Tap **Next**. The **Security Mode** dialog box displays.

8. In the **Security Mode** drop-down list, select **Legacy (Pre-WPA)**.

Figure 47   Security/Authentication Dialog Box

9. In the **Authentication** drop-down list, select **None**.

10. Tap **Next**. The **Encryption** dialog box displays.

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11. In the **Encryption Type** drop-down list, select **WEP-40 (40/24)**.

Figure 48 Encryption Dialog Box

12. Select the **Pass-phrase** or **Hexadecimal Keys** radio button to indicate whether a pass-phrase or hexadecimal keys will be entered on the next page.

13. Select the **For added security - Mask characters entered** check box to hide characters entered. Deselect this to show characters entered.

14. Tap **Next**.

Figure 49 WEP-40 WEP Keys Dialog Box

15. In the **Edit Key** drop-down list, select the key to enter.

16. In the **Key** field, enter 10 hexadecimal characters.

17. In the **Confirm** field, re-enter the key. When the keys match, a message appears indicating that the keys match.

18. Repeat for each WEP key.

19. In the **Transmit Key** drop-down list, select the key to transmit.

20. Tap **Next**. The **IPv4 Address Entry** dialog box displays.

Figure 50 IP Address Entry Dialog Box

21. Ensure that all three check boxes are selected.

22. Tap **Next**. The **Battery Usage** dialog box appears.

23. In the **Battery Usage Mode** dialog box select a power consumption option.

Figure 51   Battery Usage Dialog Box
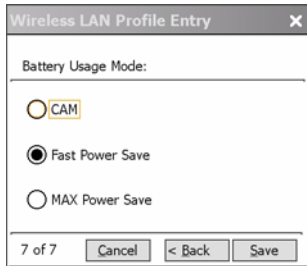
24. Tap **Next**. The **Performance Settings** dialog box appears.

25. In the **Performance Settings** dialog box select either **Optimize for Data** or **Optimize for Voice**.

26. Tap **Save**.

Messaging

Introduction

This chapter describes how to use Email and text messaging.

Email

Use email to send messages to other users. See Email Setup on page 55 for information on setting up an Email account.

Creating an Email Message

To create an email message:

1. Press ⊞ > **E-mail.**
2. Select an email account.
3. Tap ▤ > **New**.
4. To add recipients, enter their email addresses, separating them with a semicolon (;). Tap **To** to add email addresses stored in **Contacts**.
5. Enter a subject and compose the message.
6. To add an attachment to the message, tap ▤ > **Insert** and tap the item to attach: **Picture**, **Voice Note**, or **File**.
7. Tap ▤=▪.

Viewing an Email Message

To view an email message:

1. Press ⊞ > **E-mail.**
2. Select an email account.
3. Tap an email to open it.

Replying to a Message

To reply to a message:

1. Press ⊞ > **E-mail.**

2. Select an email account.

3. Tap an email to open it.

4. Tap 👤.

5. Enter a reply message, and then tap ▤.

Email Setup

The MC55X's **Messaging** application lets users access and manage multiple email accounts simultaneously in one convenient location. To send and receive email messages through an ISP (Internet Service Provider) account, or to use the MC55X to access corporate email through a VPN (Virtual Private Network), first set up an IMAP or POP account.

- IMAP (Internet Message Access Protocol) - This mail retrieval protocol is frequently used in large networks and commercial and institutional settings. IMAP4 is the current standard.

- POP (Post Office Protocol) - This protocol is supported by most ISPs and is currently more common among consumer applications. POP3 is the current standard.

NOTE: If the user has multiple email accounts, configure each account with its own settings.

Setting Up an IMAP or POP Account

When setting up an IMAP or POP account, the MC55X may be able to retrieve account settings automatically, or the user may need to enter certain settings manually.

Automatic Email Setup

1. Tap ⊞ > **E-mail.**

2. Tap **Setup E-mail**.

3. In the **E-mail address** text box, enter an email address.

4. In the **Password** text box, enter an associated password.

5. The **Save password** checkbox is checked by default to allow the MC55X to always remember the email account password. To prevent other users from viewing the email account, tap the **Save password** checkbox to remove the checkmark and deactivate the feature.

6. Tap **Next**.

NOTE: For some common email types, the MC55X automatically detects and configures the email settings without performing this step.

7. Tap the **Try to get e-mail settings automatically from the Internet** checkbox to place a checkmark in the checkbox.

Tap **Next** to attempt to retrieve these settings automatically. This process may take several minutes. The MC55X attempts to determine the necessary communication settings for both incoming and outgoing email messages.

8. If the MC55X was able to automatically retrieve the necessary settings, tap **Next**.

If the MC55X was unable to obtain the settings automatically, tap **Next** and proceed to step 8 in .

9. In the **Your name:** field, enter the name that displays in the **From** field on outgoing messages.

10. In the **Account display name:** field enter a name for the new email account.

    This name appears within the list of available email accounts on the E-mail page.

11. Tap **Next**.

12. Tap the **Automatic Send/Receive:** field and select the time interval for the MC55X to send and check for new email messages.

13. Tap the **Review all download** settings link for additional download settings and options. See Editing an Email Account on page 57 for more details.

14. Tap **Finish**.

Manual Email Setup

If the Automatic configuration was unsuccessful, or if accessing an account using a VPN server connection, contact the Internet Service Provider (ISP) or network administrator for the following information and enter it manually:

- Account type (IMAP4 or POP3)
- Incoming and outgoing mail server names
- Username and password
- Domain name
- Special security settings (if used).

For more information about configuring email accounts, go to: www.microsoft.com.

Entering Email Settings Manually

1. **Tap 🍥 > E-mail.**

2. Tap **Setup E-mail**.

3. In the **E-mail address:** field, enter the email address for the account.

4. In the **Password:** fields and the password for the account.

5. The **Save password** checkbox is checked by default to allow the MC55X to always remember the email account password. To prevent other users from viewing email, tap the **Save password** checkbox to remove the checkmark and deactivate the feature.

6. Tap **Next**.

7. Tap the **Try to get e-mail settings automatically** from the Internet box to remove the checkmark from the box and tap **Next**.

8. In the **Your e-mail provider:** drop-down list, select **Internet e-mail** and tap **Next**.

9. In the **Your name:** field enter the name that will display in the **From** field on outgoing messages.

10. In the **Account display name:** field enter a name for this new email account.

    This name appears within the list of available email accounts on the E-mail page.

11. Tap **Next**.

12. In the **Incoming mail server:** field enter the incoming mail server address.

13. In the **Account Type:** drop-down list, select either **POP3** or **IMAP4**.

14. Tap **Next**.

15. In the **User name:** field enter the username for the account.

16. In the **Password:** field enter the password for the account.

17. Tap **Next**.

18. In the **Outgoing (SMTP) mail server:** field enter the outgoing mail server address.

19. Check the appropriate fields and then tap **OK**.

   • **Outgoing server requires authentication** is used if a password is required for outgoing mail in addition to incoming mail. (Please contact the System Administrator for detailed server requirements.)

   Use the same user name and password for sending e-mail to use the same user name and password for outgoing mail as well as for incoming mail (can only be selected if the **Outgoing server requires authentication** checkbox is checked).

20. Tap the **Advanced Server Settings** link.

   • These allows configuration of server-specific messaging settings such as SSL requirements for both incoming and outgoing email, as well as network firewall profiles.

   • Select the desired options.

   • Tap **Done** once completed making updates to these settings.

21. Tap **Next**.

22. In the **Automatic Send/Receive:** drop-down list select the time interval for the MC55X to send and check for new email.

23. Tap the **Review all download settings** link for additional download settings and options.

24. Tap **Finish**.

Editing an Email Account

To edit general email settings:

1. **Tap 🌐 > E-mail.**

2. Highlight an account and tap **Menu > Options**.

3. Tap the desired email account from the on screen list.

4. Tap **Edit Account Setup**.

5. Confirm the **email address** and make any changes if necessary. Tap **Next**.

6. Confirm the **Your name** and **Account display name** information and make any changes if necessary. Tap **Next**.

7. Confirm the **Incoming mail server** and **Account type** information and make any changes if necessary. Tap **Next**.

8. Confirm the **User name** and **Password** information and make any changes if necessary (including checking or unchecking the **Save password** checkbox). Tap **Next**.

9. Confirm the **Outgoing (SMTP) mail server** information and make any changes if necessary.

10. Tap the **Advanced Server Settings** link and select any setting on this page to check or uncheck the option.

   • **Require SSL for Incoming e-mail** check box to enable SSL encryption of incoming email (if supported by the mail server).

   • **Require SSL for Outgoing e-mail** checkbox to enable SSL encryption of outgoing email (if supported by the mail server).

   • **Network connection** drop-down list to select a firewall connection setting. Select either **The Internet** (open: no firewall), **Work** (behind a firewall) or a data connection.

11. Tap **Done** and then tap **Next**.

12. In the **Automatic Send/Receive** drop-down list, select the time interval the MC55X sends and checks for new email.

13. In the **Download messages** drop-down list, select the age range of messages to download from the server to the MC55X. (The longer the time period, the more messages are downloaded.)

14. Tap the **Advanced Settings** link and select any setting on this page to check or uncheck the option.

    - Select the **Send/receive when I click Send** checkbox to automatically check for and download new messages whenever the user sends a message.

    - Select the **Use automatic send/receive schedule when roaming** checkbox to continue to check the email at predetermined intervals even if in a roaming area.

    - In the **When deleting messages** drop-down list select whether to automatically delete or retain messages on the email server when deleting messages from the MC55X.

15. Tap **Done**.

16. Tap **Next**.

17. Tap an on-screen field and change any settings. Tap an option to select it.

    - In the **Message format** drop-down list, select to view the email messages as either **HTML** or **plain text** documents.

    - In the **Message download limit** drop-down list, select the size limit of files attached to email messages.

18. Tap **Finish**.

Setting Email Signatures

Signatures are the string of text automatically added to the end of an outgoing emails or messages.

1. **Tap** **> E-mail.**

2. Tap **Menu** > **Options**.

3. Highlight an account and tap **Signatures**.

4. In the **Select an account** drop-down list, select a pre-existing account.

5. Tap the **Use signature with this account** checkbox to enable a signature to be automatically added to new outgoing messages.

6. Tap the **Use when replying and forwarding** checkbox to enable a signature to be automatically added to any messaging being replied to or being forwarded from the account.

7. Tap in the text field and enter a signature message.

8. Tap **OK** to save the new signature.

Bluetooth

Introduction

Bluetooth-equipped devices can communicate without wires, using frequency-hopping spread spectrum (FHSS) radio frequency (RF) to transmit and receive data in the 2.4 GHz Industry Scientific and Medical (ISM) band (802.15.1). Bluetooth wireless technology is specifically designed for short-range (10 meters/32 feet) communication and low power consumption.

MC55Xs with Bluetooth capabilities can exchange information (e.g., files, appointments, and tasks) with other Bluetooth enabled devices such as phones, printers, access points, and other mobile computers. To use the MC55X as a modem, create a dial-up modem connection between a computer and MC55X.

The MC55X with Bluetooth technology uses either the StoneStreet Bluetooth stack or the Microsoft Bluetooth stack. To write an application that uses the StoneStreet One Bluetooth stack APIs, refer to the Enterprise Mobility Developer Kit (EMDK) Help.

Adaptive Frequency Hopping

Adaptive Frequency Hopping (AFH) is a method of avoiding fixed frequency interferers, and can be used with Bluetooth voice. All devices in the piconet (Bluetooth network) must be AFH-capable in order for AFH to work. There is no AFH when connecting and discovering devices. Avoid making Bluetooth connections and discoveries during critical 802.11b communications. AFH for Bluetooth consists of four main sections:

- Channel Classification - A method of detecting an interference on a channel-by-channel basis, or pre-defined channel mask.
- Link Management - Coordinates and distributes the AFH information to the rest of the Bluetooth network.
- Hop Sequence Modification - Avoids interference by selectively reducing the number of hopping channels.
- Channel Maintenance - A method for periodically re-evaluating the channels.

When AFH is enabled, the Bluetooth radio "hops around" (instead of through) the 802.11b high-rate channels. AFH coexistence allows Zebra mobile computers to operate in any infrastructure.

The Bluetooth radio in this MC55X operates as a Class 2 device power class. The maximum output power is 2.5mW and the expected range is 10 meters (32 feet). A definition of ranges based on power class is difficult to obtain due to power and device differences, and whether one measures open space or closed office space.

> **NOTE:** It is not recommended to perform Bluetooth wireless technology inquiry when high rate 802.11b operation is required.

Security

The current Bluetooth specification defines security at the link level. Application-level security is not specified. This allows application developers to define security mechanisms tailored to their specific need. Link-level security occurs between devices, not users, while application-level security can be implemented on a per-user basis. The Bluetooth specification defines security algorithms and procedures needed to authenticate devices, and if needed, encrypt the data flowing on the link between the devices. Device authentication is a mandatory feature of Bluetooth while link encryption is optional.

Pairing of Bluetooth devices is accomplished by creating an initialization key that is used to authenticate the devices and create a link key for them. Entering a common Personnel Identification Number (PIN) number in the devices being paired generates the initialization key. The PIN number is never sent over the air. By default, the Bluetooth stack responds with no key when a key is requested (it is up to user to respond to the key request event). Authentication of Bluetooth devices is based-upon a challenge-response transaction. Bluetooth allows for a PIN number or passkey that is used to create other 128-bit keys used for security and encryption. The encryption key is derived from the link key used to authenticate the pairing devices. Also worthy of note is the limited range and fast frequency hopping of the Bluetooth radios that makes long-distance eavesdropping difficult.

Recommendations are:

- Perform pairing in a secure environment
- Keep PIN codes private and don't store the PIN codes in the mobile computer
- Implement application-level security.

The Microsoft stack supports Smart-pairing. For detailed information, refer to the Microsoft MSDN.

Security Mode 3 (Link Level Encryption)

The MC55X supports Security Level 3 (Link Level Encryption). Link level encryption is the data security process of encrypting information at the data link level as it is transmitted between two devices.

Microsoft Bluetooth Stack

When pairing with a remote device using the Microsoft Bluetooth UI, Security Level 3 (Link Level Encryption) is automatically used. When developing applications using the Microsoft Bluetooth stack, enable Security Mode 3 using the *BthSetEncryption* API call. Refer to the Microsoft MSDN for more information.

StoneStreet One Bluetooth Stack

To set Security Mode 3 on outgoing serial port connections, set **Encrypt Link On All Outgoing Connections** checkbox in the **Settings > Security**. See Security on page 88 for more information.

FIPS 140-2

The MC55X supports FIPS 140-2 for Bluetooth using the Microsoft Bluetooth stack and the StoneStreet One Bluetooth stack. FIPS provides secure Bluetooth communication between the MC55X and another mobile computer or scanner only using a Serial Port Profile.

Bluetooth Configuration

By default, the MC55X is configured to using the Microsoft Bluetooth stack. Refer to the MC55X Integrator Guide, Appendix B, for information on switching to the StoneStreet One Bluetooth stack.

Table 8 list the services supported by the Microsoft Bluetooth stack and the StoneStreet One Bluetooth stack.

Table 8   Bluetooth Services

Service	Microsoft Bluetooth	StoneStreet One Bluetooth
File Transfer Services	No	Yes
OBEX Object Push Services	Yes	Yes
PBAP Services	Yes	No
Serial Port Services	Yes	Yes
Personal Area Networking Services	Yes	Yes
A2DP/AVRCP Services	Yes	Yes
HID Host Services	Yes	Yes

Table 9 list the COM ports available for the StoneStreet One Bluetooth stack and the Microsoft Bluetooth stack.

Table 9   COM Ports

Microsoft Bluetooth Stack	StoneStreet One Bluetooth Stack
COM5	COM5
COM9	COM9
	COM11
	COM21
	COM22
	COM23

Bluetooth Power States

Cold Boot

With StoneStreet One Bluetooth Stack

Performing a cold boot on the MC55X turns off Bluetooth after initialization (which takes a few moments). It is normal to see the **Bluetooth** icon appear and disappear (when using the Classic Home screen), as well as a wait cursor, when initialization proceeds in all modes.

With Microsoft Bluetooth Stack

Performing a cold boot retain the state of the Bluetooth radio prior to the cold boot.

Warm Boot

With StoneStreet One Bluetooth Stack

Performing a warm boot on the MC55 turns off Bluetooth.

With Microsoft Bluetooth Stack

Performing a warm boot retain the state of the Bluetooth radio prior to the warm boot.

Suspend

When there is an active Bluetooth connection, the Bluetooth radio goes into low power mode maintaining the active connection. When there is no active connection, the Bluetooth radio turns off.

With StoneStreet One Bluetooth Stack

> **NOTE** If there is an active Bluetooth connection between the MC55X and another Bluetooth device, the MC55X will not timeout. However, if the user presses the Power button on the MC55X, the MC55X will suspend and upon receiving data from a remote Bluetooth device, the MC55X will wake from suspend mode. For example, Bluetooth scanner sending data to the MC55X.

With Microsoft Bluetooth Stack

> **NOTE** If there is an active Bluetooth connection between the MC55X and another Bluetooth device and there is no data activity, the MC55X will timeout. However, if the user presses the Power button on the MC55X, the MC55X will suspend and upon receiving data from a remote Bluetooth device, the MC55X will wake from suspend mode. For example, Bluetooth scanner sending data to the MC55X.

Resume

When the MC55X resumes, Bluetooth turns on if it was on prior to suspend.

BTUI Application

Use the BTUI application to:

- Turn the Bluetooth radio on and off. See Turning the Bluetooth Radio Mode On and Off on page 64.

- View device information

- Control device status

- Generate a pairing bar code (See Using the RS507 Hands-free Imager on page 120 for more information).

- Configure FIPS key.

Figure 52   BTUI Window
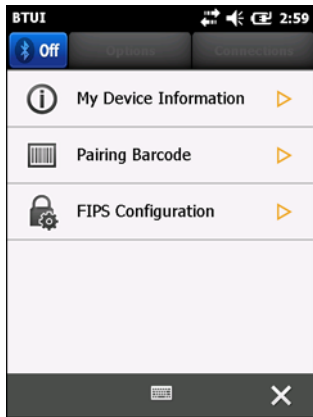
Device Information

The view the MC55X Bluetooth information:

1. Tap **Start** > **BTUI**.
2. Tap **My Device Information**.
3. The **Device Information** window displays:
   - Device Name
   - HCI version number
   - LMP version number
   - Bluetooth chip manufacturer name
   - BT UI version number.
4. Tap the Back button to return to the **BTUI** window.

FIPS Configuration

> **NOTE:** By default the MC55X has a FIPS key installed. If required, the user can generate a new FIPS key. If a new key is generated on the MC55X, the same key is required to be used on the other Bluetooth device. The user must transfer the key to the other device.

To generate a new FIPS key automatically:

1. Tap **Start** > **BTUI**.
2. Tap **FIPS Configuration**.
3. Tap **Generate Key** button.
4. Tap the **SetUp Key** button. A new key is generated. The key file, NewAESKey.reg, is created in the /Application folder.

5. Tap the Back button to return to the **BTUI** window.

To generate a new FIPS key manually:

1. Tap **Start** > **BTUI**.
2. Tap **FIPS Configuration**.
3. Tap **Enter Key** button.
4. In the text box, enter a key.
5. Tap the **SetUp Key** button. A new key is generated. The key file, NewAESKey.reg, is created in the */Application* folder.
6. Tap the Back button to return to the **BTUI** window.

To transfer the new FIPS key to another Bluetooth device:

1. Copy the NewAESKey.reg file from the MC55X to the other Bluetooth device. Place the file into the */Application* folder.
2. Navigate to the */Application* folder.
3. Locate the NewAESKey.reg file and tap the filename. The **RegMerge** confirmation box displays.
4. Tap **Yes**.
5. Perform a warm boot.

Device Status

Use the Device Status option to set if the MC55X would be seem by other Bluetooth devices. Touch the **Device Status** option to toggle the MC55X from Hidden to Discoverable.

Using Microsoft Bluetooth Stack

The following sections provide information on using the Microsoft Bluetooth stack.

Turning the Bluetooth Radio Mode On and Off

> **NOTE:** Turn the Bluetooth radio on or off using the **Wireless Manager**. Tap the Status bar and select the **Connectivity** icon. Tap **Wireless Manager**.

Turn off the Bluetooth radio to save power or if entering an area with radio restrictions (e.g., an airplane). When the radio is off, other Bluetooth devices cannot see or connect to the MC55X. Turn on the Bluetooth radio to exchange information with other Bluetooth devices (within range). Communicate only with Bluetooth radios in close proximity.

> **NOTE:** To achieve the best battery life turn off radios not in use.

Enabling Bluetooth

There are three ways to enable Bluetooth:

1. Microsoft Bluetooth application:

   a. Tap 🪟 > **Setting** > **Connections** > **Bluetooth** > **Mode**.

Figure 53   Bluetooth Mode
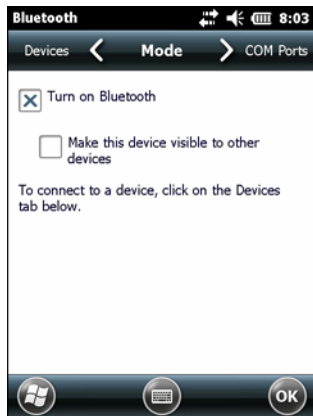
    b.   Check the **Turn On Bluetooth** checkbox to turn on the Bluetooth radio on.

    c.   Tap **OK**.

2.   Wireless Manager:

    a.   Tap the Status Bar.

    b.   Tap the Connectivity icon.

    c.   Tap **Wireless Manager**.

    d.   Tap **Bluetooth** to turn the Bluetooth radio on.

    e.   Tap **X**.

3.   MotoBTUI application:

    a.   Tap > **BTUI**.

    b.   Tap the Bluetooth **Off** tab to turn the Bluetooth radio on.

    c.   Tap **X**.

Disabling Bluetooth

There are three ways to disable Bluetooth:

1.   Microsoft Bluetooth application:

    a.   Tap > **Setting** > **Connections** > **Bluetooth** > **Mode**.

    b.   Un-check the **Turn On Bluetooth** checkbox to turn the Bluetooth radio off.

    c.   Tap **OK**.

2.   Wireless Manager:

    a.   Tap the Status Bar.

    b.   Tap the Connectivity icon.

    c.   Tap **Wireless Manager**.

    d.   Tap **Bluetooth** to turn the Bluetooth radio off.

    e.   Tap **X**.

3.   MotoBTUI application:

    a.   Tap > **BTUI**.

    b.   Tap the Bluetooth **On** tab to turn the Bluetooth radio off.

    c.   Tap **X**.

Discovering Bluetooth Device(s)

The MC55X can receive information from discovered devices without pairing. However, once paired, the MC55X and a paired device exchange information automatically when the Bluetooth radio is turned on. See Pairing with Discovered Device(s) on page 82 for more information.

To find Bluetooth devices in the area:

1. Ensure that Bluetooth is enabled on both devices.

2. Ensure that the Bluetooth device to discover is in discoverable and connectable modes.

3. Ensure that the two devices are within 10 meters (32 feet) of one another.

4. Tap > **Settings** > **Connections** > **Bluetooth** > **Devices**.

Figure 54   Bluetooth - Devices

5. Tap **Add new device**. The MC55X begins searching for discoverable Bluetooth devices in the area.

Figure 55   Searching for Bluetooth Devices
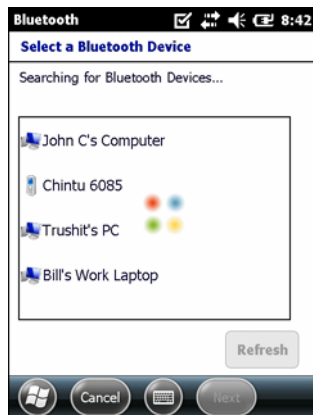
6. Select a device from the list.

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Figure 56   Select a Bluetooth Device

7.   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.

Figure 57   Enter Passcode
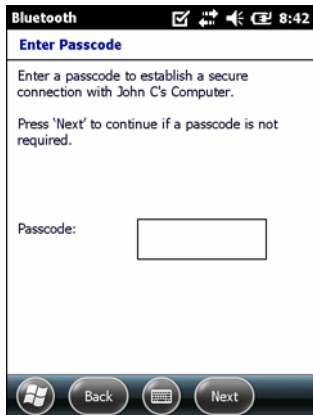
8.   Enter a Passcode.

If the device has a specific passcode, enter it in the **Passcode** field and tap **Next**. If the device does not have a specific passcode, enter one in the **Passcode** field and tap **Next**. The MC55X tries to connect with the other device.

9.   If you created a passcode, you will be prompted by the other device to enter the same passcode. Enter the created passcode to establish a paired connection. (If you entered a passcode from the device, you should not have to do anything on the other device).

10. When the connection is complete, a list of matching and supported services on the device appears.

11. Select the services to use and tap **Finish**. The services on the new devices have to be selected or else the pairing won't include those services, even though the devices are paired. If services are not selected, you will be continually reprompted for the passcode from the device.

12. The device appears in the list on the main window.

After the passcodes have been accepted on both sides, a trusted ("paired") connection is created.

Available Services

📝 **NOTE:** Some devices might not require a PIN. This depends upon the device's authentication.

The MC55X with Microsoft Bluetooth stack offers the following services:

- OBEX Object Push Services via Beam
- Serial Port Services
- Personal Area Networking Services
- PBAP Services
- A2DP/AVRCP Services.

See the following sections for information on these services.

Object Push Services via Beam

📝 **NOTE:** The MC55X only send files to a remote device using the Beam function.

Use the OBEX Push Service to send files and contacts to another Bluetooth device. To transfer files between the MC55X and another Bluetooth enabled device:

1. Ensure that Bluetooth is enabled and discoverable on both devices.
2. Ensure that the two devices are within 10 meters (32 feet) of one another.
3. Tap 🪟 > **Programs** > **File Explorer.**
4. Navigate to the file to transfer.
5. Tap and hold on the filename until the pop-up menu appears.

Figure 58   File Explorer Window
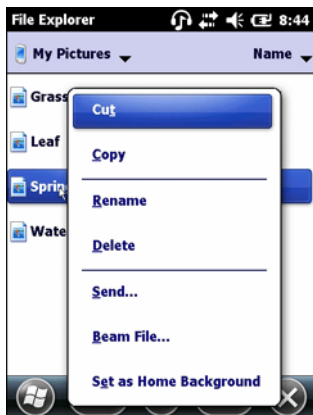
6. Select **Beam File**. The MC55X searches for Bluetooth devices in the area.
7. Tap **Tap to send** next to the Bluetooth device to send the file to. The MC55X communicates with the device and sends the file. When completed, **Tap to send** changes to **Done**.

Figure 59   Beam File Window
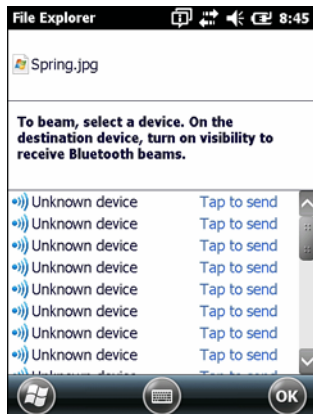
To transfer a contact between the MC55X and another Bluetooth enabled device:

1.   Ensure that Bluetooth is enabled and discoverable on both devices.

2.   Ensure that the two devices are within 10 meters (32 feet) of one another.

3.   Tap > **Contacts**.

4.   Navigate to the contact to transfer.

5.   Tap and hold on the contact until the pop-up menu appears.

Figure 60   Contact Window

6.   Select **Send Contact > Beam**. The MC55X searches for Bluetooth devices in the area.

7.   Tap **Tap to send** next to the Bluetooth device to send the file to. The MC55X communicates with the device and send the contact. When completed, **Tap to send** changes to **Done**.

Internet Sharing

Internet Sharing allows the user to connect a computer or laptop to the MC55X and use the MC55X as a modem to connect to an office network or Internet Service Provider (ISP).

To use MC55X as a modem using Bluetooth:

1.   Ensure that the MC55X is not connected to the computer or laptop.

2.   On the MC55X, ensure that the Phone is on and a data connection is configured.

3.   Tap > **Programs** > **Internet Sharing**.

4.   In the **PC Connection** list, select **Bluetooth PAN**.

5. In the **Network Connection** list, select the connection type.

   Select the network connection that the device should use to connect to the Internet.

6. Tap **Connect**.

7. On the computer or laptop, setup a Bluetooth PAN with the device.

   a. Select **Start** > **Control Panel** > **Network Connections**.

   b. Under **Personal Area Network**, select **Bluetooth Network Connection**.

   c. Right-click on **Bluetooth Network Connection** and select **View Bluetooth** network devices.

   d. In the **Bluetooth Personal Area Network Devices** window select the MC55X.

   e. Click **Connect**. The computer connects to the MC55X via Bluetooth.

> **NOTE:** If the computer is Bluetooth-enabled and Bluetooth as the PC connection is selected, the user must initiate and complete the Bluetooth PAN partnership before Internet Sharing will work. For more information, refer to Windows Help and Support.

8. To verify, on the computer or laptop, launch **Internet Explorer** and open a web site.

9. To end internet sharing, on the MC55X tap **Disconnect**.

Serial Port Services

Use the wireless Bluetooth serial port connection as a physical serial cable connection. Configure the application that will use the connection to the correct serial port.

To establish a serial port connection:

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 🪟 > **Settings** > **Connections** > **Bluetooth** > **Devices**.

4. Tap **Add new device**. The MC55X begins searching for discoverable Bluetooth devices in the area.

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. In the device list, tap the serial device. The **Partnership Settings** window displays.

9. Select the **Serial Port** checkbox.

10. Tap **Save**.

11. Tap **COM Ports**.

12. Tap **New Outgoing Port**. The add device window appears.

> **NOTE:** By default, **Secure Connection** checkbox is set enabling Security Level 3 (Linked Level Encryption).

13. Select the serial device in the list and then tap **Next**.

14. Select a COM port from the drop-down list.

15. Tap **Finish**.

NOTE: No connection is made at this point. An application must open the selected COM port to trigger Microsoft Bluetooth stack to open the connection.

ActiveSync Using Serial Port Services

Use the wireless Bluetooth serial port connection for ActiveSync just as a physical serial cable connection. Configure the application that will use the connection to the correct serial port.

To set up a Bluetooth ActiveSync connection:

Before setting up a Bluetooth ActiveSync connection, configure the Bluetooth function on the host computer.

NOTE: For additional security, disable network bridging on the computer (specifically, bridging to a Remote NDIS adapter) before connecting to the computer to pass though to the Internet or a network. For more information on network bridging, see **Windows Help** on the computer.

Refer to the Windows Help for instructions on setting up a Bluetooth connection.

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. Click **Start** > **All Programs** > **Microsoft ActiveSync**.
4. Click **File** > **Connection Settings**.

Figure 61   ActiveSync Connection Settings

5. On the **Allow connections to one of the following** drop-down list, select the COM port with the number noted earlier.
6. On the MC55X, tap ⊞ > **Programs** > **ActiveSync**.
7. Tap **Menu** > **Connect via Bluetooth**.

   Synchronization is automatically initiated.

   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. The passkey must be between 1 to 16 alphanumeric characters.

   If the user does not want to use a passkey, tap **Next**.

8. To disconnect the ActiveSync connection, tap ⊞ > **ActiveSync** > **Menu** > **Disconnect**.

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9. Tap **Disconnect**.

Phone Book Access Profile Services

Phone Book Access profile (PBAP) is used to synchronize contacts between a remote device and the MC55X. To establish an PBAP synchronization:

1. Ensure that Bluetooth is enabled and discoverable on both devices.
2. Ensure that the two devices are within 10 meters (32 feet) of one another.
3. Tap > **Settings** > **Connection** > **Bluetooth** > **Devices**.
4. Tap **Add New Device**.The MC55X 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 to transfer contacts to the car kit.
9. Select **Yes** or **No**.
10. If **Yes** is selected, contacts from the MC55X are transferred to the car kit.

Using Bluetooth StoneStreet One Bluetooth Stack

The following sections provide information on using the Stone Street One Bluetooth stack.

Turning the Bluetooth Radio Mode On and Off

Turn off the Bluetooth radio to save power or if entering an area with radio restrictions (e.g., an airplane). When the radio is off, other Bluetooth devices cannot see or connect to the MC55X. Turn on the Bluetooth radio to exchange information with other Bluetooth devices (within range). Communicate only with Bluetooth radios in close proximity.

> **NOTE:** To achieve the best battery life turn off radios not in use.

Disabling Bluetooth

To disable Bluetooth, tap the Connection icon on the Status bar and select **Wireless Manager** in the Connectivity dialog box. Tap the blue **Bluetooth** bar to turn off the Bluetooth radio.

Enabling Bluetooth

To enable Bluetooth, tap the Connection icon on the Status bar and select **Wireless Manager** in the Connectivity dialog box. Tap the blue **Bluetooth** bar to turn on the Bluetooth radio.

Modes

The BTExplorer application has two modes for managing Bluetooth connections: Wizard Mode and Explorer Mode. The Wizard Mode is for novice Bluetooth users and the Explorer Mode is for experienced Bluetooth users. To switch between modes, select **View** > **Wizard Mode** or **View** > **Explorer Mode**.

Wizard Mode

Wizard Mode provides a simple process for discovering and connecting to Bluetooth devices.

> **NOTE:** Switching between Wizard Mode and Explorer Mode closes all active connections.

Wizard Mode shows the devices and services in a simple Favorites view created by following the step-by-step wizard.

Explorer Mode

The **Explorer Mode** window is easy to navigate and provides greater control to users familiar with Bluetooth. The menu bar provides quick access to the options and tools used to connect to devices. To access Explorer Mode, tap **View** > **Explorer Mode**.

Figure 62   Explorer Mode Window
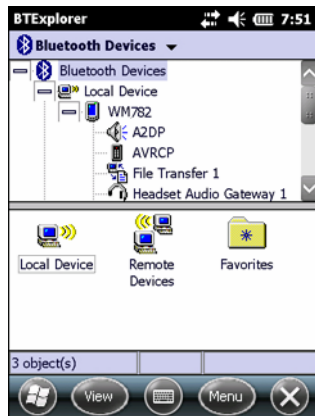
Use the "tap and hold" technique to view available options. Scroll bars and view options are similar to those on the Windows desktop. The tree structure lists the following sub-items:

- Local Device - This device

- Remote Device - Other Bluetooth devices

    - Trusted Devices - Bonded (paired) Bluetooth devices

    - Untrusted Devices - Discovered devices that are not bonded

- Favorites - Selected services that are set as *Favorite* for quick access.

> **NOTE:** Switching between Wizard Mode and Explorer Mode closes all active connections.

Discovering Bluetooth Device(s)

The MC55X can receive information from discovered devices without bonding. However, once bonded, the MC55X and a bonded device exchange information automatically when the Bluetooth radio is turned on. See Pairing with Discovered Device(s) on page 82 for more information.

To find Bluetooth devices in the area:

1. Ensure that Bluetooth is enabled on both devices.

2. Ensure that the Bluetooth device to discover is in discoverable and connectable modes.

3. Ensure that the require profile is enabled on the MC55X. See Profiles on page 91 for more information.

4. Ensure that the two devices are within 30 feet (10 meters) of one another.

5. Tap 🔲 > **Settings** > **Connections** > **Bluetooth**. The **BTExplorer** window appears.

> **NOTE:** If favorite connections have already been created, the **Favorites** screen displays. If no favorite connections have been created, the **New Connection Wizard** screen displays.

6. Tap **Menu** > **New Connection**.The **New Connection Wizard** appears.

Figure 63   BTExplorer Window
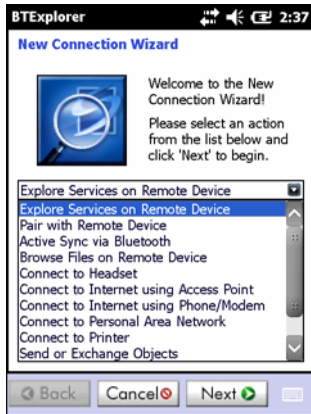
7.   Select **Explore Services on Remote Device** or another from the drop-down list and tap **Next**.

> **NOTE:** If a device discovery action has not been previously performed, a device discovery is automatically initiated. If a device discovery has previously been performed, the device discovery process is skipped, and the previously found list of devices displays. To start a new device discovery, tap and hold in the window and select **Discover Devices** from the pop-up menu.

8.   **BTExplorer** searches for Bluetooth devices in the area.

Figure 64   Discover Devices Dialog Box

The discovered devices display in the **Select Remote Device** window.

Figure 65   Select Remote Device Window
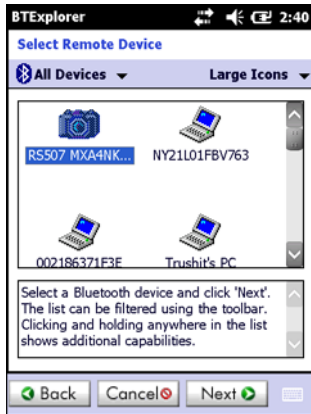
9.   Select a device from the list and tap **Next**. The MC55X searches for services on the selected Bluetooth device.

Figure 66   Device Services
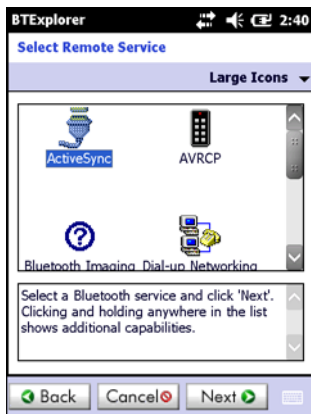
NOTE: If the MC55X discovers a service but the service is not supported, the service icon is grayed-out.

10. Select a service from the list and press **Next**. The **Connection Favorite Options** window appears.

Figure 67   Connection Favorite Options Window

11. In the **Favorite Name** text box, enter a name for this service that will appear in the **Favorite** window.

12. Tap **Next**. The **Connection Summary** window appears.

13. Tap **Connect** to add the service to the **Favorite** window and connect to the service.

Figure 68   Favorites Window
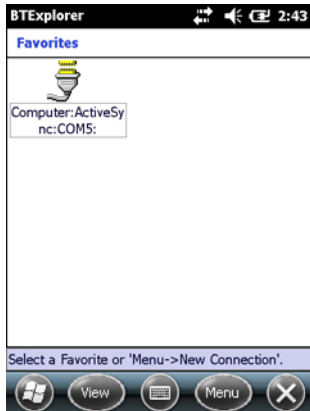
Available Services

> **NOTE:** Some devices might not require a PIN. This depends upon the device's authentication.

See the following sections for information on these services.

File Transfer Services

> **NOTE:** Shared folders are a security risk.

To transfer files between the MC55X and another Bluetooth enabled device:

1. Ensure that OBEX File Transfer profile is enabled on the MC55X. See Profiles on page 91 for more information.

> **NOTE:** If favorite connections have already been created, the **Favorites** screen displays. If no favorite connections have been created, the **New Connection Wizard** screen displays.

2. Use the **Connection Wizard** to search for a Bluetooth device.

3. Select the device and tap **Next**. The **Select Remote Service** window appears.

4. Select **File Transfer** and tap **Next**. The **Connection Favorite Options** window appears.

5. Tap **Next**. The **Connection Summary** window appears.

6. Tap **Connect**. The remote device's accessible folders appear.

Figure 69   File Transfer Window
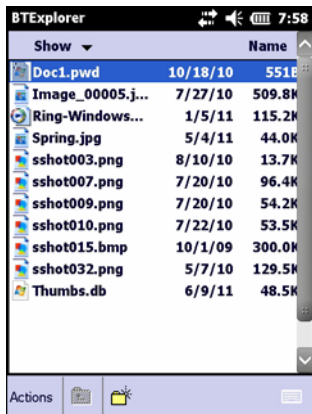
7.   Double-tap the file to copy. The **Save Remote File** window appears.

Figure 70   Save Remote File Window
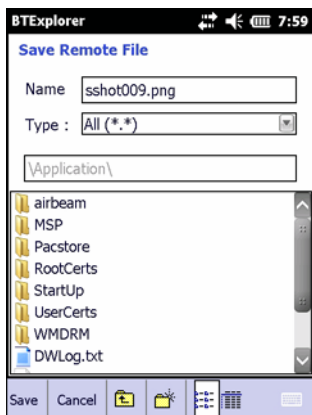
8.   Tap and hold on the file. A pop-up menu appears.

9.   Select the action to perform:

- **New** - create a new file or folder on the remote device
- **Delete** - delete the selected file on the remote device.
- **Get File** - copy the file from the remote device to the MC55X.
- **Put File** - copy a file from the MC55X to the remote device.

Creating a New File or Folder

To create a new folder or file on the remote device:

1.   Tap and hold on the screen and select **New > Folder** or **New > File**. The **Create New Folder** or **Create New File** window appears.

2.   Enter the name for the new folder or file.

3.   Tap **OK** to create the new folder or file on the remote device.

Deleting a File

To delete a file from the remote device:

1.   Tap and hold on the file to delete and select **Delete**.

2.   In the **Delete Remote Device File** dialog box tap **Yes**.

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Getting a File

To copy a file from a remote device:

1. Double-tap or tap and hold on the file and select **Get**. The **Save Remote File** window appears.
2. Navigate to the directory to save the file.
3. Tap **Save**. The file is transferred from the remote device to the MC55X.

Copying a File

To copy a file to a remote device:

1. Tap **Action** > **Put**. The **Send Local File** window appears.
2. Navigate to the directory to save the file and select a file.
3. Tap **Open**. The file copies from the MC55X to the remote device.

Connecting to the Internet Using an Access Point

This section explains how to access a Bluetooth-enabled LAN access point (AP) for a network connection. Use Internet Explorer to connect to a server.

1. Ensure the MC55X is discoverable and connectable. See Device Info on page 84.
2. Ensure that the **Personal Area Networking** profile is enabled on the MC55X. See Profiles on page 91 for more information.
3. Use the **Connection Wizard** to search for a Bluetooth AP.

> **NOTE:** If favorite connections have already been created, the **Favorites** screen displays. If no favorite connections have been created, the **New Connection Wizard** screen displays.

4. Select the **Personal Area Network** or **Network Access** service and select **Connect** from the pop-up menu. The MC55X connects with the access point.
5. Tap 🏁 > **Internet Explorer**. The **Internet Explorer** window appears.
6. In the address field, enter an internet address and tap the **Enter** button. The web page loads.

> **NOTE:** Network Access profile is not supported.

Headset Services

To connect to a Bluetooth headset:

> **NOTE:** Newer Bluetooth headsets are device dependent and remember the last device they connected to. If problems occur while connecting to the headset, place the headset in discovery mode. Refer to the headset user manual for more information.

1. Ensure the MC55X is connectable (required when automatic re-connect is initiated). See Device Info on page 84.
2. Ensure that the **Headset** profile is enabled on the MC55X. See Profiles on page 91 for more information.
3. Use the **Connection Wizard** to search for a Bluetooth headset.
4. Select the device and tap **Next**.

5. Select the **Headset** service name and select **Connect**. The MC55X connects to the headset. Refer to the headset user manual for instructions on communicating with a Bluetooth device.

> **NOTE:** When using a Bluetooth headset with Headset Services, the user cannot accept or end a call from the headset. The user must accept or end a call on the MC55X.

6. Press the communication button on the headset. This routes system audio to the headset.
7. When a call is received on the MC55X, tap the **Accept** button to answer the call.
8. Press the communication button on the headset to route the audio back to the MC55X.

Serial Port Services

Use the wireless Bluetooth serial port connection as a physical serial cable connection. Configure the application that will use the connection to the correct serial port.

To establish a serial port connection:

1. Use the **Connection Wizard** to search for a Bluetooth serial device.
2. Select the device and tap **Next**. The **Connection Favorite Options** window appears.
3. In the **Local COM Port:** drop-down list select a COM port.
4. Tap **Finish**.

ActiveSync Using Serial Port Services

> **NOTE:** By default, COM ports COM5, COM9, COM11, COM21, COM22 and COM23 are Bluetooth virtual ports. If an application opens one of these ports, the Bluetooth driver activates and guides the user through a Bluetooth connection.

Use the wireless Bluetooth serial port connection for ActiveSync just as a physical serial cable connection. Configure the application that will use the connection to the correct serial port.

Figure 71   ActiveSync Connection Settings Window on PC

To establish an ActiveSync connection:

> **NOTE:** When creating an ActiveSync connection, only use StoneStreet One Bluetooth Explorer in Wizard mode.

1. Use the **Connection Wizard** to search for a Bluetooth device, such as a computer. In the drop-down list select **ActiveSync via Bluetooth**.

2. Select the device and tap **Next**. The **Connection Favorite Options** window appears.

3. Tap **Connect**. The **Remote Service Connection** window appears.

Figure 72   Remote Service Connection Window
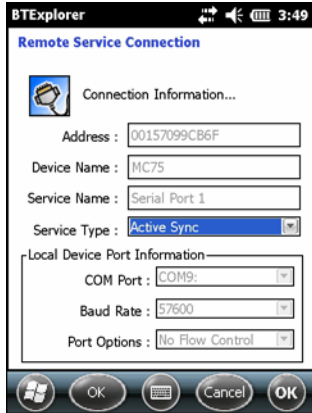
4. In the **Service Type** drop-down list, select **Active Sync**.

5. Tap **OK**. The MC55X connects the PC and an ActiveSync session begins.

6. Tap **Finish**. The Connection Favorite Options window appears.

7. To end the session, tap the ActiveSync icon in the **Favorite** window and select **Disconnect** from the pop-up window.

Personal Area Network Services

> **NOTE:** This profile supports Ad-hoc and PAN User. Network Access Profile is not supported.

Connect two or more Bluetooth devices to share files, collaborate, or play multi-player games. To establish a Personal Area Network connection:

1. Ensure that the **Personal Area Networking** profile is enabled on the MC55X. See Profiles on page 91 for more information.

2. Use the **Connection Wizard** to search for a Bluetooth device.

3. Select the device and tap **Next**. The **Connection Favorite Options** window appears.

4. Tap **Next**. The **Connection Summary** window appears.

5. Tap **Connect**. The MC55X connects to the Bluetooth device.

A2DP/AVRCP Services

A2DP/AVRCP is used to connect to a high-quality stereo headset:

1. Ensure the MC55X is connectable (required when automatic re-connect is initiated). See Device Info on page 84.

2. Ensure that the remote Bluetooth device is in discoverable mode. See the devices user manual for instructions.

3. Ensure that the **A2DP/AVRCP** profile is enabled on the MC55X. See Profiles on page 91 for more information.

4. Tap **Menu > New Connection**.

5. Select **Connect to High-Quality Audio** from the drop-down list.

6. Tap **Next**.

7. Select the device and tap **Next**.

8. Enter the PIN Code for the remote device and then tap **OK**. The **Connection Favorite Options** window appears.

9. Tap **Next**.

10. Tap **Connect**. The MC55X connects to the high-quality audio headset.

For stereo headsets that can use hands-free services, connect to the hands-free service after connecting to the A2DP service:

1. Tap **Menu > New Connection**.

2. Select **Connect to Headset** from the drop-down list.

3. Tap **Next**.

4. Select the stereo headset and tap **Next**.

5. Select the **Hands-Free unit** service and then tap **Next**.

6. Tap **Next**.

7. Tap **Connect**.

Connect to a HID Device

The MC55X can connect to an Human Interface Device (HID) device such as a Bluetooth keyboard:

1. Ensure the MC55X is connectable (required when automatic re-connect is initiated). See Device Info on page 84.

2. Ensure that the remote Bluetooth device is in discoverable mode. See the device user manual for instructions.

3. Ensure that the **HID Client** profile is enabled on the MC55X. See Profiles on page 91 for more information.

4. Tap **Menu > New Connection**.

5. Select **Explore Services on Remote Device** from the drop-down list.

6. Tap **Next**.

7. Select the device and tap **Next**.

8. Select the service and tap **Next**.

9. The **Connection Favorite Options** window appears.

10. Tap **Next**.

11. Tap **Connect**. The MC55X connects to the HID device.

Pairing with Discovered Device(s)

A pair is a relationship created between the MC55X and another Bluetooth device in order to exchange information in a secure manner. Creating a pair involves entering the same PIN on both devices. After creating a pair and turning on the Bluetooth radios, the devices recognize the pair and can exchange information without re-entering a PIN.

To pair with a discovered Bluetooth device:

NOTE: If favorite connections have already been created, the **Favorites** screen displays. If no favorite connections have been created, the **New Connection Wizard** screen displays.

1. Tap [icon] > **Settings** > **Connections** > **Bluetooth**. The **BTExplorer** window appears.

2. Tap **Menu** > **New Connection**. The **New Connection Wizard** window appears.

3. In the drop-down list, select **Pair with Remote Device**.

4. Tap **Next**. The **Select Remote Device** window appears.

> **NOTE:** Devices discovered previously are listed to save time. To start a new device discovery, tap and hold on the list area and select **Discover Devices** from the pop-up menu.

Figure 73   Select Remote Device Window

5. Select a device from the list and tap **Next**. The **PIN Code Request** window appears.

Figure 74   PIN Request Window

6. In the **PIN Code** field, enter the PIN code.

7. Tap **OK**. The **Pairing Status** window displays.

8. Tap **Finish**. The devices are successfully paired. The device name moves to the **Trusted Devices** window.

Deleting a Paired Device

To delete a device no longer needed:

1. Tap the **Bluetooth** icon and select **Show BTExplorer**. The **BTExplorer** window appears.

2. Tap **Menu > Trusted Devices**. The **Trusted Devices** window appears.

3. Tap and hold on the device select **Delete Link Key** in the pop-up menu.

4. A confirmation dialog appears. Tap **Yes**.

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Accepting a Pairing

When a remote device wants to pair with the MC55X, enter a PIN when requested to grant permission.

1. Ensure that the MC55X is set to discoverable and connectable. See Bluetooth Settings on page 84. When prompted to bond with the remote device the **PIN Code Request** window appears.

Figure 75   PIN Code Request Window

2. In the **PIN Code:** text box, enter the same PIN entered on the device requesting the bond. The PIN must be between 1 and 16 characters.
3. In the **Device Name:** text box, edit the name of the device requesting the bond, if desired.
4. Tap **OK** to create the bond. The MC55X can now exchange information with the other device.

Bluetooth Settings

Use the **BTExplorer Settings** window to configure the operation of the **BTExplorer** application. Tap **Menu** *>* **Settings**.

Device Info

Use **Device Info** to configure the MC55X's Bluetooth connection modes.

Table 10   Device Info Data

Item	Description
Device Name	Displays the name of the MC55X.
Discoverable Mode	Select whether or not the MC55X is discoverable by other Bluetooth devices.
Connectable Mode	Select whether or not the MC55X is connectable by other Bluetooth devices.

Services

NOTE: Ensure that the MC55X is discoverable and connectable when remote devices use MC55X services.

Use **Services** to add or delete Bluetooth services.

Figure 76   BTExplorer Settings - Services
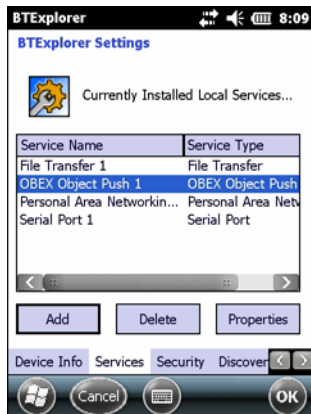
To add a service:

1.   Tap **Add**.

Figure 77   Add Local Service Window
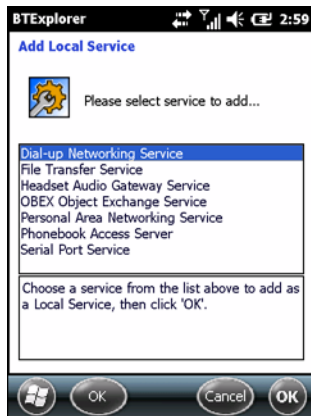
2.   In the list, select a service to add.

3.   Tap **OK**. The **Edit Local Service** window displays for the selected service.

4.   Select the appropriate information and then tap **OK**. See the following sections for information on the available services.

File Transfer Service

File transfer allows other Bluetooth devices to browse files.

Figure 78   BTExplorer Settings - File Transfer Information

Table 11   File Transfer Information Data

Item	Description
Service Name	Displays the name of the service.
Service Security	Select the type of security from the drop-down list. Options are **None**, **Authenticate**, or **Authenticate/Encrypt**.
Root Directory	Select the directory that other Bluetooth devices can access.
File Permissions	Select the file permissions for the selected directory. Check the appropriate box to grant read access, write access, and delete access.

Hands-Free Audio Gateway Service

Hands-Free Service Audio Gateway allows connection to hands-free devices.

Table 12   Hands-Free Audio Gateway Data

Item	Description
Service Name	Displays the name of the audio service.

Headset Audio Gateway Service

Headset Service Audio Gateway allows connection to headset devices.

Table 13   Headset Audio Gateway Data

Item	Description
Service Name	Displays the name of the audio service.

IrMC Synchronization Service

The IrMC Synchronization service used to synchronize PIM contacts between a remote device and the MC55X.

Table 14   IrMC Synchronization Data

Item	Description
Service Name	Displays the name of the service.
Service Security	Select the type of security from the drop-down list. Options are **None**, **Authenticate**, or **Authenticate/Encrypt**.
Phonebook	Select the **Phonebook** checkbox to allow synchronization with the MC55X's contacts.
	Select **Read**, **Write**, **Create** and/or **Delete** to allow phonebook permissions.
Calendar	Select the **Calendar** checkbox to allow synchronization with the MC55X's calendar.
	Select **Read**, **Write**, **Create** and/or **Delete** to allow calendar permissions.

OBEX Object Exchange Service

OBEX Object Exchange allows other Bluetooth devices to push contacts, business cards, pictures, appointments, and tasks to the MC55X.

Table 15   OBEX Exchange Information Data

Item	Description
Service Name	Displays the name of the service.
Service Security	Select the type of security from the drop-down list. Options are **None**, **Authenticate**, or **Authenticate/Encrypt**.
Business Card	Select Contact entry.
Do not allow clients to push objects	Disables clients from pushing objects to the MC55X.
Inbox Directory	Select a directory where another Bluetooth device can store files.

Personal Area Networking Service

Personal Area Networking hosts a Personal Area Network which allows communication with other Bluetooth devices.

Table 16   Personal Area Networking Data

Item	Description
Service Name	Displays the name of the service.
Service Security	Select the type of security from the drop-down list. Options are **None**, **Authenticate**, or **Authenticate/Encrypt**.
Support Group Ad-Hoc Networking	Select to enable Ad-Hoc networking.

Serial Port Service

Serial port allows other Bluetooth devices to access COM ports.

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Table 17 Serial Port Services Data

Item	Description
Service Name	Displays the name of the service.
Service Security	Select the type of security from the drop-down list. Options are **None**, **Authenticate**, or **Authenticate/Encrypt**.
Local COM Port	Select the COM port.
Local Baud Rate	Select the communication baud rate.
Local Port Options	Select the port option.

A2DP Service

Advanced Audio Distribution (A2DP) hosts connects from Bluetooth devices supporting high-quality stereo audio.

Table 18 Advanced Audio Distribution Data

Item	Description
Service Name	Displays the name of the audio service.

AVRCP Service

Audio Video Remote Control (AVRCP) hosts connections from Bluetooth devices supporting audio remote-control functionality.

Table 19 Audio Video Remote Control Data

Item	Description
Service Name	Displays the name of the audio service.

Security

Security settings allows the user to set global security policies for Bluetooth. Note that these settings are only active on local Services that are set to Authenticate or Authenticate/Encryption. The user can set authentication on local Services under Services.

To adjust the security settings for an individual service, select **Services** first, then select the individual service, then **Properties**.

Figure 79 BTExplorer Settings - Security

> **NOTE:** To use PIN Code, select **Authenticate** or **Authenticate/Encrypt** from the Service Security drop-down list on each local service.

Table 20 Security Data

Item	Description
Use PIN Code (Incoming Connection)	Select for automatic use of the PIN code entered in the **PIN Code** text box. It is recommended not to use this automatic PIN code feature. See Security on page 60 for more information.
PIN Code	Enter the PIN code.
Encrypt Link On All Outgoing Connections	Select to enable or disable encryption on all outgoing connections to other Bluetooth devices.

Discovery

Use **Discovery** to set and modify discovered devices.

Figure 80 BTExplorer Settings - Discovery

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Table 21 Discovery Data

Item	Description
Inquiry Length	Sets the amount of time the MC55X takes to discover Bluetooth devices in the area.
Name Discovery Mode	Select either **Automatic** or **Manual** to automatically attempt to discover a Bluetooth device's name after finding the device.
Discovered Devices - Delete Devices	Deletes all discovered devices and link keys from memory.
Discovered Devices - Delete Linked Keys	Removes all pairing from remote Bluetooth devices, and makes them all un-trusted.

Virtual COM Port

Virtual COM Port defines which COM ports BTExplorer attempts to use for virtual COM ports. Check the appropriate checkbox to use the port as a virtual COM port. When finished, choose **Apply** to enforce changes, or **Revert** to restore the original settings.

Table 22 Virtual COM Port Data

Item	Description
COM5:Bluetooth	Enable or disable COM Port 5.
COM9:Bluetooth	Enable or disable COM Port 9.
COM11:Bluetooth	Enable or disable COM Port 11.
COM21:Bluetooth	Enable or disable COM Port 21.
COM22:Bluetooth	Enable or disable COM Port 22.
COM23:Bluetooth	Enable or disable COM Port 23.

HID

Use **HID** to select The Human Interface Device Profile programming interface that defines the protocols and procedures to be used to implement HID capabilities.

Provides support for devices such as mice, joysticks, keyboards.

Table 23 HID Data

Item	Description
Enable Key Repeat	Enables key repeat functionality.
Delay	To increase key repeat delay, drag the **Delay** slider to the right. To decrease key repeat delay, drag the **Delay** slider to the left.
Rate	To increase key repeat speed, drag the **Rate** slider to the left. To decrease key repeat speed, drag the **Rate** slider to the right.

Profiles

Use **Profile** to load or remove Bluetooth services profiles. If a profile is not used, it can be removed to save memory.

1. Tap a check box next to the profile to load (activate).

   The Serial Port profile is always active and cannot be removed.

2. Tap **Select All** to select all profiles or tap **Deselect All** to deselect all profiles.

3. Tap **Apply** to activate the profiles and then **Close** to exit the application.

System Parameters

Use **System Parameters** to set device connection settings.

Table 24   System Parameters Data

Item	Description
Page Timeout	Sets the amount of time the MC55X searches for a device before moving on the next device.
Link Supervision Timeout	Sets the amount of time that the MC55X will wait for a device to come back into range after it has gone out of range. If the device does not come back into range by the set time, the MC55X drops the connection.

Miscellaneous

Use **Miscellaneous** to set color and types to better view active connections.

Table 25   Miscellaneous Data

Item	Description
Highlight Connections	Select the connection type to highlight when connected. In the Wizard Mode, the only options are *Favorites* or *None*. In the Explorer Mode the options are **None**, **Tree View Only**, **List View Only**, or **Tree and List View**.
Apply Text Style	Select the text style to apply to the connection text.
Apply Text Color	Select the text color to apply to the connection text.

Settings

This chapter provides information for customizing the MC55X.

Settings Folder

Table 26 lists setting applications pre-installed on the MC55X. Tap 🟦 > **Settings** to open the **Settings tab**.

Table 26   Setting Applications

Icon	Description	Icon	Description
	Clock & Alarms - Set the device clock to the date and time of the current location. Alarms can also be set at specified days and times of a week.		**Lock** - Set a password for the MC55X.
	Home - Customize the appearance of the Home screen and the information to display on it.		**Sounds & Notifications** - Enable sounds for events, notifications, and more, and set the type of notification for different events.
	Connections Folder - Contains connection setting applications.		**System Folder** - Contains system setting applications.
	Personal Folder - Contains personal setting applications.		
Connections Folder			
	Beam - Set the MC55X to receive incoming IrDA beams.		**Connections** - Set up one or more types of modem connections for the device, such as phone dial-up, cellular, Bluetooth, and more, so that the MC55X can connect to the Internet or a private local network.
	Bluetooth - Turn on Bluetooth, set the MC55X to visible mode and scan for other Bluetooth devices in the area.		**Domain Enroll** - Make the device an AD domain member for device management and security.
	Wi-Fi - Setup wireless network connection and customize settings.		**USB to PC** - Need info

Table 26 Setting Applications (Continued)

Icon	Description	Icon	Description
	Wireless Manager - Enables or disables the MC55X's wireless radios and customizes Wi-Fi, Bluetooth and Phone settings.		
Personal Folder			
	Buttons - Assign a program to a button.		**Owner Information** - Enter personal information on the MC55X.
System Folder			
	About - View basic information such as the Windows Embedded handheld version and type of processor used on the MC55X.		**Certificates** - See information about certificates installed on the MC55X.
	Backlight - Set backlight settings. Refer to Backlight Settings on page 95.		**DataWedge** - Enable data capture using the camera or imager.
	Error Reporting - Enable or disable the Microsoft's error reporting function.		**Encryption** - Allow files on a storage card to be encrypted. Encrypted files are readable only on the device.
	IST Settings - Set the appropriate setting for configuring the MC55X's Interactive Sensor Technology. Refer to IST Settings on page 97.		**Managed Programs** - Displays the programs that were installed on the MC55X using Mobile Device Manager.
	Keylight - Set the keypad backlight time-out. Refer to Keypad Backlight Settings on page 95.		**Memory** - Check the device memory allocation status and memory card information and stop currently running programs.
	Regional Settings - Set the regional configuration to use, including the format for displaying numbers, currency, date, and time on the MC55X.		**Power** - Check battery power and set the time-out for turning off the display to conserve battery power. Refer to Power Settings on page 94.
	Remove Programs - Remove programs that were installed on the MC55X.		**System Info** - Obtain system information.
	Screen - Change the screen orientation, re-calibrate the screen, and change the screen text size.		**Task Manager** - Stop running programs.
	USBConfig - Configure the MC55X USB port. Refer to USB Configuration on page 95.		**UI Settings** - Set Start screen layout and IE zoom feature. Refer to UI Settings on page 96.

Locking the MC55X

Use the **Password** window to set a password to disable unauthorized access to the MC55X.

> ✓ **NOTE:** If the device is configured to connect to a network, use a strong (difficult to figure out) password to help protect network security. Password cracking tools continue to improve and the computers used to crack passwords are more powerful than ever.
>
> If the user enters an incorrect password eight times, the user is requested to enter a code before trying again.
>
> If the user forgets the password, contact the system administrator.

1. Tap 🔲 > **Settings** > **Lock**.

Figure 81   Password Window
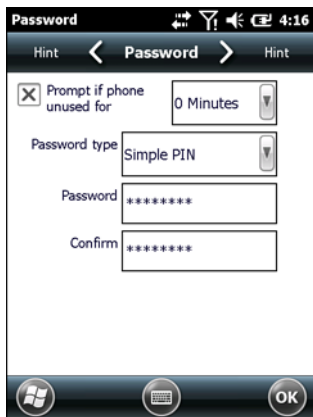
2. Select **Prompt if device unused for** check box to enable password protection.
3. From the drop-down list, select a time value for the protection to take affect after non-use.
4. From the **Password type:** drop-down list, select either **Simple PIN** or **Strong alphanumeric**.
5. For a simple password, enter a four-digit password in the **Password** field.

    For a stronger password:

    a. Enter a seven character password in the **Password:** field. A strong password must contain at least seven characters and contain at least three of the following: uppercase and lowercase letters, numerals, and punctuation.

    b. Re-enter the password in the **Confirm:** field.
6. Tap **OK**.
7. Tap **OK**.

Power Settings

To set the MC55X to turn off after a short period of non-use:

1. Tap 🔲 > **Setting** > **System** > **Power**.
2. **Tap the Advanced tab.**

3. Select the **On battery power: Turn off device if not used for check box** and select a value from the drop-down list.

4. Select **OK**.

Backlight Settings

To change the backlight settings:

1. Tap   > **Settings** > **System** > **Backlight** > **Battery Power** tab.

2. Select the **Disable backlight if device is not used for** check box and select a value from the drop-down list.

3. Select the **Brightness** tab.

4. Tap the **Backlight Auto Mode** check box to disable auto mode.

5. Tap the **Disable backlight** check box to turn off the display backlight, or use the slider to set a low value for the backlight.

6. Tap the **Persist 'Disable backlight' setting over reset** check box to enable the settings to persist after a reset.

7. Tap **OK**.

Keypad Backlight Settings

To change the keypad backlight settings:

1. Tap   > **Settings** > **System** > **Keylight** > **Battery Power** tab.

2. Select the **Disable keylight if device if not used for** check box and select a value from the drop-down list.

3. Select the **Advanced** tab.

4. Tap the **Keylight Auto Mode** check box to disable auto mode.

5. Tap the **Disable keylight** check box to turn off the keypad backlight.

6. Tap the **Persist 'Disable keylight' setting over reset** check box to enable the settings to persist after a reset.

7. Tap **OK**.

USB Configuration

The MC55X can be placed into any of the following USB modes:

- **USB Client** - Sets the MC55X to USB Client mode.

- **USB Host** - Sets the MC55X to USB Host mode.

- **USB On-the-Go** - Sets the MC55X to automatically determine necessary mode (default).

To place the MC55X into one of these modes:

1. Tap   > **Settings** > **System** > **USBConfig**.

2. Select one of the USB radio buttons.

3. Tap **OK**.

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UI Settings

Use the **UI Settings** application to change the grid view in the **Start** screen and to control Zooming in Internet Explorer.

Start Screen Settings

To change the grid view of the **Start** screen:

1. Tap **Start> Settings** > **System** > **UI Settings**.
2. Tap the **Start Screen Settings** tab.

Figure 82　Start Screen Settings Tab
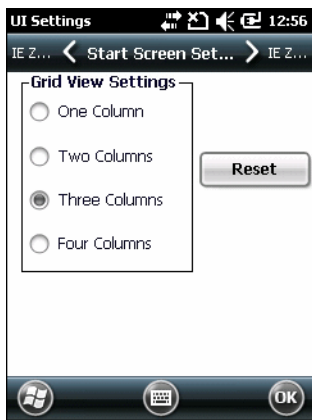
3. Select the number of columns.
4. Tap **OK**.

✓ **NOTE:** Tap **Reset** to return to the default **3 Column** setting.

5. Tap **OK**.
6. Preform a warm boot.

IE Zoom Mapping

When Internet Explorer opens, the volume keys on the side of the MC55X are used to zoom in and out. To disable IE Zoom Mapping:

1. Tap 🔲 > **Settings** > > **System** > **UI Settings**.
2. Tap the **IE Zoom Mapping** tab.

Figure 83   IE Zoom Mapping Tab
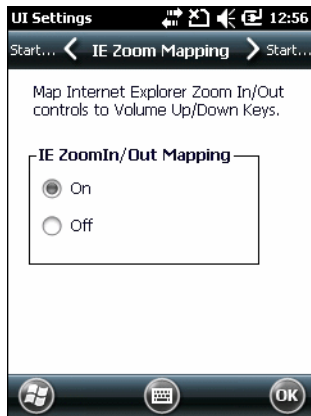
3.   Select **Off**.

4.   Tap **OK**.

5.   Tap **OK** to turn off mapping.

IST Settings

IST Control Panel Applet is an applet which needs to configure all the system wide actions based on IST sensor events and data. It provides a means to view version information of all the components used in the sensor system, change Display settings, to configure power management activity, Events notification and Sensors view. Also it provides facility to visualize sensor data in different ways and configurations required for sensors such as setting sensor threshold values, sensor calibration and etc.

Info Tab

Use the **IST Info** tab to view IST software version information.

Figure 84   IST Info Tab

Display Tab

Use the **Display** tab configure display interaction settings.

Figure 85   Display Tab

The Auto Orientation parameter controls the display rotation according to the MC55X orientation. Select the **Auto Orientation** checkbox to enable this feature. Auto orientation is disabled by default. To manually set the screen orientation, tap the **Manual Setting** button.

Power Management Tab

Use the **Power Management** tab to configure power management settings.

Figure 86   Power Management Tab
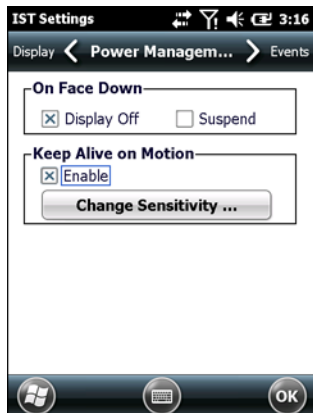
On Face Down

The **On Face Down** section provides configurable options to control what happens when the MC667 is placed with the display face down.

Select the **Display Off** checkbox to turn off the backlight when the MC55X is placed face-down. The backlight automatically powers on when the MC55X is tuned face-up.

Select the **Suspend** checkbox to suspend the MC55X when it placed face-down. To wake the MC55X use the controls listed in the **Wake Up on Motion** section below.

Keep Alive On Motion

Select the **Enabled** checkbox to prevent the MC55X from going into suspend mode while it is in motion. The motion sensitivity is configurable. To set the sensitivity, tap the **Change Sensitivity** button.

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NOTE: There is no time out defined for suspend due to IST inactivity. To aggressively manage power, while there is no motion, set the MC55X suspend time out to a very short time using system power settings. This setting suspends the MC55X when there is no motion activity or any other activity within this set time out.

Setting Sensitivity

Use the slider to set the sensitivity. A low setting indicates that a harder shake (faster movement) is required for the IST to initiate a wake up action. The sensitivity can be set from "0" to "10" and when the sensitivity is set to lower values a simple shake/motion can be detected by IST. A high setting allows IST to issue a wake up action when an easier movement to the MC55X is detected. Shake the MC55X to test the set sensitivity. An audio sound is heard and a message is displayed on screen when the shaking level reaches the set sensitivity level.

Figure 87   Set IST Sensitivity Window
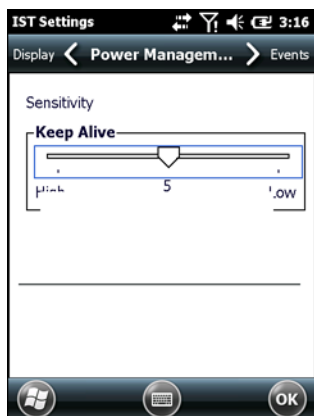
Events Tab

Use the **Event** tab to enable or disable free fall sound and facilitates to set the free fall sound file as desired.

Figure 88   Event Window
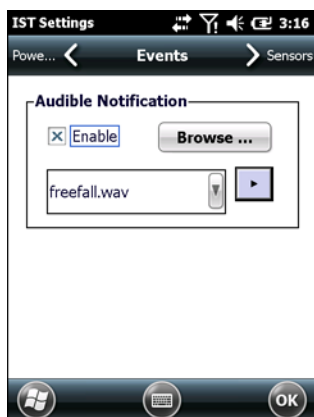
Use the Audible Notification panel to enable playing of a wave file when the MC55X is dropped. Select a desired .wav file from the Sounds: drop-down list.

Sensors Tab

The **Sensor** tab displays all the sensors available in the MC55X:

- Orientation - displays the orientation of the MC55X in pictorial and graphical views.

- Motion - detects High G or Free Fall of the device. Value 0 is no motion detected. When a Free Fall is detected sensor Visualize window will play a wave with highest amplitude.

- Acceleration - displays device acceleration along the X, Y and Z axis.

- Tilt Angle - Provide angular rotation with respect to the horizontal plane.

- eCompass - displays the device's rotation with respect to the earth's magnetic north.

Tap a sensor icon to display the sensor information screen. Sensor data can be viewed in Graphical or Visual mode. Sensor Calibration is provided in Settings button if supported.

Figure 89 Sensors Tab

The following sensor information displays for each sensor.

- Sensor Name
- Sensor ID
- Range
- Unit
- Scale
- Connectivity
- Device status.

The **Setting** button shows if the selected sensor has any parameter that is user configurable including calibration (if supported). This screen is specific to a particular sensor.

Tap **Visualize** to display sensor in a pictorial view.

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Figure 90   Visualize Screen Example
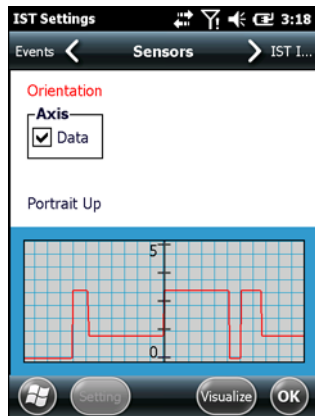
Accessories

Introduction

MC55X accessories, listed below, provide a variety of product support capabilities.

Accessories

Table 27 lists the accessories available for the MC55X.

Table 27 MC55X Accessories

Accessory	Part Number	Description
Cradles		
Single Slot USB Cradle	CRD5500-1000UR	Charges the MC55X main battery and a spare battery. Synchronizes the MC55X with a host computer through a USB connection.
Single Slot Ethernet/Modem/USB Cradle	CRD5501-1000XR	Charges the MC55X main battery and a spare battery. Synchronizes the MC55X with a host computer through an Ethernet, Modem or USB connection.
Four Slot Charge Only Cradle	CRD5501-4000CR	Charges up to four MC55X devices.
Four Slot Ethernet Cradle	CRD5501-4000ER	Charges up to four MC55X devices and connects the MC55X with an Ethernet network. CRD5501-4000ER provides up to a maximum of 1 Gbps.
Vehicle Cradle	VCD5500-1001R	Installs in a vehicle and charges the MC55X main battery.
Vehicle Holder	VCH5500-1000R	Provides an alternative mounting solution for the MC55X in a vehicle. Requires the Auto Charge cable for charging the MC55X battery.
Chargers		
Four Slot Spare Battery Charger	SAC5500-4000CR	Charges up to four MC55X battery packs.
Power Supply	PWR-BGA5V16W0WW	Provides power to the MC55X using the USB Charging Cable or Charge Only Cable.

Table 27 MC55X Accessories (Continued)

Accessory	Part Number	Description
Power Supply	PWR-BGA12V50W0WW	Provides power to the Single Slot USB cradle and Four Slot Spare Battery Charger.
Power Supply	PWR-BGA12V108W0WW	Provides power to the Four Slot Charge Only cradle or Four Slot Ethernet cradles.
USB Charging Cable	25-108022-03R	Provides power to the MC55X and USB communication with a host computer.
Charge Only Cable	25-112560-02R	Connects to a power supply to provide power to the MC55X.
Auto Charge Cable	VCA5500-01R	Charges the MC55X using a vehicle's cigarette lighter.
DC Cable	CBL-DC-388A1-01	Provides power from the power supply to the single slot cradles.
DC Cable	CBL-DC-382A1-01	Provides power from the power supply to the Four Slot cradles.
Miscellaneous		
Spare 3600 mAh lithium-ion battery	BTRY-MC55EAB02 BTRY-MC55EAB02-10 BTRY-MC55EAB02-50	Replacement 3600 mAh battery. (10-pack) (50-pack)
DEX Cable	25-127558-01R	For use with electronic data exchange For example, vending machines.
USB Client Communication Cable	25-68596-01R	Provides USB communication between the Single Slot USB Cradle and a host computer.
Printer Cable	25-136283-01R	Provides connection to a Monarch/Paxar Serial printer.
Trigger Handle	TRG5500-101R	Adds a gun-style handle with a scanning trigger for comfortable and productive data capture.
Trigger Handle Hand Strap	21-138874-01R	Handstrap for the Trigger handle.
Magnetic Stripe Reader	MSR5500-100R	Captures data from magnetic stripe cards.
Belt Mounted Rigid Holster	SG-MC5511110-01R	Clips onto belt to hold the MC55X when not in use.
Fabric Holster	SG-MC5521110-01R	Soft holder for added protection.
Stylus	KT-119150-03R KT-119150-50R	Replacement stylus (3-pack). Replacement stylus (50-pack).
Spring Loaded Stylus	STYLUS-00001-03R STYLUS-00001-10R	Optional spring loaded stylus (3-pack). Optional spring loaded stylus (10-pack).
Stylus with Tether	Stylus-00003-03R Stylus-00003-50R	Spare stylus with tether (3-pack). (50-pack).
Spare Tether	KT-122621-03R KT-122621-50R	Replacement tether (3-pack). (50-pack).

Table 27 MC55X Accessories (Continued)

Accessory	Part Number	Description
Handstrap	SG-MC5523341-03R	Replacement handstrap with pin
Wall Mounting Kit	KT-136648-01R	Use for wall mounting the four slot cradles.
Screen Protector	KT-137521-03R	Package of 3 screen protectors.

Single Slot USB Cradle

This section describes how to use a Single Slot USB cradle with the MC55X. For USB communication setup procedures refer to the MC55X Integrator Guide.

The Single Slot USB Cradle:

- Provides 5.4 VDC power for operating the MC55X.
- Synchronizes information between the MC55X and a host computer. Refer to the MC55X Integrator Guide for information on setting up a partnership between the MC55X and a host computer.
- Charges the MC55X's battery.
- Charges a spare battery.

Charging the MC55X Battery

Connect the cradle to power. Insert the MC55X into the slot to begin charging.

Figure 91   MC55X Battery Charging
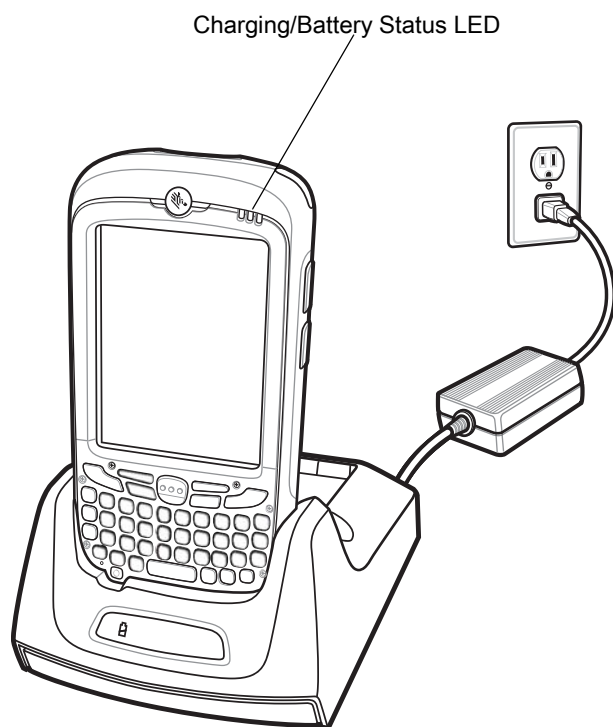
Charging the Spare Battery

Figure 92   Spare Battery Charging

Spare Battery

Spare Battery
Charging LED
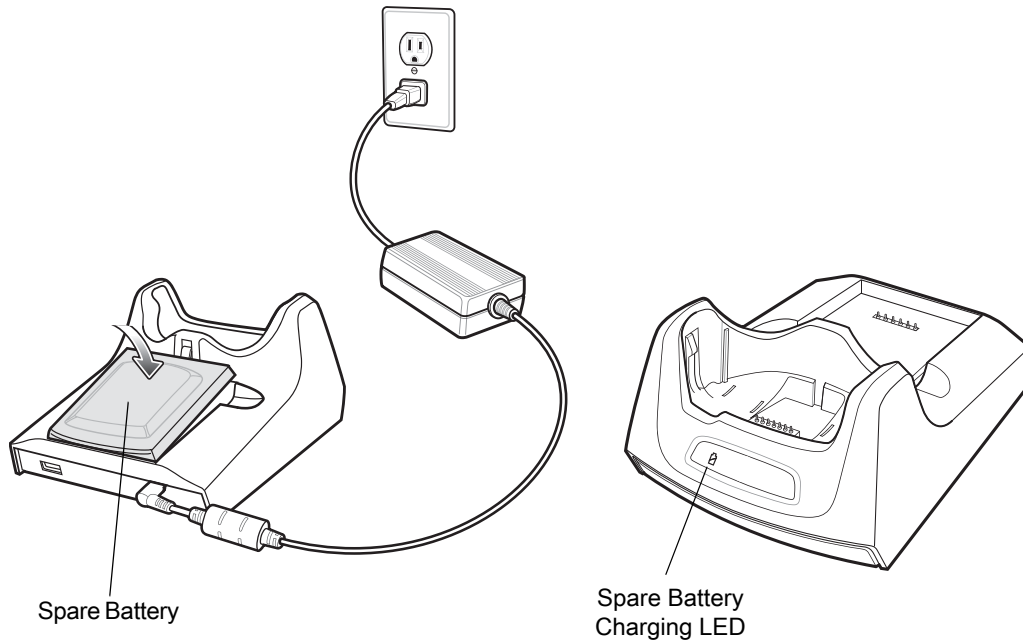
Battery Charging Indicators

The Single Slot USB Cradle charges the MC55X's main battery and a spare battery simultaneously.

The MC55X's charge LED indicates the status of the battery charging in the MC55X. See Table 2 on page 17 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 28 for charging status indications.

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 MC55X.

To accomplish this, for small periods of time, the MC55X or accessory alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC55X or accessory indicates when charging is disabled due to abnormal temperatures via its LED. See Table 2 on page 17 and Table 28.

Table 28   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.

Table 28   Spare Battery LED Charging Indicators (Continued)

Spare Battery LED (on cradle)	Indication
Solid Amber	Charging complete.
Fast Blinking Amber	Charging error.

Single-slot Ethernet/Modem/USB Cradle

The CRD5501-1000XR cradle provides connection to a host computer using USB, a dial-up network using the modem or an Ethernet network.

Refer to the MC55X Integrator Guide for information on setting up the cradle.

Country Settings

The modem defaults to operation with US telephone networks. To operate the modem with other country telephone networks, it must be configured using an application on the MC55X. Download the Cradle Modem Country Configurator Application Software for MC55xx package from the Zebra Support Central web site: http://www.zebra.com/support.

Following the instructions with the software package to install the application on the MC55X.

The application includes country selections for all supported countries and automatically programs the modem and adjust its operating parameters to comply with the telephone network in the selected country.

Connection Setup

Figure 93   Connection Setup
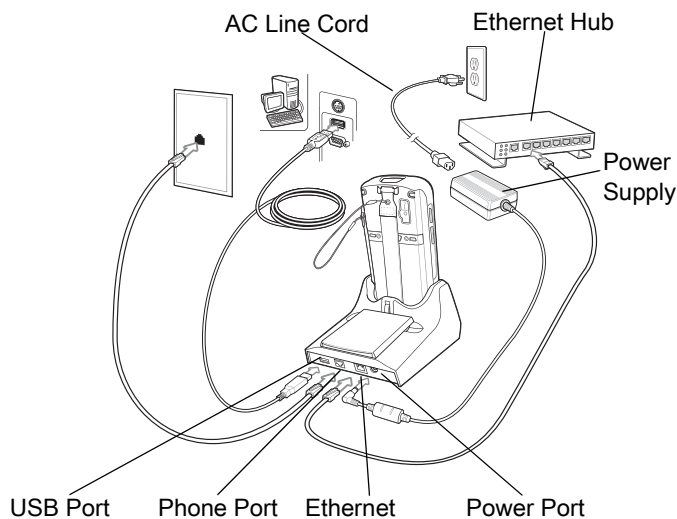
Figure 94   Connection Switch
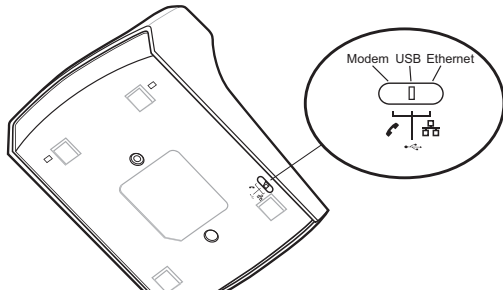
Indicators

Figure 95   Indicators

Spare Battery   Ethernet/Modem LED   Speed LED   Link LED
Charging
LED
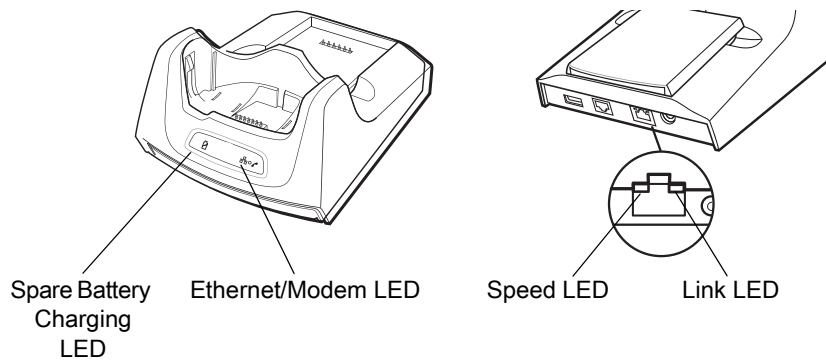
- Spare Battery Charging LED - Indicates the charging status of the spare battery.

- Ethernet/Modem LED - Blink whenever Ethernet or modem connectivity is established.

- Speed LED (green) - Indicates that the transfer rate is 100 Mbps. When it is not lit it indicates that the transfer rate is 10 Mbps.

- Link LED (yellow) - Blinks to indicate activity, or stays lit to indicate that a link is established. When it is not lit it indicates there is no link.

Operation

NOTE: The CRD5501-1000XR does not support hot swapping between operational modes. After moving the switch into a different position, remove the MC55X from the cradle and then re-insert into the cradle.

Ethernet Connection

Place the Connection switch on the bottom of the cradle to the Ethernet position.

Place the MC55X into the cradle.

To test the connection, tap > Programs > Internet Explorer. Enter a web address.

Modem Connection

Place the Connection switch on the bottom of the cradle to the Modem position.

Place the MC55X into the cradle.

The MC55X dials the phone number and connects to the web site.

Four Slot Charge Only Cradle

This section describes how to set up and use a Four Slot Charge Only cradle with the MC55X.

The Four Slot Charge Only cradle:

- Provides 5.4 VDC power for operating the MC55X.
- Simultaneously charges up to four MC55X devices.

Charging

Insert the MC55X into a slot to begin charging.

Figure 96 MC55X Battery Charging

Battery Charging Indicators

The MC55X's charge LED shows the status of the battery charging in the MC55X. See for charging status indications.

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 MC55X.

To accomplish this, for small periods of time, the MC55X or accessory alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC55X or accessory indicates when charging is disabled due to abnormal temperatures via its LED. See .

Four Slot Ethernet Cradle

This section describes how to use a Four Slot Ethernet cradle with the MC55X. For cradle communication setup procedures refer to the MC55X Integrator Guide.

The Four Slot Ethernet cradle:

- Provides 5.4 VDC power for operating the MC55X.
- Connects the MC55X (up to four) to an Ethernet network.
- Simultaneously charges up to four MC55X devices.

Charging

Insert the MC55X into a slot to begin charging.

Figure 97   MC55X Battery Charging
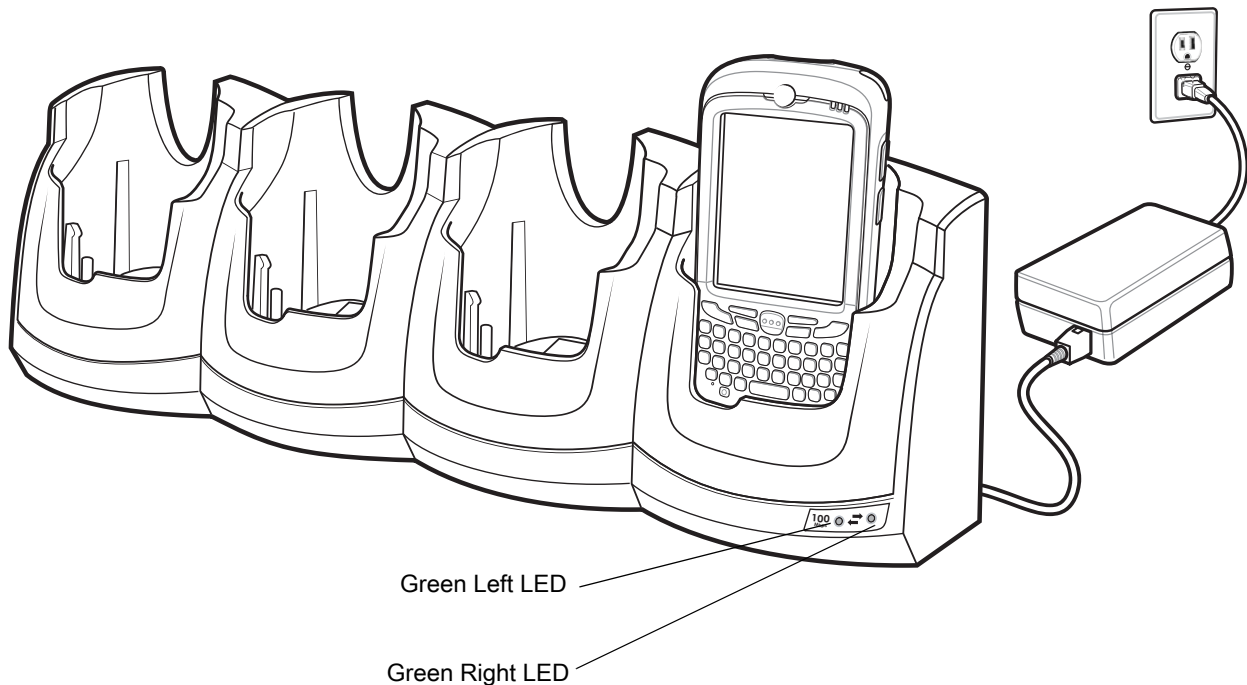
Green Left LED

Green Right LED

The MC55X's charge LED shows the status of the battery charging in the MC55X. See Table 2 on page 17 for charging status indications. The 3600 mAh battery fully charges in less than six hours.

Charge batteries in temperatures from 0°C to 40°C (32°F to 104°F). Charging is intelligently controlled by the MC55X.

To accomplish this, for small periods of time, the MC55X alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC55X indicates when charging is disabled due to abnormal temperatures via its LED. See Table 2 on page 17.

Communication

Insert the MC55X into the slot to initiate communication over an Ethernet network. The LEDs on the front of the cradle indicate the speed and activity of the connection.

LED Indicators

There are two green LEDs on the front of the cradle. These green LEDs light and blink to indicate the data transfer rate. When the LEDs are not lit the transfer rate is 10 Mbps.

Table 29 CRD5501-4000ER LED Data Rate Indicators

Data Rate	Left LED (Green)	Right LED (Green)
1 Gbps	On/Blink	Off
100 Mbps	Off	On/Blink
10 Mbps	Off	Off

VCD5000 Vehicle Cradle

This section describes how to use a VCD5000 vehicle cradle with the MC55X. For cradle installation and communication setup procedures refer to the MC55X Integrator Guide.

Once installed in a vehicle, the cradle:

- holds the MC55X securely in place
- provides power for operating the MC55X
- re-charges the battery in the MC55X.

Charging the MC55X Battery

Insert the MC55X into the vehicle cradle to begin charging. A click indicates that the MC55X button release locking mechanism is enabled and the MC55X is locked in place.

Figure 98   MC55X Battery Charging
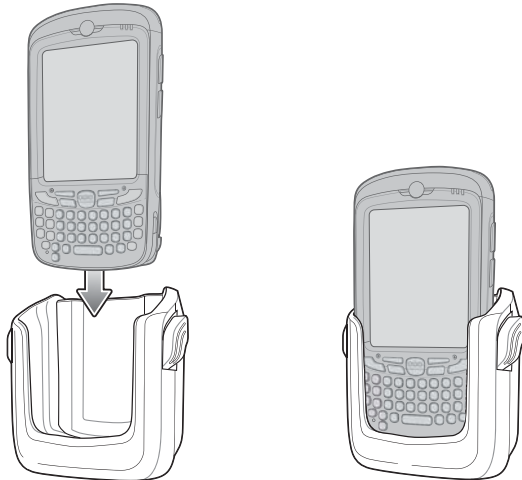
> ⚠️ **CAUTION:** Ensure the MC55X is fully inserted in the cradle. Lack of proper insertion may result in property damage or personal injury. Zebra is not responsible for any loss resulting from the use of the products while driving.

Removing the MC55X

To remove the MC55X, hold back the release lever on the cradle and pull the MC55X up and out of the cradle.

Figure 99   Removing the MC55X
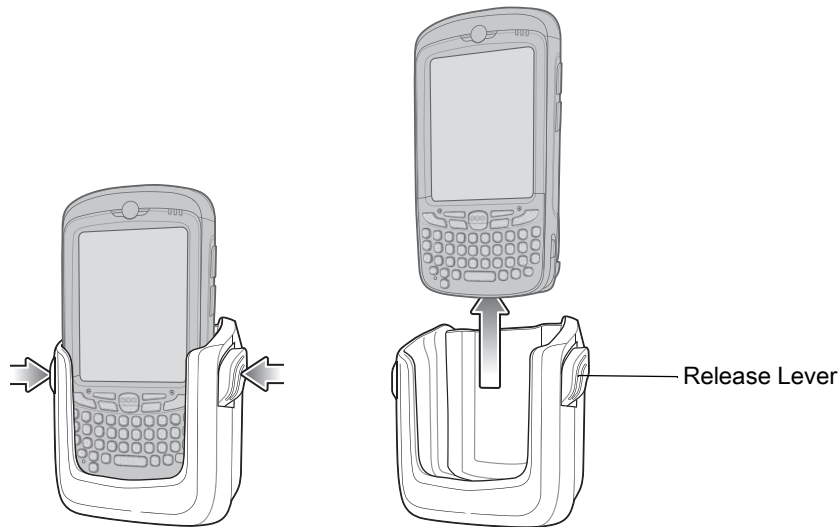
Release Lever

Battery Charging Indicators

The MC55X's charge LED indicates the status of the battery charging in the MC55X. See Table 2 on page 17 for charging status indications.

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 MC55X.

To accomplish this, for small periods of time, the MC55X alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC55X indicates when charging is disabled due to abnormal temperatures via its LED. See Table 2 on page 17.

Four Slot Battery Charger

This section describes how to use the Four Slot Battery Charger to charge up to four MC55X 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 100   Four Slot Battery Charger

Battery

Battery Charging
LEDs (4)

Battery Charging Indicators

The charger has an amber LED for each battery charging well. See Table 30 for charging status indications. 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 MC55X.

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 30.

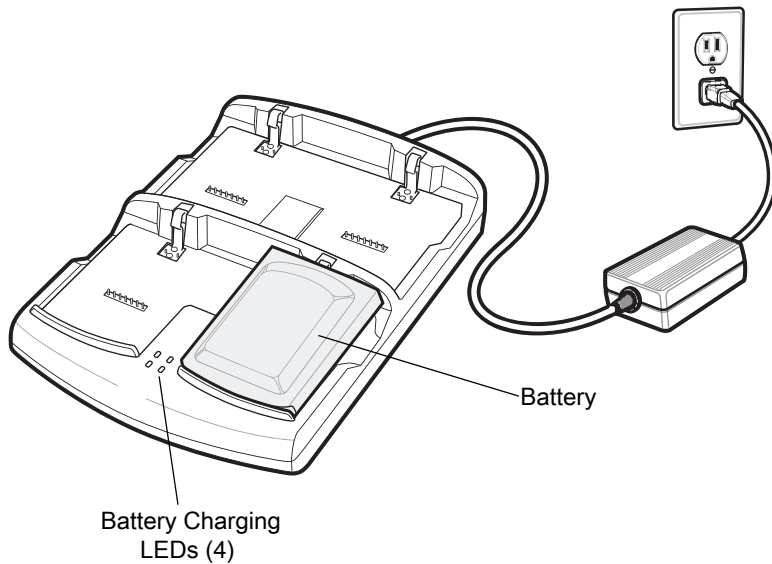**Table 30**   Battery LED Charging Indicators

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

Table 30   Battery LED Charging Indicators (Continued)

LED	Indication
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 MC55X with operating and charging power when used with the Zebra approved power supply.
  - Synchronize information between the MC55X and a host computer. With customized or third party software, it can also synchronize the MC55X with corporate databases.
- Charge Only cable
  - Provide the MC55X with operating and charging power when used with the Zebra approved power supply.
- Auto Charge cable.
  - Provide the MC55X with operating and charging power when used with the Zebra approved power supply.
- DEX cable
  - Provides communication with electronic data exchange devices, such as vending machines.

Battery Charging and Operating Power

The communication/charge cables can charge the MC55X battery and supply operating power.

To charge the MC55X battery:

1. Connect the communication/charge cable power input connector to the Zebra approved power source.
2. Slide the bottom of the MC55X into the connector cup end of the communication/charge cable and gently press in until it latches into the MC55X.
3. Slide the two locking tabs up until they both lock into position.

Figure 101   Cable Cup Locking Tabs
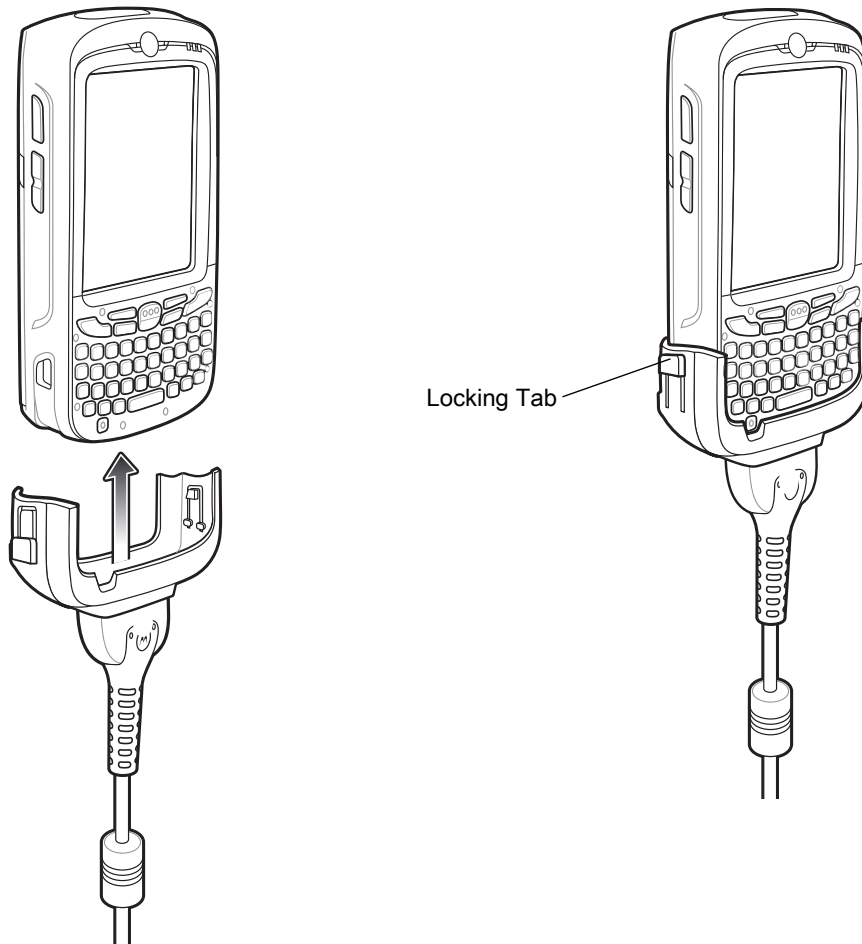
The MC55X amber Charge LED indicates the MC55X battery charging status. The 3600 mAh standard battery charges in less than six hours. See Table 2 on page 17 for charging status indications.

4. When charging is complete, push the two locking tab down and remove the cable from the MC55X.

LED Charge Indications

The amber Charge LED on the MC55X indicates battery charging status. See Table 2 on page 17 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 MC55X.

To accomplish this, for small periods of time, the MC55X or accessory alternately enables and disables battery charging to keep the battery at acceptable temperatures. The MC55X or accessory indicates when charging is disabled due to abnormal temperatures via its LED. See Table 2 on page 17.

Trigger Handle

The TRG5500 Trigger Handle adds a gun-style handle with a scanning trigger to the MC55X. It increases comfort when using the MC55X in scan-intensive applications for extended periods of time.

Figure 102   Trigger Handle Features
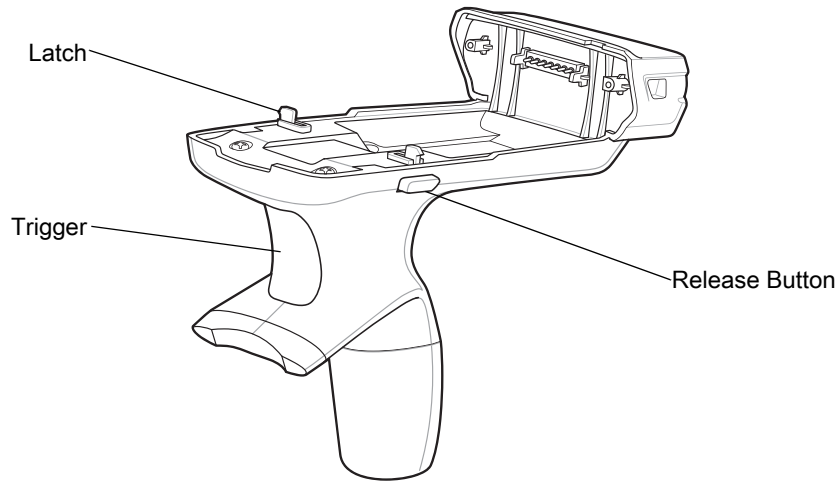
Inserting the MC55X into the Trigger Handle

Slide the MC55X into the Trigger Handle until it locks in place. The latches secure the MC55X to the Trigger Handle.

Figure 103   Installing the MC55X
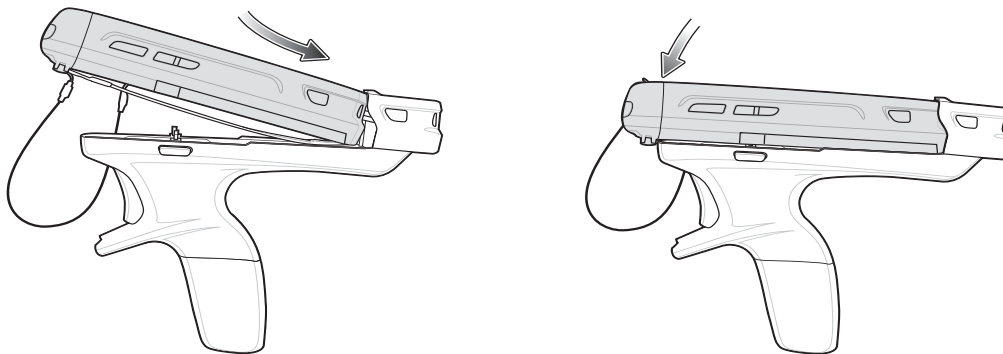
Removing the MC55X

To remove the MC55X, press the release buttons and pull the MC55X forward.

Scanning

To scan bar codes:

NOTE: A scanning application must be installed prior to scanning a bar code.

1. Start the MC55X's scanning application.
2. Aim the MC55X at the bar code.
3. Press the trigger on the handle. The Scan/Decode LED lights and a beep sounds to indicate a successful decode.

Figure 104   Scanning with the Trigger Handle
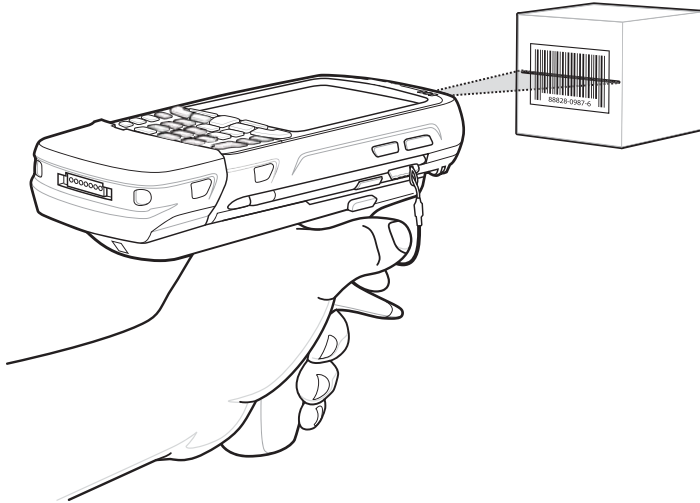
Using the RS507 Hands-free Imager

An RS507 Hands-free Imager can be used with the MC55X to capture bar code data.

To set up the MC55X and RS507:

1. Tap > BTScannerCtlPanel icon.

2. Select the BT Scanner checkbox and then select the appropriate Com port from the drop-down list.

3. Tap Save and Exit.

4. Tap > BTUI.

5. Tap Pairing Barcode. A bar code displays.

Figure 105 Pairing Bar Code
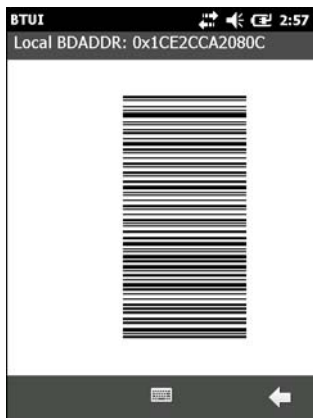
6. Point the RS507 at the bar code. The RS507 reads the bar code and begins pairing with the MC55X. If required, enter PIN (12345). Tap Yes.

7. If using DataWedge, configure DataWedge to use the Bluetooth SSI Scanner Driver. See DataWedge on page 44 for setup instructions.

8. Launch a scanning enabled application or DataWedge.

9. Point the RS507 at a bar code to read the bar code data.

Refer to the RS507 Hands-free Imager Product Reference Guide for more information.

Maintenance & Troubleshooting

Introduction

This chapter includes instructions on cleaning and storing the MC55X, and provides troubleshooting solutions for potential problems during MC55X operation.

Maintaining the MC55X

For trouble-free service, observe the following tips when using the MC55X:

- Do not scratch the screen of the MC55X. When working with the MC55X, 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 MC55X screen.

  Zebra recommends using a screen protector, p/n KT-129195-01R.

- The touch-sensitive screen of the MC55X is glass. Do not to drop the MC55X or subject it to strong impact.

- Protect the MC55X 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 MC55X in any location that is dusty, damp, or wet.

- Use a soft lens cloth to clean the MC55X. If the surface of the MC55X 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 MC55X. Zebra 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 MC55X. Zebra 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 106 Removing the Screen Protector
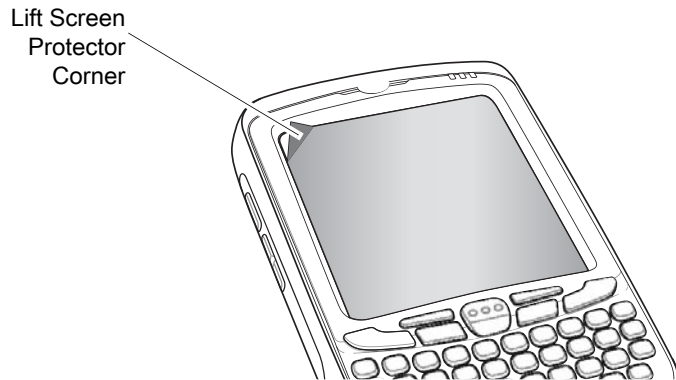
CAUTION: Do not use a sharp object to remove the protector. Doing so can damage the touch panel.

NOTE: Not using a screen protector can affect warranty coverage. To purchase replacement protectors, contact a local account manager or Zebra Technologies Corporation. These include screen protector installation instructions. Part number: KT-129195-01R 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 the user has any questions about the compatibility of a battery or a charger, contact Zebra Global Customer 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 Zebra hologram. Do not fit any battery without checking it has the Zebra 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 the user suspects damage to the equipment or battery, contact Zebra Global Customer Support to arrange for inspection.

Cleaning

CAUTION: Always wear eye protection.

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

If the user has to use any other solution for medical reasons please contact Zebra 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.

Approved Cleanser Active Ingredients

100% of the active ingredients in any cleaner must consist of one or some combination of the following: isopropyl alcohol, or mild dish soap.

Harmful Ingredients

The following chemicals are known to damage the plastics on the MC55X and should not come in contact with the device: ammonia solutions, compounds of amines or ammonia; acetone; ketones; ethers; aromatic and chlorinated hydrocarbons; acqueous or alcoholic alkaline solutions; ethanolamine; toluene; trichloroethylene; benzene; carbolic acid and TB-lysoform.

Cleaning Instructions

Do not apply liquid directly to the MC55X. Dampen a soft cloth or use pre-moistened wipes. Do not wrap the device in the cloth or wipe, but gently wipe the unit. Be careful not to let liquid pool around the display window or other places. Allow the unit to air dry before use.

Special Cleaning Notes

Many vinyl gloves contain phthalate additives, which are often not recommended for medical use and are known to be harmful to the housing of the MC55X. The MC55X should not be handled while wearing vinyl gloves containing phthalates, or before hands are washed to remove contaminant residue after gloves are removed. If products containing any of the harmful ingredients listed above are used prior to handling the MC55X, such as hand sanitizer that contain ethanolamine, hands must be completely dry before handling the MC55X to prevent damage to the plastics.

Materials Required

- Alcohol wipes
- Lens tissue
- Cotton tipped applicators
- Isopropyl alcohol
- Can of compressed air with a tube.

Cleaning the MC55X

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 18.
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 MC55X. 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 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

MC55X

Table 31 Troubleshooting the MC55X

Problem	Cause	Solution
When pressing the power button the MC55X does not turn on.	Battery not charged.	Charge or replace the battery in the MC55X.
	Battery not installed properly.	Install the battery properly. See Installing the Battery on page 16.
	System crash.	Perform a reset. See Resetting the MC55X on page 32.
When pressing the power button the MC55X 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 MC55X.
Battery did not charge.	Battery failed.	Replace battery. If the MC55X still does not operate, perform a reset. See Resetting the MC55X on page 32.
	MC55X removed from cradle while battery was charging.	Insert MC55X 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.	MC55X not powered on.	Press the **Power** button.

Table 31   Troubleshooting the MC55X (Continued)

Problem	Cause	Solution
During data communication, no data transmitted, or transmitted data was incomplete.	MC55X removed from cradle or disconnected from host computer during communication.	Replace the MC55X 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 *MC55X Integrator Guide* for details.
No sound.	Volume setting is low or turned off.	Adjust the volume. See Adjusting Volume on page 31.
MC55X shuts off.	MC55X is inactive.	The MC55X turns off after a period of inactivity. If the MC55X is running on battery power, set this period from 1 to 5 minutes, in one-minute intervals. Tap 🟦 > **Settings** *>* **System** *>* **Power** *>* **Advanced** to configure*.*
	Battery is depleted.	Replace the battery.
	Battery is not inserted properly.	Insert the battery properly. See Installing the Battery on page 16.
Tapping the window buttons or icons does not activate the corresponding feature.	Screen is not calibrated correctly.	Re-calibrate the screen. See Calibrating the Screen on page 18.
	The device is not responding.	Reset the device. See Resetting the MC55X on page 32.
A message appears stating that the MC55X memory is full.	Too many files stored on the MC55X.	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 MC55X.	Remove user-installed applications on the MC55X to recover memory. Tap 🟦 > **Settings** *>* **System** tab and tap the **Remove Programs** icon. Select the unused program and tap **Remove.**

Table 31 Troubleshooting the MC55X (Continued)

Problem	Cause	Solution
The MC55X does not decode with reading bar code.	Scanning application is not loaded.	Load a scanning application on the MC55X or enable DataWedge. See or the system administrator.
	Unreadable bar code.	Ensure the symbol is not defaced.
	Distance between exit window and bar code is incorrect.	Place the MC55X within proper scanning range.
	MC55X is not programmed for the bar code.	Program the MC55X to accept the type of bar code being scanned. Refer to the EMDK or DataWedge application.
	MC55X is not programmed to generate a beep.	If the MC55X 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 MC55X low battery condition notification. Note: If the scanner is still not reading symbols, contact the distributor or Zebra.
	User is trying to decode a DPM bar code.	An MC55X with a DPM imager is required. Contact system administrator.
MC55X 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 (32.8 feet).
	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.
Cannot unlock MC55X.	User enters incorrect password.	If the user enters an incorrect password eight times, the user is requested to enter a code before trying again. If the user forgot the password, contact system administrator.

Single Slot USB Cradle

Table 32   Troubleshooting the Single Slot USB Cradle

Symptom	Possible Cause	Action
LEDs do not light when MC55X 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.
	MC55X is not seated firmly in the cradle.	Remove and re-insert the MC55X 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.
MC55X battery is not charging.	MC55X was removed from cradle or cradle was unplugged from AC power too soon.	Ensure cradle is receiving power. Ensure MC55X is seated correctly. Confirm the main battery is charging. Tap 🪟 > **Settings > Power > Battery** tab. 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 MC55X is not fully seated in the cradle.	Remove and re-insert the MC55X 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.	MC55X removed from cradle during communications.	Replace MC55X in cradle and retransmit.
	Communication software is not installed or configured properly.	Perform setup as described in the *MC55X Integrator Guide.*

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Four Slot Ethernet Cradle

Table 33   Troubleshooting the Four Slot Ethernet Cradle

Symptom	Cause	Solution
During communication, no data transmits, or transmitted data was incomplete.	MC55X removed from cradle during communications.	Replace MC55X in cradle and retransmit.
	MC55X has no active connection.	An icon is visible in the status bar if a connection is currently active.
Battery is not charging.	MC55X removed from the cradle too soon.	Replace the MC55X in the cradle. 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.
	MC55X is not inserted correctly in the cradle.	Remove the MC55X and reinsert it correctly.
	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 50°C (122°F).

Vehicle Cradle

Table 34   Troubleshooting the Vehicle Cradle

Symptom	Possible Cause	Action
MC55X 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.
MC55X battery is not recharging.	MC55X was removed from the cradle too soon.	Replace the MC55X in the cradle. The 3600 mAh battery fully charges in less than six hours.
	Battery is faulty.	Replace the battery.
	MC55X is not placed correctly in the cradle.	Remove the MC55X from the cradle, and re-insert correctly. If the battery still does not charge, contact customer support. The MC55X battery charging LED slowly blinks amber when the MC55X is correctly inserted and charging.
	Ambient temperature of the cradle is too warm.	Move to an area where the ambient temperature is between -20°C and 50°C 50°C (-4°F and 122°F).

Four Slot Battery Charger

Table 35   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 36   Troubleshooting the Cables

Symptom	Possible Cause	Action
MC55X battery is not charging.	MC55X was disconnected from AC power too soon.	Connect the power cable correctly. Confirm main battery is charging. Tap 🟦 > **Power** > **Settings** > **Battery** tab. 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 MC55X is not fully attached to power.	Detach and re-attach the power cable to the MC55X, ensuring it is firmly connected.
During data communication, no data transmits, or transmitted data was incomplete.	Cable was disconnected from MC55X 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 MC55X Integrator Guide.

Magnetic Stripe Reader

Table 37   Troubleshooting the Magnetic Stripe Reader

Symptom	Possible Cause	Action
MSR cannot read card.	MSR removed from MC55X during card swipe.	Reattach MSR to MC55X and reswipe the card.
	Faulty magnetic stripe on card.	Try another card. If condition still exist, contact the system administrator.
	Swipe speed is too fast or too slow.	Re-swipe card using a constant swipe speed.
	MSR application is not installed or configured properly.	Ensure the MSR application is installed on the MC55X. Ensure the MSR application is configured correctly.
MC55X battery is not charging.	MC55X was removed from MSR or MSR was unplugged from AC power too soon.	Ensure MSR is receiving power. Ensure MC55X is attached correctly. Confirm main battery is charging. Tap ⊞ > **Settings** > **System** > **Power > Battery tab**. 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 MC55X is not fully attached to the MSR.	Detach and re-attach the MSR to the MC55X, ensuring it is firmly connected.
During data communication, no data transmits, or transmitted data was incomplete.	MC55X detached from MSR during communications.	Reattach MC55X 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 *MC55X Integrator Guide.*

Technical Specifications

This appendix provides specifications for the MC55X and accessories.

MC55X

Table 38 MC55X Technical Specifications

Item	Description
Physical Characteristics	
Dimensions	Height: 14.7 cm (5.78 in.) Width: 7.7 cm (3.03 in.) Depth: 2.8 cm (1.10 in.)
Weight	365 g (11.9 oz.)
Display	Color 3.5" video graphics adapter (VGA) with backlight, 65K colors, 480 W x 640 L 650+ NITS.
Touch Panel	Glass analog resistive touch
Backlight	Light Emitting Diode (LED) backlight
Battery Pack	Rechargeable Lithium Ion 3.7V, 3600 mAh battery
Backup battery	Nickel–metal hydride (Ni-MH) battery (rechargeable) 15 mAh 3.6V (non-user accessible or replaceable)
Expansion Slot	micro Secure Digital (SD) slot (supports up to 32 GB).
Connection Interface	Universal Serial Bus (USB) 2.0 High Speed (host and client)
Notification	Audible tone plus multi-color LEDs
Keypad Options	Numericand QWERTY
Audio	Dual microphone support with noise cancellation; vibrate alert; speaker; Bluetooth headset
Performance Characteristics	
CPU	Dual core 800 MHz OMAP 4 processor
Operating System	Microsoft® Windows Embedded Handheld 6.5.3 Classic

Table 38   MC55X Technical Specifications (Continued)

Item	Description
Memory	512 MB RAM/2 GB Flash
Output Power	USB - 5 VDC @ 300 mA max.
User Environment	
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°F to 104°F)
Humidity	5 to 95% non-condensing
Drop Specification	Multiple 1.8 m (6 ft.) drops per MIL-STD 810G
Tumble	1,000 1.6 ft./0.5 meter tumbles at room temperature; per applicable IEC tumble specifications
Electrostatic Discharge (ESD)	±15kVdc air discharge, ±8kVdc direct discharge, ±8kVdc indirect discharge
Sealing	IP64 per IEC specification.
Vibration	2 g's PK Sine (5 Hz to 2 kHz); 0.04g2/Hz Random (20 Hz to 2 kHz); 60 minute duration per axis, 3 axis
Thermal Shock	-40° C to 70° C (-40° F to 158° F) rapid transition
Zebra Interactive Sensor Technology (IST)	
Motion Sensor	3-axis accelerometer provides motion-sensing for dynamic screen orientation and power management.
Digital Compass	Navigation aid for users.
Wireless LAN Data and Voice Communications	
Radio	IEEE® 802.11a/b/g/n
Data Rates Supported	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54, and up to 72.2 Mbps
Operating Channels	Chan 36 - 165 (5180 - 5825 MHz) Chan 1 - 13 (2412 - 2472 MHz) Chan 14 (2484 MHz) Japan only Actual operating channels/frequencies depend on regulatory rules and certification agency
Security	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)
Voice Communications	Wi-Fi ™ -certified, IEEE 802.11a/b/g/n direct sequence wireless LAN, Wi-Fi Multimedia ™ (WMM and WMM-PS)
Wireless PAN Data and Voice Communications	
Bluetooth	Class II, v2.0 with Enhanced Data Rate (EDR); integrated antenna

Table 38   MC55X Technical Specifications (Continued)

Item	Description
Data Capture Specifications	
Options	2D SE4710 imager and 8 MP camera 2D SE4710 imager
Data Types	1D and 2D bar codes, DPM, photographs, video, signatures and documents.
Voice and Audio	
PTT; high-quality speakerphone; wireless (Bluetooth) headset support; handset/speakerphone modes	
2D Imager Engine (SE4710) Specifications	
Field of View	Horizontal - 39.2° Vertical - 25.4°
Optical Resolution	1280 H x 800 V pixels
Roll	360°
Pitch Angle	+/- 60° from normal
Skew Tolerance	+/- 60° from normal
Ambient Light	Max 107,639 lux (direct sunlight)
Focal Distance	
Aiming Element (VLD)	610 nm LED
Illumination Element (LED)	1 Hyper Red 660nm LED
Camera Specifications	
Resolution	8 Mega pixel

Table 39   Data Capture Supported Symbologies

Item	Description		
1D Bar Codes	Chinese 2 of 5	Codabar	Code 11
	Code 128	Code 39	Code 93
	Coupon Code	Discrete 2 of 5	EAN-8
	EAN-13	GS1 DataBar	GS1 DataBar 14
	GS1 DataBar Expanded	GS1 DataBar Expanded Stacked	
	GS1 DataBar Limited	Interleaved 2 of 5	ISBT 128
	Korean 2 of 5	Matrix 2 of 5	MSI
	TLC39	Trioptic 39	UCC/EAN 128
	UPCA	UPCE	UPCE1
	UPC/EAN Supplementals	Webcode	
2D Bar Codes	Australian Postal	Aztec	Canadian Postal
	Composite AB	Composite C	Data Matrix
	Dutch Postal	Japanese Postal	Linked Aztec
	Maxi Code	Micro PDF-417	microQR
	PDF-417	QR Code	US Planet
	UK Postal (US4CB)	US Postnet	USPS 4-state

Keypads

Introduction

The MC55X offers seven types of keypad configurations: Numeric, QWERTY, QWERTZ, AZERTY, PIM, DSD, and Calculator DSD.
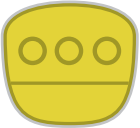
Numeric Keypad Configuration

The numeric keypad contains application keys, scroll keys, and function keys. The keypad is color-coded to indicate the alternate function key (blue) values. Note that an application can change keypad functions so the MC55X's keypad may not function exactly as described. See Table 40 for key and button descriptions and Table 41 on page 139 for the keypad's special functions.

Figure 107   Numeric Keypad Configuration
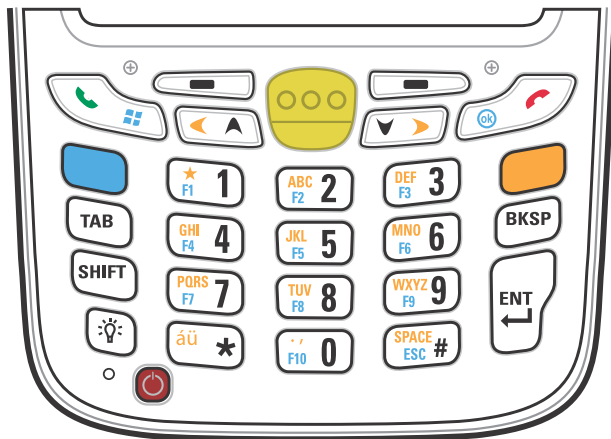
Table 40 MC55X Numeric Keypad Descriptions

Key	Description
Blue Key	Use this key to launch applications or access items (shown on the keypad in blue). Press the Blue key once to activate this mode, followed by another key. A single press illuminates the key and displays the following icon at the bottom of the screen, until a second key is pressed:
Orange Key	Use this key to access the secondary layer of characters and actions (shown on the keypad in orange). Press the Orange key once to lock the keypad into Alpha state. A single press illuminates the key and displays the following icon at the bottom of the screen: Press the Orange key a second time to return to the normal state. Press the Orange key, then the Shift key to add a temporary shift (that applies only to the next key pressed) to the orange lock state. This displays the following icon at the bottom of the screen:
Talk/Start Menu	Talk (Green Phone): press to display the phone keypad window or to dial a phone number (from the phone keypad window). When on a phone call, press to place the call on hold. Use this key in conjunction with the Blue key to instantly display the *Start* menu from any application without tapping the screen. This function is user programmable.
Scan (yellow)	Activates the imager in a scan enabled application or takes a picture or records a video in a camera application.
End/OK	End (Red Phone): press when the phone keypad window displays to stop dialing or end a call. Use this key in conjunction with the Blue key as an OK or close button. This function is user programmable.
Scroll Up and Left	Moves up one item. Moves left one item when pressed with the Orange key.
Scroll Down and Right	Moves down one item. Moves right one item when pressed with the Orange key.

Table 40   MC55X Numeric Keypad Descriptions (Continued)

Key	Description
Soft Keys	Accesses the command or menu above it on the screen.
Star	Produces an asterisk in default state. Press and release the blue key, then press the Star key to open the *Start* menu.
Alphanumeric	In default state, produces the numeric value on the key. In Alpha state, produces the lower case alphabetic characters on the key. Each key press produces the next alphabetic character in sequence. For example, press and release the Orange key and then press the '4' key once to produce the letter 'g'; press and release the Orange key and then press the '4' key three times to produce the letter 'i'. Press the SHIFT key in Alpha state to produce the upper case alphabetic characters on the key. For example, press and release the Orange key, press and release the SHIFT key, and then press the '4' key once to produce the letter 'G'; press and release the Orange key, press and release the SHIFT key and then press the '4' key three times to produce the letter 'I'.
Backspace	Produces a backspace.
SHIFT	Press and release the SHIFT key to activate the keypad alternate SHIFT functions. A single press displays the following icon at the bottom of the screen, until a second key is pressed: Press the Orange key, then the Shift key to add a temporary shift (that applies only to the next key pressed) to the orange lock state. This displays the following icon at the bottom of the screen:
Enter	Executes a selected item or function.

Table 41 Numeric Keypad Input Modes

Key	Numeric Mode			Orange Key (Alpha Lowercase Mode)				Orange + Shift Keys (Alpha Uppercase Mode)			
		Blue+ Key	SHIFT + Key	1st Press	2nd Press	3rd Press	4th Press	1st Press	2nd Press	3rd Press	4th Press
1	1	F1	!	*	*	*	*	*	*	*	*
2	2	F2	@	a	b	c		A	B	C	
3	3	F3	#	d	e	f		D	E	F	
4	4	F4	$	g	h	i		G	H	I	
5	5	F5	%	j	k	l		J	K	L	
6	6	F6	^	m	n	o		M	N	O	
7	7	F7	&	p	q	r	s	P	Q	R	S
8	8	F8	*	t	u	v		T	U	V	
9	9	F9	(	w	x	y	z	W	X	Y	Z
0	0	F10	)	.				>			
Up	Up	Up	High-light Up	Left				Left			
Down	Down	Down	High-light Down	Right				Right			
Enter	Action	Action	Action	Action				Action			
Note: An application can change the key functions. The keypad may not function exactly as described.											

Alpha-numeric Keypad Configurations

The talpha-numeric keypad produce the 26-character alphabet (A-Z, both lowercase and uppercase), numbers (0-9), and assorted characters. The keypad is color-coded to indicate which modifier key to press to produce a particular character or action. The keypad default is alphabetic, producing lowercase letters. See Table 42 for key and button descriptions and Table 43 on page 142 for the keypad's special functions.

Figure 108   QWERTY Keypad Configuration
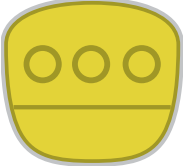
Table 42   Alpha-numeric Keypad Descriptions

Key	Action
Blue Key	Press the Blue key once to activate this mode temporarily, followed by another key. This displays the following icon at the bottom of the screen, until a second key is pressed:
	Press the Blue key twice to lock this mode. This displays the following icon at the bottom of the screen:
	Press the Blue key a third time to unlock.
Orange Key	Accesses the secondary layer of characters and actions (shown on the keypad in orange).
	Press the Orange key once to activate this mode temporarily, followed by another key. This displays the following icon at the bottom of the screen, until a second key is pressed:
	Press the Orange key twice to lock this mode. This displays the following icon at the bottom of the screen:
	Press the Orange key a third time to unlock.
Talk/Start Menu	Talk (Green Phone): press to display the phone keypad window or to dial a phone number (from the phone keypad window).
	When on a phone call, press to place the call on hold.
	Use this key in conjunction with the Blue key to instantly display the *Start* menu from any application without tapping the screen. This function is user programmable.

Table 42 Alpha-numeric Keypad Descriptions (Continued)

Key	Action
Scan (yellow)	Activates the imager in a scan enabled application or takes a picture or records a video in a camera application.
End/OK	End (Red Phone): press when the phone keypad window displays to stop dialing or end a call. Use this key in conjunction with the Blue key as an OK or close button. This function is user programmable.
Scroll Up and Left	Moves up one item. Moves left one item when pressed with the Orange key.
Scroll Down and Right	Moves down one item. Moves right one item when pressed with the Orange key.
Soft Keys	Accesses the command or menu above it on the screen.
Shift	Changes the state of the alpha characters from lowercase to uppercase. • Press the Shift key to activate this mode temporarily, followed by another key. This displays the following icon at the bottom of the screen, until a second key is pressed: • Press the Shift key twice to lock this mode. This displays the following icon at the bottom of the screen: Press the Shift key a third time to unlock.
Backlight	Turns the display backlight on and off.
Backspace	Produces a backspace.
Enter	Executes a selected item or function.

Table 42 Alpha-numeric Keypad Descriptions (Continued)

Key	Action
Period	Produces an period.
au	Creates special characters.

Table 43 QWERTY Keypad Input Modes

Key	Normal	Shift + Key	Orange + Key	Blue + Key
Q	q	Q	*	q
W	w	W	1	w
E	e	E	2	e
R	r	R	3	r
T	t	T	+	t
Y	y	Y	_	y
U	u	U	-	u
I	i	I	=	i
O	o	O	"	o
P	p	P	áü	p
A	a	A	#	a
S	s	S	4	s
D	d	D	5	d
F	f	F	6	f
G	g	G	(	g
H	h	H	)	h
J	j	J	/	j
K	k	K	:	k
L	l	L	'	l
Backspace	Backspace	Backspace	Backspace	Backspace
Shift	Shift	Shift-Lock	Shift	Shift
Z	z	Z	7	z
Note: An application can change the key functions. The keypad may not function exactly as described.				

Table 43 QWERTY Keypad Input Modes (Continued)

Key	Normal	Shift + Key	Orange + Key	Blue + Key
X	x	X	8	x
C	c	C	9	c
V	v	V	%	v
B	b	B	&	b
N	n	N	!	n
M	m	M	?	m
,	,	<	@	,
ENTER	Enter	Enter	Enter	Enter
0	0	)	0	0
TAB	Tab	Tab	Back tab	Tab
SPACE	Space	Space	Space	Space
Backlight	Backlight	Backlight	Backlight	Backlight
. (Period)	.	>	.	.
Note: An application can change the key functions. The keypad may not function exactly as described.				

Special Character Key

✓ **NOTE:** Special characters are only available on the alpha-numeric keypad configurations.

To add special characters using the MC55X **áü** key, type the related character first, then press the Orange twice followed by the **áü (P)** key. Continue pressing the **áü** key until the special character displays. To modify an existing character, move the cursor to the right of the character then press the Orange key twice and then press the **áü** key until the special character replaces the original character. Table 44 lists the special characters the user can generate.

Table 44 Special Characters

Key	Special Characters		Key	Special Characters
a	à á â ä å ą ã ă æ		A	A À Á Â Ä Å Ą Ã Ă Æ
c	ç ć č ©		C	Ç Ć Č ©
d	ð		D	Đ
e	è é ê ë ę		E	È É Ê Ë Ę
i	ì í î ï		I	Ì Í Î Ï
l			L	L Ł
n	ñ		N	Ñ
o	ò ó ô õ ö ő ø œ		O	Ò Ó Ô Õ Ö Ő Ø Œ

Table 44   Special Characters (Continued)

Key	Special Characters	Key	Special Characters
p	þ ¶	P	þ ¶
r	®	R	®
s	ş š ß	S	Ş Š ß
t	ţ	T	Ţ
u	ù ú û ü ű	U	Ù Ú Û Ü Ű
y	ý	Y	Ý
z	ź ż	Z	Ź Ż
$	€ £ ¥	/	\ |
"	' « »	(	[{ < «
)	] } > »	+	± & - _
!	¡ ? ¿	.	; , :
*	#	@	~
%	^	,	; . :
#	*	&	- _ + ±
_	+ ± & -	'	« » "
?	¿ ! ¡	:	, ; .
-	_ + ± &		

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