

70 Series

Mobile Computer

CK70, CK70NI, CK71, CK71NI, CN70, CN70NI, CN70e, CN70eNI,
CK70 RFID, CN70e RFID, CN70 RFID



User Manual

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Document Change Record

This page records changes to this document. The document was originally released as Revision 001.

Version Number	Date	Description of Change
006	01/2013	Added information to support Intermec RFID standalone demonstration application for these mobile computers: CK70 RFID, CN70e RFID, and CN70 RFID.
005	11/2012	Added information to support firmware version 1.50: <ul style="list-style-type: none">• CloneNGo application• New camera settings• SceneEditor application• EA30 imager extended reading range
004	2/2012	Revised information on ScanNGo bar codes.
003	12/2011	Added information on: <ul style="list-style-type: none">• the flashlight feature.• the Carrier Selection application. Revised information on: <ul style="list-style-type: none">• the Intermec Settings menus.• upgrading the system software and the operating system.• GPS procedures.• ScanNGo bar codes.
002	06/2011	Revised to add information on non-incendive (NI) versions of the computer, provisioning the computer, the new ScanDiagnostics application, and how to use the 70 Series as a USB mass storage device. Also corrected the cold boot procedure and removed the compass.

1

About the Computer Features

This chapter introduces the 70 Series Mobile Computers with Windows® Embedded Handheld operating system. Use this chapter to learn about the basic features and functions of each computer, as well as the available accessories for it.

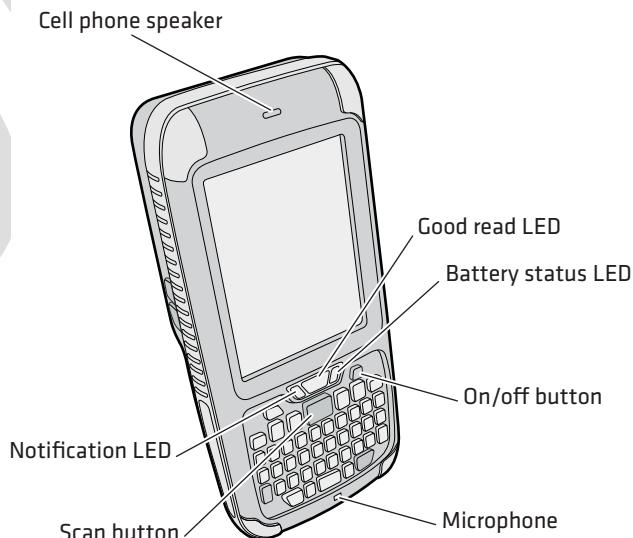
About the 70 Series Mobile Computers

The ergonomically designed Intermec 70 Series Mobile Computers are built on the Microsoft Windows Embedded Handheld operating system. They are lightweight, easy-to-use, and run most software developed for the Windows Embedded platform, including standalone, client-server, and browser-based applications.

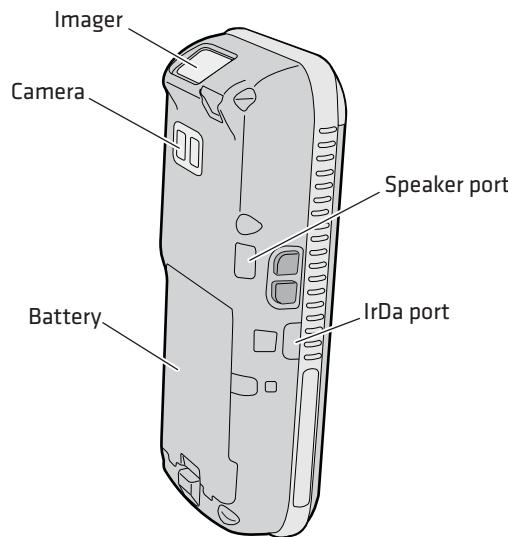
The 70 Series family of computers consists of four different models: the CN70, CN70e, CK70 and CK71. The CN70 and CN70e have the same features except that the CN70e offers a larger keypad for data-input intensive applications. The CK70 and CK71 have most of the same features, but the CK71 offers a choice of imager options and does not offer a WWAN radio option (phone). For hazardous environments, Intermec offers non-incendive (NI) models of each 70 Series computer. Throughout this manual, all versions of the mobile computer are referred to as 70 Series unless information is specific to a particular model of computer.

In most of the user manual, pictures of the CN70 and CK70 represent the four models of the 70 Series computers. The Intermec RFID Demo IM11 handheld computers (CK70 RFID, CN70e RFID, and CN70 RFID) have a visual RFID label indicated on the Front View.

CN70 Front View



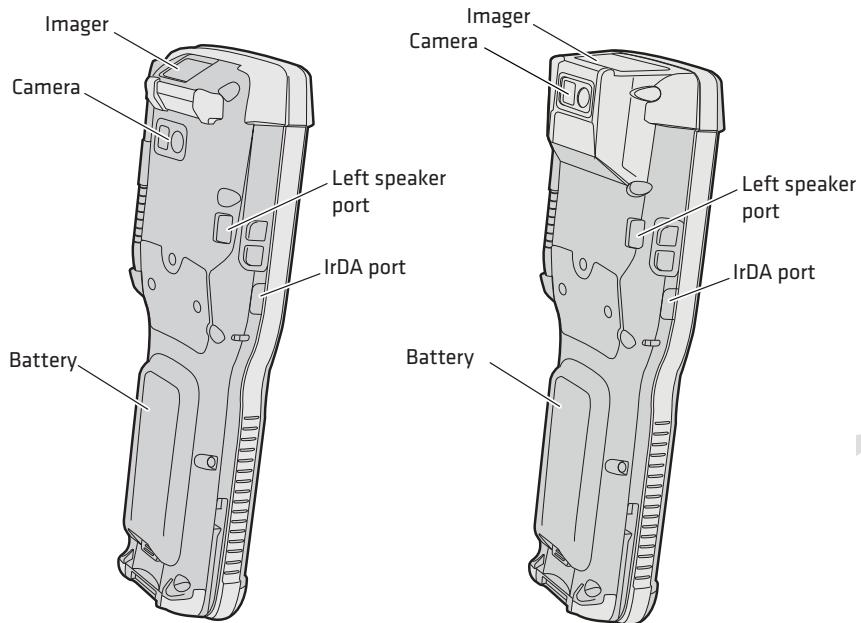
CN70 Back View



CK70 and CK71 Front View



CK70 and CK71 Back View



What's New in This Release

This version of the user manual supports the following new features:

- Intermec 70 Series RFID Demo IM11 application allows users to read and write RFID tags without the use of an outside application such as Notepad or Excel. For more information, see [“About Intermec 70 Series RFID Demo” on page 48](#).

Overview of 70 Series Features

The 70 Series includes these standard features:

- EA30 area imager that can read bar codes and capture images
- (CK71 only) Choice of EA30, EX25, or EV12 imagers
- Multi-processor architecture with 512 MB DRAM and 1G Flash
- CDMA, UMTS, or Flexible Network Radio capability (not available on CK71)
- 802.11a/b/g/n and Bluetooth® radios
- GPS radio on CDMA, UMTS, or Flexible Network Radio computers (not available on CK71)

- 5-megapixel auto-focus color camera
- Customer-accessible microSD slot for memory cards up to 32 GB
- Customer-accessible SIM card slot
- IrDA port with speeds up to 4 Mbps
- Intermec RFID Demo (models: CK70 RFID, CN70e RFID, and CN70 RFID) integrated with UHF reader allows users to scan and write data to RFID tags

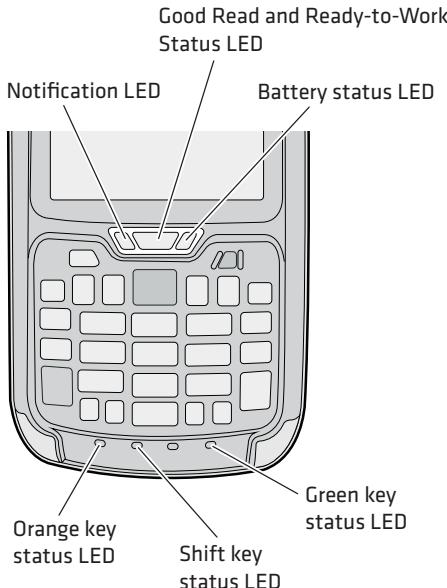


The 70 Series Mobile Computer with an IEEE 802.11a/b/g/n radio installed is Wi-Fi® certified for interoperability with other 802.11a/b/g/n wireless LAN devices.

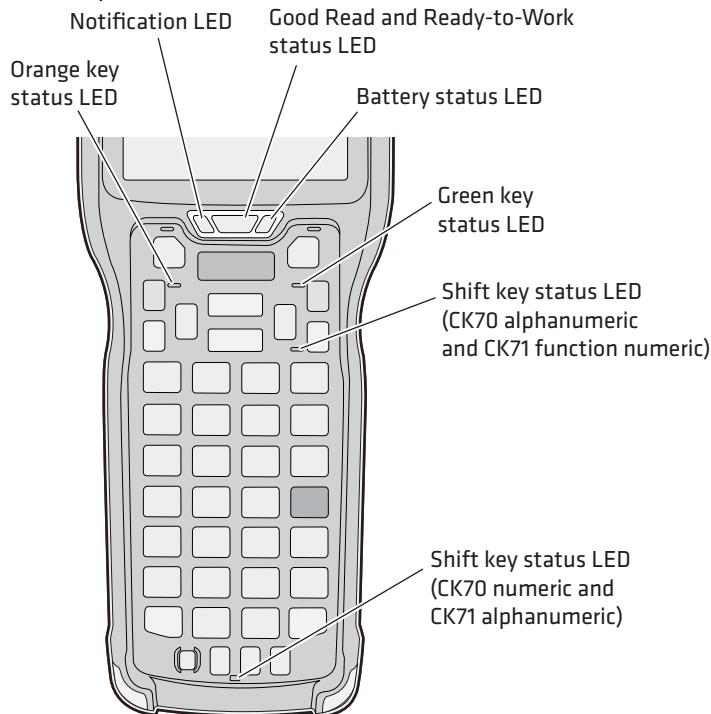
About the Status LEDs

Use the following illustrations and table to understand the status LEDs on your computer. All six status LEDs are not available on every 70 Series computer. For example, the QWERTY versions of the CN70 and CN70e do not have a Green key status LED.

Location of the CN70 Status LEDs



Location of the CK70 and CK71 Status LEDs



Status LED Descriptions

LED	Color	Description
Notification	Amber	This LED is user-programmable.
Good Read	Green	The computer successfully decoded a bar code or an RFID tag.
Ready-to-Work	Blue	If you have Intermec Terminal Emulator (ITE), the application is running and connected to the host. If you do not have ITE, you can configure the Ready-to-Work indicator to turn on or off to indicate a healthy state.
Blinking blue		ITE is running but not connected to the host. The computer is unhealthy.
Off		ITE is not installed or not running. The computer is healthy.
Battery		See “ About Battery Status ” on page 13.

LED	Color	Description
Key Status	Green	The Green function key is enabled. When writing RFID tags, a Good Read LED will blink on Green if a write is successful.
Shift	Orange Red	The Orange function key is enabled. The Shift key is enabled. When writing RFID tags, the Battery Status LED will turn on Red for 1 second and then return to its previous state if a write is unsuccessful.

70 Series Accessories

The 70 Series computer ships with a battery. All other accessories are sold and ordered separately. For help, contact your local Intermec sales representative.

70 Series Accessories

Accessory	Description
Audio Snap-On Adapter	Use the audio adapter to connect the computer to a headset.
Back Accessory Interface	Use the back accessory interface to attach accessories such as the magstripe reader adapter to the CK70 and CK71.
CK70/CK71 Battery	This battery provides main power to the CK70 and CK71.
CK70/CK71 Magstripe Reader Adapter	Use the magnetic stripe reader to be able to read magnetic cards with the CK70 and CK71 computer.
CN70/CN70e Battery	This battery provides main power to the CN70 and CN70e.
CN70/CN70e Magstripe Reader Snap-On Adapter	Use the magnetic stripe reader to be able to read magnetic cards with the CN70 and CN70e computer.
Desktop Stand	Use the desktop stand to hold the 70 Series computer on your desk or a stable surface.

Accessory	Description
DEX/UCS Snap-On Adapter	Use this adapter to receive and send serial communications through a DEX/UCS connection.
DX1 Desktop Dock with USB connectivity	Use the desktop dock with the: <ul style="list-style-type: none">• Computer cup to charge the battery while it is installed in the computer.• Battery cup to charge the battery.
DX2 Dual Dock and DX4 Quad Dock. The DX2 and DX4 are available in charge-only and Ethernet configurations.	Use these charger bases with the: <ul style="list-style-type: none">• Computer cup to charge batteries while they are installed in the computer.• Battery cup to charge two batteries.
Ethernet Snap-On Adapter	Use the Ethernet adapter to be able to connect the computer to an Ethernet network.
Handstrap Replacement Kit	You can order and install a replacement handstrap for the CN70, CN70e, and CK70/CK71. Each kit contains 5 handstraps.
Holster	Use the holster to store the computer when you need your hands free.
IP30 Handheld RFID Reader	Use the IP30 Handheld RFID Reader to connect via Bluetooth or USB to read/write RFID tags.
RS-232 Snap-On Adapter	Use the RS-232 adapter to convert the connector on the bottom of the computer to a serial connector.
Scan Handle	Use the scan handle to provide better ergonomics to the computer for high-volume scanning applications.
Tethered Stylus Replacement Kit	You can order and install a replacement stylus.
USB Snap-On Adapter	Use this adapter to convert the bottom connector of the computer to a USB connector.
Vehicle Dock	Use the vehicle dock to provide power and hold your computer while you are using it in a vehicle.

Accessory	Description
Vehicle Holder	Use the vehicle holder to hold your computer while you are using it in a vehicle.
Vehicle Power Adapter	Use the vehicle power adapter to provide power to the computer from your vehicle.
Vocollect® Snap-On Adapter	Use this adapter to be able to use the Vocollect voice solution in your warehouse.

About Language Provisioning

If your 70 Series computer includes language provisioning, you are prompted to select a language provision when the computer starts for the first time. It may take up to 15 minutes to load your language.

These languages are available:

- Chinese Simplified (CHS)
- Chinese Traditional (CHT)
- Spanish (ESN)
- French (FRA)
- German (GER)
- Italian (ITA)
- Japanese (JPN)
- Korean (KOR)
- Russian (RUS)
- World Wide English (WWE)

Make sure you select the correct language before you tap **Provision**. If you want to change the language provisioning, you need to send your computer to an Intermec Global Repair Center.

About the Battery



The battery used in this device may present a fire or chemical burn hazard if it is mistreated. Do not disassemble it, heat it above 100 °C (212 °F) or incinerate it. Dispose of used batteries promptly. Keep away from children.

The computers use these rechargeable Lithium-ion battery pack as the main power source:

- 3.7 V, 4000 mAH (14.8 Wh) battery for the CN70 and CN70e
- 3.7 V, 5200 mAH (19.2 Wh) battery for the CK70 and CK71

Charge the Battery

You need to fully charge the battery before using your computer for the first time. Use one of the charging accessories listed in the next table to charge the battery.

70 Series Charging Accessories

Charging Accessory	Charging Time
Snap-on adapters	Up to 6 hours
DX1, DX2, or DX4 dock	Up to 6 hours
CN70, CN70e, CK70, and CK71 Vehicle Power Adapter	Up to 6 hours

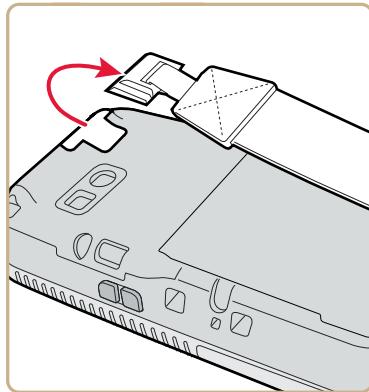
Change the Battery

If your battery power is low, you need to either charge the battery in the computer, or replace it with a charged battery.

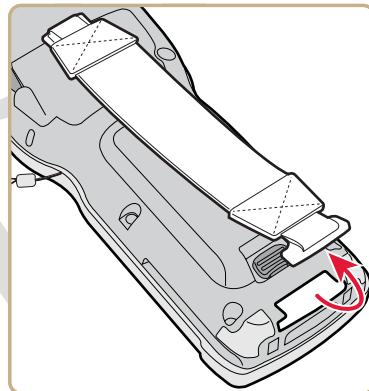
- 1 Save your files and close any open applications.
- 2 Press the **Power** button and choose **Hibernate** from the menu to suspend the computer.

- 3 Detach the handstrap from the computer.

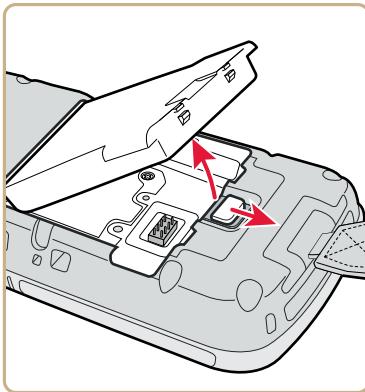
Detach the Handstrap From a CN70 or CN70e



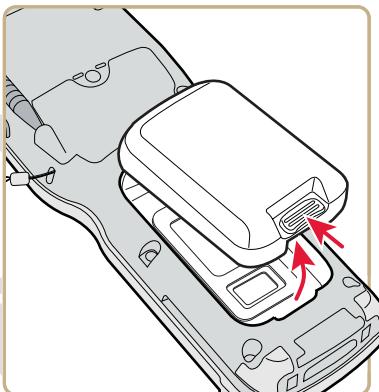
Detach the Handstrap From a CK70 or CK71



- 4 Make sure the computer is in hibernate mode and the screen is off.
- 5 Remove the battery.
 - On the CN70 or CN70e, push the battery release toward the bottom of the computer until the battery releases and then lift it away from the computer.



- On the CK70 or CK71, push the battery release toward the top of the computer until the battery releases and then lift it away from the computer.



- 6 Insert the top end of a fully charged battery into the computer, and press down firmly on the bottom of the battery. Make sure that the battery release is fully engaged.

About Battery Status

Use the battery icon on the Title bar to see the power status of your battery. If you want more detailed information on your battery such as usage time or voltage, use the Intermec Dashboard. For more information on the Dashboard, see “[About the Intermec Dashboard](#)” on page 114.

Battery Icon Status Descriptions

Battery Icon Status



Battery is fully charged.



Battery has a high charge.



Battery has a medium charge. You should be able to work for several more hours before changing batteries.



Battery is low. You need to charge or replace the battery soon.



Battery is critically low. You need to replace the battery now.



Battery is charging.



The battery is not installed.

You can also use the battery status LED to see the charging status of your battery.



Battery Status LED Descriptions

LED State	Description
Steady green	The computer is connected to a charger and the battery is more than 95% charged.
Blinking red	The battery is very low. The computer will soon go into Suspend mode. Charge or replace the battery.
Steady red	The computer is connected to a charger and the battery is charging.
Blinking red-amber	The battery charging system has encountered an error. The battery is not charging.
Steady amber	The battery is outside of the allowable charging temperature range. Charging will resume when the battery temperature is back in the acceptable range of 5 °C to 35 °C (41 °F to 95 °F).
Off	The computer is not on external power and the battery is operating normally.

About Battery Life and Conservation

Batteries that are stored outside the computer for long periods of time slowly discharge. Intermec recommends storing the battery in a charger to maintain battery performance.

Battery Conservation Tips

When You Want To: Do This to Save Battery Power:

Use the computer and the Low Battery status icon appears or the Battery light comes on.

- Connect the computer to an external power source.
- Or, save your data and press the **Power** button and select **Hibernate**. After the computer turns off, remove the battery and insert a fully charged battery.

Stop using the computer for 5 minutes or longer.

Make sure that the low battery icon is not on the screen and the Battery LED is not on. Press the **Power** button and choose **Suspend** to suspend the computer.

When You Want To:	Do This to Save Battery Power:
Store the computer for more than a day.	If you are storing the computer for a few days, like over the weekend, install a charged battery or connect the computer to a power source.
Store the battery outside the computer.	If you are storing the computer for longer, remove and charge the battery, and then store both the battery and computer in a cool location. If you store the battery for several months, recharge the battery to keep it at peak performance.
	Store the batteries in a charger.

About the Keypad

The CN70 comes with either a QWERTY keypad or a numeric keypad. The CN70e comes with either a QWERTY numeric keypad, a phone-style numeric keypad (1-2-3 digits across the top), or a calculator-style numeric keypad (7-8-9 digits across the top). The computer has an ambient light sensor that detects low light and turns on the keypad backlight. By default, the keypad backlight is enabled in low light conditions. You can disable the keypad backlight to conserve power. Use Intermec Settings to configure the backlight. For help, see [“Use Intermec Settings on the Computer” on page 72](#).

CN70 QWERTY Keypad



CN70 Numeric Keypad



CN70e QWERTY Numeric Keypad



CN70e Calculator-Style Numeric Keypad



CN70e Numeric Keypad



The CK70 comes with either a large alpha or an alphanumeric keypad. The CK71 comes with either a numeric function keypad or an alphanumeric keypad. The computer has an ambient light sensor that detects low light and turns on the keypad backlight. By default, the keypad backlight is enabled in low light conditions. You can disable the keypad backlight to conserve power. Use Intermec Settings to configure the backlight. For help, see [“Use Intermec Settings on the Computer” on page 72](#).

CK70 Large Alpha Keypad



CK70 Alphanumeric Keypad



CK71 Numeric Function Keypad



CK71 Alphanumeric Keypad



Enter Characters on the QWERTY Keypad

You need to use the orange modifier key  and the Shift key  to access all characters and functions on the QWERTY keypad.

To type a character:

- Press the key for that character.

To type a character or access a function on the overlay:

- Press  and then press the key for the character or function.

To only type characters or access functions on the overlay:

- Press  twice to lock the orange modifier key to stay on, and then press the keys for the characters or functions.

To type a single uppercase letter:

- Press  and then the letter key.

To type all uppercase letters:

- Press   to turn on Caps Lock, and then press the letter keys.

You can still type orange modifier characters by pressing  and then the key for that character.

To turn off Caps Lock, press .

Enter Characters on the Numeric Keypad

You need to use the orange modifier key  and the green modifier key  to access all characters and functions on the Numeric keypad.

To type a character or access a function printed in orange on the overlay:

- Press  and then press the key for the character or function.

To type a character or access a function printed in green on the overlay:

- Press  and then press the key for the character or function.

To type letters in the upper right corner of a key:

- Press  and then press the key one to three times depending on the position of the letter.

For example, in the upper right corner of the **2** key there are the letters “ABC”:

- To type “c”, press **□ 2 2 2**.
- To type “C,” press **□ 1** and then press **□ 2 2 2**.

Note: On the calculator-style keypad, the **2** is replaced by the **8**.



To only type letters:

- Press **□ □** to lock the green modifier key, and then press the key one to four times depending on the position of the letter.

While the green modifier key is locked, press **1** to toggle between only uppercase and lowercase letters.

To unlock the green modifier key, press **□**.



Note: If uppercase letters are enabled and you unlock the green modifier key, you may need to press **□ 1** to type lowercase letters.

Enter Characters on the CK70 and CK71 Keypads

You need to use the orange modifier key **□**, the green modifier key **□**, and the Shift or Caps Lock key **ⓐ** to access all characters and functions on the Alpha, Alphanumeric, and Numeric Function keypads.

To type a character or access a function printed in orange on the overlay or in the upper left corner of a key:

- Press **□** and then press the key for the character or function.

To type a character or access a function printed in green on the overlay:

- Press **□** and then press the key for the character or function.

To type a single uppercase letter:

- Press **ⓐ** and then the letter key.

To type all uppercase letters:

- Press **ⓐ ⓐ** to turn on Caps Lock, and then press the letter keys.

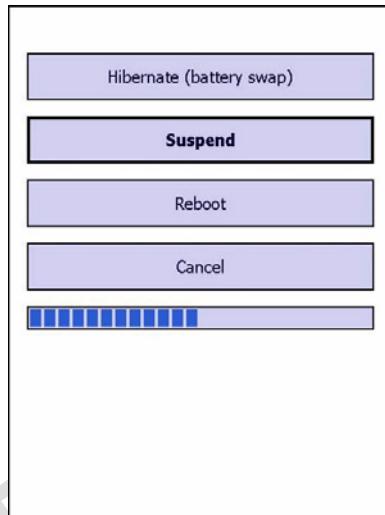
You can still type orange or green modifier characters by pressing **□** or **□** and then the key for that character.

To turn off Caps Lock, press **ⓐ**.

About the Power Button

When you press the **Power** button, a dialog box with a list of power options appears. If you do not select a power options setting, the currently selected action (the button outlined in bold) occurs after the timeout.

The Intermec Power Options Default Screen



Note: The Real Time Clock (RTC) persists through all of the power options as long as it receives power from the Real Time Clock battery.



Intermec Power Options

Option	Description
Hibernate (battery swap)	High power saving mode. Use this setting only for swapping the battery. The computer saves the current system state, registry, and file system and then powers off all radios and internal devices. You can wake the computer by pressing the Power button or connecting the computer to external power.

Option	Description
Suspend	Medium power saving mode. The computer powers off all radios and internal devices not involved in saving the system state, but the phone stays on to receive calls. This option is the default setting. You can wake the computer by pressing the Power button, pulling the scanner trigger, receiving a call, scheduling an event such as an alarm, or by connecting external power.
Reboot	The computer does not save the current system state, but the registry and file systems are saved. The computer shuts down all running processes and restarts.
Cancel	The Power Options menu is cancelled.
Screen Off	Lowest power saving mode. The screen turns off, but the phone, all radios, and internal devices stay on. Tap the screen to turn the screen back on.
Shutdown	Very high power saving mode. The computer turns off everything. You must press Power or apply external power to restart the computer.

The Intermec Power Options screen is customizable. You can use Intermec Settings to determine which options are available to end users, the timeout until the default choice is selected, the default action if no option is selected, or to disable the Power Options screen. For more information on customizing the screen using Intermec Settings, see [“Use Intermec Settings on the Computer” on page 72](#) or see the [Intermec Settings Command Reference Manual](#).

About the Intermec Dashboard Button

If the Ready-to-Work light blinks, your computer may be experiencing a problem. Press the Intermec Dashboard button (ⓐ) to launch the Intermec Dashboard application and view troubleshooting and status information.

You can press the ⓐ button at any time to bring up the Intermec Dashboard. If the computer is not healthy, the current issues are displayed at the top of the screen. If the device is healthy, you can use the Dashboard to view device information. For more information, see [“About the Intermec Dashboard” on page 114](#).

Configure the Screen Backlight

The display has an ambient light sensor that automatically adjusts the backlight intensity to conserve power and ensure the display is readable.

By default, the screen turns off when there is no activity with the computer. Press a key or tap the screen to resume activity.

You can configure the screen backlight to turn off.

- 1 Tap **Start > Settings > Power**.
- 2 Tap **Advanced** on the horizontal scroll bar.
- 3 Select the screen power off settings for when the computer is on battery power or external power.

Configure the Screen Brightness

You can configure the screen brightness using Intermec Settings or from the Start menu.

- 1 Tap **Start > Settings > System > Backlight**.
- 2 Adjust the slider to the desired brightness level.
- 3 Tap **OK**.

Adjust the Volume

You can adjust the computer volume for your needs and your environment. The volume includes sounds you hear when you tap the screen or read bar codes with the imager. You can set the volume to off, very low, low, medium, high, very high (default), or vibrate.

You can also use the buttons on the right side of the computer to adjust the volume:

- The upper button increases the volume.
- The lower button decreases the volume.

You can adjust the volume settings using Intermec Settings or the horizontal scroll menu.

- 1 Tap the Volume icon at the top of the screen, and then tap the volume icon on the horizontal scroll menu.
- 2 Use your stylus or the  and  keys to adjust the volume slider to the volume you want, select **Vibrate**, or select **Off**.

About the Imager

The computer ships with an internal imager. You can use the imager as a flashlight or to read bar codes.



Note: When the Pictures & Videos application is running, you cannot use the imager.

Use the Imager as a Flashlight

You can use the EA30 imager as a flashlight. By default, the imager is set to read bar codes. To use the imager as a flashlight, you must remap the Left side lower button.

- 1 Open Intermec Settings on the mobile computer by tapping **Start > Settings > System > Intermec Settings**.
- 2 From the Intermec Settings main menu, tap **Device Settings > Keypad**.
- 3 From the Keypad menu, tap **Button Remapping**.
- 4 From the **Left side lower button** menu, select **Flashlight**.
- 5 From the **Flashlight timeout** drop-down menu, select how long to leave the flashlight on before it automatically turns off.
- 6 Tap **OK**.

Read Bar Codes

Depending on the imager model in your computer, you can read 1D and 2D bar code symbologies, composite symbologies, and postal codes.

You can also connect the computer to cordless scanners (like the SF51 and SR61) through Bluetooth communications or tethered scanners (like the SR30 and SR61T) through the RS-232 adapter. For help, see “[Connect to a Bluetooth Scanner](#)” on page 84 and “[Connect to a Tethered Scanner](#)” on page 88, respectively.

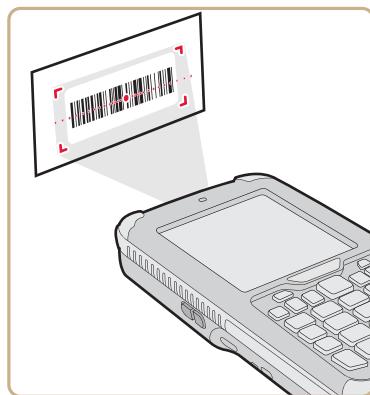
- 1 Enable only the bar code symbologies that you need.
- 2 Use Intermec Settings to select the predefined imager mode that best suits your environment:

Predefined Mode	For Scanning
1D	Only 1D labels.
1D and 2D Standard	(Default) All types of bar code labels.
1D and 2D Bright Environment	In high ambient light, such as outdoors in the sunshine.
1D and 2D Reflective Surface	Glossy labels.

Note: You can also select the imager predefined mode in Profile Settings by tapping **Start** > **Profile Settings** > **Scanning**.

- 3 Point the imager window at the bar code label, and hold the computer steady a few inches from the label.
- 4 Press the **Scan** button. The laser pointer and illumination beam or frame appear.

Scanning With the EA30 Imager



- 5 Use the laser pointer as a guide and aim toward the middle of the bar code. Make sure that the illumination beam or frame covers the bar code you are trying to decode.

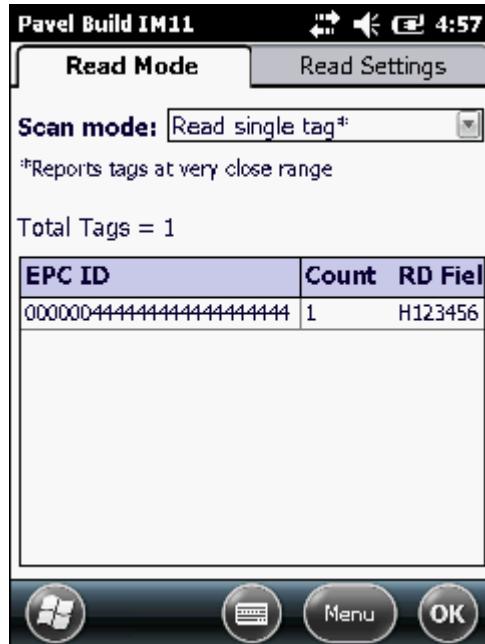
When the computer successfully reads a bar code label, you hear a high beep, and the Good Read LED turns on briefly.

- 6 Release the **Scan** button.

Read an RFID Tag

You can use the 70 Series RFID Demo to read a single or a group of RFID tags. Follow the instructions below to read a single RFID tag:

- 1 Start the Intermec 70 Series RFID Demo.
- 2 Tap **Start** > **Menu**. The Read Mode tab appears.
- 3 From **Scan mode** drop-down menu, select **Read single tag**.
- 4 Position the tag an inch from the scanner.
- 5 Scan the tag.
- 6 If the read is successful, a table appears at the bottom of the screen that displays the EPC value of the tag.



For more information about how to use the 70 Series RFID Demo application, refer to the [Intermec 70 Series RFID Demo User Guide](#).

Insert a MicroSD Card

You can use a microSD™ card to increase file storage and install software. The computers support an optional 32 GB maximum capacity microSD card.



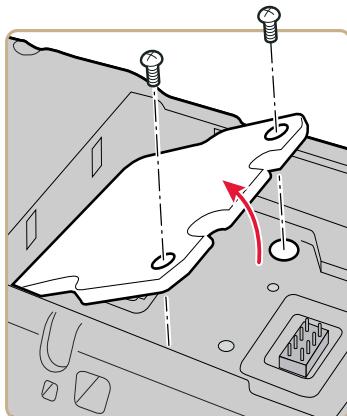
Note: The computer resets when you open the card access door to insert the microSD card. Make sure you completely close the card access door before you use your computer.

Install a MicroSD Card in a CN70 or CN70e

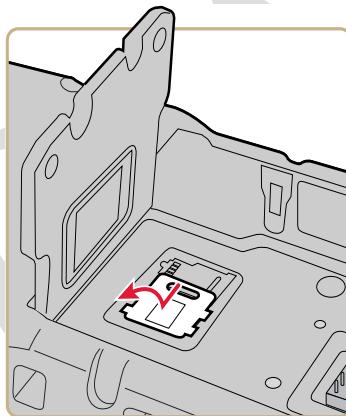
You need a Phillips screwdriver to install the microSD card.

- 1 Press the Power button to turn off the computer.
- 2 Remove the handstrap and the battery.

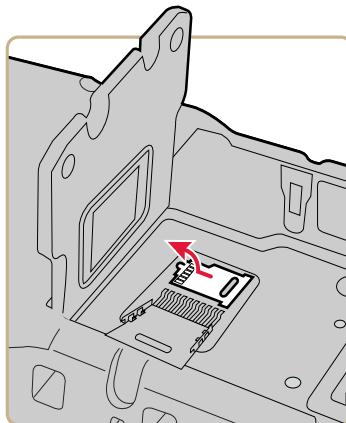
3 Remove the two Phillips screws and open the card access door.



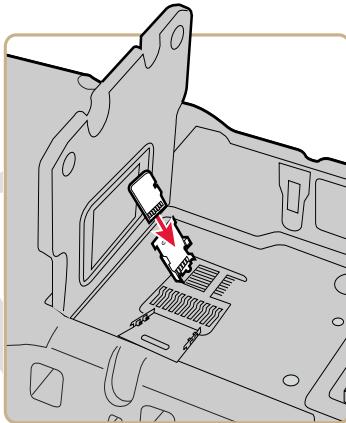
4 Slide the SIM card door to the left to unlock it and open the door.



5 Slide the microSD card door towards the top of the computer to unlock it and open the door.



6 Slide the microSD card into place.



7 Close the microSD card door and slide it towards the bottom of the computer to lock it in place.

8 Close the SIM card door and slide it to the right to lock it in place.

9 Close the card access door and replace the two screws.

10 Install the battery. Press down firmly on the bottom of the battery, and make sure that the battery release tab is fully engaged.

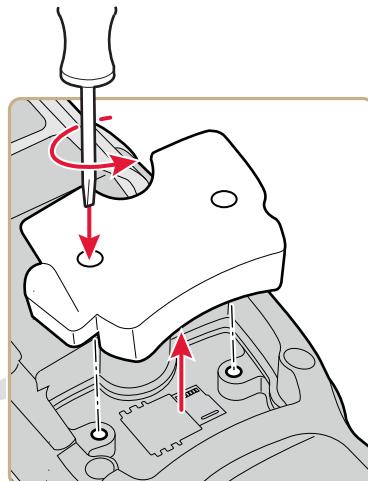
11 Attach the handstrap.

12 Press the **Power** button. The computer cold boots.

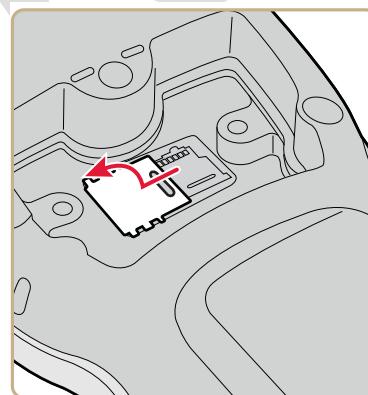
Install a MicroSD Card in a CK70 or CK71

You need a Phillips screwdriver to install the microSD card.

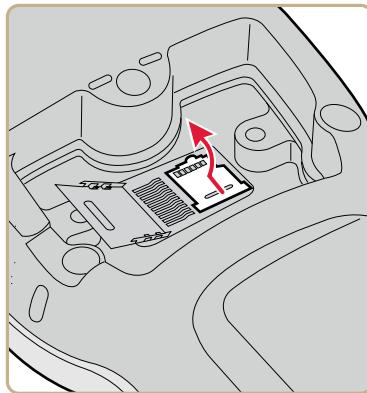
- 1 Press the **Power** button to turn off the computer.
- 2 Remove the handstrap.
- 3 Remove the two screws that attach the interface adapter cover to the back of the computer.



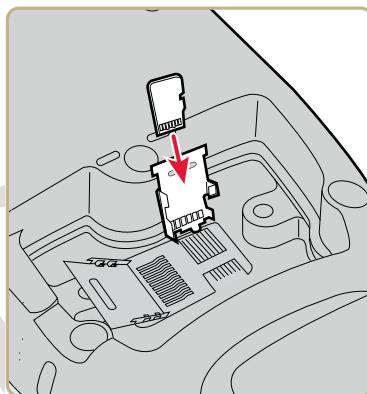
- 4 Slide the SIM card door to the left to unlock it and open the door.



- 5 Slide the microSD card door towards the top of the computer to unlock it and open the door.



- 6 Slide the microSD card into place.



- 7 Close the microSD card door and slide it towards the bottom of the computer to lock it in place.
- 8 Close the SIM card door and slide it to the right to lock it in place.
- 9 Replace the interface adapter cover and attach with the two screws removed in Step 2.
- 10 Install the battery. Press down firmly on the bottom of the battery, and make sure that the battery release tab is fully engaged.
- 11 Reattach the handstrap.
- 12 Press the **Power** button. The computer cold boots.

Transfer Files to and from Your PC

The 70 Series computer supports these two methods for transferring files to and from your PC:

- Using Microsoft ActiveSync or Windows Mobile Device Center.
- Using the 70 Series computer as a mass storage device.

Use Microsoft ActiveSync to Transfer Files

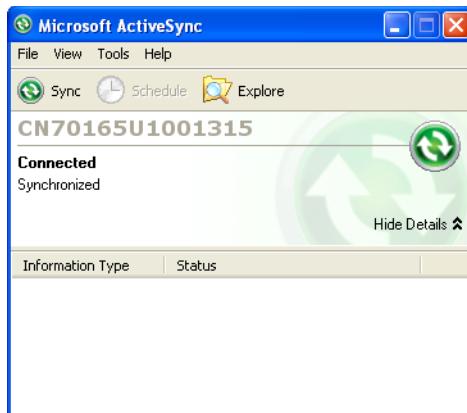
You can use Microsoft ActiveSync (Windows XP or earlier) or Windows Mobile Device Center (Windows Vista or Windows 7) to establish a connection between your computer and a PC. After you connect to your PC, you can transfer files, synchronize files, remotely debug, and perform other device management activities. ActiveSync and Windows Mobile Device Center are free applications available from the Microsoft website at www.windowsmobile.com/getstarted.

To establish a partnership between your computer and a PC, you need to physically connect your computer to your PC using these accessories:

- USB snap-on adapter (Model 1000AA07)
- USB cable

Using these accessories, you can transfer files to and from your PC using ActiveSync.

- 1 Connect your mobile computer to your desktop PC using the adapter and USB cable.
- 2 Download ActiveSync from the Microsoft website and install ActiveSync on your PC.
- 3 Follow the onscreen instructions to establish a partnership. When the partnership is established, the Microsoft ActiveSync screen appears on your PC.



Use the Computer as a Mass Storage Device

You can connect the 70 Series computer as a mass storage device to your desktop PC. When connected as a mass storage device, you can easily copy files to and from the mobile computer.

- 1 Go to www.datalight.com and download the Reliance Nitro Windows Driver (RNWD). You need to login before you can download the driver.
- 2 Connect the mobile computer to your desktop PC using a USB cable.
- 3 On the mobile computer, tap **Start > Settings > System > Intermec Settings**.
- 4 From the Intermec Settings Main Menu, tap **Device Settings > USB**.
- 5 From the USB function driver menu, select **Mass storage - Flash File Store** and tap **OK**.
- 6 Copy files to and from your desktop PC to the mobile computer.

A

Specifications and Default Settings

Physical and Environmental Specifications

CN70 & CN70 RFID Physical Dimensions

Dimensions	16.9 x 8.0 x 3.4 cm (6.66 x 3.14 x 1.35 in)
Weight	450 g (15.9 oz) with battery

CN70e & CN70e RFID Physical Dimensions

Dimensions	19.5 x 8.0 x 3.4 cm (7.66 x 3.14 x 1.35 in)
Weight	491 g (17.3 oz) with battery

CK70 & CK70 RFID Physical Dimensions

Dimensions	23.7 x 8.0 x 4.3 cm (9.33 x 3.16 x 1.69 in)
Weight	562 g (19 oz) with battery

CK71 Physical Dimensions

Dimensions	23.7 x 8.0 x 5.0 cm (9.33 x 3.16 x 1.98 in)
Weight	584 g (20.6 oz) with battery

Environmental Specifications

Operating temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Storage temperature	-30 °C to 70 °C (-22 °F to 158 °F)
Charging temperature	5 °C to 35 °C (41 °F to 95 °F)
Relative humidity (operating)	5% to 95% non-condensing
Environmental rating	IP67 compliant
Drop Specifications	All corners and sides from 1.8 m (6 ft) per MIL-STD 810F

Power and Electrical Specifications

Battery type	Rechargeable Lithium-ion (Li-ion) battery
Battery capacity	
CN70/CN70e:	3.7 V, 4000 mAh (14.8 Wh)
CK70/CK71:	3.7 V, 5200 mAh (19.2 Wh)
Electrical rating	--- 4.37/4.8 V; 2/1,5 A

70 Series Non-Incendive Computer Specifications

The 70 Series mobile computers with non-incendive (NI) certification comply with the following specifications for North America and Canada regions only.

Location	Suitable for use in Division 2 locations
Safety	cULus Listing - ISA/ANSI 12.12.01
Gases	Class I - Groups A, B, C, D
Dusts	Class II - Groups F, G
Fibers and Flyings	Class III
Maximum Ambient Temperature	T6 rating with a maximum temperature of 50 °C

Operating System

Microsoft Windows Embedded Handheld.

Hardware

Main processor options	TI OMAP3, 1 GHz TI OMAP3, 600 MHz
Memory	512 MB RAM
Persistent storage	1 GB Flash
Removable storage	up to 32 GB user-accessible microSD card slot
Keypad	CN70: QWERTY, Numeric CN70e: QWERTY Numeric, Numeric, Calculator-style CK70: Large Alpha, Alphanumeric CK71: Numeric Function, Alphanumeric
Imaging options	5 megapixel color camera and EA30 area imager (all), EV12 (CK71 only), or EX25 (CK71 only)

Back Accessory Interface Pin-outs

The back accessory interface provides power for peripheral devices out the back of the CK70 and CK71 computers.

Pin	Pin Name	I/O	Description
1	OTB_PWR	Output	Power supply for peripheral
2	GND		
3	OTB_RX	Input	DTE Data Receive
4	OTB_TX	Output	DTE Data Transmit
5	OTB_I/O_Voltage	Input	I/O Voltage Level
6	OTB_ID	BiDir	One Wire Bus for ID
7	OTB_RTS	Output	DTE Ready to Send
8	OTB_CTS	Input	DTE Clear to Send

Touch Screen Specifications

Transmissive VGA display with high-durability touch screen; 480 x 640 pixels; 8.9 cm (3.5 in) diagonal active area; LED backlight and ambient light sensor.

Standard Communications

- UMTS (not available on CK71)
- CDMA (not available on CK71)
- Flexible Network Radio (not available on CK71)
- GPS (not available on CK71)
- 802.11a/b/g/n
- Bluetooth
- USB Full Speed V2.0 Host
- USB Full Speed V2.0 Client

Wireless LAN

Standards compliant	IEEE 802.11a/b/g/n (2.4 GHz and 5 GHz), Single Stream
Data rates	up to 72Mbps
Security	802.11i, WPA, WPA2, 802.1x (EAP-TLS, TTLS, PEAP, EAP-FAST), WEP
Certifications	WPA2™ (Enterprise, Personal), WPA™ (Enterprise, Personal), Wi-Fi, WMM®, WMM Power Save, Cisco Compatible Extensions (CCX 4.0)

Regulatory Approvals

FCC, CE, cULus Listed, DEMKO

Bar Code Symbologies

The imagers support all of the bar code symbologies listed in the next table.

Supported Bar Code Symbologies

AustraliaPost*	GS1 DataBar Omni-Directional
Aztec*	Infomail*
BPO*	Interleaved 2 of 5
Canada Post*	Japan Post*
China Post*	KoreanPost*
Codabar	Matrix 2 of 5
Codablock A*	Maxicode*
Codablock F*	Micro PDF417*
Code 11	MSI
Code 39	PDF417*
Code 93	Planet*
Code 128/GS1-128	Plessey
DataMatrix*	Postnet*
Dutch Post*	QR Code*
EAN/UPC	Standard 2 of 5
GS1 Composite	SwedenPost*
GS1 DataBar Expanded	Telepen
GS1 DataBar Limited	TLC 39*

* These symbologies are not supported with the EV12 imager in the CK71.

Imager Reading Distances

Typical reading distances are done in an office environment using office lights (4 lux). Minimum distances are measured in the dark (0 lux). Both reading distances are provided in respective scan engine integration guides. Contact your local Intermec representative for more information.

Below are the typical and minimum standard reading distances for the 70 Series computer built with an EA30 imager. Also included are typical and minimum standard reading distances for the CK71 with an EV12 or EX25 imager.

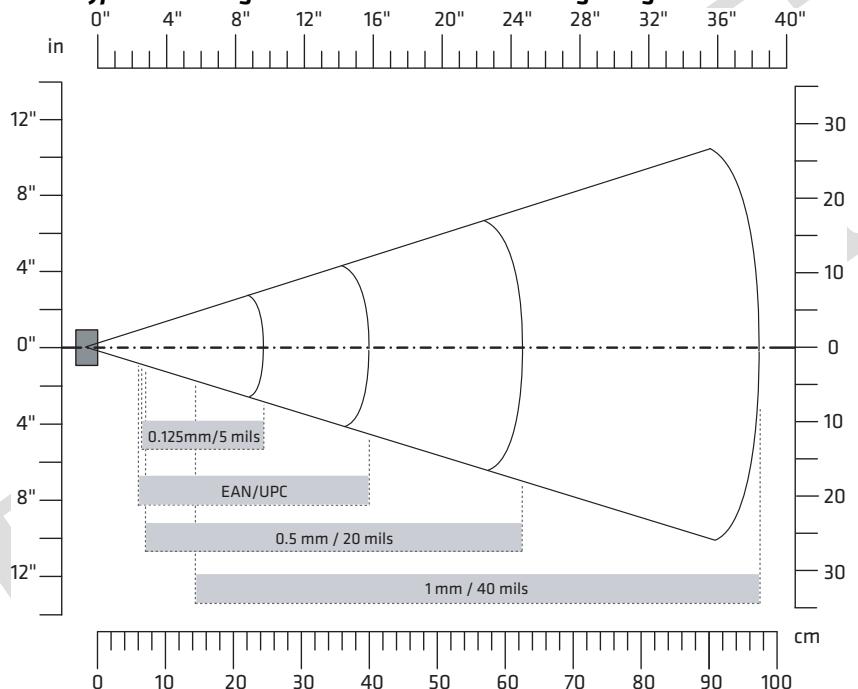
Note: Minimum distances depend on the length of the bar code.



EA30 Typical Reading Distances - Extended Reading Range

These typical reading distances are measured in an office environment (250 lux) for the EA30 standard model with Extended Reading Range activated. Extended Reading Range is enabled by default.

EA30 Typical Reading Distances - Extended Reading Range Activated

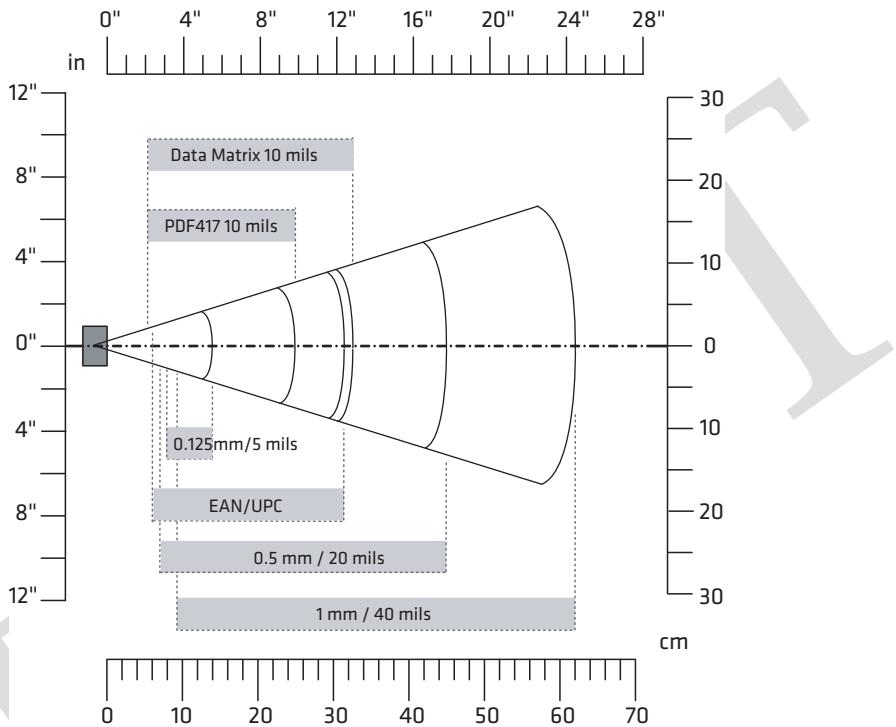


EA30 Typical Reading Distances - Extended Reading Range Activated

Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.125 mm/5 mils	64.50 cm/2.56 in	24.50 cm/9.65 in
	0.50 mm/20 mils	7 cm/ 2.76 in	62.50 cm/24.61 in
	1 mm/40 mils	14.50 cm/5.71 in	97.50 cm/38.39 in
EAN/UPC 100%	0.33 mm/13 mils	6 cm/2.36 in	40 cm/15.75 in

EA30 Area Imager Minimum Reading Distances

Minimum distances are measured in the dark (0 lux).

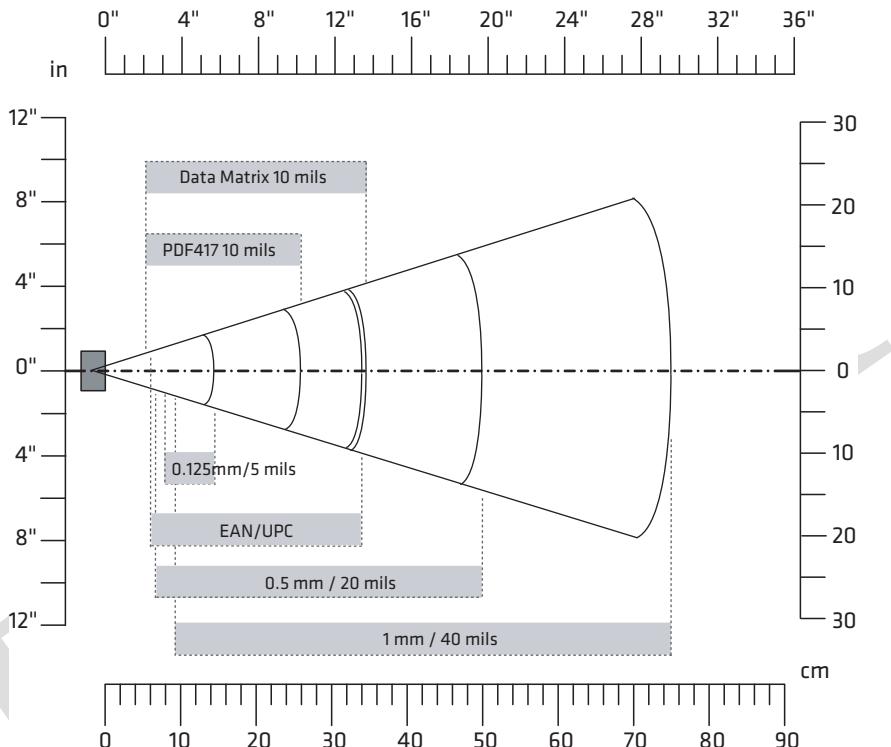


EA30 Minimum Reading Distances

Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.1 mm (4 mils)	9.5 cm (3.74 in)	10.5 cm (4.13 in)
	0.1250 mm (5 mils)	8 cm (3.15 in)	14 cm (5.51 in)
	0.5 mm (20 mils)	7 cm (2.76 in)	45 cm (17.72 in)
	1 mm (40 mils)	9.5 cm (3.74 in)	62 cm (24.41 in)
UPC/EAN 100%	0.33 mm (13.0 mils)	6 cm (2.36 in)	31.5 cm (12.4 in)
Data Matrix	0.18 mm (7 mils)	8 cm (3.15 in)	15.5 cm (6.1 in)
	0.25 mm (10 mils)	6.5 cm (2.56 in)	21.5 cm (8.46 in)
	0.38 mm (15 mils)	5.5 cm (2.17 in)	31.5 cm (12.4 in)
PDF417	0.25 mm (10 mils)	5.5 cm (2.17 in)	25 cm (9.84 in)
	0.38 mm (15 mils)	7 cm (2.76 in)	34 cm (13.39 in)

EA30 Area Imager Typical Reading Distances

Typical distances are measured in an office environment (250 lux).

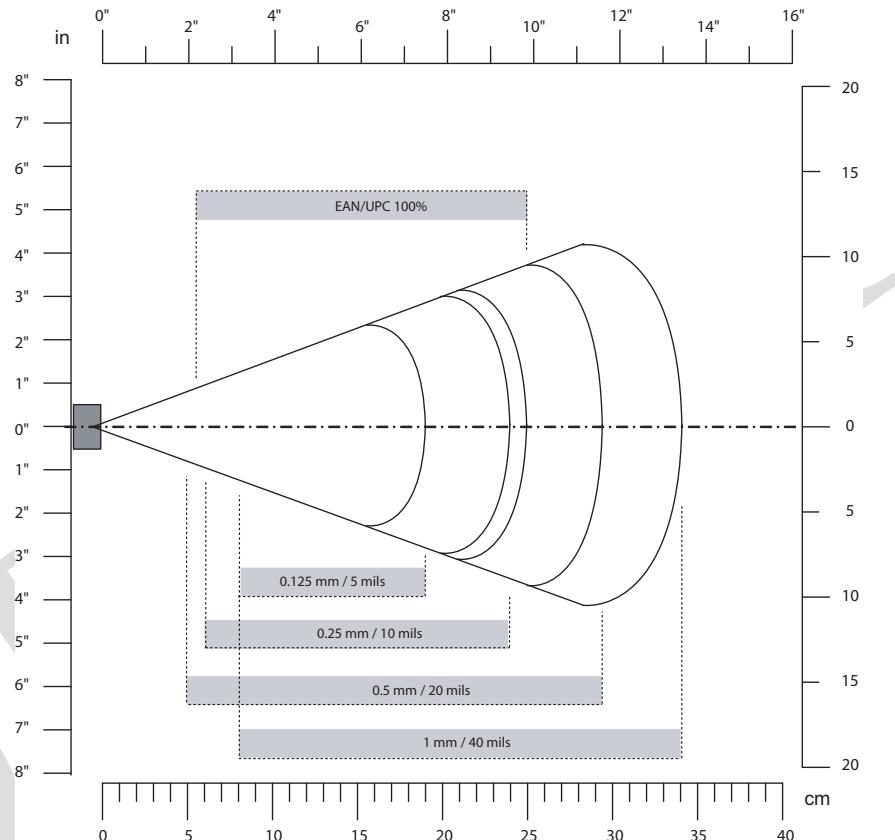


EA30 Typical Reading Distances

Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.1 mm (4 mils)	9.5 cm (3.74 in)	11.5 cm (4.53 in)
	0.125 mm (5 mils)	8 cm (3.15 in)	14.5 cm (5.71 in)
	0.5 mm (20 mils)	6.5 cm (2.56 in)	50 cm (19.69 in)
	1 mm (40 mils)	9.5 cm (3.74 in)	75 cm (29.53 in)
UPC/EAN 100%	0.33 mm (13.0 mils)	6 cm (2.36 in)	34 cm (13.39 in)
Data Matrix	0.18 mm (7 mils)	7.5 cm (2.95 in)	16.5 cm (6.5 in)
	0.25 mm (10 mils)	6 cm (2.36 in)	23 cm (9.06 in)
	0.38 mm (15 mils)	5.5 cm (2.17 in)	34.5 cm (13.58 in)
PDF417	0.25 mm (10 mils)	5.5 cm (2.17 in)	26 cm (10.24 in)
	0.38 mm (15 mils)	6.5 cm (2.56 in)	37 cm (14.57 in)

EV12 Linear Imager Minimum Reading Distances

The illustration below does not include the 0.12 cm (0.05 in) setback for the CK71. Minimum reading distances are measured in the dark (0 lux).

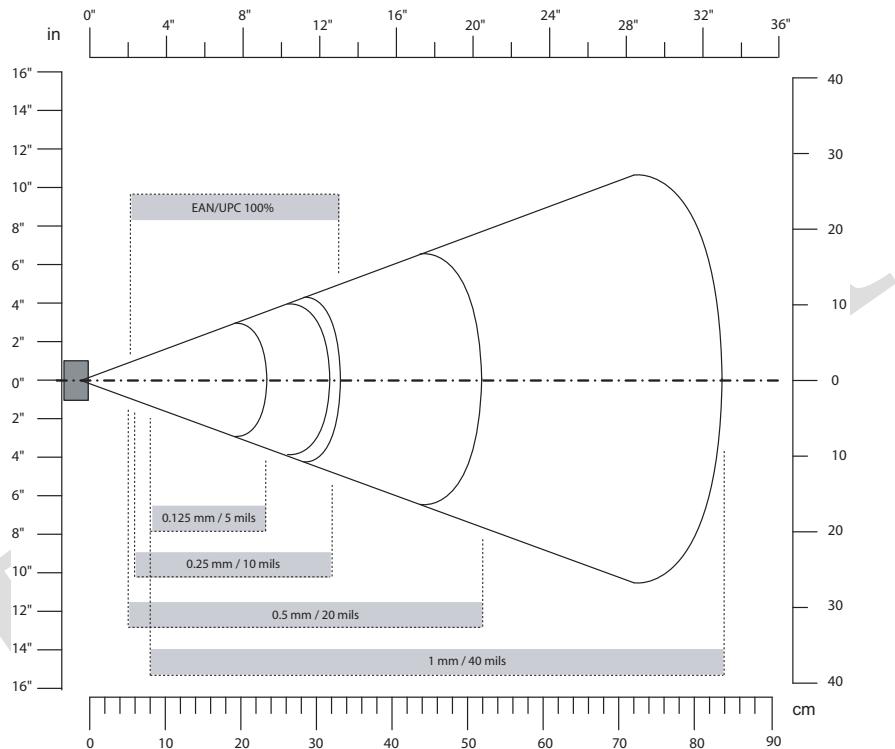


EV12 Minimum Reading Distances With 0.12 cm (0.05 in) Setback

Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.15 mm (6 mils)	9.6 cm (3.8 in)	17.9 cm (7.1 in)
	0.25 mm (10 mils)	7.1 cm (2.9 in)	20.9 cm (8.3 in)
	0.5 mm (20 mils)	6.1 cm (2.5 in)	26.9 cm (10.6 in)
	1 mm (40 mils)	8.1 cm (3.2 in)	33.9 cm (13.4 in)
EAN/UPC	0.33 mm (13 mils)	6.1 cm (2.5 in)	22.9 cm (9.1 in)

EV12 Linear Imager Typical Reading Distances

The illustration below does not include the 0.12 cm (0.05 in) setback for the CK71. Typical reading distances are measured in an office environment (200 lux).



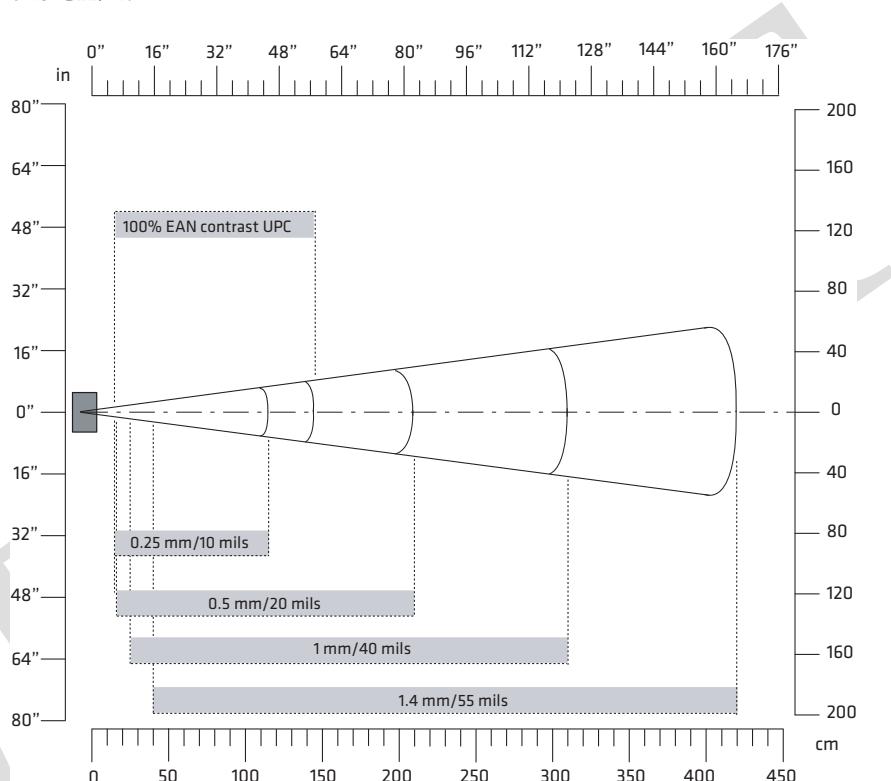
EV12 Typical Reading Distances With 0.12 cm (0.05 in) Setback

Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.15 mm (6 mils)	9.6 cm (3.8 in)	19.9 cm (7.9 in)
	0.25 mm (10 mils)	6.1 cm (2.5 in)	24.9 cm (9.8 in)
	0.5 mm (20 mils)	5.1 cm (2.1 in)	34.9 cm (13.8 in)
	1 mm (40 mils)	7.1 cm (2.9 in)**	50.9 cm (20.1 in)
EAN/UPC	0.33 mm (13 mils)	5.1 cm (2.1 in)	27.9 cm (11.0 in)

** Minimum distance depends on bar code width and scan angle.

EX25 Near-Far Range Imager Minimum Reading Distance

Minimum reading distances are measured in the dark (0 lux). The following graphic does not include the 0.24 cm (0.09 in) setback for the CK71.



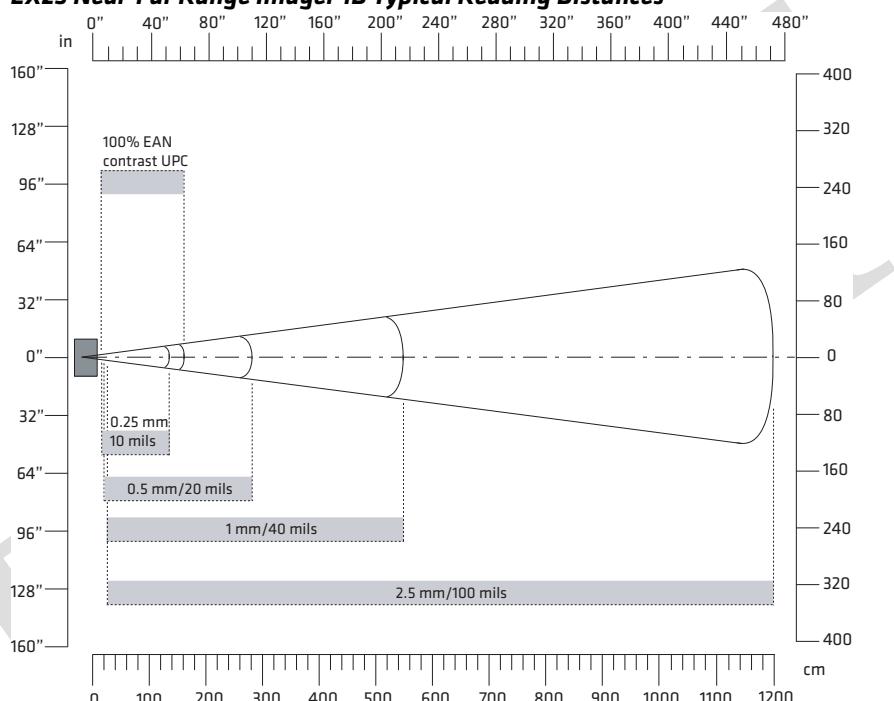
EX25 Minimum Reading Distances With 0.24 cm (0.09 in) Setback

Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.08 mm (3 mils)	15 cm (5.91 in)	35 cm (13.78 in)
	0.1 mm (2.8 mils)	15 cm (5.91 in)	45 cm (17.72 in)
	0.25 mm (10 mils)	15 cm (5.91 in)	115 cm (45.28 in)
	0.5 mm (20 mils)	16 cm (6.30 in)	210 cm (82.68 in)
	1 mm (40 mils)	25 cm (9.84 in)	310 cm (122.05 in)
	1.3 mm (51 mils)	40 cm (15.75 in)	310 cm (122.05 in)
	EAN 100%	15 cm (5.91 in)	145 cm (57.09 in)

EX25 Near-Far Range Imager Typical Reading Distance

Typical reading distances are measured in an office environment (200 lux). The following graphics do not include the 0.24 cm (0.09 in) setback for the CK71.

EX25 Near-Far Range Imager 1D Typical Reading Distances

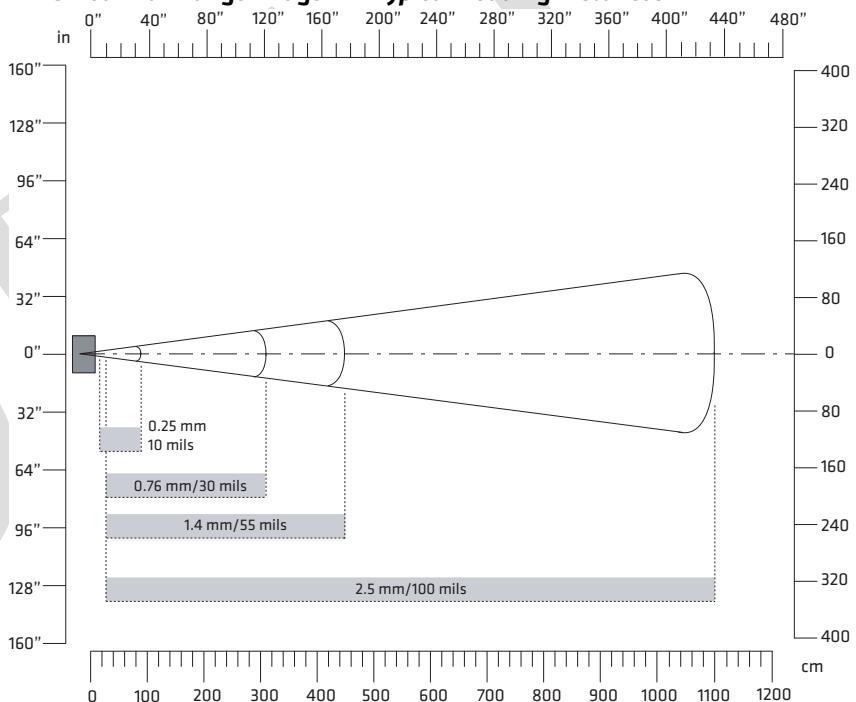


EX25 1D Symbologies Typical Reading Distances With 0.24 cm (0.09 in) Setback

Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.25 mm (10 mils)	15 cm (5.91 in)	135 cm (53.15 in)
	0.5 mm (20 mils)	16 cm (6.30 in)	280 cm (110.24 in)
	1 mm (40 mils)	25 cm (9.84 in)	550 cm (216.54 in)
	1.4 mm (55 mils)	40 cm (15.75 in)	720 cm (283.46 in)
	2.5 mm (100 mils)	**	1200 cm (472.44 in)
Code 128 retro-reflective	2.5 mm (100 mils)	**	1300 cm (511.81 in)
EAN 100%	0.33 mm (13 mils)	15 cm (5.91 in)	160 cm (62.99 in)

** Minimum distance depends on bar code width and scan angle.

EX25 Near-Far Range Imager 2D Typical Reading Distances



EX25 2D Symbolologies Typical Reading Distances With 0.24 cm (0.09 in) Setback

Symbology	Density	Minimum Distance	Maximum Distance
DataMatrix	0.25 mm (10 mils)	15 cm (5.91 in)	90 cm (35.43 in)
	0.76 mm (30 mils)	25 cm (9.84 in)	310 cm (122.05 in)
	1.4 mm (55 mils)	**	450 cm (177.17 in)
	2.5 mm (100 mils)	**	1100 cm (433.07 in)
	7.5 mm (300 mils)	20 cm (7.87 in)	1524 cm (600 in)

** Minimum distance depends on bar code width and scan angle.

Default Configuration

The following tables list the default values of the configuration settings supported on the mobile computer. If you restore the mobile computer to factory default settings, the mobile computer uses these values.

The settings are grouped by function and reflect the organization of Intermec Settings. Not all of the configuration settings are listed in this appendix. For detailed information on most of the settings, see the *Intermec Settings Command Reference Manual*.

Data Collection Settings

Use data collection settings to configure the imager and to configure the bar codes that you want the imager to be able to read.

Data Collection Settings

Data Collection Setting	Default Value
Enable Scanner/Camera Port	On
BT-Configure On Connect	Overwrite with computer settings
Enable Magstripe Reader	Disable

Symbology Settings

Symbology	Default Value
AustraliaPost	Disable
Aztec	Disable
BPO	Disable
CanadaPost	Disable
Codabar	Disable
Codablock A	Disable
Codablock F	Disable
Code 11	Disable
Code 39	Enable
Code 93	Disable
Code 128/GS1-128	Enable
DataMatrix	Enable
DutchPost	Disable
EAN/UPC	Enable UPC A, UPC E, EAN 8, EAN 13
GS1 Composite	Disable
GS1 DataBar Expanded	Disable
GS1 DataBar Limited	Disable
GS1 DataBar Omni-Directional	Disable
Infomail	Disable
Intelligent Mail	Disable
Interleaved 2 of 5	Disable
JapanPost	Disable
Matrix 2 of 5	Disable
Maxicode	Disable
Micro PDF417	Disable
MSI	Disable
PDF417	Enable
Planet	Disable
Plessey	Disable
Postnet	Disable
QR Code	Disable
Standard 2 of 5	Disable

Appendix A – Specifications and Default Settings

Symbology	Default Value
SwedenPost	Disable
Telepen	Disable
TLC 39	Disable

Symbology Option Settings

Symbology Option Settings	Default Value
Preamble	None (Disabled)
Postamble	None (Disabled)
Symbology Identifier	Disable
Multicode	Disable

Scanner Settings

Scanner Settings	Default Value
Trigger Predefined Modes	Level
Trigger Mode	Level
Aimer Mode	Typical aimer
Hardware Trigger	Enable
Trigger Timeout (sec)	2
Aiming Duration (msec)	500
Turn Off After Good Read	Enable/One-shot
Auto-Trigger delay (msec)	0

Imager Settings

Imager Settings	Default Value
Predefined Modes	1D and 2D Standard
Image File Location	\My Documents\MDI
Signature Image Capture	Disable
Document Imaging	Disable

Imager Settings	Default Value
Image Capture	
Output Compression	Bitmap
Output Compression Quality	0
Edge Enhancement	None
Noise Reduction	0
Subsampling	None
Image Rotation	None
Image Lighting Correction	Disable

Decode Security Settings

Decode Security Settings	Default Value
Consecutive Data Validation	0
Identical Consecutive Timeout	300 ms
Different Consecutive Timeout	0
Center Decoding	Disable
Center Decoding Tolerance	0

Communications

Use communications settings to configure how the mobile computer communicates with the network.

Communications Settings

Communications Setting	Default Value
Device Name	IntermecCXXX (where XXX indicates the model of mobile computer)

802.11 Radio Settings

802.11 Radio Setting	Default Value
Security Choice	Funk
Allow Security Changes	Enabled
Active Profile	Profile 1
DHCP	Enabled
Import Root Certificates	False
Import User Certificates	False

802.11 Radio Setting	Default Value
Import Pac Files	False
Radio Bands	b/g (2.4 GHz)
Radio Enabled	Off

Ethernet Adapter Settings

Ethernet Adapter Setting	Default Value
DHCP	Enabled

Bluetooth Settings

Bluetooth Setting	Default Value
Bluetooth Power	Off

WWAN Radio Settings

WWAN Radio Setting	Default Value
WWAN Radio Enabled	Enabled

Serial Port Switch

Serial Port Switch Setting	Default Value
Serial Port Switch	Standard Docking and IrDA

RFID

RFID Setting	Default Value
Enable RFID Service	Enabled
Application Connection	<ul style="list-style-type: none">Allow External BRI Connection: enabled.BRI TCP Port: 2189Enable Logging: Off
Reader 1	<ul style="list-style-type: none">Enable Reader: OnConnected: OnReader Model: IM11RFID Module:<ul style="list-style-type: none">Version: 1.00.0474

RFID Setting	Default Value
	<ul style="list-style-type: none">- Frequency: 915MHz or 865MHz (Europe)- Tag Type: EPC Class 1 Gen2- Dense Reader Mode: On- Field Separator: Space ()- ID Report: On- No Tag Report: Off- Report Timeout: 0- Timeout Mode: Off- ID Timeout: 5000- Antenna Timeout: 5000- ID Tries: 1- Antenna Tries:1- Read Tries: 3- Write Tries: 5- Initialization Tries:1- Lock Tries: 3- Select Tries: 1- Unselect Tries: 1- Initial Q: 4- Field Strength dB: 30- Session: 2- Enable Antenna Port 1: On- Enable Antenna Port 2: Off- Enable Antenna Port 3: Off- Enable Antenna Port 4: Off

Device Settings

Use device settings to configure settings on the mobile computer.

Device Settings

Device Setting	Default Value
Date	N/A
Time	N/A

Good Read Settings

Good Read Setting	Default Value
Internal Scanner Good Read Beep	One Beep
Tethered Scanner	One Beep
Bluetooth Scanner Good Read Beep	One Beep

Backlight Settings

Backlight Setting	Default Value
Display Backlight Adjustment	Normal
Keypad Backlight	On Based on Light Level
Light Level	Low

Screen Settings

Screen Setting	Default Value
Screen Rotations	Portrait 0 Degrees
Screen Rotation Sensor	Disabled

Sound Settings

Sound Setting	Default Value
Beeper and Voice	Medium
Headset Beeper	Very Low
Vibrate Mode Intensity	1 Strong Pulse
Screen Taps	Off

Sound Setting	Default Value
Key Clicks	Off

Keypad Settings

Keypad Setting	Default Value
Button Remapping	Scanner

Power Management Settings

Power Management Setting	Default Value
Enable Power Button Screen	On
Screen Options Displayed	Hibernate, Suspend, Reboot
Screen Timeout (Seconds)	5
Power Button Behavior	Suspend
Device Turns Off After (Battery Power)	5 minutes
Screen Turns Off After (Battery Power)	Disabled
Device Turns Off After (External Power)	Disabled
Screen Turns Off After (External Power)	Disabled
Device Off Sensor	Disabled

Profiles Settings Application

Profiles Settings	Default Value
Camera	
Disable Camera Scan	Show Option in Profile Settings
Enable Camera Scan	Show Option in Profile Settings
Power	
Always On	Show Option in Profile Settings
Maximize Battery Life	Show Option in Profile Settings
Normal	Show Option in Profile Settings
Scanning	
1D Bar Codes Optimized	Show Option in Profile Settings
Bright Sunlight	Show Option in Profile Settings
Reflective Labels	Show Option in Profile Settings
Standard	Show Option in Profile Settings

GPS Settings

Use GPS settings to configure how the mobile computer communicates with the GPS network.

GPS

GPS Setting	Default Value
Enable Bread Crumbing	Disable

Core Messaging Service Settings

Use core messaging service settings to configure the message routers between client and server software applications.

Core Messaging Service

Core Messaging Service Setting	Default Value
Associated Server IP	Null
Broadcast Name	INTERMEC
Port	62241
Keep Alive Ping Interval	30 Seconds

Device Monitor Settings

Use device monitor settings to configure how the mobile computer monitors the network.

Device Health Controls

Device Health Setting	Default Value
Enable Health Data Collection	On
Enable Device Health Application	On
Enable Blue Light	Off for Ready-to-Work
Set Rule File Location	\SmartSystems\HealthRules.txt
System Device Health Refresh (seconds)	90
Network Device Health Refresh (seconds)	45

Device Health Screen Captures

Device Health Screen Captures Setting	Default Value
Directory	\SmartSystems\ScreenCapture
Screen Captures Allowed	3

Device Wipe

Device Wipe Setting	Default Value
Enable Wipe	Disabled
Interval (in days)	Null

Virtual Wedge Settings

Use virtual wedge settings to configure the virtual wedge.

Virtual Wedge Setting

Setting	Default Value
Virtual Wedge	Enable
Bar Code Scanner Grid	Null
Label Encoding (Code Page)	1252
Magstripe Reader Grid	Null

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