6

Configure the Computer

Use this chapter to learn about the available methods for configuring your mobile computer and how to use Intermec Settings. You can also use this chapter to learn how to configure network communications and wireless security.

How to Configure the Computer

You can configure many parameters on the computer such as the bar code symbologies it decodes or the network settings. The values you set for these parameters determine how the computer operates.

There are several ways to configure the computer:

- Directly on the computer. You can use Intermec Settings directly on the computer to change only the settings on that computer. For more information, see the next section, **"Use Intermec Settings on the Computer."**
- Remotely using Intermec SmartSystems. When you use SmartSystems, you can remotely configure all of your 70 Series mobile computers as well as other SmartSystems-enabled Intermec computers and peripherals. For more information, see **"Use Intermec Settings Remotely with SmartSystems" on page 82**.
- You can use a third-party device management product that supports the computer and Intermec Settings, such as Soti MobiControl or Wavelink Avalanche. For more information, visit the **Device Management** page on the Intermec website.

You can also configure the computer with configuration bundles that you create using SmartSystems Foundation. For more information, see the SmartSystems Foundation Online Help.

Use Intermec Settings on the Computer

Use Intermec Settings to configure parameters for Intermec applications on the computer as well as some device-specific parameters like volume. You can configure parameters for important functions like data collection and communications.

Start Intermec Settings

Intermec Settings is located on the System screen.

- Tap **Start > Settings > System > Intermec Settings**. The Intermec Settings Main Menu appears.

About the Structure of Intermec Settings

Use the tables below to help find the parameters in Intermec Settings that you want to configure. Each table contains the parameters for one of the Intermec Settings Main Menu options.

If you see **>** next to a menu option, there are more screens available in the next level. If you see **...** next to a menu option, there is only one more screen available.

Most parameters are saved as soon as you tap **OK**. Some settings such as the Serial Port Switch require you to reboot the computer for the changes to take effect.

Data Collection Menu

Data Collection Options	Parameters You Can Configure
Internal Scanner	• Symbologies • Scanner settings • Imager settings • Decode security
Bluetooth Scanner	• Symbologies • Scanner settings • Imager settings • Decode security
Dock Tethered Scanner	• Symbologies • Scanner settings • Scanner port settings • Imager settings • Decode security
Camera	• Symbologies • Scanner settings • Camera settings • Decode security
BT-Configure on Connect	Bluetooth-configure on connect
Magstripe Reader	• Enable magstripe reader • Reader model (read-only)

Communications Menu

Communications Options	Parameters You Can Configure
Device Name	Device name
802.11 Radio	• Security choice (supplicant) • Security settings (includes Wi-Fi settings such as enable/disable radio) • IP settings • Certificates
Ethernet Adapter	IP settings
Bluetooth	Bluetooth settings (power, discoverable, connectable, and so on)

Communications Options	Parameters You Can Configure
WWAN Radio	• Add WWAN connection • Edit WWAN connections • Manage WWAN radio • Carrier Selection • WWAN information
Serial Port Switch	Serial port switch settings (IrDA, docking connector, and back interface)

Device Settings Menu

Device Settings Options	Parameters You Can Configure
Date and Time	Date and time settings
Good Read	• Internal scanner • Tethered scanner • Bluetooth scanner
Sounds	• Beeper and voice volume • Headset beeper volume • Vibrate mode intensity • Screen taps • Key clicks
Backlight	Backlight settings (display backlight, keypad backlight, and light level)
Screen	• Screen rotation • Screen rotation sensor
Keypad	Button Remapping (Flashlight timeout, Left side lower button, Handle trigger, Center scan button, Left side upper button, Right side upper button, Right side lower button)
Power Management	• Power button • Battery power • External power • Device off sensor
USB	USB function driver
System Component Versions	System component versions (read-only)
IDL Runtime Versions	ITC50 (read-only)

Device Settings Options	Parameters You Can Configure
Profile Settings Application	Whether these parameter options appear in Profile Settings: • Camera • Power • Scanning
Features Disabled by Policy	None (read-only)

Printer Menu

Printer Options	Parameters You Can Configure
Printer (if connected through Bluetooth)	Printer settings (Auto detect printer, memory, display, and so on)

Note: The Printer menu displays settings for Bluetooth connected printers. The settings that appear in the menu are dependent on the printer that is paired with the device. The printer needs to be using the Wireless Printing application.

GPS Menu

GPS Options	
GPS	Bread crumbing settings

SmartSystems Information Menu

SmartSystems Information Options	Parameters You Can Configure
Identity	Identity information (hardware version, firmware version, OS version, and so on) (read-only)
Administrator	Administrator settings (name, phone, and email)
Location	Location settings (country, state, city, campus, and detail)
Information	Device Notes (read-only)

Virtual Wedge Menu

Virtual Wedge Options	Parameters You Can Configure
Enable Virtual Wedge	Enable virtual wedge
Bar Code Scanner Wedge	Bar code scanner wedge settings (bar code scanner grid and label encoding)
Magstripe Reader Wedge	Magstripe Reader Grid

Core Messaging Service Menu

Core Messaging Service Options	Parameters You Can Configure
Server IP	Server IP (read-only)
Associated Server IP	Associated server IP
Broadcast Name	Broadcast name
Port	Port (read-only)
Keep Alive Ping Interval	Keep alive ping interval

Device Monitor Menu

Device Monitor Options	Parameters You Can Configure
Device Health Controls	• Enable Health Data Collection • Enable Device Health Application • Enable Blue Light (LED) • Set Rule File Location • Collect Abuse History • Set Data Refresh Periods
Device Health Screen Captures	Device health screen capture settings (directory and screen capture allowed)
Disabled Executables	None (read-only)
Device Wipe	Device wipe settings (enable wipe and interval)

License Manager Menu

License Manager Options	Parameters You Can Configure
About	About settings (read-only)
License Vault	None (displays applications that are licensed)

Location Services Menu

Location Services Options	Parameters You Can Configure
Server	Server settings (port and enable server)
Virtual GPS	Virtual GPS settings

For more information on all parameters in Intermec Settings, see the *Intermec Settings Command Reference Manual*.

Navigate in Intermec Settings

You can easily navigate through the screens in Intermec Settings to find the parameter you need to configure.

To move down a level in Intermec Settings:

- Tap the menu item in the list.

To move back a level in Intermec Settings:

- Tap **Back** or **Cancel** on the Tile bar.

To save a parameter setting:

- Tap **OK**.

To exit Intermec Settings:

- Tap **Menu > Exit** or **OK**.

Configure Profile Settings with Intermec Settings

A profile is a set of predefined values that you can easily apply to the computer to ensure optimal performance in a specific scenario. The end user does not need to figure out the "right" settings because we have already done that work for you. Profile Settings is available from the Start menu so you can make it available to the end user for easy configuration.

Use Intermec Settings to determine the profiles you want the end user to see in the Profile Settings application.

1. Go to **Device Settings > Profile Settings Application**.
2. Select **Camera**, **Power**, or **Scanning**.

3. From the Camera, Power, or Scanning submenu, check or clear the **Display** check box for the settings you want to have available to the end user.
4. Click **OK** to save your selection.

Restore Default Settings to a Menu

You can restore the items in a single menu to their default settings.

1. Navigate to the menu that you want to restore to defaults.
2. Tap **Menu > Restore Menu Defaults**.
3. When prompted, tap **Yes** to restore the menu default settings.
4. If prompted to refresh the computer, tap **Yes**.

Restore Default Settings for All Parameters

You can restore all Intermec Settings parameters to their default settings.

1. Tap **Menu > Restore All Defaults**. The applications asks if you are sure you want to restore all defaults.
2. Tap **Yes**.

   After several minutes, all of the default settings are restored.

Hide Menu Items in Intermec Settings

You can hide items in the Intermec Settings menus if you do not want to have them available for other users to access. Hidden items are not saved when you back up your settings in the SmartSystems console.

On the mobile computer, you can:

- hide menu items by tapping and holding the item, and then choosing **Hide Menu Item** from the popup list. When asked if you want to hide the menu, tap **Yes**.
- restore all hidden items in all menus, by tapping **Menu > Unhide All Items**.

Note: When you restore default settings in Intermec Settings, only the settings for visible items are restored to defaults. The settings for hidden menu items are not affected.

Use Intermec Settings Remotely with SmartSystems

Your mobile computer is SmartSystems-enabled, which lets you open Intermec Settings from the SmartSystems console to remotely configure all of your mobile computers. For more information about SmartSystems, see **"Manage the Computer Using SmartSystems" on page 106**.

1. In the SmartSystems console, select a mobile computer and right-click.
2. From the menu, select **Intermec Settings**.
3. Configure the settings you need to change. As you select parameters from the tree structure, help for each parameter appears in the upper right pane of Intermec Settings.
4. When you are done making changes, select **File > Save Settings**.

   For help using Intermec Settings, click **Help > Contents**. For information about all of the parameters in Intermec Settings, see the ***Intermec Settings Command Reference Manual***.

About Network Communications

You can easily add the mobile computer to your wireless or wired data collection network. You can connect your computer using:

- 802.11a/b/g/n radio communications.
- Ethernet communications.
- Bluetooth communications.
- USB and serial communications.

Configure 802.11a/b/g/n (Wi-Fi) Radio Communications

Make sure all components with antennas are at least 30 cm (1 ft) apart when power is applied. Failure to comply could result in equipment damage.

The mobile computer contains an 802.11 radio to transfer data using wireless communications and to support the TCP/IP network protocols. This section of the manual assumes that your wireless network is set up, including your access points.

By default, the 802.11 radio is disabled. Use the following procedure to enable the Wi-Fi radio using Intermec Settings. If you would like to use ScanNGo bar codes to easily enable the radio and set the default security settings, see Appendix C **"ScanNGo Wi-Fi Configuration Bar Codes" on page 177**.

1. Tap **Start > Settings > System > Intermec Settings**.
2. From the Intermec Settings main menu, tap **Communications > 802.11 Radio > Radio Enabled**.
3. Select the **Radio Enabled** check box and tap **OK**. By default, the computer uses Funk security and enables DHCP.
4. Use Intermec Settings to configure any other parameters you need to use for communication with your network.
5. Configure 802.11 security. For help, see **"About Wireless Security" on page 92**.

Configure Ethernet Communications

To configure Ethernet communications, connect your mobile computer to your Ethernet network using the Ethernet Snap-On Adapter (Model 1000AA01) or an Ethernet dock.

1. Connect the Ethernet snap-on adapter to your mobile computer.

2 Connect the Ethernet cable from your network to the snap-on adapter or dock.

   Ethernet communications are automatically enabled on your mobile computer.

3 Make sure that your computer is communicating with the network. The network connection icon ( ) should appear on the title bar.

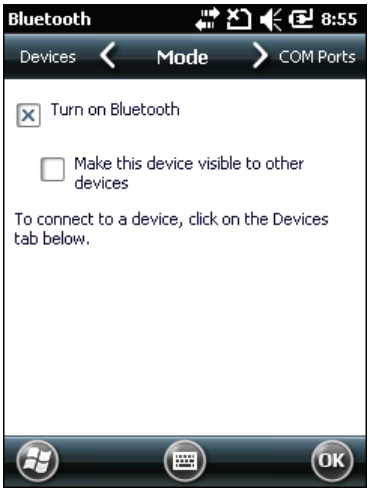
Configure Bluetooth Communications

Your mobile computer is Bluetooth™-enabled, which lets you connect to other Bluetooth devices, such as scanners, printers, or audio devices.

You need to turn on the Bluetooth radio before you can discover and connect to other Bluetooth devices. By default, the radio is turned off. You can configure Bluetooth communications using Intermec Settings or from the Start menu.

1 Tap **Start > Settings > Bluetooth > Mode**.

2 Select the **Turn on Bluetooth** check box.



3 (Optional) If you want your computer to be visible to other Bluetooth devices, select **Make this device visible to other devices**.

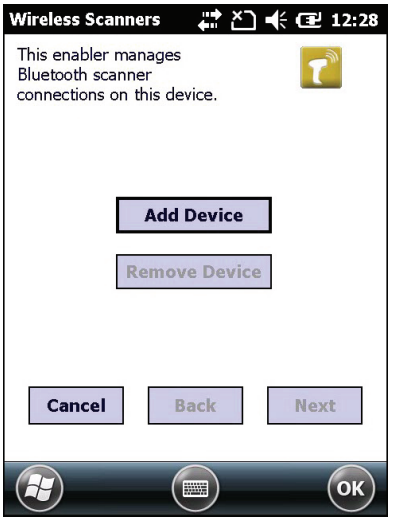
4 Tap **OK**.

The Bluetooth radio maintains its state through a reboot or cold boot and maintains virtual COM ports. But, if you clean boot your computer you need to recreate pairings to devices.

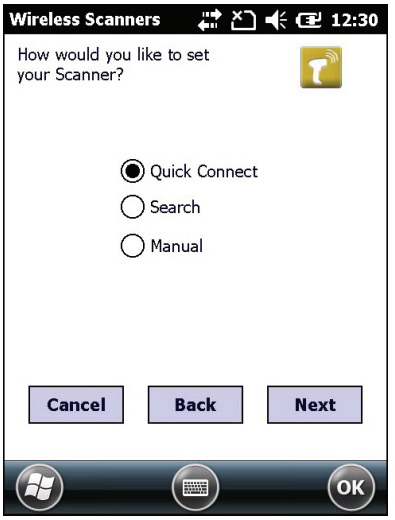
Connect to a Bluetooth Scanner

You can connect the computer to an Intermec Bluetooth scanner, such as the SF51 or SR61.

1 Tap **Start > Settings > System > Wireless Scanning**.



2 Tap **Add Device**.



3 Select **Quick Connect**, **Search**, or **Manual**. Follow the onscreen instruction to add a wireless scanner.

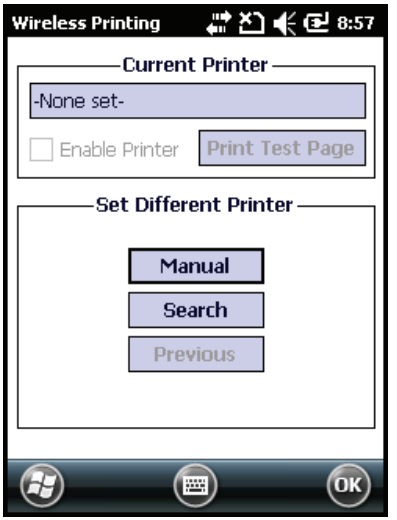
Connect to a Bluetooth Printer

To configure your computer for Bluetooth wireless printing, you need to:

- create an application that opens the wireless printing COM port on your computer. For help, see the Bluetooth Resource Kit, which is part of the Intermec Developer Library (IDL), available from the Intermec website at **www.intermec.com/idl**.
- select the current wireless printer on your computer. For help, see the next procedure.

Note: You can also print wirelessly using Microsoft APIs with Bluetooth extensions for Winsock and Bluetooth virtual COM ports. For help, see the Bluetooth Resource Kit documentation.

1 Tap **Start > Settings > System > Wireless Printing**.



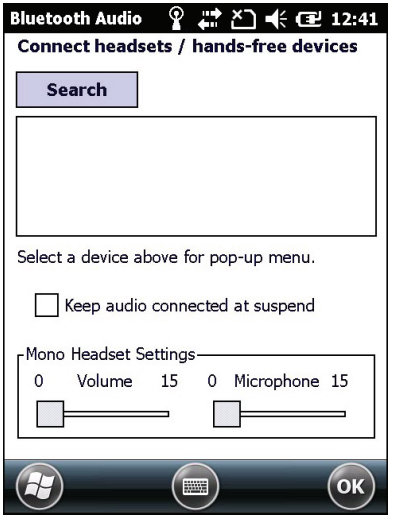
2 Tap **Search** to find a printer, or tap **Manual** to enter a device address. Follow the onscreen instructions to select the current wireless printer.

3 (Optional) Tap **Print Test Page**. The printer prints out a test page.

Connect to a Bluetooth Audio Device

Use the Bluetooth Audio enabler to discover, activate, and connect to Bluetooth audio devices such as a headset. This enables system sounds to be monitored through the headset.

1 Tap **Start > Settings > System > Bluetooth Audio**.



2 Tap **Search** to find your Bluetooth headset or hands-free device.

3 Select your device from the list and configure any settings.

4 Click **OK** when you are done.

About Serial and USB Communications

You can use these 70 Series accessories to transmit data to and receive data from another device through serial or USB communications:

- RS-232 Snap-On Adapter (Model 1000AA03)
- USB Snap-On Adapter (Model 1000AA07)

For more information about these accessories and how to order them, see **"70 Series Accessories" on page 8**.

Connect to a Tethered Scanner

Use this procedure to connect your mobile computer to an SR30, SR61T, or ASCII tethered scanner and enable RS-232 communications.

1. Tap **Start > Settings > System > Intermec Settings > Communications > Serial Port Switch**.
2. Select **Standard docking and IrDA** and tap **OK**.

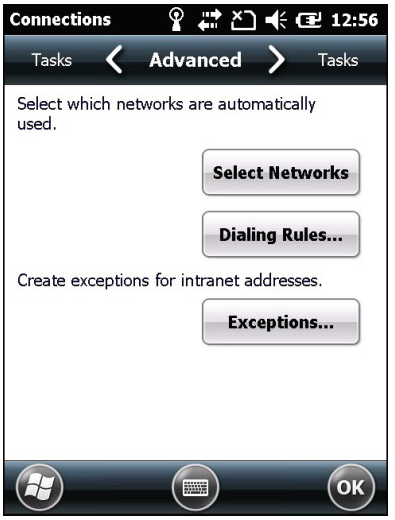
   If the serial port switch is set to one of the other options, you need to select **Standard docking and IrDA** and then save and reboot the computer before you proceed.
3. Tap **Back** to return to the Main Menu.
4. Tap **Data Collection > Dock Tethered Scanner > Enable scanner auto-detect**.
5. Select the **Enable scanner auto-detect** check box and tap **OK**.
6. Perform one of these items based on the type of scanner you are connecting:
   - For an SR30 or SR61T scanner, tap **Scanner Settings**, select **SR Intermec Scanner**, and then tap **OK**.
   - For an ASCII scanner, tap **Scanner Settings**, select **ASCII**, and then tap **OK**. Set up the appropriate COM port settings by selecting **Scanner Port Settings**.
7. Connect the RS-232 snap-on adapter with the attached scanner to the bottom of the mobile computer.

Create an ISP Connection

You can create an Internet Service Provider (ISP) connection to send and receive email messages using Messaging (Outlook Email) and view web pages using Internet Explorer Mobile. You need to get your ISP dial-up access telephone number, a user name, and a password from your ISP.

1. Tap **Start > Settings > Connections > Connections**.
2. Under **My ISP**, tap **Add a new modem connection**.

3. Enter a name for the connection, such as "ISP Connection."
4. If you are using an external modem connected to your mobile computer with a cable, select **Hayes Compatible on COM1** from the **Select a modem** list.
5. Tap **Next**.
6. Enter the access phone number and then tap **Next**.
7. Enter the **User name**, **Password**, and **Domain** (if provided by an ISP or your network administrator).
8. Tap **Finish**.
9. On the Connections screen, tap **Advanced** on the horizontal scroll.



10. Tap **Dialing Rules**.
11. When the Enable Dialing Rules box appears, tap **OK**.
12. Tap **Edit**.
13. In the **Name** field, enter your phone type (**Home**, **Mobile**, or **Work**).
14. Tap **OK** until you exit the Connections screen.

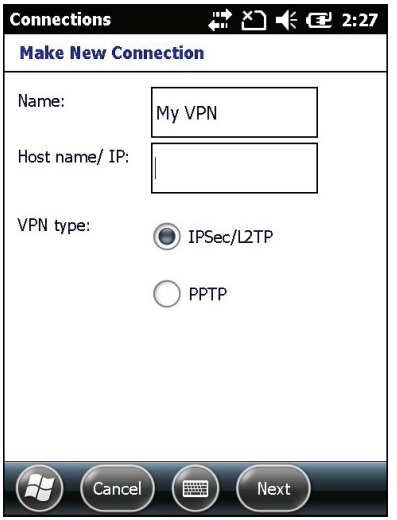
Create a VPN Server Connection

You can create a Virtual Private Network (VPN) connection to securely connect to servers, such as a corporate network, through the Internet. Before you can create a VPN connection, you need this information from your network administrator:

- User name
- Password
- Domain name
- TCP/IP settings
- Host name or IP address of the VPN server

After you have located this information, you can create a VPN server connection.

1. Tap **Start > Settings > Connections > Connections**.
2. Under **My Work Network**, tap **Add a new VPN server connection**.
3. Step through the screens to set up your VPN connection.



About Wireless Security

The computer provides five types of security for your wireless network:

- Wi-Fi Protected Access 2 (WPA2™)
- Wi-Fi Protected Access (WPA)
- 802.1x
- LEAP
- WEP

This section explains how to configure wireless security on your mobile computer. Intermec recommends that you implement WPA2 security using PSK (Personal) or 802.1X (Enterprise) key management as appropriate.

You must use either Funk or Microsoft security to implement your security solution. For details, see the next section, **"Choose Between Microsoft and Funk Security."** Intermec recommends that you always implement WPA2 security using PSK (Personal) or 802.1X (Enterprise) key management.

If you are using WPA-802.1x, WPA2-802.1x, or 802.1x security, this section also assumes that your authentication server and authenticators are properly configured.

Note: Your security choice does not depend on your authentication server. For example, you can choose Funk security if you use Microsoft Active Directory® to issue certificates.

Choose Between Microsoft and Funk Security

The computer supports both Funk and Microsoft security, which dynamically select wireless networks based on your preferences. The option you choose depends on your network security needs.

- If you are using the computer in a static environment that requires a high level of security, you should use Funk security, which offers CCX v4.0 compliance, support for LEAP and TTLS, and configuration for up to four profiles.

  To use Funk security, you need to select a profile. For help, see the next section, **"Select a Funk Security Profile."**

- If you are primarily using the computer to connect to Wi-Fi hotspots, you may want to use Microsoft security.

  To use Microsoft security, you need to select it as your security choice. For help, see **"Select Microsoft as Your Security Choice" on page 97**.

Select a Funk Security Profile

You can define up to four profiles for Funk security. Different profiles let your computer communicate in different networks without having to change all of your security settings. For example, you may want to set up one profile for the manufacturing floor and one for the warehouse. By default, the active profile is Profile 1.

Select a Funk Security Profile

Use the following procedure to select a Funk security profile.

1. Start Intermec Settings.
2. Select **Communications > 802.11 Radio > Funk Security**.
3. Select a profile. A list of configurable settings appears.
4. (Optional) In the **Profile Label** text box, enter a meaningful name for your profile.
5. Configure your security settings. For help, see the next sections.
6. Repeat Steps 3 through 5 for each profile you want to define.
7. Set an active profile by choosing it in the **Active Profile** list.
8. Save your settings.

Configure WPA or WPA2 Enterprise (802.1x) Security with Funk

Use these procedures to set WPA-802.1x or WPA2-802.1x security on your computer with Funk security.

1. Make sure the communications and radio parameters on your 70 Series are configured.
2. Make sure Funk is selected as your security choice.
3. Start Intermec Settings.
4. Select **Communications > 802.11 Radio > Funk Security**.

5 Select the profile you want to configure.

6 For **Association**, select **WPA** or **WPA2**. Encryption automatically defaults to **TKIP** or **AES**, respectively.

7 For **8021x**, select **TTLS**, **PEAP**, **EAP-FAST**, or **TLS**.

8 If you selected **TTLS**, **EAP-FAST**, or **PEAP**:

   a For **Prompt for Credentials**, select **Enter credentials now**.

   b Enter a **User Name** and **User Password**.

   c For **Validate Server Certificate**, select **Yes**.

Note: The correct date must be set on your computer when you enable **Validate Server Certificate**.

9 If you selected TLS:

   a Load a user and root certificate on your computer. For help, see **"Load a Certificate" on page 102**.

   b Enter a **User Name** and **Subject Name**.

   c For **Validate Server Certificate**, select **Yes**.

Configure WPA or WPA2 Personal (PSK) Security with Funk

Use the following procedure to configure WPA-PSK or WPA2-PSK with Funk security.

1 Make sure the communications and radio parameters on your computer are configured.

2 Make sure Funk is selected as your security choice.

3 Start Intermec Settings.

4 Select **Communications > 802.11 Radio > Funk Security**.

5 Select the profile you want to configure.

6 For **Association**, select **WPA** or **WPA2**.

7 For **8021x**, select **None**.

8 For **Pre-Shared Key**, enter the pre-shared key or passphrase.

   The pre-shared key must be a value of 32 hex pairs preceded by 0x for a total of 66 characters. The value must match the key value on the access point. The passphrase must be from 8 to 63 characters. After you enter a passphrase, the 70 Series internally converts it to a pre-shared key. This value must match the passphrase on the authenticator.

9 Save your settings.

Configure 802.1x Security with Funk Security

Use the following procedure to configure 802.1x-WEP security with Funk security. Intermec recommends that you use WPA2-802.1x instead of 802.1x-WEP if possible.

1 Make sure the communications and radio parameters on your computer are configured.

2 Make sure Funk is selected as your security choice.

3 Start Intermec Settings.

4 Select **Communications > 802.11 Radio > Funk Security**.

5 Select the profile you want to configure.

6 For **Association**, select **Open**.

7 For Encryption, select **WEP**.

8 For **8021x**, select **TTLS**, **PEAP**, or **TLS**.

9 If you selected **TTLS** or **PEAP**:

   a Enter a **User Name**.

   b For **Prompt for Credentials**, select **Enter credentials now**.

   c Enter a **User Password**.

   d For **Validate Server Certificate**, select **Yes**.

10 If you select **TLS**:

   a Load a user and root certificate on your computer. For help, see **"Load a Certificate" on page 102**.

   b For **Validate Server Certificate**, select **Yes**.

   c Enter a **User Name** and **Subject Name**.

11 Save your settings.

Configure LEAP Security with Funk

After you configure the communications and radio parameters on your mobile computer and select Funk as your security choice, you can configure LEAP.

1 Start Intermec Settings.

2 Select **Communications > 802.11 Radio > Funk**.

3 Select the profile you want to configure.

4 For **8021x**, select **LEAP**.

5 For **Association**, select **Open**, **WPA**, **WPA2**, or **Network EAP**. Encryption automatically defaults to **TKIP** if you selected **WPA**, **AES** if you selected **WPA2**, and **WEP** if you selected **Open** or **Network EAP**.

6 For **Prompt for Credentials**, select **Enter credentials now**.

7 Enter a **User Name** and **User Password**.

8 Save your settings.

Configure Static WEP Security with Funk Security

Use the following procedure to configure static WEP security with Funk. Intermec recommends that you use WPA2-PSK instead of WEP if possible.

1 Make sure the communications and radio parameters on your computer are configured.

2 Make sure Funk is selected as your security choice.

3 Start Intermec Settings.

4 Select **Communications > 802.11 Radio > Funk Security**.

5 Select the profile you want to configure.

6 For **Association**, select **Open**.

7 For **Encryption**, select **WEP**.

8 For **8021x** select **None**.

9 Define a value for the keys you want to use. You can define up to four keys (**Key 1** through **Key 4**).

   Enter an ASCII key or a hex key that is either 5 bytes or 13 bytes long depending on the capability of the radio. Set a 5- byte value for 64-bit WEP or a 13-byte value for 128-bit WEP. Hex keys must be preceded by 0x and contain 5 or 13 hex pairs.

10 For **Transmit key**, select the key you want to use for transmitting data.

11 Save your settings.

Use Open (No Security) Associations with Funk

Use the following procedure to configure your mobile computer for open security using Funk.

1 Start Intermec Settings.

2 Select **Communications > 802.11 Radio > Funk Security**.

3 Select the active profile you are using.

4 For **Association**, select **Open**.

5 For **Encryption**, select **None**.

6 Tap **OK**. Your settings are saved.

Select Microsoft as Your Security Choice

The default security setting is Funk. If you want to use Microsoft Wireless Zero Configuration (WZC) security, you need to select it as your security choice. After you select Microsoft as your security choice, you will be prompted to save your settings and reset the computer for your change to take effect.

With Microsoft as your security choice, you can configure:

- WPA or WPA2
- 802.1x
- Static WEP

Select Microsoft Security

Use the following procedure to select Microsoft security.

1. Start Intermec Settings. For help, see **"Configure the Computer" on page 73**.
2. Select **Communications > 802.11 Radio > Security Choice**.
3. From the **Security Choice list**, select **Microsoft Security**. An alert box appears telling you that you must save your settings and reboot the computer for the new security choice to take effect.
4. Select **Yes**. The computer resets and starts with Microsoft Security as the Security Choice.

Configure WPA or WPA2 Enterprise (802.1x) Security with Microsoft

Use these procedures to set WPA-802.1x security on your computer with Microsoft security.

1. Make sure the communications and radio parameters on your computer are configured.
2. Start Intermec Settings.
3. Select **Communications > 802.11 Radio > Microsoft Security**.
4. For **Infrastructure Mode**, select **Infrastructure**.
5. For **Network Authentication**, select **WPA** or **WPA2**. Data Encryption automatically defaults to **TKIP** for WPA and **AES** for WPA2.
6. For **802.1x Authentication**, select either **TLS**, or **PEAP**.

7 If you selected **TLS**:

   a Load a user and root certificate on your computer. For help, see **"Load a Certificate" on page 102**.

   b Select **Properties**. The Certificates dialog box appears.

   c Select the certificate you want to use from the list. The User Logon dialog box appears.

   d Enter a **User Name** and **Domain** and tap **OK**.

   e Tap **OK** to exit the Certificates dialog box.

   f Press **OK** to save the Microsoft Security settings.

8 If you selected PEAP:

   a Load a root certificate of the authentication server on your computer. For help, see **"Load a Certificate" on page 102**.

   b Press **OK** to save the security settings and the User Logon dialog box appears.

   c Enter a **User Name**, **Password**, and **Domain**. Select **Save Password** if you want to save the password for future authentication sessions.

   d Press **OK** to save the Microsoft Security settings.

Enable WPA or WPA2 Personal (PSK) Security with Microsoft

Use the following procedure to enable WPA-PSK with Microsoft Security.

1 Make sure the communications and radio parameters on your computer are configured.

2 Start Intermec Settings.

3 Select **Communications > 802.11 Radio > Microsoft Security**.

4 For **Infrastructure Mode**, select **Infrastructure**.

5 For **Network Authentication**, select **WPA-PSK**. Data Encryption automatically defaults to **TKIP** for WPA and **AES** for WPA2.

6 For **Pre-Shared Key**, enter the pre-shared key or the passphrase.

   The pre-shared key must be a value of 32 hex pairs preceded by 0x for a total of 66 characters. The value must match the key value on the authenticator. The passphrase must be from 8 to 63 characters. After you enter a passphrase, the computer internally converts it to a pre-shared key.

7 Save your settings.

Configure 802.1x Security with Microsoft

Use the following procedure to configure 802.1x security with Microsoft security. Intermec recommends that you use WPA2-802.1x instead of 802.1x-WEP if possible.

1 Make sure the communications and radio parameters on your computer are configured.

2 Start Intermec Settings.

3 Select **Communications > 802.11 Radio > Microsoft Security**.

4 For **Infrastructure Mode**, select **Infrastructure**.

5 For **Network Authentication**, select **Open**.

6 For **Data Encryption**, select **WEP**.

7 For **802.1X Authentication**, select **TLS** or **PEAP**.

8 If you selected **TLS**:

   a Load a user and root certificate on your computer. For help, see **"Load a Certificate" on page 102**.

   b Select **Properties**. The Certificates dialog box appears.

   c Select the certificate you want to use from the list. The User Logon dialog box appears.

   d Enter a **User Name** and **Domain** and tap **OK**.

   e Tap **OK** to exit the Certificates dialog box.

   f Press **OK** to save the Microsoft Security settings.

9 If you selected PEAP:

   a Load a root certificate of the authentication server on your computer. For help, see **"Load a Certificate" on page 102**.

   b Press **OK** to save the security settings and the User Logon dialog box appears.

   c Enter a **User Name**, **Password**, and **Domain**. Select **Save Password** if you want to save the password for future authentication sessions.

   d Press **OK** to save the Microsoft Security settings.

10 For **Network Key Setting**, select **Automatic**.

11 Save your settings.

Configure Static WEP Security with Microsoft

Use the following procedure to configure static WEP security with Microsoft security. Intermec recommends that you use WPA2-PSK instead of WEP if possible.

1 Make sure the communications and radio parameters on your computer are configured.

2 Start Intermec Settings.

3 Select **Communications > 802.11 Radio > Microsoft Security**.

4 For **Network Authentication**, select **Open**.

5 For **Data Encryption**, select **WEP**.

6 For **Network Key Setting**, select **Enter Key and Index**.

7 For **Network Key Value**, enter an ASCII key or a hex key that is either 5 bytes or 13 bytes long depending on the capability of the radio.

   Set a 5-byte value for 64-bit WEP or a 13-byte value for 128-bit WEP. Hex keys must be preceded by 0x and contain 5 or 13 hex pairs.

8 For **Network Key Index**, select the key you want to use for data transmission.

9 Save your settings.

Use Open (No Security) Associations with Microsoft

Use the following procedure to configure your mobile computer for open security using Microsoft WZC.

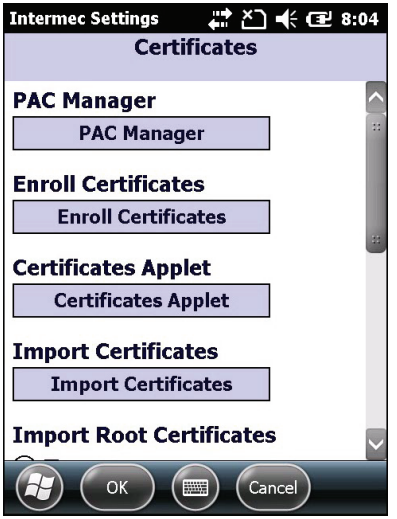
1. Start Intermec Settings.
2. Select **Communications > 802.11 Radio > Microsoft Security**.
3. For **Network Authentication**, select **Open**.
4. For **Data Encryption**, select **Disabled**.
5. Tap **OK**. Your settings are saved.

Load a Certificate

To use transport layer security (TLS) with WPA or 802.1x security, you need a unique client certificate on the computer and a trusted root certificate authority (CA) certificate. Certificates are pieces of cryptographic data that guarantee a public key is associated with a private key. They contain a public key and the entity name that owns the key. Each certificate is issued by a certificate authority.

1. Start Intermec Settings.
2. Go to **Start > Settings > System > Intermec Settings**.

3 Tap **Communications > 802.11 Radio > Certificates**. The Certificates screen appears.



4 To import a certificate chain:

- **a** Tap **Import Certificates** to install the selected certificate.
- **b** In the CertImportUI screen, tap the **<<<** button next to the Select pfx to import text field.
- **c** Select the root certificate from the list.
- **d** Tap **Import Certificate**.

5 To import user and root certificates from a Microsoft IAS server:

- **a** Tap **Import Certificates**.
- **b** Tap **Web Enrollment**.
- **c** Enter the **User**, **Password**, and **Server** (IP address) to log into the server.
- **d** Tap **OK**. A dialog box appears asking if you want to load the root certificate.
- **e** Tap **OK**. The Enrollment Tool message box appears telling you that the certificate has been added.
- **f** Tap **OK** to close the message box.

7

Manage the Computer

Use this chapter to learn how to remotely update, configure, and monitor your Intermec mobile computers. You will also find information on installing and developing software applications as well as how to upgrade the system software.

Manage the Computer in Your Network

When you have multiple mobile computers and peripherals in your network, it is essential to have an easy way to manage updates, configure all of the devices, and remotely troubleshoot problems. Intermec provides a free device management software platform called SmartSystems™ Foundation to help you manage your devices. You can also purchase third-party device management software through a vendor.

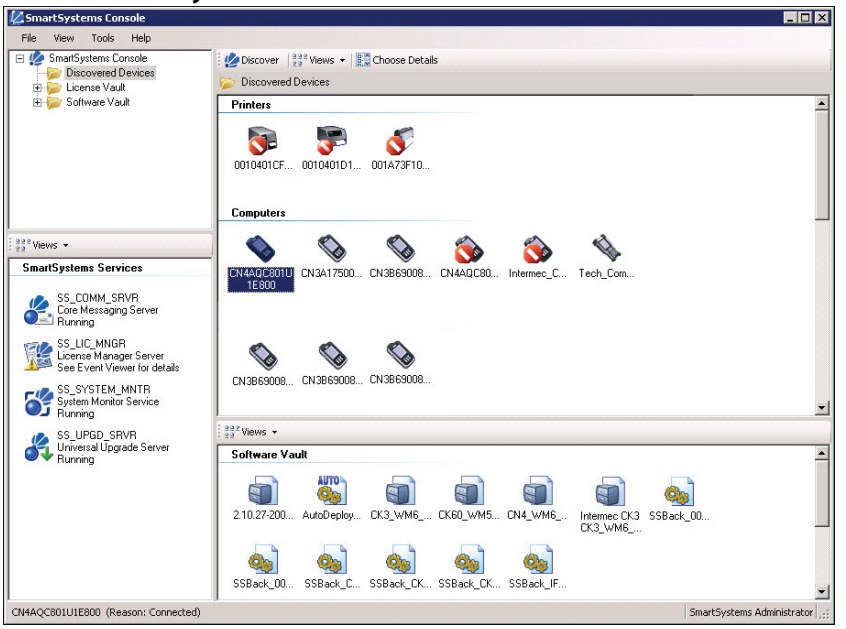
Manage the Computer Using CloneNGo

Intermec CloneNGo is a software application that allows you to copy the settings and parameters from a master computer onto one or more client computers. Cloning reduces redundancy and error by providing an efficient and accurate way to copy and transmit settings from a master computer to one or more client computers through an adhoc wireless network. For more information on using CloneNGo, see the ***CloneNGo User Guide***.

Manage the Computer Using SmartSystems

Intermec SmartSystems is a software platform that lets you manage all of your SmartSystems-enabled devices simultaneously from a central server. The SmartSystems console displays all SmartSystems-enabled computers and peripherals in your network.

Intermec SmartSystems Console



Through the console, you can:

- drag-and-drop configuration bundles, operating system updates, and firmware upgrades to multiple computers.
- save configuration settings from a single device and deploy those settings to many devices simultaneously.
- remotely change settings on SmartSystems-enabled computers and peripherals.

The SmartSystems console can report on asset locations and battery status, making it easier to manage your mobile devices.

With a Provisioning license, SmartSystems can automatically push software, configuration settings, and other files to connected mobile computers. The license also enables ScanNGo, which makes connecting additional mobile computers to your wireless network as easy as reading bar codes. You can download SmartSystems from the Intermec website at no charge. For more information, visit **www.intermec.com/SmartSystems**. To purchase a Provisioning license, contact your local Intermec sales representative.

Manage the Computer Using Third-Party Software

You can use third-party software such as Wavelink Avalanche to centrally manage your Intermec devices. Device management software enables you to update software, increase security, track your assets, and troubleshoot devices remotely. You can download the Wavelink Enabler for the mobile computer from the Wavelink website. For more information, visit the Intermec website and search for Wavelink Avalanche or visit **www.wavelink.com** to download the enabler.

Develop and Install Applications

Use the Intermec Resource Kits to develop applications to run on the mobile computer. The Resource Kits are a library of C++, .NET, Java, and web components grouped by functionality that you can use to create applications for the computer. The Resource Kits are part of the Intermec Developer Library (IDL), and can be downloaded from the Intermec website at **www.intermec.com/idl**.

For more information, see the ***Intermec Developer Library Resource Kit Developer Guide***.

Package Your Application

For very simple applications, the executable file may be the only file you need to deploy. More typically, you will have a set of files to install.

Intermec recommends using .cab files to install your applications. The computer uses standard Windows Mobile .cab files and will install third-party .cab files.

Choose a Target Location

You can have your .cab file place your application in any of these memory locations on the mobile computer:

- The ObjectStore.
- The optional microSD card. Depending on available disk space, you may want to consider installing your application files on the microSD card. Using a card creates the Storage Card folder on the computer.

- The non-volatile Flash File Store. Applications and data in the Flash File Store will persist through a clean boot.

Note: The Flash File Store is erased if you reflash the operating system image.

Files copied to any of these locations are safe when you cold boot the computer as long as the AutoRun system is installed in the appropriate location. When AutoRun is installed on the computer, all .cab files in the CabFiles folder are automatically extracted after a cold boot. For more information about AutoRun, see the ***Intermec Developer Library Resource Kit Developer Guide***.

Install Applications Using SmartSystems Foundation Console

You can use the SmartSystems console to drag-and-drop Intermec applications onto your mobile computer. The console is part of SmartSystems Foundation.

1. Download your application file from the Intermec website and unzip it on your desktop PC.
2. Double-click the application file to install it. The application file should appear in the Software Vault.
3. From the SmartSystems console in the Software Vault, drag-and-drop the application onto each mobile computer in your network, or drop the application on a group of computers contained in a folder.

Install Applications Using Microsoft ActiveSync

When you only have a few computers to update with applications, you can copy files using Microsoft ActiveSync. This procedure assumes that Microsoft ActiveSync is installed on your PC and is up and running.

1. Connect to the mobile computer via ActiveSync.
2. Copy the .cab files from your development PC to the computer.

3. Reboot or cold boot the computer.
4. After the boot process is finished, browse to the .cab files and tap the files to install them.

Install Applications Using a Storage Card

Use a storage card to install applications on one computer at a time or if you have no network connection.

1. Copy your application file to the storage card.
2. Install the storage card in the mobile computer.
3. On the mobile computer, browse to the Storage Card folder and run your application.

Launch Applications Automatically

There are two ways to launch an application automatically on a cold boot:

- Set up your .cab file to place a shortcut to the application in the \Windows\StartUp directory at install time.
- Use AutoRun.exe to start your application at boot time. AutoRun ships on the computer and automates other operations.

At boot time, AutoRun executes any commands found in its data file, Autouser.dat. For more information on how to use the AutoRun.exe feature, view the Readme.txt file located in the My Device\Flash File Store\2577 directory on your computer.

Update the System Software

The mobile computer uses SmartSystems bundles to update the operating system (OS) and the system software.

You can use these methods to update your mobile computer:

- You can update individual computers, or multiple computers at the same time using the SmartSystems console. For help, see the next section, **"Update Individual or Multiple Computers Using the SmartSystems Console"**.
- You can update individual computers using a microSD card.

Update Individual or Multiple Computers Using the SmartSystems Console

You can use the SmartSystems console to update the operating system or system software on your mobile computer. The console is part of SmartSystems Foundation and is available from the Intermec website. Before you can update your mobile computer, you need:

- SmartSystems Foundation. To download SmartSystems Foundation, go to **www.intermec.com/SmartSystems** and click the Downloads tab.
- the SmartSystems bundles you want to install. These SmartSystems bundles are available from the Intermec website at **www.intermec.com**. Go to **Support** > **Downloads** > **OS/Firmware/Drivers** list.

After you have located these items, you can update your mobile computer using SmartSystems Foundation.

1. Open the SmartSystems console.
2. Make sure the mobile computer is discovered.
3. Make sure the mobile computer is in a powered dock or that power management is disabled.
4. Download the SmartSystems bundle to your PC.
5. Double-click the SmartSystems bundle on your PC to extract the update files to the software vault.
6. From the SmartSystems console, locate the bundle to install and drag them to each mobile computer (or group in a folder) you want to update. The SmartSystems console installs the update on your mobile computers.

   After the download is complete, your mobile computer begins the update process and automatically performs a cold boot. The computer then boots into a special Update Loader mode where the computer has no network connections and is completely unusable. This process can take anywhere from 30 seconds to 15 minutes depending on the update.

   After the update is complete, the computer boots again.

Note: The SmartSystems console indicates that your mobile computer is offline, by displaying a red stop symbol, until the computer reboots and reconnects to the system.

Update Individual Mobile Computers Using a microSD Card

You can transfer upgrade bundles from your desktop PC to your mobile computer using a storage card. Before you can update your mobile computer, you need:

- the SmartSystems bundles you want to install. These SmartSystems bundles are available from the Intermec website at **www.intermec.com**. Go to **Support** > **Downloads** > **OS/Firmware/Drivers** list.
- a microSD card formatted to FAT or FAT32.

After you have located these items, you can update your mobile computer using a storage card.

1. Download the SmartSystems bundle to your PC and note the download location.
2. On your desktop PC, navigate to the download location and select the folder with the correct firmware version. For example, umts_wwe or umts_tp.
3. Transfer the autoflash.img file into the root directory of the microSD card.
4. Turn off your mobile computer and install the microSD card in your mobile computer. For help, see **"Insert a MicroSD Card" on page 30**.
5. Turn on your mobile computer.

   The update process begins. Your mobile computer may restart several times during this process. When the update is complete, the Autoflash Complete message appears.
6. Remove the microSD card.

Note: If you do not remove the storage card, the update process repeats each time the computer reboots.

7. Reboot your mobile computer and follow the setup process.

8

Troubleshoot and Maintain the Computer

If you encounter any problems while using the 70 Series computer, look in this chapter to find a possible solution. You will also find information on routine maintenance.

About the Intermec Dashboard

The Intermec Dashboard is designed to provide proactive monitoring of your mobile computers to prevent downtime. You can easily see the health of the device and can help pinpoint the source of a problem to determine if it is hardware or software related.

Intermec Dashboard displays information such as the status of network connections, battery usage, storage space, and internal devices. It also provides system information such as the operating system, firmware, and hardware configuration.

- Press the Intermec Dashboard button (?) on the computer keypad.

Intermec Dashboard Main Screen

Intermec Dashboard is highly integrated with SmartSystems Foundation. You can use SmartSystems Foundation to remotely monitor the health of your computers. For more information, refer to the SmartSystems online help.

Troubleshoot Your Mobile Computer

Use the troubleshooting tables in this section to fix problems with the Wi-Fi connection, 802.1x security, the imager, or general problems with operating the mobile computer.

If you send the computer in for service, it is your responsibility to save the computer data and configuration. Intermec is responsible only for ensuring that the hardware matches the original configuration when repairing or replacing the computer.

Troubleshoot the Wi-Fi Connection

Use this troubleshooting table to help solve problems with your 802.11 radio connection.

Problems With the Wi-Fi Connection

Problem	Solution
When you turn on the computer after it was suspended for a while (10 to 15 minutes or longer), it can no longer send or receive messages over the network.	Host may have deactivated or lost current terminal emulation session. In a TCP/IP direct connect network, turn off the "Keep Alive" message from host to maintain the TCP session while the computer is suspended.
The computer is connected to the network and you move to a new site to collect data. Your computer now shows you are not connected to the network.	Move closer to an access point or to a different location to reestablish communications until you reconnect with the network.
The computer appears to be connected to the network, but you cannot establish a terminal emulation session with the host computer.	There may be a problem with the host computer, or with the connection between the access point and the host computer. Check with the network administrator to make sure the host is running and allowing users to log in to the system.
The computer appears to be connected to the network, but the host computer is not receiving any information from the 70 Series computer.	There may be a problem with the connection between the access point and the host computer. Check with the network administrator or use your access point user's manual.

Problem	Solution
A network connection icon appears in the toolbar, but then disappears.	The computer may not be communicating with the intended access point. Make sure the network name matches the access point network name. Default network name is "INTERMEC." The access point may not be communicating with the server. Ensure the access point is turned on, properly configured, and has 802.1x security enabled.

Troubleshoot 802.1x Security

Use the following table to troubleshoot problems with your 802.1x security that will prevent you from connecting to your network, such as an incorrect password.

Problems With 802.1x Security

Problem	Solution
The computer indicates it is not authenticated.	Make sure that: • the User Name and Password parameters on the computer must match the user name and password on authentication server. You may need to reenter the password on both the computer and authentication server. • on your authentication server, the user and group are allowed and the group policy is allowed to log into the server. For help, see the documentation that shipped with your authentication server software. • the IP address and secret key for access point must match the IP address and secret key on the authentication server. You may need to reenter the IP address and secret key on both your access point and authentication server. • the authentication server software is running on the server PC.
You receive a message saying "The server certificate has expired or your system date is incorrect" after you perform a clean boot on the computer.	Date and time are not saved when you perform a clean boot. Reenter the date and time, and then save your changes.

Check 802.11 Network Status

If you have trouble connecting to your 802.11 wireless network:

- Make sure you have correctly set network parameters on the computer.
- Check your wireless security settings.

Follow the next procedure to verify available access points and networks, check signal strength, and view other diagnostics. If you need to contact Intermec Product Support, this information can be helpful in troubleshooting wireless network connection issues.

1. Tap **Start > iSpyWiFi**. The ISpyWiFi application launches.

   The ISpyWiFi tab shows:

   - MAC address and IP address of the 802.11 radio.
   - network association status, including the SSID and MAC address of the access point.
   - security configuration.
   - radio transmit power and signal strength information.

2. Tap the **Scan** tab to view a list of available 802.11 networks. The list includes the signal strength, channel, and MAC address for each network.
   - Tap **Scan** to refresh the screen.
3. Tap the **Supp** tab to view radio supplicant information, including a list of supplicant events and authentication status.
   - To verify the settings for the currently active security profile, tap **Configure Profile**. Intermec Settings launches for you to configure 802.11 Radio settings.
   - To try reconnecting to the network, tap **Reconnect**.
   - To delete the events in the list, tap **Clear Events**.
4. Tap the **Ping** tab to run a ping test to the host.
   a. In the **Host** field, enter the IP address of the host.
   b. From the **Repetitions** list, choose the number of times the computer will ping the host.

c Tap **Ping**. The graph shows the amount of time it takes for the host to return the ping. Tap **List** to see this information in a list format.

5 Tap the **RSSI** tab to view the received signal strength of the host signal.

The information box includes the current signal strength, host SSID name, MAC address, data rate, and transmit power.

- Tap **Mark** to place an arrow marker above the graph.

6 Tap the **Conf** tab to set up a log file that lists RSSI history.

This screen includes the 802.11 radio driver version and available radio modes.

a Check the **Log to File** check box.

b (Optional) Change the sample period and number of samples displayed.

c Tap **Log File**. The Save As screen appears.

d (Optional) Change the name of the saved log file, the folder to which the file will be saved, the content type (log or text), and the location.

e Tap **OK**.

Troubleshoot Reading Bar Codes

Use this section to troubleshoot problems that may prevent you from being able to read a bar code, such as the symbology not being enabled.

Problems Reading Bar Codes

Problem	Solution
You cannot see the illumination beam or frame from the imager when you press the Scan button and aim the imager at a bar code label.	• You may be too far away from the bar code label. Try moving closer to the bar code label and scan it again. • You may be reading the bar code label "straight on." Change the reading angle and try again. • The imager hardware trigger might be disabled in Intermec Settings. To check the setting go to **Start > Settings > Systems > Data Collection > Scanner Settings**. Hardware trigger should be checked.

Problem	Solution
When you release a **Scan** button or handle trigger, the **Good Read** light does not turn off.	The **Good Read** light will remain on if you configure the computer to use continuous/edge triggering. If you configure the computer for level triggering and the **Good Read** light remains on, there may be a problem. Press one of the **Scan** buttons or pull the trigger again without scanning a bar code label. If the light is still on, contact your local Intermec representative.
The scanner will not read the bar code label.	• Aim the scanner beam to cross the entire bar code label in one pass. Vary the scanning angle. • Check the quality of the bar code label. Scan a bar code label that you know will scan. Compare the two bar code labels to see if the bar code quality is too low. You may need to replace the label that you cannot scan. • Make sure the bar code symbology is enabled and configured correctly. Use Intermec Settings to check the symbologies. Expand **Data Collection** > **Symbologies** beneath devices listed (scanner, virtual wedge) to check and enable symbologies, then scan the bar code label again. • Make sure the computer application is expecting input from a bar code. You may need to type this information instead. • The scanner may not be turned on or the scanner may be unable to scan a specific bar code. Run the ScanDiagnostic application to help you troubleshoot the problem. For more information, see
The scanner does not read the bar code labels quickly, or the scanning beam seems to be faint or obscured.	The scanner window may be dirty. Clean the window with a solution of ammonia and water. Wipe dry. Do not allow abrasive material to touch the window.
You scan a valid bar code label to enter data for your application. The data decoded by the scan module does not match the data encoded in the bar code label.	The computer may have decoded the bar code label in a symbology other than the label's actual symbology. Try scanning the bar code label again. Make sure you scan the entire label.
The input device attached to the computer does not work well or read bar code labels very quickly.	Set the Scanner Model command to the specific attached input device. Check enabled bar code symbologies and enable only the symbologies being used.

Use ScanDiagnostic to Troubleshoot the Scanner

Use the ScanDiagnostic application to troubleshoot problems such as the inability to read a bar code or a scanner that does not turn on.

1. From the Home menu, tap **Start > ScanDiagnostic**.
2. From the Scan Health screen, select the scanner you want to troubleshoot and then tap **Diagnose**.

   The application checks to make sure the scanner is enabled and checks settings to make sure they are optimized.
3. From the Scan Test screen, press and hold the **Press to Scan** button while aiming at the bar code you want to read.

   After the computer scans the bar code, it beeps and the label data, data length, and symbology appear on the screen.
4. Press the right arrow button to view any recommended settings.
5. To accept the recommended settings, tap **Apply**.
6. Tap **OK** to exit.

Troubleshoot Operating the Computer

Use this section to troubleshoot problems that may prevent you from being able to operate the computer.

Problems Operating the Computer

Problem	Solution
You press the **Power** button and nothing happens.	Try the following solutions: • Replace or charge the battery. The battery may be completely drained. • Remove the battery and press the **Reset** button to perform a cold boot. For help, see **"Cold Boot the Computer" on page 123**.

Problem	Solution
The computer appears to be locked up and you cannot enter data.	• Press the **Power** button and select **Suspend** from the Power Options menu. Press the **Power** button to turn the screen back on. • Press the **Power** button and select **Reboot** from the Power Options menu. • Remove the battery and press the **Reset** button to perform a cold boot. For help, see **"Cold Boot the Computer" on page 123**. • Try reloading the firmware. For help, see **"Update the System Software" on page 110.** • If the computer does not boot or reset, contact your Intermec representative for help.
The accelerometer does not appear to be accurate.	You may need to calibrate the accelerometer using the Sensor Calibration application. Tap **Start > Settings > System > Sensor Calibration**. Rotate the computer to calibrate all six orientations.
You tap the screen and nothing happens.	Align your screen. For help, see **"Align the Screen" on page 45**.
You cannot type a character on the keypad or you can only type uppercase or lowercase letters.	You may have locked a modifier key on the keypad. Press the necessary key sequence to unlock the key. For help, see **"About the Keypad" on page 16**.

Call Product Support

If you cannot find the answer to your problem in the "Troubleshooting the Computer" section, you can visit the Intermec technical knowledge base (Knowledge Central) at **intermec.custhelp.com** to review technical information or to request technical support. If you still need help after visiting Knowledge Central, you may need to call Product Support.

To talk to an Intermec Product Support representative, call:

1-800-755-5505

Before you can call Intermec Product Support, make sure you have the following information ready:

- Configuration number
- Serial number
- Operating system version
- If you are using security, know the type (Funk or Microsoft) and the full set of parameters
- Power management settings
- If you are using Intermec Terminal Emulator (ITE), know the version and protocol. If you are not using ITE, know the language your custom application was written in and the tools you used to create it.

You can find most of the information listed above in Intermec Settings. Consult your application developer for information on your custom application.

Find Your Configuration Number

Use the following procedure to help you find the configuration number of your computer.

- Look at the label on the back of the computer.

Find Your Operating System Version

Use the following procedure to find the OS version of your mobile computer.

1. Press the **Intermec Dashboard** () button to launch the Dashboard.
2. Tap the **Information** bar. The Information Details page appears and displays information such as the firmware version and the OS version.

Reset the Computer

If the computer does not resume after pressing the **Power** button, or if the computer or an application locks up, you may need to reset the computer. The computer uses the configuration currently saved in flash memory during the boot process. There are three ways to reset the computer:

- Reboot
- Cold boot
- Clean boot

Reboot the Computer

You may need to reboot the computer to correct conditions where an application stops responding to the system.

- Press the **Power** button and select **Reboot** from the menu.

  The computer systematically shuts down, restarts, and goes through the initialization process.

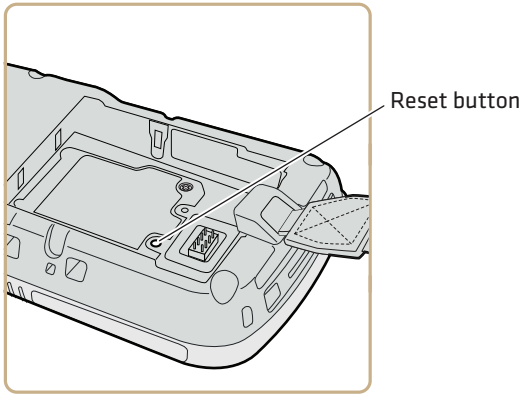
Cold Boot the Computer

In some cases where the computer completely stops responding, it may be necessary to perform a cold boot or hard reset. Because cold booting may result in data loss, use this method only if all other recovery methods have failed.

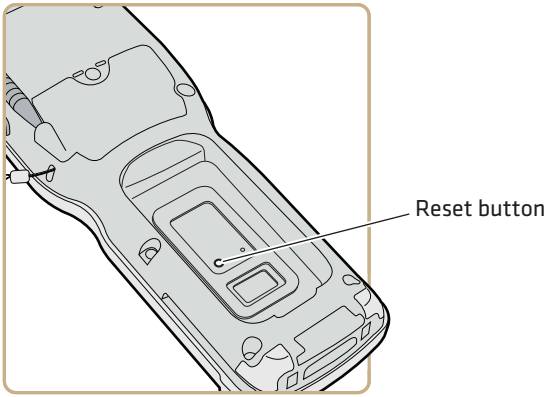
Note: Cold booting the computer does not guarantee that cached disk data will be saved, so transactional data may be lost during the reset. All other data, such as configuration and network settings, is preserved.

1. Press the **Power** button to suspend the computer.
2. Remove the handstrap and the battery pack.
3. Press the **Reset** button in the battery compartment on the back of the computer.

Location of CN70/CN70e Reset Button



Location of CK70/CK71 Reset Button



4. Replace the battery and the handstrap.
5. Press **Power** and wait while the mobile computer boots. When the cold boot is complete, the Home screen appears.

Clean Boot the Computer

A clean boot erases the memory in the mobile computer, including all applications and data files, with the exception of those found in the Flash File Store, or any removable storage.

If the computer seems to be locked up, try cold booting it. If this process does not work, use a clean boot to get the computer up and running for further troubleshooting.

You can perform a clean boot using the mobile computer.

Note: You can also perform a clean boot using the SmartSystems Console. Right-click the 70 Series computer and select **Intermec Power Tools > Clean Boot Device**.

1. Remove the battery pack from the back of the computer.
2. With a stylus, press the **Reset** button in the battery cavity.
3. Insert the battery back into the computer, and immediately press and hold the **Power** button and **Volume Down** button (the lower button on the right side).
4. Continue to hold the **Power** button and the **Volume Down** button down until you are prompted to release them.
5. Press the **Volume Up** button on the right side to start the clean boot.
6. Wait for the computer to load files from its ROM.

Clean the Computer

To keep the computer in good working order, you may need to clean the imager window, color camera window, and the touch screen. Clean the windows and the touch screen as often as needed for the environment in which you are using the computer. To clean the computer, use a solution of ammonia and water.

There are no user-serviceable parts inside the 70 Series computer. Opening the computer will void the warranty and may cause damage to the internal components.

1. Press the **Power** button and choose to suspend the computer.
2. Dip a clean cloth towel in the ammonia solution and wring out the excess.
3. Wipe off the imager window, camera lens, and flash area. Do not allow any abrasive material to touch these surfaces.
4. Wipe dry.

A

Specifications and Default Settings

Physical and Environmental Specifications

CN70 Physical Dimensions

Dimensions	16.9 x 8.0 x 3.4 cm (6.66 x 3.14 x 1.35 in)
Weight	450 g (15.2 oz) with battery

CN70e Physical Dimensions

Dimensions	19.5 x 8.0 x 3.4 cm (7.66 x 3.14 x 1.35 in)
Weight	491 g (16.6 oz) with battery

CK70 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 (19.75 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 do 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.

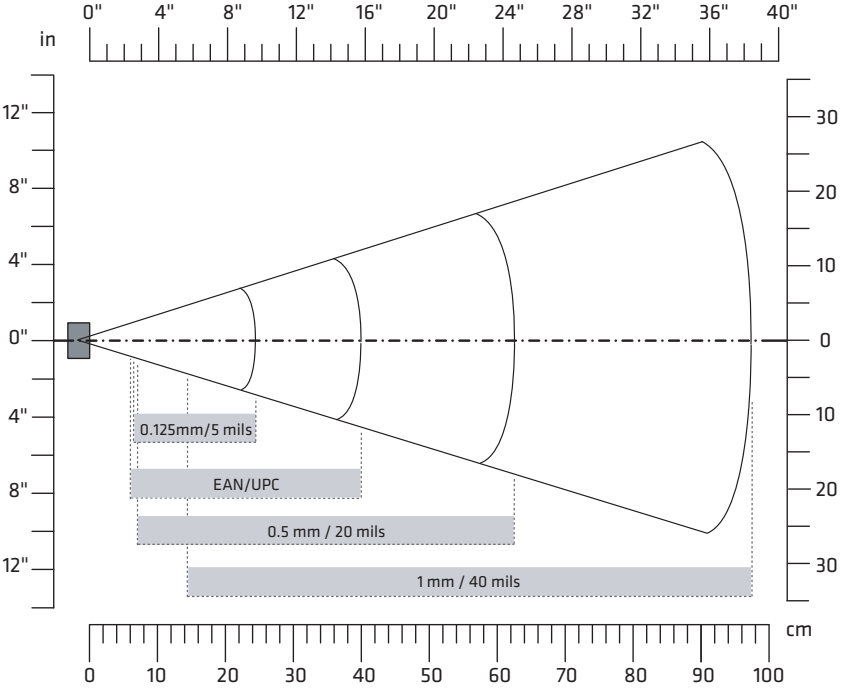
Below are the typical and minimum standard reading distances for the 70 Series computer built with an EA30 imager. Also included are typical and minimum standard reading distances for the CK71 with an EV12 or EX25 imager.

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

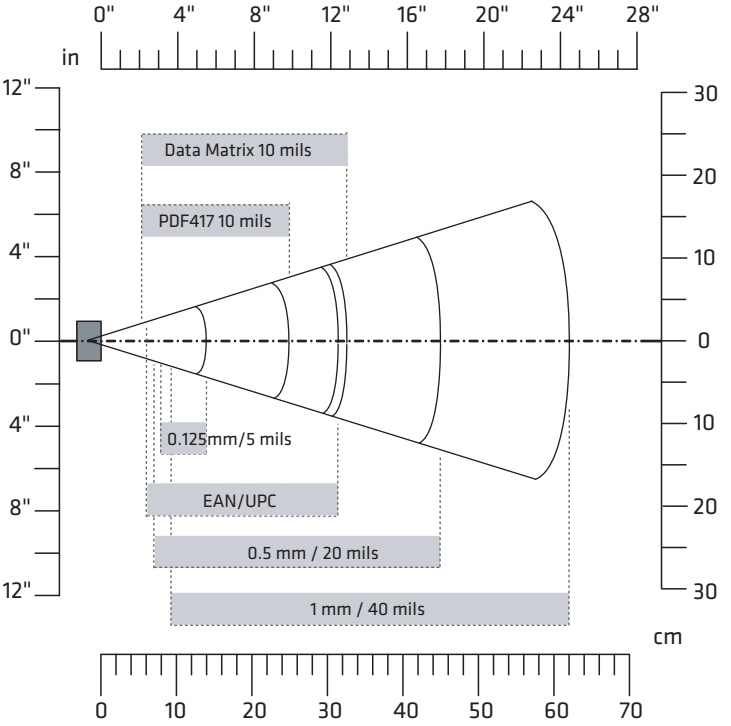


EA30 Typical Reading Distances - Extended Reading Range Activated

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).

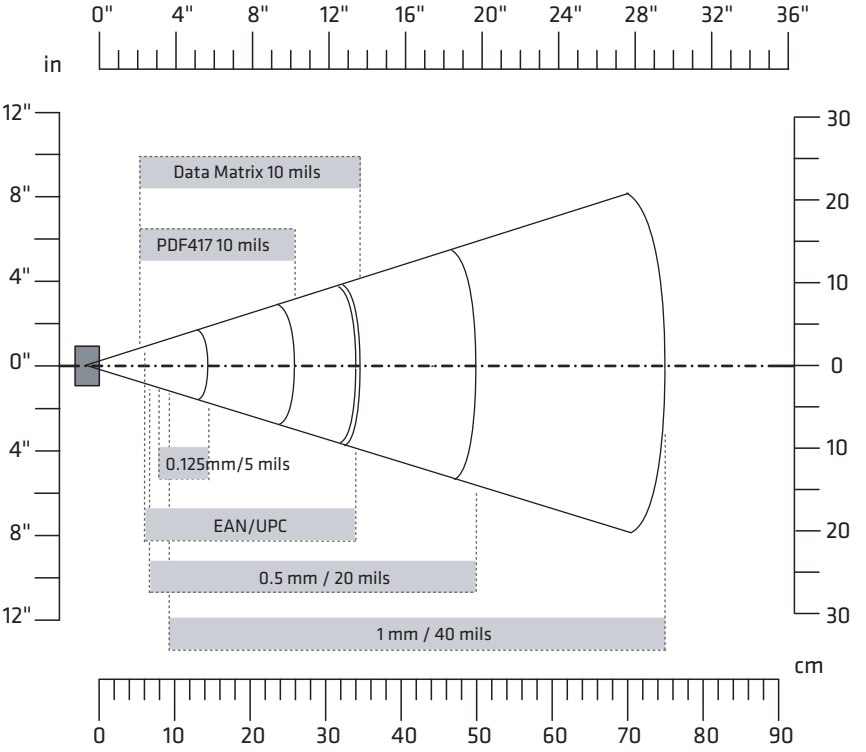


EA30 Minimum Reading Distances

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)
	038 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).

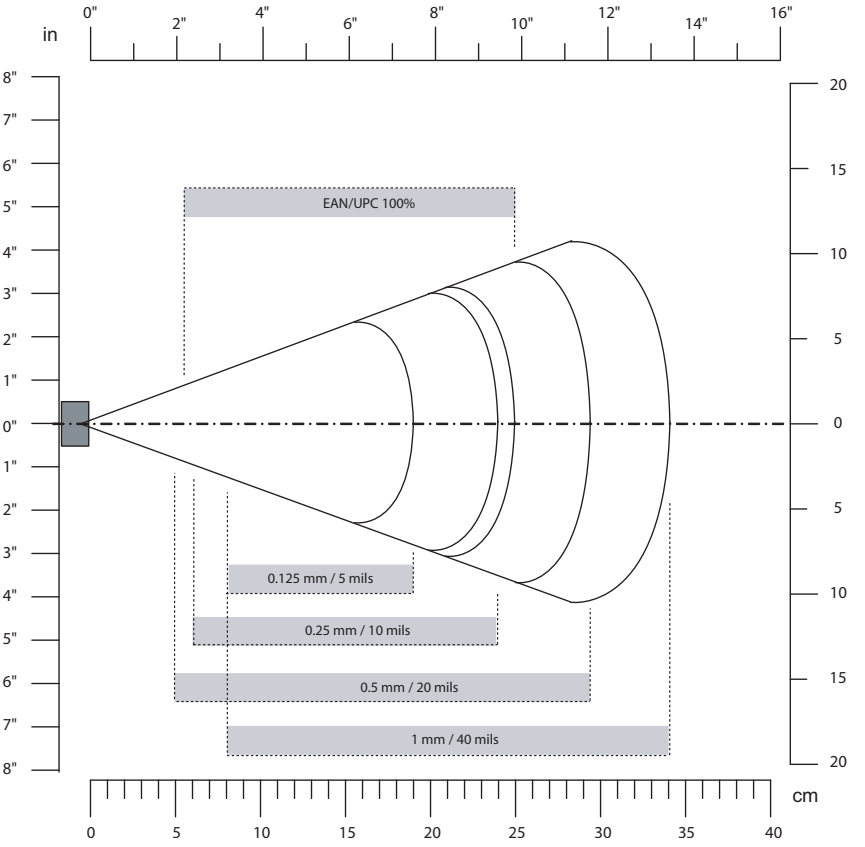


EA30 Typical Reading Distances

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).

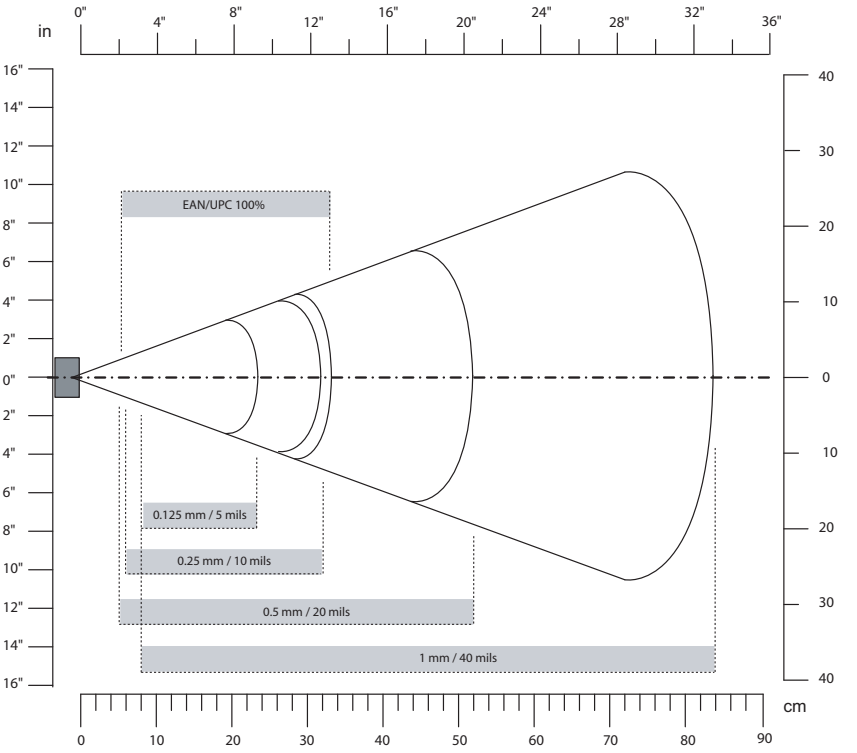


EV12 Minimum Reading Distances With 0.12 cm (0.05 in) Setback

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).



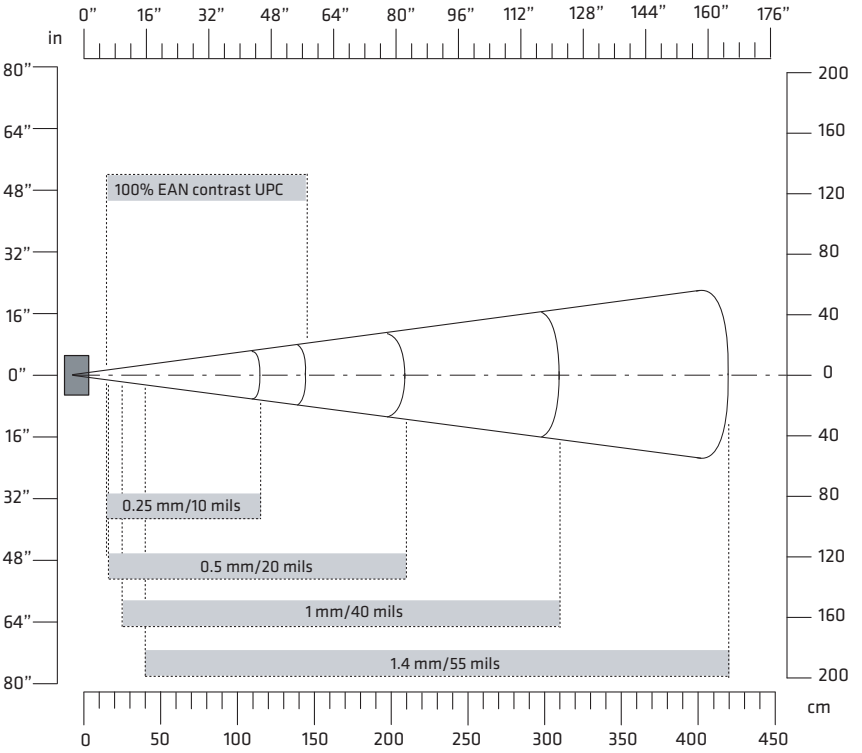
EV12 Typical Reading Distances With 0.12 cm (0.05 in) Setback

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.



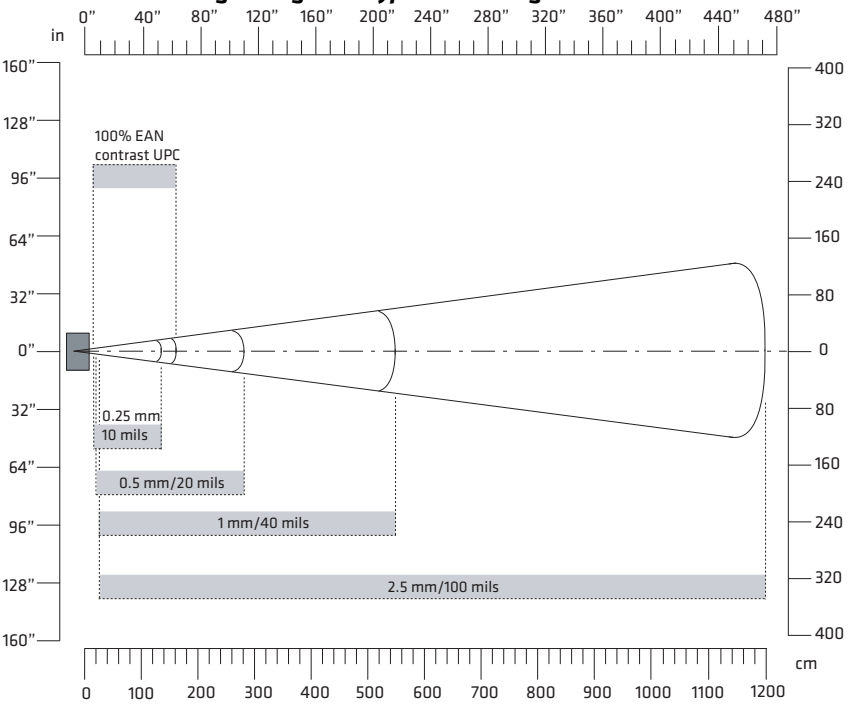
EX25 Minimum Reading Distances With 0.24 cm (0.09 in) Setback

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%	0.33 mm (13 mils)	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

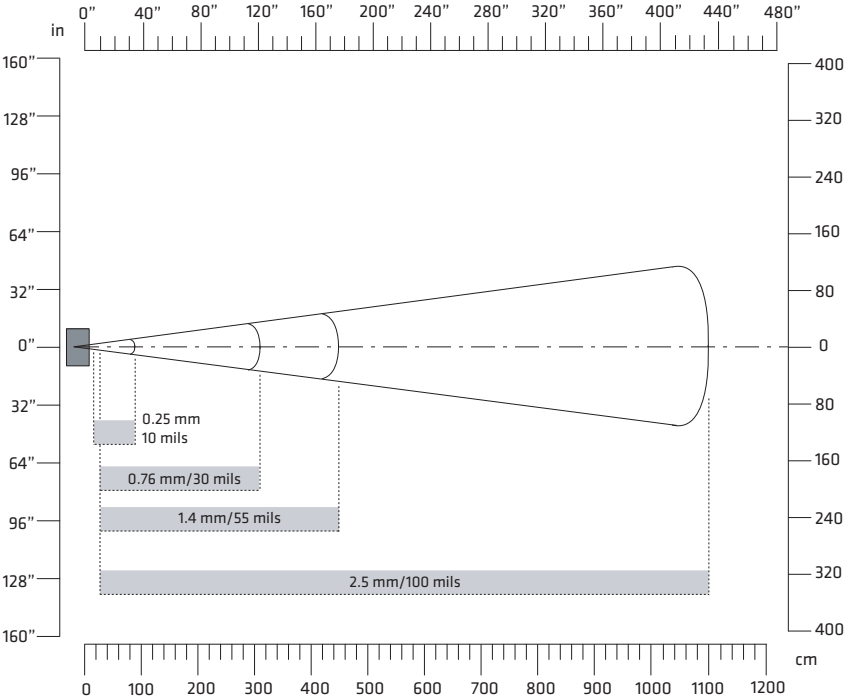


EX25 1D Symbologies Typical Reading Distances With 0.24 cm (0.09 in) Setback

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 Symbologies 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

Symbology	Default Value
Standard 2 of 5	Disable
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

802.11 Radio Setting	Default Value
Import User Certificates	False
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

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

B

Keypads and Keystrokes

Standard Characters

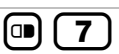
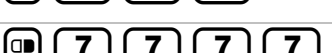
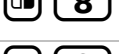
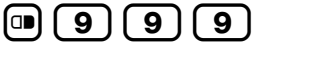
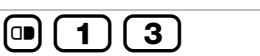
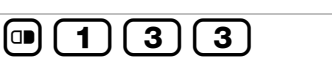
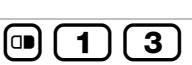
Use the following tables to learn how to enter standard and other available characters and functions with the keypad. If there is no sequence of keystrokes for a particular character or function, it is only available through the soft input panel (SIP), which you can access by tapping the keyboard icon on the touch screen.

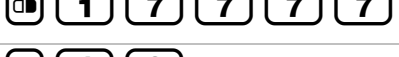
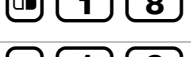
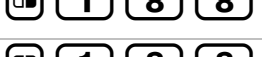
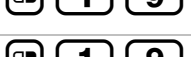
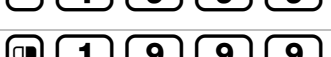
Note: You can only enter "*" and "#" characters in the phone or contacts applications.

CN70 Keypads and Keystrokes

CN70 Alphanumeric Characters

Character	Numeric Keypad	QWERTY Keypad
a	Blue 2	A
b	Blue 2 2	B
c	Blue 2 2 2	C
d	Blue 3	D
e	Blue 3 3	E
f	Blue 3 3 3	F
g	Blue 4	G
h	Blue 4 4	H
i	Blue 4 4 4	I
j	Blue 5	J
k	Blue 5 5	K
l	Blue 5 5 5	L
m	Blue 6	M

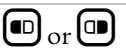
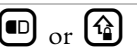
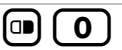
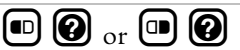
Character	Numeric Keypad	QWERTY Keypad
n		
o		
p		
q		
r		
s		
t		
u		
v		
w		
x		
y		
z		
A		
B		
C		
D		
E		
F		
G		
H		

Character	Numeric Keypad	QWERTY Keypad
I		
J		
K		
L		
M		
N		
O		
P		
Q		
R		
S		
T		
U		
V		
W		
X		
Y		
Z		
0		
1		
2		

Character	Numeric Keypad	QWERTY Keypad
3	3	ALT I
4	4	ALT H
5	5	ALT J
6	6	ALT K
7	7	ALT B
8	8	ALT N
9	9	ALT M

CN70 Characters and Functions

To Enter	Numeric Keypad	QWERTY Keypad
@ (at symbol)	N/A	ALT Q
& (ampersand)	N/A	ALT S
* (asterisk)	*	ALT C
: (colon)	N/A	ALT D
, (comma)	N/A	ALT X
$ (dollar)	N/A	ALT E
! (exclamation)	N/A	ALT O
- (hyphen)	-	ALT G
% (percent)	N/A	ALT R
. (period)	.	.
+ (plus)	ALT -	ALT T
# (pound)	#	ALT V

To Enter	Numeric Keypad	QWERTY Keypad
? (question mark)	N/A	
‘ (apostrophe)	N/A	
Forward Tab		
Backspace		
Up Arrow		
Down Arrow		
Left Arrow		
Right Arrow		
CapsLock		
Enter		
ok		
Shift		
Space		
Start (Windows)		
Esc		
Talk		
End Call		
Intermec Dashboard		

CN70e Keypads and Keystrokes

CN70e Alphanumeric Characters

Character	Numeric Keypad	Calculator-Style Keypad	QWERTY Numeric Keypad
a	2	8	A
b	2 2	8 8	B
c	2 2 2	8 8 8	C
d	3	9	D
e	3 3	9 9	E
f	3 3 3	9 9 9	F
g	4	4	G
h	4 4	4 4	H
i	4 4 4	4 4 4	I
j	5	5	J
k	5 5	5 5	K
l	5 5 5	5 5 5	L
m	6	6	M
n	6 6	6 6	N
o	6 6 6	6 6 6	O
p	7	1	P
q	7 7	1 1	Q
r	7 7 7	1 1 1	R
s	7 7 7 7	1 1 1 1	S

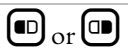
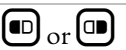
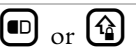
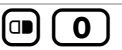
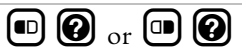
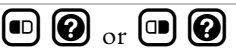
Character	Numeric Keypad	Calculator-Style Keypad	QWERTY Numeric Keypad
t	Blue 8	Blue 2	T
u	Blue 8 8	Blue 2 2	U
v	Blue 8 8 8	Blue 2 2 2	V
w	Blue 9	Blue 3	W
x	Blue 9 9	Blue 3 3	X
y	Blue 9 9 9	Blue 3 3 3	Y
z	Blue 9 9 9 9	Blue 3 3 3 3	Z
A	Blue 1 2	Blue 7 8	Shift A
B	Blue 1 2 2	Blue 7 8 8	Shift B
C	Blue 1 2 2 2	Blue 7 8 8 8	Shift C
D	Blue 1 3	Blue 7 9	Shift D
E	Blue 1 3 3	Blue 7 9 9	Shift E
F	Blue 1 3 3 3	Blue 7 9 9 9	Shift F
G	Blue 1 4	Blue 7 4	Shift G
H	Blue 1 4 4	Blue 7 4 4	Shift H
I	Blue 1 4 4 4	Blue 7 4 4 4	Shift I
J	Blue 1 5	Blue 7 5	Shift J
K	Blue 1 5 5	Blue 7 5 5	Shift K
L	Blue 1 5 5 5	Blue 7 5 5 5	Shift L
M	Blue 1 6	Blue 7 6	Shift M
N	Blue 1 6 6	Blue 7 6 6	Shift N

Character	Numeric Keypad	Calculator-Style Keypad	QWERTY Numeric Keypad
O	ALT 1 6 6 6	ALT 7 6 6 6	SHIFT O
P	ALT 1 7	ALT 7 1	SHIFT P
Q	ALT 1 7 7	ALT 7 1 1	SHIFT Q
R	ALT 1 7 7 7	ALT 7 1 1 1	SHIFT R
S	ALT 1 7 7 7 7	ALT 7 1 1 1 1	SHIFT S
T	ALT 1 8	ALT 7 2	SHIFT T
U	ALT 1 8 8	ALT 7 2 2	SHIFT U
V	ALT 1 8 8 8	ALT 7 2 2 2	SHIFT V
W	ALT 1 9	ALT 7 3	SHIFT W
X	ALT 1 9 9	ALT 7 3 3	SHIFT X
Y	ALT 1 9 9 9	ALT 7 3 3 3	SHIFT Y
Z	ALT 1 9 9 9 9	ALT 7 3 3 3 3	SHIFT Z
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6

Character	Numeric Keypad	Calculator-Style Keypad	QWERTY Numeric Keypad
7	7	7	7
8	8	8	8
9	9	9	9

CN70e Characters and Functions

To Enter	Numeric Keypad	Calculator-Style Keypad	QWERTY Numeric Keypad
@ (at symbol)	N/A	N/A	D Q
& (ampersand)	N/A	N/A	D U
* (asterisk)	*	*	*
: (colon)	N/A	N/A	D I
, (comma)	N/A	N/A	,
$ (dollar)	N/A	N/A	D E
! (exclamation)	N/A	N/A	D O
- (hyphen)	-	-	-
% (percent)	N/A	N/A	D R
. (period)	.	.	.
+ (plus)	D -	D -	D -
# (pound)	#	#	#
? (question mark)	N/A	N/A	D Y
‘ (apostrophe)	N/A	N/A	D W
Forward Tab	→	→	→
Backspace	←	←	←

To Enter	Numeric Keypad	Calculator-Style Keypad	QWERTY Numeric Keypad
Up Arrow			
Down Arrow			
Left Arrow			
Right Arrow			
CapsLock			
Enter			
ok			
Shift			
Space			
Start (Windows)			
Esc			
Talk			
End Call			
Intermec Dashboard			

CK70 Keypads and Keystrokes

CK70 Alphanumeric Characters

Character	Large Alpha Keypad	Alphanumeric Keypad
a		
b		
c		

Character	Large Alpha Keypad	Alphanumeric Keypad
d	D	D
e	E	E
f	F	F
g	G	G
h	H	H
i	I	I
j	J	J
k	K	K
l	L	L
m	M	M
n	N	N
o	O	O
p	P	P
q	Q	Q
r	R	R
s	S	S
t	T	T
u	U	U
v	V	V
w	W	W
x	X	X

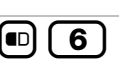
Character	Large Alpha Keypad	Alphanumeric Keypad
y	Y	Y
z	Z	Z
A	⇧ A	⇧ A
B	⇧ B	⇧ B
C	⇧ C	⇧ C
D	⇧ D	⇧ D
E	⇧ E	⇧ E
F	⇧ F	⇧ F
G	⇧ G	⇧ G
H	⇧ H	⇧ H
I	⇧ I	⇧ I
J	⇧ J	⇧ J
K	⇧ K	⇧ K
L	⇧ L	⇧ L
M	⇧ M	⇧ M
N	⇧ N	⇧ N
O	⇧ O	⇧ O
P	⇧ P	⇧ P
Q	⇧ Q	⇧ Q
R	⇧ R	⇧ R
S	⇧ S	⇧ S

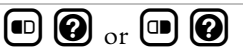
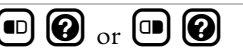
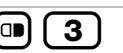
Character	Large Alpha Keypad	Alphanumeric Keypad
T	⇧ T	⇧ T
U	⇧ U	⇧ U
V	⇧ V	⇧ V
W	⇧ W	⇧ W
X	⇧ X	⇧ X
Y	⇧ Y	⇧ Y
Z	⇧ Z	⇧ Z
0	D P	0
1	D D	1
2	D E	2
3	D F	3
4	D G	4
5	D H	5
6	D I	6
7	D K	7
8	D L	8
9	D M	9

CK70 Characters and Functions

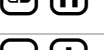
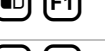
To Enter	Large Alpha Keypad	Alphanumeric Keypad
@ (at symbol)	D S	N/A
& (ampersand)	D W	D U

To Enter	Large Alpha Keypad	Alphanumeric Keypad
* (asterisk)	Blue O	Blue 0
: (colon)	Blue J	Blue 2
; (semicolon)	Orange J	Blue 5
, (comma)	Blue T	Orange X
$ (dollar)	Orange S	N/A
! (exclamation)	Orange W	N/A
- (hyphen or minus)	Orange X	Orange Space
% (percent)	Orange O	N/A
. (period)	.	.
+ (plus)	Blue X	Blue Space
# (pound)	Blue Q	Orange 0
? (question mark)	Orange Q	Orange Y
‘ (apostrophe)	Orange T	Blue Y
= (equals)	Blue Y	Blue S
_ (underscore)	Orange Y	Orange X
> (greater than)	Orange N	Orange V
< (less than)	Blue N	Blue V
[(left square bracket)	Blue V	Blue T
] (right square bracket)	Orange V	Orange T
{ (left curly brace)	N/A	Blue U
} (right curly brace)	N/A	Orange U

To Enter	Large Alpha Keypad	Alphanumeric Keypad
~ (tilde)	N/A	
\ (backslash)		
/ (forward slash)		
“ (quotes)	N/A	
((left parenthesis)		N/A
) (right parenthesis)		N/A
Insert		
Delete		
Sym		N/A
¦ (broken vertical bar)	N/A	
` (grave)	N/A	
Forward Tab		
Backspace		
Up Arrow		
Down Arrow		
Left Arrow		
Right Arrow		
CapsLock		
Enter		
ok		
Shift		

To Enter	Large Alpha Keypad	Alphanumeric Keypad
Space	Space	Space
Start (Windows)		
Esc	Esc	Esc
Alt	N/A	**Alt**
Ctrl	**Ctrl**	**Ctrl**
Send Call		
End Call		
Intermec Dashboard		

CK70 Function Keys

To Enter	Large Alpha Keypad	Alphanumeric Keypad
F1		F1
F2		F2
F3		F3
F4		F4
F5		F5
F6		
F7		
F8		
F9		
F10		
F11	N/A	
F12	N/A	

To Enter	Large Alpha Keypad	Alphanumeric Keypad
F13	N/A	D C
F14	N/A	D D
F15	N/A	D E
F16	N/A	D F
F17	N/A	D G
F18	N/A	D H
F19	N/A	D I
F20	N/A	D J
F21	N/A	D K
F22	N/A	D L
F23	N/A	D M
F24	N/A	D N

CK71 Keypads and Keystrokes

CK71 Alphanumeric Characters

Character	Numeric With Function Keys Keypad	Alphanumeric Keypad
a	D 7	A
b	D 8	B
c	D 9	C
d	D 4	D
e	D 5	E
f	D 6	F

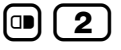
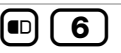
Character	Numeric With Function Keys Keypad	Alphanumeric Keypad
g	BLUE 1	G
h	BLUE 2	H
i	BLUE 3	I
j	BLUE 0	J
k	BLUE –	K
l	BLUE F1	L
m	BLUE F2	M
n	BLUE F3	N
o	BLUE F4	O
p	BLUE F5	P
q	BLUE F6	Q
r	BLUE F7	R
s	BLUE F8	S
t	BLUE F9	T
u	BLUE F10	U
v	BLUE F11	V
w	BLUE F12	W
x	BLUE ?	X
y	BLUE Ctrl	Y
z	BLUE Alt	Z
A	BLUE ⇧ 7	⇧ A

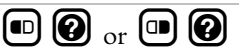
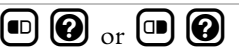
Character	Numeric With Function Keys Keypad	Alphanumeric Keypad
B	blue 8	B
C	blue 9	C
D	blue 4	D
E	blue 5	E
F	blue 6	F
G	blue 1	G
H	blue 2	H
I	blue 3	I
J	blue 0	J
K	blue –	K
L	blue F1	L
M	blue F2	M
N	blue F3	N
O	blue F4	O
P	blue F5	P
Q	blue F6	Q
R	blue F7	R
S	blue F8	S
T	blue F9	T
U	blue F10	U
V	blue F11	V

Character	Numeric With Function Keys Keypad	Alphanumeric Keypad
W	Blue Shift F12	Shift W
X	Blue Shift ?	Shift X
Y	Blue Shift Ctrl	Shift Y
Z	Blue Shift Alt	Shift Z
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

CK71 Characters and Functions

To Enter	Numeric With Function Keys Keypad	Alphanumeric Keypad
: (colon)	Orange Space	Blue 8
; (semicolon)	N/A	Blue 5
, (comma)	N/A	Orange X
$ (dollar)	Orange S	N/A
! (exclamation)	Orange W	N/A

To Enter	Numeric With Function Keys Keypad	Alphanumeric Keypad
- (hyphen or minus)		
. (period)		
+ (plus)	N/A	
‘ (apostrophe)	N/A	
= (equals)	N/A	
_ (underscore)		
> (greater than)	N/A	
< (less than)	N/A	
[(left square bracket)	N/A	
] (right square bracket)	N/A	
{ (left curly brace)	N/A	
} (right curly brace)	N/A	
~ (tilde)	N/A	
\ (backslash)		
/ (forward slash)		
“ (quotes)	N/A	
Insert		
Delete		
¦ (broken vertical bar)	N/A	
` (grave)	N/A	
Forward Tab		

To Enter	Numeric With Function Keys Keypad	Alphanumeric Keypad
Backspace		
Up Arrow		
Down Arrow		
Left Arrow		
Right Arrow		
CapsLock		
Enter		
ok		
Shift		
Space		
Start (Windows)		
Esc		
Alt	**Alt**	
Ctrl	**Ctrl**	**Ctrl**
Intermec Dashboard		

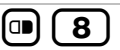
CK71 Function Keys

To Enter	Numeric With Function Keys Keypad	Alphanumeric Keypad
F1		
F2		
F3		
F4		

To Enter	Numeric With Function Keys Keypad	Alphanumeric Keypad
F5	F5	F5
F6	F6	D F1
F7	F7	D F2
F8	F8	D F3
F9	F9	D F4
F10	F10	D F5
F11	F11	D A
F12	F12	D B
F13	◨ F1	D C
F14	◨ F2	D D
F15	◨ F3	D E
F16	◨ F4	D F
F17	◨ F5	D G
F18	◨ F6	D H
F19	◨ F7	D I
F20	◨ F8	D J
F21	◨ F9	D K
F22	◨ F10	D L
F23	◨ F11	D M
F24	◨ F12	D N

CK71 Intermec Terminal Emulation (ITE) Keys

To Enter	Numeric With Function Keys Keypad	Alphanumeric Keypad
Attention	Blue 0	Blue A
Autolog	N/A	Blue F4
Clear	Orange 6	Blue 6
Duplicate	N/A	Blue D
EEOF	N/A	Blue F5
Erase	N/A	Blue E
Find	N/A	Blue F
Field +	Blue FldExit	Blue 1
Field -	Orange FldExit	Blue 1
Fieldmark	N/A	Blue G
Help	N/A	Orange 3
Hex	N/A	Blue I
Home	Blue .	Blue H
Keypad	N/A	Blue K
Menu	N/A	Blue M
Mode	N/A	Blue O
New Line	N/A	Blue N
Next Screen	Blue 9	Orange 9
PA1	Blue 1	Blue F1
PA2	Blue 2	Blue F2

To Enter	Numeric With Function Keys Keypad	Alphanumeric Keypad
PA3		
Page		
Print	N/A	
Previous Screen		
Remove	N/A	
Reset		
Return		
Roll Down		
Roll Up		
System Request		
View	N/A	
View Down		N/A
View Up		N/A

C

ScanNGo Wi-Fi Configuration Bar Codes

You can use the ScanNGo Wi-Fi configuration bar codes to quickly configure the 802.11 radio in your computer.

Radio Configuration Bar Codes

Use the following ScanNGo bar codes to enable the 802.11 radio and set the defaults for either Funk or Microsoft Wireless Zero Configuration security. After you scan the bar codes, you will still need to use Intermec Settings or another configuration program to set network-specific settings on your computer and to configure the wireless security.

The CN70, CN70e, and CK70 are available with the EA30 imager only. The CK71 has three imager options: the EA30, EX25, or EV12 imager. If your CK71 has an EA30 or EX25 imager, use the 2D configuration bar codes to configure the radio. If your CK71 has an EV12 imager, use the 1D configuration bar codes to configure the radio. You can find out what imager is in your CK71 by opening Intermec Settings and tapping **Data Collection > Internal Scanner > Scanner Settings.**

Note: If you are using Microsoft security, you can only use the 1D configuration bar codes.

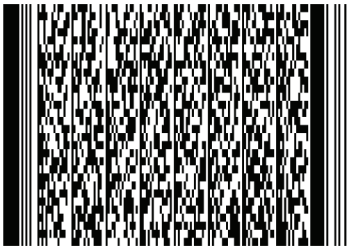
The following ScanNGo bar codes were created using SmartSystems Foundation. For more information on SmartSystems Foundation, see **"Manage the Computer Using SmartSystems" on page 106**.

2D Configuration Bar Codes

You can configure the computer with a 2D imager (EA30 or EX25).

1. Scan the appropriate bar code from the table and wait for the program to start.
2. Follow any instructions on the device.

2D Imager Radio Configuration Bar Codes

When You Want To:	Scan This Bar Code
• Set all communication settings to defaults (Wi-Fi, WWAN if applicable) • Enable Wi-Fi - set Funk defaults	

1D Configuration Bar Codes

You can configure the computer with a 1D imager (EV12).

1. Scan the **START HERE** bar code from the table and wait for the program to start.
2. Scan the **1/9** bar code.
3. Scan the rest of the bar codes in any order.
4. Follow any instructions on the device.

1D Imager Radio Configuration Bar Codes

When You Want To:	Scan This Bar Code
• Set all communication settings to defaults (Wi-Fi, WWAN if applicable) • Enable Wi-Fi - set Funk defaults	START HERE 1/9 2/9 3/9 4/9 5/9

When You Want To:	Scan This Bar Code
• Set all communication settings to defaults (Wi-Fi, WWAN if applicable) • Enable Wi-Fi - set Funk defaults	 6/9  7/9  8/9  9/9

When You Want To:	Scan This Bar Code
• Set all communication settings to defaults (Wi-Fi, WWAN if applicable) • Enable Wi-Fi - set Microsoft WZC defaults	START HERE 1/9 2/9 3/9 4/9 5/9 6/9

When You Want To:	Scan This Bar Code
• Set all communication settings to defaults (Wi-Fi, WWAN if applicable) • Enable Wi-Fi - set Microsoft WZC defaults	 7/9  8/9  9/9

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