

2. Tap the **Properties** button. The *Partition Properties* dialog appears.
3. Tap the **Mount** button. The partition is mounted. The asterisk appears next to its name in the partitions list.

The Partition Properties dialog has buttons for additional functions. Partitions can be defragmented, and their file structure can be scanned.

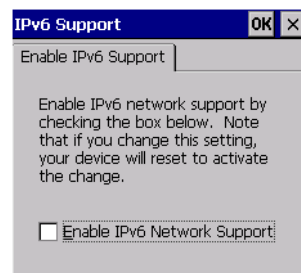
5.12 IPv6 Support

The *IPv6 Support* icon in the *Control Panel* allows you to activate IPv6 network support on your unit if your network setup requires this. This internet protocol specification (version 6) supports 128-bit IP addresses, replacing version 4.

Figure 5.11 IPv6 Support Icon



- Choose the **IPv6 Support** icon to display the associated dialog box.



- Choose the checkbox next to *Enable IPv6 Network Support* to enable this internet protocol.

5.13 Teklogix Imagers

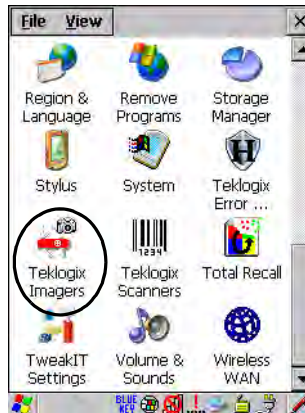
The Teklogix Imagers program is used to read bar codes and capture images. The program manages preset groups of settings. It does not manage imager settings individually. Custom presets—groups of imager settings—are created, modified, deleted, and selected for use, through Teklogix Imagers. For detailed information on these presets, please refer to the *Pision Teklogix Imaging Services SDK Developers Guide* (PN 8100153).

5.13.1 Configuring The Image Capture Presets

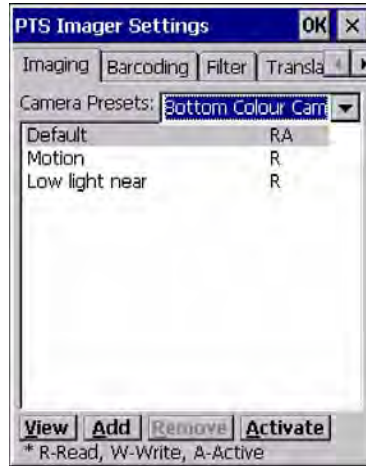
To configure the image capture presets, open the dialog box as follows:

- In Control Panel, select **Teklogix Imagers** and then click the **Imaging** tab.

Figure 5.12 Teklogix Imagers Icon



The following window opens:



This window lists all the presets, both the predefined and the custom ones. Presets are identified as follows:

- Predefined presets are marked as read-only.
- Custom presets are marked as read and write.
- One preset—either predefined or custom—is marked as active.

When you have completed all the changes, do one of the following:

- Click **OK** to exit and save the changes, *or*
- Click the **Close** button to exit without saving the changes.

5.13.1.1 Selecting A Camera

If the Ikôn has more than one built-in camera, one camera must be selected for configuration. The cameras is selected as follows:

1. Expand the **Camera Presets** list to view the camera options.
2. Select a camera.

5.13.1.2 Setting The Active Preset

The active preset is used at startup by the demonstration program and by other application programs. An application can change the active preset to another preset using Teklogix Imagers. To set the active preset, do the following:

1. Select a preset.

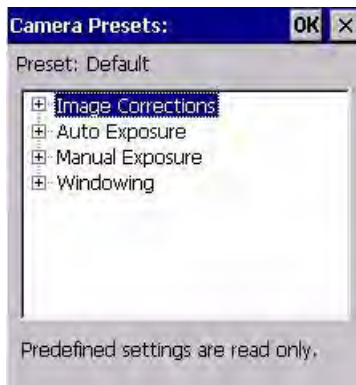
2. Click **Activate**.

5.13.1.3 Viewing A Preset

To view the parameter settings in a preset, do the following:

1. Select a preset.
2. Click **View**.

The following window opens:



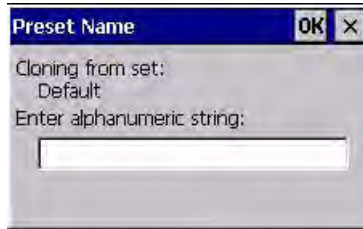
3. Expand one of the lists to view the parameter settings.
4. Click the **OK**, or the **Close**, button to exit.

5.13.1.4 Creating A Custom Preset

Custom presets are created, modified and deleted through Teklogix Imagers. A new custom preset is created by modifying a preset—either a predefined preset or an existing custom preset. To create a custom preset do the following:

1. Select a preset.
2. Click **Add**.

A window similar to the following opens:



3. Type the name of the new preset in the dialog box.
4. When you have completed all the changes, do one of the following:
 - Click **OK** to exit and save the changes, *or*
 - Click the **Close** button to exit without saving the changes.
5. The preset list is displayed; the new custom preset is at the end of the list. It is marked as read and write.

5.13.1.5 Modifying A Custom Preset

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value do the following:

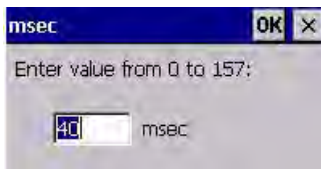
1. Select a preset.
2. Click **Edit**.

The following window opens:



3. Expand one of the lists to view the parameter settings.

4. Scroll through the parameter list until you reach the parameter that you want to change.
5. For a parameter that can take a range of values:
 - i. Select the parameter and then press the [SPACE] key, *or* double-click the parameter.
 - ii. A dialog box—containing the valid range of values for the parameter and the current setting—similar to the following opens:



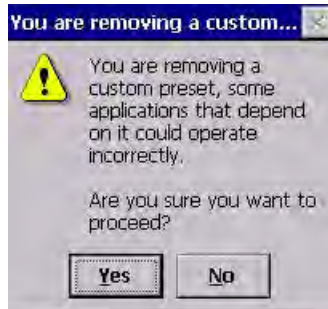
- iii. Type the new value for the parameter into the box.
6. For a parameter that toggles between two values:
 - Select the parameter and then press the [SPACE] key, *or*
 - Double-click the parameter.
7. When you have completed all the changes, do one of the following:
 - Click **OK** to exit to the parameter list and save the changes, *or*
 - Click the **Close** button to exit to the parameter list without saving the changes.
8. The parameter list is displayed; the new value for the changed parameter is shown.
9. When you have completed all the changes, do one of the following:
 - Click **OK** to exit to the preset list and save the changes, *or*
 - Click the **Close** button to exit to the preset list without saving the changes.

5.13.1.6 Removing A Custom Preset

To remove a custom preset do the following:

1. Select a custom preset.
2. Click **Remove**.

The following window opens:



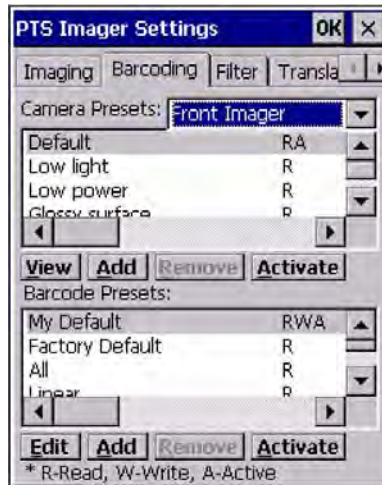
3. Do one of the following:
 - Click **Yes** to delete the custom preset and exit to the preset list, *or*
 - Click **No** to exit to the preset list without deleting the custom preset.

5.13.2 Configuring The Bar Code Decoding Camera Presets

To configure the bar code decoding camera presets, open the dialog box as follows:

- In Control Panel, select **Teklogix Imagers** and then click the **Barcoding** tab.

The following window opens:



This window lists all the presets, both the predefined and the custom ones. Presets are identified as follows:

- Predefined presets are marked as read-only.
- Custom presets are marked as read and write.
- One preset—either predefined or custom—is marked as active.

When you have completed all the changes, do one of the following:

- Click **OK** to exit and save the changes, *or*
- Click the **Close** button to exit without saving the changes.

5.13.2.1 Selecting A Camera

If the Ikôn has more than one built-in camera, one camera must be selected for configuration. The camera is selected as follows:

1. Expand the **Camera Presets** list to view the camera options.
2. Select a camera.

5.13.2.2 Setting The Active Preset

The active preset is used at startup by the demonstration program and by other application programs. An application can change the active preset to another preset using Teklogix Imagers. To set the active preset, do the following:

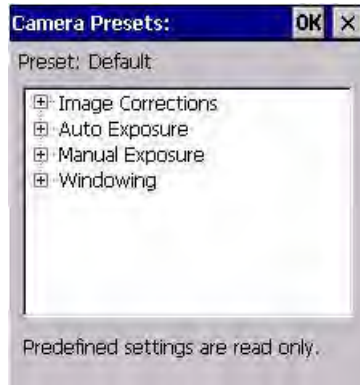
1. Select a preset.
2. Click **Default**.

5.13.2.3 Viewing A Preset

To view the parameter settings in a preset, do the following:

1. Select a preset.
2. Click **View**.

The following window opens:



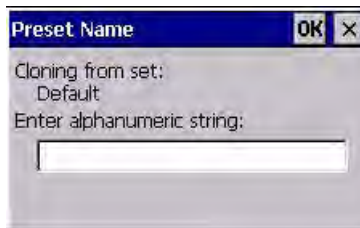
3. Expand one of the lists to view the parameter settings.
4. Click the **OK** or the **Close** button to exit.

5.13.2.4 Creating A Custom Preset

Custom presets are created, modified and deleted through Teklogix Imagers. A new custom preset is created by modifying a preset—either a predefined preset or an existing custom preset. To create a custom preset do the following:

1. Select a preset.
2. Click **Add**.

A window similar to the following opens:



3. Type the name of the new preset in the dialog box.
4. When you have completed all the changes, do one of the following:
 - Click **OK** to exit and save the changes, *or*
 - Click the **Close** button to exit without saving the changes.

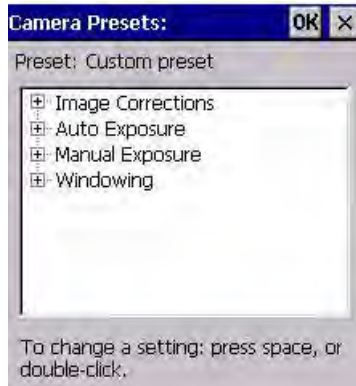
5. The preset list is displayed; the new custom preset is at the end of the list. It is marked as read and write.

5.13.2.5 Modifying A Custom Preset

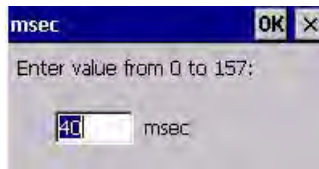
The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a parameter value do the following:

1. Select a preset.
2. Click **Edit**.

The following window opens:



3. Expand one of the lists to view the parameter settings.
4. Scroll through the parameter list until you reach the parameter that you want to change.
5. For a parameter that can take a range of values:
 - i. Select the parameter and then press the [SPACE] key, *or* double-click the parameter.
 - ii. A dialog box —containing the valid range of values for the parameter and the current setting—similar to the following opens:



- iii. Type the new value for the parameter into the box.

6. For a parameter that toggles between two values:
 - Select the parameter and then press the [SPACE] key, *or*
 - Double-click the parameter.
7. When you have completed all the changes, do one of the following:
 - Click **OK** to exit to the parameter list and save the changes, *or*
 - Click the **Close** button to exit to the parameter list without saving the changes.
8. The parameter list is displayed; the new value for the changed parameter is shown.
9. When you have completed all the changes, do one of the following:
 - Click **OK** to exit to the preset list and save the changes, *or*
 - Click the **Close** button to exit to the preset list without saving the changes.

5.13.2.6 Removing A Custom Preset

To remove a custom preset do the following:

1. Select a custom preset.
2. Click **Remove**.

The following window opens:



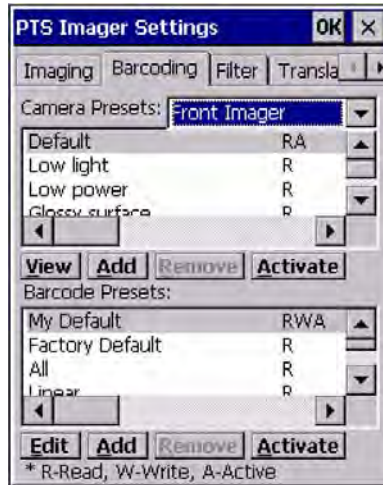
3. Do one of the following:
 - Click **Yes** to delete the custom preset and exit to the preset list, *or*
 - Click **No** to exit to the preset list without deleting the custom preset.

5.13.3 Configuring The Bar Code Decoding Symbology Presets

To configure the bar code decoding symbology presets, open the dialog box as follows:

- In Control Panel, select **Teklogix Imagers** and then click the **Barcoding** tab.

The following window opens:



This window lists all the presets, both the predefined and the custom ones. Presets are identified as follows:

- Predefined presets are marked as read-only.
- Custom presets are marked as read and write.
- One preset—either predefined or custom—is marked as active.

When you have completed all the changes, do one of the following:

- Click **OK** to exit and save the changes, *or*
- Click the **Close** button to exit without saving the changes.

5.13.3.1 Selecting A Camera

If the Ikôn has more than one built-in camera, one camera must be selected for configuration. The camera is selected as follows:

1. Expand the **Camera Presets** list to view the camera options.
2. Select a camera.

5.13.3.2 Setting The Active Preset

The active preset is used at startup by the demonstration program and by any other application program. An application can change the active preset to another preset using Teklogix Imagers. To set the active preset, do the following:

1. Select a preset.

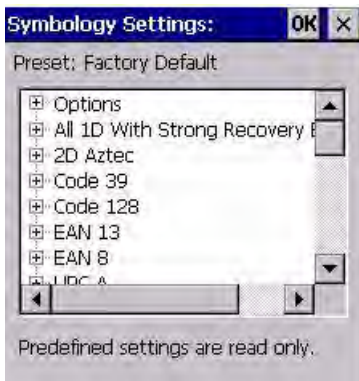
2. Click **Activate**.

5.13.3.3 Viewing A Preset

To view the parameter settings in a preset, do the following:

1. Select a preset.
2. Click **View**.

The following window opens:



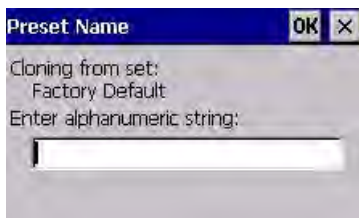
3. Expand one of the lists to view the parameter settings.
4. Click the **OK** or the **Close** button to exit.

5.13.3.4 Creating A Custom Preset

Custom presets are created, modified and deleted through Teklogix Imagers. A new custom preset is created by modifying a preset—either a predefined preset or an existing custom preset. To create a custom preset do the following:

1. Select a preset.
2. Click **Add**.

A window similar to the following opens:



3. Type the name of the new preset in the dialog box.
4. When you have completed all the changes, do one of the following:
 - Click **OK** to exit and save the changes, *or*
 - Click the **Close** button to exit without saving the changes.
5. The preset list is displayed; the new custom preset is at the end of the list. It is marked as read and write.

5.13.3.5 Modifying A Custom Preset

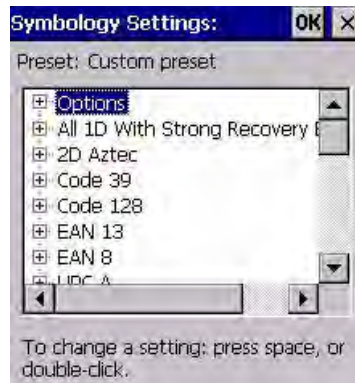


Warning: *None of the changes made to a bar code symbology custom preset has any effect on the symbologies configured by the Teklogix Scanners program in Control Panel.*

The parameter values in a custom preset can be modified. It is recommended that very few changes be made to a custom preset. To ensure that it will work reliably, it should be as close as possible to the original predefined preset. To change a bar code decoding parameter value do the following:

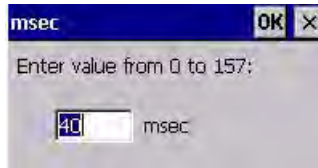
1. Select a preset.
2. Click **Edit**.

The following window opens:



3. Expand one of the lists to view the parameter settings.
4. Scroll through the parameter list until you reach the parameter that you want to change.
5. For a parameter that can take a range of values:

- i. Select the parameter and then press the [SPACE] key, *or* double-click the parameter.
- ii. A dialog box—containing the valid range of values for the parameter and the current setting—similar to the following opens:



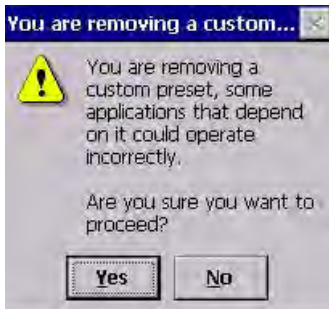
- iii. Type the new value for the parameter into the box.
6. For a parameter that toggles between two values:
 - Select the parameter and then press the [SPACE] key, *or*
 - Double-click the parameter.
 7. When you have completed all the changes, do one of the following:
 - Click **OK** to exit to the parameter list and save the changes, *or*
 - Click the **Close** button to exit to the parameter list without saving the changes.
 8. The parameter list is displayed; the new value for the changed parameter is shown.
 9. When you have completed all the changes, do one of the following:
 - Click **OK** to exit to the preset list and save the changes, *or*
 - Click the **Close** button to exit to the preset list without saving the changes.

5.13.3.6 Removing A Custom Preset

To remove a custom preset do the following:

1. Select a custom preset.
2. Click **Remove**.

The following window opens:



3. Do one of the following:
 - Click **Yes** to delete the custom preset and exit to the preset list, *or*
 - Click **No** to exit to the preset list without deleting the custom preset.

5.13.3.7 Working With The My Default Preset

The **My Default** symbology preset is synchronized with the symbologies defined by the Teklogix Scanners program in Control Panel.

Configuring symbologies in the Teklogix Scanners Control Panel program

When a symbology is enabled or configured using the Teklogix Scanners program, the changes are also made in the **My Default** preset. **My Default** automatically becomes the active bar code symbology preset.

None of the other bar code decoding predefined presets is changed.

Configuring symbologies in the My Default preset

When My Default is the active preset

In this case the changes to the symbology configuration are also made in the Teklogix Scanners program.

When My Default is not the active preset

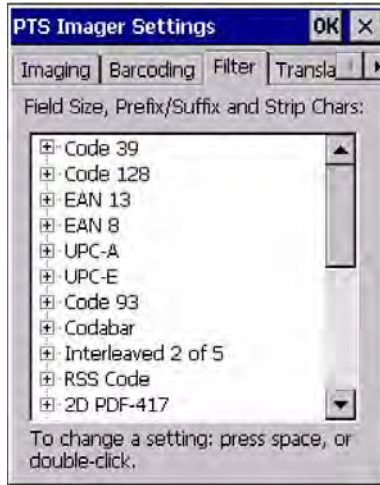
In this case the changes to the symbology configuration are not made in the Teklogix Scanners program.

5.13.4 Manipulating Bar Code Data

To configure the rules for manipulating bar code data, open the dialog box as follows:

- In Control Panel, select **Teklogix Imagers** and then click the **Filter** tab.

The following window opens:

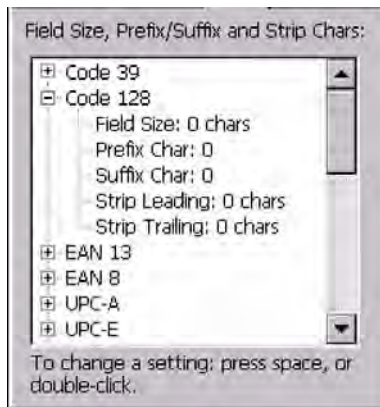


5.13.4.1 Modifying A Bar Code Setting

The rules for manipulating data from selected bar code symbologies can be modified. To change the settings for a symbology do the following:

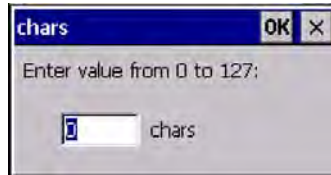
1. Expand the selected bar code symbology to view the parameter settings.

A list similar to the following is displayed:

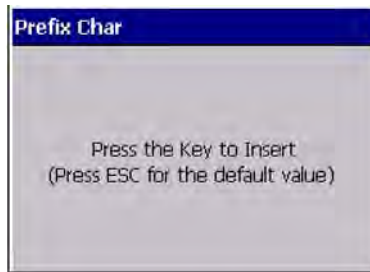


2. For a parameter that can take a range of values:
 - i. Select the parameter and then press the [SPACE] key, *or* double-click the parameter.

- ii. A dialog box—containing the valid range of values for the parameter and the current setting—similar to the following opens:



- iii. Type the new value for the parameter into the box.
3. For a parameter that takes a single character:
 - i. Select the parameter and then press the [SPACE] key, *or* double-click the parameter.
 - ii. The following dialog box opens:



- iii. Press the selected key on the keyboard.
4. When you have completed all the changes, do one of the following:
 - Click **OK** to exit to the Control Panel and save the changes, *or*
 - Click the **Close** button to exit to the Control Panel without saving the changes.

5.13.5 Configuring Translation Rules

Translation rules enable the automatic processing of bar code data. Up to 10 cases can be defined, each consisting of up to 10 sequential rules.

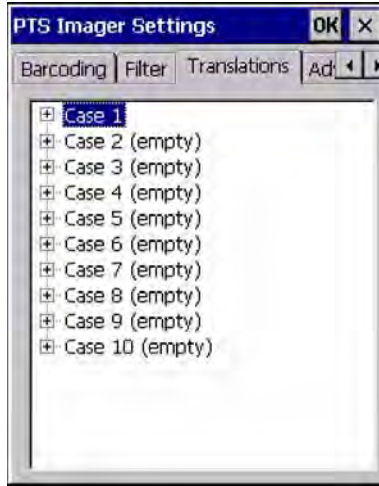


Note: Changes made to the translations configuration using the Teklogix Scanner program in Control Panel are synchronized with changes made here. Changes made in either place affect both translations tables.

To configure translation rules open the dialog box as follows:

- In Control Panel, select **Teklogix Imagers** and then click the **Translations** tab.

The following window opens:



For instructions on adding, editing, and removing translation rules, refer to “Translations” on page 206.

5.13.6 Obtaining Information On the Imaging System

To obtain information on the imaging system, open the dialog box as follows:

- In Control Panel, select **Teklogix Imagers** and then click the **About** tab.

The following window opens:



This window displays the following:

- The imager model.
- The version number of the imaging driver installed on the Ikôn.
- The version number of the firmware installed on the imager.

To close the window either click **OK**, or click the **Close** button.

5.13.7 Configuring File Locations For Captured Images

To configure the location for saved images, open the dialog box as follows:

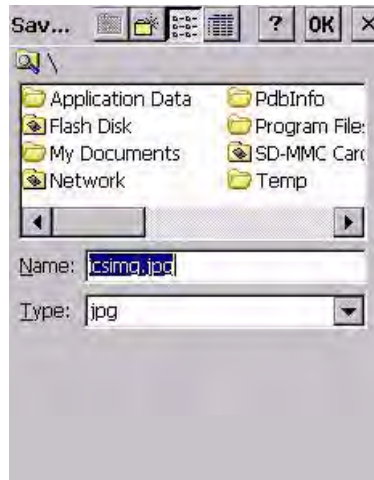
- In Control Panel, select **Teklogix Imagers** and then click the **Advanced** tab.

The following window opens:



To define the location for saving imager files:

- Click **File Location**. The following window opens:



- Select the folder name and the file type. Enter the file name.
- When you have completed all the changes, do one of the following:
 - Click **OK** to exit to the preset list and save the changes, *or*

- Click the **Close** button to exit to the preset list without saving the changes.

5.13.8 Configuring Triggers

5.13.8.1 Viewing The Trigger Configuration

The scan button on the Ikôn is configured using the *Manage Triggers* program in Control Panel. The Teklogix Imagers program has a shortcut to Manage Triggers. To navigate to this shortcut open the dialog box as follows:

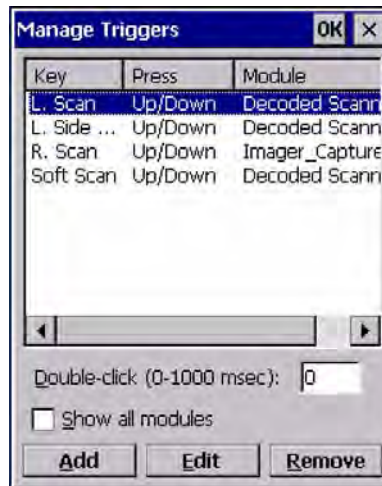
1. In Control Panel, select **Teklogix Imagers** and then click the **Advanced** tab.

The following window opens:



2. Click **Trigger Control...**

The following Manage Triggers window opens displaying the triggers that are available to imaging applications:



3. To view all the triggers and the hardware devices that are configured to use them, select **Show all modules**.

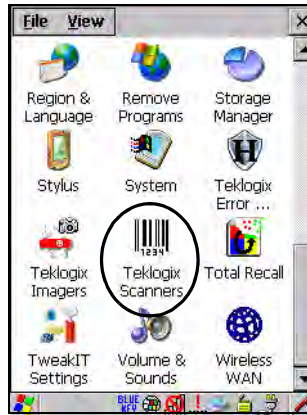
5.13.8.2 Adding, Editing, And Removing Triggers

For instruction on adding, editing, and removing triggers, refer to “Manage Triggers” on page 106.

5.14 Scanner Settings

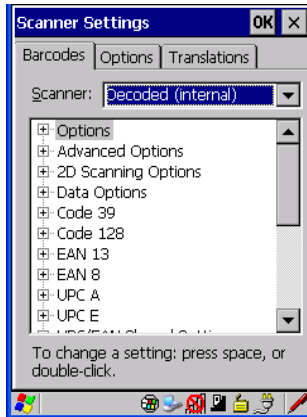
The *Teklogix Scanners* icon in the *Control Panel* provides dialog boxes in which you can tailor bar code options and choose the bar codes your scanner will recognize. The parameters are preset with the default settings of the decoded scanner installed in the unit.

Figure 5.13 Teklogix Scanners Icon



For a listing of available scanners and their specifications, please refer to Chapter 7: “Specifications”.

5.14.1 Bar Codes



5.14.1.1 Scanner

The drop-down menu to the right of the *Scanner* option allows you to choose from one of the following scanner types used with your Ikôn: *Decoded* (internal), *Decoded* (HHP), *Decoded* (ISCP), and *Imager*.

The symbologies listed change to reflect the scanner you choose and the bar codes it supports.



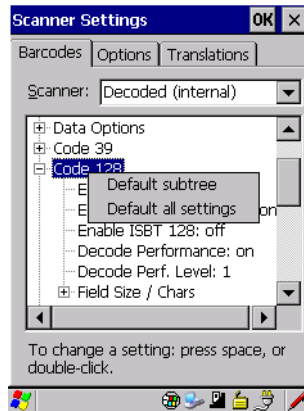
Important: To improve the decode speed and performance, enable only those codes that are required by the application.

Keep in mind that some bar code types are only available when an internal imaging scanner is installed. All internal scanners can be configured using the *Barcode* dialog boxes.

5.14.1.2 Restoring Default Settings

If you want to restore the factory defaults after making changes, the defaults can be applied to a selected parameter, sub-tree of parameters or all scanner parameters.

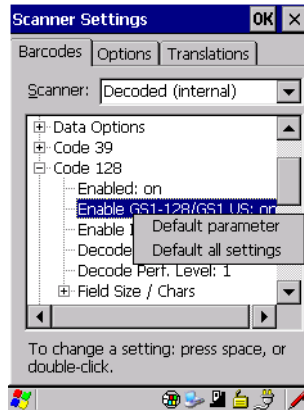
- Press and hold the stylus on a symbology (e.g., Code 128) to display a pop up a menu.



- Choose **Default subtree** to reset only the parameters in the symbology you selected, or choose **Default all settings** to reset all scanner parameters to default settings.

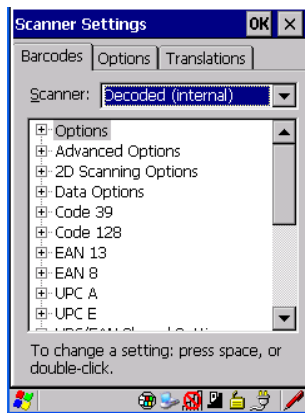
To reset a single parameter to its default setting:

- Press and hold the stylus on the parameter you want to reset.



- Choose **Default parameter** to reset the parameter to the default setting.

5.14.2 Decoded (Internal) Scanners



- Tap on the **Scanner** drop-down menu, and choose **Decoded (internal)**.

5.14.2.1 Options



Note: Some options are available only for specific scanners. Refer to the option names in this section for scanner model identification.

Dot Time (msec)

The value selected for “Dot Time (msec)” determines (in milliseconds) how long the targeting dot remains on before the scanner switches to a normal scan sweep. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value of *0 msec*, *200 msec* or *400 msec*. A value of **0** (zero) disables the target dot.

Aim Duration

This parameter determines the total time the aiming pattern appears before the scanner laser begins sweeping. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value from *0* to *30* (*0* to *3* sec.). A value of **0** (zero) disables the aiming-dot.

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed. Double-tapping on this parameter displays a dialog box in which you can enter a value between *5* and *99*, each number representing 0.1 seconds.

5.14.2.2 Decoded (Internal) Advanced Options

Continuous Scan Mode

Setting this parameter to **on** keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when the user quickly triggers on/off.

Low Power Timeout

To extend laser life, you can select the time the scanner remains active following a successful decode. The scanner wakes from low power mode when a bar code is scanned—a successful decode restores normal blinking.

This is only used if the unit’s Trigger Mode has been changed to Continuous On. If the Ikôn is used in a fixed mount this parameter might be used, but not if the unit is used as a PDA.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of *30 sec.*, *1 min.*, *2 min.*, or *3 min.*

Parameter Scanning

Setting this parameter to **on** enables decoding of parameter bar codes.

Linear Security Level

This parameter allows you to select the security level appropriate for your bar code quality. There are four levels of decode security for linear code types (e.g., Code 39, Interleaved 2 of 5). Higher security levels should be selected for decreasing levels of bar code quality. As security levels increase, the scanner's decode speed decreases.

Double-tapping on this parameter displays a dialog box in which you can enter a value from **1** to **4**.

Linear security level 1 specifies that the following code types must be successfully read twice before being decoded:

Code Type	Length
Codabar	All
MSI Plessey	4 or less
D 5 of 5	8 or less
I 2 of 5	8 or less

Linear security level 2 specifies that all types of codes must be successfully read twice before being decoded.

Linear security level 3 specifies that code types other than the following must be successfully read twice before being decoded. The following codes must be read three times:

Code Type	Length
MSI Plessey	4 or less
D 2 of 5	8 or less
I 2 of 5	8 or less

Linear security level 4 requires that all code types be successfully read three times before being decoded.

Bi-Direction Redundancy



Note: This parameter is only valid if a "Linear Security Level" is enabled.

When this parameter is enabled, a bar code must be successfully scanned in both directions (forward and reverse) before being decoded.

5.14.2.3 Decoded (Internal) 2D Scanning Options

Scanning Mode

When you double-tap on this parameter, a dialog box is displayed in which you can choose one of the following scanning modes: *Smart Raster*, *Always Raster*, *Programmable Raster*, *Slab Pattern*, *Cyclone Pattern*, or *Semi-Omni Pattern*.

Raster Height And Raster Expand Rate

These parameters determine the laser pattern's height and rate of expansion.



Note: These parameters are only used when either Programmable Raster or Always Raster is assigned to the "2D Scanning Mode" parameter. "2D Raster Height" and "2D Raster Expand Rate" are intended for very specific applications and are usually not required for normal scanning purposes.

Double-tapping on this parameter displays a dialog box in which you can enter a value from 1 to 15.

5.14.2.4 Decoded (Internal) Data Options

Transmit Code ID Char

A code ID character identifies the scanned bar code type. In addition to any single character prefix already selected, the code ID character is inserted between the prefix and the decoded symbol.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a transmit code: *None*, *AIM*, or *Symbol*.

Scan Data Format

This parameter allows you to change the scan data transmission format. Double-tapping on **Scan Data Format** displays the following options from which you can choose a data format: *data (as-is)*, *data [S1]*, *data [S2]*, *data [S1][S2]*, *[P] data*, *[P] data [S1]*, *[P] data [S2]*, and *[P] data [S1][S2]*.

Prefix [P], Suffix [S1] And Suffix [S2]

A prefix and/or one or two suffixes may be appended to scan data for use in data editing.

When you double-tap on these parameters, a dialog box is displayed in which you can enter a value from 0 to 255.

Delete Char Set ECIs

Setting this parameter to **on** enables the scanner to delete any escape sequences representing Character Set ECIs—Extended Channel Interpretations (also known as GLIs)—from its buffer before transmission.

When this parameter is enabled, the scanner transmits data from PDF417 and MicroPDF417 bar codes containing Character Set ECIs, even when the ECI Protocol is disabled.

ECI Decoder

Setting this parameter to **on** enables the scanner to interpret any Extended Channel Interpretations (ECIs) supported by the scanner. This parameter has no effect on symbols that were not encoded using ECIs.

If this parameter is set to **OFF** and a symbol that was encoded using an ECI escape is scanned, the scanner transmits the ECI escape followed by the data that was not interpreted.

5.14.2.5 Code 39

Enabled

Setting this parameter to **on** enables “Code 39”.

Enable Trioptic Code 39



Note: “Trioptic Code 39” and “Full ASCII” should not be enabled simultaneously. The scanner does not automatically discriminate between these two symbologies.

Trioptic Code 39 symbols always contain six characters. Setting this parameter to **on** allows this type of symbology to be recognized.

Convert To Code 32



Note: “Code 39” must be enabled in order for this parameter to function.

Setting this parameter to **on** allows the scanner to convert the bar code from “Code 39” to “Code 32”.

Code 32 Prefix



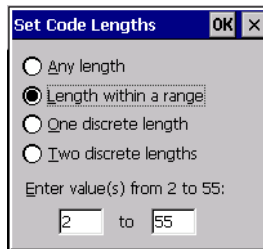
Note: “Convert to Code 32” must be enabled in order for this parameter to function.

When this parameter is enabled, the prefix character “A” is added to all “Code 32” bar codes.

Set Length L1 And Set Length L2

Lengths for “Code 39” can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be decoded by your scanner



Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **1** to **55**.

Check Digit Verification

When this parameter is enabled, the integrity of a “Code 39” symbol is checked to ensure that it complies with specified algorithms.



Note: Only those “Code 39” symbols that include a Mod 43 check digit are decoded when this parameter is enabled.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must to enabled.

Full ASCII

If this parameter is enabled, the characters +, %, and / are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Decode Performance

If this parameter is enabled, one of three decode levels can be chosen in the *Decode Performance Level* parameter.

Decode Perf. Level

This parameter provides three levels of decode performance or “aggressiveness” for Code 39 symbols. Increasing the performance level reduces the amount of required bar code orientation—this is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security.

When you double-tap on this parameter, a dialog box is displayed in which you can enter a decode performance level of between **1** and **3**.

Field Size/Chars

Field Size

The field size is the length of the field after the first character is stripped and the prefix and suffix characters are added. If the field size is non-zero, only bar codes of that length are passed through.

Prefix Char

This character, if non-zero, is added before a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Suffix Char

This character, if non-zero, is added after a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Strip Leading

This parameter determines the number of characters that will be removed from the beginning of the bar code before the prefix character is added.



*Note: For Code 39 bar codes, the “AIAG Strip” is performed **before** the “Strip Leading”.*

Strip Trailing

The value entered in this parameter determines the number of characters that will be removed from the end of the bar code before the suffix character is added.

5.14.2.6 Code 128

Enabled

Set this parameter to **on** to enable “Code 128”.

Enable GS1-128/GS1 US

Previously UPC/EAN and UCC, these types of bar codes include group separators and start codes.

Enable ISBT 128

To successfully scan this variation, “Enable ISBT 128” must be set to **on**.

Decode Performance

If this parameter is set to on, one of three decode levels assigned to the *Decode Performance Level* parameter can be selected.

Decode Perf. Level

This parameter provides three levels of decode performance or “aggressiveness” for Code 128 symbols. Increasing the performance level reduces the amount of required bar code orientation—this is useful when scanning very long and/or truncated bar codes. Keep in mind that increased levels reduce decode security.

When you double-tap on this parameter, a dialog box is displayed in which you can enter a decode performance level of between **1** and **3**.

Field Size/Chars

Refer to page 170 for details.

5.14.2.7 EAN 13

Enabled

Set this parameter to **on** to enable “EAN 13”.

Prefix/Suffix

Prefix Char

This character, if non-zero, is added before a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Suffix Char

This character, if non-zero, is added after a successfully decoded bar code. Press the key you want to insert in the dialog box attached to this parameter. The ASCII/Unicode key value of the keypress is displayed.

Strip Leading

This parameter determines the number of characters that will be removed from the beginning of the bar code before the prefix character is added.



Note: The appended character is treated as any other keyboard character. For example, if [BKSP] is pressed, the usual action for that key is performed.

Strip Trailing

The value entered in this parameter determines the number of characters that will be removed from the end of the bar code before the suffix character is added.

5.14.2.8 EAN 8

Enabled

Set this parameter to **on** to enable “EAN 8”.

EAN-8 Zero Extend

When this parameter is enabled, five leading zeros are added to decoded EAN-8 symbols, making them compatible in format to EAN-13 symbols. Disabling this parameter returns EAN-8 symbols to their normal format.

Prefix/Suffix

See “Prefix/Suffix” on page 171.

5.14.2.9 UPC A

Enabled

Set this parameter to *on* to enable “UPC A”.

UPC-A, Check Digit

If you enable this parameter, the check digit is included with the decoded bar code data.

UPC-A, Preamble

When you double-tap on this parameter, a dialog box is displayed where you can choose one of three options for lead-in characters for UPC-A symbols transmitted to the host device:

System Char—system character transmitted with the data,

Country Code and System Char—both the country code (“0” for USA) and system character are transmitted with the data, or

None—no preamble is transmitted. The lead-in characters are considered part of the symbol.

Prefix/Suffix

See “Prefix/Suffix” on page 171.

5.14.2.10 UPC E

Enabled UPC-E

Set this parameter to **on** to allow “UPC E” bar code scans.

Enabled UPC-E1

Set this parameter to **on** to allow “UPC-E1” (zero suppressed) bar code scans.

UPC-E And UPC-E1 Check Digit

If you enable one or both of these parameters, a check digit is included with the decoded bar code data.

UPC-E And UPC-E1 Preamble

When you double-tap on one of these parameters, a dialog box is displayed where you can choose one of three options for lead-in characters for UPC-E and UPC-E1 symbols transmitted to the host device:

System Char—system character transmitted with the data,

Country code and System Char—both the country code (“0” for USA) and system character are transmitted with the data, or

None—no preamble is transmitted. The lead-in characters are considered part of the symbol.

Conv. UPC-E To UPC-A

This parameter converts UPC-E (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Conv. UPC-E1 To UPC-A

This parameter converts UPC-E1 (zero suppressed) decoded data to UPC-A format before transmission. After conversion, data follows UPC-A format and is affected by UPC-A programming selections (e.g., Preamble, Check Digit).

Prefix/Suffix

Refer to “Prefix/Suffix” on page 171.

5.14.2.11 UPC/EAN Shared Settings

The parameters you set here are shared across all available UPC and EAN bar codes.

Enable Bookland EAN

Setting this parameter to **on** allows your scanner to recognize Bookland EAN bar codes.

Supplementals

Supplementals are additionally appended characters (2 or 5).

Double-tapping this parameter displays a list of options. If *Ignore* is chosen, UPC/EAN is decoded and the supplemental characters are ignored. If *Decode* is chosen, UPC/EAN symbols are decoded with supplementals. *Autodiscriminate* works in conjunction with the Supp. Redundancy parameter.

Supp. Redundancy

With “Autodiscriminate” selected in the *Supplementals* parameter, *Supp. Redundancy* adjusts the number of times a symbol without supplementals is decoded before transmission.

When you double-tap on this parameter, a dialog is displayed in which you can enter a value between **2** and **20**. A value of 5 or above is recommended when *Autodiscriminate* is selected and you are decoding a mix of UPC/EAN symbols with and without supplementals.

Security Level

This parameter controls the tolerance for decoding edge-to-edge UPC/EAN bar codes. Double-tapping on this parameter displays a dialog box in which you can choose a level from **0** to **3**. Lower values have a lower tolerance for misreads, but they also increase the time it takes to decode the bar code.

Linear Decode

Linear Decode applies to code types containing two adjacent blocks (e.g., UPC-A, EAN-8, EAN-13). When enabled, a bar code is transmitted only when both the left and right blocks

are successfully decoded within one laser scan. This option should be enabled when bar codes are in proximity to each other.

2D UPC Half Block Stitching

Setting this parameter to **on** enables “UPC Half Block Stitching” for the omnidirectional scanner engine only.

5.14.2.12 Code 93

Enabled

Set this parameter to **on** to enable “Code 93”, or **OFF** to disable it.

Set Length L1 And Set Length L2

Lengths for “Code 93” can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **4** to **55**.

Field Size/Chars

Refer to page 170 for details.

5.14.2.13 Codabar

Enabled

Set this parameter to **on** to enable “Codabar”.

Set Length L1 And Set Length L2

Lengths for “Codabar” can be set for *Any length*, *Length within a range*, *One discrete length*, or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **5** to **55**.

CLSI Editing

When enabled, this parameter strips the start and stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar symbol.



Note: Symbol length does not include start and stop characters.

NOTIS Editing

When enabled, this parameter strips the start and stop characters from decoded Codabar symbol.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.2.14 MSI Plessey

Enabled

Set this parameter to **on** to enable “MSI Plessey”.

Set Length L1 And Set Length L2

Lengths for “MSI Plessey” can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **6** to **55**.

Check Digits

Double-tapping on this parameter displays a dialog box in which you can choose *One* or *Two* check digit(s).

If this parameter is set to *One*, it is assumed that the last digit is a check digit. If “Check Digits” is set to *Two*, it is assumed that the last two digits are check digits.



*Note: If **Two check digits** is selected, an MSI Plessey “Check Digit Algorithm: must also be selected. See below for details.*

Transmit Check Digit

If this parameter is enabled, the check digit is included with the bar code data.

Check Digit Algorithm

When the *Two MSI Plessey* check digits option is selected, an additional verification is required to ensure integrity. Double-tapping on this parameter displays a dialog box in which you can choose the algorithm to be used: *MOD 10/MOD 11* or *MOD 10/MOD 10*.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.2.15 Interleaved 2 of 5

Enabled

Set this parameter to **on** to enable “Interleaved 2 of 5”.

Set Length L1 And Set Length L2

Lengths for “Interleaved 2 of 5” can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **4** to **14**.

Check Digit Verification

When enabled, this parameter checks the integrity of an I 2 of 5 symbol to ensure it complies with a specified algorithm—either USS (Uniform Symbology Specification) or OPCC (Optical Product Code Council).

Transmit Check Digit

If this parameter is enabled, the check digit is included with the bar code data.

Convert To EAN 13

If this parameter is enabled, the I 2 of 5 bar code is converted to EAN 13.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.2.16 Discrete 2 of 5

Enabled

Set this parameter to **on** to enable “Discrete 2 of 5”.

Set Length L1 And Set Length L2

Lengths for “Discrete 2 of 5” can be set for *Any length*, *Length within a range*, *One discrete length* or *Two discrete lengths*. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on this parameter displays a dialog box labelled *Set Code Lengths* where you can define the code length that will be recognized by your scanner.

Choosing *One discrete length* allows you to decode only those codes containing a selected length. Choosing *Two discrete lengths* allows you to decode only those codes containing two selected lengths. *Length within a range* allows you to decode a code type within a specified range from **1** to **12**.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.2.17 RSS Code

Enable

Setting this parameter to **on** enables “2D RSS Code” scanning capability.

Enable RSS-14 (Reduced Space Symbology)

RSS-14 code can be either purely linear or split in half with one half stacked on top of the other half. Stacking the code reduces the bar code length, and providing the nominal height of the code is maintained, it can be omni-directionally scanned.

Enable RSS Limited

“RSS-Limited” is restricted, in that it can only encode 14 digit GTINs (global trade item number) that begin with either a 0 or a 1. It is not stackable and is not designed to be read omni-directionally.

Enable RSS Expanded

“RSS Expanded” uses the same application identifiers as UCC/EAN-128 codes but it can be split into sections and stacked several rows high, reducing the length of the symbol, while increasing the capacity of data that can be stored. “RSS Expanded” code can be omni-directionally scanned.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.2.18 Composite



Important: To successfully read this type of bar code, the two types of symbologies included in a composite bar code must be enabled. In addition, “Center Bar Code Only” must be disabled.

A composite symbol includes multi-row 2D components making it compatible with linear and area CCD scanners along with linear and rastering laser scanners.

The options available for this parameter represent multi-level components of a composite symbol.

Enable CC-C And Enable CC-AB

To activate these components, set these parameters to **on**.

Enable TLC-39

This composite component integrates MicroPDF417 with the linear code. Setting this parameter to **on** enables this parameter.

5.14.2.19 PDF-417

Enable

Setting this parameter to **on** enables PDF-417 two dimensional (2D) coding.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.2.20 Micro PDF-417

Enable

Setting this parameter to **on** enables “Micro PDF-417” bar code scanning. Micro PDF-417 is a multi-row symbology that is useful for applications requiring greater area efficiency but lower data capacity than PDF-417.

Code 128 Emulation

When this parameter is enabled, the scanner transmits data from certain Micro PDF-417 symbols as if it was encoded in Code 128 symbols.

If Code 128 Emulation is enabled, the following Micro PDF-417 symbols are transmitted with one of the following prefixes:

JC1 if the first codeword is 903-907, 912, 914, 915

JC2 if the first codeword is 908 or 909

JC0 if the first codeword is 910 or 911

If Code 128 Emulation is set to off, the Micro PDF-417 symbols are transmitted with one of the following prefixes:

JL3 if the first codeword is 903-907, 912, 914, 915

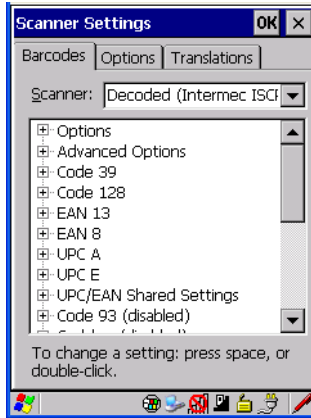
JL4 if the first codeword is 908 or 909

JL5 if the first codeword is 910 or 911

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3 Decoded (ISCP)



- Tap on the **Scanner** drop-down menu, and choose **Decoded (ISCP)**.

5.14.3.1 Decoded (ISCP) Options

Laser On Time

The value assigned to this parameter determines how long the laser will remain on when the scan button or trigger is pressed.

Double-tapping on this parameter displays a dialog box in which you can enter a value between *1* and *10* seconds.

5.14.3.2 Decoded (ISCP) Advanced Options

Continuous Scan Mode

Setting this parameter to **on** keeps the laser on and continuously decoding as long as the scanner button is pressed and held down.

Minimum Cancel Time

The value assigned to this parameter determines the time delay before the scanner is turned off, once the scanner trigger or button is released. This gives the scanner a minimum amount of time to complete its current decode before the scan is cancelled when the user quickly triggers on/off.

Low Power Timeout

To extend laser life, you can select the length of time the scanner remains active following a successful decode. The scanner wakes from low power mode when a bar code is scanned—a successful decode restores normal blinking.

When you double-tap on this parameter, a dialog box is displayed in which you can choose a value of *30 sec*, *1 min*, *2 min*, or *3 min*.



*Note: This parameter is only used if the Trigger Mode has been set to **Continuous On** and the Ikôn is mounted in a fixed position; otherwise, 'Low Power Timeout' is not used.*

Parameter Scanning

Setting this parameter to **Enabled** allows decoding of parameter bar codes.

Same Read Validate

The data is only transmitted after repeated reads give the same result. The value assigned at this parameter determines the number of reads required, from *0* to *10* times.

Same Read Timeout

Prevents the same bar code from being read more than once. The value assigned determines after what time period the scanner will timeout, from *0* to *2550 msec*.

Diff Read Timeout

Prevents unwanted reading of other bar codes on the same label. The value assigned determines after what time period the scanner will timeout, from *0* to *2550 msec*.

5.14.3.3 Code 39

Enable

Setting this parameter to **on** enables “Code 39”.

Full ASCII

If this parameter is enabled, the characters *+*, *%*, and */* are used as escape characters. The combination of an escape character and the next character is converted to an equivalent ASCII character.

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

Start/Stop Transmit

Setting this parameter to **on** enables the transmission of start and stop characters, which are usually not transmitted. Code 39 can start and end with either a * or a \$ character (see also the next parameter).

Accepted Start Char

This parameter allows the user the option of using one of the two start/stop characters or both (\$ char, * char, \$ and * char).

Check Digit Verification

Uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted. The available options are: *Disabled*, *MOD 43 Check*, *French CIP*, or *Italian CIP*.



Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Italian CIP (Italian pharmaceutical) is also known as Code 32. It is transmitted as a standard Code 39 if checksum is not validated.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.4 Code 128

Enable

Setting this parameter to **on** enables “Code 128”.

GS1-128

“GS1-128” is the GS1 implementation of the Code 128 barcode specification. The former correct name was UCC/EAN-128.

GS1-128 Identifier

“GS1-128 Identifier” allows the AIM ID "]C1" for EAN 128 to be transmitted or removed. By default, this identifier is transmitted if EAN 128 is enabled.

GTIN Compliant

GTIN (global trade item number) processing transmits EAN 128 as the 14-character EAN/UCC GTIN. To use GTIN processing, you must activate the EAN 128 symbology.



Important: When EAN 128 and GTIN processing are both activated, it is not possible to read normal EAN 128 Codes.

FNC1 Conversion

“FNC1 Conversion” allows the FNC1 character to be converted to another character for applications that cannot use the default <GS> Group Separator or hex (1d).

Double-tapping on this option displays a dialog box listing the allowable range: 0 to 255.

Enable ISBT 128

To successfully scan this type of bar code (International Society of Blood Transfusion), this option must be set to **on**. If you enable this type of bar code, Code 128/EAN 128 is deactivated to avoid any confusion.

ISBT Concat Transmit

The codes are not concatenated by default. You need to choose one of the options provided for this parameter to send concatenated code. Choosing *Only Concatenated Codes* transmits only concatenated codes—single codes will not be transmitted. Choosing *Concatenated or Single* transmits single codes or concatenated codes. If only one code of a pair is read, that code will be transmitted as a single code. If both codes in a pair are detected, they will be concatenated provided that “ISBT Concat Any Pair” (see below) is enabled.

ISBT Concat Any Pair

Enabling this parameter causes all code pairs that can be, to be concatenated even if they do not comply with Section 4.1 of the “ISBT 128 Bar Code Symbology and Application Specification for Labeling of Whole Blood and Blood Components” (June 2000, Version 1.2.1).

Reading Range

Determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

Check Digit Verification

The available options for this parameter are *Disabled* or *French CIP*. This parameter uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.



Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.5 EAN 13 Settings

Enabled

Set this parameter to **on** to enable “EAN 13”.

ISBN Conversion

When this parameter (International Standard Book Number) is enabled, the first 3 characters (‘978’) are ignored and the checksum (0,9, ‘X’) is calculated on the remaining characters.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 171.

5.14.3.6 EAN 8

Enabled

Set this parameter to **on** to enable “EAN 8”.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Convert To EAN 13

If this parameter is enabled, an EAN 8 bar code is converted to EAN 13.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 171.

5.14.3.7 UPC A Settings

Enabled

Set this parameter to **on** to enable “UPC A” bar code scanning recognition.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Transmit Number System

If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Convert To EAN 13

If this parameter is enabled, a UPC A bar code is converted to EAN 13.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 171.

5.14.3.8 UPC E Settings

Enabled

Set this parameter to **on** to enable “UPC E”.

Enable UPC-E1

Set this parameter to **on** to allow “UPC-E1” (zero suppressed) bar code scans.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Transmit Number System

If this parameter is enabled, the number system digit is transmitted with the decoded bar code data.

Convert To UPC-A

This parameter converts UPC E (zero suppressed) decoded data to UPC A format before transmission. After conversion, data follows UPC A format and is affected by UPC A programming selections (e.g. Check Digit).

Prefix/Suffix

Refer to “Prefix/Suffix” on page 171.

5.14.3.9 UPC/EAN Shared Settings

The setting assigned to the “Addendum” parameter associated with this option is shared across all UPC and EAN bar codes.

Addendum

An addendum is a separate bar code, supplementary to the main bar code. This parameter provides two options: *Not Required but Transmitted if Read* or *Required and Transmitted*.

- Double-tap on **Addendum** to display a dialog box listing your options.
- Highlight an item, and tap on **OK**.

When “Addendum” is set to *Not Required but Transmitted if Read*, the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to *Required and Transmitted*, the scanner does not accept the main bar code without an addendum.

Addendum Add-on 2 And Addendum Add-on 5

Enabling these parameters sets the length of the addendum bar code to either 2 or 5 characters.

GTIN Compliant

GTIN (global trade item number) processing transmits EAN 128 as the 14-character EAN/UCC GTIN. To use GTIN processing, you must activate the EAN 128 symbology.



Important: When EAN 128 and GTIN processing are both activated, it is not possible to read normal EAN 128 Codes.

Reading Range

This parameter determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

5.14.3.10 Code 93

Enabled

Set this parameter to **on** to enable “Code 93”.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.11 Codabar

Enabled

Set this parameter to **on** to enable “Codabar”.

Start/Stop Transmit

Codabar can use the following sets of characters as start and stop characters:

a, b, c, d

A, B, C, D

a, b, c, d, /, t, n, *, e

DC1, DC2, DC3, DC4

Thus, when a set is chosen, the first and last digits of a Codabar message must be one of those characters and the body of the message should not contain these characters. Setting this parameter to *Not Transmitted* strips the start and stop characters from this bar code.

CLSI Library System

When enabled, spaces are inserted after characters 1, 5, 10 in the 14-character label (used in the USA by libraries using the CLSI system).

Check Digit Verification

When enabled, this parameter checks the integrity of a symbol to ensure it complies with a specified algorithm—either USS (Uniform Symbology Specification) or OPCC (Optical Product Code Council).

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for “Codabar” can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can choose to set L1 as *Minimum Length* or L1,L2,L3 as *Fixed Length*.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.12 MSI Plessey

Enabled

Set this parameter to **on** to enable “MSI”.

Enable Plessey

Set this parameter to **on** to enable “Plessey”.

Check Digit Verification

The available options for this parameter are MOD 10 Check and Double MOD 10 Check. This parameter uses the specified algorithm of the option you’ve chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Plessey Transmit Check Digit

If the check digit is to be transmitted with the Plessey data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Plessey Minimum Length

Minimum lengths for the Plessey bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.13 Code 11

Enabled

Set this parameter to **on** to enable “Code 11”.

Check Digit Verification

The available options for this parameter are *MOD 10 Check* and *Double MOD 10 Check*. This parameter uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.14 Interleaved 2 of 5

Enabled

Set this parameter to **on** to enable “Interleaved 2 of 5”.

Reading Range

This parameter determines the reading distance from which a bar code can be successfully scanned. The default setting, *Extended*, allows for increased reading distance.

Check Digit Verification

The available options for this parameter are *Disabled*, *MOD 10 Check* and *French CIP*. “Check Digit Verification” uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.



Note: French CIP (French pharmaceutical) is only used with bar codes containing 7 characters.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for “Interleaved 2 of 5” can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can chose to set L1 as *Minimum Length* or L1,L2,L3 as *Fixed Length*.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.15 Matrix 2 of 5

Enabled

Set this parameter to **on** to enable “Matrix 2 of 5”.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.16 Discrete 2 of 5

Enabled

Set this parameter to **on** to enable “Discrete 2 of 5”.

Standard 2 of 5 Format

This parameter allows you to choose a standard format – either *Identicon* (6 start/stop bars) or *Computer Identics* (4 start/stop bars).

Check Digit Verification

The available options for this parameter are *Disabled* and *MOD 10 Check*. “Check Digit Verification” uses the specified algorithm of the option you've chosen to ensure the integrity of the symbol data before transmitting. If the data does not contain that algorithm, the data is not transmitted.

Transmit Check Digit

If the check digit is to be transmitted with the data, this parameter must be enabled.

Set Length L1, Set Length L2, And Set Length L3

Lengths for “Discrete 2 of 5” can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Double-tapping on these parameters displays dialog boxes where you can define the code length that will be recognized by your scanner.

Length Mode

You can chose to set L1 as *Minimum Length* or L1,L2,L3 as *Fixed Length*.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.17 Telepen

Enabled

Set this parameter to **on** to enable “Telepen”.

Format

This parameter allows you to set the bar code character format to either *ASCII* or *Numeric*.

Minimum Length

Minimum lengths for the bar code can be set from 0 to 255. The length of a code refers to the number of characters (i.e., human readable characters), including check digit(s).

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.18 RSS Code (Reduced Space Symbology)

Enable

Setting this parameter to **on** enables “RSS Code” scanning capability.

Enable RSS-14

RSS-14 code can be either purely linear or split in half with one half stacked on top of the other half. Stacking the code reduces the bar code length, and providing the nominal height of the code is maintained, it can be omni-directionally scanned.

Enable RSS Limited

“RSS-Limited” is restricted, in that it can only encode 14 digit GTINs (global trade item number) that begin with either a *0* or a *1*. It is not stackable and is not designed to be read omni-directionally.

Enable RSS Expanded

“RSS Expanded” uses the same application identifiers as UCC/EAN-128 codes but they can be split into sections and stacked several rows high, reducing the length of the symbol, while increasing the capacity of data that can be stored. “RSS Expanded” code can be omni-directionally scanned.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.19 PDF-417

Enabled

Set this parameter to **on** to enable “PDF-417”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.20 Micro PDF-417

Enabled

Set this parameter to **on** to enable “Micro PDF-417”.

Code 128 Emulation

When this parameter is enabled, the scanner transmits data from certain Micro PDF-417 symbols as if it was encoded in Code 128 symbols.

If Code 128 Emulation is *enabled*, the following Micro PDF-417 symbols are transmitted with one of the following prefixes:

JC1 if the first codeword is 903-907, 912, 914, 915

JC2 if the first codeword is 908 or 909

JC0 if the first codeword is 910 or 911

If Code 128 Emulation is set to *off*, the Micro PDF-417 symbols are transmitted with one of the following prefixes:

JL3 if the first codeword is 903-907, 912, 914, 915

JL4 if the first codeword is 908 or 909

JL5 if the first codeword is 910 or 911

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.3.21 Codablock

Enable Codablock A

Set this parameter to **on** to enable “Codablock type A”.

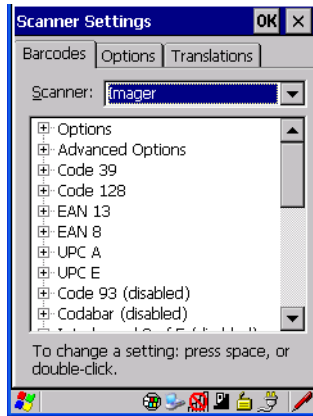
Enable Codablock F

Set this parameter to **on** to enable “Codablock type F”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4 Imager



- Tap on the **Scanner** drop-down menu, and choose **Imager**.

5.14.4.1 Imager Options

TekImager Enabled

Setting this option to **on** enables the imager installed in your Ikôn.

Continuous Scan Mode

Setting this parameter to on keeps image capture active and continuously decoding as long as the scanner button is pressed and held down.

Center Bar Code Only



Note: This parameter must be disabled when reading Composite bar codes.

When more than one bar code is visible in a single snap shot, this parameter allows you to specify that only the centre image within the imager framing marker be read. When this parameter is set to **on**, the target dot is pointed at the centre image and only that image is returned.

Max Number Barcodes

This parameter specifies the maximum number of bar codes the imager will attempt to decode in an image. A maximum of 6 bar codes can be decoded at one time.

Barcodes Must Decode

This parameter specifies the minimum number of bar codes that the imager must decode in order to report success.



Note: This number must be less than the number of bar codes assigned to “Max Number Barcodes”. The driver validates and reassigns the value if necessary.

Window Width

“Window Width” determines the width of the captured image in pixels.



Note: The driver will validate and reassign the value assigned to this parameter, if necessary; the driver will also use the “Window Width” value to horizontally center the image in the field of view.

Window Height

This parameter determines the height of the captured image in pixels.



Note: The driver will validate and reassign the value assigned to this parameter, if necessary; the driver will also use the “Window Height” value to vertically center the image in the field of view.

Dot Time (msec)

The value selected for “Dot Time (msec)” determines (in milliseconds) how long the targeting dot remains on before the scanner begins capturing images. When you double-tap on this parameter, a dialog box is displayed in which you can enter a value of between 0 and 3000. A value of 0 disables the target dot.

5.14.4.2 Imager Advanced Options



Important: Do not adjust the advanced options without first consulting Psion Teklogix technical support.

Factory Defaults On Reboot

The value assigned to this parameter determines whether or not the driver will restore the factory defaults to the imager device on the next reboot.



Note: The driver will default the imager device on a ‘clean’ reset, regardless of the value of this parameter.

Min Scan Duration

This parameter defines the minimum amount of time in seconds that the imager will scan when the trigger is pressed and held down without successful decode.



Note: The actual scan duration when the trigger is pressed relies on the value assigned to “Captures Per HW Trigger”, below.

Captures Per HW Trigger

The value assigned to this parameter determines the number of captures the imager device will take while the imager's internal hardware trigger is held down.



Note: This parameter, together with “Min Scan Duration”, determines the actual scan duration. When the scan trigger is pressed and held down, the driver starts a timer based on the value of “Min Scan Duration” and also sends a command to emulate the hardware trigger. When completed, if the time has not yet expired, it will send another command to the imager device, forcing the imager to flash again using the value assigned to “Captures Per HW Trigger”.

Auto Exposure



Important: This parameter value should only be changed by qualified Psion Teklogix personnel. It should be left at the default value: on.

Setting this parameter to **on** allows the imager to make automatic gain, integration and illumination adjustments based on ambient light before capturing the bar code. If the adjustment is insufficient, further adjustments are made automatically before another image is captured.

Fast Converge



*Note: “Auto Exposure” must be set to **on** in order for this parameter to function.*

Keep in mind that while this parameter can improve imager performance, “Fast Converge” increases battery power consumption.

Setting this parameter to **on** speeds the “Auto Exposure” process. It allows the imager to rapidly snap a number of bar code capture attempts while finding ideal values for gain, integration and illumination.

Max Gain, Max Integration And Max Illumination



Important: *These parameter values should only be changed by qualified Psion Teklogix personnel.*

These parameters represent internal values used by the 2D imager. The “Auto Exposure” parameter automatically adjusts the *Max Gain*, *Max Integration* and *Max Illumination* parameters to produce the best bar code read. Keep in mind that “Auto Exposure” must be set to **on** in order for these parameter values to be automatically adjusted.

Double-tapping on any of these parameters displays an associated dialog box in which an allowable range is displayed: *Max Gain* – 357 to 7920, *Max Integration* – 0 to 65535, *Max Illumination* – 0 to 7.

Decoder Timeout

The decoder is a set of algorithms that examine the image and attempt to find the bar codes, and then turn the pixels into data that the computer can use—this process takes time. “Decoder Timeout” limits the amount of time the decoder will spend attempting to decode an image, and forces it to stop and grab a new image, which will probably be easier to decode.



Note: When decoding multiple bar codes in one image, the value assigned to ‘Decoder Timeout’ should be increased to 200ms/extra bar code after the first.

Adaptive Windowing

“Adaptive Windowing” is an advanced technique used to speed up bar code recognition in certain applications. This parameter automatically reduces the size of the window to the user-programmed window size when it successfully decodes (which reduces decode time the next time it is used), but increases it to the full size window on a failed decode.



Note: This feature assumes that you have reached an understanding about how the device operates in your application, and that, after a learning period, operators will get used to using the imager in one particular way. It also assumes that a trained operator will usually only have near miss scenarios.

Constant Illumination

“Constant Illumination” is used to reduce the intrusiveness of the device’s illumination on the observer. Instead of the illumination turning on and off every time the device attempts a decode (2-4 times per second), the illumination stays on from the time the trigger is pulled until a decode is successful. This feature is useful in low light environments, since it will also reduce the distraction that the illumination can have on nearby co-workers.

5.14.4.3 Code 39 Settings

Enabled

Set this parameter to **on** to enable “Code 39”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.4 Code 128 Settings

Enabled

Set this parameter to **on** to enable “Code 128”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.5 EAN 13

Enabled

Set this parameter to **on** to enable “EAN 13”.

Addendum

An addendum is a separate bar code, supplementary to the main bar code. This parameter provides three options: *Disabled*, *Optional* and *Required*. Depending on the value chosen for this parameter, an addendum is recognized or ignored.

- Double-tap on **Addendum** to display a dialog box listing your options.
- Highlight an item, and tap on **OK**.

When “Addendum” is set to *Disabled*, the scanner does not recognize an addendum. If this parameter is set to *Optional*, the scanner searches for an addendum and if one exists, appends it to the main bar code. When the parameter is set to *Required*, the scanner does not accept the main bar code without an addendum.



Note: Setting “Addendum” to ‘Optional’ reduces performance. It should only be chosen if at least some of the bar codes being read have addendums.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 171.

5.14.4.6 EAN 8

Enabled

Set this parameter to **on** to enable “EAN 8”.

Addendum

Refer to “Addendum” on page 199.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 171.

5.14.4.7 UPC A

Enabled

Set this parameter to **on** to enable “UPC A”.

Addendum

Refer to “Addendum” on page 199.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 171.

5.14.4.8 UPC E

Enabled

Set this parameter to **on** to enable “UPC E”.

Addendum

Refer to “Addendum” on page 199.

Prefix/Suffix

Refer to “Prefix/Suffix” on page 171.

5.14.4.9 Code 93

Enabled

Set this parameter to **on** to enable “Code 93”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.10 Codabar

Enabled

Set this parameter to **on** to enable “Codabar”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.11 Interleaved 2 of 5

Enabled

Set this parameter to **on** to enable “Interleaved 2 of 5”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.12 RSS Code (Reduced Space Symbology)

Enable

Setting this parameter to **on** enables “RSS Code” scanning capability.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.13 Composite



Important: To successfully read this type of bar code, the two types of symbologies included in a composite bar code must be enabled.

Enabled

Set this parameter to **on** to enable “Composite” bar codes.

5.14.4.14 PDF-417

Enable

Setting this parameter to **on** enables PDF-417 two dimensional (2D) coding.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.15 Micro PDF-417

Enable

Setting this parameter to **on** enables “Micro PDF-417” bar code scanning. Micro PDF-417 is a multi-row symbology that is useful for applications requiring greater area efficiency but lower data capacity than PDF-417.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.16 2D Data Matrix

Enable

Set this parameter to **on** to enable “Data Matrix”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.17 2D QR Code

Enabled

Set this parameter to **on** to enable “2D QR Code”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.18 2D Maxicode

Enabled

Set this parameter to **on** to enable “2D Maxicode”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.19 2D Aztec

Enabled

Set this parameter to **on** to enable “Aztec”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.20 Postal: PlaNET

Enabled

Set this parameter to **on** to enable “Postal: PlaNET”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.21 Postal: PostNET

Enabled

Set this parameter to **on** to enable “Postal: PostNET”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.22 Postal: Australian

Enabled

Set this parameter to **on** to enable “Postal: Australian”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.23 Postal: Japanese

Enabled

Set this parameter to **on** to enable “Postal: Japanese”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.24 Postal: Korean

Enabled

Set this parameter to **on** to enable “Postal: Korean”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.4.25 Postal: Royal

Enabled

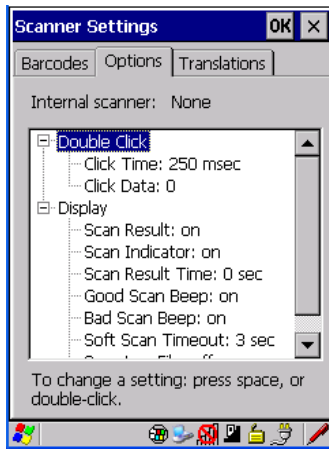
Set this parameter to **on** to enable “Postal: Royal”.

Field Size/Chars

Refer to “Field Size/Chars” on page 170 for details.

5.14.5 Options

This menu allows you to tailor the double-click parameters and the display options associated with your scanner.



5.14.5.1 Double Click Parameters

Click Time (msec)

This parameter controls the maximum gap time (in milliseconds) for a double-click. If the time between the first and second clicks of the scanner trigger is within this time, it is considered a double-click. The allowable range is 0 to 1000. A value of zero disables this feature.

A double-click produces different results depending on whether or not a value is assigned in the “Click Data” parameter. When a value is not assigned for the “Click Data”, double-clicking the scanner trigger overrides the target dot delay set in the “Dot Time” parameter and

initiates a normal scan sweep. If a value is assigned for the “Click Data” parameter, double-clicking the scanner trigger inserts the “Click Data” value rather than initiating a scan.

Click Data

For both integrated and external scanners, this parameter determines which character is sent to the application installed in your Ikôn following a double-click. A dialog box appears, asking that you press the key you want to insert. The ASCII/Unicode key value of the key-press is displayed.

5.14.5.2 Display Parameters

Scan Result

When this parameter is enabled, the type of bar code and the result of the scan appear on the screen. Note that this information is only displayed after a successful decode and is visible only while the scanner trigger is pressed. When the trigger is released, this information is cleared from the screen.

Scan Indicator

When this parameter is enabled, the laser warning logo appears on the display whenever the scanner is activated.

Scan Result Time (sec)

The value assigned to the “Scan Result Time (sec)” parameter determines how long the scan results of a successful scan are displayed on the screen. Time is measured in seconds, and a value of 0 (zero) disables the parameter. When you choose this option, a dialog box appears where you can enter a value.



Note: To remove the scan result from the screen before the “Result Time” has expired, point the scanner away from the bar code and press the trigger.

Good Scan Beep And Bad Scan Beep

These parameters determine whether or not the Ikôn emits an audible scanner ‘beep’ when a good (successful) scan or a bad (unsuccessful) scan is performed. Set these parameters to either **on** to enable the beeper or **off** to disable it.

Soft Scan Timeout

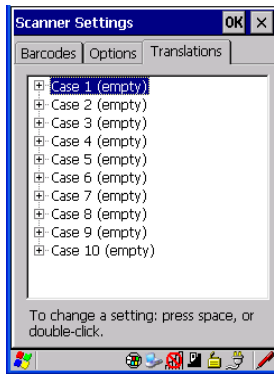
This parameter is used by the SDK “Scan” function (soft-scan: starting a scan session via the SDK function, instead of a physical user trigger press). The value assigned to this parameter determines the soft-scan timeout from 1 to 10 sec (default is 3 sec).

Scan Log File

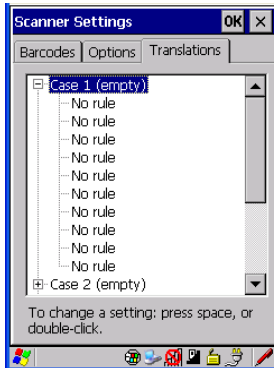
If this parameter is enabled, the input barcode and the modified/translated output bar code are logged in the file `\Flash Disk\ScanLog.txt`. Keep in mind that if the “Scan Log File” is enabled, there is a slight performance effect when performing multiple scans since the log file is written to persistent storage.

5.14.6 Translations

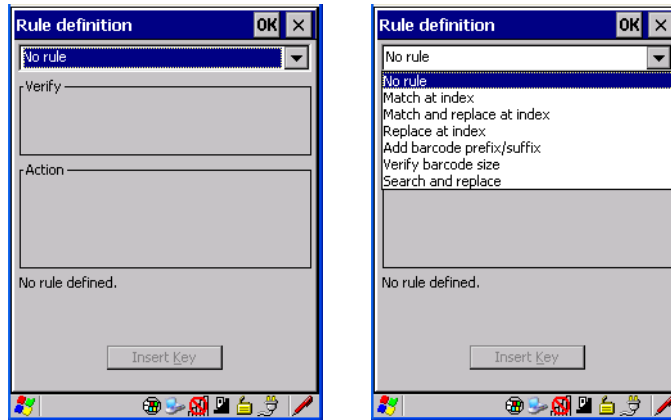
The *Translations* menu allows you to define up to 10 cases, each consisting of up to 10 rules in sequential order. Only one case will be applied to a bar code and a case will only be applied if all rules specified in the case are successful—if a rule within a case fails, the entire case fails.



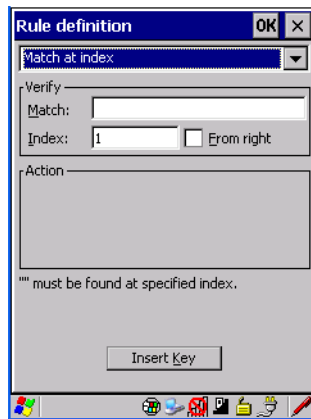
- In the *Translation* menu, tap on the **Case #** to create rules.



- Tap on the **No rule** drop-down menu to display the rules.



When you choose a rule, an associated screen is displayed in which you can define the rule.



5.14.6.1 Case Rules

The case rules are defined as follows:

- *No rule*—ignored.
- *Search and replace*—replaces all instances of the match string. (Note that this rule cannot fail.)
- *Match at index*—matches the match string at a specified index.
- *Match and replace at index*—matches the match string at a specified index and replaces/changes it.
- *Replace at index*—replaces/changes unspecified data in a given range.

Translations

- *Add barcode prefix/suffix*—adds a global prefix or suffix.
- *Verify barcode size*—verifies the bar code size. This rule should generally be assigned first, before creating subsequent rules.



Note: Keep in mind that the effects of previously applied rules must be taken into account when creating subsequent rules. For example, if the bar code size is important, it should be checked before any rules that might change the size are applied.

Translation information about the status of each case/rule is displayed in the scan log file (see “Scan Log File” on page 206) when enabled. This is useful if a case fails, and you are trying to determine why a rule is failing.

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6.1 Carrying Accessories

There are a variety of carrying accessories to help the operator work safely and comfortably with the Ikôn.

Table 6.1 Carrying Accessories And Model Numbers

Carrying Accessory	Model Number
Handstrap	CH6021 (with stylus and tether)
Protective Carrying Cases	CH6090 pouch (leather; non-functional, access to DC port, includes belt clip) CH6095 case (leather; fully functional, access to all Ikôn features, includes belt clip)
Stylus Tether Kit	CH6020 (stylus, tether and Velcro retainer)



Important: Do not use adhesives such as Loctite to secure screws on carrying accessories. These chemicals may damage the plastic casing.

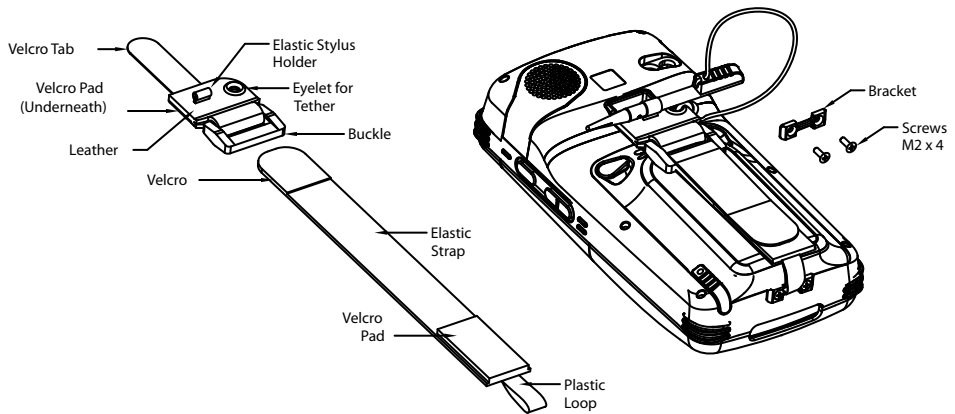
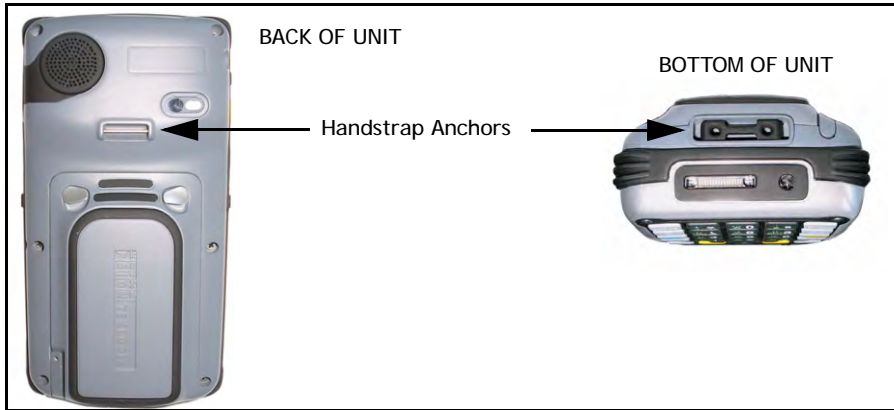
6.1.1 Attaching The Handstrap With Tether (Model No. CH6021)

The handstrap with tether can be attached to the back of the Ikôn to provide a secure means for operators to carry the PDA.

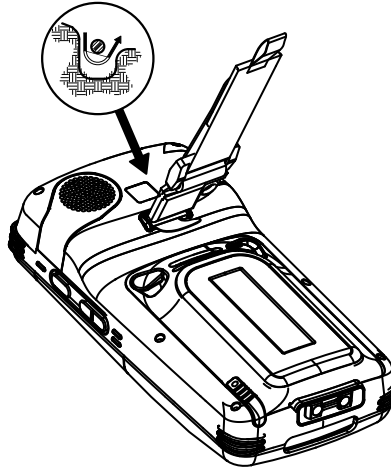
Attaching The Handstrap

The handstrap is attached by fixing the ends of the strap to the anchors located on the back and bottom of the unit (see Figure 6.1 on page 212).

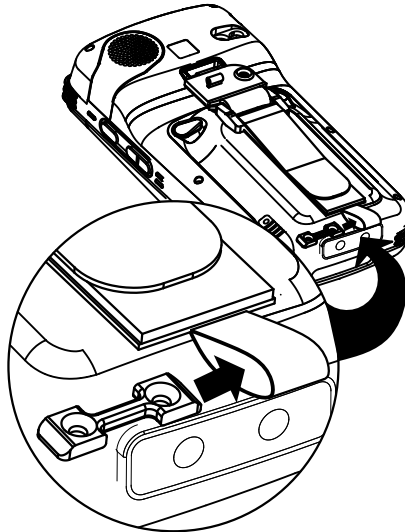
Figure 6.1 Attaching The Handstrap



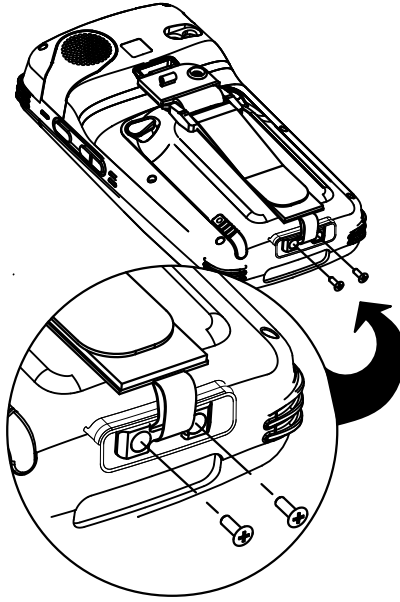
1. Attach the handstrap to the Ikôn by looping the Velcro tab around the pin and adhering the tab to the Velcro pad.



2. Remove the bracket and screws from the Ikôn.



3. Slide the bracket through the plastic loop on the handstrap and install the screws.

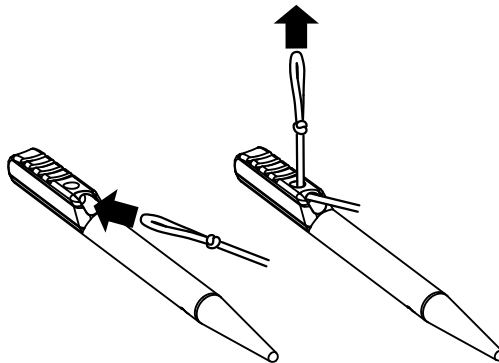


4. Adjust the handstrap by pulling up the Velcro tab and readjusting to your hand as needed.

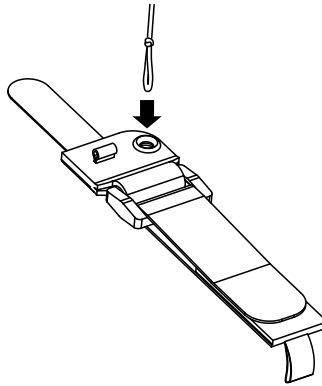
Attaching The Stylus Tether To The Handstrap

The stylus tether can be attached to the handstrap at the back of the Ikôn.

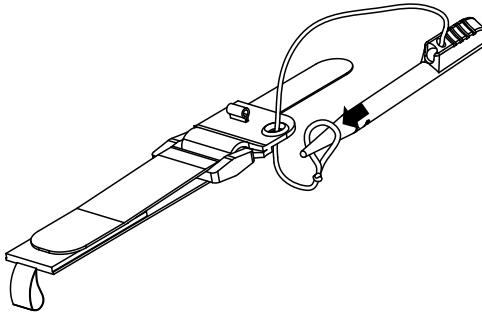
1. If not assembled, thread the tether cord through the stylus as shown, pulling the cord tight.



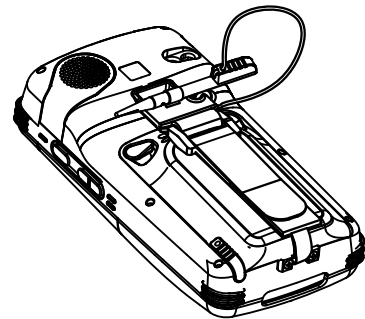
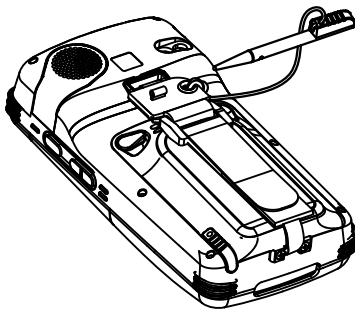
2. Thread the tether through the eyelet on the strap.



3. Pass the stylus through the tether loop and pull the tether snug.



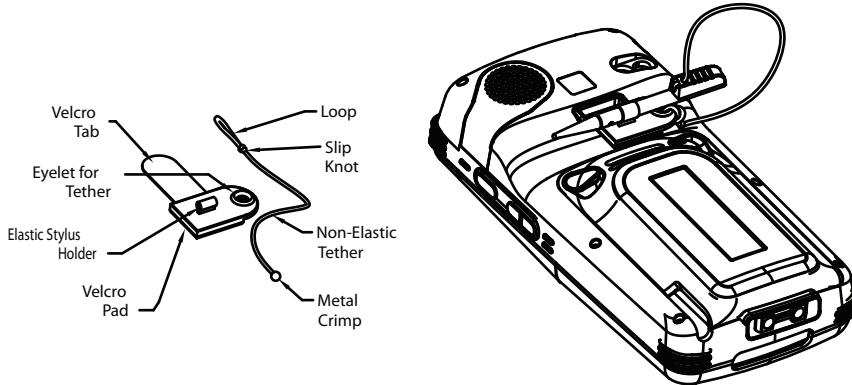
4. Slip the stylus into the elastic holder, and you're finished.



6.1.2 Attaching The Tether (Model No. CH6020)

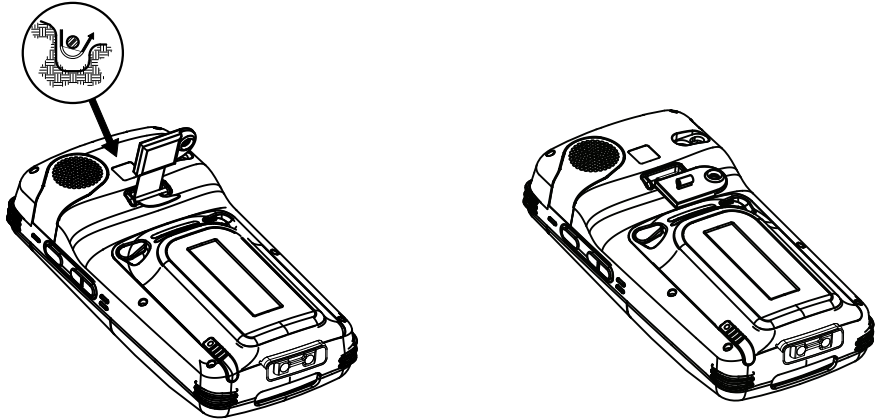
The tether can be installed to the back of the Ikôn to provide a secure means for attaching the stylus to the PDA.

Figure 6.2 Attaching The Tether



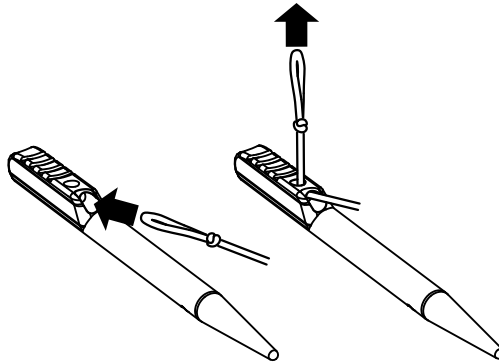
Attaching The Velcro Retainer

Attach the retainer to the Ikôn by looping the Velcro tab around the pin and adhering the tab to the Velcro pad.

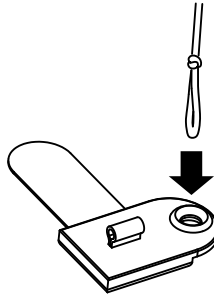


Attaching The Stylus Tether To The Retainer

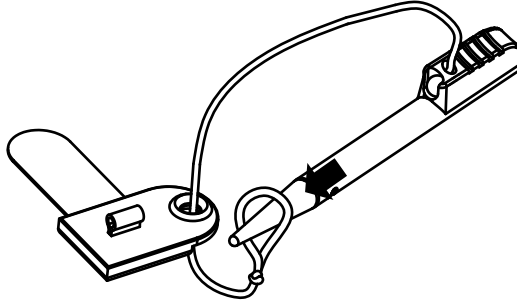
1. If not assembled, thread the tether cord through the stylus as shown, pulling the cord tight.



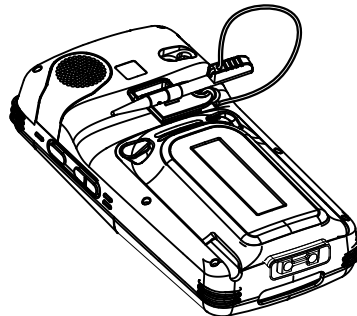
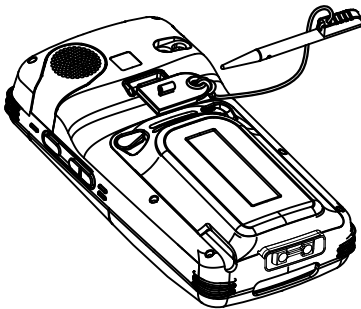
2. Thread the tether through the eyelet on the strap.



3. Pass the stylus through the tether loop and pull the tether snug.



4. Slip the stylus into the elastic holder, and you're finished.



6.1.3 Protective Carrying Cases

Two leather carrying cases are available for Ikôn to shield it from damage. The Model No. CH6090 pouch fully covers the Ikôn; the Model No. CH6095 case provides full access to the Ikôn screen and keyboard for functionality.

6.2 The Battery

The Ikôn operates on a 5000 mAh Lithium Ion battery pack—Model No. CH3000.



Note: Review Chapter 7: “Specifications” for detailed information. See also “Battery 5000 mAh (CH3000): Contact Pinout” on page A-3.



Important: Before opening the battery cover on your Ikôn, press the Power button to turn off the PDA.

6.3 Adaptor Cable Options

The following are adaptors that can be ordered for your Ikôn:

Table 6.2 Cable Model Numbers And Description

Model Number	Adaptor Cable Description
CA1033	Tether to USB Host.
CA1032	Tether to USB Device. (For ActiveSync)
WA4010 - G1	USB to Ethernet adaptor.
CH1050	Power cable used with quad docking station CH4004.

6.4 Chargers And Docking Stations: General Information



Important: Keep in mind when ordering a charger or docking station, you must also order the appropriate power cord separately.

Pision Teklogix offers a variety of chargers and docking stations for the Ikôn. These include:

- AC Adaptor – Model No. PS1050 - G1 (page 230).
- Automotive Power Adaptor – Model No. CH3050 (see page 231).
- Desktop Docking Station – Model No. CH4000 (see page 222).

- Quad Docking Station – Model No. CH4004 (see page 227).

6.4.1 Important Safety Instructions

- Before using the AC adaptor, CH4000 Desktop Docking Station, or CH4004 Quad Docking Station, read all instructions and markings on the housing.
- Use the AC adaptor, batteries, and other attachments recommended or sold by Psion Teklogix.
- The mains power cord (sold separately) shall comply with the national safety regulations of the country where the equipment is to be used.
- These docking stations cannot be used with non-Ikôn PDAs. Although they may share the same battery terminating connector, they are designed with different applications in mind.
- Do not operate the AC adaptor with a damaged cord or plug. Replace immediately.
- Do not disassemble the AC adaptor; it should be repaired by qualified service personnel. Incorrect reassembly may result in electric shock or fire.
- To reduce the risk of damage to the electric plug and cord when unplugging a docking station, pull the plug rather than the cord.
- Make sure the cord is positioned so that it is not stepped on, tripped over, or otherwise subjected to damage or stress.
- Do not operate the AC adaptor, the CH4000, or the CH4004, if it is struck by a sharp blow, dropped, or otherwise damaged in any way; it should be inspected by qualified service personnel.
- To reduce the risk of electric shock, unplug the AC adaptor from the outlet before attempting any maintenance or cleaning.
- An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in fire or electric shock. If an extension cord must be used, make sure:
 - The plug pins on the extension cord are the same number, size, and shape as those on the adaptor.
 - The extension cord is properly wired and in good electrical condition, and that the wire size is larger than 18 AWG.
- Do not expose the AC adaptor to rain or snow. However, both the CH4000 and CH4004 are designed to accept a wet Ikôn Rugged PDA without harmful effect.
- Do not place batteries in the docking stations if they are cold—temperatures below 0°C (32°F). Allow them to warm up to room temperature for at least 30 minutes.

- Do not use a docking station if after an overnight charge, the battery feels warmer than the charger housing. The dock should be inspected by qualified service personnel.
- Do not use a docking station if the battery, while charging, becomes more than lukewarm.

6.4.2 Installation: Chargers And Docking Stations

When installing a charger or docking station, consider the following guidelines.

- Keep chargers and docking stations away from excessive dirt, dust and contaminants.
- Chargers will not charge batteries outside an ambient temperature range of 0°C to 40°C (32°F to 104°F). It is recommended that the charger or docking station be operated at room temperature—between 18°C and 25°C (64°F to 77°F) for maximum performance.

After unpacking your unit:

- Visually inspect the charger for possible damage.
- Install the IEC power cord and apply power.

6.4.3 Power Consumption Considerations

Check to ensure the mains circuit supplying chargers and/or docking stations is adequate for the load, especially if several chargers and docking stations are being powered from the same circuit.

- Quad docking station can consume up to 1.9A @ 120VAC or 1.5A @ 240VAC.

Figure 6.3 AC Adaptors



CH4000 AC Adaptor

CH4004 AC Adaptor

6.5 CH4000 Desktop Docking Station



Important: *The CH4000 desktop docking station is shipped with its own quick reference guide. It is critical that it be reviewed for additional information and updates.*



Important: *To preserve battery integrity, the desktop docking station will proceed with a charge only when the battery temperature falls between 0°C and 40°C (32°F to 104°F).*

The CH4000 desktop docking station is a desktop model designed to:

- Fast charge the internal battery.
- Fast charge the spare battery pack (see Figure 6.4 on page 223).
- Supply Type A and Type B USB connectivity to the Ikôn (see Figure 6.5 on page 225).

The desktop docking station provides sufficient power to concurrently support all the above functions.

The CH4000 storage temperature is -30°C to +60°C (-22°F to 140°F). Operating temperature and humidity are: 5 - 95% non-condensing and 0°C to 40°C (32°F to 104°F).

The CH4000 uses careful charge algorithms designed to maximize battery life while ensuring the shortest possible charge time. The charger supports proprietary Psion Teklogix Smart Batteries and handles a range of voltages and charge algorithms. See “The Battery” on page 31 for more information regarding battery capacity, charge times and battery life, for the Ikôn battery. See “Charging The Spare Battery” on page 224 for spare battery charge information.

6.5.3.2 Charging The Spare Battery



Important: Do not store spare batteries in a charger for more than 72 hours. Doing so may damage the battery or reduce its charge capacity.

- Install the battery in the rear slot of the CH4000 with the connector facing to the right. Slide the battery in and down to mate the connector.
- The CH4000 spare battery LED lights up immediately. During charge the LED will be flashing green.
- When the battery capacity reaches 95%, the LED turns solid green.
- The charge stops when the battery is fully charged and the LED remains green.

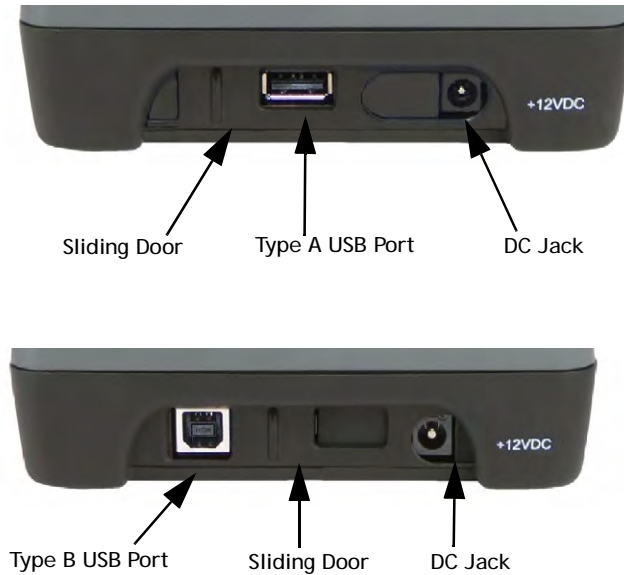
A full charge will take 2.5 to 3.0 hours for a 5000 mAh battery.

6.5.3.3 Operating The USB Dock

The CH4000 Desktop Docking Station offers a rear-mounted host or device USB connection to the Ikôn. The Ikôn supports communication with low- and full-speed USB 1.1 compliant devices and hosts through the docking station. The Type B receptacle may be used for ActiveSync® among other applications typical for a Type B device (Figure 6.5 on page 225).

Move the sliding door selector to alternate between the Type A and Type B USB ports.

Figure 6.5 CH4000 Desktop Docking Station Rear View



Linking An Ikôn To A PC

The desktop docking station can be connected to a PC so that you can exchange files in the same way that you would between PC drives. A USB cable is included with your docking station.



Note: For information about data transfer with the Windows XP operating system and ActiveSync and with the Vista operating system, refer to “Data Transfer Between The PC And The Ikôn” on page 19.

To link the Ikôn to a PC:

- Insert the Ikôn in the desktop docking station.
- Insert the USB cable into the docking station Type B USB connector. Attach the other end of the cable to a USB port on the PC.

6.5.4 Cleaning The CH4000



Important: *Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the unit clean.*

- Use only mild detergent or soapy water on a slightly damp cloth to clean the CH4000. Avoid abrasive cleaners, solvents or strong chemicals for cleaning. The plastic case is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.
- To clean ink marks from the label, use isopropyl alcohol.

6.5.5 Troubleshooting

6.5.5.1 Docking Station Does Not Seem To Power On.

- When first connected to the DC power supply, the spare charger LED should turn ON and remain on for 3 seconds.
- If not, the charger is defective and requires service.

6.5.5.2 The Ikôn Charge Indicator LED Stays Off.

When an Ikôn is docked into a powered CH4000 and its charge indicator LED stays off, there could be a problem with the Ikôn or with the docking station. Use an Ikôn with a properly functioning charge indicator to isolate the problem.

6.5.5.3 The Ikôn Charge Indicator LED Is Fast Flashing Green.

If the Ikôn charge indicator fast flashes green when the Ikôn is docked:

- Remove the Ikôn and disconnect the adaptor DC power cable.
- Wait at least 20 seconds, and then plug the cable in again.
- If the Ikôn indicator still shows a fault, the Ikôn requires service.

6.5.5.4 Spare Battery LED Fast Flashes Green With A Battery Installed.

- Try inserting a battery that is known to be working with another charger.
- If the charge slot LED continues to fast flash green with the known working battery, the charger is defective and requires service.
- *Your Psion Teklogix battery and desktop docking station are carefully designed for safety and capacity performance in accordance with IEEE 1725. If the battery or charger are not Psion Teklogix approved products, or the safety mechanism is faulty, the spare charge slot LED or Ikôn LED will rapidly flash green.*

6.5.5.5 Spare Battery LED Does Not Turn On When A Battery Is Installed.

- Inspect the charge slot contacts for damage (are they bent, flattened, twisted or broken?).
- Reinstall the battery and check that it is fully seated in the slot.

6.6.3 Operation

6.6.3.1 Charging The Ikôn Battery

Insert the adaptor's DC power MINI FIT JR plug into the CH4004 rear DC input receptacle. The adaptor LED should be ON when powered from the mains.

The CH4004 supplies DC power to enable the Ikôn internal fast charger. Normally, it takes 2.5 to 3.0 hours to charge the Ikôn 5000 mAh battery.

- During charge the Ikôn LED will be a slow flashing green.
- When the battery capacity reaches 95%, the LED turns solid green.

When installed in the docking station, the Ikôn battery charge LED will illuminate to indicate the unit has external power and may charge the internal battery.



Note: Battery charging continues whether the Ikôn is switched on or off.

6.6.3.2 Connecting To The Ethernet Network

The rear-mounted RJ45 connector incorporates LEDs that indicate data traffic (see Figure 6.7) when:

- The Ikôn is in the docking station and powered on;
- The docking station is powered by the AC adaptor;
- The docking station is connected to Ethernet network with a Category 5 cable plugged into the RJ45 rear socket.

The green Link LED flashes to indicate the presence of data traffic. The yellow Speed LED is steady ON when the network is 100 Mbps and OFF when the network is 10 Mbps.

6.6.5 Troubleshooting

6.6.5.1 The Ikôn Charge Indicator LED Stays Off.

When an Ikôn is docked into a powered CH4004 and its charge indicator LED stays off, there could be a problem with the Ikôn or with the docking station. Use an Ikôn with a properly functioning charge indicator to isolate the problem.

6.6.5.2 The Ikôn Charge Indicator LED Is Fast Flashing Green.

If the Ikôn charge indicator fast flashes green when the Ikôn is in any of the four sites:

- Remove the Ikôns and disconnect the adaptor DC power cable.
- Wait at least 20 seconds, and then plug the cable in again.
- If the Ikôn indicator still shows a fault, the Ikôn requires service.

6.6.5.3 Green LED OFF When Connected To A Network.

- Check the Category 5/5e cable. Replace if the cable is suspect.
- Contact your network administrator.

6.6.5.4 Yellow LED OFF When Connected To A 100Base-T Network.

- Check the Ethernet cable. Replace if the cable is suspect.
- Contact your network administrator to ensure the network is running at 100 Mbps.

6.6.5.5 Powered Adaptor LED Stays Off.

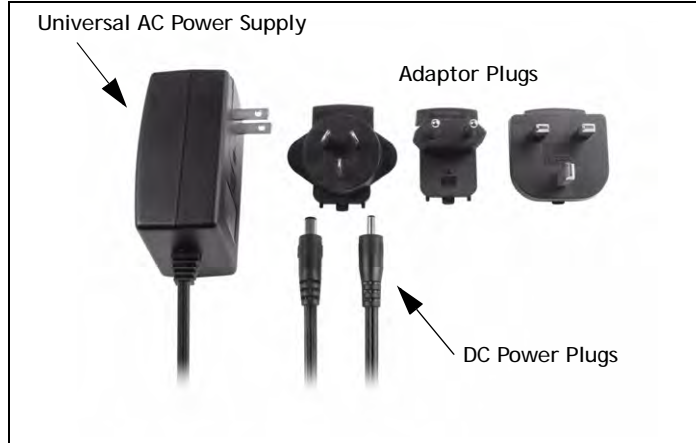
- Check the AC cable. Replace with the same type if the cable is suspect.
- If the adaptor's LED stays OFF, the adaptor is defective and requires service.

6.7 AC Wall Adaptor: Model No. PS1050 - G1

The AC wall adaptor available for your Ikôn allows you to operate your PDA using AC power while charging the battery inserted in the unit.

Adaptor plugs suitable for use in the following countries are shipped with the AC wall adaptor: United Kingdom, Switzerland, Japan, Israel, Australia, Europe, and North America (see Figure 6.8 on page 231).

Figure 6.8 AC Wall Adaptor Plugs



- Choose the adaptor plug that is suitable for use in your country. Slide the adaptor plug into the Universal AC power supply, snapping it into place. These two pieces, coupled together, are referred to as an AC wall adaptor.
- Insert the DC power plug into the DC IN port at the base of the Ikôn, located between the tether and LIF ports.
- Plug the pronged end into an AC outlet.

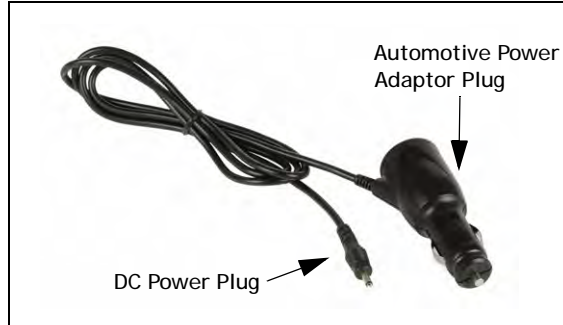
6.8 Automotive Power Adaptor: Model No. CH3050



Important: *It is critical that you review the safety instructions outlined in the quick start guide enclosed with your automotive power adaptor before using the accessory.*

The automotive power adaptor allows you to power your Ikôn and recharge your battery using power drawn from your vehicle's automotive power outlet.

Figure 6.9 CH3050 Automotive Power Adaptor



- Insert the DC power plug into the DC IN port at the base of the Ikôn.
- Insert the automotive power adaptor plug into automotive power outlet in your vehicle.

6.9 The CH1000 Non-Powered Vehicle Cradle



Important: *The CH1000 vehicle cradle is shipped with its own quick reference guide. It is critical that it be reviewed for additional information and updates.*

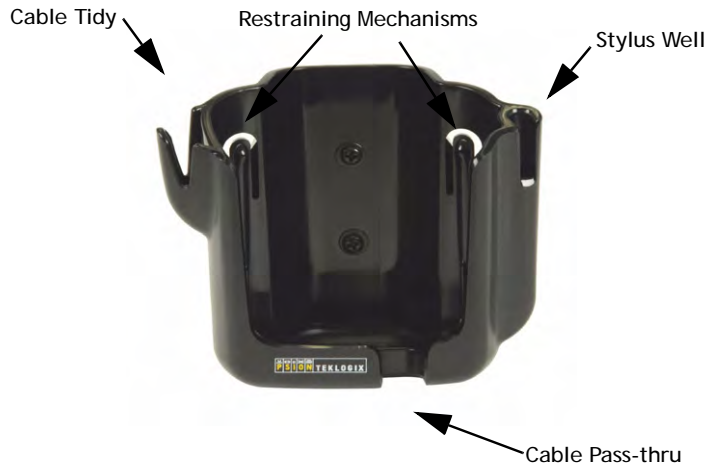
The CH1000 Vehicle Cradle is a passive device, designed to securely grip the Ikôn. The cradle design permits access for the DC input cable to connect to the Ikôn (see Figure 6.10 on page 233). The cradle is also equipped with:

- A stylus holder.
- A loop for tethering the stylus.
- A tidy for draping the power cables or storing the disconnected DC plug.



Important: *Shock and vibration specifications for the Ikôn are verified using Psion Teklogix-approved RAM[®] mounts and mounting hardware. Use of non-certified Psion Teklogix mounting hardware is not recommended, and may void warranty coverage.*

Figure 6.10 CH1000 Vehicle Cradle



6.9.1 Important Instructions

The CH1000 storage temperature is -40°C to $+70^{\circ}\text{C}$ (-40°F to 158°F). Operating humidity and temperature is 5 - 95% non-condensing and -30°C to 60°C (-22°F to 140°F).

6.9.2 Vehicle Cradle Operation

6.9.2.1 Operator Controls

The vehicle cradle has no operator controls or power switch.

6.9.2.2 Indicators

The CH1000 has no front indicators. The Ikôn LED serves as the power indicator.

6.9.2.3 Placing The Ikôn In The Vehicle Cradle

Connect the vehicle power to the Ikôn prior to inserting it in the vehicle cradle.

The vehicle cradle is designed with a front opening through which you can pass the connected cable while inserting the Ikôn (see Figure 6.10).

When placing the Ikôn into the vehicle cradle, press firmly on the top of the PDA and the Ikôn will bottom out on the cradle base. This action will make the final fit to the cradle base to allow the rear restraining mechanism to resist vibration.

6.9.2.4 Removing The Ikôn From The Vehicle Cradle

When removing the Ikôn, apply slight pressure to the rear and pull upwards. The rear-first motion will assist in disengaging the rear restraining mechanism.

6.9.3 CH1000 Vehicle Cradle Mounting Recommendations



Important: Before mounting a vehicle cradle in a vehicle, there are a number of operator safety issues that require careful attention. An improperly mounted cradle may result in one or more of the following: operator injury, operator visibility obstruction, operator distraction and/or poor ease of egress for the operator. Psion Teklogix strongly recommends that you seek professional mounting advice from the vehicle manufacturer.

Cable routing within a vehicle cab also requires careful consideration, especially for separately tethered scanners and other devices with loose cables. If you are unable to obtain suitable advice, contact Psion Teklogix for assistance. Note also that for better protection, the equipment should be mounted inside the vehicle roll cage.



Important: The Ikôn Vehicle Cradles are designed to be compatible with any RAM[®]-B mounting interface. For other mounting options please contact our Technical Support offices.

In addition, for safety reasons, only pedestal mounts with fully locking joints should be used in vehicles. Always adjust the pedestal for the optimum viewing angle, and securely tighten the hex and wing screws.

The most effective way to mount the vehicle cradle RAM mount is to use the seven #M4 threaded inserts on the rear of the unit. Bolts must not extend more than 5mm into the vehicle cradle. You may also remove the rear Ram-B mount accessory to custom mount the vehicle cradle to a surface other than the recommended RAM-B (Figure 6.11 on page 235)

6.9.3.1 Mounting Template

For detailed mounting instructions including a drill template, refer to the *CH1000 Ikôn Rugged PDA Vehicle Cradle Quick Reference Guide (PN 8100149)*.

In every case, please take the following precautions:

- When installing the cradle, ensure the driver's view is not obstructed.
- Install cradles so as not to obstruct vehicle safety features, i.e. air bags, seat belts, etc.
- Ensure cradle is secured to the vehicle in a safe location. Injury may result otherwise.

- Ensure the mounting has the capacity to hold the cradle and the Ikôn. Cradle plus Ikôn weight is approximately 1kg (2.2 lb.).
- Psion Teklogix has recommended and approved mounts—consult Customer Service for information.

Figure 6.11 Removing The RAM Mount Interface



To accommodate the service loop of the power cable, leave a 10.2 cm (4 in.) clearance at the bottom of the vehicle cradle. Leave a 17.8 cm (7 in.) clearance at the top of the vehicle cradle to allow easy removal of the Ikôn. When selecting a mounting location, refer to the detailed assembly instructions that are packaged with the pedestal.



Important: *Before Psion Teklogix releases a product, our engineering team exposes that product to vibration tests to ensure the Ikôn will remain secure during normal use. But as a low cost mount, the cradle will not defend against shock if the vehicle undergoes a front or rear impact. Take care to mount the cradle in an upright position in case of accidents.*

If you elect to use a third party company-produced cradle, Psion Teklogix cannot take responsibility for the effects of that third party product when it causes failure to our device.

6.9.4 Cleaning The CH1000 Vehicle Cradle



Important: *Dampen a soft cloth with mild detergent to wipe the unit clean.*

- Use only mild detergent or soapy water on a slightly damp cloth to clean the CH1000. Avoid abrasive cleaners, solvents or strong chemicals for cleaning. The plastic case is susceptible to harsh chemicals. The plastic is partially soluble in oils, mineral spirits and gasoline. The plastic slowly decomposes in strong alkaline solutions.
- To clean ink marks from the label, use isopropyl alcohol.

6.10 The CH1005A Powered Vehicle Cradle

The CH1005A Powered Vehicle Cradle (12-24 VDC) is designed to securely grip the Ikôn when locked in and provides an easy single-handed release mechanism when the Ikôn needs to be quickly removed from the cradle. The cradle design permits access for the DC input cable to connect to the Ikôn (see Figure 6.15 on page 241). The cradle is also equipped with:

- One USB A connector.
- LED charge indicator.
- A stylus holder and tether latch.
- Built in speaker, identical to the one on Ikôn, that offers hands-free functionality. The powered cradle detects when the Ikôn is docked and can automatically transfer the speaker function from the Ikôn to the cradle.
- Depending on the cradle variant, there can be up to two full RS-232 connectors.
 - PN 1081148-500: no RS-232 connectors.
 - PN 1081148-400: one RS-232 connector.
 - PN 1081148-200: two RS-232 connectors.

The cradle comes with four mounting screws and a CH1005A Powered Cradle Quick Start Guide (PN 8000164), with illustrated electrical and mounting instructions.

Before Psion Teklogix releases a product, our engineering team exposes that product through a series of severe testing to ensure that it will survive in the rugged environments in which our products are typically used. These tests usually include shock and vibration testing as well as IP testing for water and dust, electrical shock, etc.

If a third party vehicle mount is used, the third party should perform the same type of testing in order to ensure that the design will maintain the factory specifications of the product. If the third party company is unwilling to perform the necessary testing and take responsibility for the effects of the design, then we highly recommend using Psion Teklogix designed and supported accessories.

If you elect to use a third party company produced cradle, Psion Teklogix cannot take responsibility for the effects of that third party product if it causes failure of our device.

If you wish to custom mount the vehicle cradle to a surface other than the recommended RAM-B, please take the following precautions:

- When installing the cradle, ensure the driver's view is not obstructed.
- Install cradles so as not to obstruct vehicle safety features, i.e. airbags, seat belts, etc.
- Ensure cradle is secured to the vehicle in a safe location. Injury may result otherwise.
- Ensure the mounting has capacity to hold the cradle and Ikôn. Cradle plus Ikôn weight is approximately 1.3 kg.
- Psion Teklogix has recommended and approved mounts—consult Customer Service for instructions.

To accommodate the service loop of the connecting cable, leave a 10 cm clearance at the bottom of the vehicle cradle. Leave a 17 cm clearance at the top of the vehicle cradle to allow easy removal of the Ikôn. Refer to the detailed assembly instructions that are packaged with the pedestal when selecting a mounting location.

6.10.1.1 Mounting Template

For detailed mounting instructions including a drill template, refer to the *Ikôn CH1005A Powered Vehicle Cradle Quick Reference Guide (PN 8000165)*.

6.10.2 Cable Arrangement

Before installing cables between the cradle and other devices, review the following:

- Ensure that drilling holes will not damage the vehicle or its wiring.
- Protect cable runs from pinching, overheating and physical damage.
- Use grommets to protect cables that pass through metal.
- Use plastic straps and tie-downs to secure cables and connectors in their desired location, away from areas where they may get snagged or pulled.
- Keep cables away from heat sources, grease, battery acid and other potential hazards.
- Keep cables away from control pedals and other moving parts that may damage the cables or interfere with the operation of the vehicle.

6.10.3 Electrical Requirements

The Powered Vehicle Cradle is designed to allow the Ikôn to be powered by a vehicle battery. The battery installed in the Ikôn is also recharged by the vehicle battery system.

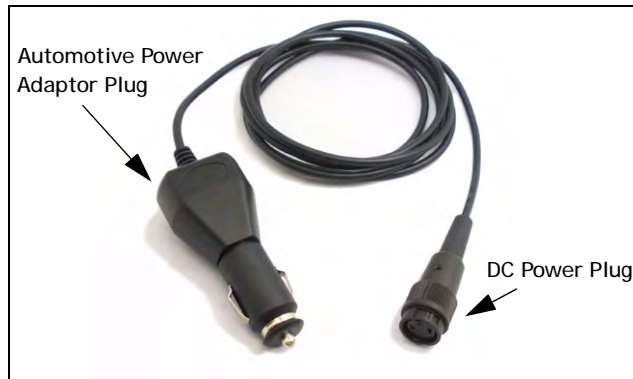


Warning: *Applying a voltage above 36VDC or reversing polarity may result in permanent damage to the vehicle cradle power section and will void the product warranty. For safety reasons, disconnect the vehicle cradle power cable when the vehicle battery is being charged by an source other than the vehicle alternator.*

6.10.3.1 Wiring Vehicle Power To The Cradle

The Powered Vehicle Cradle uses the automotive power outlet or the vehicle fuse box to power from the vehicle battery system. The CLA power cable (PN 1081141) is used for the automotive power outlet; the Power Extension cable (PN 1081142) is used for the vehicle fuse box.

Figure 6.14 CLA Power Cable



Power cables are equipped with fuses and instructions are supplied with each cable. Use only a 4A slow blow Safety-approved fuse in the fuse assembly.

These cables should only supply operating power from the vehicle to the Powered Vehicle Cradle from 12VDC or 24VDC systems.

- The Powered Vehicle Cradle draws no more than 1.9A @ 12VDC or 0.95A @ 24VDC. Any additional wiring, connectors or disconnects used should be rated for at least 4A. The Powered Vehicle Cradle and peripherals can be used with both negative ground systems when using the Power Extension cable. Peripheral wiring should be closely examined to avoid ground loops in positive ground systems.
- There is the option of connecting power to the cradle before or after the 'key' switch.

Peripherals such as scanners, printers, GPS, etc., may be used with the Ikôn and the cradle. Check with Psion Teklogix if there is any compatibility issue with the device you want to use with the Ikôn and the cradle.

6.10.5 Using The Vehicle Cradle

If your Ikôn is equipped with a shoulder strap or protective cover, these accessories need to be removed before installing the unit in a vehicle cradle. There is no need to remove hand-straps or tethered devices from the unit.

- Slide the Ikôn into the cradle, and press firmly downward to the point where resistance is met. Press the Ikôn down through the resistance until it bottoms in the cradle—the locks on the latches will engage. This can be one smooth motion if you wish. Electrical contact will not be made until the Ikôn is fully inserted. On a vehicle, it's a good idea to pull up on the Ikôn to be certain that it is secure.
- To remove the unit, push the latches upwards—the Ikôn will be released so that it can be removed.

6.10.6 Maintaining The Vehicle Cradle

- Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the unit clean.
- Use only mild detergent or soapy water on a slightly damp cloth to clean the vehicle cradle.
- Avoid abrasive cleaners, solvents, or strong chemicals for cleaning.
- The vehicle cradle has a plastic case and stamped logo that is susceptible to harsh chemicals. The plastic and stamping is partially soluble in oils, mineral spirits and gasoline. They slowly decompose in strong alkaline solutions.
- To clean ink marks from the label, use isopropyl alcohol.
- The two-lock assembly in the Powered Vehicle Cradle holds the Ikôn firmly in place. Although this mechanism is designed for at least 20,000 cycles, it will wear over time and will no longer lock the Ikôn securely in the cradle. For replacement parts and instructions contact Psion Teklogix. Partial disassembly is required.

6.11 Scanners And Imagers

The Ikôn supports several scanner/imager options to address a variety of user application requirements. The scanner/imager installed in your unit can be configured using the *Scanner Settings* dialog box in the *Control Panel* (see page 161), the *Manage Triggers* application (see page 106), and Teklogix.

Scanner/imagers available for your Ikôn include: 1D Laser SE955, 1D Imager EV15, and the 2D Imager SX5400.

It is critical that you review the safety information in the *Ikôn Rugged PDA Regulatory & Warranty Guide*, PN 8000148, before proceeding.

6.11.1 Scanning Techniques

- Hold the scanner at an angle. Do not hold it perpendicular to the bar code.
- Do not hold the scanner directly over the bar code. In this position, light can reflect back into the scanner's exit window and prevent a successful decode.
- Scan the entire bar code. If you are using a 1D laser scanner, make certain that the scan beam crosses every bar and space on the bar code, including the margins on either end of the symbol.
- If you are using a 2D imaging scanner, make certain the red, oval shaped framing mark is centered within the bar code you want to scan.
- When using imaging scanners, do not move the scanner while decoding the bar code. Movement blurs the image.
- Hold the scanner farther away for larger bar codes.
- Hold the scanner closer for bar codes with bars that are close together.

A bar code icon appears on the screen during a scan. While the scanner beam is active, the onscreen message states: **SCANNING**. If you want to turn off the onscreen message, disable **Scan Indication** in the *Options* tab of the *Scanner Settings* menu in the *Control Panel*.

When the scan is successful, the bar code data is displayed on the screen until the scan button is released, but only if **Scan Result** is turned on in the *Options* tab of the *Scanner Settings* menu in the *Control Panel*.

6.11.2 Troubleshooting

If the scanner is not working, investigate the following:

- Is the unit on?
- Check that the bar code symbology being scanned is enabled for the Ikôn you are using. Check any other parameters that affect the scanning procedure or the bar code.
- Check the bar code to make sure it is not damaged. Try scanning a different bar code to verify that the problem is not with the bar code.
- Check that the bar code is within the proper range.
- Does the Ikôn display the warning without scanning? This suggests a hardware problem in the PDA.

- Is the laser beam scanning across the bar code?
- Once the scan beam has stopped, check the scanner window for dirt or fogging.

6.11.3 Operating One Dimensional (1D) Laser Scanners

- Turn the Ikôn on. Wait until the unit has booted up completely.



Important: *If an aiming dot is available on the installed scanner, the dot will be enabled for a configurable time period (including off), after which normal scanning begins. Refer to “Dot Time (msec)” on page 165 for details.*

Double-clicking the button will override the aiming delay and initiate an immediate scan. Note that the aiming dot is standard on long-range and high visibility internal scanners.

- Aim at the bar code and press the scan key or the button. A scan beam and a warning indicator appear until a successful decode is achieved or six seconds have elapsed.

6.11.4 Operating Two Dimensional (2D) Imagers

An imager takes a snap shot of a single bar code or multiple bar codes (at one time). It can find a bar code regardless of its orientation—that is, even a bar code printed at a 45 degree angle to the Ikôn will be decoded successfully.



Note: When scanning multiple bar codes, ensure that all of the desired bar codes are within the field of view of the scanner. It is possible that even when all bar codes are within the field of view, not all of them will be decoded. Only successfully decoded bar codes are passed to the application program. The application program then issues a warning, asking that you scan the missing bar codes.

When scanning a single bar code, ensure that only the desired bar code is within the field of view of the scanner.

Because imagers generally have a shorter depth of field than laser scanners, some practise may be required to find the optimal distance from the types of bar codes being scanned. Although the imager includes illumination LEDs, ambient light will help the imager decode the bar codes, especially if the bar code is far from the Ikôn.



Important: *Keep in mind that the imager scanner is a camera, and the LED illumination is a flash. Glare can be an issue on reflective media such as plastic coated bar codes, just as glare is an issue for photographers. When pointing at a shiny surface, either shift the bar code to the side or top, or angle the bar code so that the glare reflects away from the imager scanner.*

Most imagers take several ‘snap shots’ of the bar code in order to decode it. It is normal for the LEDs to flash two or three times. Hold the unit steady between flashes to improve decode performance.

- Turn the Ikôn on. Wait until the unit has booted up completely.
- Aim at the bar code and press the scan key or the button. Hold the button until a successful or failed scan result is obtained.
- When the scan button is pressed, a red, oval shaped light (the framing marker) is displayed. Centre the framing marker in the field—either in the centre of the bar code you want to scan or in the centre of the area in which multiple bar codes are to be scanned.

The illumination LEDs will flash (typically several times) and a picture of the bar code(s) is taken.

6.12 Bluetooth Peripherals

The Ikôn is equipped with a *Bluetooth* radio, making it is possible to communicate with a variety of *Bluetooth* peripherals, including GSM/GPRS handsets, scanners, printers, and so on.

Psion Teklogix provides built-in support for the *Bluetooth* peripherals listed below.

- GSM/GPRS universal handset.
- *Bluetooth* printer.
- *Bluetooth* headset.

Keep in mind that *Bluetooth* and IEEE 802.11b/g radios both operate in the 2.4GHz band. Although the Ikôn includes features to minimize interference, performance of the system will not be optimal if you use both radios simultaneously. Typically, when both radios operate in the Ikôn at the same time, they cannot transmit simultaneously—this has a negative impact on overall system throughput. To minimize the impact on the backbone 802.11g network, Psion Teklogix recommends using *Bluetooth* peripherals that have low transaction rates (such as printers and scanners).

Refer to “Bluetooth Setup” on page 111 for information about setting up your *Bluetooth* devices for communication. In addition, review the manual shipped with your *Bluetooth* device to determine the method used to pair with the Ikôn host.

SPECIFICATIONS

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Note: Performance specifications are nominal & subject to change without notice.
7.1 Ikôn Rugged PDA Specifications (Model No. 7505)



7.1.1 Hardware

Physical Dimensions

- 16 cm x 8.1 cm x 4.5 cm (6.3 in. x 3.2 in. x 1.8 in.).

Weight (with battery pack)

- 450 g (1.0 lbs.) with battery pack.

User Interface

Color Touchscreen Display:	9.39 cm (3.7 in.) diagonal. Full VGA 480x640 resolution. Transflective, portrait mode TFT. Adjustable Backlight. Sunlight readable (for outdoor use). High reliability LED backlight. Easily replaceable and customizable bezel. Passive stylus or finger operation. Signature capture.
Keyboards:	Alphanumeric. Ergonomically enhanced for ambidextrous, one-hand operation. Backlit, high durability hard-capped keys.
Indicators And Controls:	3 LEDs indicate battery charge, application, and radio on/off status.
Audio:	Hands-free speaker, total output volume: 95dB SPL

Microphone/Receiver.

Wireless headset via *Bluetooth* capability.

Audio jack (mono).

Expansion Slots

- One microSD memory card slot—user accessible.

External Connectors

- One Low-Insertion Force (LIF) docking connector.
- DC Power Jack.

Power Management

- Battery Pack: Lithium Ion 5000 mAh capacity with 8-hour life under normal operating conditions (see page 258 for battery specifications).
- Advanced Smart Battery with gas gauge.
- 3 power source options: Runs off battery, AC power, or automotive power supplies.
- Backup power: >10 minutes.

Environmental Specifications

Drop Test:	Withstands 6 drops at 1.5 meters (5 ft.) on all surfaces.
Rain/Dust:	IP65, IEC 60529.
Operating Temperature:	-10°C to +50°C (14°F to 122°F).
Relative Humidity:	5% to 95% RH non-condensing.
Storage Temperature:	-20°C to +60°C (-4°F to 140°F).
Shock and Vibration:	5 to 400 Hz PSD (random) and 30 g (3 axis).
ESD:	+/- 8kVdc air discharge, +/- 4kVdc contacts.

7.1.2 Software

Platform

- XScale PXA270 @ 624 MHz, 32 bit RISC CPU.
- 128 MB flash, 128 MB RAM.

Operating System

- Microsoft® Windows® CE 5.0.

Programming Environment

- Psion Teklogix Mobile Devices SDK.
- Hardware Development Kit (HDK).
- .NET and C++ programming using Microsoft® Visual Studio® 2005.
- Java programming supporting JDK 1.2.2 or higher.
- Standard Protocol APIs: Windows sockets (CE .net).

Application Software

- Internet Explorer 6.0 incl.with Windows CE 5.0.
- Unique Psion Teklogix Voice Dialer and Contacts Manager incl.Windows CE 5.0.
- PTX Connect VoIP.
- Optional Open TekTerm terminal emulation software: supports IBM 5250, IBM 3270, HP2392, ANSI, and TESS.
- Mobile Control Center (MCC) device management.

7.1.3 Wireless Communication



*Note: 802.11b/g, and **Bluetooth** are available simultaneously.*

Optional expansion modules for:

- 802.11b/g (proprietary module) operating in the 2.4GHz band:
 - Supports IEEE 802.11b data rates of 1,2,5.5 and 11Mbps using Direct Sequence Spread Spectrum (DSSS).
 - Supports IEEE 802.11g data rates of 6,9,12,24,36,48 and 54Mbps,using Orthogonal Frequency Division Multiplexing (OFDM) base band modulation.
-

- Desktop docking station with Type A and Type B USB connectivity and charge functions for an internal battery along with a spare battery.
- USB cable supports ActiveSync without requiring a docking station.
- **Power supplies:**
 - AC wall adaptor.
 - Automotive power adaptor.
 - Single-slot battery pack chargers.
- **Vehicle peripherals:**
 - Non-powered cradle.
 - RAM Mount with screws.

7.1.7 Approvals

Safety:	CSA/UL60950-1, IEC 60950-1, EN60950-1
EMC:	FCC Part 15 Class B EN 55022 EN 55024 EN 301 489
Laser:	IEC 60825-1, Class 2 FDA 21 CFR 1040.10 1040.11 Class II
<i>Bluetooth:</i>	Ver 2
RF:	<i>Bluetooth</i> and 802.11b/g: EN300 328, Part 15.247

7.2 Radio Specifications

7.2.1 802.11b/g WLAN Radio

Antenna port	Hirose U.FL connector
Antenna	PCB antennas 2.1 dBi
Transmit Power	802.11b: 32mW (+15 dBm) 802.11g: 28mW (+14.5 dBm)
Frequency Range	2.400 - 2.4835 GHz
Channels	FCC: 11 ETSI: 13 TELEC: 13
RX Sensitivity	-96dBm @ 1Mbps, -90dBm @ 11Mbps, -94dBm @ 6Mbps, -75dBm @ 54Mbps
Data Rates	802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps

7.2.4 Bluetooth Radio

Embedded (920 kbps serial interface)

<i>Bluetooth</i> Version	Ver 2.0 compliant (features Adaptive Frequency Hopping for better co-existence with 802.11 radio and Enhanced Data Rate (EDR) for up to 3Mbps data rate).
Chip Antenna Gain	1dBi peak
Transmit Power	-3dBm (0.5mW) minimum, +4dBm (2.5mW) max
Frequency Range	2.400–2.4835 GHz
RX Sensitivity (BER<0.1%)	-80dBm max
Data Rate	V1.2 = 732.2 kbps and 57.6 kbps asymmetric, 433.9kbps symmetric V2.0 = 2 & 3Mbps

7.3 Lithium-Ion Battery 5000 mAh Specifications

Description	Specification
Model Number	CH3000
Part Number	1081236 (NA and Canada); 1081506 (World)
Chemistry	Lithium Ion (Li-Ion)
Capacity	5000 mAh nominal at 1000mA discharge 20°C to 3.0V (min)
Voltage	3.7V nominal (3.0V min. to 4.2V max.)
Cell Configuration	2P1S (2 parallel connected cells)

Description	Specification
Max. charge voltage	4.2V +/- 1%
Recommended charge termination timeout	5.0 hr - charging must stop.
Charge Temperature	0°C to +40°C (32°F to +104°F)
Discharge Temperature	-20°C to +50°C (-4°F to +122°F)
Storage Temperature	-20°C to +50°C (-4°F to +122 °F). Storage at elevated temperatures not recommended. 25°C (77 °F)—recommended storage temperature.
Cycle Life	300 cycles minimum with no degradation below 80% of nominal capacity based on 1C charge / 1C discharge rates (to 3.0V) @ 25°C (77 °F).

7.4 Scanner/Imager Specifications

7.4.1 SE 955HP Specifications

Scan Angle	47° ± 3° default / 35° ± 3° reduced
Scan Rate	104 (± 12) scans/sec (bi-directional)
Scan Pattern	Linear
Wavelength	650nm
Input Voltage	3.0-5.5 VDC ± 10%
Input Current	65 mA typical
Standby Current	8 µA max
Operating Temperature	-20° to 60° C -4° to 140°F
Print Contrast	Minimum 25% absolute dark/light reflectance measured at 650 nm
Dimensions	1.21 cm H x 2.16 cm W x 1.55 cm (max) 0.47 in. H x 0.85 in. W x 0.61 in. D (max)
Symbologies	UPC/EAN, Code 128, Code 39, Code 93, I 2 of 5, Discrete 2 of 5, Codabar, MSI Plessey

7.4.1.1 SE 955HP Decode Zone

Decode Zone Typical	
4 mil	1.0 in. – 5.5 in. / 2.54 cm – 13.97 cm
5 mil	1.25 in. – 8 in. / 3.18 cm – 20.32 cm
7.5 mil	1.5 in. – 13.25 in. / 3.81 cm – 33.66 cm
10 mil	1.5 in. – 17.5 in. / 3.81 cm – 44.45 cm
UPC 100%	1.5 in. – 23.5 in. / 3.81 cm – 59.69 cm
15 mil	1.5 in. – 29.5 in. / 3.81 cm – 74.93 cm
20 mil	1.75 in. – 35.5 in. / 4.45 cm – 90.17 cm
40 mil	* - 40 in. / * - 101.6 cm
55 mil	* - 55 in. / * - 139.7 cm
* dependent on width of bar code	

7.4.2 EV15 Imager Specifications

Light Source	617nm Highly Visible LED
Scan Angle	40°
Minimum Print Contrast	Minimum 25%
Min x. Dimension	0.1 mm (4 mils)
Reading Distance	Up to 90cm (35 in)
Symbologies	UPC (E&A), EAN, RSS, Code 39, Code 128, UCC/EAN 128, ISBN, ISBT, Interleaved, Matrix, Industrial and Standard 2 of 5, Codabar, Code 93/93i, Code 11, MSI, Plessey, Telepen, PDF417, Micro PDF417
Ambient Light	Works in any lighting conditions, from 0 to 100,000 lux
Shock	2000G, 0.7ms, half sinus, 3 axes
Vibration	50G r.m.s

7.4.2.1 EV15 Imager Decode Zone

0 Lux to 100,000 Lux		
	Minimum Range	Maximum Range
Mil Size	Inches	Inches
5	2.5	7
10	3	14
UPC	2	14.5
20	2.5	22
40	3	35.5
High quality symbols in normal room light.		

7.4.3 SX5400* Imager Specifications

Optical Resolution	752H x 480V
Field of view at 160mm	120mm (H) x 78mm (V) 41.1° (H) x 27.4° (V)
Pitch angle	±45°
Skew angle	±45°
Ambient light	0 to 100,000 lux (full sunlight) 300 lux nominal
Minimum contrast	10%
Targeting	Intuitive range finding 626 nm LED
Self Illumination	Red LED (standard)
Supply voltage	5 V ± 10%
Power supply	3.6 Volt DC nominal (2.7 - 5 Volts DC)
Connectivity	USB 1.1 or serial async
Connector to the interface board	Molex 52892-1295 or HiRose FH12-12S-.5SH
Symbologies supported	Code 39; Code 39 Full ASCII; UPC-A, -A2, -A5; UPC-E, -E2, -E5; EAN-8 -13; JAN; I2of5; Code 128; Codabar/NW7; RSS 14, RSS Limited, RSS Expanded, RSS 14 Truncated, PDF417, microPDF417; Composite, CC-A, CC-B, CC-C; image capture, Data Matrix; QR Code; Maxicode; Aztec Code; Planet; Postnet; Royal Mail 4SCC; 4 State postal codes from Australia, Canada, Japan; Korean Post 3 of 5.

**Formerly known as Symagery SX5400.*

7.4.3.1 SX5400 Imager Performance

The table below presents the typical performance of the SX5400 Imager at 300 lux (@ 160mm focus when using Grade A photographic-quality bar codes). Shown are the average near, far, and Depth of Reading (DOR) numbers.

Symbology	Size (mil)	Near Avg. (inches)	Far Avg. (inches)	DOR Avg. (inches)
C39	7.5	4.0	7.0	3.0
C39	10	2.75	9.25	6.5
C39	15	2.25	11.0	8.75
PDF6.6	6.6	4.0	6.5	2.5
PDF10	10	3.25	9.0	5.75
PDF15	15	2.25	10.75	8.5
DM15	15	3.0	8.0	5.0
QR15	15	3.75	7.5	3.75
UPC	12.5	3.0	9.5	6.5

APPENDIX A

PORT PINOUTS

A.1 Docking Port Pinout

Table A.1

Pin #	Pin Name	Signal	Direction Relative To DPA	Comment
1	GND	DGND	-	
2	VDD_EXT_PWR	VDD_EXT_PWR	Input	These 3 pins are connected together.
3	VDD_EXT_PWR			
4	VDD_EXT_PWR			
5	BATT_OUT	VDD_BATT_OUT	Output	
6	AUDIO_P		Output	Audio positive.
7	AUDIO_N		Output	Audio negative.
8	VDD_USBOTG		Bi-directional	USB Power (+5.5V). As output, supplies external devices when Ikôn is in USB Host mode. As input, charges battery when Ikôn is in USB Client mode.
9	DOCK_ID		Input	Dock ID.
10	USB_OTG_DN		Bi-directional	

Table A.1

Pin #	Pin Name	Signal	Direction Relative To DPA	Comment
11	USB_OTG_DP		Bi-directional	
12	USB_OTG_ID		Input	
13	GND	DGND	-	
14	TXDATA		Output	RS-232 data transmit. Max bit rate 115 kbits/sec.
15	RXDATA		Input	RS-232 data receive. Max bit rate 115 kbits/sec.
16	GND	DGND	-	

A.2 Audio Port Pinout

Table A.2

Pin #	Pin Name	Direction Relative To DPA	Comment
1	HPR	Output	Headphone output.
2	HP_DETECT	Input	
3	N/C	-	Not connected.
4	MIC	Input	Microphone.
5	N/C	-	Not connected.
6	DGND	-	Ground.

A.3 DC IN Port Pinout

Table A.3

Pin #	Signal	Comment
1	DGND	Side contact.
2	DGND	Side contact.
3	VDD_ACDC	Center contact pin.

A.4 Battery 5000 mAh (CH3000): Contact Pinout

Table A.4

PIN #	Signal Name	DESCRIPTION
1	BATT-RAW	Positive lead of battery.
-		Plastic Rip - provides mechanical polarity.
2	BATT-RAW	Positive lead of battery.
3	BATT-CLK	SMBus data clock.
4	BATT-THERM	Thermistor 10K NTC.
5	BATT-DATA	SMBus bi-directional data line.
6	GND	Negative lead of battery.
7	GND	Negative lead of battery.

APPENDIX C

SCU FOR 802.11B/G RADIO

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C.1 SCU Tabs

This appendix provides details about each tab in the Summit Client Utility (SCU). For quick, step-by-step setup instructions, refer to “Configuring The Summit 802.11b/g” on page 13.

The following sections provide a detailed description of each of the tabs available in the SCU—*Main* (below), *Profile* (page C-4), *Status* (page C-9), *Diags* (page C-9), and *Global* (page C-10).

C.1.1 Main Tab

The Main tab is displayed when you tap on the *Start>Programs>SCU* icon.



- **Enable/Disable Radio:** Enables or disables the radio. This is a toggle button; when the radio is enabled, this button reads *Disable Radio*, and when the radio is disabled, the button reads *Enable Radio*.
- **Active Profile:** Lists the name(s) of the active configuration profile(s). When a *profile* is chosen from the *Active Profile* drop-down menu, the settings for that profile become active.

If *ThirdPartyConfig* is selected, after the Ikôn goes through a power cycle, WZC is used for configuration of the radio. See “ThirdPartyConfig” on page C-8 for details.

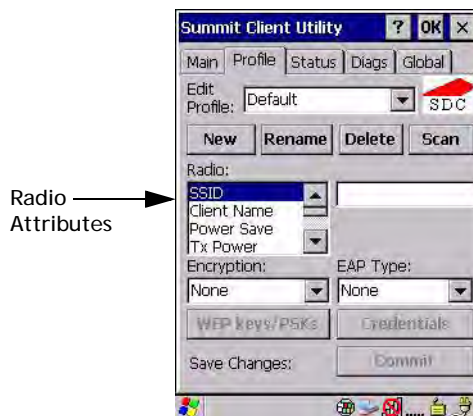
- **Radio Type:** Indicates the type of radio installed in the device, e.g. “BG” when an 802.11b/g radio is installed.
- **Reg. Domain:** Indicates the regulatory domain (e.g. ETSI, FCC or TELEC) for which the radio is configured. “Worldwide” means that the radio can be used in any domain.
- **Status:** Indicates if the radio is associated to an access point. If this is not the case, *Status* indicates the radio status.

- **Driver** and **SCU**: These fields display the version of the device driver and the SCU that are running on the Ikôn.
- **About SCU**: This box provides details about the SCU software.

C.1.2 Profile Tab

The *Profile* tab allows you to define radio and security settings that are stored in the registry as part of the configuration profile.

The profile you create and save is listed in the *Active Profile* drop-down menu in the *Main* tab. You can define up to 20 profiles.



- **Edit Profile**: Used to choose the profile to be viewed or edited. If *ThirdPartyConfig* is chosen, after the Ikôn goes through a power cycle, WZC is used for configuration of the radio.
- **New**: Allows you to create a new profile with default settings and assign it a name.
- **Rename**: Allows you to assign a profile name.
- **Delete**: Deletes the profile unless it is currently active.
- **Scan**: Opens a new window which displays a list of available access points with their respective SSIDs, Signal Strength (RSSI value) and Security Status. Selecting an AP returns you to the profile page and populates a new profile with the information available from the scan to simplify setting up a new profile.
- **Radio**: Lists radio attributes. These attributes can be individually chosen from this menu. When an attribute is chosen, an associated list of options is displayed where you can assign new settings or view existing settings.
- **Commit**: Saves all changes.

The following table describes the options in the *Radio* attributes, *Encryption*, and *EAP Type* drop-down menus:

Table C.1 Radio, Encryption, And EAP Menus

Radio Attribute	Description	Value	Default
SSID	Service set identifier (SSID) for WLAN to which the radio connects.	Maximum of 32 characters.	None
Client Name	Name assigned to radio & Ikôn into which it is installed.	Maximum of 16 characters.	None
Power Save	Power save mode for radio.	CAM: Constantly awake. Maximum: Maximum power savings. Fast: Fast power save mode.	Fast
Tx Power	Maximum transmit power.	Max: Maximum defined for current regulatory domain. Measured in mW: 50,30,10, 1.	Max
Bit Rate	Used by radio when interacting with WLAN access point.	Auto: Rate automatically negotiated with access point. Rates in Mbps: 1, 2, 5.5, 6.9 11, 12, 18, 24, 36, 48, 54.	Auto
Radio Mode	Used by 802.11g when interacting with access point.	B rates only: 1, 2, 5.5, & 11 Mbps. G rates only: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps. BG rates full: All B and G rates. BG rates optimized: 1, 2, 5.5, 6, 11, 24, 36 & 54 Mbps.	BG rates optimized
Auth Type	802.11 authentication type used when associating with access point.	Open, shared-key, or LEAP (Network-EAP).	Open
EAP Type	Extensible Authentication Protocol type used for 802.1X authentication to access point.	None, LEAP, EAP-FAST, PEAP-MSCHAP – To use EAP-TLS, you must use WZC.	None

Table C.1 Radio, Encryption, And EAP Menus

Radio Attribute	Description	Value	Default
Credentials	Authentication credentials for the selected EAP type. Refer to “EAP Credentials” on page C-7.	User: Username or Domain/Username (up to 64 characters). Password: up to 64 characters. For PEAP: CA Cert–CA server certificate filename.	None
Encryption	Type of encryption used to protect transmitted data.	None, Manual WEP, Auto WEP (generated during EAP authentication), WPA PSK, WPA TKIP, WPA2 PSK, WPA2 TKIP, WPA2 AES, CCKM TKIP. For Manual WEP: Up to four static WEP keys. For PSK: ASCII passphrase or hex PSK.	None

- **EAP-Type & Encryption:** Security settings. These settings allow you to enhance the security of data across the wireless LAN. Refer to “EAP Credentials” on page C-7 and ‘SCU Security Capabilities’ below, for details about these settings.

C.1.2.1 SCU Security Capabilities

The SCU provides integrated security to protect transmitted data as well as the Ikôn and wireless WAN infrastructure that transmit and receive data.

A foundational element of the IEEE 802.11i WLAN security standard is IEEE 802.1X and a critical application on a mobile device is an 802.1X supplicant. This supplicant provides an interface between the radio and the operating system and supports the authentication and encryption elements required for 802.11i, also known as Wi-Fi Protected Access 2 (WPA2), as well as predecessors such as WPA and WEP. Summit software includes an integrated supplicant that supports a broad range of security capabilities, including:

- 802.1X authentication using pre-shared keys or an EAP type, required for WPA2 and WPA.
- Data encryption and decryption using WPA2 AES, WPA TKIP or WEP.

Common EAP types include:

- **EAP-TLS:** Uses the same technology as a follow-on to Secure Socket Layer (SSL). It provides strong security, but relies on client certificates for user authentication.

- **PEAP:** Provides secure user authentication by using a TLS tunnel to encrypt EAP traffic. Two different inner methods are used with PEAP:
 - EAP-MSCHAPV2, resulting in PEAP-MSCHAP: This is appropriate for use against Windows Active Directory and domains.
 - EAP-GTC, resulting in PEAP-GTC: This is for authentication with one-time passwords (OTPs) against OTP databases such as SecureID.
- **LEAP:** Is an authentication method for use with Cisco WLAN access points. LEAP does not require the use of server or client certificates. LEAP supports Windows Active Directory and domains but requires the use of strong passwords to avoid vulnerability to offline dictionary attacks.
- **EAP-FAST:** Is a successor to LEAP and does not require strong passwords to protect against offline dictionary attacks. Like LEAP, EAP-FAST does not require the use of server or client certificates and supports Windows Active Directory and domains.



Note: PEAP and EAP-TLS require the use of Windows facilities for the configuration of digital certificates.

C.1.2.2 SCU EAP Types

The following EAP types are supported by the integrated supplicant and can be configured in SCU: *PEAP-MSCHAP*, *PEAP-GTC*, *LEAP* and *EAP-FAST*. With each of these four types, if authentication credentials are not stored in the profile, you will be prompted to enter credentials the first time the radio attempts to associate to an access point that supports 802.1X (EAP).

Consider the following when configuring one of the EAP types:

- **PEAP-GTC:** SCU supports static (login) passwords only.
- **LEAP:** Strong passwords are recommended.
- **EAP-FAST:** SCU supports automatic, not manual, PAC provisioning.

EAP-TLS will work with an 802.11b/g radio module when *Windows Zero Config (WZC)* rather than the SCU is used to configure the type. With WZC, the native *Windows supplicant* instead of the *SCU integrated supplicant* is used.

C.1.2.3 EAP Credentials

Keep the following in mind when defining security settings:

- If the credentials specified in the profile are incorrect and that profile is used, the authentication fails without an error message; you will not be prompted to enter correct credentials.

- If the credentials are not specified in the profile, when the radio tries to associate using that profile, you will be prompted to enter the credentials.
- When prompted, you can enter valid credentials, enter invalid credentials, or cancel the operation.
 - If you enter valid credentials and tap **OK**, the radio will associate and authenticate.
 - If you enter invalid credentials and tap on **OK**, the radio will associate but will not authenticate; you will be prompted again to enter credentials.
 - If you tap on **Cancel** or clear the credentials fields and tap on **OK**, the radio will not attempt to associate with that profile until you perform one of the following actions (while the profile is the active profile):
 - Cause the Ikôn to go through a power cycle or suspend/resume.
 - Disable and enable the radio, or tap the **Reconnect** button on the *Diags* windows.
 - Modify the *Profile*, and tap on **Commit**.

Alternatively, you can choose another profile as the active profile and then switch back to the profile for which EAP authentication was cancelled.

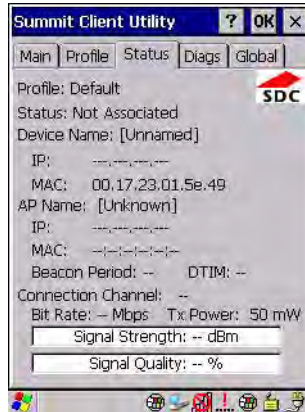
C.1.2.4 ThirdPartyConfig

If you choose to configure *ThirdPartyConfig*, the SCU will work with the operating system's *Windows Zero Config* (WZC) to configure radio and security settings for the CF radio installed in the unit.

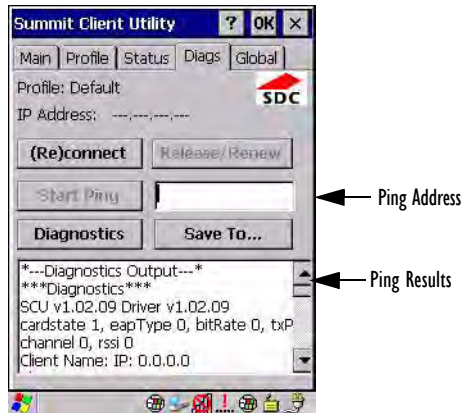
Choosing this profile means that WZC must be used to define the following radio and security options: *SSID*, *Auth Type*, *EAP Type*, and *Encryption*. The SCU settings for *ThirdPartyConfig* include: *Client Name*, *Power Save*, *Tx Power*, *Bit Rate*, and *Radio Mode*. These SCU settings along with SCU global settings and the WZC settings will be applied to the radio module.

C.1.3 Status Tab

The *Status* tab provides status information including IP address and MAC address for the client radio, IP address and MAC address for the AP, signal strength, channel, transmit power and data rate.



C.1.4 Diags Tab



Use the *Diags* tab as a troubleshooting tool. The functions are as follows:

- **(Re)Connect:** Enables/Disables the radio, applies/reapplies current profile and tries to associate and authenticate to the wireless LAN, logging all activity in the output area at bottom of the dialog box.

- **Release/Renew:** Obtains a new IP address through DHCP and logs all activity in the output area.
- **Start Ping:** Starts a continuous ping to the address in the text box next to this button. This is a toggle button so when you tap on it, it changes to *Stop Ping*. Closing this window or tapping on another button also stops the ping.
- **Diagnostics:** Attempts to connect or reconnect to an AP, and provides a more detailed dump of data than if you used *(Re)connect*. The dump includes the radio state, profile settings, global settings and BSSID list of APs. The SCU is saved to a file called *_sdc_diag.txt* in the Windows directory.

C.1.5 Global Tab



The *Global* settings tab allows you to define radio and security settings that apply to all profiles, along with settings that apply specifically to the SCU. The *Global* settings in the table below can be edited in SCU:

Table C.2 Global Tab

Global Setting	Description	Value	Default
Roam Trigger	If RSSI from AP is less than roam trigger value, radio performs roam scan or probes for an AP with stronger signal.	dBm: -50, -55, -60, -65, -70, -75, Custom	-75
Roam Delta	Amount by which second AP's RSSI must exceed the moving average RSSI for the current AP before the radio will attempt to roam to a second AP.	dBm: 5, 10, 15, 20, 25, 30, 35, Custom	10
Roam Period	Following an association or roam scan (with no roam), the number of seconds the radio collects RSSI scan data before considering roaming.	Seconds: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, Custom	10
BG Channel Set	Defines the 2.4 GHz channels to be scanned when the radio is set to roam and needs to determine what APs are available.	Full (all channels) 1, 6, 11 1, 7, 13 Custom	Full
DFS Channels	Reserved	Off, On	Off
Aggressive Scan	When this setting is On and the current connection to an AP becomes unreliable, the radio scans for available APs more aggressively. Aggressive scanning complements and works in conjunction with the standard scanning that is configured through the Roam Trigger, Roam Delta, and Roam Period settings. It is recommended that Aggressive Scan is left On unless there is significant co-channel interference because of overlapping coverage from APs on the same channel.	Off, On	On

Table C.2 Global Tab

Global Setting	Description	Value	Default
CCX features	Activates three CCX features: AP-assisted roaming, AP-specified maximum transmit power and radio management.	Optimized, Full, Off	Optimized
WMM	Use Wi-Fi Multimedia Extensions, also know as WMM.	On, Off	Off
TX Diversity	Defines how to handle antenna diversity when transmitting data to AP.	-Main only: Use main antenna only. -Aux only: Use auxiliary antenna only. -On: Use diversity.	Main only
RX Diversity	Defines how to handle antenna diversity when receiving data from AP.	-On-Start on Main: On startup, use main antenna. -On-Start on Aux: On startup, use auxiliary antenna. -Main only: Use main antenna only. -Aux only: Use auxiliary antenna only.	On-Start on Main
Frag Thresh	Packet is fragmented when packet size (in bytes) exceeds threshold.	Integer from 256 to 2346.	2346
RTS Thresh	Packet size above which RTS/CTS is required on link.	An integer from 0 to 2347.	2347
LED	Available only with MCF10G.	On, Off	Off
Tray Icon	Enables the System Tray icon.	Off, On	Off
Hide Passwords	On - SCU as well as EAP authentication dialog boxes hide passwords, WEP keys and other sensitive information.	On, Off	Off
Admin Password	Password that must be specified when Admin Login button is pressed.	A string of up to 64 characters.	SUMMIT

Table C.2 Global Tab

Global Setting	Description	Value	Default
Auth Timeout	Specifies the number of seconds that the software will wait for an EAP authentication request to succeed or fail. If authentication credentials are specified in the active profile and the authentication times out, then association will fail. If authentication credentials are not specified in the active profile and the authentication times out, then the user will be re-prompted to enter authentication credentials.	An integer from 3 to 60.	8
Certs Path	Directory where certificates for EAP authentication are stored.	Valid directory path up to 64 characters.	Dependent on device.
Ping Payload	Amount of data to be transmitted on a ping.	Bytes: 32, 64, 128, 256, 512, 1024	32
Ping Timeout ms	Amount of time in milliseconds that passes without a response before ping request is considered a failure.	Integer from 0 to 30000.	5000
Ping Delay ms	Amount of time in milliseconds between successive ping requests.	Integer from 0 to 7200000.	1000

