CipherLab
User Guide

MIRROR Browser

for

Windows Embedded Compact 6.0 9300
9600
9700
CP60

Windows Embedded Compact 7.0 CP55

Version 2.70



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RELEASE NOTES

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2.70	Aug 14, 2014	▸ Revise description for test pages in 3.4.1 Test Page ▸ Revise description for Shift+Down in 3.6 Use Hotkeys ▸ Revise description in 5.1.2 Screen Settings, 5.1.3 Network Settings ▸ Update Appendix I & VI: Symbologies supported for 9700
2.60	Jun 20, 2014	▸ Supports CP55, 9700 ▸ Add SIP icon description in 3.4.2 Full Screen Mode ▸ Remove Browser option from 3.2 Menu, remove Browser icon and Exit icon from 3.3 Toolbar ▸ Add 3.5.1 Default Test Pages, 3.6 Use Hotkeys, 5.1.3 Network Settings, 5.1.6 Reader Settings for CP55, 5.2 Text Size Adjustment ▸ Update 5.1.2 Screen Settings, 6.2 JavaScript APIs ▸ Update reader types and supported symbologies in Appendix I: Scan Engine Settings ▸ Add Appendix IV: Laser (SE1524) and Appendix VI: 2D Imager (EX25)
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2.50	Oct 25, 2013	▸ New: Supports CP60 (CE) ▸ Remove: EOL products — 9400, 9500 ▸ Modified: 1.1 Installation is available from PC or mobile computer ▸ Modified: 1.1.1 & 1.1.2 Add note for avoiding application loss after cold boot on 9300/9600 ▸ Modified: 1.3 Launch Browser by tapping Start | Programs | Mirror Browser ▸ Modified: Browser UI updated; restructure Chapters 2-5 to fit new UI and update screenshots ▸ Modified: 6.2 JavaScript APIs — Add paths for checking system information on CP60 ▸ Modified: Add CP60 code type to “onScanBarcode” ▸ Modified: Update Appendix I — Supported symbologies & RFID tags ▸ New: Add CP60 settings to Appendix III, IV ▸ Modified: Update Appendix V: Supported RFID reader start page
2.28	Oct 05, 2011	▸ Modified: 3.1 getScannerTypeOnCom1/getScannerTypeOnCom2
2.27	Jun 21, 2011	▸ Modified: Features — Remove auto-submit a webpage
2.26	Nov 30, 2010	▸ Modified: Appendix I~V — Add more GS1 DataBar symbologies
2.25	July 12, 2010	▸ Modified: 2.5.2 RFID Reader Settings — UI updated ▸ Modified: 3.1 System Information — Change return value for “getScannerTypeOnCom1” and “getScannerTypeOnCom2” ▸ Modified: Appendixes V — Add “Intercharacter Gap Size” for 4407 and move the setting under Codabar and Code 39, and add “ISBT Concatenation” and “ISBT Concatenation Redundancy” for 4507

2.24	Feb 04, 2010	▸ Modified: Chapter 1 Installing MIRROR Browser — Change default install directory to "\Program Files\Browser" and update screenshots ▸ Modified: 2.4 Changing Symbology Settings — Renamed "Pharmacode" with "I/F Pharma." and updated the screenshot ▸ Modified: 2.5.2 RFID Reader Settings — Rename Tag Type "Mifare Ultralight" with "Mifare" and change the Start Page to "4" ▸ Modified: 2.5.3 Data Output — Add "Display code type", "Display code length", "Display RFID UID", "Display RFID user data", and "Field delimiter" and update screenshot ▸ Modified: Appendix III — GS1 DataBar (RSS) default settings
2.23	Jan 04, 2010	▸ Modified: 2.5.4 Notifications (For Good Read) — Good Read via vibrator ▸ Modified: 2.4 Changing Symbology Settings — Update screenshots ▸ Modified: Appendix I, II — Support ISBT 128 and UPC-E1 for CCD/Laser ▸ Modified: Appendix III — Redundancy Level default setting ▸ Modified: Appendix III — Add "UPC/EAN Security Level" for SE955 ▸ Modified: Appendix II~IV — "Read Redundancy" changed to "Redundancy Level"
2.22	Dec 21, 2009	▸ Modified: Appendix I — ID_MOD_MP_RFID table updated
2.21	Dec 15, 2009	▸ Update screenshots
2.20	Oct 21, 2009	▸ Modified: update screenshots (Win CE 6.0) ▸ Modified: 2.5.2 RFID Reader Settings — remove write operation ▸ Modified: Appendix III — Add "Timeout between Same Barcode" for SE955 ▸ Modified: Appendix V — Add "Intercharacter Gap Size" for 4507
2.19	Aug 25, 2009	▸ New: change icons ▸ New: add new feature "Supports SSL communications protocol" ▸ New: add new feature "Supports 9300 & 9600" ▸ Modified: 2.3.1 Changing Settings - add new feature "Disable pictures" and update screenshots ▸ Modified: Appendixes I~V – updated
2.18	Mar 12, 2009	▸ Modified: add new feature "Full Screen" and update screenshots ▸ Modified: 1. Installing MIRROR Browser — SetupApp.exe provided ▸ Modified: 2.2.2 Toolbar — add "Full Screen" icon
2.17	Mar 03, 2009	▸ Modified: 9500PPC removed ▸ Modified: section 3.2 onScanBarcode() — GS1-128 (EAN-128), GS1 DataBar Omnidirectional (RSS-14), GS1 DataBar Limited (RSS Limited), GS1 DataBar Expanded (RSS Expanded) ▸ Modified: Appendixes I~IV — GS1-128 (EAN-128), GS1 DataBar Omnidirectional (RSS-14), GS1 DataBar Limited (RSS Limited), GS1 DataBar Expanded (RSS Expanded)
2.16	May 02, 2008	▸ Modified: section 2 – Move [About] to Tools Menu ▸ Modified: section 2.3.1 – Add [Show wireless signal strength], [Show battery status] ▸ Modified: section 2.5.3 Notifications – remove warning beep and add Good Read via buzzer ▸ New: section 3.2 Device Control – add getBatteryStatus() ▸ New: Appendix III, IV – AIM Code ID ▸ Modified: Appendix II~IV – update default values
2.15	Feb 25, 2008	▸ New: Graphic user interface implemented

2.14	Dec 06, 2007	• Modified: 2.5.5 Emulating Keyboard Input – added
2.13	Nov 23, 2007	• Modified: 2.5.5 Emulating Keyboard Input – removed • Modified: Appendix II~IV – default values updated
2.12	Oct 31, 2007	• Modified: 1. Installation – screenshots updated • Modified: 2.3 Browser Tab – sample webpage updated • Modified: 2.5.5 Emulating Keyboard Input – enabled automatically when the Browser is minized
2.11	Sep 03, 2007	• Modified: 1. Installation – Power Suite CD-ROM • Modified: 3.2 onScanBarcode() – Code Type for LR, ELR and 2D
2.10	Aug 27, 2007	• New Word template applied; supports 9400 and new RFID module • New: Supports 9400 • Modified: RFID Reader Settings
2.02	Jun 12, 2007	• Modified: Appendix I – RFID Tags Supported • New: Appendix II – CCD/Laser Scan Engine • New: Appendix III – LR/ELR Scan Engine • New: Appendix IV – 2D Scan Engine
2.01	May 14, 2007	• Modified: 20-minute trial before activation
2.00	Apr 18, 2007	• New: Installer program provided • New: Product Activation Key implemented
1.02	Mar 07, 2007	• Modified: 3.4.1 Browser Settings – Home Page
1.01	Mar 01, 2007	• Modified: UI to provide SIP button and remove Backward/Forward buttons • New: Browser settings – screen lock, password, homepage, import/export initial settings • New: JavaScript functions for device control on 9500
1.00	Dec 28, 2006	• Initial release

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INTRODUCTION

CipherLab 9300/9600 and CP60 (CE) Series Mobile Computers ship with a built-in Web Browser application, the Internet Explorer. Because more and more data collection solutions are implemented by web-based applications, an urgent need arises for a simple method of manipulating our barcode and RFID readers in the client applications. The MIRROR Browser software is provided to answer your demands by delivering a ready-for-use client application.

MIRROR Browser makes it effortless to integrate a client device to a web server afar. MIRROR Browser enables a client mobile computer to pass collected data to a remote web server by simply navigating to the webpage in mind, pressing the scan key and submitting data.

This user guide describes the ready-to-go application MIRROR Browser and a set of APIs for programming. We recommend that you read the document thoroughly before use and keep it at hand for quick reference.

Thank you for choosing CipherLab products!

FEATURES

- Supports CipherLab handhelds powered by Windows Embedded Compact 6.0 9300/9600/9700/CP60 series Mobile Computers and Windows Embedded Compact 7.0 CP55 series Mobile Computers
- Browses web pages from a remote web server
- Can browse a webpage from a web server
- Simplified browser interface specifically designed for real-time data collection with web servers
- Can automatically insert data into a webpage, by means of reading barcodes or RFID tags
- Can maximize to full screen in one click
- Prevent unwanted user interference by locking the screen and applying a password
- Easy cloning by exporting/importing the initial settings
- Provides JavaScript functions for device control
- Supports SSL communications protocol

DEVELOPMENT TOOLS

- A plain text editor such as Notepad (of Windows OS) to create an HTML document, either .htm or .html.
- JavaScript

LICENSING

MIRROR Browser requires a product key for activation, and the trial version allows 20-minute use before activation. Please contact your sales representative for license terms and price information.

SETUP

This chapter guides to the setup of MIRROR Browser, which is a simple task that takes just a few clicks to activate the installer and go through installation.

This chapter also describes the 1st launch of the application and where it is installed to.

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1.1. INSTALL

MIRROR Browser presents a compressed archive that yields two installation files, an .exe and .cab file. They allow installation through two approaches.

Each installation file is able to set up MIRROR Browser independently. Users can handle the setup either on the mobile computer or from the comfort of their Windows-based PC.

The two approaches are explicated in the following.

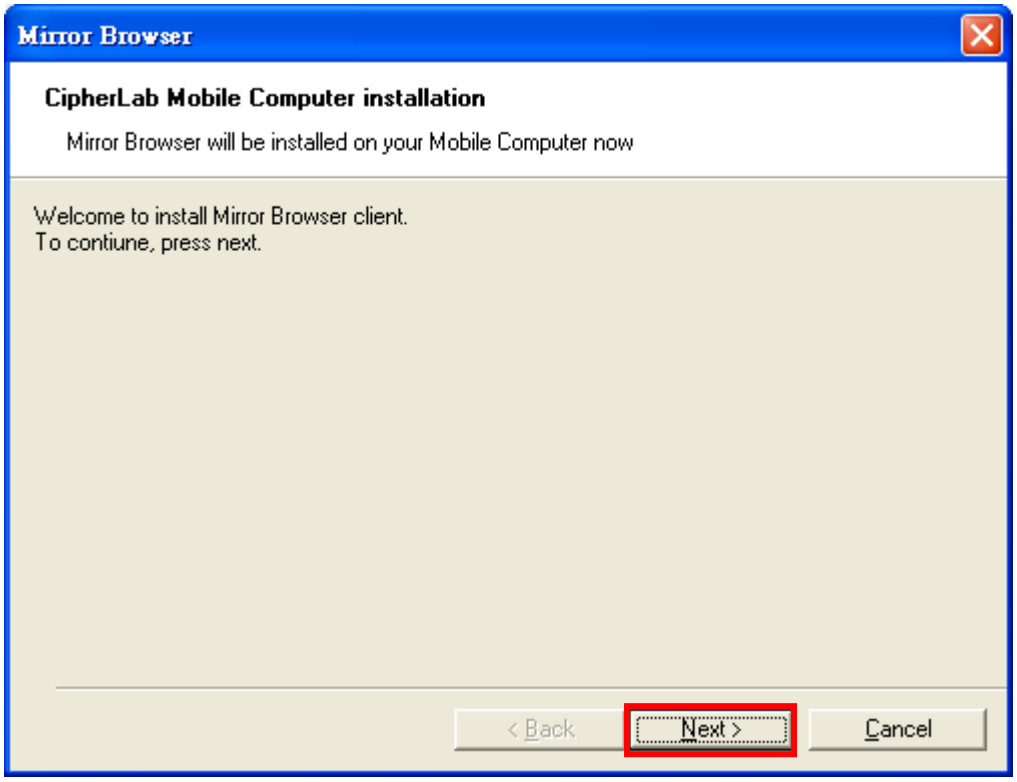
1.1.1. INSTALL FROM PC

Installation from PC relies hardware-wise on the USB connection and software-wise on the ActiveSync synchronization partnership between the PC and mobile computer.

To install MIRROR Browser from your PC:

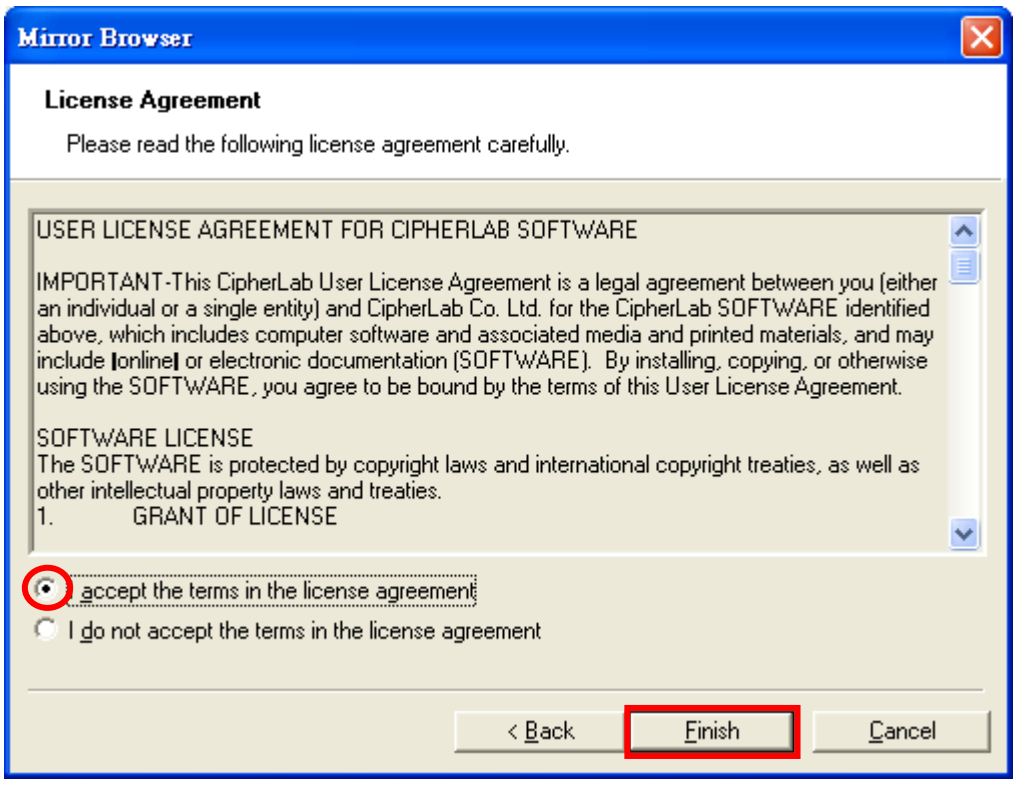
1) Set up USB connection between the PC and mobile computer.
2) Run ActiveSync on the PC.
3) On your PC, run the executable file MirrorBrowser_X.XXXX.exe. (X specifies the version).

   Installation wizard opens. Click **Next** to proceed.



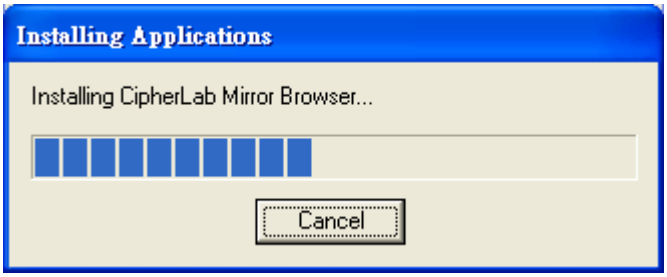
4) You are led to a **License Agreement** window.

Select **I accept the terms in the license agreement**. Click **Finish** to proceed.

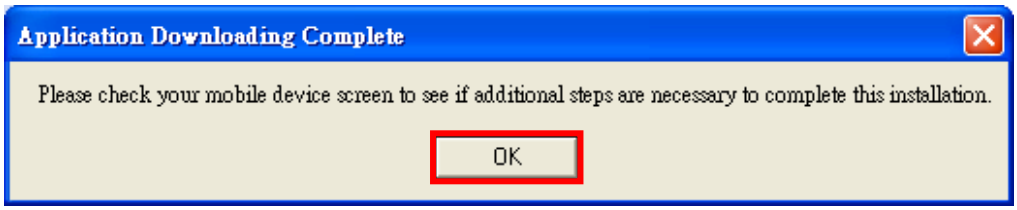


5) A prompt appears asking whether to install the application to the default directory **My Device\Program Files\Mirror Browser**.

The wizard then offloads Mirror Browser to the mobile computer.

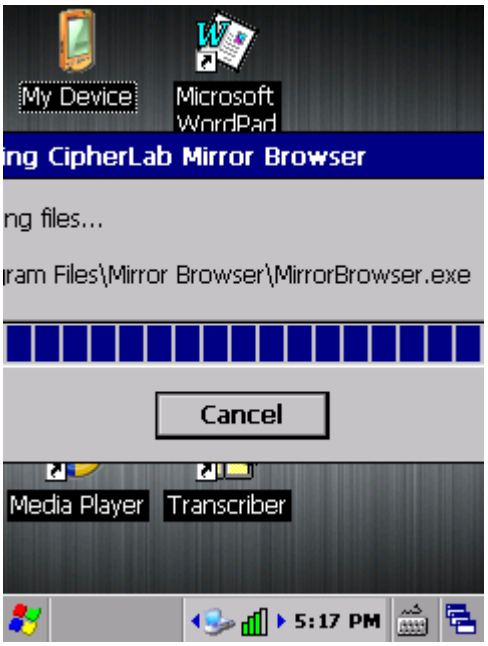


Once offload finishes, a dialog opens prompting you to check on the mobile computer.

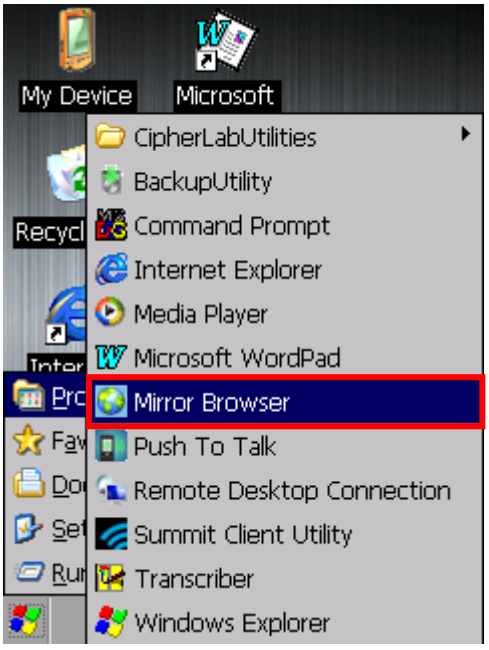


6) Click **OK**.

7) Check the mobile computer, which shows a dialog indicating installation is in progress.



The installation is completed in a few seconds. Once through, an icon for MIRROR Browser will be added to the Programs menu under **Start** | **Programs**.



8) On 9300/9600 mobile computer, before launching MIRROR Browser, copy or move the file "ReaderDll_CE.dll" to **My Device\Program Files\MIRROR Browser**.

Note:

(1) This step is required for 9300 and 9600 mobile computers only.

(2) On the 9300/9600 mobile computer, applications installed under **My Device\Program Files** will be cleared after you perform a cold boot. It is recommended that you copy the application to the "DiskOnChip" folder upon installation, or perform regular system backup so that important applications are not lost after hardware reset.

9) Proceed to launch MIRROR Browser as described in Launch MIRROR Browser.

1.1.2. INSTALL FROM MOBILE COMPUTER

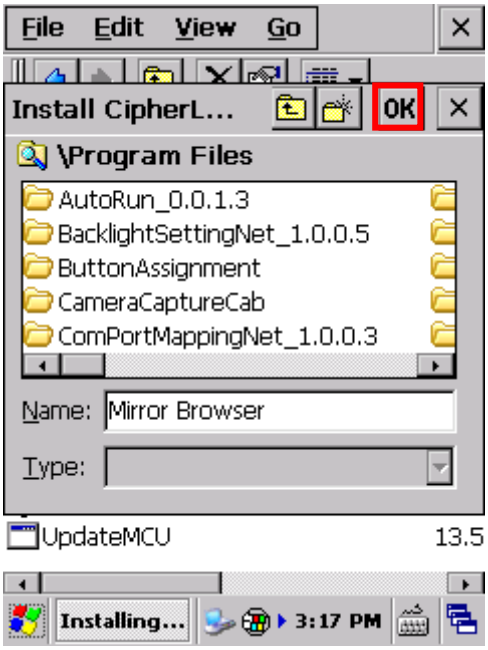
Installation from mobile computer relies on the .cab file extracted from the compressed archive. The mobile computer needs a copy of this .cab file in its storage, either in its internal or external storage.

To install from mobile computer:

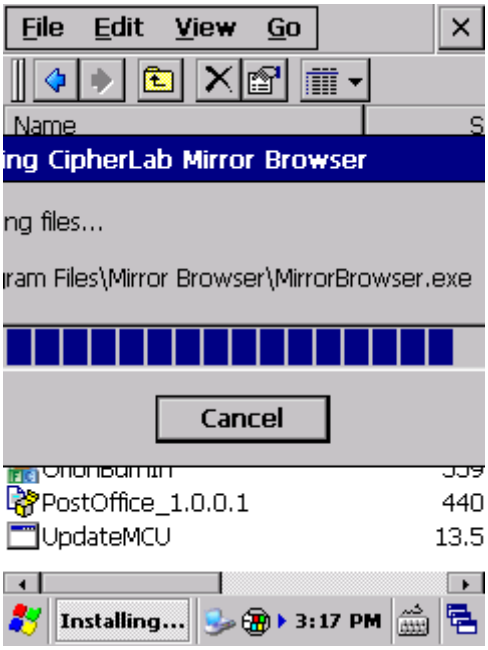
1) Copy MirrorBrowser_X.XXXX.cab (X for the version) to the mobile computer, either internal or external storage.

2) On the mobile computer, open **My Device** (file explorer) on the desktop.
3) Browse to the .cab file.
4) Double-tap the .cab file.

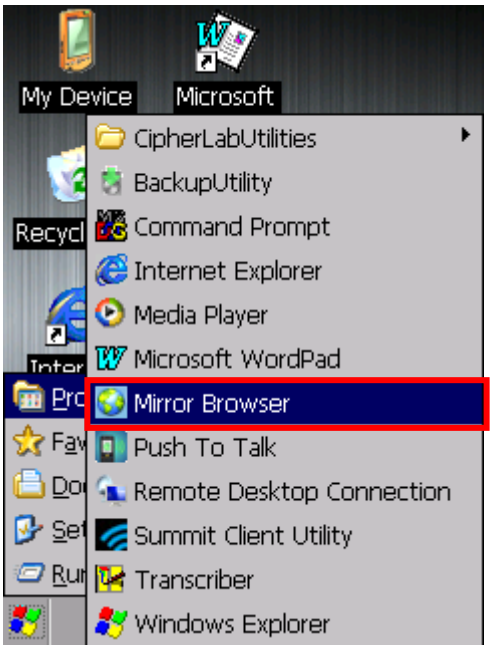
   Installer starts. A screen opens prompting you to choose the location to install MIRROR Browser. Browse to the desired location and tap **OK** on the title bar of the dialog box.



5) A dialog opens indicating the installation is in progress.



The installation is completed in a few seconds. Once through, an icon for MIRROR Browser will be added to the Programs menu under **Start** | **Programs**.



6) On 9300/9600 mobile computer, before launching MIRROR Browser, copy or move the file "ReaderDll_CE.dll" to **My Device\Program Files\MIRROR Browser**.

Note:

(1) This step is required for 9300 and 9600 mobile computers only.

(2) On the 9300/9600 mobile computer, applications installed under **My Device\Program Files** will be cleared after you perform a cold boot. It is recommended that you copy the application to the "DiskOnChip" folder upon installation, or perform regular system backup so that important applications are not lost after hardware reset.

7) Proceed to launch MIRROR Browser as described in Launch MIRROR Browser.

1.2. INSTALL FOLDER

If you haven't selected an alternate, MIRROR Browser is installed to the internal storage under **My Device\Program Files\Mirror Browser**. Alongside the executable file that launches MIRROR Browser, there are some others as explicated below:

File	Description
MirrorBrowser.exe	The executable file that launches MIRROR Browser.
MirrorBrowser.png	MIRROR Browser's shortcut graphic, which users tap in the Programs menu to launch MIRROR Browser.
test.htm	An HTML document that delivers users' test-scanned data. ▸ This is the page that loads and displays when MIRROR Browser launches (if no home page is assigned in Browser Settings).
browser_setting.ini	Stores browser settings. ▸ Available only after defaults are changed.

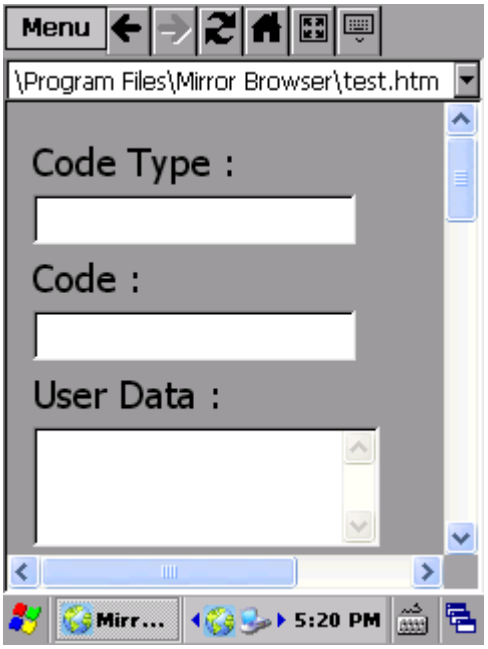
1.3. LAUNCH MIRROR BROWSER

After installation is completed, proceed to launch MIRROR Browser.

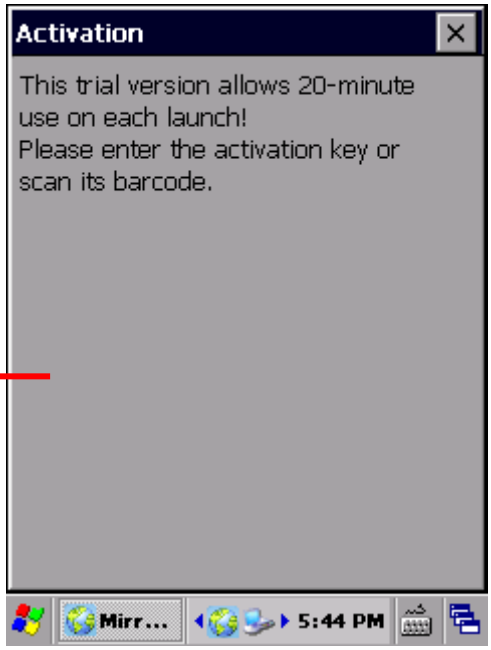
To launch MIRROR Brower:

1) Tap **Start** | **Programs** | **Mirror Browser** .

   MIRROR Browser launches. Trial period starts and the test.htm displays.



Without activation, MIRROR Browser allows a 20 minute trial-usage. Once the trial period is over, an warning page will appear on-screen notifying that “activation” is required for continuous usage. To use MIRROR Browser uninterruptedly, activate it. See Activate.



If no activation key is entered, an Activation screen appears after 20 minutes notifying that trial period is over

NOTEWORTHY LAUNCHING FACTS

On 9300/9600 mobile computer, before launching MIRROR Browser, close any other application that has control over the reader modules, such as Terminal Emulation and Reader Configuration; otherwise MIRROR Browser won't be able to launch and system prompts "Failed to initialize reader!". Since each of the COM ports assigned to stream decoded data can only be occupied by one application on the mobile computer, it is essential to run only one reader-controlling application at a time.

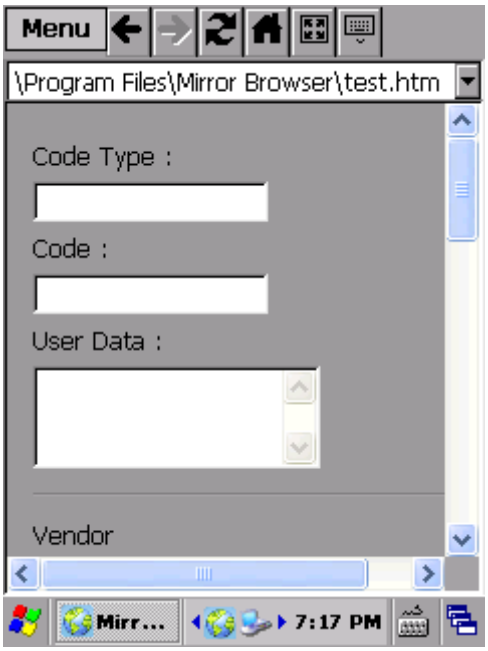
ACTIVATE

This chapter explicates activation of MIRROR Browser with an activation key.

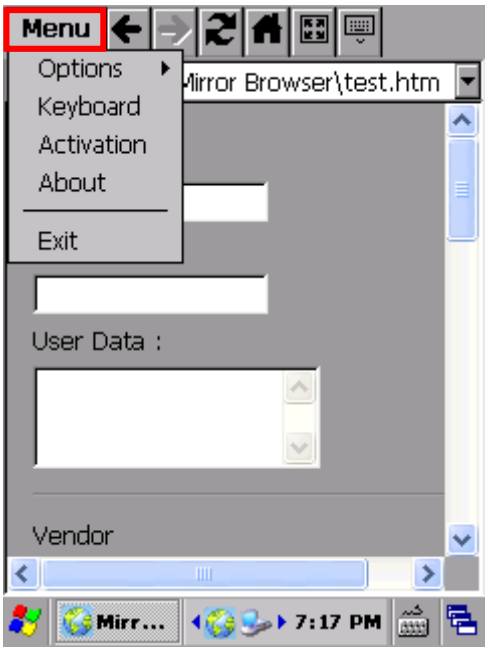
2.1. ACTIVATE

If an activation key is available, activate MIRROR Browser following the steps below:

1) Launch MIRROR Browser as described in Launch MIRROR Browser.



2) Tap the **Menu** button on the toolbar.



3) Tap **Activation**.

   "Activation key" screen opens presenting a single input field.

4) Enter an activation key by scanning the activation barcode.

OR

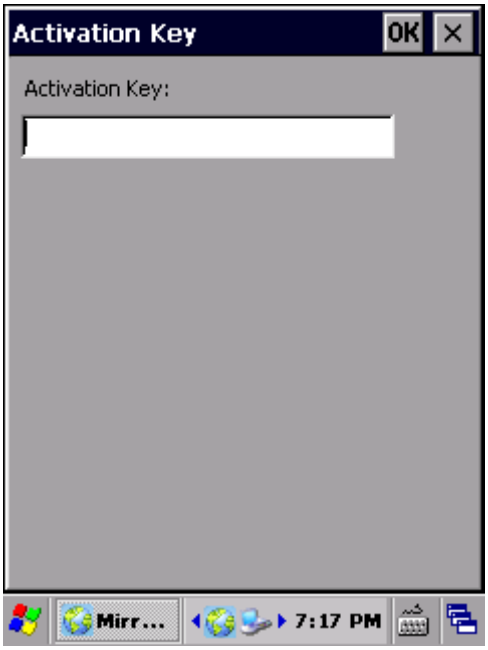
   Manually type the activation key with the physical keypad.

5) Press Enter key to submit the input.

   A dialog opens notifying activation success.

6) Tap **OK** at the upper-right of the dialog.

   The dialog closes and MIRROR Browser is activated.



If the software has not been activated, it will remain as a trial version and will prompt a warning window in 20 minutes. Tap **Menu** and select About to view the version information.

USER INTERFACE

MIRROR Browser comes with an environment with graphics, bars and boxes for users to tap on-screen so its settings can be accessed and actions can be taken. This chapter gives an overview of MIRROR Browser's system appearances.

Note: For different Windows Embedded Compact device models, screen sizes and layout might differ according to the LCD panel resolution of each device.

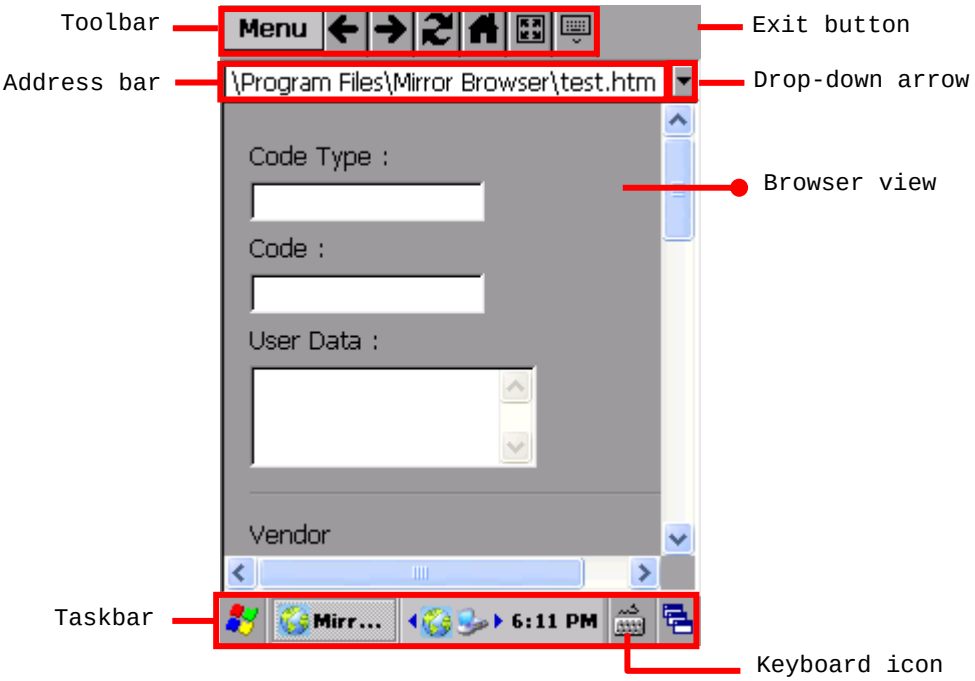
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3.1. SCREEN TERMINOLOGY

The screenshot below shows MIRROR Browser opened on the mobile computer. The software presents a test.htm in its window along with several GUI elements.

On-screen elements are illustrated as follows:



Term	Description
Toolbar	Bears a few icons that quick launches some actions from MIRROR Browser. ▸ See Toolbar for details.
"Menu" button	Opens MIRROR Browser menu. ▸ See Menu for details.
Exit button	Tap to close the application.
Address bar	A text box that enables users to enter a URL of the page they wish to display in MIRROR Browser. Address bar comes with a drop-down arrow at the right. See Address Bar & Drop-down Arrow for details.
Drop-down arrow	Shows recently visited pages. See Address Bar & Drop-down Arrow for details.
Browser view	The screen MIRROR Browser displays for users to collect data. ▸ See Browser View for details.

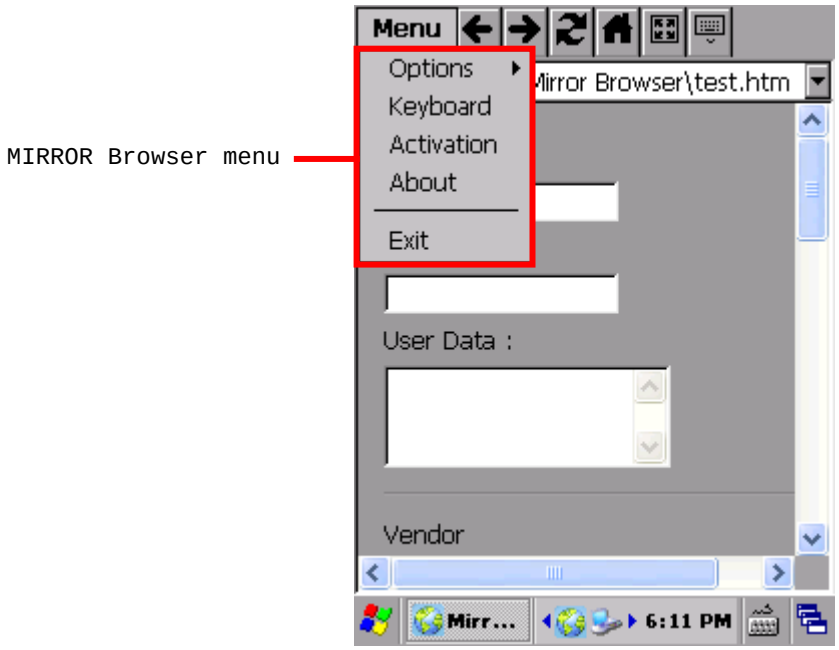
3.2. MENU

MIRROR Browser features a menu label, which provides a list of options for users to make selections and access the settings of MIRROR Browser.

Note: General browser settings can be made in **Internet Explorer Mobile** as described in General Browser Settings.

To open MIRROR Browser menu:

1) Launch MIRROR Browser as described in Launch MIRROR Browser.
2) Tap the bottom-left **Menu** label.



MIRROR Browser menu delivers the following functions:

Item	Description
Browser	Opens Browser View if the current screen isn't Browser view.
Option	Accesses the settings of Browser View, the reader engine and its symbologies.
Keyboard	Opens the on-screen keyboard. See Using On-screen Keyboard for more ways to use the on-screen keyboard.
Activation	Activates MIRROR Browser for uninterrupted use.
About	Delivers software developer and version info.
Exit	Quits MIRROR Browser.

3.3. TOOLBAR

Different from the Browser menu, the toolbar bears on-screen buttons that launch actions from MIRROR Browser.

The toolbar is presented along the bottom of Browser View as long as Browser View isn't maximized to full-screen.



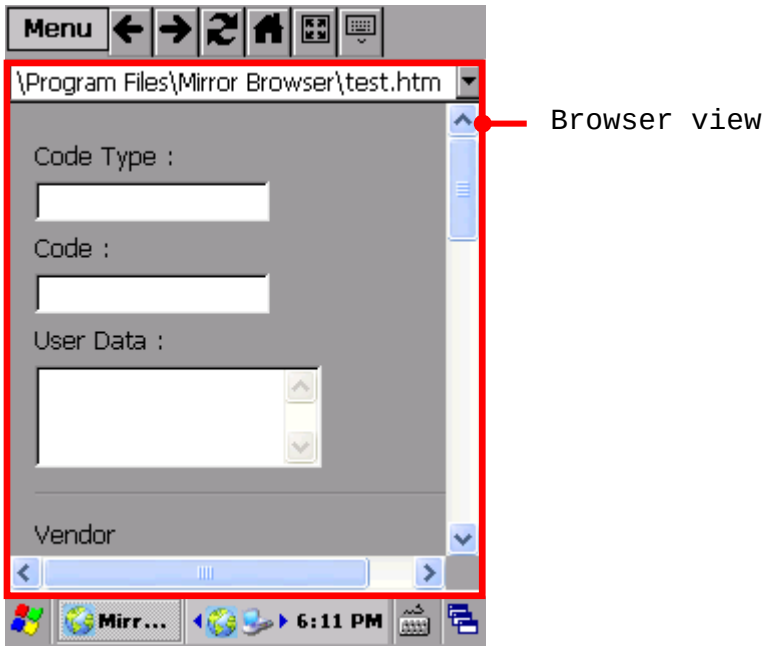
Toolbar delivers the following functions:

Icon	Description
Menu	**Menu** button – Opens a list of menu options.
	Back button - Opens the previous page worked on.
	Forward button - Moves forward to the next page (which was previously opened).
	Refresh button - Reloads the current page or loads a page again if it doesn't display properly.
	Home button - Opens MIRROR Browser's home page, which is definable at **Menu** | **Option** | **Settings** | **Browser** tab page.
	Maximize button - Maximizes Browser View to full screen whereby the **Menu** label, toolbar and address bar will all be hidden. ▸ Certain operations can be performed under Full Screen Mode, including relocation of icons, checking actual percentage for battery and Wi-Fi status, and exiting full screen. ▸ Users can select whether to display the OS taskbar or specific status icons under full screen mode. See Screen for details.
	Keyboard button - Opens the on-screen keyboard.

3.4. BROWSER VIEW

"Browser view", or simply "Browser", is the web-browsing area that collects data.

The "test.htm" page loads in Browser view when MIRROR Browser launches if there is no home page defined yet. The test.htm is a file that comes with MIRROR Browser and shares the same whereabouts with MIRROR Browser's installation files at **My Device\Program Files\MIRROR Browser**.



3.4.1. TEST PAGE

Mirror Browser provides a few test pages that can serve as templates for your HTML document. These test pages carry data collecting scripts that retrieve data using JavaScript APIs. The default HTML page opened in Browser View when Mirror Browser launches is "test.htm". See Change Test Pages for more details on other test pages.

To use the default test page:

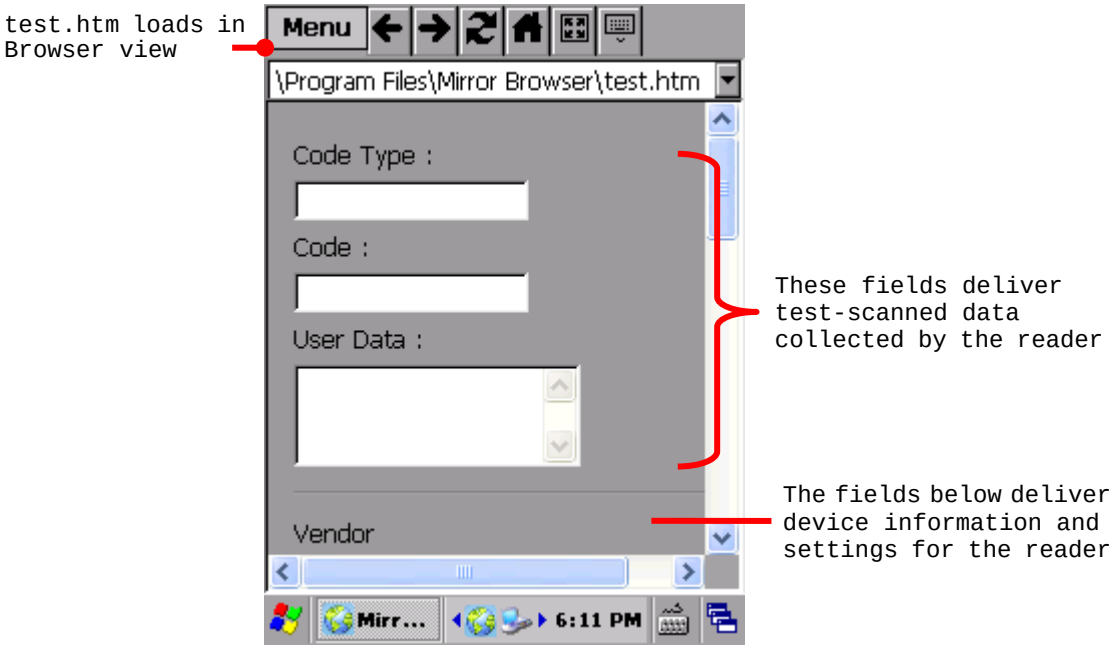
1) Launch MIRROR Browser as described in Launch MIRROR Browser.

   Test.htm opens (on condition that no home page has been defined under Browse).

2) Scan a barcode or an RFID tag by pressing the physical SCAN key or either side trigger.

   The scanned data is entered into the blank areas of the form.

   The fields below deliver device information as well as notification and data output settings for the reader.



For more applications, see Develop Your HTML Document for how to collect data using self-defined HTML documents.

3.4.2. FULL SCREEN MODE

Browser View can be maximized to full screen by tapping the icon  on the toolbar. When full screen mode is activated, a resize icon  shows by default to quit maximization and bring Browser view back to its original scale.

In full screen mode, the Browser toolbar, Menu label and the address bar are all stripped from the screen. As for the OS taskbar located at the bottom of the screen, users can select whether to have this displayed when the Browser is maximized to full screen. Alternatively, users can select whether to display icons to indicate battery level and Wi-Fi signal strength. See Screen Settings for whether to display the taskbar or the two said icons.

Resize icon: 

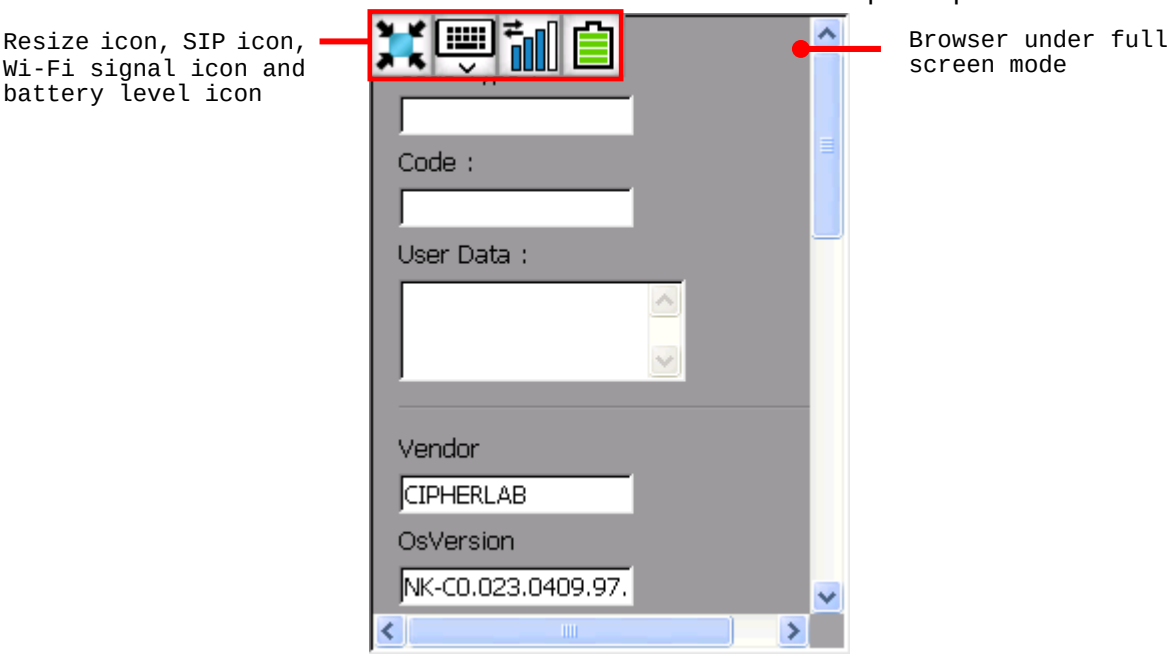
SIP icon: 

Battery level icons: 

Wi-Fi signal strength icons: 

ACTIONS TO TAKE ON FULL SCREEN

Several actions can be taken on the maximized full screen to improve performance.

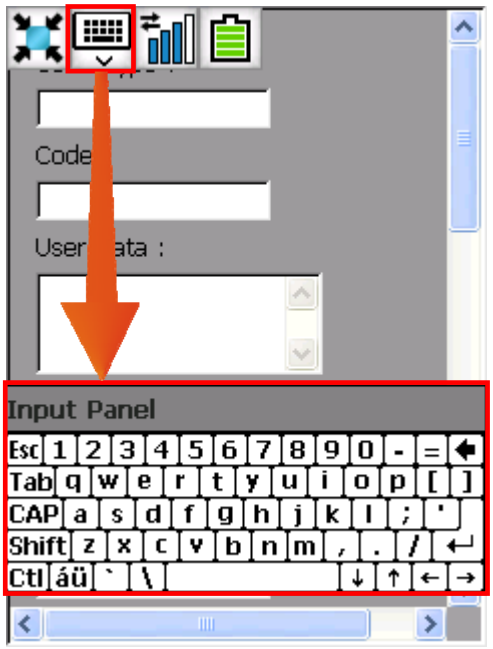


QUIT FULL SCREEN MODE

To quit full screen mode, double-tap the resize icon . Browser View will open on the screen.

OPEN ON-SCREEN KEYBOARD

Double-tap the SIP icon to open the on-screen keyboard for text input. Double-tap the icon once more to close the on-screen keyboard.



If Set HW key (SHIFT+ESC) to control SIP is selected under **Screen** Settings, you may also press Shift+Esc on the physical keypad to open or close the on-screen keyboard.

RELOCATE ICONS

By default, the resize icon, battery level icon and Wi-Fi signal strength icon will appear in the upper-left corner of the screen. These icons are movable and can be individually relocated to a better position on-screen. Simply drag and drop the icon to move it to the desired position.

VIEW BATTERY LEVEL & WI-FI SIGNAL

The graphical icons for battery and Wi-Fi only roughly sketch the battery level and Wi-Fi signal strength. To view the precise percentage of the battery level or Wi-Fi signal strength, double-tap the icon in order to pop up a dialog which delivers the precise percentage.

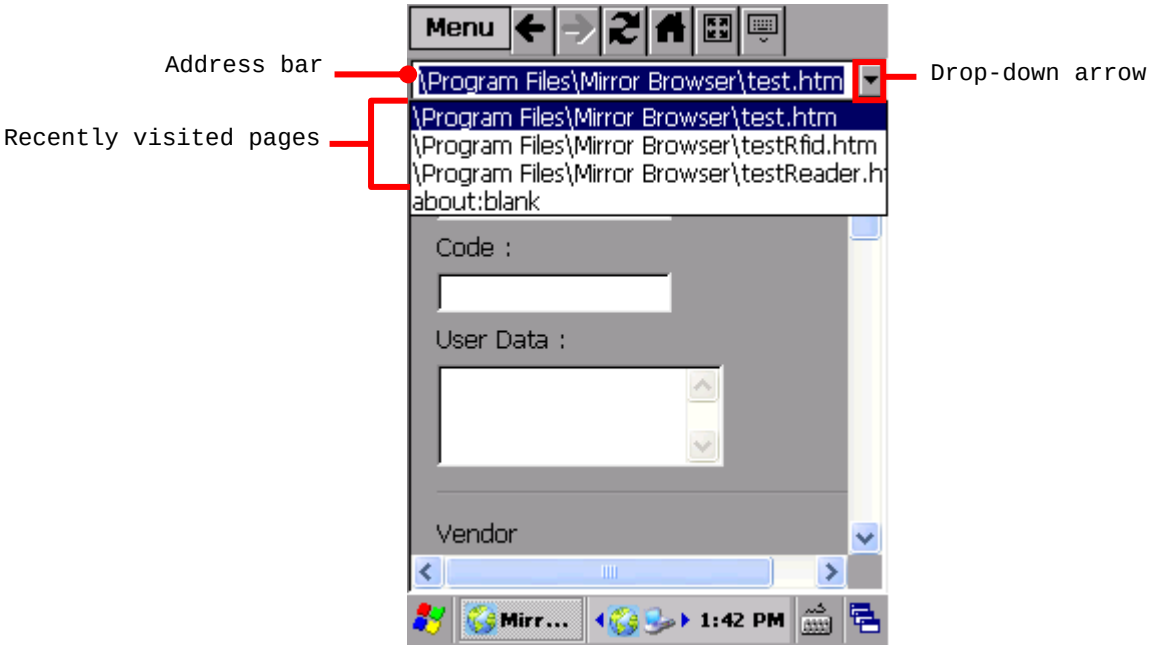


3.5. ADDRESS BAR & DROP-DOWN ARROW

The address bar is a text box atop Browser View for users to enter webpage URL. It can be concealed by maximizing Browser View using the maximize icon  on toolbar. This bar is also subject to inactivation by one of the Browse.

The address bar comes with a drop-down arrow to its right side, which can be used to open a drop-down list of up to 20 recently visited web pages.

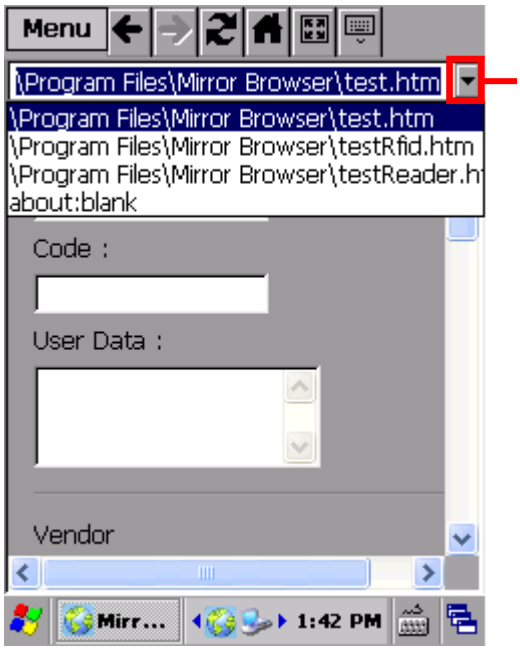
Note: When the home screen is locked as in Lock the Home page at the next start, the drop-down arrow will become inaccessible.



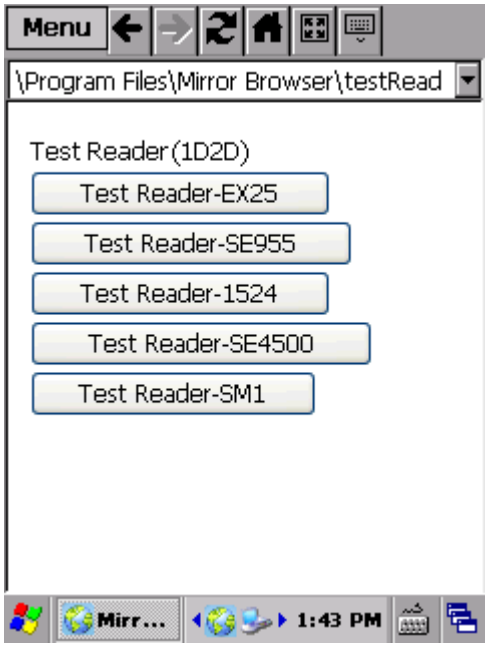
3.5.1. CHANGE TEST PAGES

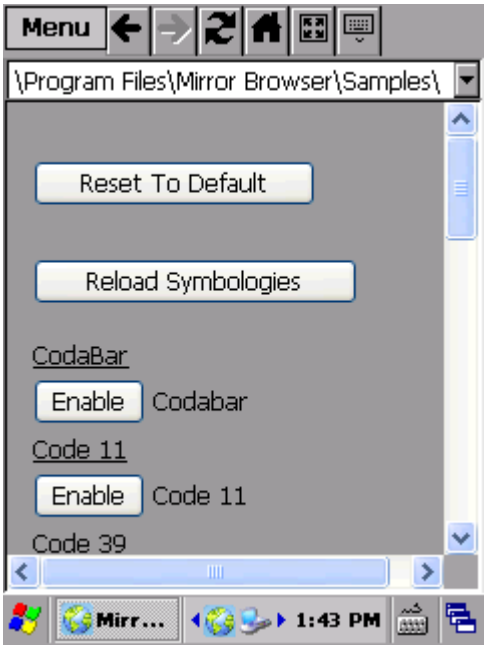
By default, the Browser provides three test pages which present different system and reader information retrieved through JavaScript APIs.

To change the test page opened in Browser view, tap the drop-down arrow to show the list of default test pages.



Tap the test page to open, or press the Down button on the physical keypad to select the test page to open. The new default page provides items to adjust reader settings.





The three available test pages are:

Test Page	Description
test.htm	This is the default test page opened in Browser view when Mirror Browser is first launched. This page provides blank fields which are used to accept decoded barcode data, display information about the device and reader type, and also set notification for good reading and configure data output format.
testReader.htm	Use this test page to enable/disable the symbologies decoded by the reader. Select the reader type to configure. ▸ For settings to be effective, the selected reader type must match the Reader Type Name shown on the default test page (test.htm).
testRFID.htm	Use this test page to open or close the specific card, read its UID, read/write RFID data, and also set the starting block to read/write and input the data write. Select the RFID card type to work on. ▸ Effective on RFID devices only.

3.6. USE HOTKEYS

Use the following hotkeys on the mobile computer to operate on Browser view.

Hotkey	Description
F1	Opens Home page. Same as tapping the  icon on the toolbar.
F5	Refreshes the page opened in Browser view. Same as tapping the  icon on the toolbar.
F10	Opens the settings window. Same as tapping **Menu** | **Options** | **Settings**.
F11	Maximizes the screen, or quits full screen mode. Same as tapping the  icon on the toolbar, or tapping the  icon on the maximized screen.
Shift + Up	Increases the text size shown in Browser view. Same as selecting a larger text size in Text Size Adjustment.
Shift + Down	Decreases the text size shown in Browser view. Same as selecting a smaller text size in Text Size Adjustment.
Shift + Esc	Shows or hides the on-screen keyboard. Same as tapping the  icon on the maximized screen. ▸ To enabled this hotkey, select **Set HW key (SHIFT+ESC) to control SIP** under **Menu** | **Options** | **Settings** | **Screen**. See Screen Settings.

BROWSE AND COLLECT DATA

This chapter summarizes how to browse web pages and collect data using MIRROR Browser.

4.1. OPEN WEB PAGES

To open a webpage in Browser view:

1) Launch MIRROR Browser as described in Launch MIRROR Browser.

   MIRROR Browser opens in Browser view.

2) Enter the URL of the webpage to visit in the address bar. Press/tap **Enter** key.

OR

Tap the drop-down arrow at the right of the address bar to view the recently visited web pages. Tap the URL of the webpage you would like to open.

3) MIRROR Browser loads and displays the page to visit.

   You can now proceed to collect data.

4.2. COLLECT DATA

After a webpage with a data collecting form opens in Browser view, proceed to collect data:

1) Aim the scanning window at the printed barcode to read.

   OR

   Tap (slightly contact) the scanning window with the RFID tag to read.

2) Press the physical SCAN key (or either one of the side triggers).

   Data is auto-entered.

3) Submit data. Data is then passed to server.

If the scan engine is not working or working abnormally:

Tap **Menu** | **Options** | **Settings** | **Reader** tab page and:

- Make sure the correct scan engine is enabled. Since barcode and RFID tags can be read at the same time, it is recommended that only one scan engine is enabled at a time to prevent misreading.
- Make sure the symbology of the target barcode is enabled.
- Adjust Data Output settings to meet the desired data output format.
- Perform a test scan of the barcode. If test scan results are empty or erroneous, the problem may be with the barcode or RFID tag. Check whether they are defaced, damaged, with poor print quality, etc.

Note: MIRROR Browser allows configuring and activating the scan engine(s) installed on the mobile computer. On the mobile computer, the COM ports assigned to stream decoded data can only be occupied by one application at a time. Avoid running two applications that access reader(s) at the same time, such as running MIRROR Browser and Reader Configuration concurrently.

SETTINGS

As MIRROR Browser aims at web-based data collection, it is equipped with the ability to launch and configure reader module(s) just as Reader Configuration does.

MIRROR Browser provides all its settings under **Menu** | **Option** | **Settings**, grouped on several tab pages. These settings adjust selected browser actions, screen presentation, configure reader(s), and set the symbologies to read.

Note: For different Windows Embedded Compact device models, screen sizes and layout will differ according to the LCD panel resolution of each device.

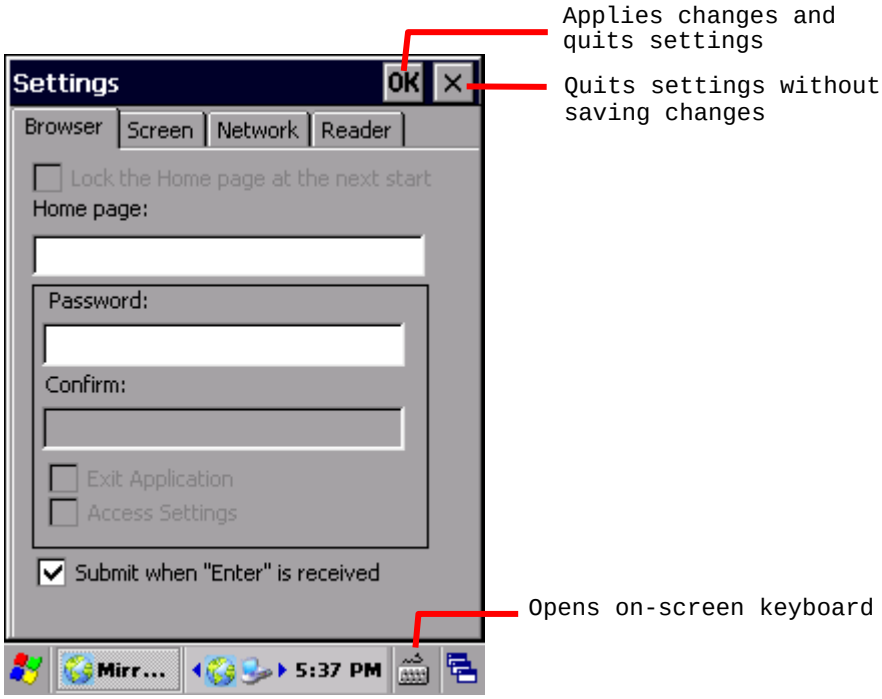
IN THIS CHAPTER

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5.1. OPTION SETTINGS

5.1.1. BROWSER SETTINGS

Browser settings adjust browsing preferences. They modulate how the Browser acts each time it is used. Tap **Menu** | **Option** | **Settings** to open **Browser** tab page.



Featured settings are:

Setting	Description
Lock the Home page at the next start	Makes address bar unavailable upon relaunch of MIRROR Browser. When set, browser will load the assigned home page when MIRROR Browser launches. ▸ This checkbox becomes available when a URL is entered in the "Home page" field. Note: To prevent unexpected user interference with the application, it is suggested to lock down the screen and apply password-protection.
Home page	Sets a home page to load in Browser view the next time MIRROR Browser opens. Enter the URL here.
Password	Puts up password protection against unauthorized access to the settings in **Menu** | **Option** | **Settings**.
Confirm	Enter the password once more for confirmation.
Exit application	Select whether to put up password protection for exiting the application. If this checkbox is selected and a password is entered in the text fields above, you will need to enter the password in order to exit MIRROR

	Browser.
Submit when “Enter” is received	When selected, data on a webpage form is submitted to the server once “Enter” is pressed. ▸ This is selected by default.

When finished with the settings, tap OK to apply changes and quit settings. Tap ✕ to quit settings without saving changes.

If a password is set up for accessing settings, when you tap **Menu** | **Option** | **Settings**, a password confirmation page will open with a blank field for you to enter the password. After entering the password, tap OK to exit the application, or tap ✕ to cancel.

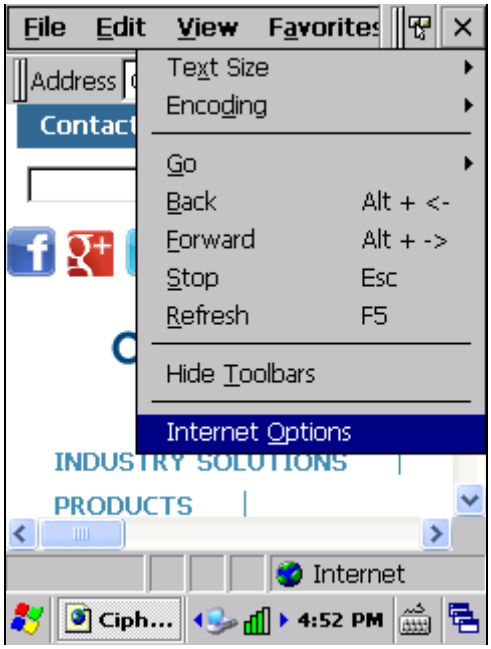
GENERAL BROWSER SETTINGS

Since the Browser is intended to provide a simplified user interface, to adjust general browser settings, you may use Internet Explorer which is inherently installed on the mobile computer.

To access general browser settings:

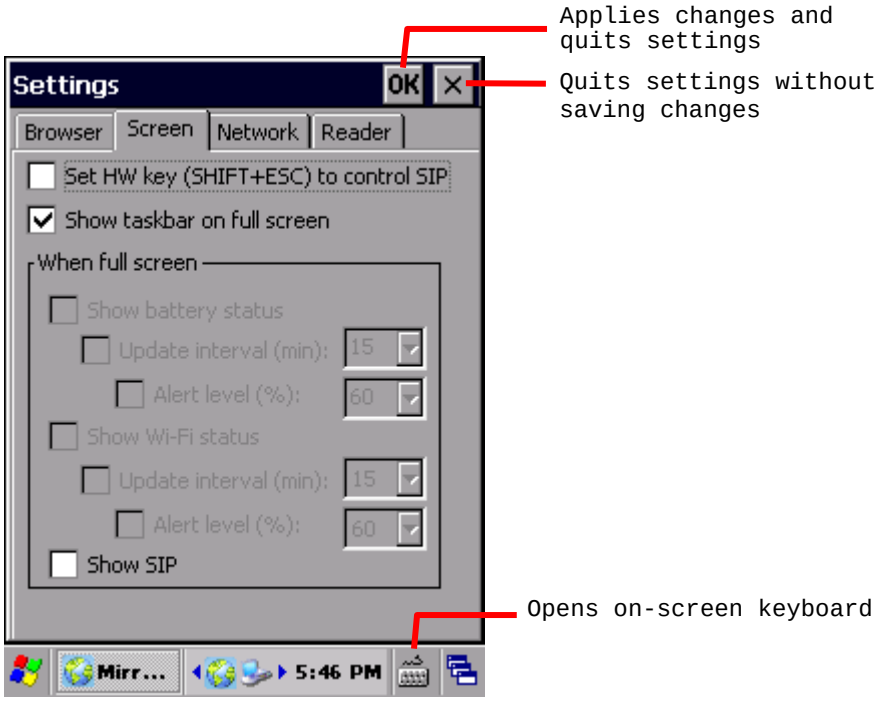
1) Tap **Internet Explorer** on the desktop of the mobile computer.
2) Tap **View** on the toolbar.

   Use the items in the drop-down menu to adjust text size, code page and Internet options if necessary.



5.1.2. SCREEN SETTINGS

Screen settings select the way status information is displayed when Browser full screen mode is activated. Such information can be presented in the form of the taskbar, or as individual status icons for battery level and Wi-Fi signal strength. Tap **Menu** | **Option** | **Settings** | **Screen** to open screen settings.

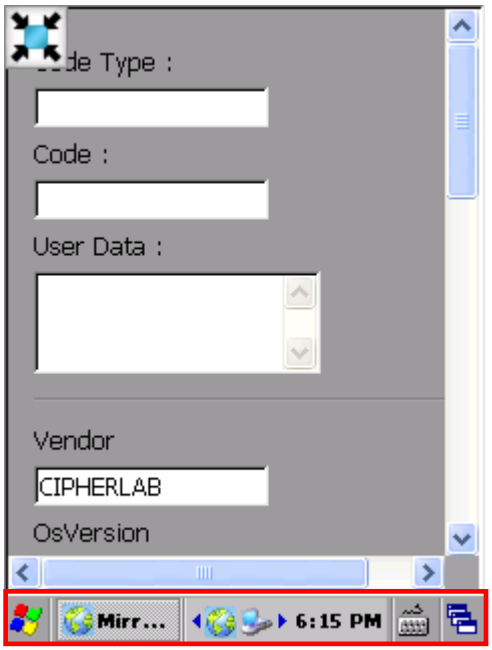


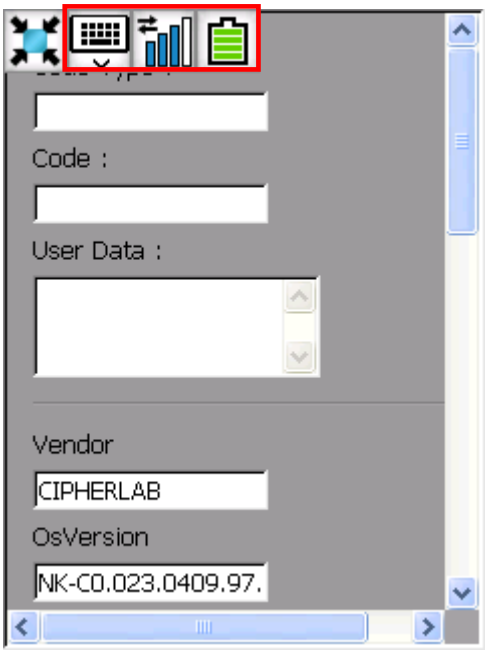
Featured settings are:

Setting	Description
Set HW key (SHIFT+ESC) to control SIP	Sets whether to enable SHIFT+ESC as the hotkey for opening/closing the on-screen keyboard. See Use Hotkeys. ▸ This is disabled by default.
Show taskbar on full screen	Sets whether to display the OS taskbar under full screen mode. The taskbar presents Wi-Fi signal, phone status, volume status, battery level, time information and more. ▸ When this is selected, the "When full screen" group box is automatically disabled and greyed out.
When full screen	This group box sets the items to display under Full Screen Mode, including the battery level icon, Wi-Fi signal strength icon and the SIP icon. The first two icons can be enabled on condition that the taskbar is not enabled. The SIP icon can be enabled regardless of whether the taskbar is shown on full screen.

Setting	Description
Show battery status	Select to enable the battery status icon.  Update Interval (min): Select to define frequency to update battery level. Options are: 1, 3, 5, 15, 30, 60 minutes. Alert Level (%): Select to define threshold for low battery alert to appear (by a pop-up dialog indicating the remaining battery level). Options are: 10, 20, 30, 40, 50, 60, 70, 80, 90%.
Show Wi-Fi status	Select to enable the Wi-Fi status icon.  Update Interval (min): Select to define frequency to update battery level. Options are: 1, 3, 5, 15, 30, 60 minutes. Alert Level (%): Select to define threshold for low Wi-Fi signal alert to appear (by a pop-up dialog indicating the remaining Wi-Fi signal strength). Options are: 10, 20, 30, 40, 50, 60, 70, 80, 90%.
Show SIP	Select to enable the SIP icon. 

When finished with the settings, tap  to apply changes and quit settings. Tap  to quit settings without saving changes.





When “Show taskbar on full screen” is selected, the OS taskbar is retained under full screen mode, thus delivering status information for various items.

- See Actions to take on Full Screen for how to operate icons on the maximized screen.

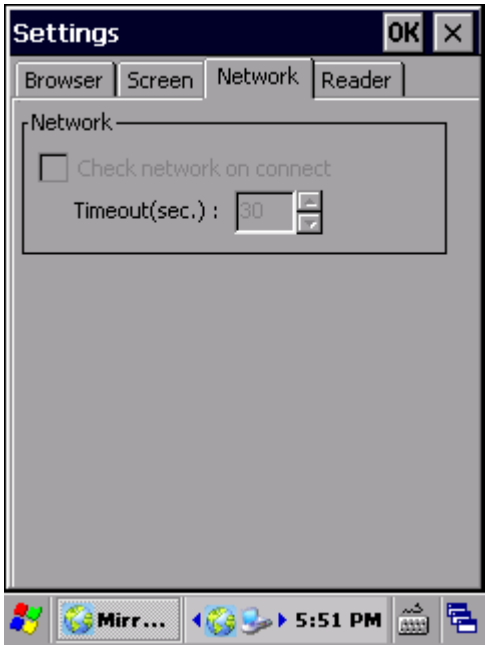
When “Battery Status Item”, “Wi-Fi Status Item” and “Show SIP” ”are selected, icons for battery level, Wi-Fi signal and the on-screen keyboard will appear under full screen mode. The taskbar is automatically hidden.

- See Actions to take on Full Screen for how to operate icons on the maximized screen.

5.1.3. NETWORK SETTINGS

Network settings can check Wi-Fi network connection each time data is requested from the web server.

Note: Network settings are available only after an activation key is entered on the device. See Activate.

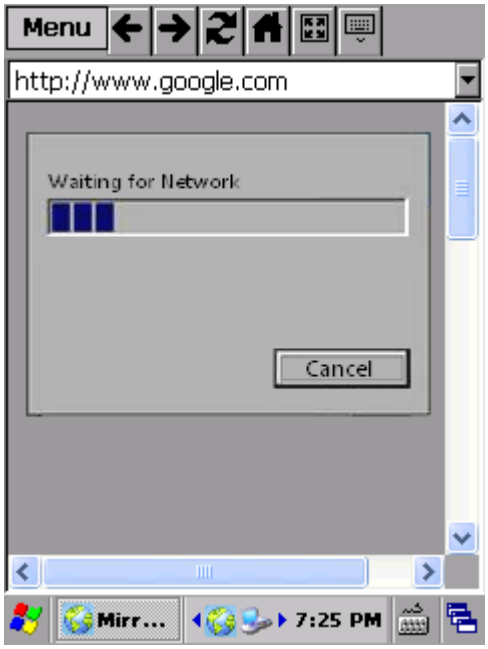


Setting	Description
Network	This group box performs network checking for Wi-Fi connection. Available on activated devices only.

Setting	Description
Check network on connect	Select to enable checking of Wi-Fi connection when data is requested from the web server, for instance, when a new URL is entered in the address bar, or when the web page is refreshed.
Timeout (sec)	Set the timeout period for network checking. The device will stop checking after the set amount of time has passed.

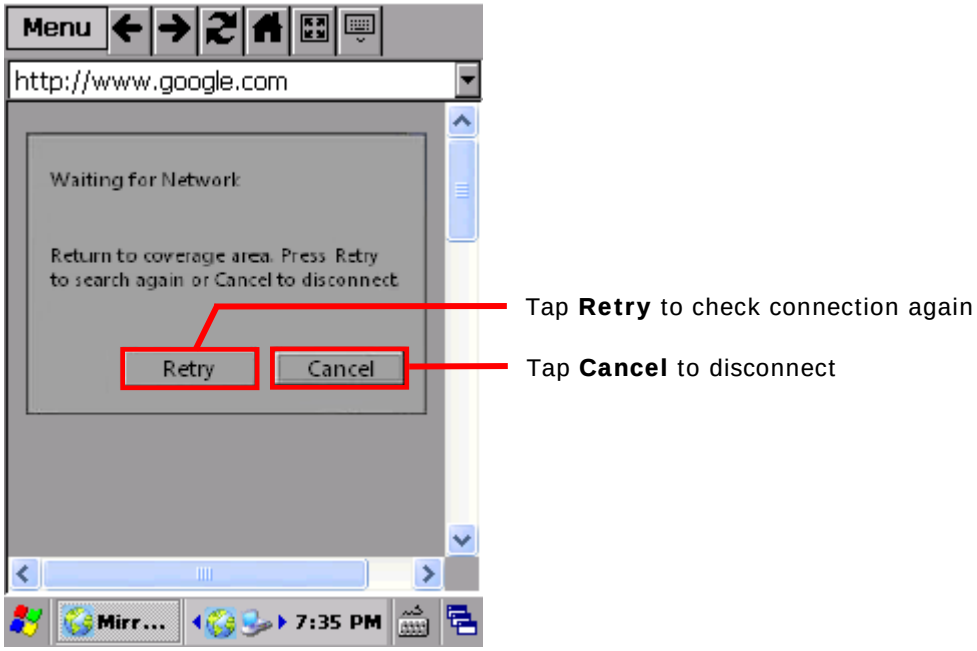
NETWORK CHECK

If network checking is enabled, when Browser view is directed towards a new URL, a "Waiting for Network" window pops up on the screen. The device begins checking for Wi-Fi connection status.



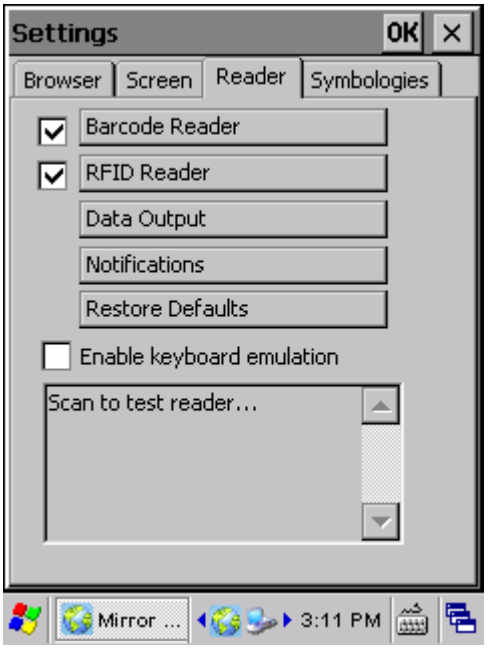
If a successful Wi-Fi connection is detected on the device, the "Waiting for Network" window closes and the target webpage opens in Browser view.

When the timeout period ends and no Wi-Fi connection is established, a notification message appears asking you to return to the Wi-Fi coverage range for better connectivity. Once you have obtained a better Wi-Fi signal, tap **Retry** to test connectivity again.



5.1.4. READER SETTINGS FOR 9300/9600

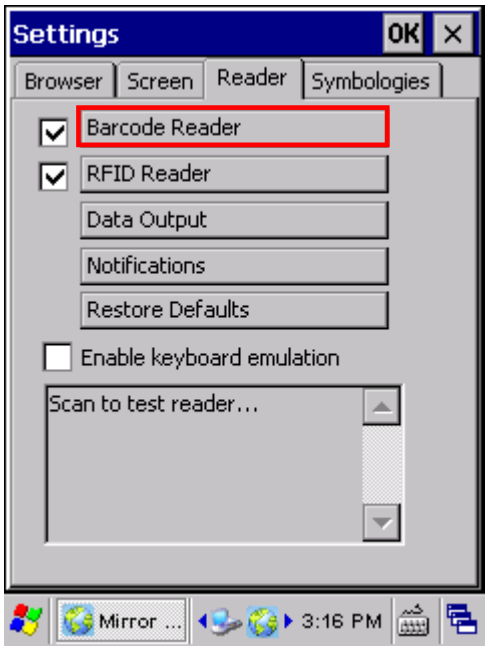
On the 9300/9600 Mobile Computer, tap the **Menu** | **Option** | **Settings** | **Reader** tab page to view options for adjusting the reader. Options provided and layout might differ according to the model type and scan engine integrated on the mobile computer.

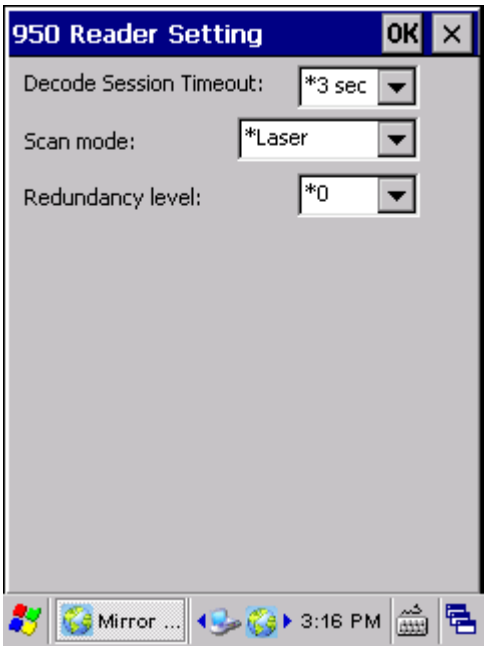


Featured settings are:.

Setting	Facility	Description	Default
Barcode Reader	Check box	Enables/disables 1D (laser) reader or 2D imager.	Selected
	GUI button	Opens a page that sets barcode reading.	--
RFID Reader	Check box	Enables/disables RFID scan engine. ▸ Available only when RFID reader is available	Selected
	GUI button	Opens a page that sets RFID reading. ▸ Available only when RFID reader is available	--
Data Output	GUI button	Opens a page that sets how to output decoded data, i.e. the output format.	--
Notifications	GUI button	Opens a page that sets how to give notice of good read.	--
Restore Defaults	GUI button	Recovers default settings.	--
Enable keyboard emulation	Check box	Treats the decoded data as a typed text for subsequent output to the active application. ▸ Deselected by default, which means data is only read and decoded but isn't output.	Deselected
Scan to test reader…		This is a field to deliver user's test-scanned data including the following: ▸ Printed barcodes: barcode type, barcode data, user defined data ▸ RFID tags: tag type, UID, user defined data	--

BARCODE READER



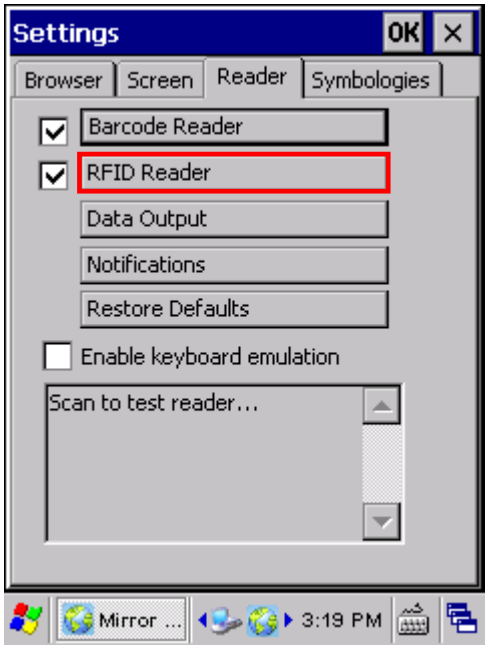


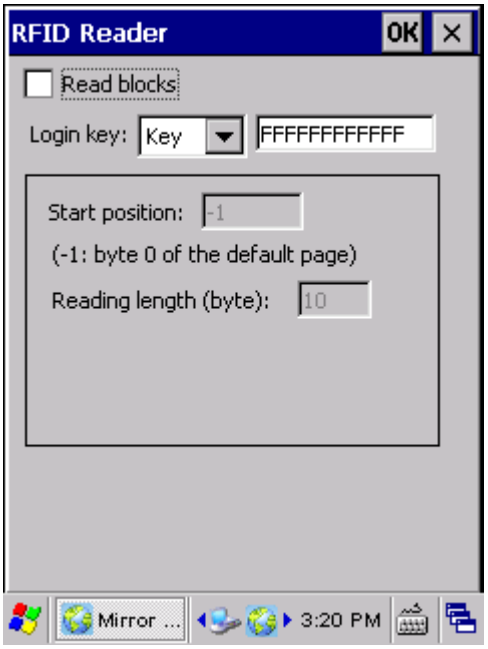
Barcode Reader check box is selected by default, which means the printed barcode reader, either a 1D CCD/laser reader or 2D imager, is enabled. Deselect the check box to disable the barcode reader. This is occasionally needed when an RFID reader coexists on the mobile computer and you only want the RFID tags to be read; by doing so you may prevent printed barcodes from being read and decoded.

Besides a check box to enable/disable the printed barcode reader, **Barcode Reader** also features a settings page to control the 1D (laser) reader or 2D imager on board the mobile computer. Tap **Barcode Reader** button to open **Barcode Reader** settings page. The system will automatically detect the scan engine(s) installed on the mobile computer and display its settings accordingly.

Mobile computer	Refer to
9300	Appendix III: 1D Laser Reader Reader Settings for 9300
	Appendix IV: 2D Imager Reader Settings for 9300
9600	Appendix II: 1D CCD & Laser Reader Reader Settings for 9600
	Appendix IV: 2D Imager Reader Settings for 9600

RFID READER





If an RFID scan engine is present, configurable options will be displayed. Tap **RFID Reader** to open a setting page that tunes RFID reading.

Note: (1) For ID_MOD_MP_RFID module, RFID reader power will be automatically turned off when the read/write operation is completed.
(2) Because it is possible to read a barcode and RFID tag at the same time, it is recommended that only one scan engine is enabled at a time to prevent misreading.

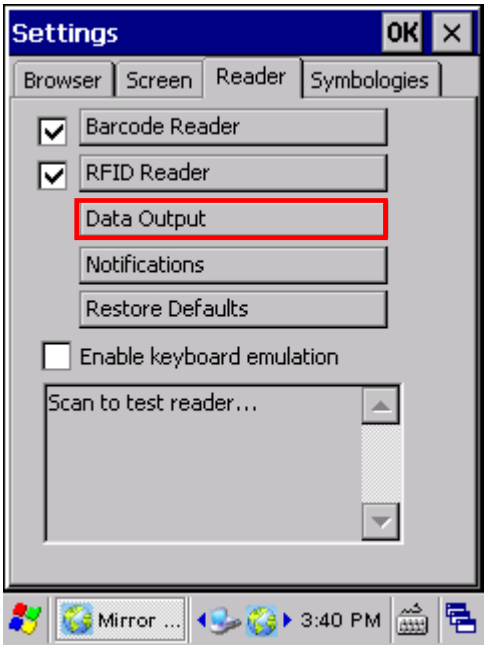
Featured settings are:

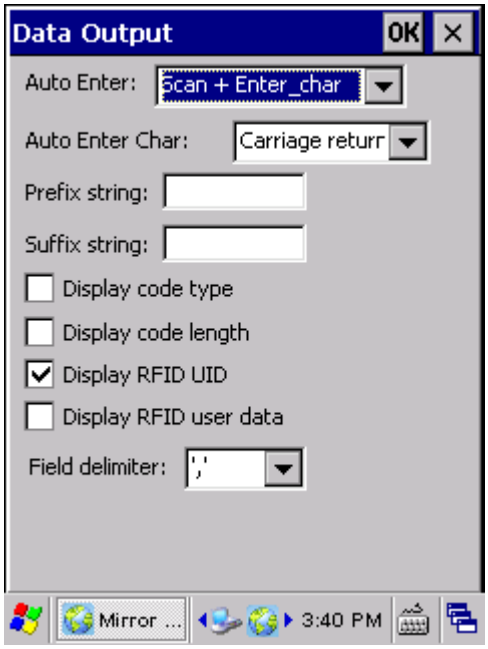
Setting	Description	Default
Read blocks	Select to enable reading data from an RFID tag	Deselected (Disabled)
Login key	RFID tags may support authentication for security concerns, such as Mifare Standard 1K/4K and SLE66R35 tags. The security key, Key A or Key B, is used to access a specific RFID tag. ▸ By default, it is set to use “FFFFFFFFFFFF” for a new Mifare tag, regardless of Key A or Key B. Modify the key string if necessary. It must be a hex string with 12 bytes length.	Key A & FFFFFFFFFFFF
Start position	Define the starting point for reading data from an RFID tag.	-1 (default block, byte 0)
Reading length (byte)	By default, the RFID tag is read from byte 0 of the default page. However, the default page, amount of bytes and number of pages of each tag may be different. Specify how many bytes of data you want to read from the tag.	10

Note: MIRROR Browser supports “reading” RFID tags only. To write data to RFID tags, use **Reader Configuration** instead.

DATA OUTPUT

Data Output sets how to output decoded data. Simply put, it formulates the precise form to present the decoded data.





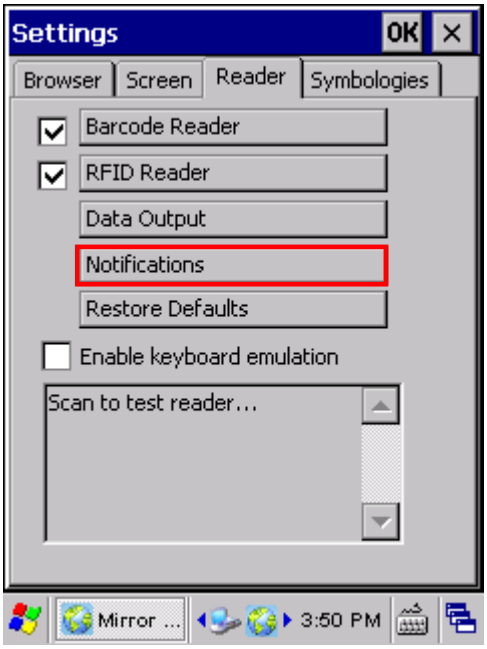
Featured settings are:

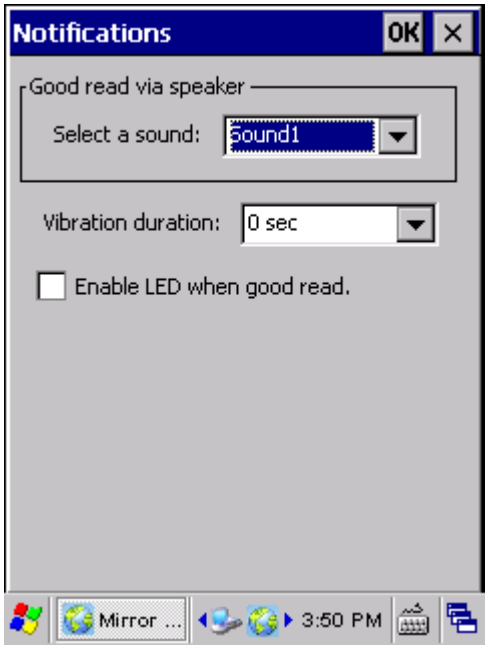
Setting	Description	Default
Auto Enter	Auto-adds an ENTER character before or after each scanning act. This function saves the trouble pressing [Enter] key to confirm each scan. Options are: ▸ None ▸ Scan + Enter_char ▸ Enter_char + Scan	Scan + Enter_char
Auto Enter Char	Adds a character before or after the decoded data. Options are: ▸ None ▸ Carriage Return ▸ Tab ▸ Space ▸ Comma ▸ Semicolon This setting only functions when **Auto Enter** is enabled.	Carriage Return
Prefix string	Affixes 1 to 9 characters to the left of the output data.	--
Suffix string	Affixes 1 to 9 characters to the right of the output data.	--
Display Code Type	Prefixes the output data with code type data.	Deselected (Disabled)
Display Code Length	Suffixes the output data with code length data.	Deselected (Disabled)
Display RFID UID	Outputs the UID of the RFID tag to read.	Selected

	▸ This setting only functions when RFID reader is available	(Enabled)
Display RFID User Data	Outputs the user data of the RFID tag to read. ▸ This setting only functions when RFID reader is available	Deselected (Disabled)
Field Delimiter	Sets the delimiter that separate an output data to pieces — ▸ For printed barcodes: This delimiter separates code type, decoded barcode data, and code length (if code type and code length are applicable.) ▸ For RFID tags: This delimiter separates UID and user data if they are applicable.	‘ , ’ (comma)

NOTIFICATION SETTINGS

Notifications controls how to give notice of successful decoding (good read), whether through audible, visible or tactile feedback.



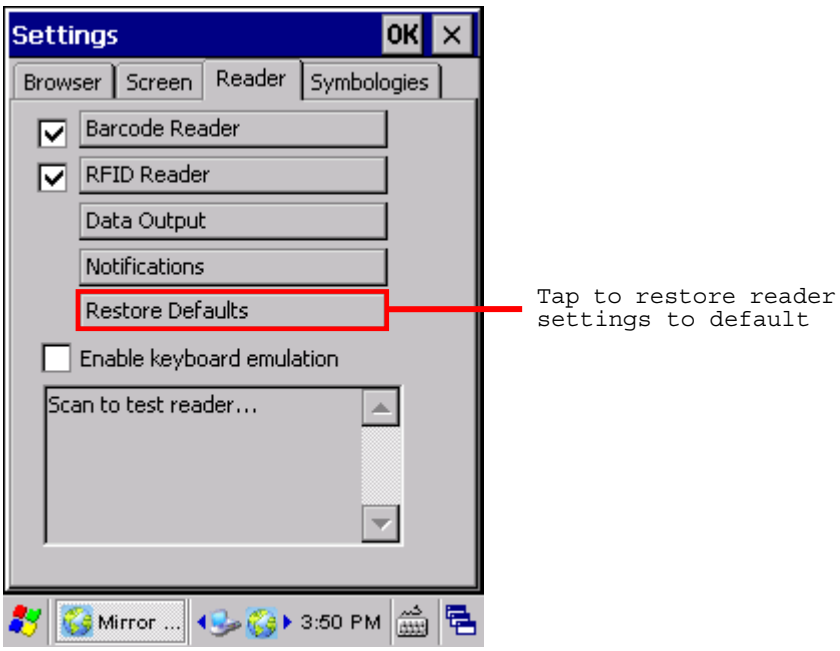


Settings on **Notifications** settings page are detailed as follows:

Setting	Descriptions	Default
Good read via speaker	Enables/disables the speaker to sound for good read. Mute the speaker sound, or configure it between sounds 1 to 9.	Sound 1
Vibration duration	Enables/disables tactile feedback (vibration) for good read and sets duration. Configurable duration is 0 to 5 seconds.	0 sec (=disabled)
Enable LED when good read	Enables/disables the mobile computer's Green LED to light for good read.	Deselected (= disabled)

RESET TO DEFAULT

1) Tap the **Restore Defaults** button if you wish to reload the default settings.



TEST SCAN

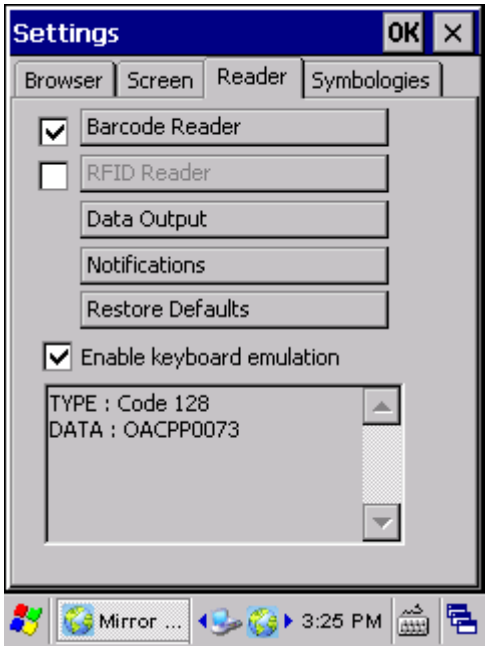
On the Reader tab page, you may perform a test scan of a printed barcode or RFID tag to test reader functionality.

Read a barcode in position

1) Select the **Barcode Reader** checkbox, and tap the **Barcode Reader** button to configure barcode reader settings.

   You may also tap the **Symbologies** tab page and select the symbologies you would like to decode.

2) Press the [SCAN] button to read a barcode in position. The decoded data will be displayed in the data output field at the bottom.

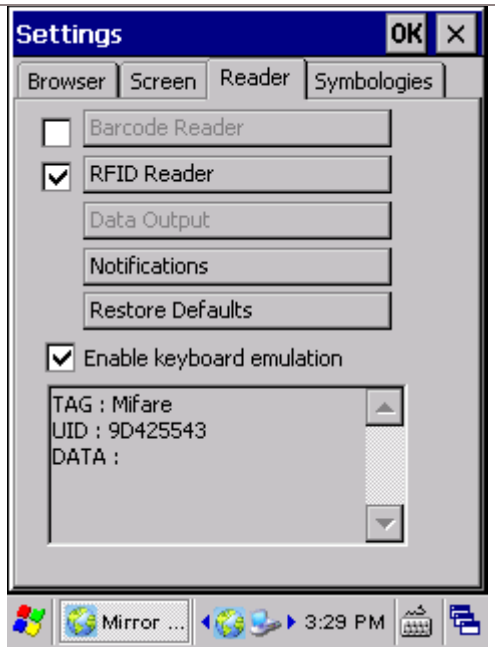


Read an RFID tag in proximity

1) Select the **RFID Reader** checkbox, and tap the **RFID Reader** button to open RFID settings.

   Select “Read” operation and configure associated settings.

2) Press the [SCAN] button to read an RFID tag in proximity. The decoded data will be displayed in the data output field at the bottom.



SYMBOLOGY SETTINGS

Symbologies tab page sets the symbologies to read. This page also enables/disables some feature(s) for a symbology to read such as:

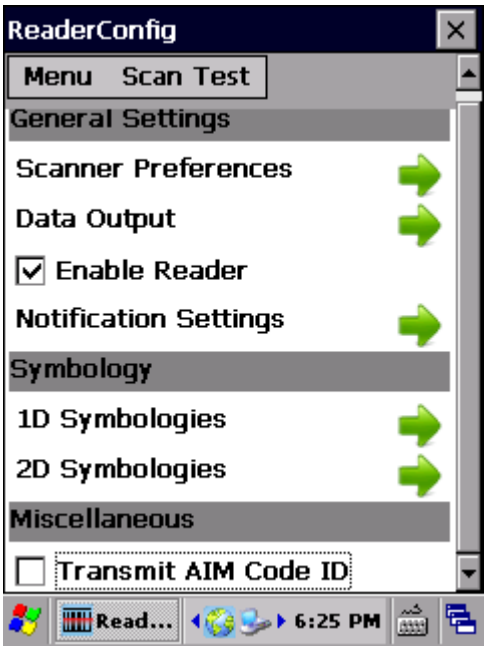
- Customize/transmit start/stop characters
- Verify and transmit check digits
- Enable/disable add-on digits
- Convert to another symbology
- Transmit symbology ID

For details about the featured symbologies, see the following pages:

Device	Refer to
9300	Appendix III: 1D Laser Reader Symbology Settings for 9300
	Appendix IV: 2D Imager Symbology Settings for 9300
9600	Appendix II: 1D CCD & Laser Reader Symbology Settings for 9600
	Appendix IV: 2D Imager Symbology Settings for 9600

5.1.5. READER SETTINGS FOR CP55, CP60, 9700

On CP55, CP60 and 9700 Mobile Computers, tapping the **Menu** | **Option** | **Settings** | **Reader** tab page will open the Reader Configuration utility (same as tapping **Start** | **Settings** | **Control Panel** | **Reader Configuration**). For the settings provided, see the Reference Manual of the specified mobile computer.



Featured settings are:

Setting	Description
Scanner Preferences	Adjusts reader settings for conditions on scanning barcodes.
Data Output	Opens a page that sets how to output decoded data, i.e. the output format.
Enable Reader	Check to enable/disable the 1D (laser) reader or 2D imager.
Notification Settings	Sets how to give notice of a good read.
1D Symbologies	Opens a list of 1D symbologies supported by the reader engine (either 1D or 2D).
2D Symbologies	Opens a list of 1D symbologies supported by the 2D imager.
Transmit AIM Code	Sets whether to include AIM code ID character in the decoded data. See AIM Code ID character.

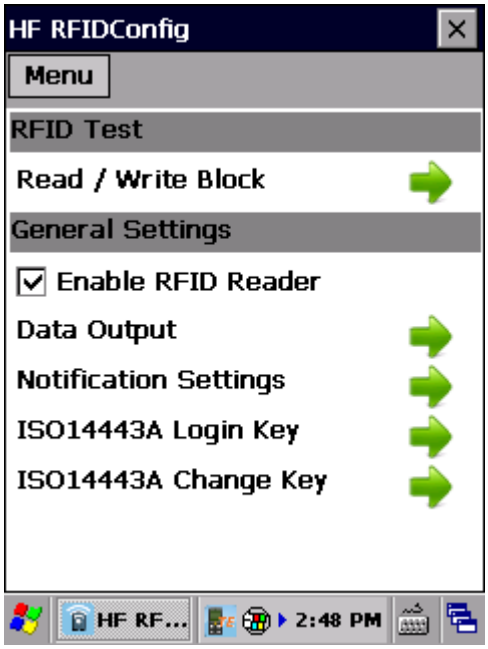
SYMBOLOGY SETTINGS

For details about the featured symbologies, see the following pages:

Device	Refer to
CP55	Appendix II: CCD Linear Imager (SM1) & Laser (950) Symbology Settings for CP55
	Appendix III: 1D Laser & LR Laser Reader Symbology Settings for CP55, CP60, 9700
	Appendix IV: 2D Imager Symbology Settings for CP55, CP60, 9700
CP60	Appendix III: 1D Laser & LR Laser Reader Symbology Settings for CP55, CP60, 9700
	Appendix IV: 2D Imager Symbology Settings for CP55, CP60, 9700
9700	Appendix III: 1D Laser & LR Laser Reader Symbology Settings for CP55, CP60, 9700
	Appendix III: 1D Extended Range Laser Reader Symbology Settings for 9700
	Appendix IV: 2D Imager Symbology Settings for CP55, CP60, 9700
	Appendix IV: Near/Far 2D Imager Symbology Settings for 9700

5.1.6. RFID SETTINGS FOR CP55

If your CP55 mobile computer is equipped with an RFID reader, an **RFID** tab page will be available in the Settings window. Tapping the **Menu** | **Options** | **Settings** | **RFID** tab page will open the HF RFID Configuration utility on the mobile computer (same as tapping **Start** | **Settings** | **Control Panel** | **HF RFID Configuration**). For details on the provided settings, see the CP55 Reference Manual.



Featured settings are:

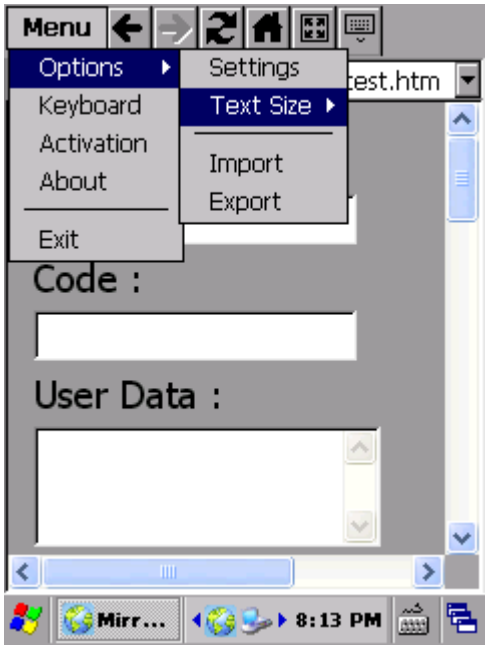
Setting	Description
Read/Write Block	Read data from or write data to an RFID tag.
Data Output	Opens a page that sets how to output decoded data, i.e. the output format.
Enable RFID Reader	Check to enable/disable the RFID reader.
Notification Settings	Sets how to give notice of a good read.
ISO14443A Login Key	Enter the security keys A and B in order to access data blocks on a Mifare tag.
ISO14443A Change Key	Change the security keys A and B for a Mifare tag.

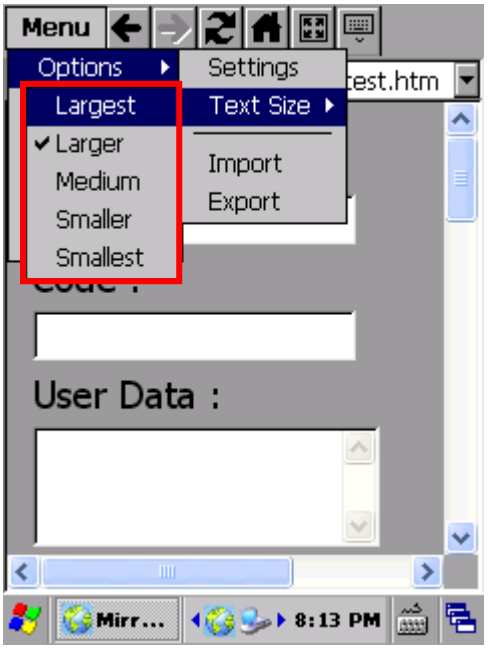
5.2. TEXT SIZE ADJUSTMENT

You may adjust the font size of the webpage text which displays in Browser view. Five different font sizes are available.

To change font size:

1) Tap **Menu** | **Options** | **Text Size** to open a menu that shows five font sizes from large to small. The default font size of Browser view is **Larger**.





2) Tap one of the font sizes in the menu. The text on the webpage opened in Browser view will change to the selected font size.

   You may also change font size in General Browser Settings.

5.3. IMPORT/EXPORT SETTINGS

MIRROR Browser supports importing and exporting settings on **Browser** and **Screen** tab pages as a separate profile (browser_setting.ini).

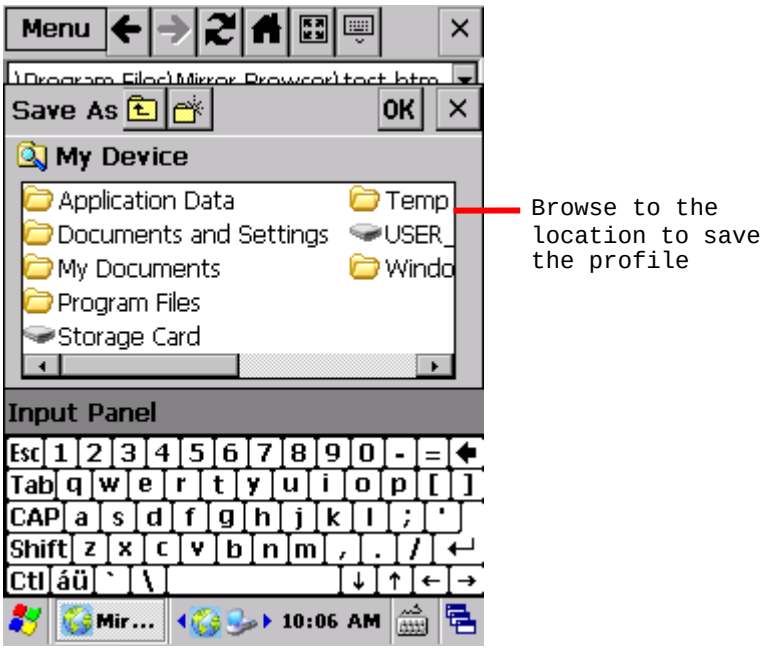
Previously exported profiles can be imported again on the mobile computer. Through exporting and importing profiles, you can save copies of different settings and select when to use them at your ease, or you can copy MIRROR Browser settings on one device and reproduce them on all other devices.

EXPORT SETTINGS

To export browser settings:

1) Tap **Menu** | **Option** | **Export**.

   An export dialog box opens allowing you to enter the name of the profile and select a location to store it.



2) After changing the settings according to your preferences, tap **OK** button to save the settings.

   The profile will be created in the specified destination.

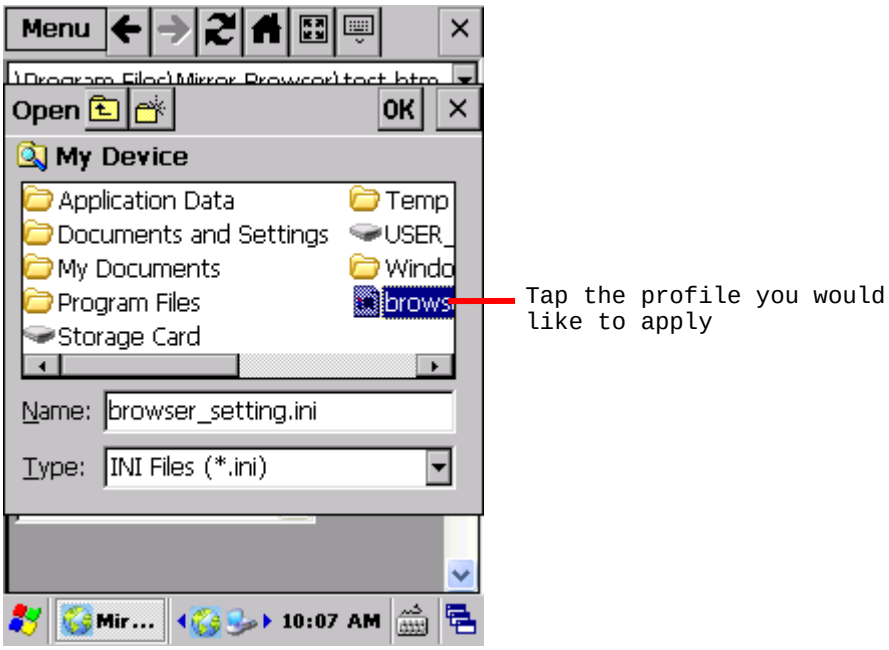
Note: Reader Settings are not included in the exported profile.

IMPORT SETTINGS

To import browser settings:

1) Obtain the profile and place it on your mobile computer (either internal or external storage).
2) On the mobile computer, open MIRROR Browser as described in Launch MIRROR Browser.
3) Tap **Menu** | **Option** | **Import**.

   An import dialog box opens. Browse to and tap the profile you would like to apply.



4) Tap **OK** on the title bar of the dialog box.

   Browser View will re-open with the selected profile applied as browser settings.

5.4. USING ON-SCREEN KEYBOARD

There are several ways to use the on-screen keyboard in Browser view:

Open On-screen Keyboard	Close On-screen Keyboard
Tap the OS keyboard icon on the taskbar (seated at the bottom of the screen), and select **Keyboard** in the pop-up menu.	Tap the OS keyboard icon once more, and select **Hide Input Panel** in the pop-up menu.
Tap the keyboard icon on the toolbar.	Tap the keyboard icon once more.
Tap **Menu** button | **Keyboard**. 	Tap **Menu** button | **Keyboard** once more. 
If Set HW key (SHIFT+ESC) to control SIP is selected under **Screen** Settings, press Shift + Esc to open the on-screen keyboard.	If Set HW key (SHIFT+ESC) to control SIP is selected under **Screen** Settings, press Shift + Esc to close the on-screen keyboard.
When Browser view is switched to full screen mode, double tap the SIP icon to open the on-screen keyboard. ▸ Show SIP must be selected for the SIP icon to be displayed on the maximized screen.	When Browser view is switched to full screen mode, double tap the SIP icon to close the on-screen keyboard. ▸ Show SIP must be selected for the SIP icon to be displayed on the maximized screen.

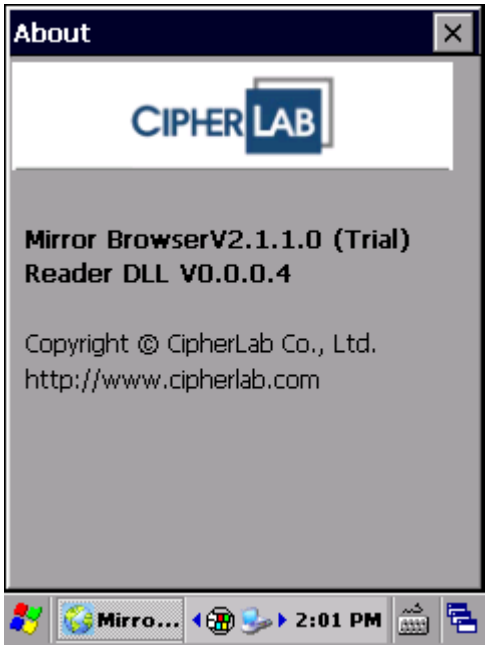
Note: When the home screen is locked as in Lock the Home page at the next start, the OS keyboard icon will become inaccessible. Use the other methods to open the on-screen keyboard.

5.5. ABOUT

To view software version and copyright information:

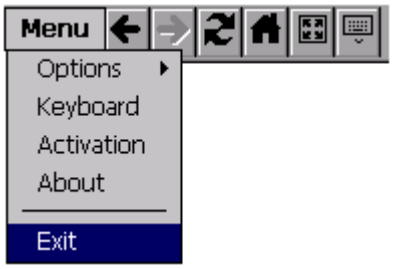
1) Open MIRROR Browser as described in Launch MIRROR Browser.
2) Tap **Menu** | **About**.

   Information about the software will be displayed on the screen.



5.6. EXIT APPLICATION

To exit MIRROR Browser, tap **Menu** | **Exit**.

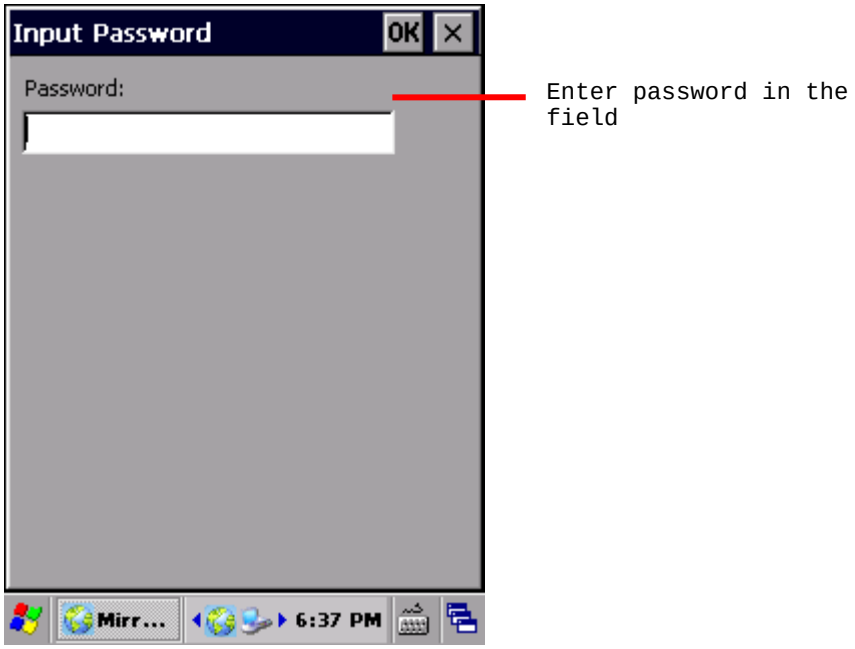


OR

On the taskbar, tap the MIRROR Browser icon, and select **Exit** in the pop-up menu.



If a password is set up for exiting the application in Browse, a password inquiry page will open showing a blank field to enter the password. Tap OK after you have entered the password to exit the application, or tap ✕ to cancel and return to the previous screen.



DEVELOP YOUR HTML DOCUMENT

This chapter introduces the scripts to be embedded in your HTML document to load on the mobile computer, a client device. The embedded script links to the data collecting form consigned with decoded data from the decoder. “Scripts” are actually “programs” that execute when a HTML document is loaded.

A series of APIs that retrieve system information and reader information are also provided in this chapter to help you develop your own HTML document.

IN THIS CHAPTER

6.1 Data Collecting Script & Form 58
6.2 JavaScript APIs..... 59

6.1. DATA COLLECTING SCRIPT & FORM

The script is a data collecting script that comes with a data collecting form. Together they receive the decoded data coming from the decoder and scan engines.

The data collecting script and form are provided in the sample page “test.htm”. To use the script & form:

1) Browse to where MIRROR Browser is installed on the mobile computer.

   If you haven’t selected an alternate location, MIRROR Browser is installed to the device’s internal storage at **My Device\Program Files\Mirror Browser**.

2) Locate test.htm. Open it with a text editor.

   The data collecting script is enclosed by the tags <SCRIPT> and </SCRIPT>, followed by a data collecting form enclosed in <table> and </table> tags.

3) Copy and paste the said script and form to your HTML document.

   The script and form will then work with the active scan engine(s) on the mobile computer to collect data. The following section How Data Collection Works on HTML Doc will explain how they work together.

   Note this script relies on the physical SCAN key (or side triggers) to take action.

6.1.1. HOW DATA COLLECTION WORKS ON HTML DOC

The following text explains how data collection works on an HTML document, through the example of reading printed barcodes:

Once the physical Scan key (or side trigger key) is pressed, the scanning light beams and a barcode is read.

- If decoding succeeds, function **onScanBarcode()** or **onScanRFID()** in the script is invoked, and decoded data is passed to the arguments of **onScanBarcode()**or **onScanRFID()**.
- If decoding fails, function **onScanBarcodeError()** or **onScanRfidError()** in the script is invoked, and the error code is passed to **onScanBarcodeError()** or **onScanRfidError()**.

Note: All the functions invoked by the Browser are JavaScript functions, and their function names are case-sensitive.

6.2. JAVASCRIPT APIS

The JavaScript APIs herein enable your HTML document to retrieve system information and control reader module(s), speaker and vibrator.

Note all browser-triggered functions are JavaScript functions, and function names are case-sensitive.

6.2.1. SYSTEM INFORMATION

getManufactureDate	
Purpose	Gets mobile computer manufacturing date.
Syntax	Result = window.external.getManufactureDate()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	y=window.external.getManufactureDate();
	alert(y);
	}
	</SCRIPT>
	</BODY>
	</HTML>

Remarks	The result is a string that delivers manufacturing date. ▸ This information is identical to the one displayed under **Start** | **Settings** | **Control Panel** | **Device Information** on the mobile computer. On CP55/CP60/9700, tap **Start** | **Settings** | **Control Panel** | **System Information** – Manufacture Info.

getOsVersion	
Purpose	Gets OS version information
Syntax	Result = window.external.getOsVersion()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	y=window.external.getOsVersion();
	alert(y);
	}
	</SCRIPT>
	</BODY>
	</HTML>

Remarks	The result is a string that delivers OS image version. ▸ The resulted information is exactly as displayed under **Start** | **Settings** | **Control Panel** | **Device Information** - OS Version/Software Version. On CP55/CP60/9700, tap **Start** | **Settings** | **Control Panel** | **System Information** – Version.

getSerialNumber

Purpose	Gets device serial number.
Syntax	Result = window.external.getSerialNumber()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	y=window.external.getSerialNumber();
	alert(y);
	}
	</SCRIPT>
	</BODY>
	</HTML>

Remarks	The result is a string of device serial number. ▸ This information is exactly as delivered under **Start** | **Settings** | **Control Panel** | **Device Information** | **Serial Number.** On CP55/CP60/9700, tap **Start** | **Settings** | **Control Panel** | **System Information** - Manufacture Info - Shipping Number.

getVendor

Purpose	Gets device manufacturer info.
Syntax	Result = window.external.getVendor()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	y=window.external.getVendor();
	alert(y);
	}
	</SCRIPT>
	</BODY>
	</HTML>

Remarks	The result is a string of device manufacturer name (="CIPHERLAB"). ▸ This information is exactly as delivered under **Start** | **Settings** | **Control Panel** | **Device Information** - Manufacturer. On CP55/CP60/9700, tap **Start** | **Settings** | **Control Panel** | **System Information** - Manufacture Info - Manufacturer.

getWiFiStatus

Purpose	Gets Wi-Fi status.

Syntax	Result = window.external.GetWiFiStatus()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	y=window.external.GetWiFiStatus();
	alert(y);
	}
	</SCRIPT>
	</BODY>
	</HTML>

Remarks	The result is the Wi-Fi signal status, expressed as a value between 0 and 100. The higher the value, the greater the signal strength.

getPowerStatus

Purpose	Gets power status.
Syntax	Result = window.external.GetPowerStatus()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	y=window.external.GetPowerStatus();
	alert(y);
	}
	</SCRIPT>
	</BODY>
	</HTML>

Remarks	The result is the remaining battery capacity, expressed as a value between 0 and 100. The higher the value, the more the remaining battery capacity. .

6.2.2. SYMBOLOGY

enableSymbology

Purpose	Enables symbology by name.
Syntax	window.external.enableSymbology (*name*, *enable*)
Parameters	*name* Symbology key. Refer to the Symbology Key Table. *enable* [in] Integer to enable/disable the symbology.

True	Enable the symbology
False	Disable the symbology

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
    Var name = ‘Codabar’
    Var enabled = true;
    window.external.EnableSymbology(name, enable);
…
</SCRIPT>
</BODY>
</HTML>
```

IsSymbologyEnabled

Purpose	Gets status of symbology by name.
Syntax	window.external.enableSymbology (*name*)
Parameters	*name* Symbology key. Refer to the Symbology Key Table.

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
    Var name = ‘Codabar’
    Var enable = window.external.IsSymbologyEnabled(name);
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value — If successful, it returns a string to indicate symbology status:

True	Symbology is enabled
False	Symbology is disabled

SYMBOLOGY KEY TABLE

The table below lists which symbologies can be configured using Javascript APIs on each type of reader. Refer to Scan Engine Settings to see which types of readers are available on each device.

1D Symbologies		1D Reader				2D Imager		
Symbology	API key	SM1	S955	SE965	SE1524	SE4500	PL4507	EX25
Codabar	Codabar	✓	✓	✓	✓	✓	✓	✓
Code11	Code11	✗	✓	✓	✗	✓	✓	✓
Code39	Code39	✓	✓	✓	✓	✓	✓	✓
Code93	Code93	✓	✓	✓	✓	✓	✓	✓
Code128	Code128	✓	✓	✓	✓	✓	✓	✓
	GS1128	✓	✓	✓	✓	✓	✓	✗
	ISBT128	✓	✓	✓	✓	✓	✓	✓
Code 2 of 5	Chinese25	✗	✓	✓	✗	✓	✓	✗
	Discrete25	✓	✓	✓	✓	✓	✓	✓
	Interleaved25	✓	✓	✓	✓	✓	✓	✓
	Matrix25	✗	✗	✗	✗	✓	✓	✓
Composite	CompositeCCAB	✗	✗	✗	✗	✓	✓	✓
	CompositeCCC	✗	✗	✗	✗	✓	✓	✓
	CompositeTLC39	✗	✗	✗	✗	✓	✓	✗
GS1 DataBar	GS1DataBar14	✓	✓	✓	✓	✓	✓	✓
	GS1DataBarLimited	✓	✓	✓	✓	✓	✓	✓
	GS1DataBarExpanded	✓	✓	✓	✓	✓	✓	✓
Korean 3 of 5	Korean3of5	✗	✗	✗	✗	✓	✓	✗
MSI	MSI	✓	✓	✓	✓	✓	✓	✓
Postal Code	AustralianPostal	✗	✗	✗	✗	✓	✓	✓

	JapanPostal	✘	✘	✘	✘	✓	✓	✓
	NetherlandKIXCode	✘	✘	✘	✘	✓	✓	✓
	USPostnet	✘	✘	✘	✘	✓	✓	✓
	USPlanet	✘	✘	✘	✘	✓	✓	✓
	UKPostal	✘	✘	✘	✘	✓	✓	✘
UPC/EAN	Ean8	✓	✓	✓	✓	✓	✓	✓
	Ean13	✓	✓	✓	✓	✓	✓	✓
	UPCA	✓	✓	✓	✓	✓	✓	✓
	UPCE	✓	✓	✓	✓	✓	✓	✓
	UPCE1	✓	✓	✓	✓	✓	✓	✓
2D Symbologies		**1D Reader**				**2D Imager**		
API key		**SM1**	**S955**	**SE965**	**SE1524**	**SE4500**	**PL4507**	**EX25**
Aztec		✘	✘	✘	✘	✓	✓	✓
DataMatrix		✘	✘	✘	✘	✓	✓	✓
Maxicode		✘	✘	✘	✘	✓	✓	✓
MicroPDF417		✘	✘	✘	✘	✓	✓	✓
MicroQR		✘	✘	✘	✘	✓	✓	✘
PDF417		✘	✘	✘	✘	✓	✓	✓
QRCode		✘	✘	✘	✘	✓	✓	✓

6.2.3. READER

GetReaderType	
Purpose	Gets the reader type on the device.
Syntax	window.external.GetReaderType()
Parameters	None

Example	<HTML>
	<BODY onload=”test()”>
	<SCRIPT>
	function test() {
	window.external.GetReaderType();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Remarks	Refer to the Programming Guide of each specific device for details on reader types.

GetBcReaderType	
Purpose	Gets the barcode reader type on the device.
Syntax	window.external.GetBcReaderType()
Parameters	None

Example	<HTML>
	<BODY onload=”test()”>
	<SCRIPT>
	function test() {
	window.external.GetBcReaderType();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Remarks	Refer to the Programming Guide of each specific device for details on reader types.

GetRFIDReaderType	
Purpose	Gets the RFID reader type on the device.
Syntax	window.external.GetRFIDReaderType()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	window.external.GetRFIDReaderType();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Remarks	Refer to the Programming Guide of each specific device for details on reader types.

GetReaderTypeName

Purpose	Gets the name of the reader type on the device.
Syntax	window.external.GetReaderTypeName()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	window.external.GetReaderTypeName();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Return Value	If successful, it returns a string to indicate the reader type name:

SE955E
SE955I
SE4500
SE965
SE4500+PL4507
Intermec EX25
SE1524
SM1
SE950
SE4407
SE4507
RFID

GetActiveDevice

Purpose	Gets the active reader type(s).
Syntax	window.external.GetActiveDevice()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	window.external.GetActiveDevice();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Return Value	If successful, it returns a value to indicate the active reader type(s):

0	No Active Device
7	Barcode Reader
32	RFID Reader
255	All devices

GetActiveDeviceName

Purpose	Gets the name of the active reader type(s).
Syntax	window.external.GetActiveDeviceName()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	window.external.GetActiveDeviceName();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Return Value	If successful, it returns a string to indicate the active reader type(s):

Barcode
RFID
Barcode, RFID
none

enableBarcodeScanner

Purpose	Enables barcode reader.
Syntax	window.external.enableBarcodeScanner (*enable*)
Parameters	*enable* [in] Integer to turn on/off barcode reader.

True	Turns on barcode reader
False	Turns off barcode reader

Example

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test() {
   window.external.enableBarcodeScanner(true);    // enable the
scanner
}
…
</SCRIPT>
</BODY>
</HTML>
```

IsBarcodeScannerEnabled

Purpose	Gets barcode reader status.
Syntax	window.external.IsBarcodeScannerEnabled ()
Parameters	None

Example

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test() {
   window.external.IsBarcodeScannerEnabled();
}
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value: If successful, it returns a string to indicate barcode reader status:

True	Barcode reader is on
False	Barcode reader is off

enableRFIDScanner

Purpose	Manipulates RFID reader.
Syntax	window.external.enableRFIDScanner (*enable*)
Parameters	*enable* [in] Integer that determines whether to turn on RFID reader or not.

True	Enables
False	Disables

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test() {
   window.external.enableRFIDScanner(true);        // enable the RFID scanner
}
…
</SCRIPT>
</HTML>
```

IsRFIDScannerEnabled

Purpose: Gets RFID reader status.

Syntax: window.external.IsRFIDScannerEnabled ()

Parameters: None

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test() {
   window.external.IsRFIDScannerEnabled();
}
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value: If successful, it returns a string to indicate RFID reader status:

True	RFID reader is on
False	RFID reader is off

ReadFromDevice

Purpose: Reads the symbologies from the device.

Syntax: window.external.ReadFromDevice()

Parameters: None

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test() {
   window.external.ReadFromDevice();
}
…
</SCRIPT>
</BODY>
</HTML>
```

WriteToDevice

Purpose	Writes the symbologies to the device.
Syntax	window.external.WriteToDevice()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	window.external.WriteToDevice();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Remarks	If EnableAutoWriteToDevice is set as "false", use this function to have reader settings written to the device when finished calling all other functions.

EnableAutoReadFromDevice

Purpose	Enables auto reading of symbologies from the device.
Syntax	window.external.EnableAutoReadFromDevice (*enable*)
Parameter	A default value comes with an asterisk "*". *enable* [in] Integer to turn on/off auto reading of symbologies from the device.

True	Enables auto read
False*	Disables auto read

Example

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test() {
   window.external.EnableAutoReadFromDevice(true);     // enable
auto read
}
…
</SCRIPT>
</BODY>
</HTML>
```

IsAutoReadFromDeviceEnabled

Purpose	Gets auto read status (auto reading of symbologies from the device).
Syntax	window.external.IsAutoReadFromDeviceEnabled()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	window.external.IsAutoReadFromDeviceEnabled();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Return Value	If successful, it returns a string to indicate auto read status:

True	Auto read is on
False	Auto read is off

EnableAutoWriteToDevice

Purpose	Enables auto writing of symbologies to the device.
Syntax	window.external.EnableAutoWriteToDevice (*enable*)
Parameter	*enable* [in] Integer to turn on/off auto writing of symbologies to the device.

True	Enables auto write
False	Disables auto write

Example

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test() {
   window.external.EnableAutoWriteToDevice(true);        // enable
auto write
}
…
</SCRIPT>
</BODY>
</HTML>
```

Remarks

- If only a few reader functions are called, it is recommended to set this function as "true". When each function is called, settings will be written to the device automatically.
- If more than several APIs are called (for instance, more than 10), it is recommended to set this function as "false"; instead, when finished calling all functions, call WriteToDevice to have the settings written to the device.

IsAutoWriteToDeviceEnabled

Purpose	Gets auto write status (auto writing of symbologies to the device).
Syntax	window.external.IsAutoWriteToDeviceEnabled()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	window.external.IsAutoWriteToDeviceEnabled();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Return Value	If successful, it returns a string to indicate auto write status:

True	Auto write is on
False	Auto write is off

onScanBarcode

Purpose	Decodes a barcode.
Syntax	function onScanBarcode(*codeType*, *code*)
Parameters	*codeType*, *code* [in] The decoded code type and barcode will be passed to the arguments. The argument codeType is a hex string of fixed length (= 2 characters). As per symbologies supported on the scan engine, code types are listed below:

Scan engine: 1D CCD/Laser or 2D Imager

Code Type	Symbology
'40'	ISBT 128
'41'	Code 39
'42'	Italian Pharmacode (Code 32)
'43'	French Pharmacode (CIP 39)
'44'	Industrial 25
'45'	Interleaved 25
'46'	Matrix 25
'47'	Codabar (NW7)
'48'	Code 93
'49'	Code 128
'4A'	UPC-E0
'4B'	UPC-E0 with Addon 2
'4C'	UPC-E0 with Addon 5

'4D'	EAN-8
'4E'	EAN-8 with Addon 2
'4F'	EAN-8 with Addon 5
'50'	EAN-13 (also UPC-A on CCD/Laser scan engine)
'51'	EAN-13 with Addon 2
'52'	EAN-13 with Addon 5
'53'	MSI
'54'	Plessey
'55'	GS1-128 (EAN-128)
'56'	Undefined
'57'	Undefined
'58'	Undefined
'59'	Undefined
'5A'	Telepen
'5B'	GS1 DataBar Omnidirectional (RSS-14)
'5C'	GS1 DataBar Limited (RSS Limited)
'5D'	GS1 DataBar Expanded (RSS Expanded)
'5E'	UPC-A
'5F'	UPC-A with Addon 2
'60'	UPC-A with Addon 5
'61'	UPC-E1
'62'	UPC-E1 with Addon 2
'63'	UPC-E1 with Addon 5
'64'	TLC 39 (TCIF Linked Code 39)
'65'	Trioptic (Code 39)
'66'	Bookland (EAN)
'67'	Code 11
'68'	Code 39 Full ASCII
'69'	IATA[Note] (Code 25 used on flight tickets)
'6A'	Industrial 25 (Discrete 25)
'6B'	PDF417
'6C'	MicroPDF417
'6D'	Data Matrix
'6E'	Maxicode
'6F'	QR Code
'70'	US Postnet

'71'	US Planet
'72'	UK Postal
'73'	Japan Postal
'74'	Australian Postal
'75'	Dutch Postal
'76'	Composite Code
'77'	Macro PDF
'78'	Coupon Code
'79'	Chinese 25
'7A'	Aztec
'7B'	MicroQR
'7C'	USPS 4CB / One Code / Intelligent Mail
'7D'	UPU FICS Postal
'7E'	Macro MicroPDF417

Example

```
<HTML>
<SCRIPT>
function onScanBarcode(codeType, code) {
if(codeType == '41') {
       t1.value = "Code 39";
       t2.value = code;
       t3.value = "";
   }
   else if(codeType == '47') {
       t1.value = "Codabar (NW7)";
       t2.value = code;
       t3.value = "";
   }
}
</SCRIPT>
</HTML>
```

Remarks

Once a barcode reading succeeds, the HTML document invokes this function.

onScanRFID

Purpose	Decodes an RFID tag.
Syntax	function onScanRFID (*codeType*, *code*, *userData*)
Parameters	*codeType*, *code*, *userData* [in] The decoded code type (= tag type), code (= UID) and user data will be passed to the arguments. The tag types are listed below:

Tag Type	RFID Tag / Standard
'I'	Icode
'M'	Mifare Ultralight ISO 14443A
'S'	SR176
'T'	Tagit
'V'	ISO 15693
'Z'	ISO 14443B

Example

```
<HTML>
<SCRIPT>
function onScanRFID(codeType, code, userData) {
    switch(codeType) {
    case 'I':
        t1.value = "Icode";
        t2.value = code;
        t3.value = userData;
        break;
    default:
        t1.value = codeType;
        t2.value = code;
        t3.value = userData;
        break;
    }
}
…
</SCRIPT>
</HTML>
```

Remarks: When RFID reading succeeds, Browser invokes this function.

playSound

Purpose: Sounds a .wav file.

Syntax: window.external.playSound (*soundIdx*, *path*)

Parameters:

soundIdx

[in] An integer that specifies which .wav file to sound:

0	Mutes
1~9	Sounds .wav file 1 ~ 9
-1	Sounds user-defined .wav file

path

[in] A string that specifies the file path if "-1" is specified in the first parameter.

Example:

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test() {
   window.external.playSound(1, ' ');
}
…
</SCRIPT>
</BODY>
</HTML>
```

Remarks: This function sounds a .wav file.

- Embedded are 9 .wav files to be selected by the index number passed to parameter soundIdx.
- Play your own .wav file by passing "-1" to parameter soundIdx and assigning the file path in the second parameter.

startVibration

Purpose: Controls the built-in vibrator.

Syntax: window.external.startVibration (*enable*)

Parameters:

enable

[in] An integer that specifies if to turn on vibrator and how long it vibrates.

0	Turns off
Non-zero	Turns on and vibrates for the specified time, by unit of second.

Example:

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test() {
   window.external.startVibration(1);     // to vibrate for 1 second
}
…
</SCRIPT>
</BODY>
</HTML>
```

EnableKeyboardEmulation

Purpose	Enable keyboard emulation on the device.
Syntax	window.external.EnableKeyboardEmulation (*enable*)
Parameters	*enable* [in] Integer to turn on/off keyboard emulation.

True	Turns on keyboard emulation
False	Turns off keyboard emulation

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test() {
   window.external.EnableKeyboardEmulation(true);        // enable keyboard emulation
}
…
</SCRIPT>
</BODY>
</HTML>
```

Remarks: To collect barcode or RFID data in the data collecting script, this function must be set as “true”. However, if Javascript APIs are used to collect barcode or RFID data, this function must be set as “false”.

IsKeyboardEmulationEnabled

Purpose	Gets keyboard emulation status.
Syntax	window.external.IsKeyboardEmulationEnabled()
Parameters	None

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test() {
   window.external.IsKeyboardEmulationEnabled();
}
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value: If successful, it returns a string to indicate keyboard emulation status:

True	Keyboard emulation is on
False	Keyboard emulation is off

SetPrefixCode	
Purpose	Sets the prefix code.
Syntax	window.external.SetPrefixCode (*sCode*)
Parameters	*sCode* [in] An integer that specifies the prefix code to add to the left of the decoded data.

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	window.external.SetPrefixCode(XYZ[);
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

GetPrefixCode	
Purpose	Gets the prefix code.
Syntax	window.external.GetPrefixCode()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test() {
	window.external.GetPrefixCode();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

SetSuffixCode	
Purpose	Sets the suffix code.
Syntax	window.external.SetSuffixCode (*sCode*)
Parameters	*sCode* [in] An integer that specifies the suffix code to add to the right of the decoded data.

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test() {
   window.external.SetSuffixCode(XYZ[);
}
…
</SCRIPT>
</BODY>
</HTML>
```

GetSuffixCode

Purpose	Gets the suffix code.
Syntax	window.external.GetSuffixCode()
Parameters	None

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test() {
   window.external.GetSuffixCode();
}
…
</SCRIPT>
</BODY>
</HTML>
```

6.2.4. RFID READER

ReadRfidData

Purpose

Reads RFID data by tapping a GUI button (without intercepting WM_DECODEDATA).

Syntax

window.external.ReadRfidData (nType, nStartBlock, nReadLen, nTimeout, sLoginKey, nLoginKeyType)

Parameters

nType

A value that specifies which data to read (UID or encoded data).

Name	Value
READ_UID	1
READ_DATA	2

nStartBlock

A value that specifies the byte or block to start reading data from.

-1 Means to start reading from the default block (of an RFID tag).

Tabulated below is a number of RFID tags' default block to start reading data from:

Tag Type	Standard	Default Start Block
Mifare	(ISO 14443A)	**4**
SR176	(ISO 14443B)	**4**
ICODE SLI	(ISO 15693)	**3**
LRI512	(ISO 15693)	**0**
SRF55VxxP	(ISO 15693)	**3**
EM4135	(ISO 15693)	**0**
Tag-it	(ISO 15693)	**0**
Others	(ISO 15693)	**0**
ICODE	(Phillips)	**5**

nReadLen

Number of bytes to read. As different tag types may have different numbers of blocks allowed to be read, when you pass a value greater than allowed, it auto-adjusts itself to the maximum value allowed on a tag.

nTimeout Reserved

sLoginKey

A key to access a specific RFID tag such as Mifare Standard 1K/4K or SLE66R35 tags.

- Such key must be a hex string of 12 bytes length.
- This login key applies to all the sectors covered by the range formulated by "nStart" and "nReadLen".

LoginKey Example	Key String
0	FFFFFFFFFFFF
“F1F2F3F4F5F6”	F1F2F3F4F5F6

nLoginKeyType

A value that identifies the login key.

0*	Key A
1	Key B

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test()
{
    var nType               = 1;//1=READ_UID;2=READ_DATA;
    var nStartBlock         = -1;
    var nReadLen            = 10;
    var nTimeout            = 3;
    var sLoginKey           = 'FFFFFFFFFFFF';
    var nLoginKeyType       = 0;

    var nReadRfidData =
window.external.ReadRfidData(nType,nStartBlock,nReadLen,nTimeout,sL
oginKey,nLoginKeyType);
    alert("ReadRfidUID="+nReadRfidData);

    If(nType==1) {
        var sCardUid=window.external.GetCardUid ();
    }
    else {
        var sCardData=window.external.GetCardData();
    }
}
…
</SCRIPT>
</BODY>
</HTML>
```

Other Info

Name	Type	Description
GetCardUid	String	Returns card UID
GetCardData	String	Returns card data

Return Value

If successful, it returns the number of bytes obtained (excluding terminating null character).

Otherwise, it returns a negative value to indicate an error condition:

-101	E_READER_NOT_INIT
-272	E_TAG_READ_FAILED
-273	E_TAG_VALUE_OVER_RANGE
-274	E_TAG_INVALID_LENGTH
-278	E_TAG_NO_TAG
-280	E_TAG_CANNOT_READ
-281	E_TAG_READ_TIMEOUT

WriteRfidData

Purpose

Writes RFID data to an RFID tag upon pressing a physical trigger.

Syntax

window.external.WriteRfidData(sData, nStartBlock, nWriteLen, nTimeout, nMode, sLoginKey, nLoginKeyType)

Parameters

sData

Writes data.

nStartBlock

A value that specifies the byte or block to start reading data from.

-1 Means to start reading from the default block (of an RFID tag).

Tabulated below is a number of RFID tags' default block to start reading data from:

Tag Type	Standard	Default Start Block
Mifare	(ISO 14443A)	**4**
SR176	(ISO 14443B)	**4**
ICODE SLI	(ISO 15693)	**3**
LRI512	(ISO 15693)	**0**
SRF55VxxP	(ISO 15693)	**3**
EM4135	(ISO 15693)	**0**
Tag-it	(ISO 15693)	**0**
Others	(ISO 15693)	**0**
ICODE	(Phillips)	**5**

nWriteLen

Maximum number of bytes to write. As the number of blocks allowed to be written may vary from tag type to tag type, when you pass a value greater than allowed, it auto-adapts to the maximum value allowed on a tag.

nTimeout Reserved

nMode

A value that specifies writing mode.

0	Starts writing immediately.
Non-zero	Starts writing upon pressing the trigger.

sLoginKey

A key to access a specific RFID tag such as Mifare Standard 1K/4K or SLE66R35 tags.

Such key must be a hex string of 12 bytes length.

- This login key applies to all the sectors covered by the range formulated by “nStart” and “nWriteLen”.

LoginKey Example	Key String
0	FFFFFFFFFFFF
“F1F2F3F4F5F6”	F1F2F3F4F5F6

nLoginKeyType

A value that identifies the login key.

0*	Key A
1	Key B

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test()
{
    var sData               =”AABBCCDD”;
    var nStartBlock         = -1;
    var nWriteLen           = 8;
    var nTimeout            = 3;
    var nMode               = 0;
    var sLoginKey           ='FFFFFFFFFFFF';
    var nLoginKeyType       =0;

    var nWriteRfidData =
window.external.WriteRfidData(sData,nStartBlock,nWriteLen,nTimeout,
nMode,sLoginKey,nLoginKeyType);
    alert("WriteRfidData="+nWriteRfidData);
}
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value

If successful, it returns 0.

Otherwise, it returns a negative value to indicate an error condition:

-101	E_READER_NOT_INIT
-273	E_TAG_VALUE_OVER_RANGE
-274	E_TAG_INVALID_LENGTH
-275	E_TAG_GET_DATA_FAILED
-276	E_TAG_WRITE_FAILED
-277	E_TAG_CANNOT_WRITE
-278	E_TAG_NO_TAG
-279	E_TAG_WRITE_TIMEOUT

WorkingType

Purpose

Sets the reader antenna (RF) working model between ISO-14443A, ISO-14443B and ISO-15693. Before executing this function, you must execute OpenCard first.

- Only one working mode can be set at a time. The default working mode is ISO-14443A.

Syntax

window.external.WorkingType(*nType*)

Parameters

nType

Sets up the access mode of the reader.

Name	Value
ISO14443A	0x41
ISO14443B	0x42
ISO15693	0x31
Default setting to access SR176 and SRIX4K cards within ISO-14443B.	0x73

Example

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test() {
   window.external.WorkingType(0x41);
}
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value

If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

AntennaControl

Purpose	Before executing this function, you must execute Open Reader. It allows the system to turn off the antenna when it goes into standby, which reduces equipment power and fulfills power saving purposes.
Syntax	window.external.AntennaControl(*nSelect*)
Parameters	nSelect For ANTENNA_SELECT_POWER_LOW: if the function is executed successfully without any error codes, the antenna will switch to low power consumption mode after 8 seconds.

Name	Value
Antenna off	0x00
Antenna on	0x01
Auto transfer	0x08
Low-power	0x10

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test() {
   window.external.AntennaControl(0x01);
}
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value: If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

OpenCard

Purpose: Select ISO-14443A card and get card spec type information (supports multi-card). Before operating an ISO-14443A card, execute this function first.

Syntax: window.external.OpenCard()

Parameters: None

Example:

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test()
{
    var nAntennaControl=window.external.OpenCard();
    var sCardUid=window.external.GetCardUid();
    var sCardAtqa=window.external.GetCardAtqa();
    var sCardSak=window.external.GetSak();
}
…
</SCRIPT>
</BODY>
</HTML>
```

Other Info:

Name	Type	Description
GetCardUid()	String	Return the card's serial numbers. Length is LEN (11) array, UID_END = 77 is the card's serial end value.
GetCardAtqa()	String	Return ATQA card type, length is ATQA_LEN (2) (Unit: BYTE).
GetCardSak()	String	Return SAK card type.

Return Value: If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

CloseCard

Purpose: Close ISO-14443A card. To finish writing data to an ISO-14443A card, execute this function and then continue to read another card.

Syntax: window.external.CloseCard()

Parameters: None

Example:

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test() {
    window.external.CloseCard();
}
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value: If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

ReadMifareOneBlock

Purpose

Read ISO-14443A card data according to the specified block location.

Syntax

window.external.ReadMifareOneBlock(*nKeyType*,*nBlock*,*sKey*)

Parameters

nKeyType

[in] Application file key type.

Name	Constant	Value
Key A	CARD_KEY_A	0x00
Key B	CARD_KEY_B	0x01

nBlock

Block number to read. Block number starts from 0; S50: Block0~Block63 (does not include Security Block, total 45 blocks), S70: Block0~Block255 (does not include Security Block, total 210 blocks).

sKey

Card default key; length is CARD_KEY_LEN(6) array.

Example

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test()
{
    var nKeyType=0x00;//KeyA;
    var nBlock=4;
    var sKey='FFFFFFFFFFFF';
    var sReadMifareOneBlock=window.external.ReadMifareOneBlock(
    nKeyType,nBlock,sKey);
    var sCardData = window.external.GetCardData();
}
…
</SCRIPT>
</BODY>
</HTML>
```

Other Info

Name	Type	Description
GetCardData()	String	Return read data; length is BLOCK_LEN (16) array.

Return Value

If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

WriteMifareOneBlock

Purpose	Write data into ISO-14443A card according to the specified block location.
Syntax	window.external.WriteMifareOneBlock(*nKeyType*, *nBlock*, *sKey, sData*)
Parameters	nKeyType [in] Application file key type.

Name	Constant	Value
Key A	CARD_KEY_A	0x00
Key B	CARD_KEY_B	0x01

nBlock

Block number to read. Block number starts from 0; S50: Block0~Block63 (does not include Security Block, total 45 blocks), S70: Block0~Block255 (does not include Security Block, total 210 blocks).

sKey

Card default key; length is CARD_KEY_LEN(6) array.

sData

Data to write; length is BLOCK_LEN(16) array.

Example

```
<HTML>
<BODY onload="test()">
<SCRIPT>
function test()
{
    var nKeyType=0x00;//KeyA;KeyB;
    var nBlock=4;
    var sKey='FFFFFFFFFFFF'';
    var sData='1234567890';
    var nWriteMifareOneBlock=window.external.WriteMifareOneBlock
    (nKeyType,nBlock,sKey,sData);

}
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value: If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

ReadUltraLight

Purpose	Read data from UltraLight card according to the specified block location; this function is for Mifare UltraLight card only.
Syntax	window.external.ReadUltraLight(*nBlock*)
Parameters	nBlock Block number to read data.

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test()
	{
	var nBlock=0;
	var nReadUltraLight=window.external.ReadUltraLight(nBlock);
	var sCardData=window.external.GetCardData();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Other Info	

Name	Type	Description
GetCardData()	String	Return read data; length is ULTRA_LIGHT_READ_LEN (16) array.

Return Value	If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

WriteUltraLight

Purpose	Write data into UltraLight card according to the specified block location; this function is for Mifare UltraLight card.
Syntax	window.external.WriteUltraLight(*nBlock*)
Parameters	nBlock Block number to write data.

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test()
{
    var nBlock =0;
    var sData =”1234”;
    var nWriteUltraLight = window.external.WriteUltraLight(nBlock,
    sData)
}
…
</SCRIPT>
</BODY>
</HTML>
```

Other Info

Name	Type	Description
nBlock	BYTE	Block number to write data.
sData	String	Data to write; length is ULTRA_LIGHT_WRITE_LEN (4) array.

Return Value

If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

STCardSelect

Purpose

Select ISO-14443B card and get card number. Before operating an ISO-14443B card, please execute this function first.

Syntax

window.external.STCardSelect()

Parameters

None

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test()
{
    var nSTCardSelect=window.external.STCardSelect();
    var sCardSelectNum=window.external.GetCardSelectNum();
}
…
</SCRIPT>
</BODY>
</HTML>
```

Other Info

Name	Type	Description
GetCardSelectNu()	String	Return card number.

Return Value

If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

SR176ReadBlock

Purpose	Read SR176 card data according to the specified block location.
Syntax	window.external.SR176ReadBlock(*nBlkNo*)
Parameters	*nBlkNo* Read block number; Block 0~15.

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test()
	{
	var nBlkNo=0;
	var nSR176ReadBlock = window.external.SR176ReadBlock(nBlkNo);
	var sCardData = window.external.GetCardData();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Other Info	

Name	Type	Description
GetCardData()	String	Return read data, length is SR176_READ_LEN (16) array.

Return Value	If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

SR176WriteBlock

Purpose	Write data into SR176 card according to the specified block location.
Syntax	window.external.SR176WriteBlock(*nBlkNo, sData*)
Parameters	*nBlkNo* Data block number to write; Block 4~14. *sData* Data to write, length is SR176_BLOCK_LEN(2) array.

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test()
{
    var nBlkNo=0;
    var sData=“12”;
    var nSR176WriteBlock = window.external.SR176WriteBlock(nBlkNo,
    sData);
}
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value

If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

SRIX4KReadBlock

Purpose

Read SRIX4K card data according to the specified block location.

Syntax

window.external.SRIX4KReadBlock(*nBlkNo*)

Parameters

nBlkNo

Read block number; Block 0~127.

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test()
{
    var nBlkNo=0;
    var nSRIX4KReadBlock = window.external.SRIX4KReadBlock(nBlkNo);
    var sCardData = window.external.GetCardData();
}
…
</SCRIPT>
</BODY>
</HTML>
```

Other Info

Name	Type	Description
GetCardData()	String	Return read data, length is SRIX4K_BLOCK_LEN (4) array.

Return Value

If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

SRIX4KWriteBlock

Purpose	Write data into SRIX4K card according to the specified block location.
Syntax	window.external.SRIX4KWriteBlock(*nBlkNo, sData*)
Parameters	*nBlkNo* Data block number to write; Block 7~127. *sData* Data to write, length is SRIX4K_BLOCK_LEN(4) array.

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test()
	{
	var nBlkNo=0;
	var sData="1234";
	var nSRIX4KWriteBlock = window.external.SRIX4KWriteBlock(nBlkNo, sData);
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Return Value	If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

SRIX4KReadUID

Purpose	Read SRIX4K unique identifier.
Syntax	window.external.SRIX4KReadBlock()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test()
	{
	var nSRIX4KReadUID = window.external.SRIX4KReadUID();
	var sCardUid=window.external.GetCardUid();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Other Info	

Name	Type	Description
GetCardUid()	String	Return unique identifier code; length is SRIX4K_UID_LEN(10) array.

Return Value	If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

ISO15693Inventory

Purpose	Select ISO-15693 card and set card into Ready mode, get card unique identifier (UID).
Syntax	window.external.ISO15693Inventory()
Parameters	None

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test()
	{
	var nInventory = window.external.ISO15693Inventory();
	var sCardMask = window.external.GetCardMask();
	var sCardDsfid = window.external.GetCardDsfid();
	var sCardUID = window.external.GetCardUid();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Other Info	

Name	Type	Description
GetCardMask()	String	Mask; length is ISO15693_MASK_LEN(8) array.
GetCardDsfid()	String	Data storage format identifier, marks which type of format this card uses to store information. Please refer to ISO15693 related documents.
GetCardUid()	String	Return UID; length is ISO15693_UID_LEN(8) array.

Return Value	If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

ISO15693Read

Purpose	Read ISO-15693 card data according to the specified block location.
Syntax	window.external.ISO15693Read(*sUID*, *nBlockStart*, *nBlockCount*)
Parameters	sUID Return UID; length is ISO15693_UID_LEN(8) array. nBlockStart Start to read file block number; total block number varies for different card part numbers. nBlockCount Total block numbers; total block number varies for different card part numbers; Block1~15, MAX is 15 blocks.

Example	<HTML>
	<BODY onload="test()">
	<SCRIPT>
	function test()
	{
	var sUID=window.external.GetCardUid();
	var nBlockStart=0;
	var nBlockCount=1;
	var nISO15693Read = window.external.ISO15693Read(sUID,
	nBlockStart,nBlockCount);
	var sCardData = window.external.GetCardData();
	}
	…
	</SCRIPT>
	</BODY>
	</HTML>

Other Info	

Name	Type	Description
GetCardData()	String	Return read data, length is SRIX4K_BLOCK_LEN (4) array.

Return Value	If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

ISO15693Write

Purpose	Write data into ISO-15693 card according to the specified block location.
Syntax	window.external.ISO15693Write(*sUID, nBlkNo, sData*)
Parameters	sUID Return UID; length is ISO15693_UID_LEN(8) array. *nBlkNo* File block number which data will be written into; block number varies for cards of different part numbers. *sData* Data to write; length is ISO15693_BLOCK_LEN(4) array.

Example

```
<HTML>
<BODY onload=”test()”>
<SCRIPT>
function test()
{
    var sUID=window.external.GetCardUid();
    var nBlkNo=0;
    var sData=”1234”;
    var nISO15693Write = window.external.ISO15693Write(sUID,nBlkNo,
    sData);
}
…
</SCRIPT>
</BODY>
</HTML>
```

Return Value

If executed successfully, it will respond LRSUCCESS. For other codes, please refer to Appendix VIII: Response Code Instructions.

Appendix I

SCAN ENGINE SETTINGS

MIRROR Browser supports the following reader types. Reader availability depends on the hardware integrated on the mobile computer.

Scan Engine		ID	9300	9600	9700	CP55	CP60
1D	*Linear Imager (CCD)*	*SM1*		✓		✓	
	Laser	*SE950*		✓			
		SE955	✓		✓	✓	✓
	Long Range Laser	*SE965*				✓	✓
	Extended Range Laser	*SE1524*			✓		
2D	*2D Imager*	*SE4500+PL4507*	✓	✓	✓		
		SE4500 Software Decode SDK			✓	✓	✓
	Near/Far Range 2D Imager	*EX25*			✓		
RFID	*ID_MOD_MP_RFID*			✓		✓	

Reader combination allowed is either 1D plus RFID or 2D plus RFID. Each combination is able to initialize both readers at the same time (dual mode operation). For example, when you hit a physical scan key with MIRROR Browser active on the mobile computer, it reads a printed barcode in position or an RFID tag in proximity, depending on which comes first.

Note:

(1) 1D and 2D scan engines don't coexist on the mobile computer because they are both barcode readers and only one barcode reader is allowed on board the mobile computer.

(2) Run only one reader-controlling application at a time. For example, while running MIRROR Browser, avoid running Reader Configuration (Reader Configuration), FORGE Application Generator, STREAM Wireless Studio, or any other application that uses ReaderDLL.

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SYMBOLOGIES SUPPORTED

Depending on the scan engine installed, the supported symbologies are different as listed below. For details on configuring associated settings, refer to Appendix II and III.

		9600 CCD, 9600 Laser	CP55 CCD	9300 Laser 9700 Laser CP55 Laser CP60 Laser	9300 2D 9600 2D	9700 2D CP55 2D CP60 2D
Codabar		✓	✓	✓	✓	✓
Code 11		✗	✗	✓(1)	✓	✓
Code 39	Code 39	✓	✓	✓	✓	✓
	Trioptic Code 39	✗	✗	✓	✓	✓
	Italian Pharmacode (Code 32)	✓	✓	✓	✓	✓(2)
	French Pharmacode	✓	✗	✗	✗	✗
Code 93		✓	✓	✓	✓	✓
Code 128	Code 128	✓	✓	✓	✓	✓
	GS1-128 (EAN-128)	✓	✓	✓	✓	✓
	ISBT 128	✓	✓	✓	✓	✓
Code 2 of 5	Chinese 25	✗	✗	✓(1)	✓	✓(2)
	Industrial 25 (Discrete 25)	✓	✓	✓	✓	✓
	Interleaved 25	✓	✓	✓	✓	✓
	Convert Interleaved 25 to EAN-13	✗	✗	✓	✓	✓(2)
	Matrix 25	✓	✗	✗	✓	✓
Composite Code	Composite CC-A/B	✗	✗	✗	✓	✓
	Composite CC-C	✗	✗	✗	✓	✓
	Compostie TLC 39	✗	✗	✗	✓	✓(2)
GS1 DataBar (RSS)	GS1 DataBar Omnidirectional (RSS-14)	✓	✓	✓	✓	✓

	GS1 DataBar Truncated	✓	✓	✓	✓	✓
	GS1 DataBar Stacked	✓	✓	✓	✓	✓
	GS1 DataBar Stacked Omnidirectional	✓	✓	✓	✓	✓
	GS1 DataBar Limited (RSS Limited)	✓	✓	✓	✓	✓
	GS1 DataBar Expanded (RSS Expanded)	✓	✓	✓	✓	✓
	GS1 DataBar Expanded Stacked	✓	✓	✓	✓	✓
	Convert to UPC/EAN	✗	✗	✓	✓	✓(2)
Inverse		✗	✗	✗	✗	✓
Korean 3 of 5		✗	✗	✗	✗	✓
MSI		✓	✓	✓	✓	✓
Negative Barcode		✓	✗	✗	✗	✗
Plessey		✓	✗	✗	✗	✗
Telepen		✓	✗	✗	✗	✗
Postal Codes	Australian Postal	✗	✗	✗	✓	✓
	Japan Postal	✗	✗	✗	✓	✓
	Netherlands KIX Code	✗	✗	✗	✓	✓
	US Postnet	✗	✗	✗	✓	✓
	US Planet	✗	✗	✗	✓	✓
	UK Postal	✗	✗	✗	✓	✓(2)
EAN / UPC	EAN-8	✓	✓	✓	✓	✓
	EAN-8 Extend (Convert to EAN-13)	✓	✓	✓	✓	✓(2)
	EAN-13	✓	✓	✓	✓	✓
	Bookland EAN (ISBN)	✓	✓	✓	✓	✓
	UCC Coupon Extended Code	✗	✗	✓	✓	✓(2)
	ISSN EAN	✗	✗	✗	✓	✓
	UPC-A	✓	✓	✓	✓	✓
	UPC-E	✓	✓	✓	✓	✓
	Convert UPC-E to UPC-A	✓	✓	✓	✓	✓

	UPC-E1	✓	✓	✓	✓	✓
	Convert UPC-E1 to UPC-A	✓	✓	✓	✓	✓
2D Symbologies	Aztec	✗	✗	✗	✓	✓
	Data Matrix	✗	✗	✗	✓	✓
	Maxicode	✗	✗	✗	✓	✓
	MacroPDF	✗	✗	✗	✓	✓
	MicroPDF417	✗	✗	✗	✓	✓
	MicroQR	✗	✗	✗	✓	✓(2)
	PDF417	✗	✗	✗	✓	✓
	QR Code	✗	✗	✗	✓	✓

Note:

(1) Not supported on 9700 Extended Range Laser Reader.

(2) Not supported on 9700 Near/Far 2D Imager.

RFID TAGS SUPPORTED

MIRROR Browser supports reading RFID data only. Supported labels include ISO 15693, ISO 14443A and ISO 14443B.

SUPPORTED RFID TAGS ON 9600

ID_MOD_MP_RFID		UID Only	Read Page	Write Page
ISO 14443A	Mifare Standard 1K	✓	✓	✓
	Mifare Standard 4K	✓	✓	✓
	Mifare Ultralight	✓	✓	✓
	Mifare DESFire	✓	✗	✗
	Mifare S50	✓	✓	✓
	SLE44R35	✓	✓	✓
	SLE66R35	✓	✓	✓
ISO 14443B	SRIX 4K	✗	✗	✗
	SR176	✓	✓	✓
ISO 15693	ICODE SLI	✓	✓	✓
	SRF55V02P	✓	✓	✓
	SRF55V02S	✓	✓	✓
	SRF55V10P	✓	✓	✓
	TI Tag-it HF-I	✓	✓	✓
	ST LRI512	✓	✓	✓

Note: Study the specifications of the RFID tags to read before reading.

SUPPORTED RFID TAGS ON CP55

ID_MOD_RFID		UID Only	Read Page	Write Page
ISO 14443A	Mifare Classic S50 1K	✓	✓	✓
	Mifare S50 1K UID 7 Bytes	✓	✓	✓
	Mifare Classic S70 4K	✓	✓	✓
	Mifare Ultralight (UL/ULC)	✓	✓	✓
	Mifare S20 Mini	✓	✓	✓
	Mifare DESFire V0.6 4K	✓	✓(2)	✓(2)
	Mifare DESFire EV1 2K/4K/8K	✓	✓(2)	✓(2)
	Mifare PLUS S 2K/4K	✓	✓(2)	✓(2)
	SLE 66R35	✓	✓	✓
ISO 14443B	SR176	✓	✓	✓
	SRI512	✓	✓	✓
	SRIX4K	✓	✓	✓
ISO 15693	I-CODE SLI-S/L	✓	✓	✓
	I-CODE SLIX	✓	✓	✓
	SRF 55V10P	✓	✓	✓
	SRF 55V02P	✓	✓	✓
	Tag-it HF-I Pro/Plus	✓	✓	✓

Note:

(1) For more information, refer to the specifications of the RFID tags to read.

(2) To read/write data or support additional functions, users must obtain permission from the RFID chip manufacturer.

Appendix II

CCD LINEAR IMAGER (SM1) & LASER (SE950)

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READER SETTINGS FOR 9600

CCD/Laser Engine	Description	Default
Time-out		**3 sec.**
1~9 (second) for MIRROR Browser	Set the maximum time for decoding to continue during a scan attempt. It applies to the following scan modes only – ▸ Level mode ▸ Auto Off mode	
Scan Mode		**Level mode**
Continuous Mode	Non-stop scanning ▸ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning.	
Test Mode	Non-stop scanning ▸ Capable of decoding the same barcode repeatedly	
Alternate Mode	Press the scan trigger to start with scanning. ▸ The scanning won't stop until you press the trigger again.	
Level Mode	Hold down the scan trigger to start with scanning. ▸ The scanning won't stop until (a) a barcode is read, (b) the preset timeout expires, or (c) you release the trigger.	
Auto Off Mode	Press the scan trigger to start with scanning. ▸ The scanning won't stop until (a) a barcode is read or (b) the preset timeout expires.	
Redundancy Level		**None**
None	No redundancy means one successful decoding will make the reading valid and induce the "READER Event".	
One time, Two times, or Three times	The higher the reading security is (that is, the more redundancy the user selects), the slower the reading speed gets. ▸ If "Three Times" is selected, it will take a total of four consecutive successful decodings of the same barcode to make the reading valid.	

SYMBOLOGY SETTINGS FOR 9600

CCD/Laser Engine	Description	Default
Codabar		**Enable**
Select Start/Stop Characters	If "Transmit Start/Stop Characters" is desired, select one set: ▸ abcd / abcd ▸ abcd / tn*e ▸ ABCD / ABCD ▸ ABCD / TN*E	abcd / abcd
Transmit Start/Stop Characters	Decide whether to include the start/stop characters in the data being transmitted.	No
Code 128		**Enable**
GS1-128 (EAN-128)		**Enable**
Transmit Code ID	Decide whether to include Code ID (“]C1”) will be included in the data being transmitted.	No
Replace Field Separator	Decide whether to replace the field separator. If the barcode contains Field Separator “0x1D”, it will be changed to the desired Field Separator. For example, type the desired character “;” (semicolon) as the new field separator. Then if the barcode contains Field Separator “0x1D”, it will be changed to “;”.	No
ISBT 128		**Enable**
Industrial 25 (Discrete 25)		**Enable**
Start/Stop Selection	This decides the readability of all 2 of 5 symbology variants. For example, flight tickets actually use an Industrial 25 barcode but with Interleaved 25 start/stop pattern. In order to read this barcode, the start/stop pattern selection parameter of Industrial 25 should set to "Interleaved 25".	Industrial 25
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Yes
Select Length	▸ One or two fixed lengths ▸ Range	4~127
Interleaved 25		**Enable**
Start/Stop Selection	Refer to Industrial 25.	Interleaved 25
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Yes
Select Length	▸ One or two fixed lengths ▸ Range	4~127
Matrix 25		**Enable**

Start/Stop Selection	Refer to Industrial 25.	Matrix 25
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Yes
Select Length	▸ One or two fixed lengths ▸ Range	4~127
French Pharmacode		**Disable**
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Yes
Italian Pharmacode (Code 32)		**Disable**
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Yes

Note: For French/Italian Pharmacode, “Transmit Start/Stop Character” is not provided in UI but it is controlled by the same setting of Code 39.

Code 39		**Enable**
Transmit Start/Stop Character	Decide whether to include the start/stop characters "*" in the data being transmitted.	No
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Yes
Code 39 Full ASCII	Code 39 Full ASCII includes all the alphanumeric and special characters.	Disable
Code 93		**Enable**
MSI		**Disable**
Verify Check Digit	Select one of the three calculation formulas to verify the check digit. If the check digit is incorrect, the barcode will not be accepted. ▸ Single Modulo 10 ▸ Double Modulo 10 ▸ Modulo 11 & 10	Single Modulo 10
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. ▸ Last digit not transmitted ▸ Both digits transmitted ▸ Both digits not transmitted	Both digits transmitted
Select Length	▸ One or two fixed lengths ▸ Range	4~127
Negative Barcode		**Disable**
Plessey		**Disable**
Convert to UK Plessey	When applied, each occurrence of the character "A" in the barcode data will be replaced by the character "X".	No

Transmit Check Digit	Decide whether to include the two check digits in the data being transmitted.	Yes
Telepen		**Disable**
Original Telepen (Numeric)	The original Telepen includes numeric characters.	Yes
AIM Telepen (Full ASCII)	AIM Telepen (Full ASCII) includes all the alphanumeric and special characters.	No
GS1 DataBar-14 (RSS-14)		**Disable**
GS1 DataBar-14 is short for GS1 DataBar Omnidirectional. This group consists of (1) GS1 DataBar Omnidirectional, (2) GS1 DataBar Truncated, (3) GS1 DataBar Stacked, and (4) GS1 DataBar Stacked Omnidirectional.		
Transmit Code ID	Decide whether to include Code ID (“]e0”) will be included in the data being transmitted.	Yes
Transmit Application ID	Decide whether to include the Application ID ("01") in the data being transmitted.	Yes
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Yes
GS1 DataBar Limited (RSS Limited)		**Disable**
Transmit Code ID	Refer to RSS-14.	Yes
Transmit Application ID	Refer to RSS-14.	Yes
Transmit Check Digit	Refer to RSS-14.	Yes
GS1 DataBar Expanded (RSS Expanded)		**Disable**
This group consists of (1) GS1 DataBar Expanded, and (2) GS1 DataBar Expanded Stacked.		
Transmit Code ID	Refer to RSS-14.	Yes
EAN-8		**Enable**
Convert to EAN-13	The EAN-8 barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Yes
Addon 2 / Addon 5	Decide whether to decode EAN-8 with addons.	No
EAN-13 / UPC-A		**Enable**
ISBN Conversion	The EAN-13 barcode starting with 978 and 979 will be converted to ISBN.	No
ISSN Conversion	The EAN-13 barcode starting with 977 will be converted to ISSN.	No
GTIN for EAN-13	The EAN-13 barcode will be expanded into 14-digit Global Trade Item Number (GTIN).	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Yes
Addon 2 / Addon 5	Decide whether to decode EAN-13/UPC-A with addons.	No

(UPC-A) Convert to EAN-13	The UPC-A barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.	Yes
(UPC-A) Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes
(UPC-A) Transmit System Number	Decide whether to include the UPC-A System Number in the data being transmitted.	Yes
UPC-E		**Enable**
UPC-E0 / UPC-E1	Decide whether to decode the UPC-E0 barcodes only or both UPC-E0 and UPC-E1 barcodes.	UPC-E0 only
Convert to UPC-A	The UPC-E barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
Transmit Check Digit	Decide whether to include the UPC-E check digit in the data being transmitted.	Yes
Transmit System Number	Decide whether to include the UPC-E System Number in the data being transmitted.	No
Addon 2 / Addon 5	Decide whether to decode UPC-E with addons.	No

Note: UPC-E1 is supported with decoder version 1.02 or later.

READER SETTINGS FOR CP55

<table>
<tr><th>Laser Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Time-out</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>▸ 3 sec.</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">Following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>All</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded. Following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">▸ All barcodes must be successfully read three times before being decoded.</td></tr>
<tr><td>Scan Angle</td><td>Select the scan angle for Long Range Laser scan engine.
▸ “Narrow angle” for 35°
▸ “Wide angle” for 47°</td><td>Wide angle</td></tr>
<tr><td colspan="2">Scan Mode</td><td>Level mode</td></tr>
<tr><td>Continuous Mode</td><td colspan="2">Non-stop scanning
▸ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning.</td></tr>
<tr><td>Level Mode</td><td colspan="2">Hold down the scan trigger to start with scanning.
▸ The scanning won’t stop until (a) a barcode is read, (b) the preset timeout expires, or (c) you release the trigger.</td></tr>
<tr><td>Timeout Between Symbols</td><td>Sets the time for the barcode reader to resurrect its ability to once more decode a barcode it just decoded.
▸ Only applied in Continuous mode.</td><td>1 sec</td></tr>
</table>

SYMBOLOGY SETTINGS FOR CP55

CCD Engine	Description	Default
CODABAR		
Codabar		**Enable**
Codabar	Checkbox to enable Codabar decoding.	Enable
Length option	Sets the length of the Codabar symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CLSI	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	Disable
NOTIS	Sets whether to include start/stop characters in the transmitted data. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	Disable
CODE 39		
Code 39		**Enable**
Code 39	Checkbox to enable Code 39 decoding.	Enable
Convert to Code 32	Selects whether to convert decoded data to Italian Pharmacode.	Disable
Code 32 Prefix	Prefix character “A” to Code 32 barcodes. ▸ “Convert to Code 32” must be enabled for this to function properly.	Disable
Verify Check Digit	Selects whether to verify the Modulo 43 check digit. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data to transmit. ▸ “Verify Check Digit” must be enabled.	Disable
Support Full ASCII	Selects whether to enable Code 39 Full ASCII decoding. Characters are paired to encode the full ASCII character set.	Disable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 93		
Code 93		**Enable**
Code 93	Checkbox to enable Code 93 decoding.	Enable

Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 128		
Code 128		
Code 128	Checkbox to enable Code 128 decoding.	Enable
ISBT 128		
ISBT 128	Checkbox to enable ISBT 128 decoding.	Enable
GS1-128		
GS1-128	Checkbox to enable GS1-128 decoding.	Enable
CODE 2 OF 5		
Industrial 25 (Discrete 25)		
Discrete 25	Checkbox to enable Discrete 25 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Interleaved 25		
Interleaved 25	Checkbox to enable Interleaved 2 of 5 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Verify Check Digit	Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted. ▸ Disable ▸ USS Check Digit ▸ OPCC Check Digit	Disable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
GS1 DATABAR		
GS1 DataBar-14		
GS1 DataBar-14	Checkbox to enable GS1 DataBar-14 decoding.	Enable
GS1 DataBar Limited		
GS1 DataBar Limited	Checkbox to enable GS1 DataBar Limited decoding.	Enable
GS1 DataBar Expanded		
GS1 DataBar Expanded	Checkbox to enable GS1 DataBar Expanded decoding.	Enable

MSI		
MSI		
MSI	Checkbox to enable MSI decoding.	Enable
Length option	Sets the length of the MSI symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Check Digit Option	One check digit is mandatory for decoding MSI barcodes. Select whether a second check digit should be verified. If the check digits are incorrect, the barcode will not be accepted. ▸ One Check Digit ▸ Two Check Digits	One Check Digit
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
Algorithm	When two check digits are set for verification, two choices are available for the pair of check digits. ▸ Modulo10 / Modulo11 ▸ Double Modulo 10	Double Modulo 10
UPC/EAN		
EAN-8		
EAN-8	Checkbox to enable EAN-8 decoding.	Enable
EAN-8 Extend	Checkbox to enable converting EAN-8 to EAN-13 format.	Disable
EAN-13		
EAN-13	Checkbox to enable EAN-13 decoding.	Enable
Bookland EAN	Checkbox to enable ISBN decoding. If enabled, select Bookland ISBN Format in the drop-down box below.	Enable
Bookland ISBN Format	Select to decode Bookland data starting with 978 as 10-digit format along with the Bookland check digit, or decode Bookland data starting with 978/979 as EAN-13 format.	Bookland ISBN-10
Transmit Check Digit	Decide whether to include the EAN-13 check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-A		
UPC-A	Checkbox to enable UPC-A decoding.	Enable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Transmit Check Digit	Decide whether to include the UPC-A check digit (the last character in the barcode) in the data being transmitted.	Enable

UPC-E		
UPC-E	Checkbox to enable UPC-E decoding.	Enable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-E1		
UPC-E1	Checkbox to enable UPC-E1 decoding.	Disable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
General Preference		
EAN Addon Option	Decide whether to decode EAN-8, EAN-13 with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon
EAN Addon Redundancy	When “Auto-discriminate” is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 30.	10
UPC Addon Option	Decide whether to decode UPC-E0, UPC-E1, UPC-A with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon
UPC Addon Redundancy	When “Auto-discriminate” is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 30.	10

Appendix III

LASER (SE955 & SE965)

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READER SETTINGS FOR 9300

<table>
<tr><th>Laser Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Time-out</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>▸ 3 sec.</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">Following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>All</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded. Following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">All barcodes must be successfully read three times before being decoded.</td></tr>
<tr><td>Scan Angle</td><td>Select the scan angle for Long Range Laser scan engine.
▸ “narrow” for 35°
▸ “wide” for 47°</td><td>Wide</td></tr>
<tr><td colspan="2">Scan Mode</td><td>Level mode</td></tr>
</table>

Continuous Mode	Non-stop scanning ▸ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning.	
Level Mode	Hold down the scan trigger to start with scanning. ▸ The scanning won't stop until (a) a barcode is read, (b) the preset timeout expires, or (c) you release the trigger.	
Timeout between same symbols	When in Continuous mode, set the minimum time that must elapse before the scan engine decodes a second barcode, which is identical to the one that has just been decoded. This reduces the risk of accidentally scanning the same barcode twice. ▸ 0.0~9.9 (second)	1.0 sec.

SYMBOLOGY SETTINGS FOR 9300

Laser Engine	Description	Default
Code 11		**Enable**
Verify Check digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted. ▸ No verification ▸ One Check Digit ▸ Two Check Digits	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. ▸ "Verify Check Digit" must be enabled.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Codabar		**Enable**
CLSI Editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	No
NOTIS Editing	Decide whether to include the start/stop characters in the data being transmitted. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Code 128		**Enable**
Code 128	Read standard Code 128 barcodes (= without leading FNC1 character).	Enable
GS1-128 (UCC/EAN-128)	Read GS1-128 barcodes with leading FNC1 character.	Enable
ISBT 128	Read ISBT 128 barcodes.	Enable
Industrial 25 (Discrete 25)		**Enable**
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Interleaved 25		**Enable**
Convert to EAN-13	Convert a 14-character barcode into EAN-13 if the following requirements are met: ▸ The barcode must have a leading 0 and a valid EAN-13 check digit. ▸ “Verify Check Digit” must be disabled.	No

<table>
<tr><td>Verify Check Digit</td><td>Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted.
No
USS algorithm
OPCC algorithm</td><td>No</td></tr>
<tr><td>Transmit Check Digit</td><td>Decide whether to include the check digit in the data being transmitted.</td><td>No</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td colspan="2">Chinese 25</td><td>Enable</td></tr>
<tr><td colspan="2">Code 39</td><td>Enable</td></tr>
<tr><td>Convert to Code 32</td><td>Convert to Italian Pharmacode.</td><td>No</td></tr>
<tr><td>Code 32 Prefix</td><td>Prefix character "A" to Code 32 barcodes.</td><td>No</td></tr>
<tr><td>Verify Check Digit</td><td>Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.</td><td>No</td></tr>
<tr><td>Transmit Check Digit</td><td>Decide whether to include the check digit in the data being transmitted.
"Verify Check Digit" must be enabled.</td><td>No</td></tr>
<tr><td>Code 39 Full ASCII</td><td>Code 39 Full ASCII includes all the alphanumeric and special characters.</td><td>Disable</td></tr>
<tr><td>Trioptic Code 39</td><td>Decide whether to decode Trioptic Code 39.
Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.</td><td>Disable</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td colspan="2">Code 93</td><td>Enable</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td colspan="2">MSI</td><td>Enable</td></tr>
<tr><td>Verify Check Digit</td><td>If Two Check Digits option is selected, an additional verification is required to ensure integrity. Select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted.<table><tr><th>Check Digit</th><th>Algorithm</th></tr><tr><td>One Check Digit</td><td>Single Modulo 10</td></tr><tr><td>Two Check Digits</td><td>Mod 10/Mod 11
Mod 10/Mod 10</td></tr></table></td><td>Single Modulo 10</td></tr>
<tr><td>Transmit Check Digit</td><td>Decide whether to include the check digit in the data being transmitted.</td><td>No</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td colspan="2">GS1 DataBar (RSS)</td><td>---</td></tr>
</table>

GS1 Databar-14	GS1 DataBar-14 is short for GS1 DataBar Omnidirectional. This group consists of (1) GS1 DataBar Omnidirectional, (2) GS1 DataBar Truncated, (3) GS1 DataBar Stacked, and (4) GS1 DataBar Stacked Omnidirectional.	Enable
GS1 Databar Limited		Enable
GS1 Databar Expanded	This group consists of (1) GS1 DataBar Expanded, and (2) GS1 DataBar Expanded Stacked.	Enable
Convert RSS to UPC/EAN	"Convert to UPC/EAN" only applies to GS1 Databar-14 and GS1 Databar Limited barcodes not decoded as part of a Composite barcode. **Convert to EAN-13** Strip the leading "010" from barcodes. ▸ "01" is the Application ID and must be followed by a single zero (the first digit encoded) **Convert to UPC-A** Strip the leading "0100" from barcodes. ▸ "01" is the Application ID and must be followed by two or more zeros (but not six zeros)	No
EAN-8		**Enable**
Convert to EAN-13	The EAN-8 barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.	No
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
EAN-13		**Enable**
Bookland EAN (ISBN)	The EAN-13 barcode starting with 978 will be converted to ISBN.	Yes
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
UPC-A		**Enable**
Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
UPC-E0		**Enable**
Transmit Check Digit	Decide whether to include the UPC-E0 check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-E0 preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
Convert to UPC-A	The UPC-E0 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UPC-E1		**Disable**

Transmit Check Digit	Decide whether to include the UPC-E1 check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-E1 preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UCC Coupon Extended Code		**Disable**
Read UPC-A barcodes starting with digit "5", EAN-13 barcodes starting with digits "99", and UPC-A/GS1-128 Coupon Codes. ▸ UPC-A, EAN-13, and GS1-128 must be enabled first! ▸ Use “Addon Redundancy” to control auto-discrimination of the GS1-128 (right half) of a coupon code.		
UPC/EAN Addon		**---**
Addon 2 / Addon 5	Decide whether to decode EAN-8, EAN-13, UPC-E0, UPC-E1, UPC-A with addons. ▸ Ignore Addons ▸ Decode Only With Addons ▸ Auto-discriminate	Ignore…
Addon Redundancy	When “Auto-discriminate” is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	7 times
UPC/EAN Security Level		**Level 2**
Decide the decode security for UPC/EAN barcodes. Higher security levels are selected for decreasing levels of barcode quality. Note that increasing security level decreases the scan engine’s aggressiveness; choose only that level of security necessary for the application. ▸ Level 0 – Select this option for the scan engine to operate in its most aggressive state, providing sufficient security in decoding most “in-spec” UPC/EAN barcodes. ▸ Level 1 – As barcode quality level diminish, certain characters become prone to mis-decodes before others (i.e. 1, 2, 7, 8). Select this option for the scan engine to eliminate mis-decodes, which are limited to characters 1, 2, 7 and 8. ▸ Level 2 – This default setting allows the scan engine to eliminate most mis-decodes when the poorly printed barcodes occurrence not limited to characters 1, 2, 7 and 8. ▸ Level 3 – Select this option if Level 2 still fails to eliminate mis-decodes. However, selecting this option impairs the decoding ability of the scan engine. If this level of security is necessary, try to improve the barcode quality.		

MISCELLANEOUS

Laser Engine	Description	Default
Miscellaneous Options		---
Transmit Code ID	Decide whether to include AIM Code ID in the beginning of data. Each AIM Code ID contains the three-character string "**]cm**" – ▸] = Flag Character (ASCII 93) ▸ c = Code Character (see below) ▸ m = Modifier Character (see below)	Disable

READER SETTINGS FOR CP55, CP60, 9700

<table>
<tr><th>Laser Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Time-out</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>▸ 3 sec.</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">Following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>All</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
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<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded. Following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">▸ All barcodes must be successfully read three times before being decoded.</td></tr>
<tr><td>Scan Angle</td><td>Select the scan angle for Long Range Laser scan engine.
▸ “Narrow angle” for 35°
▸ “Wide angle” for 47°</td><td>Wide angle</td></tr>
<tr><td colspan="2">Scan Mode</td><td>Level mode</td></tr>
<tr><td>Continuous Mode</td><td colspan="2">Non-stop scanning
▸ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning.</td></tr>
<tr><td>Level Mode</td><td colspan="2">Hold down the scan trigger to start with scanning.
▸ The scanning won’t stop until (a) a barcode is read, (b) the preset timeout expires, or (c) you release the trigger.</td></tr>
<tr><td>Timeout Between Symbols</td><td>Sets the time for the barcode reader to resurrect its ability to once more decode a barcode it just decoded.
▸ Only applied in Continuous mode.</td><td>1 sec</td></tr>
</table>

SYMBOLOGY SETTINGS FOR CP55, CP60, 9700

Symbology	Description	Default
CODABAR		
CodaBar		
Codabar	Checkbox to enable Codabar decoding.	Enable
Length option	Sets the length of the Codabar symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CLSI	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	Disable
NOTIS	Sets whether to include start/stop characters in the transmitted data. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	Disable
CODE 11		
Code 11		
Code 11	Checkbox to enable Code 11 decoding.	Enable
Check Digit Option	Sets whether to verify check digits according to the selected option. If the check digits are incorrect, the barcode will not be accepted. ▸ Disable ▸ One Check Digit ▸ Two Check Digits	Disable
Transmit Check Digit	Selects whether to include check digits in the transmitted data. ▸ Check Digit Option" must be enabled.	Disable
Length option	Sets the length of the Code 11 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 39		
Code 39		
Code 39	Checkbox to enable Code 39 decoding.	Enable
Trioptic Code 39	Selects whether to decode Trioptic Code 39. ▸ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.	Disable

Convert to Code 32	Selects whether to convert decoded data to Italian Pharmacode.	Disable
Code 32 Prefix	Prefix character “A” to Code 32 barcodes. ▸ “Convert to Code 32” must be enabled for this to function properly.	Disable
Verify Check Digit	Selects whether to verify the Modulo 43 check digit. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data to transmit. ▸ “Verify Check Digit” must be enabled.	Disable
Support Full ASCII	Selects whether to enable Code 39 Full ASCII decoding. Characters are paired to encode the full ASCII character set.	Disable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 93		
Code 93		
Enable Code 93	Checkbox to enable Code 93 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 128		
Code 128		
Enable Code 128	Checkbox to enable Code 128 decoding.	Enable
ISBT 128		
Enable ISBT 128	Checkbox to enable ISBT 128 decoding.	Enable
GS1-128		
Enable GS1-128	Checkbox to enable GS1-128 decoding.	Enable
CODE 2 OF 5		
Chinese 25		
Enable Chinese 25	Checkbox to enable Chinese 25 decoding.	Enable
Discrete 25		
Discrete 25	Checkbox to enable Discrete 25 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)

Interleaved 25		
Interleaved 25	Checkbox to enable Interleaved 2 of 5 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. • One Fixed length (Length 1) • Two Fixed lengths (Length 1>Length 2) • Max / Min Length (range: 0-55; Length 1<Length 2) • Any Length	Max / Min Length (4-55)
Verify Check Digit	• Disable • USS Check Digit • OPCC Check Digit	Disable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
Convert To EAN-13	Convert a 14-character Interleaved 25 barcode into EAN-13 if the following requirements are met: The barcode must have a leading 0 and a valid EAN-13 check digit.	Disable
GS1 DATABAR		
GS1 DataBar-14		
Enable GS1 DataBar-14	Checkbox to enable GS1 DataBar-14 decoding. • GS1 DataBar-14 is short for GS1 DataBar Omnidirectional. This group consists of (1) GS1 DataBar Omnidirectional, (2) GS1 DataBar Truncated, (3) GS1 DataBar Stacked, and (4) GS1 DataBar Stacked Omnidirectional.	Enable
GS1 DataBar Limited		
Enable GS1 DataBar Limited	Checkbox to enable GS1 DataBar Limited decoding.	Enable
GS1 DataBar Expanded		
Enable GS1 DataBar Expanded	Checkbox to enable GS1 DataBar Expanded decoding.	Enable
Convert to UPC/EAN		
Convert to UPC/EAN	This only applies to GS1 DataBar-14 and GS1 DataBar Limited barcodes not decoded as part of a Composite barcode. **Convert to EAN-13** Strips the leading “010” from barcodes. • The barcode must be composed of a leading “01” as the application identifier (AI) and a first digit of zero. **Convert to UPC-A** Strips the leading “0100” from barcodes. • The barcode must be composed of a leading “01” as the application identifier (AI) and two or more zeros (but not six zeros).	Disable

MSI		
MSI		
MSI	Checkbox to enable MSI decoding.	Enable
Length option	Sets the length of the MSI symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Check Digit Option	One check digit is mandatory for decoding MSI barcodes. Select whether a second check digit should be verified. If the check digits are incorrect, the barcode will not be accepted. ▸ One Check Digit ▸ Two Check Digits	One Check Digit
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
Algorithm	▸ When two check digits are set for verification, two choices are available for the pair of check digits. ▸ Modulo10 / Modulo11 ▸ Double Modulo 10	Double Modulo 10
UPC/EAN		
EAN-8		
EAN-8	Checkbox to enable EAN-8 decoding.	Enable
EAN-8 Extend	Checkbox to enable converting EAN-8 to EAN-13 format.	Disable
EAN-13		
EAN-13	Checkbox to enable EAN-13 decoding.	Enable
Bookland EAN	Checkbox to enable ISBN decoding. If enabled, select Bookland ISBN Format in the drop-down box below.	Enable
Bookland ISBN Format	Decodes Bookland data starting with 978 in 10-digit format along with the Bookland check digit, or Bookland data starting with 978/979 as EAN-13 format.	Bookland ISBN-10
Transmit Check Digit	Decide whether to include the EAN-13 check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-A		
UPC-A	Checkbox to enable UPC-A decoding.	Enable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Transmit Check Digit	Decide whether to include the UPC-A check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-E		

UPC-E	Checkbox to enable UPC-E decoding.	Enable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-E1		
UPC-E1	Checkbox to enable UPC-E1 decoding.	Disable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
General Preference		
Support Coupon Code	Reads UPC-A barcodes starting with “5”, EAN-13 barcodes starting with “99”, and UPC-A/EAN-128 Coupon Codes. ▸ UPC-A, EAN-13, and GS1-128 must be enabled first! ▸ Use “Addon Redundancy” to control auto-discrimination of the GS1-128 (right half) of a coupon code.	Disable
EAN Addon Option	Decide whether to decode EAN-8, EAN-13 with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon
EAN Addon Redundancy	When “Auto-discriminate” is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 30.	10
UPC Addon Option	Decide whether to decode UPC-E0, UPC-E1, UPC-A with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon

<table>
<tr><td>UPC Addon Redundancy</td><td>When “Auto-discriminate” is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 30.</td><td>10</td></tr>
<tr><td>UPC Security Level</td><td>Sets the security level to ensure decoding accuracy considering the printed quality of the barcodes such as Code 128, Code 93, and UPC/EAN. The higher the level is, the more security is ensured. Options are:
<table>
<tr><th>Level</th><th>Description</th></tr>
<tr><td>0</td><td>With this default, the scan engine is aggressive enough to decode most “in-spec” barcodes.</td></tr>
<tr><td>1</td><td>Select this level if misdecodes have occurred. It fixes most misdecodes.</td></tr>
<tr><td>2</td><td>Select this level if Level 1 should fail to eliminate misdecodes.</td></tr>
<tr><td>3</td><td>Select this level if Security Level 2 should fail to prevent misdecodes. However, as this level actually impairs the decoding ability of scan engine, it’d be better to improve the barcode’s print quality if this level should be needed.</td></tr>
</table></td><td>Level 2</td></tr>
</table>

MISCELLANEOUS

Laser Engine	Description	Default
Miscellaneous Options		---
AIM Code ID character	Decide whether to include AIM Code ID in the data. Each AIM Code ID contains a three-character string “**]cm**”: ▸] = Flag Character (ASCII 93) ▸ c = Code Character (see below) ▸ m = Modifier Character (see below)	Disable

AIM CODE ID – CODE CHARACTERS

Code Character	Code Type
A	Code 39, Code 39 Full ASCII, Code 32
C	Code 128, Coupon (Code 128 portion)
d	Data Matrix
E	UPC/EAN, Coupon (UPC portion)
e	GS1 DataBar (RSS)
F	Codabar
G	Code 93
H	Code 11
I	Interleaved 25
L	PDF417, Macro PDF417, Micro PDF417

M	MSI
Q	QR Code
S	Industrial 25 (Discrete 25), IATA 2 of 5
U	Maxicode
X	Code 39 Trioptic, Bookland EAN, US Postnet, US Planet, UK Postal, Japan Postal, Australian Postal, Dutch Postal

AIM CODE ID – MODIFIER CHARACTERS

Code Type	Option Value	Option
Code 39	0	No check character or Full ASCII processing.
	1	Check digit has been verified.
	3	Check digit has been verified and stripped.
	4	Full ASCII conversion has been performed.
	5	Result of option values 1 and 4.
	7	Result of option values 3 and 4.
Code 128	0	Standard data packet. No Function Code 1“FNC1” in the first character position.
	1	Function Code 1“FNC1” in the first character position.
	2	Function Code 1“FNC1” in the second character position.
Interleaved 25	0	No check digit processing.
	1	Check digit has been verified.
	3	Check digit has been verified and stripped.
Codabar	0	No check digit processing.
Code 93	0	Always transmit 0.
MSI	0	Modulo 10 check digit verified and transmitted.
	1	Modulo 10 check digit verified but not transmitted.
Industrial 25 (Discrete 25)	0	Always transmit 0.
UPC/EAN	0	Standard data packet in full EAN country code format, which is 13 digits for UPC-A and UPC-E (not including addons).
	3	Standard data packet with two-digit or five-digit addons.
	4	EAN-8 data packet.
	A UPC-A with Addon 2 barcode, 012345678905-10, is transmitted to the host as a 18-character string, **]E3**001234567890510.	
Bookland EAN	0	Always transmit 0.
Trioptic Code 39	0	Always transmit 0.
Code 11	0	Single check digit (has been verified.)
	1	Two check digits (has been verified.)

	3	Check digit has been verified but not transmitted.
GS1 DataBar (RSS)	0	Always transmit 0.
	RSS-14 and RSS Limited will be transmitted with an Application Identifier "01". For example, an RSS-14 barcode, 10012345678902, is transmitted as **]e0**0110012345678902.	

Note: In GS1-128 emulation mode, RSS is transmitted using Code 128 rules (= "]C1").

EAN.UCC Composites (RSS, GS1-128, 2D portion of UPC composite)	Native mode transmission	
	0	Standard data packet
	1	Data packet containing the data following an encoded symbol separator character.
	2	Data packet containing the data following an escape mechanism character. The data packet does not support the ECI protocol.
	3	Data packet containing the data following an escape mechanism character. The data packet supports the ECI protocol.
	GS1-128 emulation	
	1	Data packet is a GS1-128 barcode (= data is preceded with "]JC1").

Note: UPC portion of composite is transmitted using UPC rules.

PDF417, Micro PDF417	0	Scan engine is set to conform to protocol defined in 1994 PDF417 symbology specifications. ▸ When this option is transmitted, the receiver cannot reliably determine whether ECIs have been invoked or whether data byte 92_{DEC} has been doubled in transmission.
	1	Scan engine is set to follow the ECI protocol (Extended Channel Interpretation). All data characters 92_{DEC} are doubled.
	2	Scan engine is set for Basic Channel operation (no escape character transmission protocol). Data characters 92_{DEC} are not doubled. ▸ When decoders are set to this mode, unbuffered Macro symbols and symbols requiring the decoder to convey ECI escape sequences cannot be transmitted.
	3	The barcode contains a GS1-128 symbol, and the first codeword is 903-907, 912, 914, 915.
	4	The barcode contains a GS1-128 symbol, and the first codeword is in the range 908-909.
	5	The barcode contains a GS1-128 symbol, and the first codeword is in the range 910-911.
	A PDF417 barcode, ABCD, with no transmission protocol enabled, is transmitted as]L2ABCD.	

Data Matrix	0	ECC 000-140, not supported.
	1	ECC 200.
	2	ECC 200, FNC1 in first or fifth position.
	3	ECC 200, FNC1 in second or sixth position.
	4	ECC 200, ECI protocol implemented.
	5	ECC 200, FNC1 in first or fifth position, ECI protocol implemented.
	6	ECC 200, FNC1 in second or sixth position, ECI protocol implemented.
Maxicode	0	Mode 4 or 5
	1	Mode 2 or 3
	2	Mode 4 or 5, ECI protocol implemented.
	3	Mode 2 or 3, ECI protocol implemented in secondary message.
QR Code	0	Model 1
	1	Model 2, ECI protocol not implemented.
	2	Model 2, ECI protocol implemented.
	3	Model 2, ECI protocol not implemented, FNC1 implied in first position.
	4	Model 2, ECI protocol implemented, FNC1 implied in first position.
	5	Model 2, ECI protocol not implemented, FNC1 implied in second position.
	6	Model 2, ECI protocol implemented, FNC1 implied in second position

Note: For JPEG files, these BPP settings are ignored for it always uses 8 bits per pixel!

Appendix IV

EXTENDED RANGE LASER (SE1524)

IN THIS CHAPTER

Reader Settings for 9700.....131
Symbology Settings for 9700.....132

READER SETTINGS FOR 9700

<table>
<tr><th>Laser Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Time-out</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>▸ 3 sec.</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">Following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>All</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded. Following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">▸ All barcodes must be successfully read three times before being decoded.</td></tr>
<tr><td>Scan Angle</td><td>Select the scan angle for Long Range Laser scan engine.
▸ “Narrow angle” for 35°
▸ “Wide angle” for 47°</td><td>Wide angle</td></tr>
<tr><td colspan="2">Scan Mode</td><td>Level mode</td></tr>
<tr><td>Continuous Mode</td><td colspan="2">Non-stop scanning
▸ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning.</td></tr>
</table>

Level Mode	Hold down the scan trigger to start with scanning. ▸ The scanning won't stop until (a) a barcode is read, (b) the preset timeout expires, or (c) you release the trigger.	
Timeout Between Symbols	Sets the time for the barcode reader to resurrect its ability to once more decode a barcode it just decoded. ▸ Only applied in **Continuous** mode.	1 sec

SYMBOLOGY SETTINGS FOR 9700

Symbology	Description	Default
CODABAR		
CodaBar		
Codabar	Checkbox to enable Codabar decoding.	Enable
Length option	Sets the length of the Codabar symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CLSI	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	Disable
NOTIS	Sets whether to include start/stop characters in the transmitted data. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	Disable
CODE 39		
Code 39		
Code 39	Checkbox to enable Code 39 decoding.	Enable
Trioptic Code 39	Selects whether to decode Trioptic Code 39. ▸ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.	Disable
Convert to Code 32	Selects whether to convert decoded data to Italian Pharmacode.	Disable
Code 32 Prefix	Prefix character "A" to Code 32 barcodes. ▸ "Convert to Code 32" must be enabled for this to function properly.	Disable
Verify Check Digit	Selects whether to verify the Modulo 43 check digit. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data to transmit. ▸ "Verify Check Digit" must be enabled.	Disable

Support Full ASCII	Selects whether to enable Code 39 Full ASCII decoding. Characters are paired to encode the full ASCII character set.	Disable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 93		
Code 93		
Enable Code 93	Checkbox to enable Code 93 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 128		
Code 128		
Enable Code 128	Checkbox to enable Code 128 decoding.	Enable
ISBT 128		
Enable ISBT 128	Checkbox to enable ISBT 128 decoding.	Enable
GS1-128		
Enable GS1-128	Checkbox to enable GS1-128 decoding.	Enable
CODE 2 OF 5		
Discrete 25		
Discrete 25	Checkbox to enable Discrete 25 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Interleaved 25		
Interleaved 25	Checkbox to enable Interleaved 2 of 5 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Verify Check Digit	Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted. ▸ Disable ▸ USS Check Digit ▸ OPCC Check Digit	Disable

Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
Convert To EAN-13	Convert a 14-character Interleaved 25 barcode into EAN-13 if the following requirements are met: The barcode must have a leading 0 and a valid EAN-13 check digit.	Disable
GS1 DATABAR		
GS1 DataBar-14		
Enable GS1 DataBar-14	Checkbox to enable GS1 DataBar-14 decoding.	Enable
GS1 DataBar Limited		
Enable GS1 DataBar Limited	Checkbox to enable GS1 DataBar Limited decoding.	Enable
GS1 DataBar Expanded		
Enable GS1 DataBar Expanded	Checkbox to enable GS1 DataBar Expanded decoding.	Enable
Convert to UPC/EAN		
Convert to UPC/EAN	This only applies to GS1 DataBar-14 and GS1 DataBar Limited barcodes not decoded as part of a Composite barcode. **Convert to EAN-13** Strips the leading “010” from barcodes. ▸ The barcode must be composed of a leading “01” as the application identifier (AI) and a first digit of zero. **Convert to UPC-A** Strips the leading “0100” from barcodes. ▸ The barcode must be composed of a leading “01” as the application identifier (AI) and two or more zeros (but not six zeros).	Disable
MSI		
MSI		
MSI	Checkbox to enable MSI decoding.	Enable
Length option	Sets the length of the MSI symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Check Digit Option	One check digit is mandatory for decoding MSI barcodes. Select whether a second check digit should be verified. If the check digits are incorrect, the barcode will not be accepted. ▸ One Check Digit ▸ Two Check Digits	One Check Digit
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable

Algorithm	When two check digits are set for verification, two choices are available for the pair of check digits. ▸ Modulo10 / Modulo11 ▸ Double Modulo 10	Double Modulo 10
UPC/EAN		
EAN-8		
EAN-8	Checkbox to enable EAN-8 decoding.	Enable
EAN-8 Extend	Checkbox to enable converting EAN-8 to EAN-13 format.	Disable
EAN-13		
EAN-13	Checkbox to enable EAN-13 decoding.	Enable
Bookland EAN	Checkbox to enable ISBN decoding. If enabled, select Bookland ISBN Format in the drop-down box below.	Enable
Bookland ISBN Format	Select to decode Bookland data starting with 978 as 10-digit format along with the Bookland check digit, or decode Bookland data starting with 978/979 as EAN-13 format.	Bookland ISBN-10
Transmit Check Digit	Decide whether to include the EAN-13 check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-A		
UPC-A	Checkbox to enable UPC-A decoding.	Enable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Transmit Check Digit	Decide whether to include the UPC-A check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-E		
UPC-E	Checkbox to enable UPC-E decoding.	Enable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-E1		

UPC-E1	Checkbox to enable UPC-E1 decoding.	Disable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
General Preference		
Support Coupon Code	Reads UPC-A barcodes starting with “5”, EAN-13 barcodes starting with “99”, and UPC-A/EAN-128 Coupon Codes. ▸ UPC-A, EAN-13, and GS1-128 must be enabled first! ▸ Use “Addon Redundancy” to control auto-discrimination of the GS1-128 (right half) of a coupon code.	Disable
EAN Addon Option	Decide whether to decode EAN-8, EAN-13 with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon
EAN Addon Redundancy	When “Auto-discriminate” is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 30.	10
UPC Addon Option	Decide whether to decode UPC-E0, UPC-E1, UPC-A with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon
UPC Addon Redundancy	When “Auto-discriminate” is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 30.	10

<table>
<tr>
<td>UPC Security Level</td>
<td>Sets the security level to ensure decoding accuracy considering the printed quality of the barcodes such as Code 128, Code 93, and UPC/EAN. The higher the level is, the more security is ensured. Options are:
<table>
<tr><th>Level</th><th>Description</th></tr>
<tr><td>0</td><td>With this default, the scan engine is aggressive enough to decode most “in-spec” barcodes.</td></tr>
<tr><td>1</td><td>Select this level if misdecodes have occurred. It fixes most misdecodes.</td></tr>
<tr><td>2</td><td>Select this level if Level 1 should fail to eliminate misdecodes.</td></tr>
<tr><td>3</td><td>Select this level if Security Level 2 should fail to prevent misdecodes. However, as this level actually impairs the decoding ability of scan engine, it’d be better to improve the barcode’s print quality if this level should be needed.</td></tr>
</table>
</td>
<td>Level 0</td>
</tr>
</table>

MISCELLANEOUS

Laser Engine	Description	Default
Miscellaneous Options		
Transmit AIM Code ID	Decide whether to include AIM Code ID in the data. Each AIM Code ID contains a three-character string “**]cm**”: ▸] = Flag Character (ASCII 93) ▸ c = Code Character (see below) ▸ m = Modifier Character (see below)	Disable

Appendix V

2D IMAGER (SE4500DL)

IN THIS CHAPTER

Reader Settings for 9300.....139
Symbology Settings for 9300.....141
Reader Settings for 9600.....149
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Reader Settings for CP55, CP60, 9700.....159
Symbology Settings for CP55, CP60, 9700.....161

Reader and symbology settings for the 9300, 9600 and CP60 2D imagers are:

READER SETTINGS FOR 9300

<table>
<tr><th>2D Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Time-out</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>3 sec.</td></tr>
<tr><td>Decode Illumination</td><td>Decide whether to flash illumination on every barcode capture to aid decoding.
▸ Turn On (Internal LED)
▸ Turn Off</td><td>On</td></tr>
<tr><td>Aiming Pattern</td><td>Decide whether to project the aiming pattern during barcode capture.
▸ Turn On
▸ Turn Off</td><td>On</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">The following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>8 characters or less</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
</table>

<table>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded.
The following barcodes must be read three times:<table><tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr><tr><td>Codabar</td><td>8 characters or less</td></tr><tr><td>MSI</td><td>4 characters or less</td></tr><tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr><tr><td>Interleaved 25</td><td>8 characters or less</td></tr></table></td></tr>
<tr><td>Level 4</td><td colspan="2">All barcodes must be successfully read three times before being decoded.</td></tr>
<tr><td>Security Level</td><td>Select a decode security level appropriate for the barcode quality when reading delta barcodes such as Code 128, Code 93, UPC/EAN.
Security Level 0 – This default setting allows the scan engine to operate in its most aggressive state, providing sufficient security in decoding most “in-spec” barcodes.
Security Level 1 – Select this option if misdecodes occur. This level should eliminate most misdecodes.
Security Level 2 – Select this option if Security Level 1 fails to eliminate misdecodes.
Security Level 3 – Select this option if Security Level 2 also fails to eliminate misdecodes. However, selecting this option impairs the decoding ability of the scan engine. If this level of security is necessary, try to improve the barcode quality.</td><td>Level 0</td></tr>
</table>

SYMBOLOGY SETTINGS FOR 9300

1D SYMBOLOGIES

2D Engine	Description	Default
Codabar		**Enable**
CLSI Editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	No
NOTIS Editing	Decide whether to include the start/stop characters in the data being transmitted. ▸ NOTIS Editing is to strip the start/stop characters, which equals to “Disable Transmit Start/Stop Characters".	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Intercharacter Gap Size	The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various barcode printing technologies, this gap can grow larger than the maximum size allowed, preventing the scan engine from decoding a barcode. If this problem occurs, set it to “Large Intercharacter Gaps” to tolerate these out-of-specification barcodes. ▸ Normal intercharacter gaps ▸ Large intercharacter gaps	Normal
Code 128		**---**
Code 128	Read standard Code 128 barcodes (= without leading FNC1 character).	Enable
GS1-128 (UCC/EAN-128)	Read GS1-128 barcodes with leading FNC1 character.	Enable
ISBT 128	Read ISBT 128 barcodes.	Enable
ISBT Concatenation	Decide whether to decode and concatenate pairs of ISBT barcodes. ▸ Disable ▸ Enable – When this option is selected, there must be two ISBT barcodes for the scanner to decode and perform concatenation. ▸ Auto-discriminate – When this option is selected, the scanner decodes and concatenates pairs of ISBT barcodes immediately. If only a single ISBT barcode is present, the scanner must decode 10 times before transmitting its data to confirm that there is no additional ISBT barcode.	Disable
ISBT Concatenation Redundancy	When “Auto-discriminate” is applied, decide the concatenation redundancy (2~20 times).	10 times
Industrial 25 (Discrete 25)		**Enable**

Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Interleaved 25		**Enable**
Convert to EAN-13	Convert a 14-character barcode into EAN-13 if the following requirements are met: ▸ The barcode must have a leading 0 and a valid EAN-13 check digit. ▸ “Verify Check Digit” must be disabled.	No
Verify Check Digit	Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted. ▸ No ▸ USS algorithm ▸ OPCC algorithm	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Matrix 25		**Enable**
Redundancy	Decide whether to enable decode redundancy.	Disable
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Chinese 25		**Enable**
Code 39		**Enable**
Convert to Code 32	Convert to Italian Pharmacode.	No
Code 32 Prefix	Prefix character "A" to Code 32 barcodes.	No
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. ▸ "Verify Check Digit" must be enabled.	No
Code 39 Full ASCII	Code 39 Full ASCII includes all the alphanumeric and special characters.	Disable
Trioptic Code 39	Decide whether to decode Trioptic Code 39. ▸ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.	Disable
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55

<table>
<tr><td>Intercharacter Gap Size</td><td>The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various barcode printing technologies, this gap can grow larger than the maximum size allowed, preventing the scan engine from decoding a barcode. If this problem occurs, set it to “Large Intercharacter Gaps” to tolerate these out-of-specification barcodes.
Normal intercharacter gaps
Large intercharacter gaps</td><td>Normal</td></tr>
<tr><td colspan="2">Code 93</td><td>Enable</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td colspan="2">MSI</td><td>Enable</td></tr>
<tr><td>Verify Check Digit</td><td>If Two Check Digits option is selected, an additional verification is required to ensure integrity. Select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted.<table><tr><th>Check Digit</th><th>Algorithm</th></tr><tr><td>One Check Digit</td><td>Single Modulo 10</td></tr><tr><td>Two Check Digits</td><td>Mod 10/Mod 11
Mod 10/Mod 10</td></tr></table></td><td>Single Modulo 10</td></tr>
<tr><td>Transmit Check Digit</td><td>Decide whether to include the check digit in the data being transmitted.</td><td>No</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td colspan="2">GS1 DataBar (RSS)</td><td>---</td></tr>
<tr><td>GS1 Databar-14</td><td>GS1 DataBar-14 is short for GS1 DataBar Omnidirectional. This group consists of (1) GS1 DataBar Omnidirectional, (2) GS1 DataBar Truncated, (3) GS1 DataBar Stacked, and (4) GS1 DataBar Stacked Omnidirectional.</td><td>Enable</td></tr>
<tr><td>GS1 Databar Limited</td><td></td><td>Enable</td></tr>
<tr><td>GS1 Databar Expanded</td><td>This group consists of (1) GS1 DataBar Expanded, and (2) GS1 DataBar Expanded Stacked.</td><td>Enable</td></tr>
<tr><td>Convert RSS to UPC/EAN</td><td>"Convert to UPC/EAN" only applies to GS1 Databar-14 and GS1 Databar Limited barcodes not decoded as part of a Composite barcode.<table><tr><th>Convert to EAN-13</th></tr><tr><td>Strip the leading "010" from barcodes.
"01" is the Application ID and must be followed by a single zero (the first digit encoded)</td></tr><tr><th>Convert to UPC-A</th></tr><tr><td>Strip the leading "0100" from barcodes.
"01" is the Application ID and must be followed by two or more zeros (but not six zeros)</td></tr></table></td><td>No</td></tr>
</table>

EAN-8		**Enable**
Convert to EAN-13	The EAN-8 barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.	No
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
EAN-13		**Enable**
Bookland EAN (ISBN)	The EAN-13 barcode starting with 978 will be converted to ISBN.	Yes
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
UPC-A		**Enable**
Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
UPC-E0		**Enable**
Transmit Check Digit	Decide whether to include the UPC-E0 check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-E0 preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
Convert to UPC-A	The UPC-E0 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UPC-E1		**Disable**
Transmit Check Digit	Decide whether to include the UPC-E1 check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-E1 preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UCC Coupon Extended Code		**Disable**
Read UPC-A barcodes starting with digit "5", EAN-13 barcodes starting with digits "99", and UPC-A/GS1-128 Coupon Codes. ▸ UPC-A, EAN-13, and GS1-128 must be enabled first! ▸ Use “Addon Redundancy” to control auto-discrimination of the GS1-128 (right half) of a coupon code.		
UPC/EAN Addon		**---**
Addon 2 / Addon 5	Decide whether to decode EAN-8, EAN-13, UPC-E0, UPC-E1, UPC-A with addons. ▸ Ignore Addons ▸ Decode Only With Addons ▸ Auto-discriminate	Ignore...

Addon Redundancy	When "Auto-discriminate" is applied, decide the number of times of supplementary decoding for the same barcode to make a valid reading.	10 times
Code 11		**Enable**
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted. ▸ No verification ▸ One Check Digit ▸ Two Check Digits	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. ▸ "Verify Check Digit" must be enabled.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Postal Codes		**---**
US Postnet		Enable
US Planet		Enable
Transmit US Postal Check Digit	US Postnet or US Planet must be enabled first!	Enable
UK Postal		Enable
Transmit UK Postal Check Digit	UK Postal must be enabled first!	Enable
Japan Postal		Enable
Australian Postal		Enable
Dutch Postal		Enable
Composite Codes		**---**
Composite CC-C		Enable
Composite CC-A/B		Disable
Composite TLC-39		Disable
GS1-128 Emulation Mode for UCC/EAN Composite Codes	Transmit UCC/EAN Composite Code data as if it was encoded in GS1-128 barcodes.	Disable

UPC Composite Mode	UPC barcodes can be "linked" with a 2D barcode during transmission as if they were one barcode. **UPC Never Linked** Transmit UPC barcodes regardless of whether a 2D barcode is detected. **UPC Always Linked** Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted. ▸ CC-A/B or CC-C must be enabled! **Auto-discriminate UPC Composites** Transmit UPC barcodes as well as the 2D portion if present.	UPC Always Linked

2D SYMBOLOGIES

2D Engine	Description	Default
2D Symbologies		**---**
PDF417		Enable
MicroPDF417		Disable
MicroPDF417 Code 128 Emulation	Transmit data from certain MicroPDF417 barcodes as if it was encoded in Code 128 barcodes. ▸ Transmit AIM Code Identifier in **Miscellaneous Options** must be enabled first! When applied, the MicroPDF417 barcodes are transmitted with one of these prefixes: **The first codeword of MicroPDF417 is 903-907, 912, 914, 915:** The original Code ID "]L3" will be changed to "]C1". **The first codeword of MicroPDF417 is 908 or 909:** The original Code ID "]L4" will be changed to "]C2". **The first codeword of MicroPDF417 is 910 or 911:** The original Code ID "]L5" will be changed to "]C0".	Disable
Data Matrix		Enable

Data Matrix Inverse	Decide whether to decode Data Matrix Inverse. **Regular Only** Decode regular Data Matrix barcodes only. **Inverse Only** Decode inverse Data Matrix barcodes only. **Autodetect** Decode both regular and inverse Data Matrix barcodes.	Regular Only
Maxicode		Enable
QR Code		Enable
QR Code Inverse	Decide whether to decode QR Code Inverse. **Regular Only** Decode regular QR Code only. **Inverse Only** Decode inverse QR Code only.	Regular Only
	Autodetect Decode both regular and inverse QR Code.	
MicroQR		Enable
Aztec		Enable
Aztec Inverse	Decide whether to decode Aztec Inverse. **Regular Only** Decode regular Aztec barcodes only. **Inverse Only** Decode inverse Aztec barcodes only. **Autodetect** Decode both regular and inverse Aztec barcodes.	Regular Only
2D Symbologies - Macro PDF		**---**
Macro PDF is a special feature for concatenating multiple PDF barcodes into one file, known as Macro PDF417 or Macro MicroPDF417.		

Transmit/Decode Mode	Decide how to handle Macro PDF decoding. **Buffer All Symbols / Transmit Macro PDF When Complete** Transmit all decoded data from an entire Macro PDF sequence only when the entire sequence is scanned and decoded. If the decoded data exceeds the limit of 50 symbols, no transmission because the entire sequence was not scanned! **Transmit Any Symbol in Set / No Particular Order** Transmit data from each Macro PDF symbol as decoded, regardless of the sequence. **Passthrough All Symbols** Transmit and decode all Macro PDF symbols and perform no processing. In this mode, the host is responsible for detecting and parsing the Macro PDF sequences.	Passthrough All Symbols
ESC Characters	When enabled, it uses the backslash "\" as an Escape character for systems that can process transmissions containing special data sequences. It will format special data according to the Global Label Identifier (GLI) protocol, which only affects the data portion of a Macro PDF symbol transmission. The Control Header, if enabled, is always sent with GLI formatting.	None

Note: When printing barcodes, keep each Macro PDF sequence separate, as each has a unique identifier. Do not mix barcodes from several Macro PDF sequences, even if they encode the same data. When you scan Macro PDF sequences, scan the entire Macro PDF sequence without interruption!

MISCELLANEOUS

Miscellaneous Options		**---**
Transmit Code ID	Decide whether to include AIM Code ID in the beginning of data. Each AIM Code ID contains the three-character string "**]cm**" – ▸] = Flag Character (ASCII 93) ▸ c = Code Character (see below) ▸ m = Modifier Character (see below)	Disable

READER SETTINGS FOR 9600

<table>
<tr><th>2D Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Time-out</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>3 sec.</td></tr>
<tr><td>Decode Illumination</td><td>Decide whether to flash illumination on every barcode capture to aid decoding.
▸ Turn On (Internal LED)
▸ Turn Off</td><td>On</td></tr>
<tr><td>Aiming Pattern</td><td>Decide whether to project the aiming pattern during barcode capture.
▸ Turn On
▸ Turn Off</td><td>On</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">The following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>8 characters or less</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded.
The following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>8 characters or less</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">All barcodes must be successfully read three times before being decoded.</td></tr>
</table>

Security Level	Select a decode security level appropriate for the barcode quality when reading delta barcodes such as Code 128, Code 93, UPC/EAN. ▸ Security Level 0 – This default setting allows the scan engine to operate in its most aggressive state, providing sufficient security in decoding most “in-spec” barcodes. ▸ Security Level 1 – Select this option if misdecodes occur. This level should eliminate most misdecodes. ▸ Security Level 2 – Select this option if Security Level 1 fails to eliminate misdecodes. ▸ Security Level 3 – Select this option if Security Level 2 also fails to eliminate misdecodes. However, selecting this option impairs the decoding ability of the scan engine. If this level of security is necessary, try to improve the barcode quality.	**Level 0**

SYMBOLOGY SETTINGS FOR 9600

1D SYMBOLOGIES

2D Engine	Description	Default
Codabar		**Enable**
CLSI Editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	No
NOTIS Editing	Decide whether to include the start/stop characters in the data being transmitted. ▸ NOTIS Editing is to strip the start/stop characters, which equals to “Disable Transmit Start/Stop Characters".	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Intercharacter Gap Size	The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various barcode printing technologies, this gap can grow larger than the maximum size allowed, preventing the scan engine from decoding a barcode. If this problem occurs, set it to “Large Intercharacter Gaps” to tolerate these out-of-specification barcodes. ▸ Normal intercharacter gaps ▸ Large intercharacter gaps	Normal
Code 128		**---**
Code 128	Read standard Code 128 barcodes (= without leading FNC1 character).	Enable
GS1-128 (UCC/EAN-128)	Read GS1-128 barcodes with leading FNC1 character.	Enable
ISBT 128	Read ISBT 128 barcodes.	Enable
ISBT Concatenation	Decide whether to decode and concatenate pairs of ISBT barcodes. ▸ Disable ▸ Enable – When this option is selected, there must be two ISBT barcodes for the scanner to decode and perform concatenation. ▸ Auto-discriminate – When this option is selected, the scanner decodes and concatenates pairs of ISBT barcodes immediately. If only a single ISBT barcode is present, the scanner must decode 10 times before transmitting its data to confirm that there is no additional ISBT barcode.	Disable
ISBT Concatenation Redundancy	When “Auto-discriminate” is applied, decide the concatenation redundancy (2~20 times).	10 times
Industrial 25 (Discrete 25)		**Enable**

Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Interleaved 25		**Enable**
Convert to EAN-13	Convert a 14-character barcode into EAN-13 if the following requirements are met: ▸ The barcode must have a leading 0 and a valid EAN-13 check digit. ▸ “Verify Check Digit” must be disabled.	No
Verify Check Digit	Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted. ▸ No ▸ USS algorithm ▸ OPCC algorithm	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Matrix 25		**Enable**
Redundancy	Decide whether to enable decode redundancy.	Disable
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Chinese 25		**Enable**
Code 39		**Enable**
Convert to Code 32	Convert to Italian Pharmacode.	No
Code 32 Prefix	Prefix character "A" to Code 32 barcodes.	No
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. ▸ "Verify Check Digit" must be enabled.	No
Code 39 Full ASCII	Code 39 Full ASCII includes all the alphanumeric and special characters.	Disable
Trioptic Code 39	Decide whether to decode Trioptic Code 39. ▸ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.	Disable
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55

<table>
<tr><td>Intercharacter Gap Size</td><td>The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various barcode printing technologies, this gap can grow larger than the maximum size allowed, preventing the scan engine from decoding a barcode. If this problem occurs, set it to “Large Intercharacter Gaps” to tolerate these out-of-specification barcodes.
Normal intercharacter gaps
Large intercharacter gaps</td><td>Normal</td></tr>
<tr><td colspan="2">Code 93</td><td>Enable</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td colspan="2">MSI</td><td>Enable</td></tr>
<tr><td>Verify Check Digit</td><td>If Two Check Digits option is selected, an additional verification is required to ensure integrity. Select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted.<table><tr><th>Check Digit</th><th>Algorithm</th></tr><tr><td>One Check Digit</td><td>Single Modulo 10</td></tr><tr><td>Two Check Digits</td><td>Mod 10/Mod 11
Mod 10/Mod 10</td></tr></table></td><td>Single Modulo 10</td></tr>
<tr><td>Transmit Check Digit</td><td>Decide whether to include the check digit in the data being transmitted.</td><td>No</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td colspan="2">GS1 DataBar (RSS)</td><td>---</td></tr>
<tr><td>GS1 Databar-14</td><td>GS1 DataBar-14 is short for GS1 DataBar Omnidirectional. This group consists of (1) GS1 DataBar Omnidirectional, (2) GS1 DataBar Truncated, (3) GS1 DataBar Stacked, and (4) GS1 DataBar Stacked Omnidirectional.</td><td>Enable</td></tr>
<tr><td>GS1 Databar Limited</td><td></td><td>Enable</td></tr>
<tr><td>GS1 Databar Expanded</td><td>This group consists of (1) GS1 DataBar Expanded, and (2) GS1 DataBar Expanded Stacked.</td><td>Enable</td></tr>
</table>

Convert RSS to UPC/EAN	"Convert to UPC/EAN" only applies to GS1 Databar-14 and GS1 Databar Limited barcodes not decoded as part of a Composite barcode. **Convert to EAN-13** Strip the leading "010" from barcodes. ▸ "01" is the Application ID and must be followed by a single zero (the first digit encoded) **Convert to UPC-A** Strip the leading "0100" from barcodes. ▸ "01" is the Application ID and must be followed by two or more zeros (but not six zeros)	No
EAN-8		**Enable**
Convert to EAN-13	The EAN-8 barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.	No
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
EAN-13		**Enable**
Bookland EAN (ISBN)	The EAN-13 barcode starting with 978 will be converted to ISBN.	Yes
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
UPC-A		**Enable**
Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
UPC-E0		**Enable**
Transmit Check Digit	Decide whether to include the UPC-E0 check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-E0 preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
Convert to UPC-A	The UPC-E0 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UPC-E1		**Disable**
Transmit Check Digit	Decide whether to include the UPC-E1 check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-E1 preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	

Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UCC Coupon Extended Code		**Disable**
Read UPC-A barcodes starting with digit "5", EAN-13 barcodes starting with digits "99", and UPC-A/GS1-128 Coupon Codes. ▸ UPC-A, EAN-13, and GS1-128 must be enabled first! ▸ Use “Addon Redundancy” to control auto-discrimination of the GS1-128 (right half) of a coupon code.		
UPC/EAN Addon		**---**
Addon 2 / Addon 5	Decide whether to decode EAN-8, EAN-13, UPC-E0, UPC-E1, UPC-A with addons. ▸ Ignore Addons ▸ Decode Only With Addons ▸ Auto-discriminate	Ignore...
Addon Redundancy	When "Auto-discriminate" is applied, decide the number of times of supplementary decoding for the same barcode to make a valid reading.	10 times
Code 11		**Enable**
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted. ▸ No verification ▸ One Check Digit ▸ Two Check Digits	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. ▸ "Verify Check Digit" must be enabled.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Postal Codes		**---**
US Postnet		Enable
US Planet		Enable
Transmit US Postal Check Digit	US Postnet or US Planet must be enabled first!	Enable
UK Postal		Enable
Transmit UK Postal Check Digit	UK Postal must be enabled first!	Enable
Japan Postal		Enable
Australian Postal		Enable
Dutch Postal		Enable
Composite Codes		**---**
Composite CC-C		Enable
Composite CC-A/B		Disable

Composite TLC-39		Disable
GS1-128 Emulation Mode for UCC/EAN Composite Codes	Transmit UCC/EAN Composite Code data as if it was encoded in GS1-128 barcodes.	Disable
UPC Composite Mode	UPC barcodes can be "linked" with a 2D barcode during transmission as if they were one barcode. **UPC Never Linked** Transmit UPC barcodes regardless of whether a 2D barcode is detected. **UPC Always Linked** Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted. ▸ CC-A/B or CC-C must be enabled! **Auto-discriminate UPC Composites** Transmit UPC barcodes as well as the 2D portion if present.	UPC Always Linked

2D SYMBOLOGIES

2D Engine	Description	Default
2D Symbologies		**---**
PDF417		Enable
MicroPDF417		Disable
MicroPDF417 Code 128 Emulation	Transmit data from certain MicroPDF417 barcodes as if it was encoded in Code 128 barcodes. ▸ Transmit AIM Code Identifier in **Miscellaneous Options** must be enabled first! When applied, the MicroPDF417 barcodes are transmitted with one of these prefixes: **The first codeword of MicroPDF417 is 903-907, 912, 914, 915:** The original Code ID "]L3" will be changed to "]C1". **The first codeword of MicroPDF417 is 908 or 909:** The original Code ID "]L4" will be changed to "]C2". **The first codeword of MicroPDF417 is 910 or 911:** The original Code ID "]L5" will be changed to "]C0".	Disable

Data Matrix		Enable
Data Matrix Inverse	Decide whether to decode Data Matrix Inverse. **Regular Only** Decode regular Data Matrix barcodes only. **Inverse Only** Decode inverse Data Matrix barcodes only. **Autodetect** Decode both regular and inverse Data Matrix barcodes.	Regular Only
Maxicode		Enable
QR Code		Enable
QR Code Inverse	Decide whether to decode QR Code Inverse. **Regular Only** Decode regular QR Code only. **Inverse Only** Decode inverse QR Code only.	Regular Only

	Autodetect Decode both regular and inverse QR Code.	
MicroQR		Enable
Aztec		Enable
Aztec Inverse	Decide whether to decode Aztec Inverse. **Regular Only** Decode regular Aztec barcodes only. **Inverse Only** Decode inverse Aztec barcodes only. **Autodetect** Decode both regular and inverse Aztec barcodes.	Regular Only
2D Symbologies - Macro PDF		**---**
Macro PDF is a special feature for concatenating multiple PDF barcodes into one file, known as Macro PDF417 or Macro MicroPDF417.		

Transmit/Decode Mode	Decide how to handle Macro PDF decoding. **Buffer All Symbols / Transmit Macro PDF When Complete** Transmit all decoded data from an entire Macro PDF sequence only when the entire sequence is scanned and decoded. If the decoded data exceeds the limit of 50 symbols, no transmission because the entire sequence was not scanned! **Transmit Any Symbol in Set / No Particular Order** Transmit data from each Macro PDF symbol as decoded, regardless of the sequence. **Passthrough All Symbols** Transmit and decode all Macro PDF symbols and perform no processing. In this mode, the host is responsible for detecting and parsing the Macro PDF sequences.	Passthrough All Symbols
ESC Characters	When enabled, it uses the backslash "\" as an Escape character for systems that can process transmissions containing special data sequences. It will format special data according to the Global Label Identifier (GLI) protocol, which only affects the data portion of a Macro PDF symbol transmission. The Control Header, if enabled, is always sent with GLI formatting.	None

Note: When printing barcodes, keep each Macro PDF sequence separate, as each has a unique identifier. Do not mix barcodes from several Macro PDF sequences, even if they encode the same data. When you scan Macro PDF sequences, scan the entire Macro PDF sequence without interruption!

MISCELLANEOUS

Miscellaneous Options		**---**
Transmit Code ID	Decide whether to include AIM Code ID in the beginning of data. Each AIM Code ID contains the three-character string "**]cm**" – ▸] = Flag Character (ASCII 93) ▸ c = Code Character (see below) ▸ m = Modifier Character (see below)	Disable

READER SETTINGS FOR CP55, CP60, 9700

<table>
<tr><th>2D Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Timeout</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>3 sec.</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">The following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>8 characters or less</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded.
The following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>8 characters or less</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">All barcodes must be successfully read three times before being decoded.</td></tr>
<tr><td>Security Level</td><td>Select a decode security level appropriate for the barcode quality when reading delta barcodes such as Code 128, Code 93, UPC/EAN.
▸ Security Level 0 – This default setting allows the scan engine to operate in its most aggressive state, providing sufficient security in decoding most “in-spec” barcodes.
▸ Security Level 1 – Select this option if misdecodes occur. This level should eliminate most misdecodes.
▸ Security Level 2 – Select this option if Security Level 1 fails to eliminate misdecodes.
▸ Security Level 3 – Select this option if Security Level 2 also fails to eliminate misdecodes. However, selecting this option impairs the decoding ability of the scan engine. If this level of security is necessary, try to improve the barcode quality.</td><td>Level 0</td></tr>
<tr><td>Inter-Char Gap Size</td><td>Sets the intercharacter gap size for Code 39 and Codabar. Switch between Normal and Large.</td><td>Normal</td></tr>
</table>

Scan Mode	Sets the reader's scanning behaviour. Options available are **Level**, **Presentation Mode** and **Auto Aim**. • Level: Decoding process is activated by trigger event and continues until trigger event ends, a valid decode happens or decode session time-out is reached. • Presentation Mode: The imager engine attempts to decode when an object appears in its field of view. Sleeping state is not entered when this mode is activated. • Auto Aim: Red aiming pattern is turned on when the imager engine detects motion. A trigger event will then activate decoding. If 2 seconds go by without any activity, the aiming pattern goes off.	Level
Decoding Illumination	Enables an LED light beam to aid barcode reading.	Selected (Enabled)
Decode Aiming Pattern	Projects a crosshair at the center of the laser light beam to facilitate barcode reading.	Selected (Enabled)
Picklist Mode	When selected, only barcodes aligned at the crosshair of the laser light beam will be decoded.	Deselected (Disabled)
Display Mode	Enable improved performance for reading barcodes on electronic displays and mobile phones.	Deselected (Disabled)

SYMBOLOGY SETTINGS FOR CP55, CP60, 9700

1D SYMBOLOGIES

Symbology	Description	Default
CODABAR		
CodaBar		
Codabar	Checkbox to enable Codabar decoding.	Enable
Length option	Sets the length of the Codabar symbols to decode. • One Fixed length (Length 1) • Two Fixed lengths (Length 1>Length 2) • Max / Min Length (range: 0-55; Length 1<Length 2) • Any Length	Max / Min Length (4-55)
CLSI	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. • The 14-character barcode length does not include start/stop characters.	Disable
NOTIS	Sets whether to include start/stop characters in the transmitted data. • NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	Disable
CODE 11		
Code 11		
Code 11	Checkbox to enable Code 11 decoding.	Enable
Check Digit Option	Sets whether to verify check digits according to the selected option. If the check digits are incorrect, the barcode will not be accepted. • Disable • One Check Digit • Two Check Digits	Disable
Transmit Check Digit	Selects whether to include check digits in the transmitted data. • Check Digit Option" must be enabled.	Disable
Length option	Sets the length of the Code 11 symbols to decode. • One Fixed length (Length 1) • Two Fixed lengths (Length 1>Length 2) • Max / Min Length (range: 0-55; Length 1<Length 2) • Any Length	Max / Min Length (4-55)
CODE 39		
Code 39		
Code 39	Checkbox to enable Code 39 decoding.	Enable

Trioptic Code 39	Selects whether to decode Trioptic Code 39. ▸ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.	Disable
Convert to Code 32	Selects whether to convert decoded data to Italian Pharmacode.	Disable
Code 32 Prefix	Prefix character “A” to Code 32 barcodes. ▸ “Convert to Code 32” must be enabled for this to function properly.	Disable
Verify Check Digit	Selects whether to verify the Modulo 43 check digit. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data to transmit. ▸ “Verify Check Digit” must be enabled.	Disable
Support Full ASCII	Selects whether to enable Code 39 Full ASCII decoding. Characters are paired to encode the full ASCII character set.	Disable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 93		
Code 93		
Enable Code 93	Checkbox to enable Code 93 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 128		
Code 128		
Enable Code 128	Checkbox to enable Code 128 decoding.	Enable
GS1-128		
Enable GS1-128	Checkbox to enable GS1-128 decoding.	Enable
ISBT-128		
ISBT 128	Checkbox to enable ISBT 128 decoding.	Enable
Concatenation	▸ Sets whether to enable decoding ISBT-128 by performing concatenation of ISBT data ▸ Disable: Does not perform concatenation ▸ Enable: Performs concatenation on all ISBT-128 barcodes. ▸ Auto-discriminate: Auto-discriminates between the ISBT-128 barcodes which require concatenation and those which do not need concatenation.	Disable
Redundancy	Sets redundancy between 2-20.	10

CODE 2 OF 5		
Chinese 25		
Enable Chinese 25	Checkbox to enable Chinese 25 decoding.	Enable
Discrete 25		
Discrete 25	Checkbox to enable Discrete 25 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Interleaved 25		
Interleaved 25	Checkbox to enable Interleaved 2 of 5 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Verify Check Digit	▸ Disable ▸ USS Check Digit ▸ OPCC Check Digit	Disable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
Convert To EAN-13	Convert a 14-character Interleaved 25 barcode into EAN-13 if the following requirements are met: The barcode must have a leading 0 and a valid EAN-13 check digit.	Disable
Matrix 25		
Matrix 25	Checkbox to enable Matrix 2 of 5 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Redundancy	▸ Sets read redundancy	Disable
Verify Check Digit	▸ Select whether to verify the check digit, which is the last character of the barcode. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
COMPOSITE		
Composite CC-A/B		
Enable Composite CC-A/B	Checkbox to enable Composite CC-A/B decoding.	Disable
Composite CC-C		

Enable Composite CC-C	Checkbox to enable Composite CC-C decoding.	Enable
Composite TLC 39		
Enable Code 128	Checkbox to enable Code 128 decoding.	Disable
General Preference		
UPC Composite Mode	UPC barcodes can be "linked" with a 2D barcode during transmission as if they were one barcode. **UPC Never Linked** Transmit UPC barcodes regardless of whether a 2D barcode is detected. **UPC Always Linked** Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted. ▸ CC-A/B or CC-C must be enabled. **Auto-discriminate** Transmit UPC barcodes as well as the 2D portion if present.	UPC Always Linked
GS1-128 Emulation Mode	Sets GS1-128 emulation mode for UCC/EAN Composite Codes.	Disable
GS1 DATABAR		
GS1 DataBar-14		
Enable GS1 DataBar-14	Checkbox to enable GS1 DataBar-14 decoding.	Enable
GS1 DataBar Limited		
Enable GS1 DataBar-Limited	Checkbox to enable GS1 DataBar-Limited decoding.	Enable
GS1 DataBar Expanded		
Enable GS1 DataBar-Expanded	Checkbox to enable GS1 DataBar-Expanded decoding.	Enable
Convert to UPC/EAN		
Convert to UPC/EAN	This only applies to GS1 DataBar-14 and GS1 DataBar Limited barcodes not decoded as part of a Composite barcode. **Convert to EAN-13** Strips the leading “010” from barcodes. ▸ The barcode must be composed of a leading “01” as the application identifier (AI) and a first digit of zero.	Disable

	Convert to UPC-A Strips the leading “0100” from barcodes. ▸ The barcode must be composed of a leading “01” as the application identifier (AI) and two or more zeros (but not six zeros).	
INVERSE		
Inverse		
Enable Inverse	Checkbox to enable Inverse 1D decoding.	Disable
KOREAN 3 OF 5		
Korean 3 of 5		
Enable Korean 3 of 5	Checkbox to enable Korean 3 of 5 decoding.	Disable
MSI		
MSI		
MSI	Checkbox to enable MSI decoding.	Enable
Length option	Sets the length of the MSI symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Check Digit Option	One check digit is mandatory for decoding MSI barcodes. Select whether a second check digit should be verified. If the check digits are incorrect, the barcode will not be accepted. ▸ One Check Digit ▸ Two Check Digits	One Check Digit
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
Algorithm	▸ When two check digits are set for verification, two choices are available for the pair of check digits. ▸ Modulo10 / Modulo11 ▸ Double Modulo 10	Double Modulo 10
POSTAL CODE		
Australian Postal		
Enable Australian Postal	Checkbox to enable Australian Postal decoding.	Enable
Japan Postal		
Enable Japan Postal	Checkbox to enable Japan Postal decoding.	Enable
Netherlands KIX Code		
Enable Netherlands KIX Code	Checkbox to enable Netherlands KIX Code decoding.	Enable
US Postnet		
Enable US Postnet	Checkbox to enable US Postnet decoding.	Enable
US Planet		

Enable US Planet	Checkbox to enable US Planet decoding.	Enable
UK Postal		
Enable UK Postal	Checkbox to enable UK Postal decoding.	Enable
General Preference		
US Postal Check Digit	Decide whether to transmit check digit for US Postnet or US Planet.	Enable
UK Postal Check Digit	Decide whether to transmit check digit for UK Postal.	Enable
UPC/EAN		
EAN-8		
EAN-8	Checkbox to enable EAN-8 decoding.	Enable
EAN-8 Extend	Checkbox to enable converting EAN-8 to EAN-13 format.	Disable
EAN-13		
EAN-13	Checkbox to enable EAN-13 decoding.	Enable
Bookland EAN	Checkbox to enable ISBN decoding. If enabled, select Bookland ISBN Format in the drop-down box below.	Enable
Bookland ISBN Format	Decodes Bookland data starting with 978 in 10-digit format along with the Bookland check digit, or Bookland data starting with 978/979 as EAN-13 format.	Bookland ISBN-10
ISSN EAN	Checkbox to enable ISSN EAN decoding.	Disable
UPC-A		
UPC-A	Checkbox to enable UPC-A decoding.	Enable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Transmit Check Digit	Decide whether to include the UPC-A check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-E		
UPC-E	Checkbox to enable UPC-E decoding.	Enable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character

Convert to UPC-A	The UPC-E barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-E1		
UPC-E1	Checkbox to enable UPC-E1 decoding.	Disable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
General Preference		
Support Coupon Code	Reads UPC-A barcodes starting with “5”, EAN-13 barcodes starting with “99”, and UPC-A/EAN-128 Coupon Codes. ▸ UPC-A, EAN-13, and GS1-128 must be enabled first! ▸ Use “Addon Redundancy” to control auto-discrimination of the GS1-128 (right half) of a coupon code.	Disable
EAN Addon Option	Decide whether to decode EAN-8, EAN-13 with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon
EAN Addon Redundancy	When “Auto-discriminate” is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 30.	10
UPC Addon Option	Decide whether to decode UPC-E0, UPC-E1, UPC-A with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon
UPC Addon Redundancy	When “Auto-discriminate” is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 30.	10

2D SYMBOLOGIES

Symbology	Description	Default
Aztec		
Aztec	Selects whether to enable Aztec decoding.	Enable
Aztec Inverse	Decide whether to decode Aztec Inverse. **Regular only** Decode regular Aztec barcodes only. **Inverse only** Decode inverse Aztec barcodes only. **Inverse Auto-detect** Decode both regular and inverse Aztec barcodes.	Regular only
Data Matrix		
Data Matrix	Selects whether to enable Data Matrix decoding.	Enable
Data Matrix Inverse	Decide whether to decode Data Matrix Inverse. **Regular Only** Decode regular Data Matrix barcodes only. **Inverse Only** Decode inverse Data Matrix barcodes only. **Auto Detect** Decode both regular and inverse Data Matrix barcodes.	Regular Only
Decode Mirror Images	Selects whether to enable PDF 417 decoding. **Never** Does not decode Data Matrix barcodes that are mirror images. **Always** Decodes Data Matrix barcodes that are mirror images. **Auto** Decodes both mirrored and unmirrored Data Matrix barcodes.	Never
Maxicode		
MicroPDF417		

MicroPDF417	Selects whether to enable Maxicode decoding.	Disable
Code 128 Emulation	Transmit data from certain Micro PDF 417 barcodes as if it was encoded in Code 128 barcodes. ▸ Transmit AIM code ID character in **Miscellaneous** options must be enabled first. When applied, the MicroPDF417 barcodes are transmitted with one of these prefixes: **The first codeword of MicroPDF417 is 903-905:** The original Code ID "]L3" will be changed to "]C1". **The first codeword of MicroPDF417 is 908 or 909:** The original Code ID "]L4" will be changed to "]C2". **The first codeword of MicroPDF417 is 910 or 911:** The original Code ID "]L5" will be changed to "]C0".	Disable
MicroQR		
PDF417		
QR Code		
QR Code	Selects whether to enable QR Code decoding.	Enable
QR Code Inverse	Decide whether to decode QR Code Inverse. **Regular Only** Decodes regular QR Code only. **Inverse Only** Decodes inverse QR Code only. **Inverse Auto-detect** Decodes both regular and inverse QR Codes.	Regular Only

MISCELLANEOUS

2D Engine	Description	Default
Miscellaneous Options		
AIM Code ID character	Decide whether to include AIM Code ID in the data. Each AIM Code ID contains a three-character string "**]cm**": ▸] = Flag Character (ASCII 93) ▸ c = Code Character ▸ m = Modifier Character ▸ Refer to AIM Code ID – Code Characters.	Disable

Appendix VI

NEAR/FAR 2D IMAGER (EX25)

IN THIS CHAPTER

Reader Settings for 9700.....171
Symbology Settings for 9700.....171

READER SETTINGS FOR 9700

2D Engine	Description	Default
Scan Mode	Sets the reader's scanning behaviour. Options available are **Level** and **Presentation Mode**. ▸ Level: Decoding process is activated by trigger event and continues until trigger event ends, a valid decode happens or decode session time-out is reached. ▸ Presentation Mode: The imager engine attempts to decode when an object appears in its field of view. Sleeping state is not entered when this mode is activated.	Level
Decode Timeout	Set the maximum time for decoding to continue during a scan attempt. ▸ 1~9 (second)	3 sec.
Timeout Between Symbols	Sets the time for the barcode reader to resurrect its ability to once more decode a barcode it just decoded.	600 ms

SYMBOLOGY SETTINGS FOR 9700

1D SYMBOLOGIES

Symbology	Description	Default
CODABAR		
CodaBar		Enable
Codabar	Checkbox to enable Codabar decoding.	Enable
Length option	Sets the length of the Codabar symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)

CLSI Editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	Disable
NOTIS Editing	Sets whether to include start/stop characters in the transmitted data. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	Disable
CODE 11		
Code 11		Enable
Code 11	Checkbox to enable Code 11 decoding.	Enable
Check Digit Option	Sets whether to verify check digits according to the selected option. If the check digits are incorrect, the barcode will not be accepted. ▸ Disable ▸ One Check Digit ▸ Two Check Digits	Disable
Transmit Check Digit	Selects whether to include check digits in the transmitted data. ▸ Check Digit Option" must be enabled.	Disable
Length option	Sets the length of the Code 11 symbols to decode. ▸ Fixed at Any Length (Length 1 &2 are reserved)	--
CODE 39		
Code 39		Enable
Code 39	Checkbox to enable Code 39 decoding.	Enable
Trioptic Code 39	Selects whether to decode Trioptic Code 39. ▸ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.	Disable
Convert to Code 32	(Reserved)	--
Code 32 Prefix	(Reserved)	--
Verify Check Digit	Selects whether to verify the Modulo 43 check digit. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data to transmit. ▸ "Verify Check Digit" must be enabled.	Disable
Support Full ASCII	Selects whether to enable Code 39 Full ASCII decoding. Characters are paired to encode the full ASCII character set.	Disable
Length option	Sets the length of the Code 39 symbols to decode. ▸ Fixed at Any Length (Length 1 &2 are reserved)	--
CODE 93		
Code 93		Enable
Enable Code 93	Checkbox to enable Code 93 decoding.	Enable

Length option	Sets the length of the Code 93 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 128		
Code 128		Enable
GS1-128		Enable
ISBT 128		Enable
ISBT 128	Checkbox to enable ISBT 128 decoding.	Enable
Concatenation	Sets whether to enable decoding ISBT-128 by performing concatenation of ISBT data ▸ Disable: Does not perform concatenation ▸ Enable: Performs concatenation on all ISBT-128 barcodes. ▸ Auto-discriminate: Auto-discriminates between the ISBT-128 barcodes which require concatenation and those which do not need concatenation.	Disable
Concatenation Redundancy	(Reserved)	--
CODE 2 OF 5		
Discrete 25		Enable
Discrete 25	Checkbox to enable Discrete 25 decoding.	Enable
Length option	Sets the length of the Discrete 25symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Interleaved 25		Enable
Interleaved 25	Checkbox to enable Interleaved 2 of 5 decoding.	Enable
Length option	Sets the length of the Interleaved 25 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Verify Check Digit	Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted. ▸ Disable ▸ USS Check Digit ▸ OPCC Check Digit	Disable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
Convert to EAN-13	(Reserved)	--

Matrix 25		Enable
COMPOSITE		
Composite CC-A/B		Disable
Composite CC-C		Enable
GS1 DATABAR		
GS1 DataBar-14		Enable
GS1 DataBar Limited		Enable
GS1 DataBar Expanded		Enable
MSI		
MSI		Enable
MSI	Checkbox to enable MSI decoding.	Enable
Length option	Sets the length of the MSI symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Check Digit Option	One check digit is mandatory for decoding MSI barcodes. Select whether a second check digit should be verified. If the check digits are incorrect, the barcode will not be accepted. ▸ One Check Digit ▸ Two Check Digits	One Check Digit
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
Algorithm	(Reserved)	--
POSTAL CODE		
Australian Postal		Enable
Japan Postal		Enable
Netherlands KIX Code		Enable
US Postnet		Enable
US Planet		Enable
Postal General Reference		
US Postal Check Digit	Decide whether to transmit check digit for US Postnet or US Planet.	Enable
UK Postal Check Digit	(Reserved)	--
UPC/EAN		
EAN-8		Enable
EAN-13		Enable
EAN-13	Checkbox to enable EAN-13 decoding.	Enable
Bookland EAN	Checkbox to enable ISBN decoding. If enabled, select Bookland ISBN Format in the drop-down box below.	Enable

Bookland ISBN Format	(Reserved)	--
Transmit Check Digit	(Reserved)	--
ISSN EAN	Checkbox to enable ISSN EAN decoding.	Disable
UPC-A		Enable
UPC-A	Checkbox to enable UPC-A decoding.	Enable
Preamble	Decide whether to include the UPC-A preamble System Character (and Country Code) in the data being transmitted. ▸ Enable ▸ Disable	Enable
Transmit Check Digit	Decide whether to include the UPC-A check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-E		Enable
UPC-E	Checkbox to enable UPC-E/UPC-E1 decoding.	Enable
Preamble	Decide whether to include the UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ Enable ▸ Disable	Enable
Convert to UPC-A	The UPC-E/UPC-E1 barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E/UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
Separator Character (FNC1)		Enable
Enable separator char	Enable the function code character separator, which is used to identify and separate fields for variable length application identifiers. Applicable for EAN-128/GS1-128, Coupon code, GS1 DataBar, Composite Component barcodes.	Disable
Separator char replace by	Tap the keyboard icon to open a mapping table for selecting a separator character. ▸ Enable separator char must be selected	None

2D SYMBOLOGIES

Symbology	Description	Default
Aztec		Enable
Data Matrix		Enable
Maxicode		Enable
MicroPDF417		Disable
MicroPDF417	Selects whether to enable MicroPDF417 decoding.	Disable
Code 128 Emulation	Transmit data from certain Micro PDF 417 barcodes as if it was encoded in Code 128 barcodes. ▸ Transmit AIM code ID character in **Miscellaneous** options must be enabled first. When applied, the MicroPDF417 barcodes are transmitted with one of these prefixes: **The first codeword of MicroPDF417 is 903-905:** The original Code ID "]L3" will be changed to "]C1". **The first codeword of MicroPDF417 is 908 or 909:** The original Code ID "]L4" will be changed to "]C2". **The first codeword of MicroPDF417 is 910 or 911:** The original Code ID "]L5" will be changed to "]C0".	Disable
PDF417		Enable
QR Code		Enable

MISCELLANEOUS

2D Engine	Description	Default
Miscellaneous Options		
Transmit AIM Code ID	Decide whether to include AIM Code ID in the data. Each AIM Code ID contains a three-character string "**]cm**": ▸] = Flag Character (ASCII 93) ▸ c = Code Character ▸ m = Modifier Character ▸ Refer to AIM Code ID – Code Characters.	Disable

Appendix VII

HF RFID READER

The RFID scan engine supports reading tags on a page-by-page basis. You may find it necessary to define your own read operation. For reference only, the table below lists the start page for read operation on a number of RFID tags.

Start Page	Tag Type	
-1	Start from byte 0 of the default page (see below) for all tags	
4	Mifare	(ISO 14443A)
4	SR176	(ISO 14443B)
3	ICODE SLI	(ISO 15693)
0	LRI512	(ISO 15693)
3	SRF55VxxP	(ISO 15693)
0	EM4135	(ISO 15693)
0	Tag-it HF-I	(ISO 15693)
0	Others	(ISO 15693)
5	ICODE	(Phillips)

Note: Please refer to the specifications of your RFID tags for memory organization.

Appendix VIII

RESPONSE CODE INSTRUCTIONS

Name	Value	Instruction
LRSUCCESS	0x00	Successful completion of request
LRSYSTEM	0x01	Unknown error
LRLASTCARD	0x02	Last Card Still Present
LRNOCARD	0x03	Card is not present
LRCTYPE	0x04	Card Type error
LRPARAM	0x05	Request Parameter error
LRACCESS	0x06	Card access error
LRREAD	0x07	Card read error
LRWRITE	0x08	Card write error
LRINCR	0x09	Purse increment error
LRDECR	0x0A	Purse decrement error
LRTRANSFER	0x0B	Purse value transfer error
LRRESTORE	0x0C	Purse restore error
LRPURSE	0x0D	Purse value corrupt
LRMADERR	0x0E	Card Directory error
LRFIXERR	0x0F	Purse fix error
LRFIXED	0x10	Purse found corrupt but fixed
LRNOTOPEN	0x11	Card not open
LRNOFILE	0x12	File not found
LRBADSIZE	0x13	Bad file size
LRABORTED	0x14	Request aborted
LRMANYCARD	0x15	Too many card present
LRFORMAT	0x16	Card format error
LRCREATE	0x17	Card file create error
LRDELETE	0x18	Card file delete error
LRALREADOPEN	0x19	Card has been opened already

LRALREADCLOSED	0x1A	Card has been closed already
LRMSTRKEYLOAD	0x1B	Cannot load master keys
LRAPPKEYLOAD	0x1C	Cannot load application keys
LRKEYCARD	0x1D	Keycard Error
LRUNFORMAT	0x1E	Card has files on it
LRNOKBDCHAR	0x20	No keyboard character
LRAPIWRITE	0x21	API data write error
LRAPIREAD	0x22	API data read error
LRBLOCKERROR	0x23	Block number error
LRNOTIMPL	0x7F	Function not implemented
LRUNKNOWN	0x80	Unknown error
LRCCRBUSY	0xBB	Reader is busy
LRCHANGEWROKTYPE	0xEE	Change Reader working type error
LRRDUNKNOWN	0xEF	Reader Unknown error
LRCRDNOTOPEN	0xFA	Card has not been opened
LRINUSE	0xFB	Card in use by another applications
LRAPPLICERR	0xFC	API system error
LRRDLINKLOS	0xFD	Link to Reader has been lost
LRBADCOMPORT	0xFE	COM port cannot be accessed
LRRDNOINIT	0xFF	Reader has not been opened
LRNOCRYPTBOX	0xF9	Key-Box not found
LRBADAPPACCESS	0xF8	Invalid Application access code
LRBADRDACCESS	0xF7	Invalid Reader access code
LRNOMAIDFILE	0xF6	Cannot open MAID definition file
LRBOXREAD	0xF5	Cannot read from Key-Box
LRBOXWRITE	0xF4	Cannot write to Key-Box
LRBOXNOKEYS	0xF3	No of Keys in Box is zero or invalid
LRSECURE	0xF2	Comms MAC checking failed
LRERRSELREADER	0xF1	Cannot change to selected reader
LRRDNORESP	0xF0	Reader No Response