CipherLab

User Guide

Wireless Smart Scan

For 8230/8260/8630 Mobile Computers
& 166x Scanners

DOC Version 1.06

CIPHERLAB

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RELEASE NOTES

Version	Date	Notes
1.06	Sep. 14, 2016	▸ Modified: **Download Settings** – descriptions for Fast VPort interface (8630 only) added ▸ Modified: **1.3** – descriptions for Fast VPort interface (8630 only) added ▸ Modified: **2.2** – picture updated
1.01	Jun. 25, 2015	▸ Modified: **1.2** – LCD Backlight settings
1.00	Apr. 22, 2015	▸ Initial Release

CONTENTS

INTRODUCTION

Wireless Smart Scan (WSS) is a convenient utility employed to collect and send data to user's document-based applications on the server host via Bluetooth or Wi-Fi.

Designed with client/server architecture, WSS has the bidirectional communication ability that the server host can instruct clients to respond with a variety of feedback including beeping, vibrating, LED indicator blinking, message displaying; naturally, clients can send collected data to the server host for kinds of business application. The client/server architecture allows multiple clients (8230/8260/8630 mobile computers and 166x series scanners) to connect wirelessly to the server host at the same time.

For 8230/8260/8630 mobile computers, pre-defined settings including layout of data collecting form, wireless networking, and barcode parameters can be saved to a configuration file (.WSS) to facilitate daily data collecting and transmission tasks.

Before loading the WSS configuration file to the mobile computer, the WSS runtime program must be loaded and activated that is capable of handling negotiations between the mobile computer and the WSS Console running on the server.

This manual serves to provide comprehensive understanding of Wireless Smart Scan, and helps establish a Wi-Fi/Bluetooth connection. We recommend that you read the document thoroughly before use and keep it at hand for quick reference.

Thank you for choosing CipherLab products!

SYSTEM REQUIREMENTS

To run the configuration utility, one of the Windows operating systems is required:

- Windows 2000
- Windows XP
- Windows Vista
- Windows 7

The Wireless Smart Scan software package consists of three parts as follows:

WSS Components	Descriptions
Wireless Smart Scan Designer	WSS Designer is a windows-based graphic interface application to configure settings for 8230/8260/8630 mobile computers.
Wireless Smart Scan Console	WSS Console is a Windows service to accept requests from multiple clients (mobile computer/scanners).
WSS Runtime	WSS Runtime, with .SHX filename extension, is loaded to the mobile computer as the client program.

FEATURES

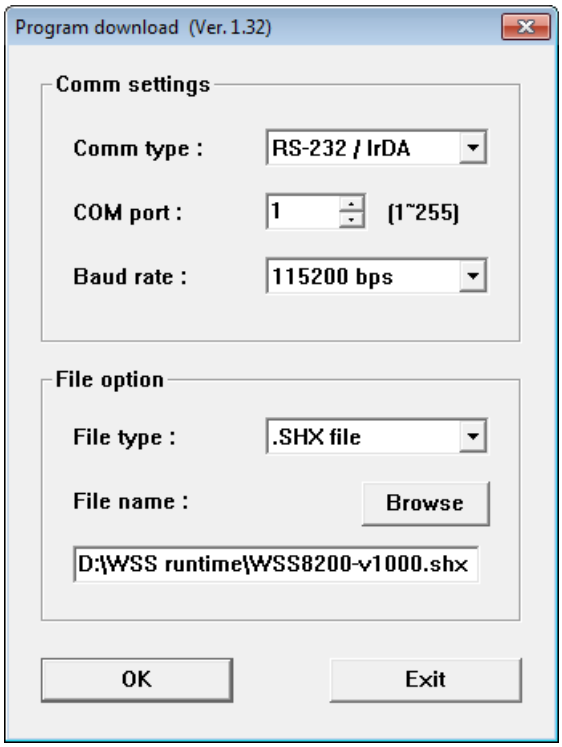
- Bidirectional communications between mobile computers and PC over Bluetooth SPP or Wi-Fi
- Bidirectional communications between scanners and PC over Bluetooth SPP
- Client/Server architecture (WSS runtime/WSS Console application)
- Easy-configured graphic interface utility for 8230/8260/8630
- Easy cloning by saving user settings to a configuration file (.WSS)
- Supports pre-defined layout of data collecting form, font size options, Wi-Fi settings, multiple languages etc.
- Supports settings for barcode reader and barcode parameters
- Supports one-scan barcode for Wi-Fi SSID and destination server IP/Port setup
- Capable of collecting data and having the scanner/mobile computer give users feedback via displaying message on the screen (mobile computers), vibrating, beeping, and LED blinking

GETTING STARTED

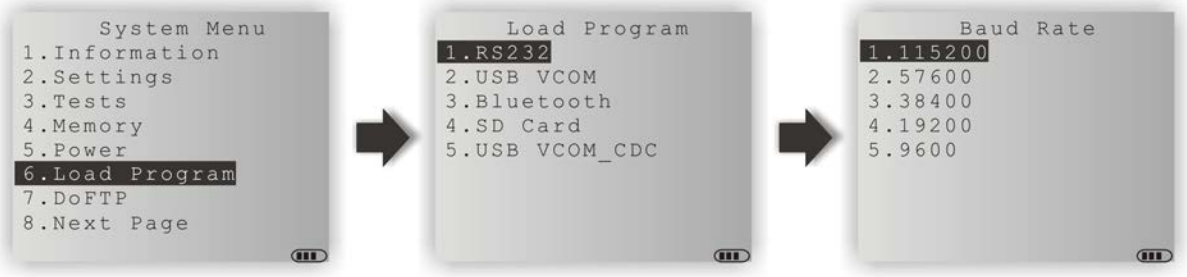
DOWNLOAD RUNTIME

I) Run the **ProgLoad.exe** utility to download the Wireless Smart Scan runtime program (.SHX) to the mobile computer.

Associated Runtime Program	
WSS8200-vxxxx.shx	Download this program file (xxxx means the number of runtime version) to the mobile computer.

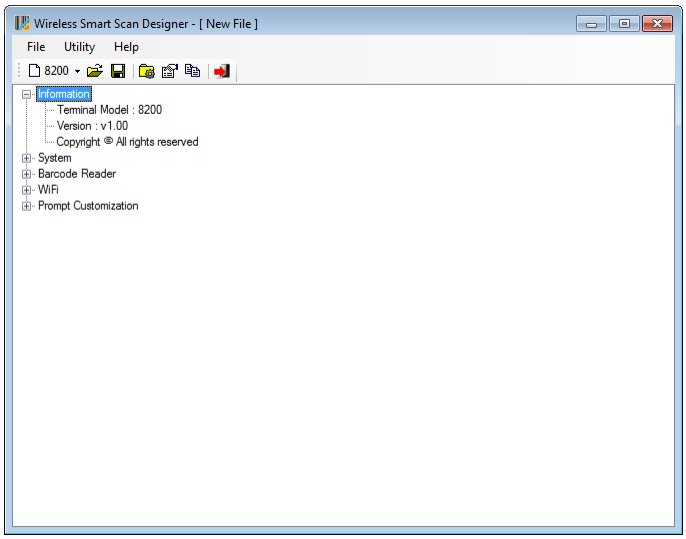


2) On the mobile computer, press [7] + [9] + [Power] simultaneously to enter **System Menu | Load Program**. And then choose the appropriate download interface depending on handy connections or what you prefer.

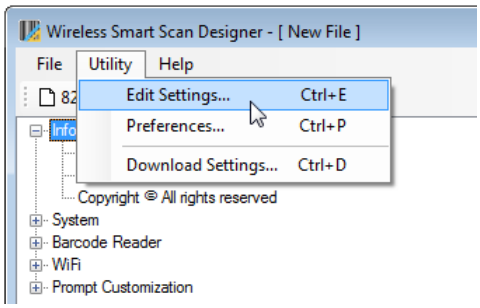


DOWNLOAD SETTINGS (.WSS FOR 8230/8260/8630)

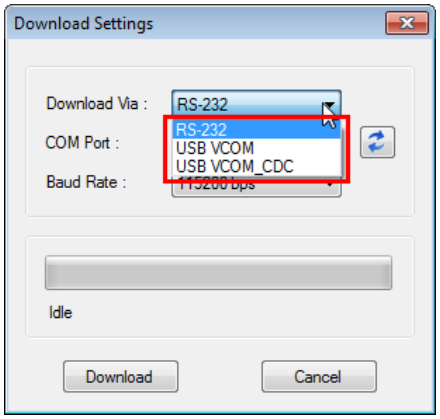
1) Run **WSS Designer.exe**. The associated information and default settings of the mobile computer will be displayed as below.



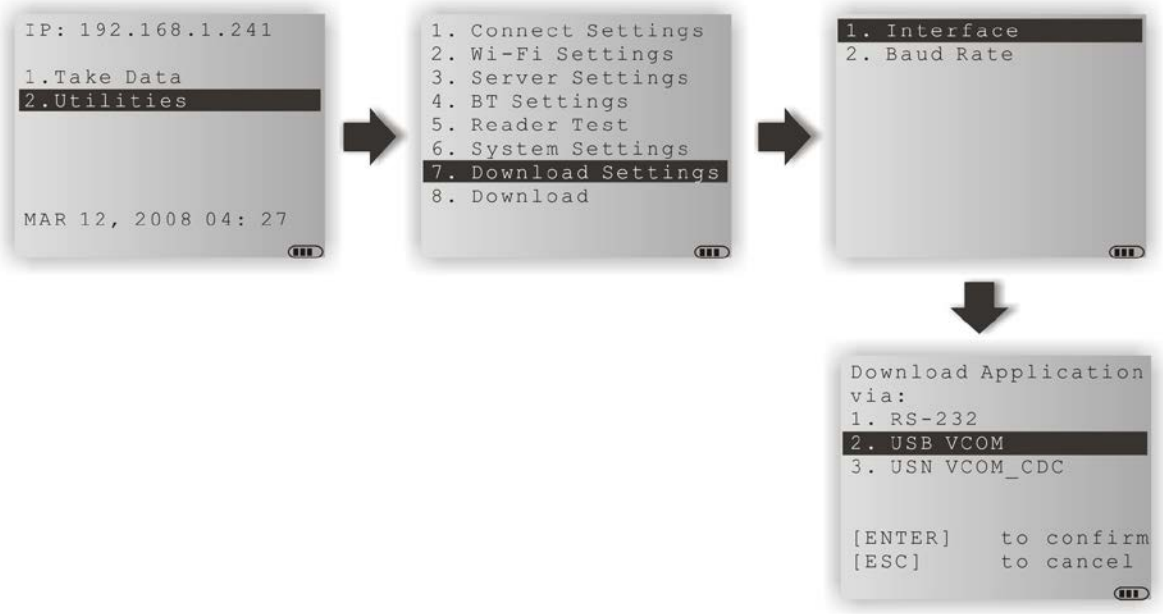
2) Click **Utilities | Edit Settings** to configure the current user settings for the mobile computer.



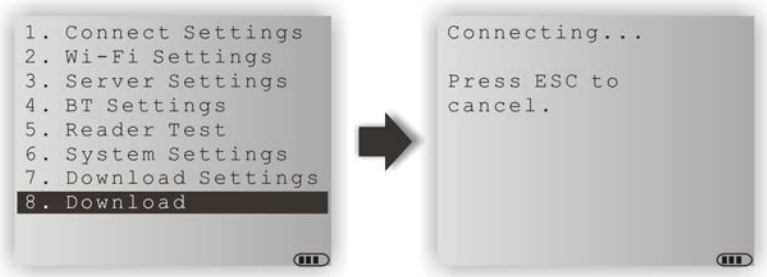
3) After you have finished all settings, click **File | Save** to save the current user settings to a configuration file (.WSS) and then download it to the mobile computer. Click **Utilities | Download Settings** to bring up the dialog box. Select an interface to download settings such as RS-232, USB-VCOM, USB-VCOM-CDC (depending on the VCOM driver installed on your PC), or Fast VPort (8630 only). Specify Baud Rate when you download via RS-232.



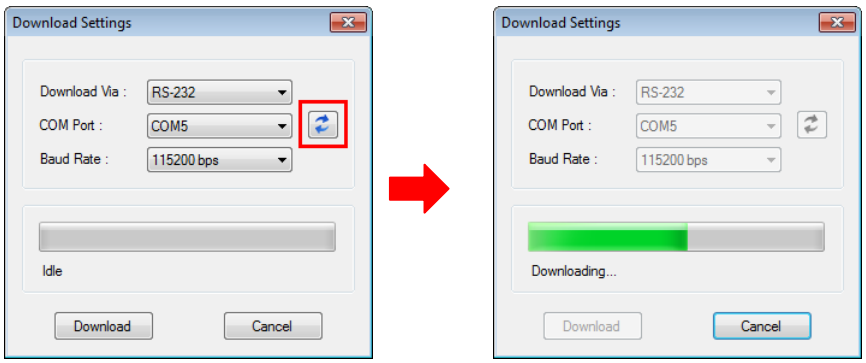
Meanwhile, turn on the mobile computer and connect to your PC with the appropriate RS-232 or USB cable. As the pictures illustrated below, select **2. Utilities | 7. Download Settings** to determine download settings on the mobile computer side.



After specifying download settings, return to the Utilities main menu and select **8. Download** to commence download.



4) While the mobile computer is ready to receive setting from PC, you have to specify the COM port manually by using **WSS Designer** on the PC side. Click the **COM Port** drop-down menu to select the COM port being used by the device (the button next to the drop-down menu is to refresh the COM port options listed). When ready, click the **Download** button to start downloading. When you see the "Download complete!" message displaying below the progress bar, click the close button at the top-right corner or the **Cancel** button to close the dialog box.



5) From the **WSS** runtime menu on the mobile computer, select **1. Take Data** to collect data.

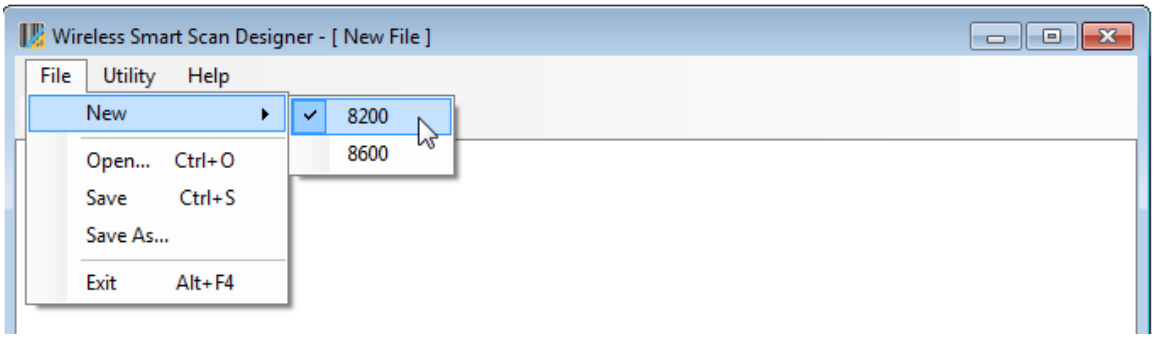
In the case of the steps illustrated above, use the 8230/8260 mobile computer connecting to your PC over Bluetooth (configured in the .WSS file).

A mobile computer (configuration file loaded with Wi-Fi settings) will connect to the server (PC) via the associated access point.

WORKING WITH MENUS & TOOLBAR

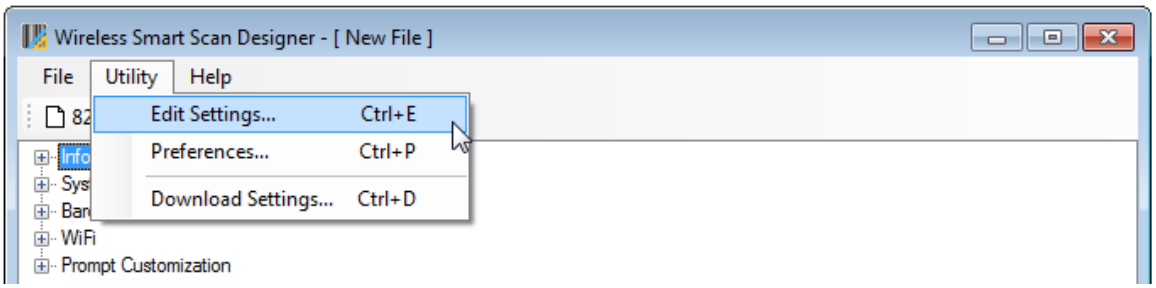
The menu bar contains a number of menus that specify tasks to be performed by system. Each menu contains a list of commands.

FILE MENU



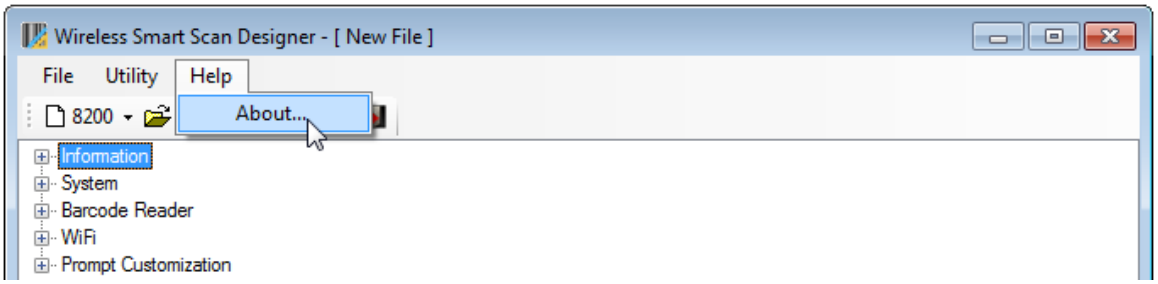
Command	Action...
New	To create a new configuration file for the WSS client. Refer to each chapter.
Open	To open an existing configuration file.
Save	To save the current settings to a configuration file (.WSS).
Save As	To save the current settings to a new .WSS file.
Exit	To close the application.

UTILITIES MENU



Command	Action...
Edit Settings	To configure the current user settings. Refer to each chapter. ▸ System Settings ▸ Form Settings ▸ Barcode Reader Settings ▸ Wi-Fi Settings ▸ Prompt Customization Settings
Preferences	To select a language file for WSS user interface from the pop-up dialog.
Download Settings	To configure the download interface, COM port and Baud rate settings between host computer and mobile computer.

HELP MENU



Command	Action...
About	To show version information about WSS. ▸ Version information is also available from the tree view.

TOOLBAR

The toolbar allows quick access to commands that are available in the current stage.

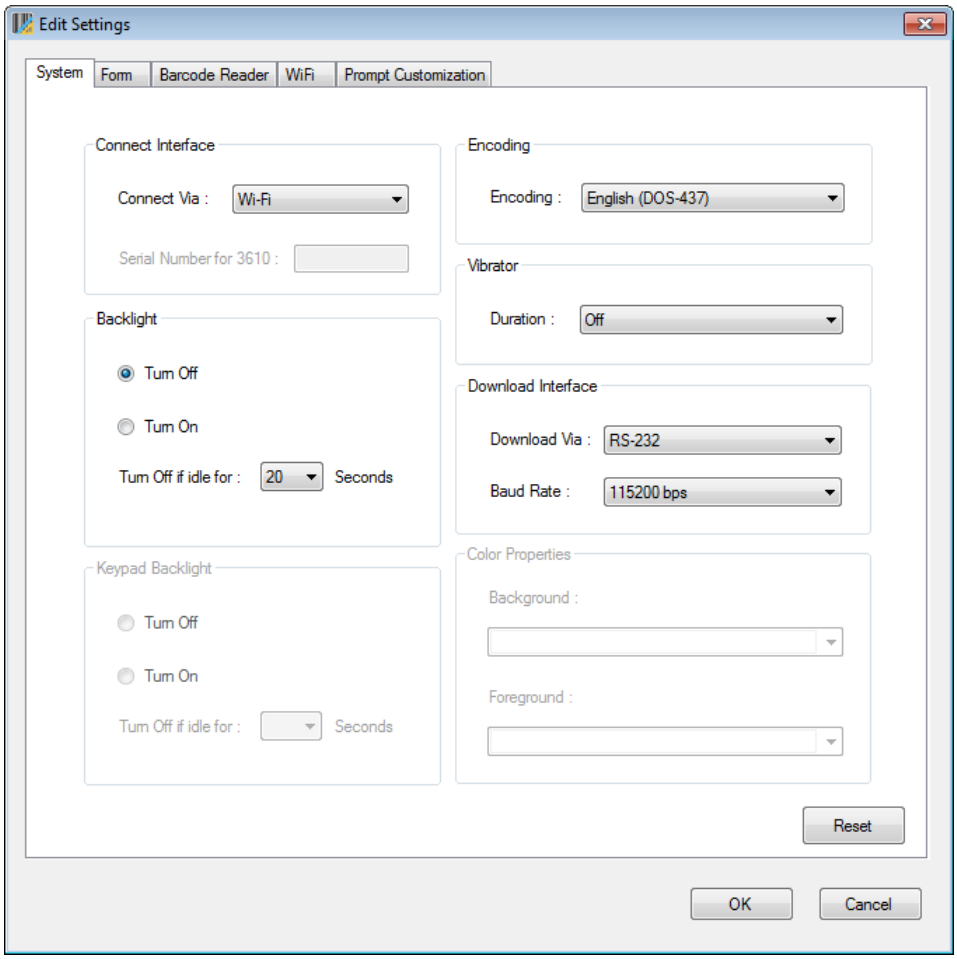
From left to right, they stand for the following commands:

	File Menu | New
	File Menu | Open
	File Menu | Save
	Utilities Menu | Preferences
	Utilities Menu | Edit Settings
	Utilities Menu | Download Settings
	File Menu | Exit

Chapter 1

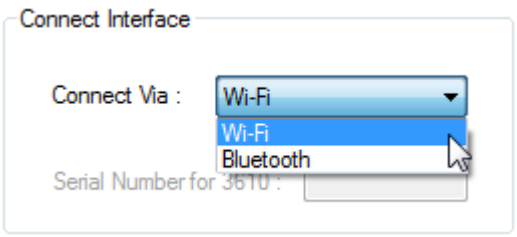
SYSTEM SETTINGS

The Wireless Smart Scan (WSS) configuration utility running on your PC offers the convenience of using the graphic interface to configure all of the settings for the mobile computer. Once the configuration file (.WSS) has been downloaded to the mobile computer, the new settings will take effect immediately.



IN THIS CHAPTER

1.1 CONNECT INTERFACE

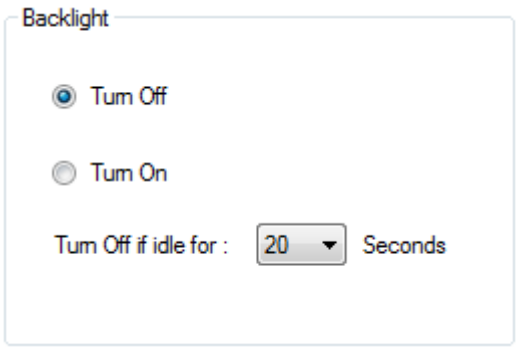


Connect via: Determine the wireless connection, Wi-Fi or Bluetooth, between the mobile computer and your PC.

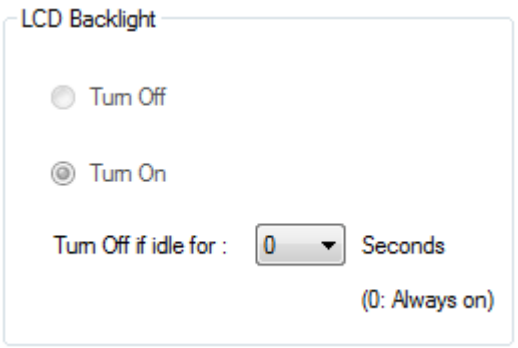
Serial Number for 3610: When you select Bluetooth as the interface, please fill in the serial number of the 3610 Bluetooth dongle which is installed on PC.

1.2 BACKLIGHT

Users can decide to have the mobile computer turn on the LCD backlight by pressing any key. This is to help read information on the screen while in dark environments.



8200 Backlight Setting

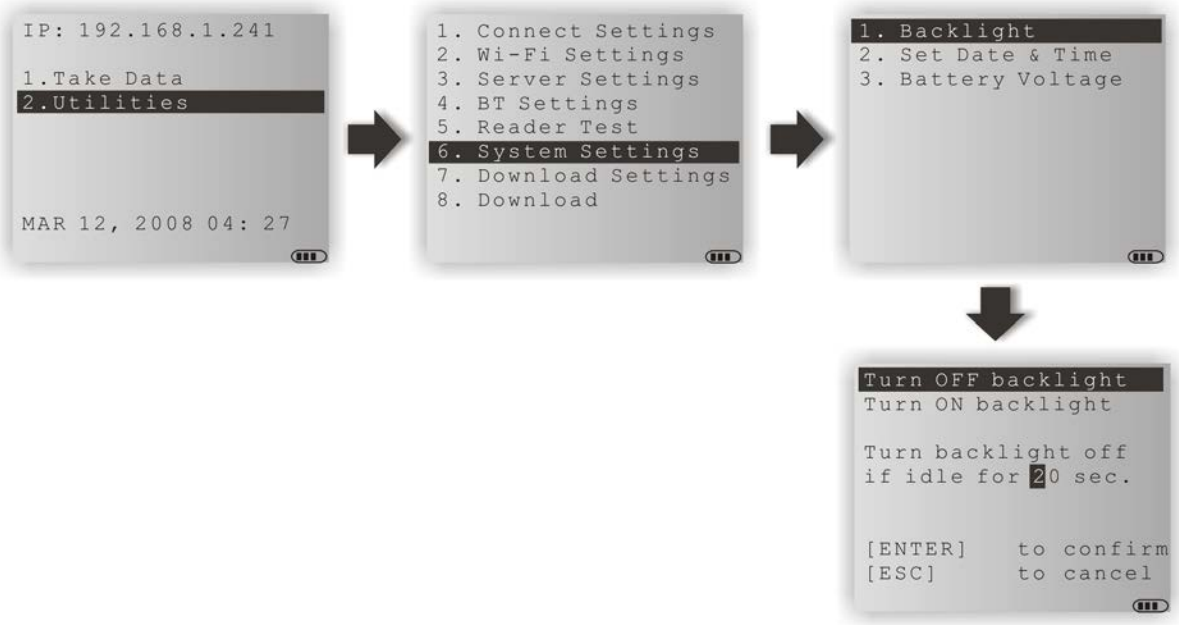


8600 Backlight Setting

By default, the mobile computer LCD backlight is turned off for 8200 (backlight is turned on for 8600).

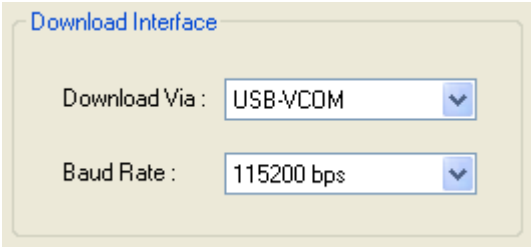
With the **Turn On** radio button selected for 8200, you can specify a period of idle time ranging from 10 to 90 seconds (in 10-second increments) to turn the backlight off automatically. As for 8600, you can specify the idle time ranging from 0 to 30 (in 10-second increments) to turn the backlight off automatically (0 means the backlight is always on).

Anytime users can also configure backlight settings depending on ambient light conditions via the **Backlight** menu on the mobile computer.



1.3 DOWNLOAD INTERFACE

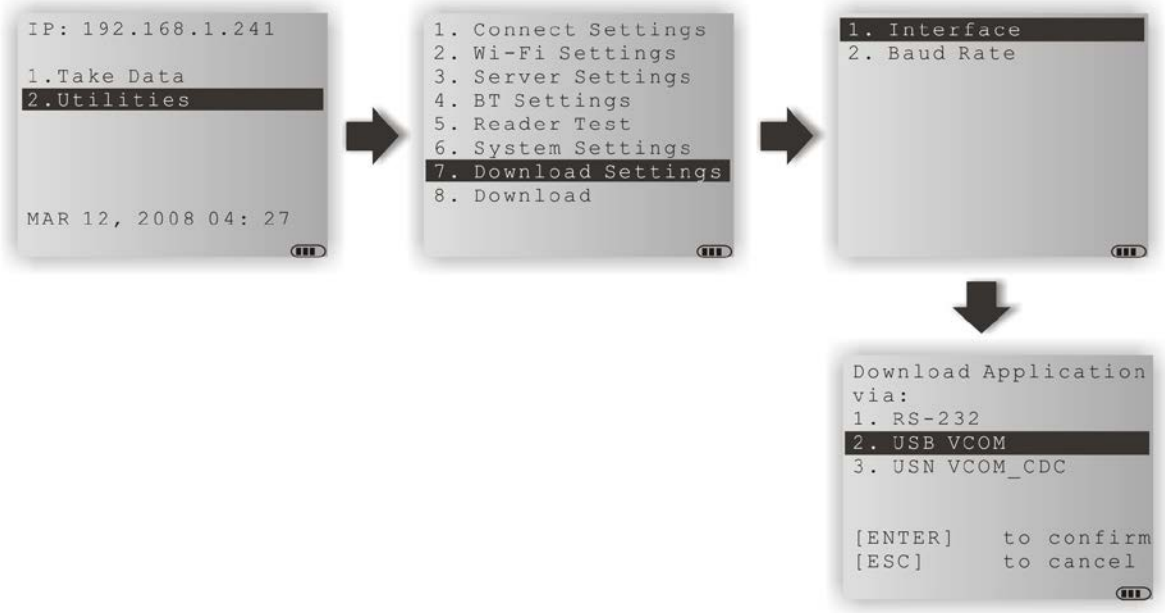
Select the download interface to send configuration file (.WSS) to the mobile computer.



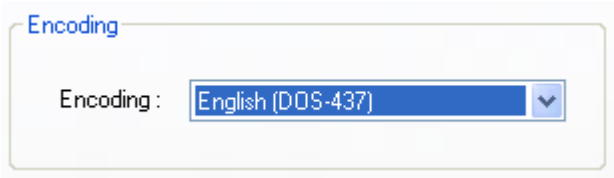
Download Via: Click the drop-down menu to select download interfaces including RS-232, USB-VCOM, USB-VCOM-CDC, and Fast VPort (8630 only).

Baud Rate: This setting needs to be configured only when you have selected RS-232 as the download interface. Please specify the baud rate ranging from 9600 to 115200 bps.

On the mobile computer, you can also configure download settings depending on handy connections via the **Download Settings** menu.



1.4 ENCODING



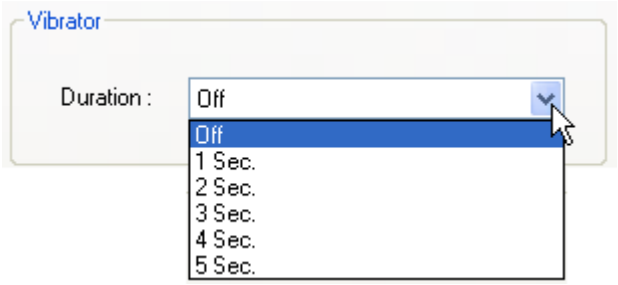
By default, small font is applied. Data coming in from the host will be displayed accordingly. This setting also affects the default horizontal/vertical steps that the cursor moves at one time on the host screen.

Users can click the Encoding drop-down menu to select a font file language. The table below lists the font files supported.

Font File Language	Double-byte	Single-byte
Traditional Chinese	✓	
Simplified Chinese	✓	
Korean	✓	
Japanese	✓	
English (DOS-437, default)		✓
French (DOS-863)		✓
Hebrew (DOS-862)		✓
Western Europe (DOS-850)		✓
Nordic (DOS-865)		✓
Portuguese (DOS-860)		✓
Cyrillic (WIN-1251)		✓
Slavic (DOS-852)		✓
Central & Eastern Europe (WIN-1250)		✓
Turkish (DOS-857)		✓
Greek (DOS-737)		✓
Latin (WIN-1252)		✓
Greek (WIN-1253)		✓
Turkish (WIN-1254)		✓

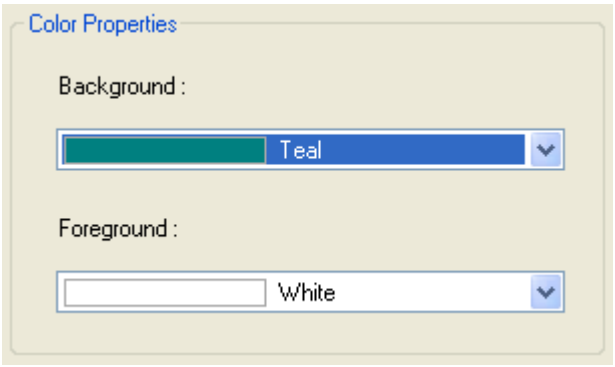
1.5 VIBRATOR

Configure settings for the vibrator. By default, the vibrator is disabled. Click the drop-down menu to determine the vibrating time length in seconds ranging from 1 to 5.



1.6 COLOR PROPERTIES (8630 ONLY)

Click the drop-down menus to respectively set colors to the background and foreground of the WSS Utilities main menu.



1.7 RESET

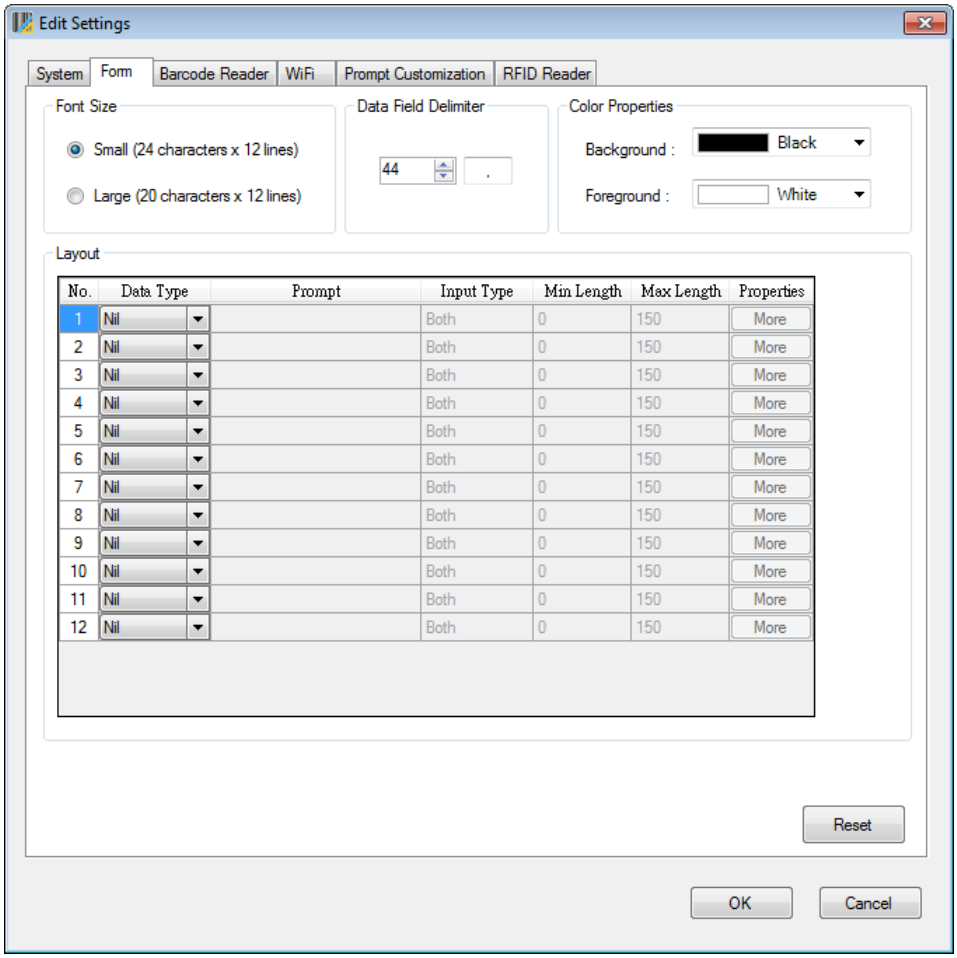
Click **Reset** to load the default settings.

Note: The current settings will be cleared.

Chapter 2

FORM SETTINGS

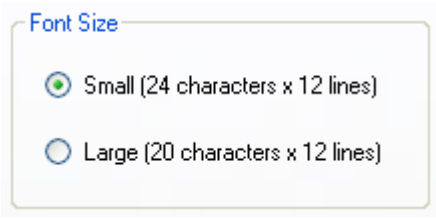
A 'form' means a data collecting form with multiple input fields. Data is transferred to a host computer in a real-time way when all the input fields of a form are completed. Each form allows at most eight input fields for 8230/8260, or 12 input fields for 8630.



IN THIS CHAPTER

2.1 FONT SIZE

Click the Font Size radio buttons to select between small and large options. Large font must be applied to double-byte languages, such as Chinese and Japanese.



2.2 DATA FIELD DELIMITER

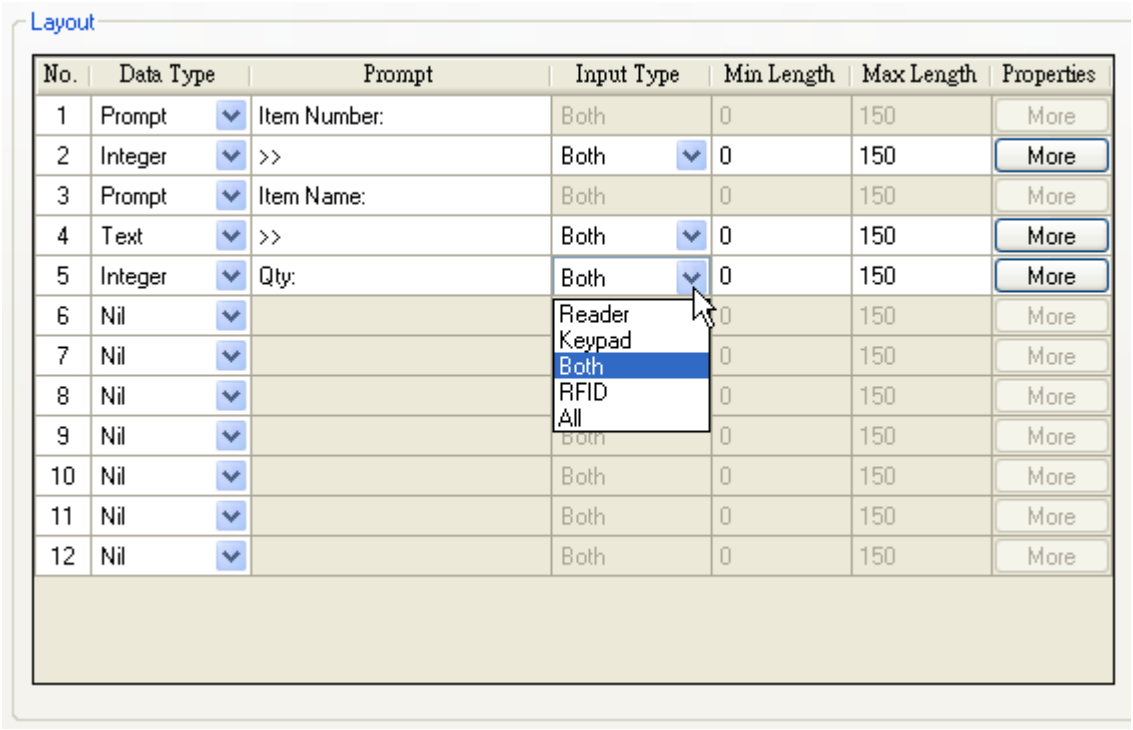
By default, a comma (,) is used to separate data fields. Click the up/down arrow button to select other punctuation marks as the delimiter. Alternatively users can also type a character in the text field to specify the delimiter.

2.3 COLOR PROPERTIES (8630 ONLY)

Click the drop-down menus to respectively set colors to the background and foreground of the designed data collecting form.

2.4 LAYOUT

A data collecting form generally consists of a series of input fields that are arranged line after line. For each input field, you need to configure its details, including Data Type, Prompt, Input Type, Min. Length, Max. Length, and Properties.



With the data collecting form configured as the picture shown above, the form layout will be displayed on the mobile computer's screen after establishing the connection.

2.4.1 DATA TYPE

The following table gives an account of the "Data Types" available and how each data type interacts with other elements in an input field. A check mark means an selection that is available:

Data Type	Prompt	Input Source	Length	Properties
	on-screen		*Min / Max*	*More...*
Nil				
Text	✓	✓	✓	✓
Integer	✓	✓	✓	✓
Real	✓	✓	✓	✓
Letter	✓	✓	✓	✓
Boolean	✓	✓		✓
Prompt	✓			
Extension				
Pause	✓			

In the following contents of this section, you will be guided through the available “Data Types”:

Nil

No data input is allowed.

- This is the default setting. Set the data type of an input field to “Nil” to have a blank line on the screen of the mobile computer.

Text

Set the data type of an input field to “Text” to accept only ASCII characters. Any ASCII character is acceptable. For example, `$1a2b3c=-*/…`

- If a lookup field is specified, the input value will overwrite the lookup value.

Integer

Set the data type of an input field to “Integer” to accept only whole numbers. Any whole number is acceptable such as … `-2, -1, 0, 1, 2` …

Real

Set the data type of an input field to “real number” to accept any number with a decimal representation whether rational or irrational. For example, `4.56`

- If a lookup field is specified, the input value will overwrite the lookup value.

Letter

Set the data type of an input field to “Letter” to accept only alphabetic characters. Any letter is acceptable, capital or small (`Aa ~ Zz`).

- If a lookup field is specified, the input value will overwrite the lookup value.

Boolean

Only one of these sets of values are acceptable – “0 or 1”, “Y or N” and “T or F”.

- If a lookup field is specified, the input value will overwrite the lookup value.
- If you input a value other than the above ones, a message will be displayed on the mobile computer to indicate "Data type is wrong!"

Prompt

No data input is allowed.

- The prompt string will not be saved.

Extension

No data input is allowed.

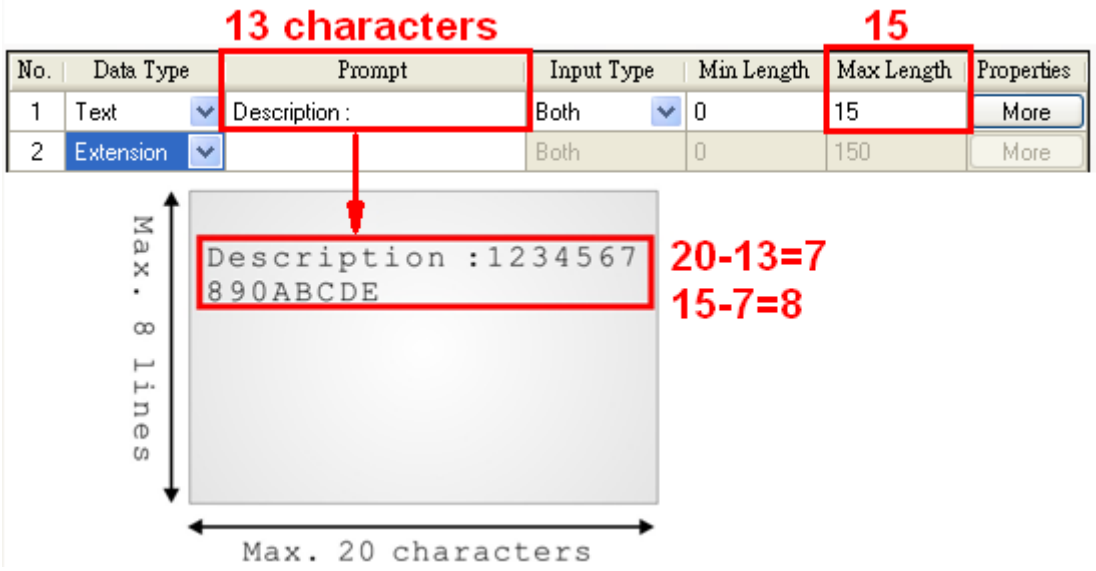
- The line needs to be reserved as an "extension" of the previous line so the whole input data can be displayed on the mobile computer screen.

Note: The number of extension lines depends on the maximum length of your data and the screen size of the mobile computer.

Take the following for example –

If the screen of the mobile computer allows 20 characters per line for small font,

- Now the prompt string ("Description :" in line 2) takes 13 characters, and the data length is 15 characters at most.
- This makes the total length 28 characters at most, which is longer than one line.
- As a result, the data type of line 3 needs to be set "extension" if you want to display the input data in full.



Pause

No data input is allowed.

- The prompt string will not be saved. However, it will be highlighted constantly on the mobile computer to catch your attention.

2.4.2 PROMPT

"Prompt" is yet another element that needs your configuration for an input field. Specify a prompt string for a specific input field, if necessary.

2.4.3 INPUT TYPE

Specify the source that data should be collected from.

- Reader
- Keypad
- Both
- RFID (only applicable to 8630)
- All (only applicable to 8630)

Upon the completion of one input field, it is necessary to press the [Enter] key on the mobile computer. Then the cursor will move to the next input field.

When the input type is specified to "reader" only, you need to enable "Auto ENTER" for barcode input settings. Refer to the Properties section.

Note: When "RFID" is selected, you may still press the [ESC] or [Enter] key on the mobile computer to cancel or confirm a task. The other keys on the keypad won't work.

2.4.4 MIN. LENGTH

Specify the minimum length of the input data.

- If the input data is shorter than specified, it is considered unacceptable.

2.4.5 MAX. LENGTH

Specify the maximum length of the input data. The value can be 50 at most.

- If the input data is longer than specified, it is considered unacceptable.

Input via Barcode/RFID Reader

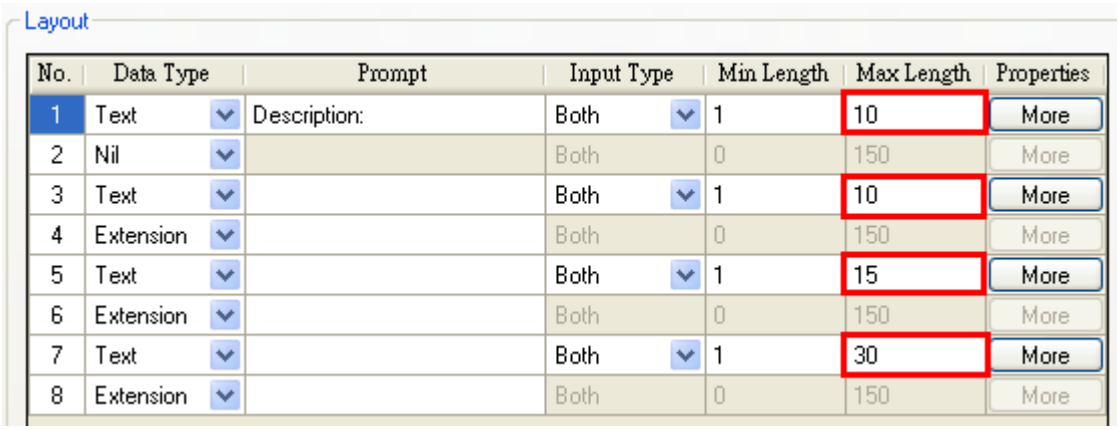
For data input from the barcode or RFID reader, a warning message will display when the data is too long.

Input via Keypad

For a data input from the keypad, it is allowed even if gets longer than the screen can display. Take the scenario below for example.

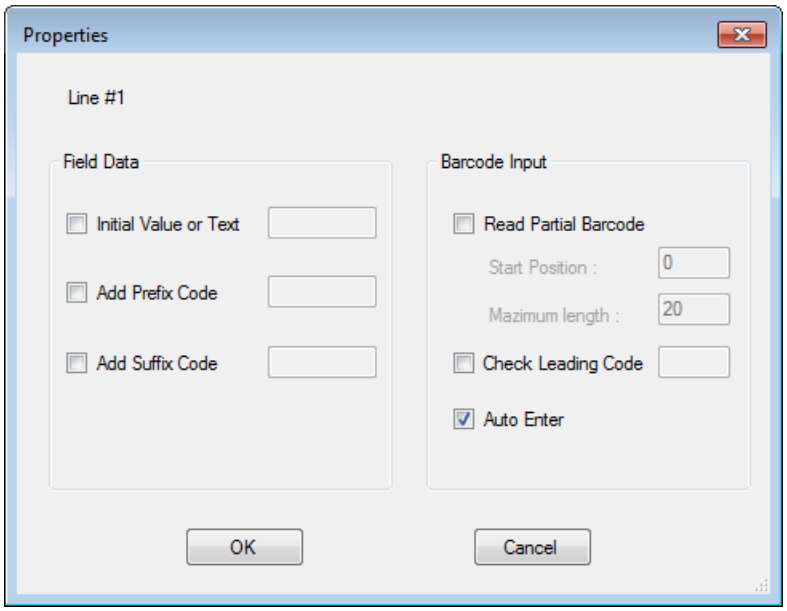
- The screen of the mobile computer allows 20 characters per line for small font.
- Each prompt string takes 12 characters.

Line	Input from Keypad	Screen Reading	Transaction Record
#1	12345678	12345678	12345678
	1234567890	34567890	1234567890
	1234567890ABCDE	3456789E	123456789E
#3, 4	1234567890A	123456789A	123456789A
#5, 6	1234567890LEMONADE	1234567890LEMOE	1234567890LEMOE
#7, 8	1234567890ORANGE_JUICE	1234567890ORANGE_JUICE	1234567890ORANGE_JUICE



2.4.6 PROPERTIES

Specify field properties if necessary.



Initial Value or Text

Select the check box. An initial value or text, up to 9 characters, specified here will be shown in the input field. It is to be replaced by input data. For example, it can be used to prompt an initial value for quantity.

Add Prefix Code

Select the check box to prefix a code to the input data. Type one or more codes. For example, a dollar sign ("$") can be added to the front of the data input for price.

Add Suffix Code

Select the check box to suffix a code to the input data. Type one or more codes. Instead of using delimiters, you may use prefix and/or suffix codes to separate each entry of input data.

Note: You may use prefix/suffix code to wrap the input data.

Read Partial Barcode

By default, it will return the whole barcode that has been decoded. When the check box is selected, it will return partial barcode according to the settings of the start position and maximum length. Below are some examples.

Start position	Max. length	Barcode scanned	Transaction record
2	10	9876543210	876543210
2	3	9876543210	876

Check Leading Code

The leading code refers to the digit in the start position of a barcode. Select the check box to verify the barcode input. When the leading code is not matching, the barcode will be rejected. Below are some examples.

Leading code	Barcode scanned	Transaction record
9	9876543210	9876543210
2	9876543210	(Error: code not matching)

Read partial code + Check leading code:

Start position	Max. length	Leading Code	Barcode scanned	Transaction record
2	7	8	9876543210	8765432
2	7	9	987654321	(Error)

Auto ENTER

Normally, it is necessary to press the [Enter] key on the mobile computer upon completion of one input field. Then, it will move to the next input field. This function will automatically add a carriage return after the barcode input (="Scan + ENTER").

2.5 RESET

Press this button to load the default settings.

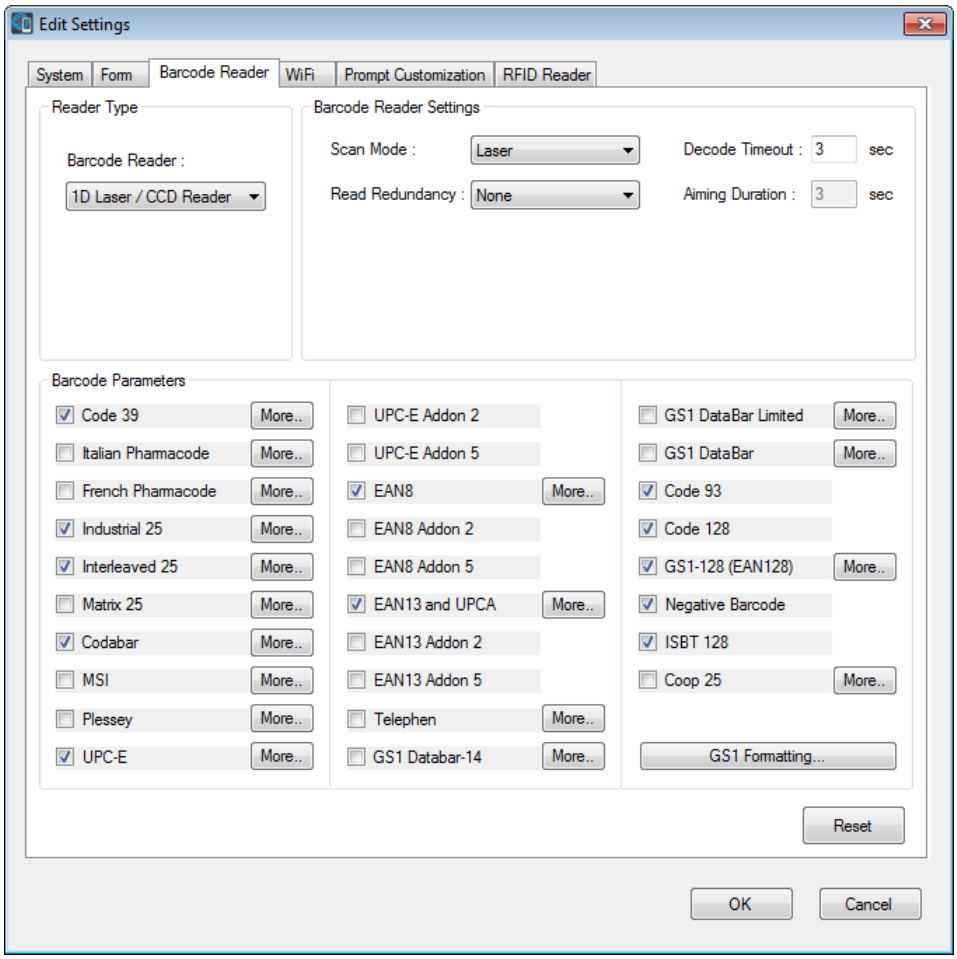
Note: The current settings for the form will be cleared.

Chapter 3

BARCODE SETTINGS

According to the requirements of a specific application, barcode settings allow users to enable or disable any of the barcode symbologies and configure the associated parameters.

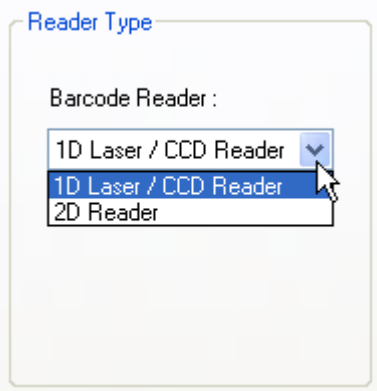
Supported barcodes depend on the scan engine integrated on the mobile computer.



IN THIS CHAPTER

3.1 READER TYPE

Select a reader type that matches the hardware configuration of the mobile computer. The associated barcode reader settings, as well as the barcode parameters (= symbology settings) will be displayed accordingly.



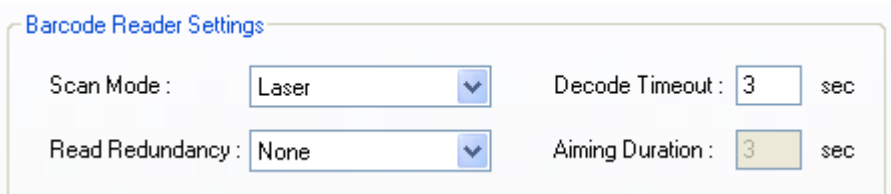
For more information, please refer to the following appendixes:

- Appendix I – Scan Engine Settings for information on the symbologies and RFID tags supported.
- Appendix II – CCD/Laser Scan Engine provides information on the reader settings as well as symbology settings for the CCD or Laser scan engine.
- Appendix III – 2D Scan Engine provides information on the reader settings as well as symbology settings for the 2D scan engine.

Note: If you accidentally selected the wrong reader type and downloaded to the mobile computer, the mobile computer will use the defaults for the correct reader type instead.

3.2 BARCODE READER SETTINGS

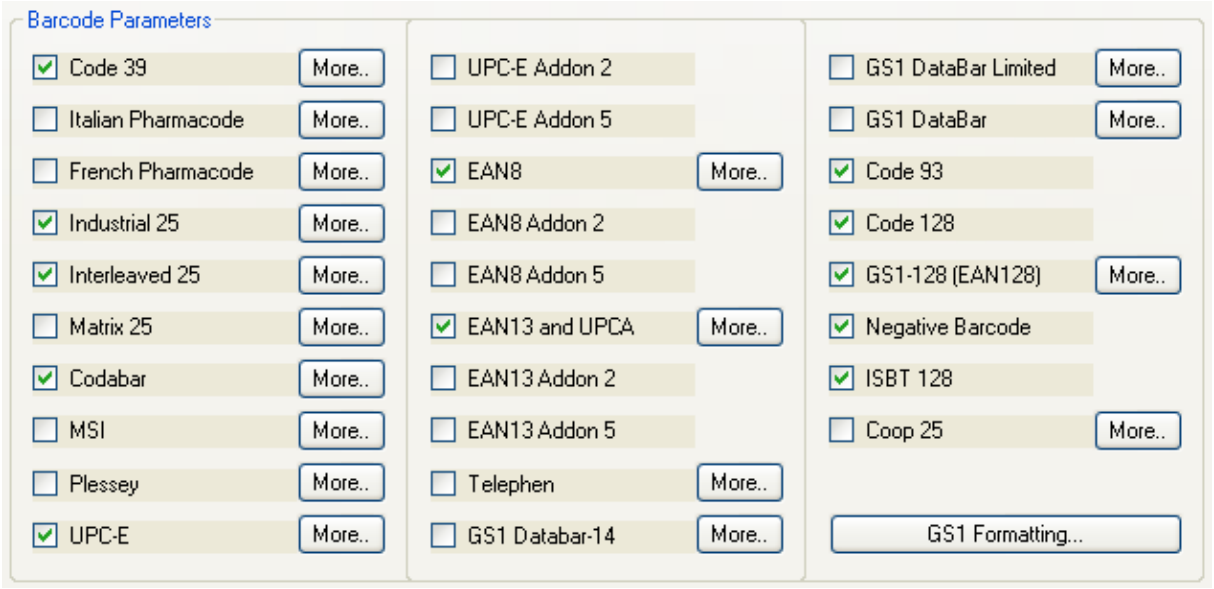
Depending on the barcode reader selected, configure the associated reader settings. Further details please refer to the Reader Settings Table in Appendixes II and III.



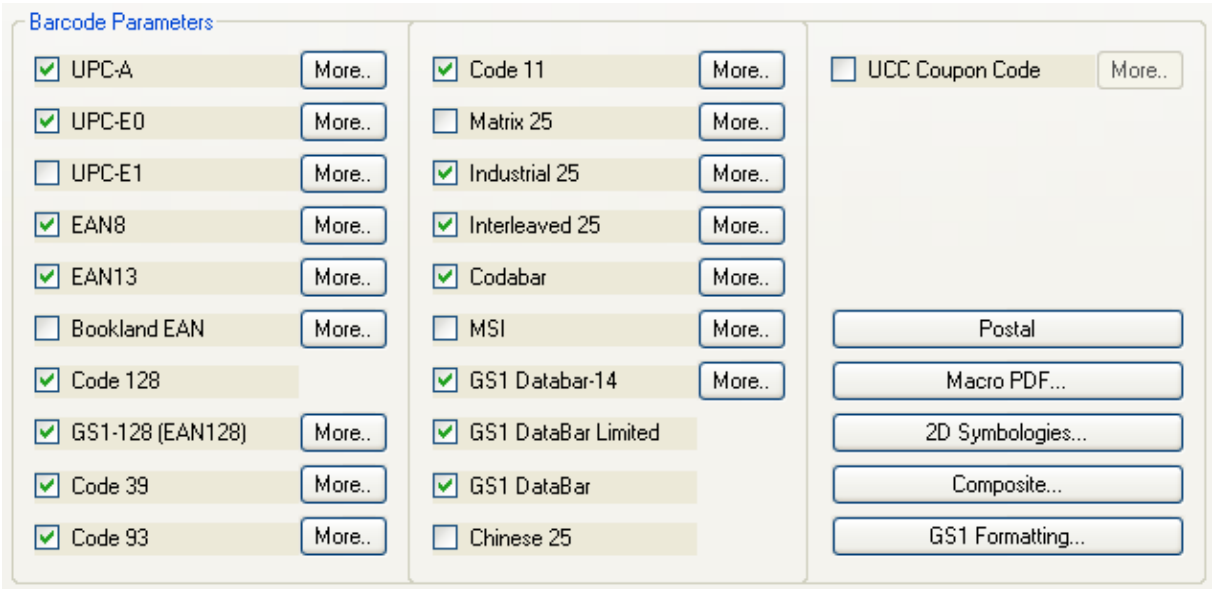
3.3 BARCODE PARAMETERS (SYMBOLOGY SETTINGS)

Depending on the barcode reader selected, configure the associated symbologies. Further details please refer to the Symbology Settings Table in Appendixes II and III. For a symbology along with the more... button, it means advanced symbology settings are available.

1D Laser/CCD Reader:



2D Reader:



3.4 RESET

Click **Reset** to load the default settings. This applies to the following settings —

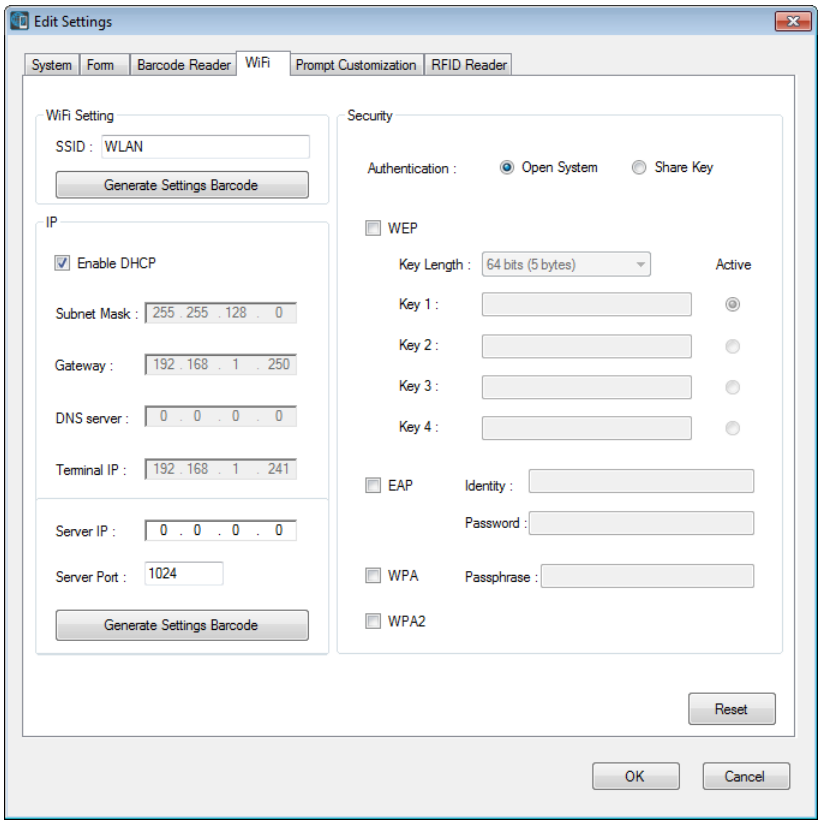
- Barcode Type & Reader Settings
- Barcode Parameters

Note: The current settings will be cleared.

Chapter 4

WI-FI SETTINGS

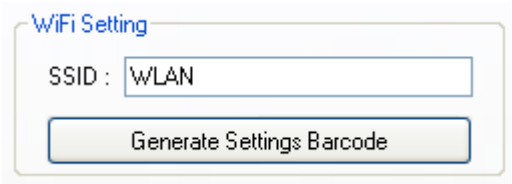
To establish a Wi-Fi connection to a host, Wi-Fi networking settings must be configured correctly.



Users can also configure Wi-Fi settings depending on the connection environment via the **Wi-Fi Settings** menu on the mobile computer.

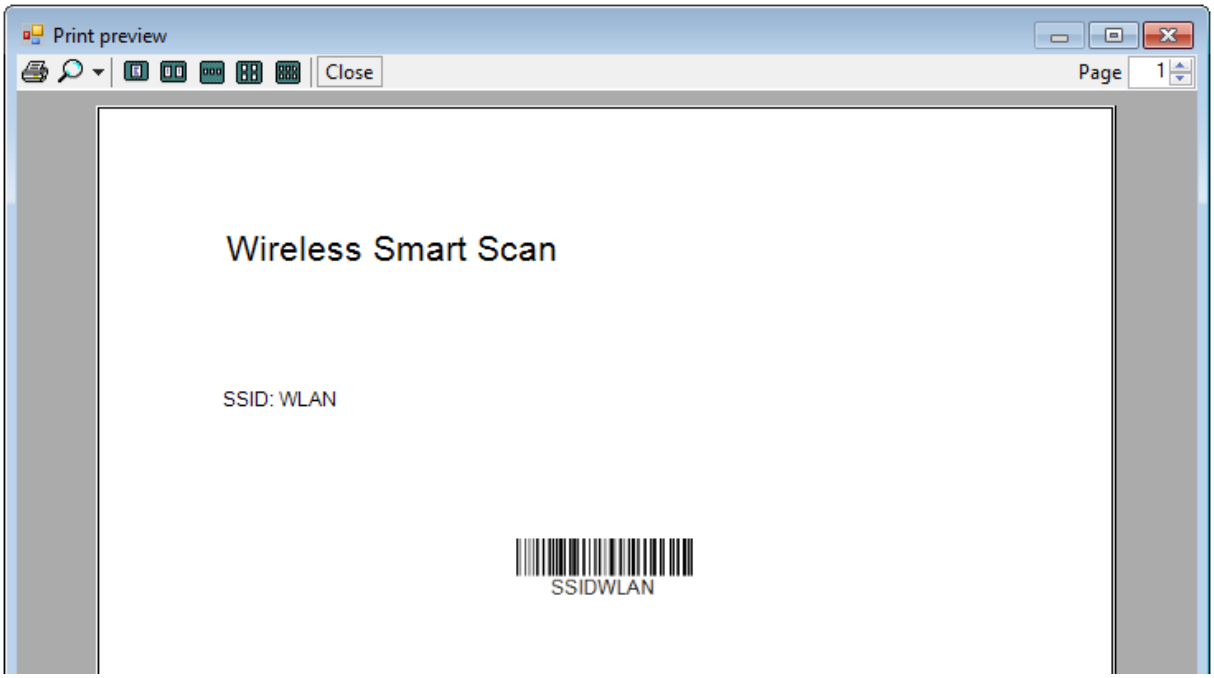
IN THIS CHAPTER

4.1 WI-FI SETTINGS



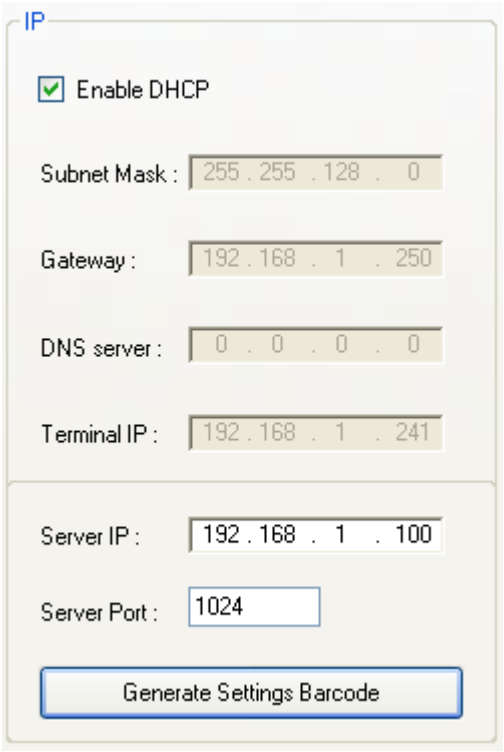
SSID: Type in the SSID of target WLAN to which the mobile computer tries to connect.

Generate Settings Barcode: Click this button to generate a setting barcode for quick SSID configuration. Users can then print this SSID setting barcode for later use to configure SSID by simply scanning it. Just get into **Utilities | 2. Wi-Fi Settings | 2. SSID**, and then scan the printed barcode below.



4.2 IP

By default, DHCP server is enabled where all the settings can be obtained.



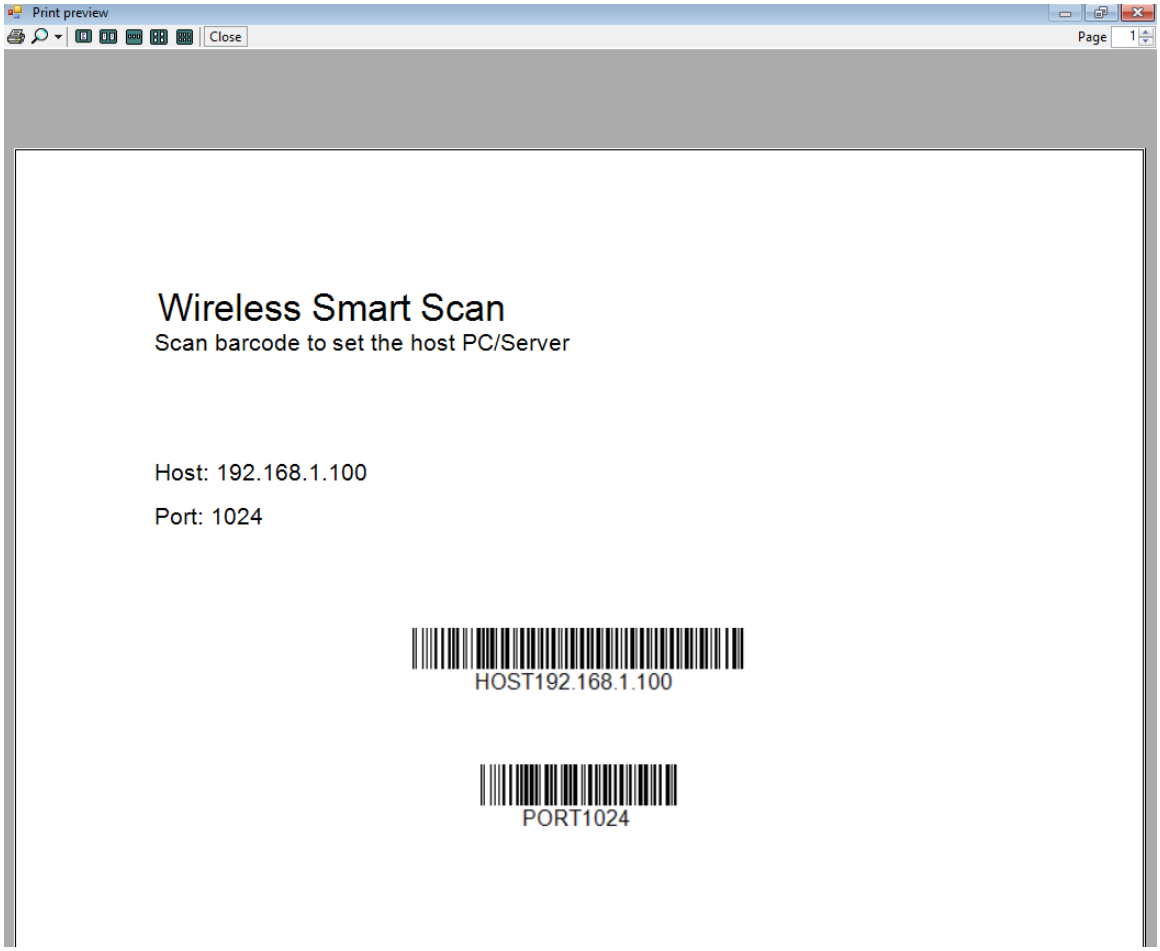
By default, DHCP is enable. If the DHCP function is disabled, the following information should be provided —

- Subnet Mask
- Gateway
- DNS Server
- Terminal IP

Server IP: Enter the IP address of the destination server to which your mobile computer attempts to connect.

Server Port: Specify the port number of the destination server.

Generate Setting Barcode: Click this button to generate setting barcodes for quick destination server IP/port number configuration, as the picture shown below. Users can then print the setting barcodes for later use to configure server IP/port number by simply scanning them. Just get into **Utilities | 3. Server Settings | 3. Quick Setup**, and then scan the printed barcodes respectively.

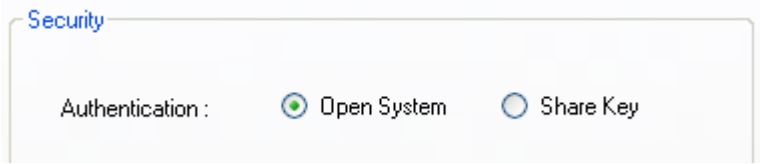


4.3 SECURITY

Authentication and encryption help provide data protection on the 802.11b/g (8230) and 802.11b/g/n (8630) network.

4.3.1 OPEN SYSTEM/SHARED KEY

Two types of network authentication methods are supported: Open System and Shared Key.



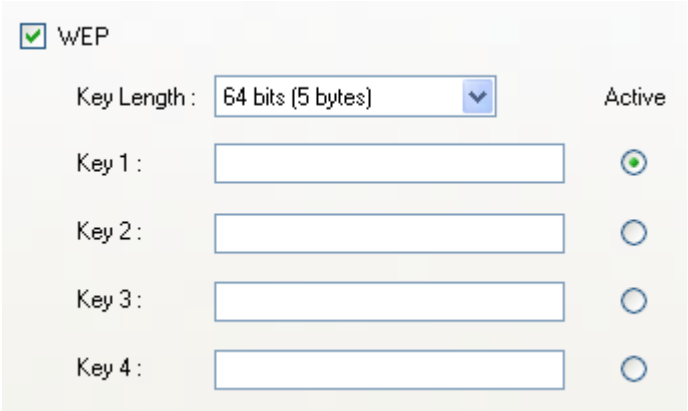
Setting	Remark
Open System	Using Open System authentication, any wireless station can request authentication. The station that needs to authenticate with another wireless station sends an authentication management frame containing the identity of the

	sending station. The receiving station or AP will grant any request for authentication. ▸ Open System authentication allows any device network access. If no encryption is enabled on the network, any device that knows the SSID of the access point can gain access to the network.
Shared Key	Using Shared Key authentication, each wireless station is assumed to have received a secret shared key over a secure channel that is independent from the 802.11b/g/n wireless network communications channel. ▸ Shared Key authentication requires that the client configured with a static WEP key. The client access will be granted only if it passed a challenge based authentication.

Note: For Shared Key authentication, the active WEP key is used for authentication.

4.3.2 WEP KEY

Select the check box to implement Wired Equivalent Privacy or Wireless Encryption Protocol (WEP) for data encryption.



Setting	Remark
Key Length	Encryption type can be 64 bits (5 bytes) or 128 bits (13 bytes). ▸ Using 64-bit encryption, the password phrase can be 5 characters long. Click on any of the key fields to bring up the Grid Control of ASCII table. Select up to 5 characters (ASCII codes) for the WEP key. ▸ For 128-bit encryption, the password phrase can be 13 characters long. Click on any of the key fields to bring up the Grid Control of ASCII table. Select up to 13 characters (ASCII codes) for the WEP key.
Key 1 ~ 4	Key index number. Up to four WEP keys can be configured.
Active	Only one key (the active one) can be used at a time.

Note: It must use the same settings as configured for other devices on the wireless network, e.g. access points.

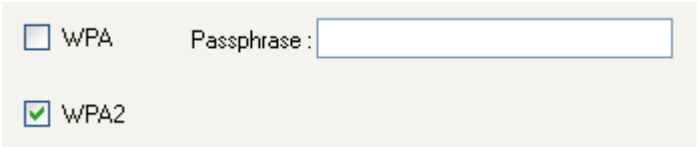
4.3.3 EAP

Select the check box to enable authentication using Extensible Authentication Protocol (EAP). It requires user name and password so that the mobile computer can identify itself when associating to Cisco® access points.

Setting	Remark
Identity	Specify a user name. (32 characters maximum)
Password	Specify a password. (32 characters maximum)

4.3.4 WPA-PSK/WPA2-PSK PASSPHRASE

WPA-PSK is supported to enhance security over wireless networks, and this Pre-Shared key mode requires a passphrase to access the network. The passphrase must be 8 to 63 characters (ASCII codes). It is used to generate a WEP key automatically.



4.4 RESET

Click **Reset** to load the default settings.

Note: The current settings will be cleared.

Chapter 5

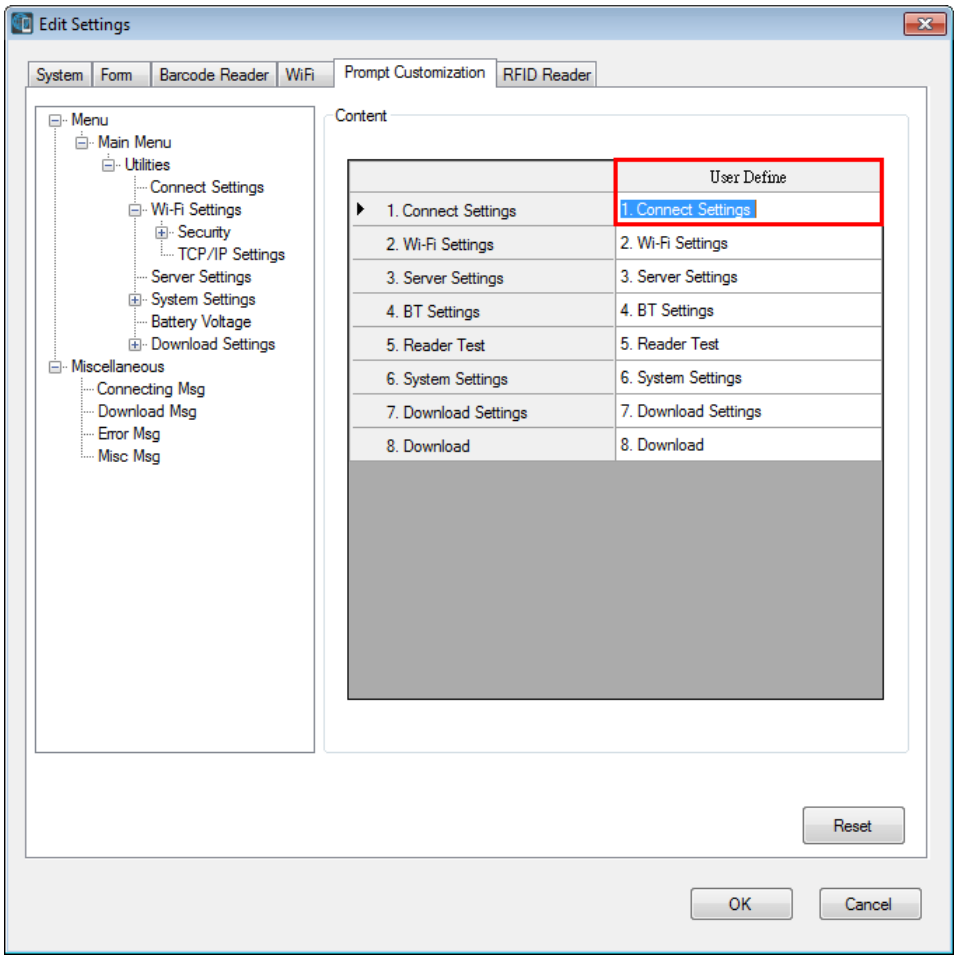
PROMPT CUSTOMIZATION

The WSS Designer utility allows users to edit the menu titles and messages on the mobile computer for display language localization.

IN THIS CHAPTER

5.1 DISPLAY LANGUAGE LOCALIZATION

Click any menu or message item in the tree menu to have its subitems display on the right side. In the User Define fields, as the picture shown below, users can change the labels in the target language which they want to display on the mobile computer. When finished, click OK to have the settings take effect.



5.2 RESET

Click **Reset** to load the default settings.

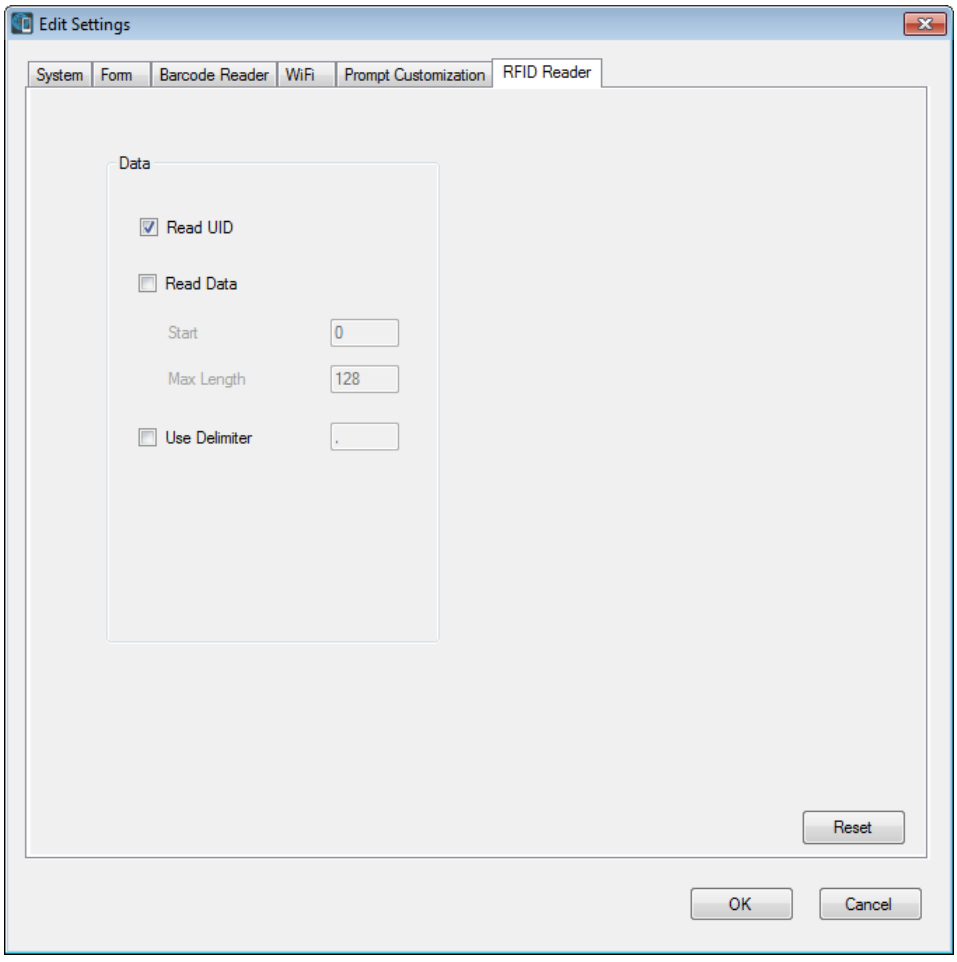
Note: The current settings will be cleared.

Chapter 6

RFID READER

This tab is for 8630 only. With the mobile computer capable of reading RFID tags, this tab is to configure the associated RFID settings. By default, the RFID reader is enabled to read UID only.

IN THIS CHAPTER



6.1 DATA

Read UID

By default, the RFID reader is set to read tag UID (Unique Identification).

- UID: a permanent factory programmed unique identification (UID) code which is unique to each tag.

Read Data

Select the check box so that RFID data can be read.

- If only partial data is required, specify the start position and maximum length.

Use Delimiter

Select the check box and specify a delimiter to separate UID from data when both are read.

- Click the editing box and select one character from the Grid Control (ASCII codes).

6.2 RESET

Click **Reset** to load the default settings.

Note: The current settings will be cleared.

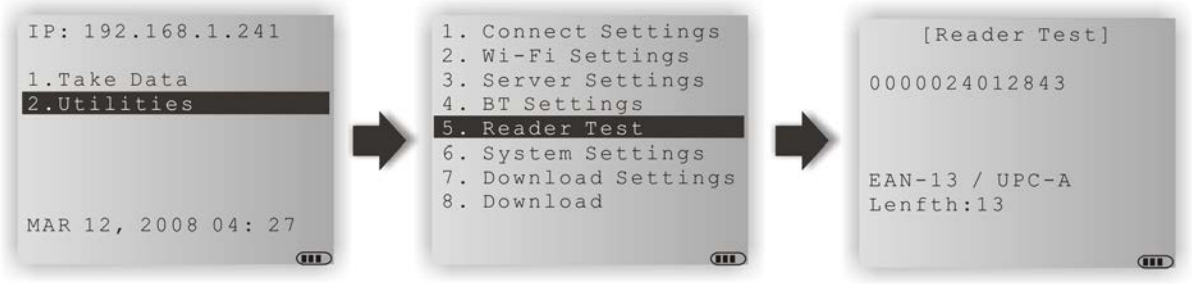
Chapter 7

MISCELLANEOUS

This chapter is intended to explain the menu items on the mobile computer that are not included in the windows-base configuration utility.

IN THIS CHAPTER

7.1 READER TEST

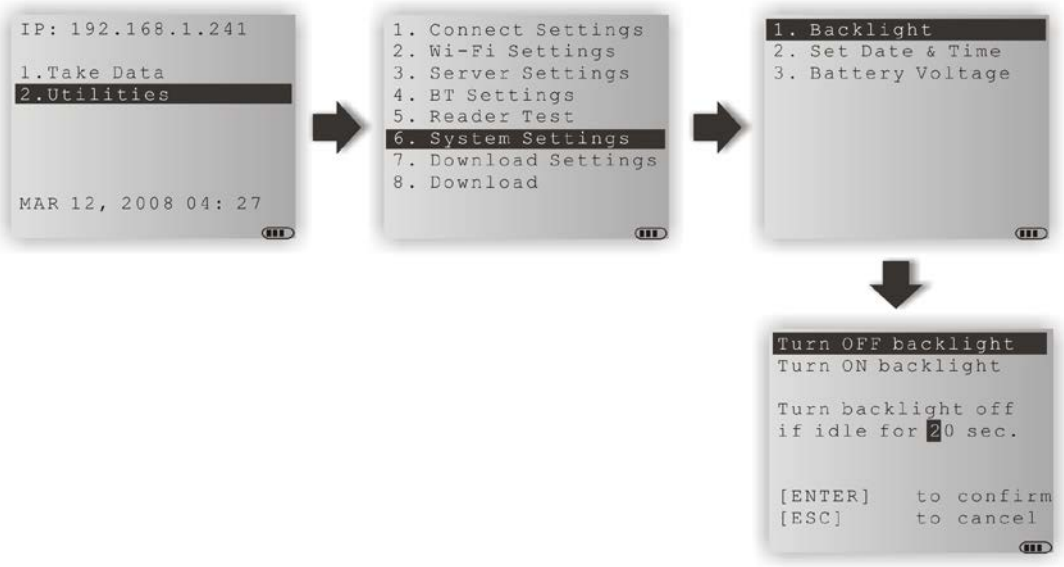


As the pictures illustrated above, users can press the trigger to scan barcode labels to make sure the barcode reader is working and identify the barcode type.

7.2 SYSTEM SETTINGS

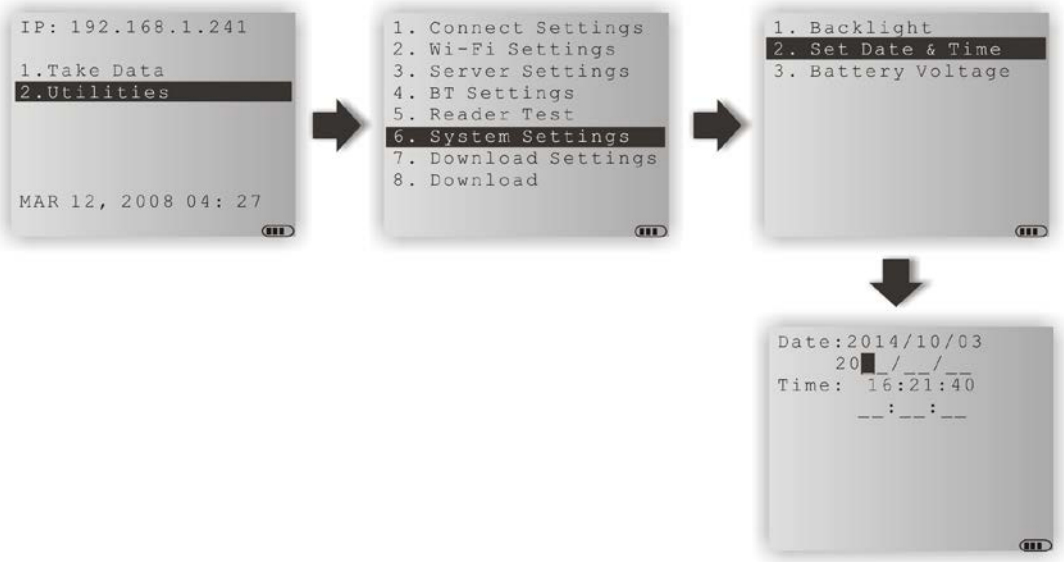
7.2.1 BACKLIGHT

Users can configure backlight settings depending on ambient light conditions via the **Backlight** menu on the mobile computer.



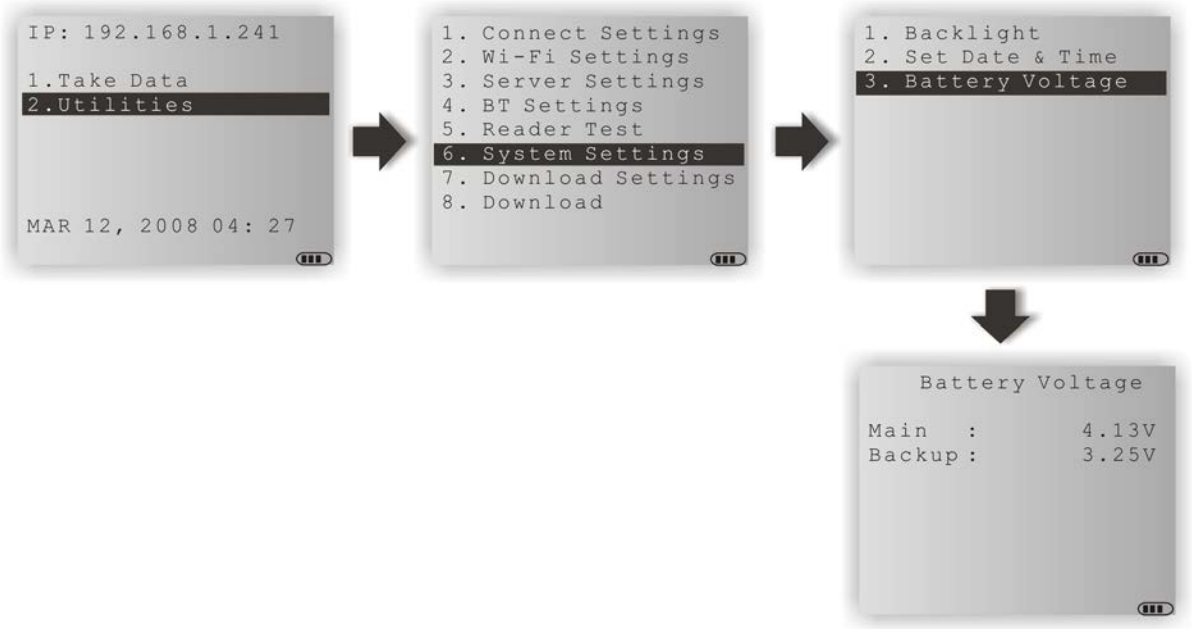
7.2.2 SET DATE & TIME

As the pictures illustrated below, this function is designed for users to change system date and time manually.



7.2.3 BATTERY VOLTAGE

As the pictures illustrated below, this function is designed for users to monitor the battery voltage level.



Chapter 8

WIRELESS SMART SCAN CONSOLE

Wireless Smart Scan Console is a windows-based application running as a host console to which allows multiple clients to connect. Users can connect to the console via Wi-Fi using 8230/8630 mobile computers, or via Bluetooth SPP using 166x series scanners and 8230/8260/8630 mobile computers.

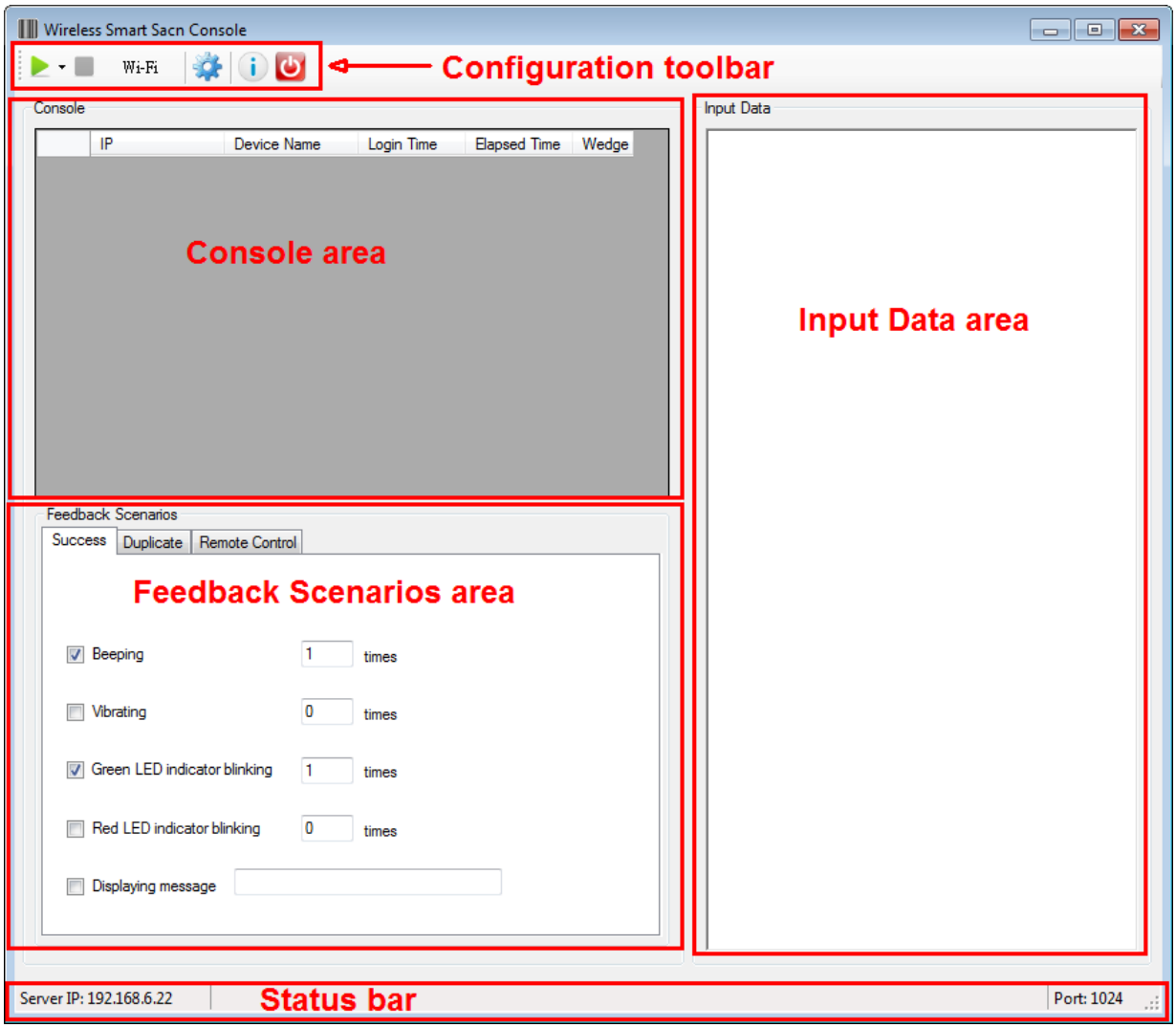
By default, WSS Console is capable of receiving collected data and saving the data into a text file. For the Wi-Fi connection, users have options to save data into other document-based applications such as Microsoft Word and Excel.

IN THIS CHAPTER

8.1 GETTING STARTED

Clicking the WSS Console icon for the first time running, you will be prompted to choose between Wi-Fi and Bluetooth SPP connections, as the picture shown below; you can also change that later.

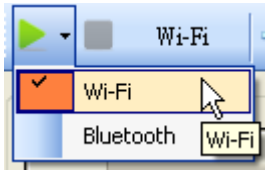
After running WSS Console, you will see the WSS Console user interface which mainly consists of the Configuration toolbar, Console, Feedback Scenarios, Input Data areas, and the Status bar.



8.2 CONFIGURATION TOOLBAR

The toolbar allows quick access to commands including Start/Stop Server, Console Configuration, About, and Exit.

From left to right, they stand for the following commands:



Click the downward triangle to select between Wi-Fi and Bluetooth. With the connection selected, click the green triangle button to start the server.

While the server is running, you can click the red square button to stop the server.

Click this button to configure WSS Console.

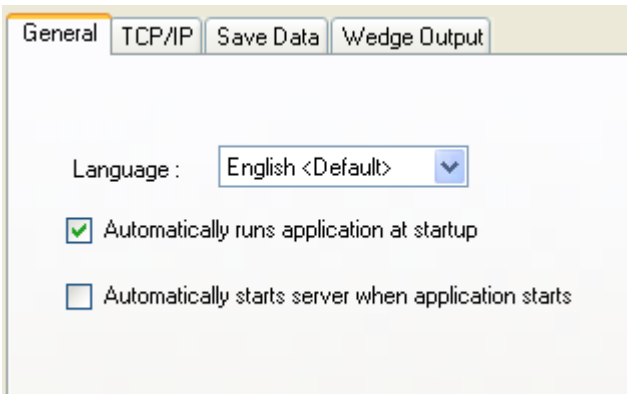
Click it to check information of the console.

Click it to exit the console.

8.2.1 WSS CONSOLE CONFIGURATION

Click  to bring up the configuration window. Tabbed pages in the window help users to specify settings for the console such as running timing, port number, codepage, data file location, etc.

GENERAL

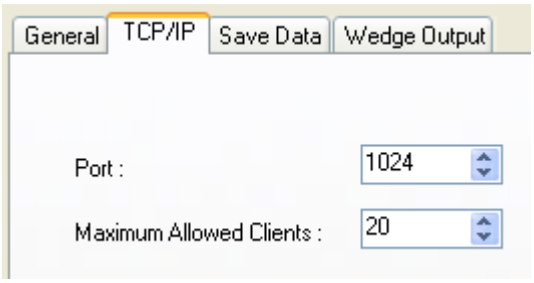


Language: Click the drop-down menu to select a language file for WSS Console user interface.

Automatically runs application at startup: Check this checkbox to have WSS Console run automatically at system startup.

Automatically starts server when application starts: Check this checkbox to start the server when WSS Console starts.

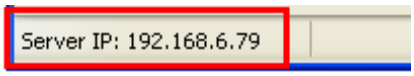
TCP/IP (WI-FI CONNECTION ONLY)



Port: Specify the port number for WSS Console. 1024 is set by default.

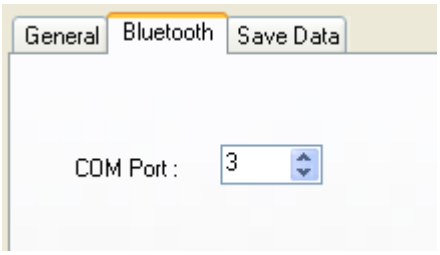
Maximum Allowed Clients: WSS Console can accept up to 256 clients at the same time. 20 is set by default.

While the WSS Console is running for Wi-Fi networking, the Server IP and Port number being used will be displayed in the status bar as shown below.



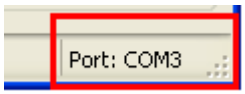
BLUETOOTH (BLUETOOTH CONNECTION ONLY)

This tabbed page is available when Bluetooth is set as the wireless connection.

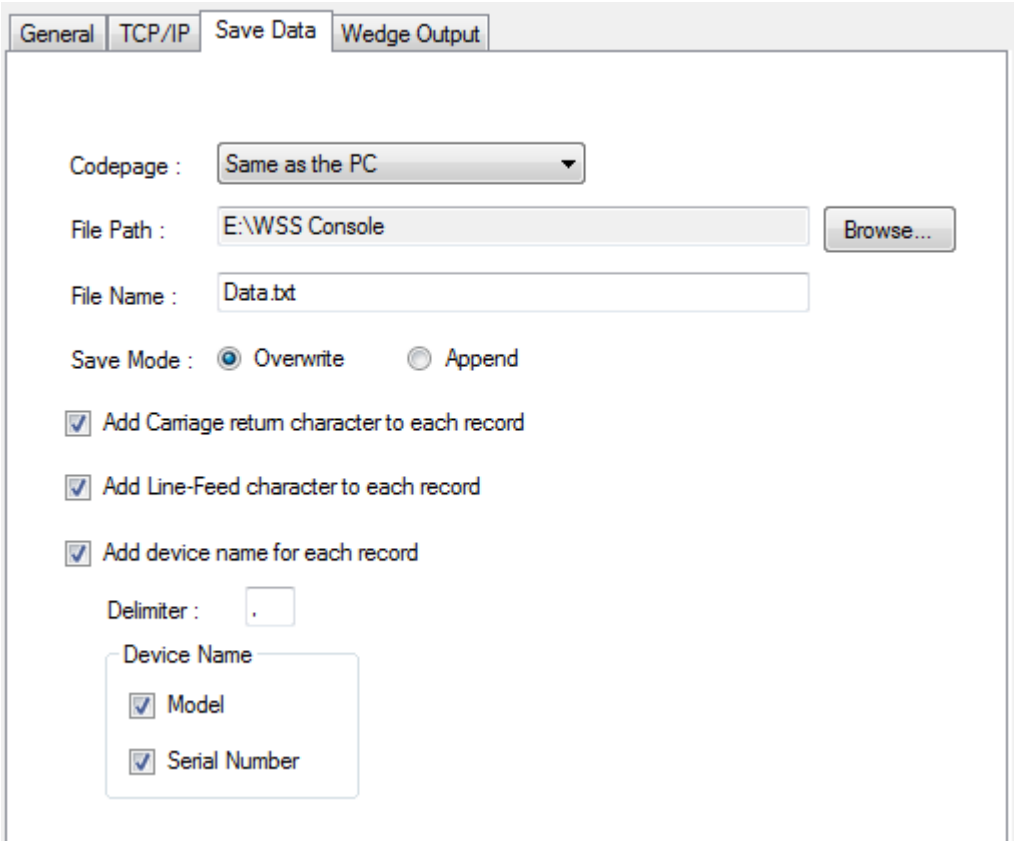


COM Port: Mobile computers and scanners will connect to the host server (PC) via 3610. Please specify the COM port that 3610 is using.

While the WSS Console is running for Bluetooth networking, the COM port number being used will be displayed in the status bar as shown below.



SAVE DATA



Codepage: Click the drop-down menu to select the codepage for WSS Console.

File Path: Click the Browse button to determine the directory where the file of saving collected data is located.

File Name: Specify the file name that saves the collected data.

Save Mode: Determine whether the new collected data is appended or overwritten to the file.

Add Carriage return character to each record: Check this checkbox to add a carriage return character to the end of each record.

Add Line-Feed character to each record: Check this checkbox to add a line-feed character to the end of each record.

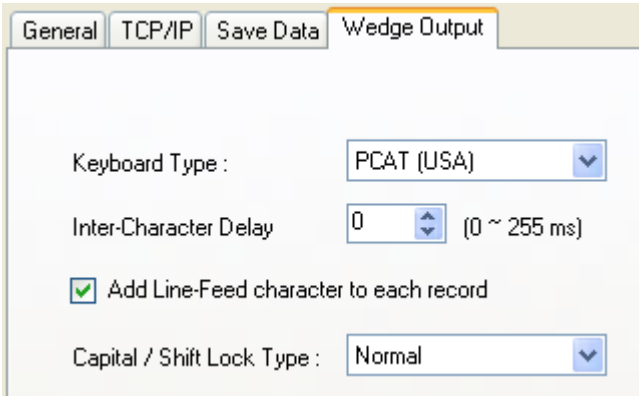
Add device name for each record: Check this checkbox to add device name in front of each record.

Delimiter: By default, a comma symbol is added to separate device name and data. Users can enter the own symbol they want in the field.

Device Name: A device name, by default, consists of model name and serial number. You can add either model name or serial name or both for your own purposes.

WEDGE OUTPUT (WI-FI CONNECTION ONLY)

This tabbed page is available when Wi-Fi is set as the wireless connection. Configure these settings for the collected data to be output to other applications.



Keyboard Type: Click the drop-down menu to select the keyboard type for wedge output.

Inter-Character Delay: By default, the inter-character delay is set to zero. Specify a value ranging from 0 to 255 in milliseconds to match the computer response time of the keyboard interface. Such delay time is inserted between every character being transmitted. The longer the delay time is, the slower the transmission speed will be.

Add Line-Feed character to each record: Check this checkbox to add a line-feed character to the end of each record.

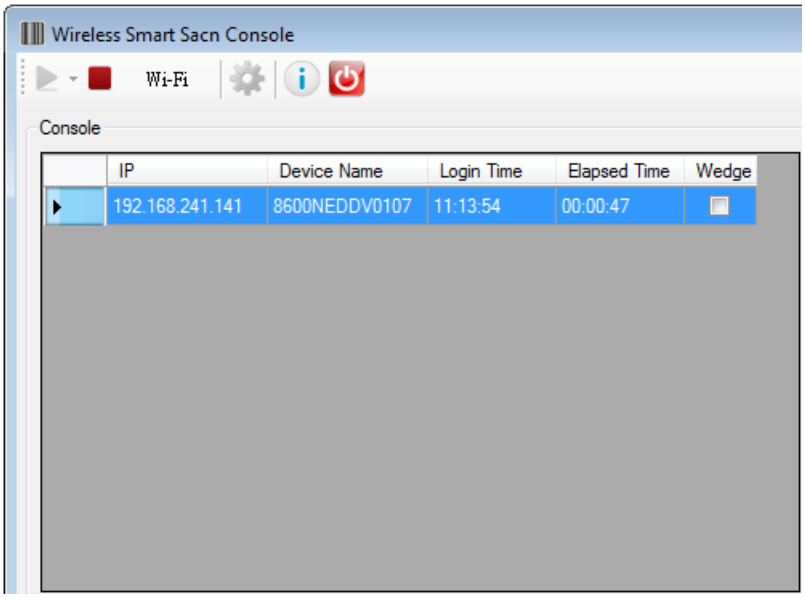
Capital/Shift Lock Type: In order to send the alphabet with correct case, the scanner needs to know the status of Caps Lock on the keyboard. Incorrect settings may result in reversed case of the alphabet being transmitted.

Cap Lock Type	Description
Normal	Normal type
Capital Lock	When selected, the keys of alphabetic characters will be interpreted as capital letters. However, this does not affect the number or punctuation keys.
Shift Lock	When selected, the keys of alphabetic characters will be interpreted as capital letters. In addition, this affects the number or punctuation keys.

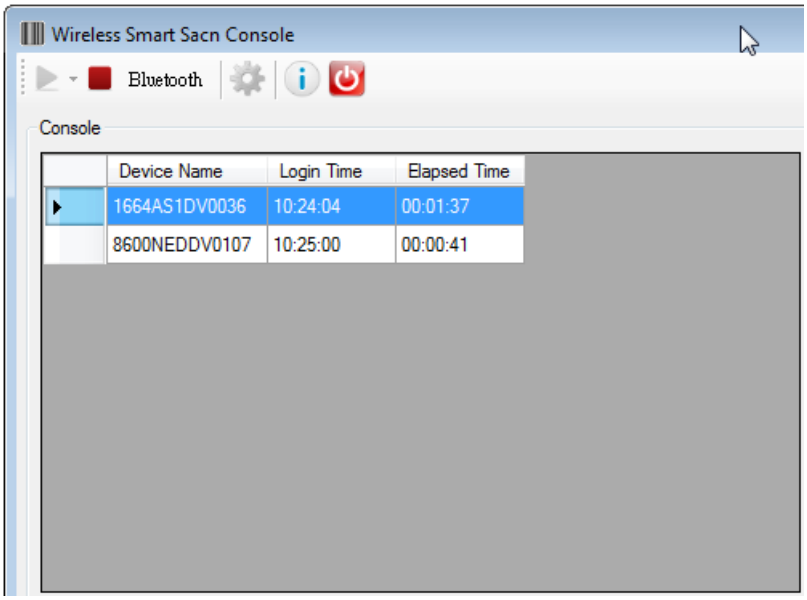
8.3 CONSOLE AREA & STATUS BAR

After the device is connecting with the console, the connected device information will be displayed in the Console area.

For Wi-Fi connection, the Console area displays IP address, device name, login time, elapsed time for each connected mobile computer. Besides, a checkbox labelled as 'Wedge' at the end allows users to redirect the collected data to other applications when it is checked. Note when the Wedge checkbox is checked, the collected data won't be displayed in the Input Data area.



For Bluetooth connection, the Console area displays device name, login time, and elapsed time for each connected mobile computer or scanner.

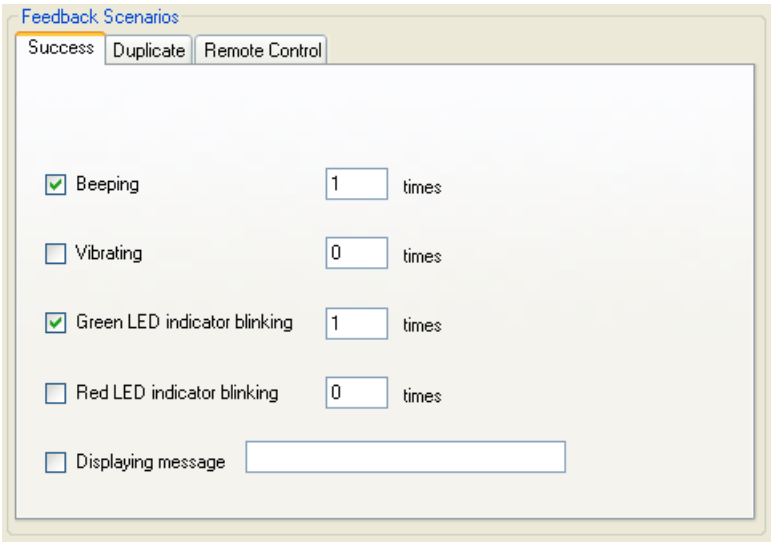


8.4 FEEDBACK SCENARIOS

Users can have the connected device respond by beeping, vibrating, blinking, or displaying message to indicate a success scan/duplicate collected data.

8.4.1 SUCCESS SCAN

Check the checkboxes and specify a value in times respectively to have the connected device respond to a success scan.



Beeping: With the checkbox checked, enter a value into the field. The connected device will then respond by beeping when a success scan occurs.

Vibrating: With the checkbox checked, enter a value into the field. The connected device will then respond by vibrating when a success scan occurs.

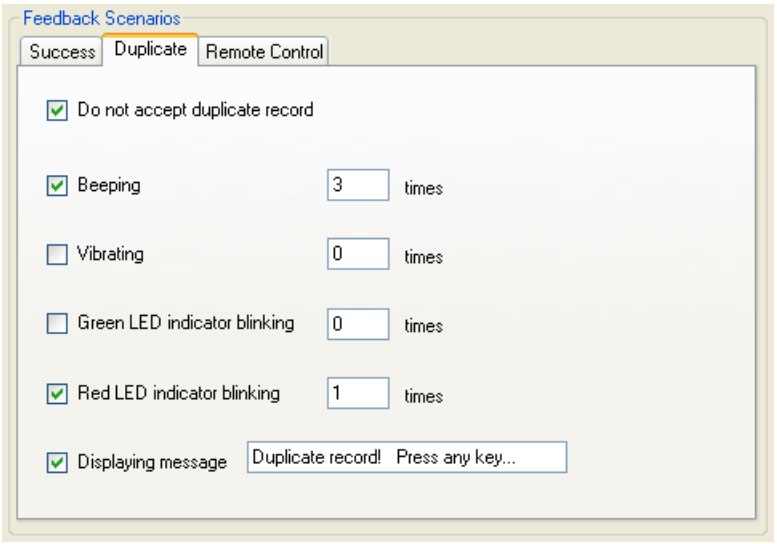
Green LED indicator blinking: With the checkbox checked, enter a value into the field. The connected device will then respond by blinking its green LED indicator when a success scan occurs.

Red LED indicator blinking: With the checkbox checked, enter a value into the field. The connected device will then respond by blinking its red LED indicator when a success scan occurs.

Displaying message: With the checkbox checked, enter the displaying message into the field. The connected device will then respond by displaying the pre-defined message on the mobile computer's screen when a success scan occurs.

8.4.2 DUPLICATE DATA

Check the checkboxes and specify a value in times respectively to have the connected device respond to a duplicate data.



Beeping: With the checkbox checked, enter a value into the field. The connected device will then respond by beeping when a duplicate scan occurs.

Vibrating: With the checkbox checked, enter a value into the field. The connected device will then respond by vibrating when a duplicate scan occurs.

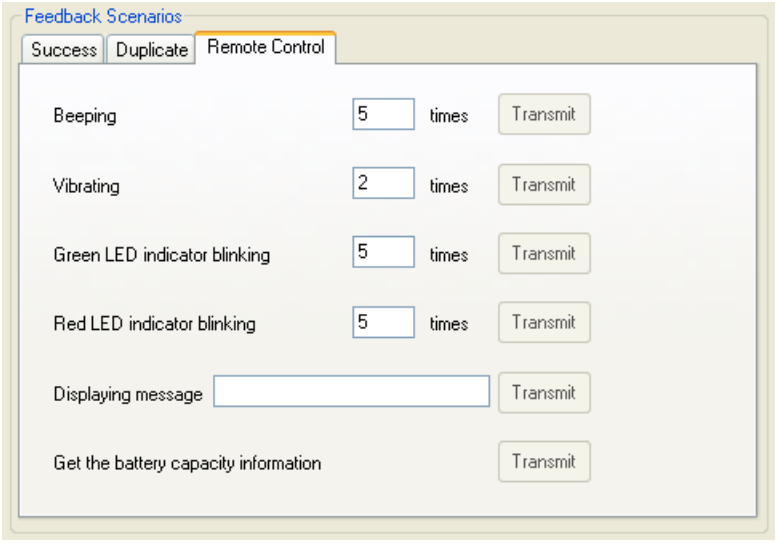
Green LED indicator blinking: With the checkbox checked, enter a value into the field. The connected device will then respond by blinking its green LED indicator when a duplicate scan occurs.

Red LED indicator blinking: With the checkbox checked, enter a value into the field. The connected device will then respond by blinking its red LED indicator when a duplicate scan occurs.

Displaying message: With the checkbox checked, enter the displaying message into the field. The connected device will then respond by displaying the pre-defined message on the mobile computer's screen when a duplicate scan occurs.

8.4.3 REMOTE CONTROL

Enter a value into the fields respectively to have the connected device respond with the specified indication to help users find the device they want when there are a lot of device are connecting to the host.



The Transmit buttons are available when the Console is running and at least one device is connecting to the host. Before clicking the Transmit button, make sure you have move the cursor to highlight the connected device listed in the Console area.

Beeping: With a value entered into the field, click the Transmit button to have the device beep for indication.

Vibrating: With a value entered into the field, click the Transmit button to have the device vibrate for indication.

Green LED indicator blinking: With a value entered into the field, click the Transmit button to have the device LED blink for indication.

Red LED indicator blinking: With a value entered into the field, click the Transmit button to have the device LED blink for indication.

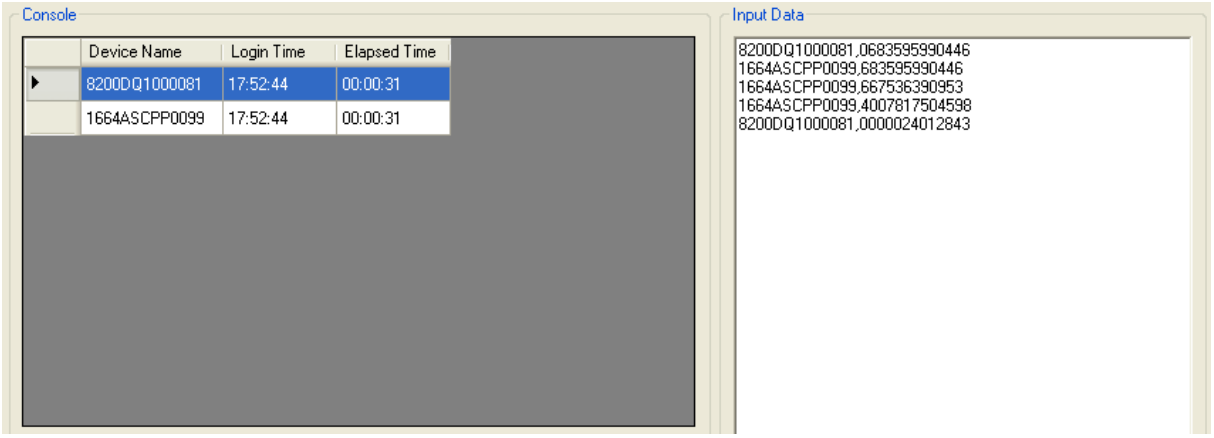
Displaying message: With the message entered into the field, click the Transmit button to have the device display the pre-defined message on the mobile computer's screen for indication.

Get the battery capacity information: Click the Transmit button to bring up the window that display battery capacity information.

8.5 INPUT DATA

The collected data will be saved to a text file by default. Besides, the data will also be displayed in the Input Data area.

Note: For Wi-Fi connection, if the Wedge checkbox is checked, the collected data will not be displayed in the Input Data area.



Appendix I

SCAN ENGINE SETTINGS

The **WSS** allows configuring the following reader types, depending on the module equipped on the mobile computer:

	8230/8260	8630
Barcode Reader		
1D CCD Scan Engine	✓	✓
1D Laser Scan Engine	✓	✓
1D Long Range Laser Scan Engine (LR)	×	×
1D Extra Long Range Laser Scan Engine (ELR)	×	×
2D Scan Engine	✓	✓
RFID Reader		
ACG_RFID Module v0.9	×	×
ACG_RFID Module v1.0	×	×
HF RFID Multi-ISO v1.2.2	×	✓

Options of different reader combination are allowed, such as 1D+RFID and 2D+RFID. For each combination, both readers can be initialized and ready for scanning at the same time (dual mode operation). For example, if pressing the **SCAN** button while running the WSS run-time program on the mobile computer, it will read a barcode in position or an RFID tag in proximity depending on which one comes first.

Note: It cannot have 1D+2D scan engines installed on the mobile computer because they are both barcode readers!

SYMBOLOGIES SUPPORTED

Varying by the scan engine installed, the supported symbologies or tag types are listed below. For details on configuring associated settings, please refer to each Appendix separately.

		CCD, Laser	2D
Codabar		✓	✓
Code 11		×	✓
Code 93		✓	✓
Composite Code		×	✓
MSI		✓	✓
Plessey		✓	×
Postal Codes		×	✓
Telepen		✓	×
Code 128	Code 128	✓	✓
	GS1-128 (EAN-128)	✓	✓
	ISBT 128	✓	✓
Code 2 of 5	Industrial 25 (Discrete 25)	✓	✓
	Interleaved 25	✓	✓
	Matrix 25	✓	(✓)Note
	Chinese 25	×	(✓)Note
	Coop 25	(✓)Note	×
Code 3 of 9	Code 39	✓	✓
	Trioptic Code 39	×	✓
	Italian Pharmacode (Code 32)	✓	✓
	French Pharmacode	✓	×
EAN / UPC	EAN-8	✓	✓
	EAN-13	✓	✓
	Bookland EAN (ISBN)	✓	✓
	UPC-E0	✓	✓
	UPC-E1	✓	✓
	UPC-A	✓	✓
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	✓	✓
2D Symbologies	PDF417	×	✓
	MicroPDF417	×	✓
	Data Matrix	×	✓
	Maxicode	×	✓
	QR Code	×	✓
	Micro QR	×	(✓)Note
	Aztec	×	(✓)Note

RFID TAGS SUPPORTED

The RFID reader supports read/write operations depending on the tags. The supported labels include ISO 15693, Icode®, ISO 14443A, and ISO 14443B. Currently, the performance of some tags has been confirmed, and the results are listed below for your reference. The results found may vary in RFID module version.

Note: You should study the specifications of RFID tags before use.

HF RFID Multi-ISO Version 1.2.2		UID Only	Read Page	Write Page
ISO 14443A	Mifare Standard 1K (Mifare S50)	✓	✓	✓
	Mifare Standard 4K (Mifare S70)	✓	✓	✓
	Jcop 41 only the (Mifare 1K & 4K compatible)	✓	✓	✓
	Mifare Ultralight	✓	✓	✓
	Mifare Ultralight C	✓	✓	✓
	Mifare ProX	✓	✓	✓
	Mifare DESFire	✓	✓	✓
	Mifare Plus	✓	✓	✓
	Mifare Mini (Mifare S20)	✓	✓	✓
	SLE66CLX320P	✓	---	---
	SLE55R04 / 08	✓	---	---
	Smart MX	✓	---	---
	Jewel	✓	✓	✓
	Topaz	✓	✓	✓
ISO 14443B	SLE6666CL160S	✓	---	---
	SR176	✓	✓	✓
	SRIX4K	✓	✓	✓
	SLIX 4K	✓	✓	✓

Dual	ISO 14443A compliant	✓	---	---
	ISO 14443B compliant	✓	---	---
ISO 15693	EM4135	✓	✓	✓
	ICode SLI	✓	✓	✓
	LRI12	✓	✓	✓
	LRI64	✓	✓	✓
	LRI128	✓	✓	✓
	LRI2k	✓	✓	✓
	SRF55VxxP	✓	✓	✓
	SRF55VxxS	✓	✓	✓
	Tag-it HF-I Std	✓	✓	✓
	TempSense	✓	---	---
	ICODE1 with EAS&AFI	✓	✓	✓
	Icode	✓	✓	✓

ACG_RFID Module Version 1.0		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	✓	✓	✓
ICODE® (Phillips)	ICODE	✓	✓	✓

ACG_RFID Module Version 0.9		UID Only	Read Page	Write Page
ISO 14443A	Mifare Standard 1K	✓	---	---
	Mifare Standard 4K	✓	---	---
	Mifare DESFire	✓	---	---

	Mifare S50	✓	---	---
	SLE44R35	✓	---	---
	SLE66R35	✓	---	---
ISO 15693	ICODE SLI	✓	✓	✓
	SRF55V02P	✓	✓	✓
	SRF55V02S	✓	---	---
	SRF55V10P	✓	✓	✓
	TI Tag-it HF-I	✓	✓	✓
	ST LRI64	✓	✓	✓
	ST LRI512	✓	✓	✓
Tagit®	Tagit	✓	✓	✓
ICODE® (Phillips)	ICODE	✓	✓	✓

Appendix II

CCD/LASER SCAN ENGINE

The tables below list reader settings as well as symbology settings for the CCD or Laser scan engine.

READER SETTINGS TABLE

CCD/Laser Engine	Description	Default
Scan Mode		**Laser 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	
Repeat Mode	Non-stop scanning ▸ Capable of re-transmitting barcode data if triggering within one second after a successful decoding	
Momentary Mode	Hold down the scan trigger to start with scanning. ▸ The scanning won't stop until you release the trigger.	
Alternate Mode	Press the scan trigger to start with scanning. ▸ The scanning won't stop until you press the trigger again.	
Aiming Mode	Press the scan trigger to aim at a barcode. Within one second, press the trigger again to decode the barcode. ▸ The scanning won't stop until (a) a barcode is decoded, (b) the pre-set timeout expires, or (c) you release the trigger.	
Laser 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.	
Auto Power Off Mode	Press the scan trigger to start with scanning. ▸ The scanning won't stop until the preset timeout expires, and, the preset timeout period re-counts after each successful decoding.	
Read Redundancy		**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.
Time-out	**3 sec.**
0~255 (second)	Set the maximum time for decoding to continue during a scan attempt. It applies to the following scan modes only – ▸ Aiming mode ▸ Laser mode ▸ Auto Off mode ▸ Auto Power Off mode
Aiming Duration	**3 sec.**
1~255 (second)	Set the maximum time for decoding to continue during a scan attempt. ▸ It applies to Aiming mode only.

SYMBOLOGY SETTINGS TABLE

CCD/Laser Engine	Description	Default
Codabar		**Enable**
Transmit Start/Stop Character	Decide whether to include the start/stop characters in the data being transmitted. If "Transmit Start/Stop Characters" is desired, select one set: ▸ abcd / abcd ▸ abcd / tn*e ▸ ABCD / ABCD ▸ ABCD / TN*E	No
Code 128		**Enable**
GS1-128 (EAN-128)		**Enable**
Transmit Code ID (for EAN-128)	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 2 of 5 barcode but with Interleaved 2 of 5 start/stop pattern. In order to read this barcode, the start/stop pattern selection parameter of Industrial 2 of 5 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	1~127
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	1~126
Matrix 25		**Disable**
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	1~127
Coop 25		**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.	Yes
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
Security Level	▸ High ▸ Normal	High
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	1~127
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.	No
AIM Telepen (Full ASCII)	AIM Telepen (Full ASCII) includes all the alphanumeric and special characters.	Yes
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
GTIN-13 Format	Decide whether to convert using GTIN-13 format.	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**
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
Enable UPC-E1	Decide whether to decode both UPC-E0 and UPC-E1 barcodes. ▸ By default, it decodes the UPC-E0 barcodes only.	No
Enable UPC-E1 Triple Check	Decide whether to apply read redundancy to the UPC-E1 barcode. ▸ When applied, the same UPC-E1 barcode has to be read three times to make a valid reading. This is helpful when the barcode is defaced and requires more attempts to read it successfully.	No
Addon 2 / Addon 5	Decide whether to decode UPC-E with addons.	No

GS1 Formatting		**---**
GS1-128 (EAN128)	Decide whether to enable GS1 formatting for GS1-128.	Disable
GS1 DataBar Family	Decide whether to enable GS1 formatting for GS1 DataBar.	Disable
Field Separator	Specify the field separator.	No
Application ID Mark	Specify the application ID mark character.	No

Appendix III

2D SCAN ENGINE

The tables below list reader settings as well as symbology settings for the 2D scan engine.

READER SETTINGS TABLE

2D Engine	Description	Default
Scan Mode		**Laser 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.	
Aiming Mode	Press the scan trigger to aim at a barcode. Within one second, press the trigger again to decode the barcode. ▸ The scanning won't stop until (a) a barcode is decoded, (b) the pre-set timeout expires, or (c) you release the trigger.	
Laser 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.	
Focus Mode	Select the focus mode to control the working range: ▸ Far Focus – optimized to read at its far position ▸ Near Focus – optimized to read at its near position ▸ Smart Focus – toggles the focus position after every frame	**Far Focus**
Decode Illumination	Decide whether to flash illumination on every barcode capture to aid decoding. ▸ Turn On (Internal LED) ▸ Turn Off	**On**
Aiming Pattern	Decide whether to project the aiming pattern during barcode capture. ▸ Turn On ▸ Turn Off	**On**

Time-out		**3 sec.**
0~255 (second)	Set the maximum time for decoding to continue during a scan attempt. It applies to the following scan modes only – ▸ Aiming mode ▸ Laser mode ▸ Auto Off mode	
Aiming Duration		**3 sec.**
1~255 (second)	Set the maximum time for aiming to continue before a scan attempt. ▸ It applies to Aiming mode only.	
Picklist Mode	Picklist mode enables the decoder to decode only barcodes aligned under the center of the laser aiming pattern. ▸ Enable ▸ Disable	**Disable**
1D Inverse Decode	1D Inverse Decoder: ▸ Decode regular 1D barcode only ▸ Decode inverse 1D barcode only ▸ Decode both regular and inverse	**Decode regular 1D barcode only**
Mobile Display Mode	Decide whether to enable mobile phone display ▸ Enable ▸ Disable	**Disable**
Read Redundancy		**None**
None	No redundancy means one successful decoding will make the reading valid and induce the "READER Event".	
One time or Two times	The higher the reading security is (that is, the more redundancy the user selects), the slower the reading speed gets. ▸ If "Two Times" is selected, it will take a total of three consecutive successful decodings of the same barcode to make the reading valid.	

SYMBOLOGY SETTINGS TABLE

1D SYMBOLOGIES

2D Engine	Description	Default
Codabar		**Enable**
Transmit Start/Stop Character	Decide whether to include the start/stop characters in the data being transmitted.	No
Select Length	▸ Any Length ▸ One or two fixed lengths ▸ Range (1~55)	Any Length
Code 128		**Enable**
GS1-128		**Enable**
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**
Select Length	▸ Any Length ▸ One or two fixed lengths ▸ Range (1~55)	Any Length
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.	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	▸ Any Length ▸ One or two fixed lengths ▸ Range (1~55)	Any Length

<table>
<tr><td colspan="2">Matrix 25</td><td>Disable</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.</td><td>No</td></tr>
<tr><td>Select Length</td><td>▸ Any Length
▸ One or two fixed lengths
▸ Range (1~55)</td><td>Any Length</td></tr>
<tr><td colspan="2">Chinese 25</td><td>Disable</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>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 so that the check digit can be left out (= "Transmit Check Digit" disabled).</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>▸ Any Length
▸ One or two fixed lengths
▸ Range (1~55)</td><td>Any Length</td></tr>
<tr><td colspan="2">Code 93</td><td>Enable</td></tr>
<tr><td>Select Length</td><td>▸ Any Length
▸ One or two fixed lengths
▸ Range (1~55)</td><td>Any Length</td></tr>
<tr><td colspan="2">MSI</td><td>Disable</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.</td><td>Single Modulo 10</td></tr>
<tr><td></td><td><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></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>
</table>

Select Length	▸ Any Length ▸ One or two fixed lengths ▸ Range (1~55)	Any Length
GS1 DataBar (RSS)		**---**
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.	No
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/EAN-128 Coupon Codes. ▸ UPC-A, EAN-13, and EAN-128 must be enabled first!		
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 ▸ Decode With Addons (= Auto-discriminate)	Ignore...
Code 11		**Disable**
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
Select Length	▸ Any Length ▸ One or two fixed lengths ▸ Range (1~55)	Any Length
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
UPU FICS Postal		Disable
USPS 4CB/One Code/ Intelligent Mail		Disable
Composite Codes		---
Composite CC-C		Disable
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
GS1 Formatting		---
GS1-128 (EAN128)		Disable
GS1 DataBar Omnidirectional	Decide whether to enable GS1 formatting for GS1 DataBar Omnidirectional.	Disable
GS1 DataBar Limited	Decide whether to enable GS1 formatting for GS1 DataBar Limited.	Disable
GS1 DataBar Expanded	Decide whether to enable GS1 formatting for GS1 DataBar Expanded.	Disable
Composite CC-A/B	Decide whether to enable GS1 formatting for Composite CC-A/B.	Disable
Composite CC-C	Decide whether to enable GS1 formatting for Composite CC-C.	Disable
Field Separator	Specify the field separator.	No
Application ID Mark	Specify the application ID mark character.	No

2D SYMBOLOGIES

2D Engine	Description	Default
2D Symbologies		---
PDF417		Enable
MicroPDF417		Enable
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. **Inverse Autodetect** Decode both regular and inverse Data Matrix barcodes.	Regular Only
Mirror Image (for Data Matrix)	Decide whether to decode mirror image Data Matrix barcodes. **Never** Do not decode Data Matrix barcodes that are mirror images. **Always** Decode only Data Matrix barcodes that are mirror images. **Auto** Decode both mirrored and unmirrored Data Matrix barcodes.	Never
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. **Inverse Autodetect** Decode both regular and inverse QR Code.	Regular Only

<table>
<tr><td>MicroQR</td><td></td><td>Enable</td></tr>
<tr><td>Aztec</td><td></td><td>Enable</td></tr>
<tr><td>Aztec Inverse</td><td>Decide whether to decode Aztec Inverse.<table><tr><td>Regular Only</td></tr><tr><td>Decode regular Aztec barcodes only.</td></tr><tr><td>Inverse Only</td></tr><tr><td>Decode inverse Aztec barcodes only.</td></tr><tr><td>Inverse Autodetect</td></tr><tr><td>Decode both regular and inverse Aztec barcodes.</td></tr></table></td><td>Regular Only</td></tr>
<tr><td colspan="2">2D Symbologies - Macro PDF</td><td>---</td></tr>
<tr><td colspan="3">Macro PDF is a special feature for concatenating multiple PDF barcodes into one file, known as Macro PDF417 or Macro MicroPDF417.</td></tr>
<tr><td>Transmit/Decode Mode</td><td>Decide how to handle Macro PDF decoding.<table><tr><td>Buffer All Symbols / Transmit Macro PDF When Complete</td></tr><tr><td>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!</td></tr><tr><td>Transmit Any Symbol in Set / No Particular Order</td></tr><tr><td>Transmit data from each Macro PDF symbol as decoded, regardless of the sequence.</td></tr><tr><td>Passthrough All Symbols</td></tr><tr><td>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.</td></tr></table></td><td>Passthrough All Symbols</td></tr>
<tr><td>ESC Characters</td><td>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.</td><td>None</td></tr>
</table>

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!