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User Guide

# Scanner Manager

Version 2.01



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# Preface

**Scanner Manager** is a convenient tool package that helps you configure a set of barcode scanners. There are two ways to change or update the configuration: download the new settings directly to scanners, or print out the setup barcodes that can be scanned by scanners for loading new or default settings.

This manual serves to provide comprehensive understanding of the **Scanner Manager** software, and helps configure the CipherLab barcode scanners. We recommend that you read the manual thoroughly before use and keep it at hand for quick reference.

Thank you for choosing CipherLab products!

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## Revision History

Version	Release Date	Notes
2.01	Jan. 25, 2007	♦ New: ScanManager.exe, all-in-one version, except for Scan1300.exe



## CHAPTER 1

# Introducing Scanner Manager

The **Scanner Manager** package includes two programs, **ScanManager.exe** and **PrintBarcode.exe**, which can be used with a set of CipherLab scanners.

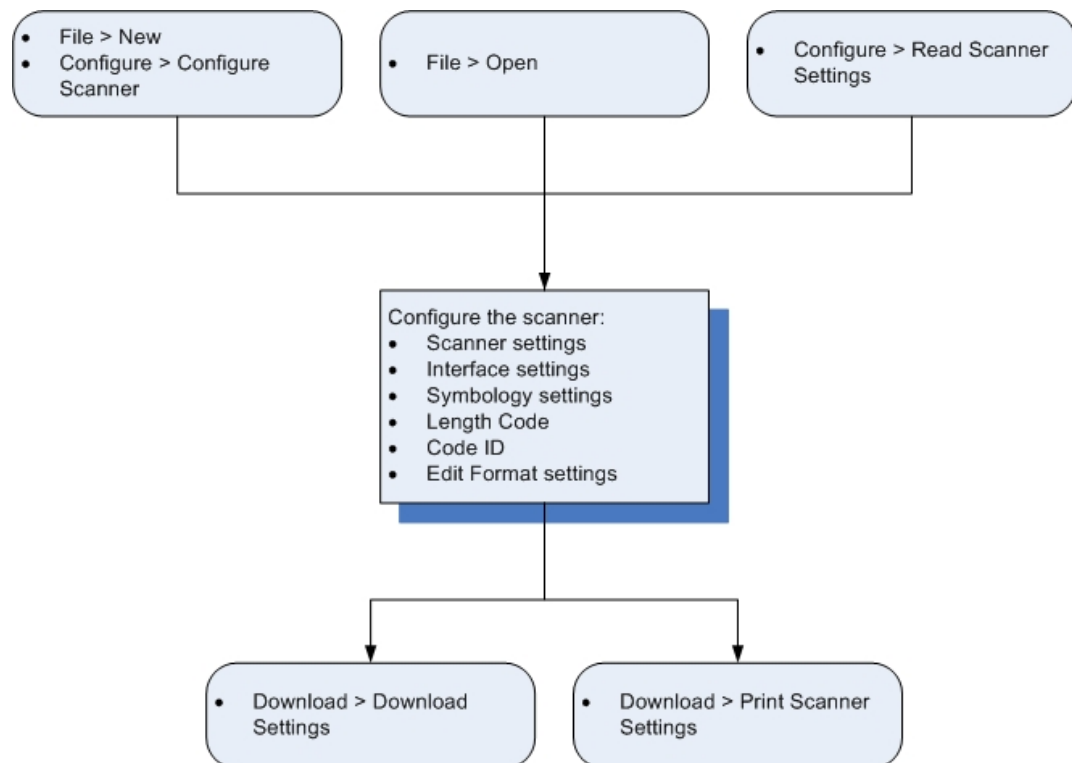
In **ScanManager**, you can choose to configure scanner settings based on one of the following sources:

- A new configuration (File > New or Configure > Configure Scanner)
- An existing configuration file (File > Open)
- The configuration read from the scanner (Configure > Read Scanner Settings)

Then, you can choose one of the output options:

- Download this configuration to the scanner directly. (Download > Download Settings)
- Generate a file named Barcode.prn that contains setup barcodes for this configuration. (Download > Print Scanner Settings)

If you wish to keep the Barcode.prn file, you must rename it; otherwise, it will be automatically overwritten as long as you choose to generate setup barcodes. Once you have a \*.prn file, you can print the setup barcodes at any time by running PrintBarcode.exe.



## In This Chapter

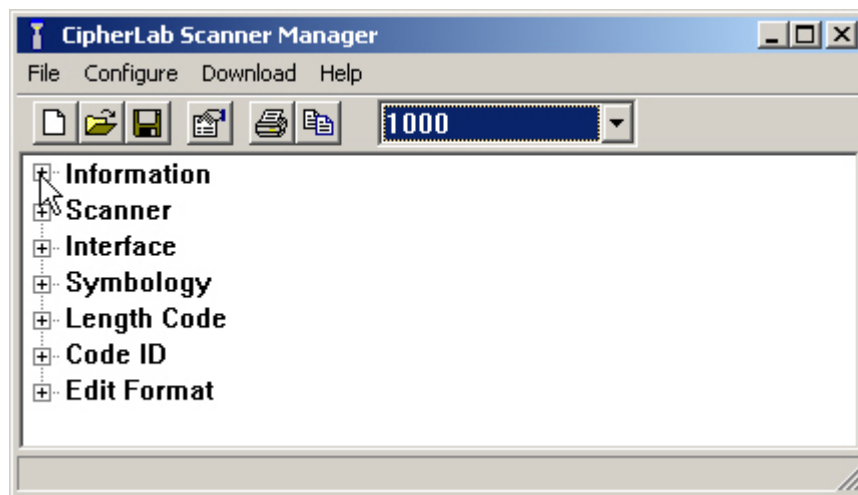
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## 1.1 Configure the Scanner

1. Run the Scanner Manager program (ScanManager.exe) on your computer.
2. Click the drop-down menu of [Select Scanner] on the [toolbar](#), and select the model you work on.

The [default settings](#) of the target scanner can be viewed in the main menu.



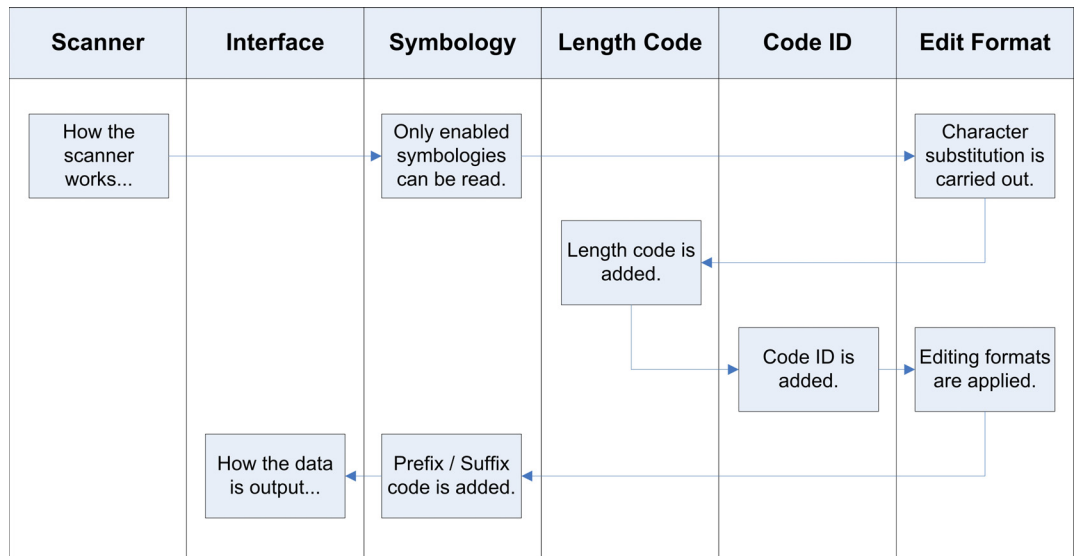
3. To create a new configuration file, click  or .

To open an existing configuration file, click .


To clone configuration from another scanner, click **Configure > Read Scanner Settings**. This scanner has to be connected to the serial port of the computer.

4. Proceed to configure the scanner. The data process is illustrated below.





5. If the target scanner is connected to the serial port of the computer, you can directly download the settings to the scanner.

Otherwise, you can load settings to the scanner by scanning setup barcodes. Click  to print out setup barcodes.

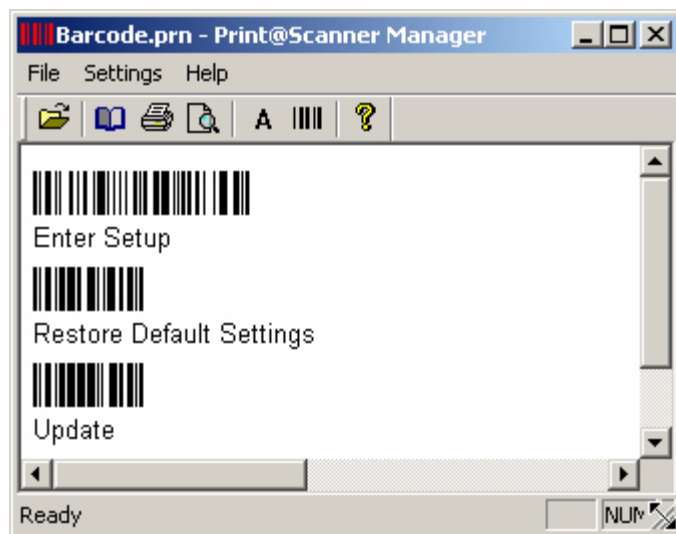
Note: The program PrintBarcode.exe must be in the same folder of ScanManager.exe.

6. When the scanner is configured successfully, connect it to the host computer via a proper interface: RS-232, Keyboard wedge, or Bluetooth Serial Port.

Note: If the scanner is set to the Wand Emulation mode, you need to connect it to a portable data terminal or a decoder that is expecting input from a wand scanner.

## 1.1.1 Setup Barcodes - Defaults

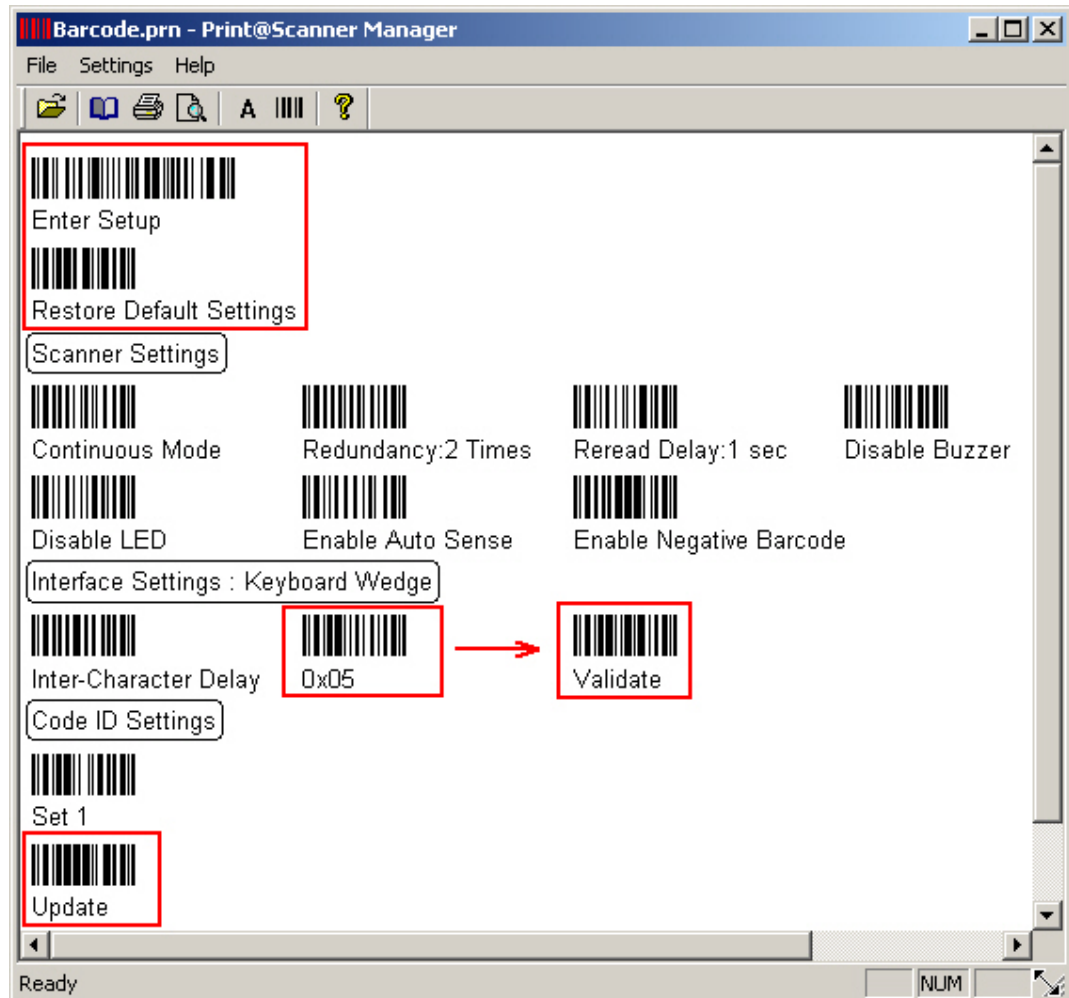
If you want to restore default settings, scan these barcodes one by one.



Setup Barcodes	Description	Indication
<b>Enter Setup</b>	Scan this barcode to enter the configuration mode.	When the scanner has successfully entered the configuration mode: <ul style="list-style-type: none"> <li>♦ it will sound 6 beeps (3 pairs of high-low beeps), and</li> <li>♦ the LED indicator will become solid green</li> </ul>
<b>Restore Default Settings</b>	Scan this barcode to restore the default settings.	When the scanner has successfully read the barcode: <ul style="list-style-type: none"> <li>♦ it will sound 2 beeps (1 pair of high-low beeps), and</li> <li>♦ the LED indicator will become red and then turns back to green</li> </ul>
<b>Update</b>	Scan this barcode to confirm the updating.	When the scanner has successfully updated the settings: <ul style="list-style-type: none"> <li>♦ it will sound 6 beeps (3 pairs of high-low beeps) and then one long beep, and</li> <li>♦ the LED indicator will go off.</li> </ul>

## 1.1.2 Setup Barcodes - Example

If you want to load new settings, scan associated barcodes. Take the following screen-shot for example.



- You can always restore the default settings.
- The setup barcodes are categorized into groups of related settings, such as Scanner Settings, Interface Settings, Code ID Settings, etc.
- After having made any changes to settings, you need to scan the "Update" barcodes to confirm such action. However, if a decimal or hex-decimal value is involved in the setting, you need to scan the "Validate" barcode before the "Update" barcode.

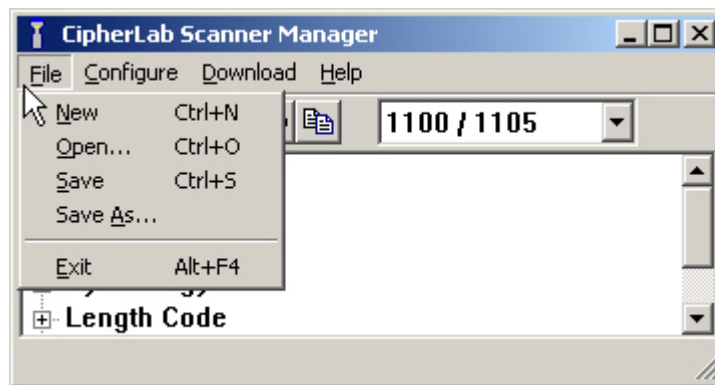
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## 1.2 Menu Bar

The menu bar contains a number of menus that specify which task you want the system to perform. Each menu contains a list of commands. Some of the options carry out commands immediately, and others display a window so that you can enter additional information. If an option is followed by [...], it will display a window. Otherwise, the command is carried out immediately.



### 1.2.1 File Menu

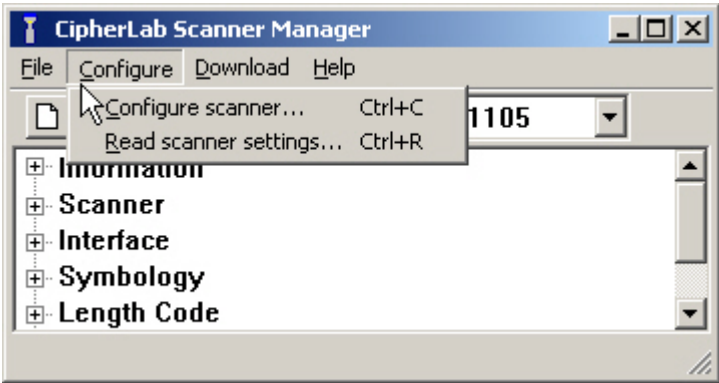


Command	To Do...
New	To create a new configuration file.
Open	To open an existing configuration file. File path needs to be specified.

Scanner series	Filename extension
1000	*.100
1090+	*.090
1100/1105	*.110
1160	*.116
1166	*.166
1200	*.120
1260	*.126
1266	*.266
14XX	*.140

	1045	*.045
Save	To save the current settings.	
Save As	To save the current settings to a new configuration file.	
Exit	To close the Scanner Manager program.	

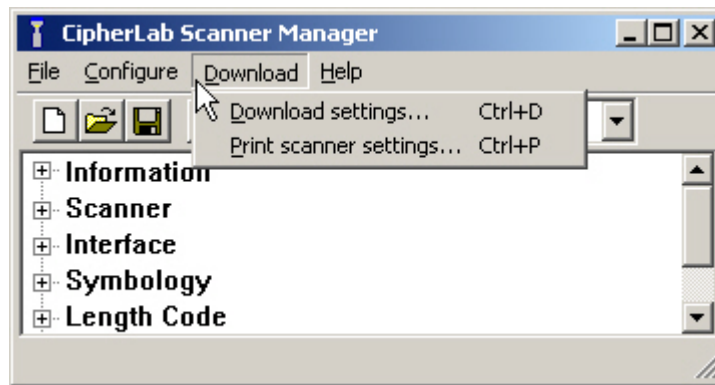
### 1.2.2 Configure Menu



Command	To Do...
Configure Scanner	Configure the current settings for the target scanner. Refer to the following sections: <ul style="list-style-type: none"><li>Scanner Settings</li><li>Interface Settings</li><li>Symbology Settings</li><li>Length Code</li><li>Code ID</li><li>Edit Format Settings</li></ul>
Read Scanner Settings	To clone settings or simply modify them, upload the current settings from the target scanner. <ul style="list-style-type: none"><li>A dialog box will pop up for configuring the COM port properties on your computer.</li></ul>

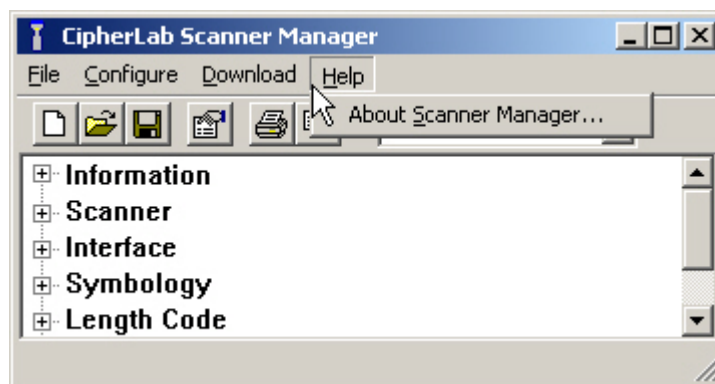
Note: To clone settings, first read settings from a specific scanner, and then download these settings to other scanners.

## 1.2.3 Download Menu



Command	To Do...
<b>Download Settings</b>	<p>Download the settings to the target scanner if it is connected to the serial port of the host computer.</p> <ul style="list-style-type: none"> <li>♦ A dialog box will pop up for configuring the COM port properties on your computer.</li> </ul>
<b>Print Scanner Settings</b>	<p>Run PrintBarcode.exe to print out the <a href="#">setup barcodes</a>, which will be automatically saved in the Barcode.prn file.</p> <p>If the scanner is not connected to the serial port of the host computer, scanner configuration can be changed by scanning the setup barcodes.</p> <ul style="list-style-type: none"> <li>♦ The setup barcodes are categorized into groups of related settings.</li> </ul>

## 1.2.4 Help Menu



Command	To Do...
<b>About Scanner Manager</b>	Provide version information and license agreement of the software.

## 1.3 Toolbar

The toolbar allows quick access to most commands.



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



♦ New



♦ Open



♦ Save



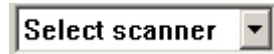
♦ Configure



♦ Print



♦ Download Settings

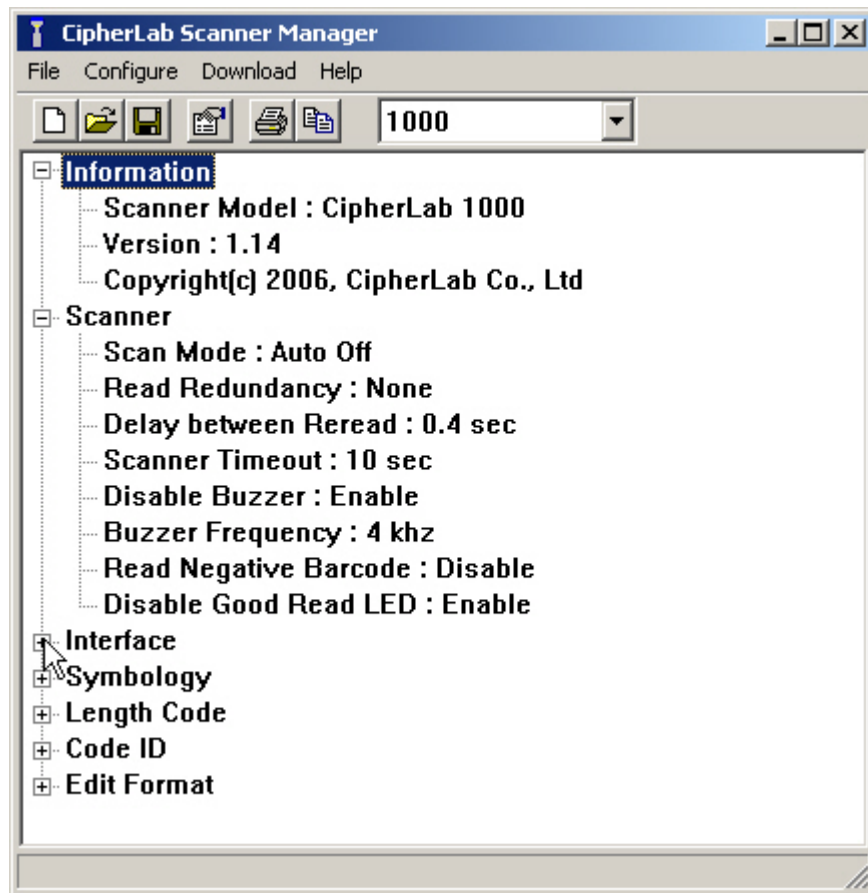


♦ Select one of the following scanner models:

1000	CCD scanner, contact type, width of field 65 mm
1090+	CCD scanner, contact type, width of field 90 mm
1100/1105	linear imaging scanner
1160	linear imaging scanner, Bluetooth, fixed battery
1166	linear imaging scanner, Bluetooth, replaceable battery
1200	Laser scanner
1260	Laser scanner, Bluetooth, fixed battery
1266	Laser scanner, Bluetooth, replaceable battery
14xx (fixed)	linear imaging module
1045 (fixed)	linear imaging scanner

## 1.4 Settings Overview

The associated information and default settings will be displayed in the main menu. If you open an existing configuration file or change the current settings, these will be updated accordingly.



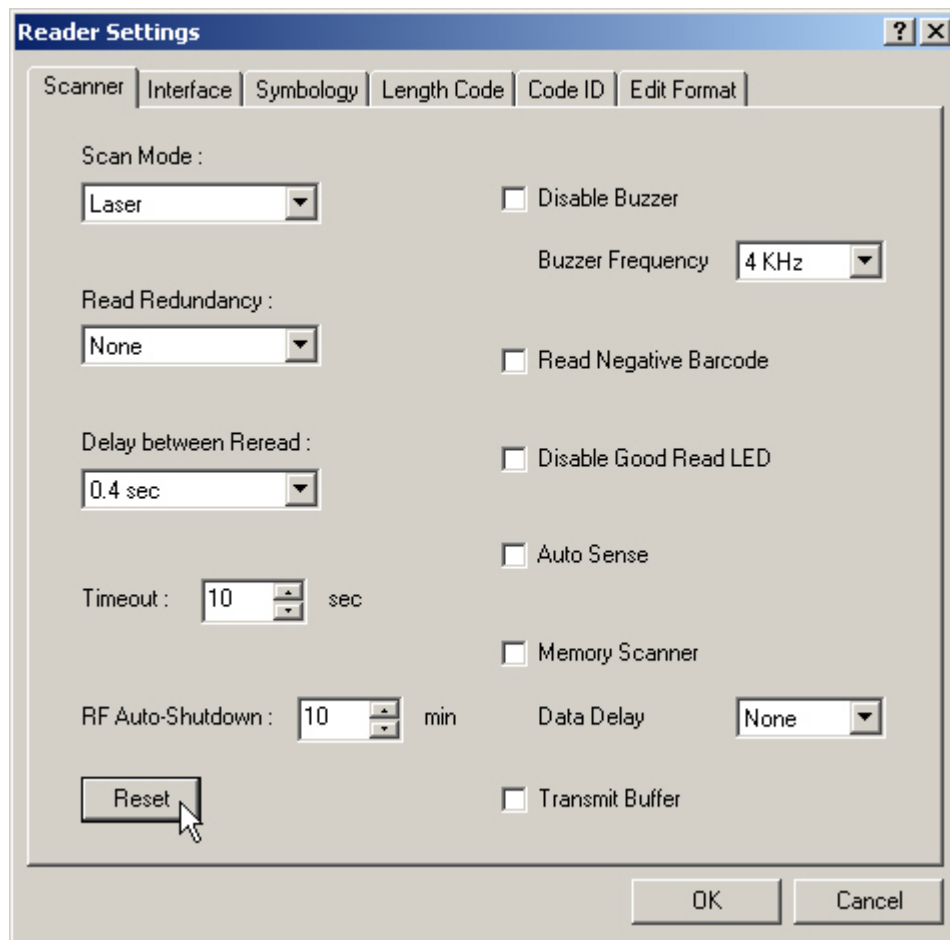
Note: You will have to select the target scanner from the toolbar first.



## CHAPTER 2

# Scanner Settings

You may configure scanner settings of the target scanner. Below is a screen-shot taken with scanner model 1166.



The available options may be slightly different for other models.

Basically, the default settings for each model are the same except for the following:

Scanner Model	Scan Mode	Auto Sense	RF Auto-Shutdown	Memory Scanner	Transmit Buffer
1000	Auto Off	N/A	N/A	N/A	N/A
1090+	Auto Off	N/A	N/A	N/A	N/A
1100 /1105	Laser	Disabled	N/A	N/A	N/A

1160	Laser	Disabled	10 min.	Disabled	N/A
1166	Laser	Disabled	10 min.	Disabled	Disabled
1200	Laser	N/A	N/A	N/A	N/A
1260	Laser	N/A	10 min.	Disabled	N/A
1266	Laser	N/A	10 min.	Disabled	Disabled
14XX	Continuous	Disabled	N/A	N/A	N/A
1045	Continuous	Disabled	N/A	N/A	N/A

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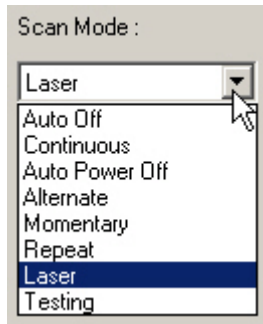
## 2.1 Scan Mode

Each of the scanners supports eight different scan modes to meet your application requirements. The table below lists the default scan mode respectively.

Handheld Scanner	Default Scan Mode
1000	Auto Off mode
1090+	Auto Off mode
1100 / 1105	Laser mode
1160	Laser mode
1166	Laser mode
1200	Laser mode
1260	Laser mode
1266	Laser mode

Fixed Scanner	Default Scan Mode
14XX	Continuous mode
1045	Continuous mode

- From the drop-down menu, you may select other operation mode than the default one.



Note: For fixed scanners, only Continuous and Testing modes can be selected. For other modes, an external trigger or button is required.

Scan Mode	ON				OFF			
	<i>Always</i>	<i>Press trigger once</i>	<i>Hold trigger</i>	<i>Press trigger twice</i>	<i>Release trigger</i>	<i>Press trigger once</i>	<i>Barcode being read</i>	<i>Timeout</i>
Continuous mode	✓							
Test mode	✓							
Repeat mode	✓							
Momentary mode			✓		✓			
Alternate mode		✓				✓		
Aiming mode				✓			✓	✓
Laser mode			✓		✓		✓	✓
Auto Off mode		✓					✓	✓
Auto Power Off mode		✓						✓

**Continuous Mode**

---

- ♦ The reader is always scanning, but only one decoding is allowed for the same barcode. That is, to read (i.e. scan and decode) the same barcode multiple times, the barcode has to be taken away and replaced for new scanning.
- ♦ Several modes have been developed based on this mode.

**Test Mode**

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- ♦ The reader is always scanning for testing purpose.
- ♦ Comparing to the Continuous mode, it will decode repeatedly even with the same barcode without re-approaching.

**Repeat Mode**

---

This mode is most useful when the same barcode needs to be read many times. Press the scan trigger again within one second after a successful reading, the same data will be re-transmitted without actually reading the barcode. Such re-transmission can be activated as many times as needed, as long as the time interval between each triggering does not exceed one second.

- ♦ The reader is always scanning.
- ♦ It will decode once for the same barcode and allow for re-transmission when you press the trigger again within one second.

**Momentary Mode**

---

- ♦ Hold down the scan trigger to start scanning.
- ♦ The scanning continues until you release the trigger.

**Alternate Mode**

---

- ♦ Press the scan trigger to start scanning.
- ♦ The scanning continues until you press the trigger again.

**Aiming Mode**

---

This mode best applies when two barcodes are printed too close to each other. It is necessary to take aim first to make sure the correct barcode will be scanned.

- ♦ Press the scan trigger to aim at a barcode. Within one second, press the trigger again to decode the barcode.
- ♦ The scanning continues until one of the events happens:
  - (1) A barcode is read.
  - (2) The preset timeout expires.

Note: The system global variable `AIMING_TIMEOUT`, specified in units of 5 ms, can be used to change the default one-second interval for aiming timeout .

**Laser Mode**

---

This mode is most often used on laser scanners.

- ♦ Hold down the scan trigger to start scanning.
- ♦ The scanning continues until one of the events happens:
  - (1) A barcode is read.
  - (2) The preset timeout expires.
  - (3) The trigger is released.

**Auto Off Mode**

---

This is the default mode.

- ♦ The reader will start to scan once you press the scan trigger.
- ♦ The scanning continues until one of the events happens:
  - (1) A barcode is read.
  - (2) The preset timeout expires.

**Auto Power Off Mode**

---

- ♦ The reader will start to scan once you press the scan trigger.
- ♦ The scanning continues until one of the events happens:
  - (1) The preset timeout expires.
- ♦ Comparing to the Auto Off mode, the reader continues to scan whenever there is a successful reading of barcode because its timeout period re-counts.

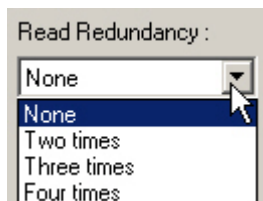
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## 2.2 Read Redundancy

This decides the number of times that the same barcode has to be decoded before it is transmitted. The higher the reading security is, the slower the reading speed becomes. Comprise some speed for getting more security when it is necessary.

For example, if **None** is selected, it only requires one successful decoding to make the reading valid. If **Three times** redundancy is selected, it needs to successfully decode three more times to make the reading valid.

- From the drop-down menu, you may select a desired level of reading (decoding) security.

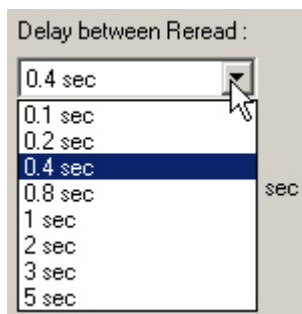


---

## 2.3 Delay between Reread

When the scan mode is set to **Continuous**, **Momentary**, **Alternate**, or **Auto Power Off**, the scanner will automatically avoid reading the same barcode twice in a short time specified by the "Delay between Reread" parameter. For the scanner to read the same barcode, you will need to take the barcode away from the scanning beam for a period of time longer than the specified delay time. When you re-present the barcode, the scanner will be able to read it for the second time.

- From the drop-down menu, you may select other value than the default one (0.4) for delay time, in units of second.



## 2.4 Timeout

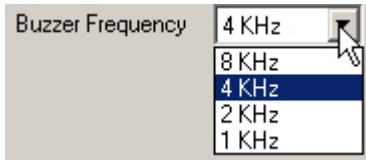
When the scan mode is set to **Aiming**, **Laser**, **Auto Off**, or **Auto Power Off**, the default time-out is 10 seconds.

- You may specify a value in the range of 0~255, in units of second.

## 2.5 Disable Buzzer

The buzzer of the scanner beeps differently to indicate various operating conditions.

Select the check box if audible signals are not desired.

Conditions	Description
<b>Power On Beep</b>	The scanner will generate a long beep to indicate it is turned on successfully.
<b>Good Read Beep</b>	<p>The scanner will generate a beep to indicate it successfully reads a barcode. You may select other frequency than the default 4 KHz.</p> 
<b>Error Beep</b>	The scanner will generate a long beep in the lower tone to indicate errors.
<b>Enter Configuration Beep</b>	The scanner will generate 6 beeps upon entering the configuration mode.
<b>Update / Exit Configuration Beep</b>	The scanner will generate 6 beeps followed by one long beep upon exiting the configuration mode.
<b>Setup Beep</b>	<p>In configuration mode, the scanner will normally beeps twice when a setup barcode is read.</p> <p>When a particular parameter needs to make use of more than one setup barcode, the scanner will only generate a short beep to indicate there are more setup barcodes that need to be read in order to complete the current parameter setting.</p>

<b>Full Memory Beep</b>	For 1166 and 1266:  When "Memory Scanner" is enabled and the memory becomes full, the scanner will sound a warning, 3 beeps in the lower tone.
-------------------------	--

---

## 2.6 Read Negative Barcodes

Normally, barcodes are printed with the color of the bars darker than that of the spaces. For negative barcodes, they are printed oppositely just like negative films. That is, the spaces of the negative barcodes are printed with the color darker than that of the bars.

- Select the check box so that the scanner can read negative barcodes.

---

## 2.7 Disable Good Read LED

There is a dual-color LED indicator on top of the scanner. Normally, it is off except for the following conditions:

Conditions	Description
<b>Good Read</b>	LED turns solid red
<b>Configuration Mode</b>	All models except for 1166 / 1266: LED turns solid green For 1166 / 1266 only: LED turns solid blue

- Select the check box if Good Read LED indication is not desired.

---

## 2.8 RF Auto Shutdown (1160, 1166, 1260, 1266)

For Bluetooth scanners, the RF signal search operation will be automatically shutdown when no transmission activity occurs for a preset period of time, i.e. 10 minutes. This is also known as the suspend mode for power-saving purpose. To resume the connection, simply press the trigger.

- You may specify a value in the range of 0~255, in units of minute.



---

## 2.9 Auto Sense (1100/1105, 1160, 1166, 14XX, 1045)

For specific models, you may make use of the auto-sense stand and enable this functionality.

This will have the scanner automatically start to scan once a barcode is brought within range, and then decode it.

**Note:** Auto-sense can only be enabled when scan mode is set to Auto Off or Laser mode.

---

## 2.10 Transmit Buffer (1166, 1266)

The transmit buffer is 4 KB.

- Select the check box for these Bluetooth scanners to buffer data when out of range. Data will be sent to the host when the scanner is back within range.

**Note:** For Bluetooth scanner 1160 or 1260, it will not be able to scan when out of range.

---

## 2.11 Memory Scanner (1160, 1166, 1260, 1266)

The memory buffer is 128 KB.

- Select the check box for these Bluetooth scanners to work as batch scanners and save data to memory.

You may specify the data delay time, in units of millisecond or second.

---

## 2.12 Reset

Click this button to load the default settings.

Note: Current settings will be cleared.

## CHAPTER 3

# Interface Settings

There are four options for output interface, which depend on the scanner model you have:

- Keyboard Wedge
- RS-232
- Wand Emulation
- Bluetooth Serial Port

Scanner Model	Keyboard Wedge	RS-232	Wand Emulation	Bluetooth Serial Port
1000	Default	optional	optional	N/A
1090+	Default	optional	optional	N/A
1100 /1105	Default	optional	optional	N/A
1160	Default	optional	N/A	optional
1166	Default	optional	N/A	optional
1200	Default	optional	optional	N/A
1260	Default	optional	N/A	optional
1266	Default	optional	N/A	optional
14XX	N/A	Default	optional	N/A
1045	optional	Default	optional	N/A

Select a desired output interface from the drop-down menu. Under the selected scanner interface, its associated items will be displayed for configuration.

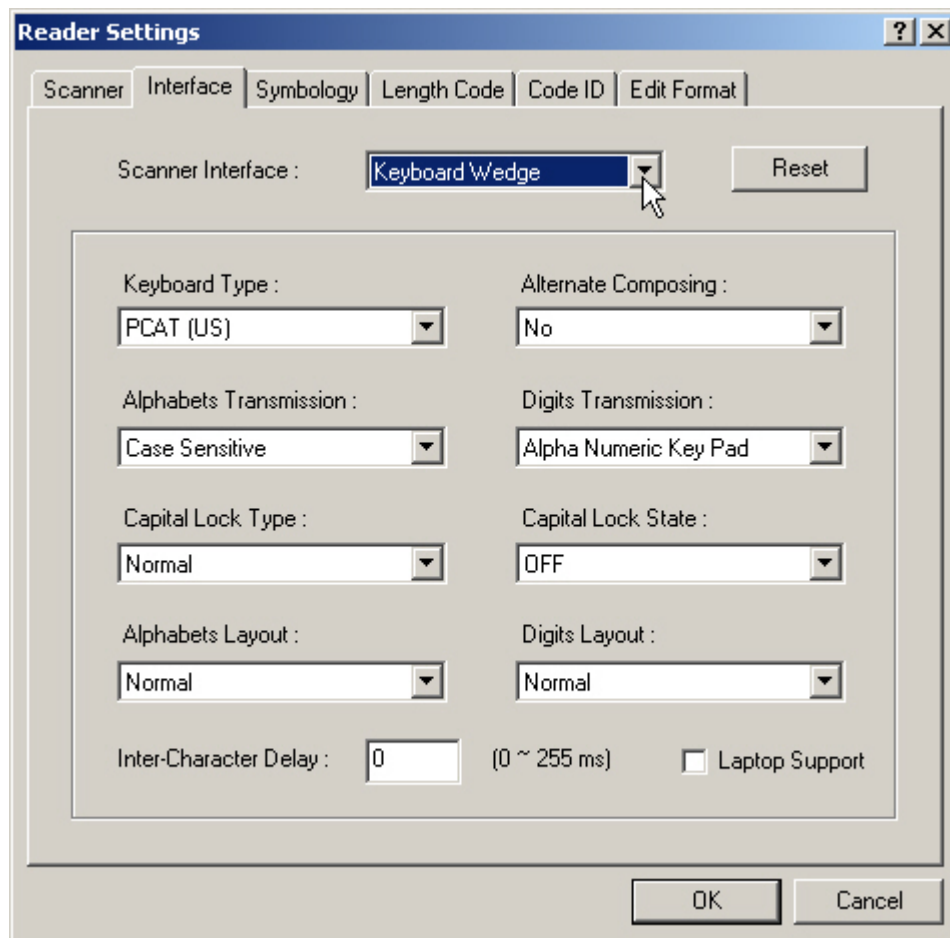
## In This Chapter

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## 3.1 Scanner Interface

### 3.1.1 Keyboard Wedge

Connect the scanner between the keyboard input port of the host computer and the keyboard using the "Y-shaped" keyboard wedge cable. The scanned data will be transmitted to the host keyboard port as if it is manually entered via the keyboard.



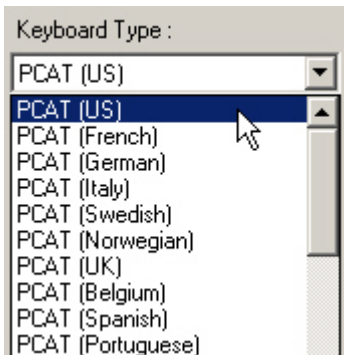
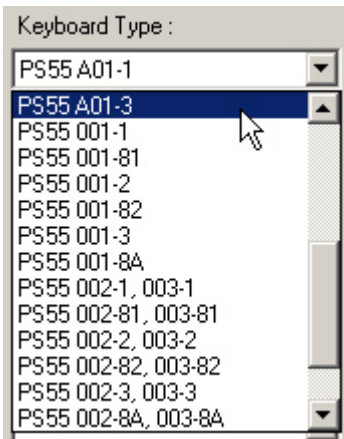
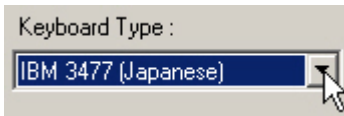
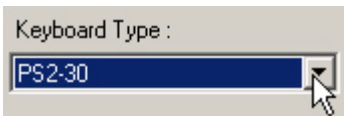
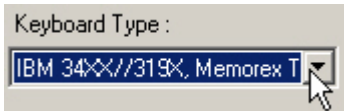
Keyboard Wedge Settings	Defaults
Keyboard Type:	PCAT (US)
Alternate Composing:	No
Alphabets Transmission:	Case-sensitive
Digits Transmission:	Alpha-numeric keypad
Capital Lock Type:	Normal

Capital Lock State:	Off
Alphabets Layout:	Normal
Digits Layout:	Normal
Inter-Character Delay:	0 (ms)
Laptop Support:	Disabled

## Keyboard Type

By default, the keyboard type is PCAT(US).

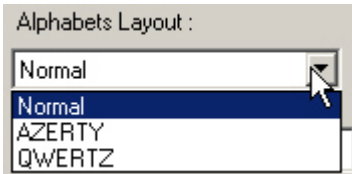
Select a desired type from the drop-down list.

Keyboard Type options	
<p>PCAT</p> 	<p>PS55</p> 
<p>IBM 3477 (Japanese keyboard)</p> 	<p>PS2-30</p> 
<p>IBM 34XX, 319X and Memorex Telex (122-key keyboards)</p> 	

## Alphabets Layout

By default, the alphabets layout is set "Normal". Select French or German keyboard layout if necessary.

The scanner will make adjustments when sending the "A", "Q", "W", "Z", "Y", and "M" characters according to this setting.

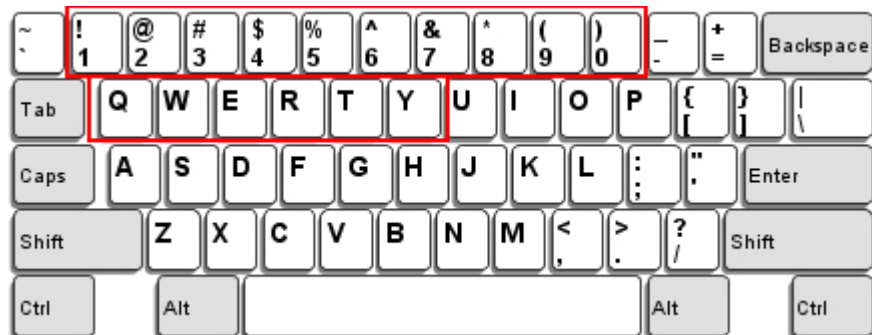


Options	Description
<b>Normal</b>	the QWERTY layout, which is normally used in western countries; also known as the standard English layout
<b>AZERTY</b>	the French layout
<b>QWERTZ</b>	the German layout

**Note:** This setting only works when the keyboard type selected is US keyboard.

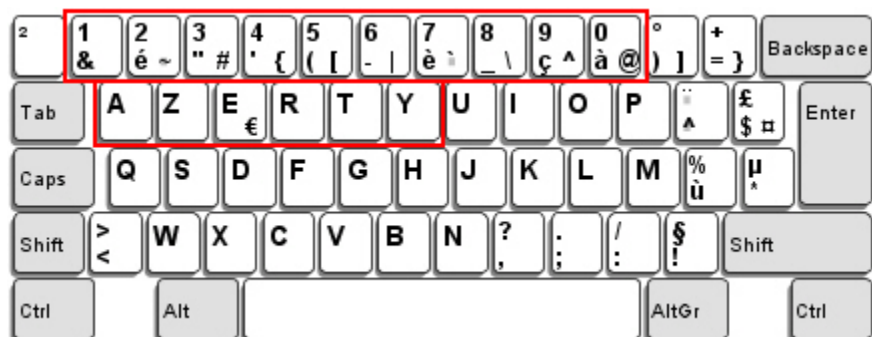
### US Keyboard Style

- Lower Row for Digits Layout: Digits
- Upper Row for Digits Layout: Special characters



### French Keyboard Style

- Lower Row for Digits Layout: Special characters
- Upper Row for Digits Layout: Digits



**German Keyboard Layout - QWERTZ**

- ♦ Lower Row for Digits Layout: Digits
- ♦ Upper Row for Digits Layout: Special characters

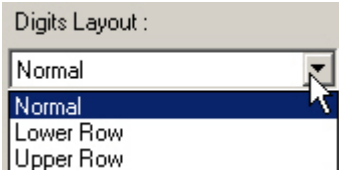


Note: The Alphabets Layout and Digits Layout setting must match your keyboard.

**Digits Layout**

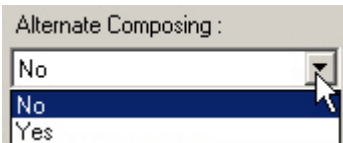
By default, the digits layout is set "Normal", which depends on the [Shift] key or [Shift Lock] setting. Select a proper layout that matches the alphabets layout.

The scanner will make adjustments according to this setting.



Options	Description
<b>Normal</b>	depends on the [Shift] key or [Shift Lock] setting
<b>Lower Row</b>	for QWERTY and QWERTZ keyboards
<b>Upper Row</b>	for AZERTY keyboards

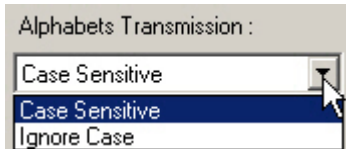
Note: This setting is meant to be used with the Alphabets Layout, and perhaps the Character Substitution setting when support to certain keyboard types (languages) is unavailable but required.

**Alternate Composing**

By default, the Alternate Composing is disabled.

Select [Yes] to allow emulating the key combination of [Alt] + [any numeric key] so that a specific ASCII character can be entered.

## Alphabets Transmission



By default, the alphabets transmission is case-sensitive. That is, the alphabets will be transmitted according to their original case.

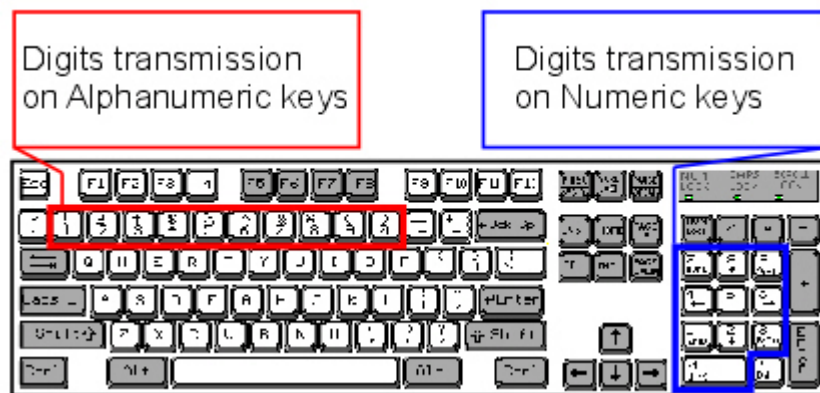
Select [Ignore Case] if necessary.

## Digits Transmission



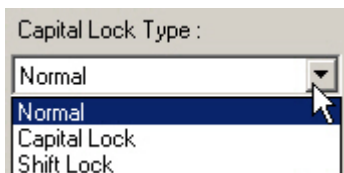
By default, the digits transmission makes use of the alpha-numeric keypad.

Select [Numeric Keypad] if you wish to use the keys on the numeric keypad.



Note: If you select [Numeric Keypad], the Num Lock status of the physical keyboard should be "ON".

## Capital Lock Type



By default, the Caps Lock is set to normal mode.

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



## **Capital Lock State**

In order to send the alphabets 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 alphabets being transmitted.

By default, the Capital Lock State is "OFF". Select "ON" or "Auto Detection" if necessary.



Capital Lock State	Description
OFF	Transmitted characters are exactly the same as in the barcode (when "case-sensitive" is selected for Alphabets Transmission).
ON	<ul style="list-style-type: none"> <li>When the Capital Lock Type is set "Capital Lock", the keys of alphabetic characters will be interpreted as capital letters. However, this does not affect the number or punctuation keys.</li> <li>When the Capital Lock Type is set "Shift Lock", the keys of alphabetic characters will be interpreted as capital letters. In addition, it affects the number or punctuation keys.</li> </ul>
Auto Detection	The scanner will automatically detect the capital lock status of the keyboard before data is transmitted.

## **Laptop Support**

By default, the laptop support is disabled.

Select the check box to enable this feature if you connect the wedge cable to a laptop without an external keyboard being inter-connected.

**Note:** This feature is not supported on the 14XX module.

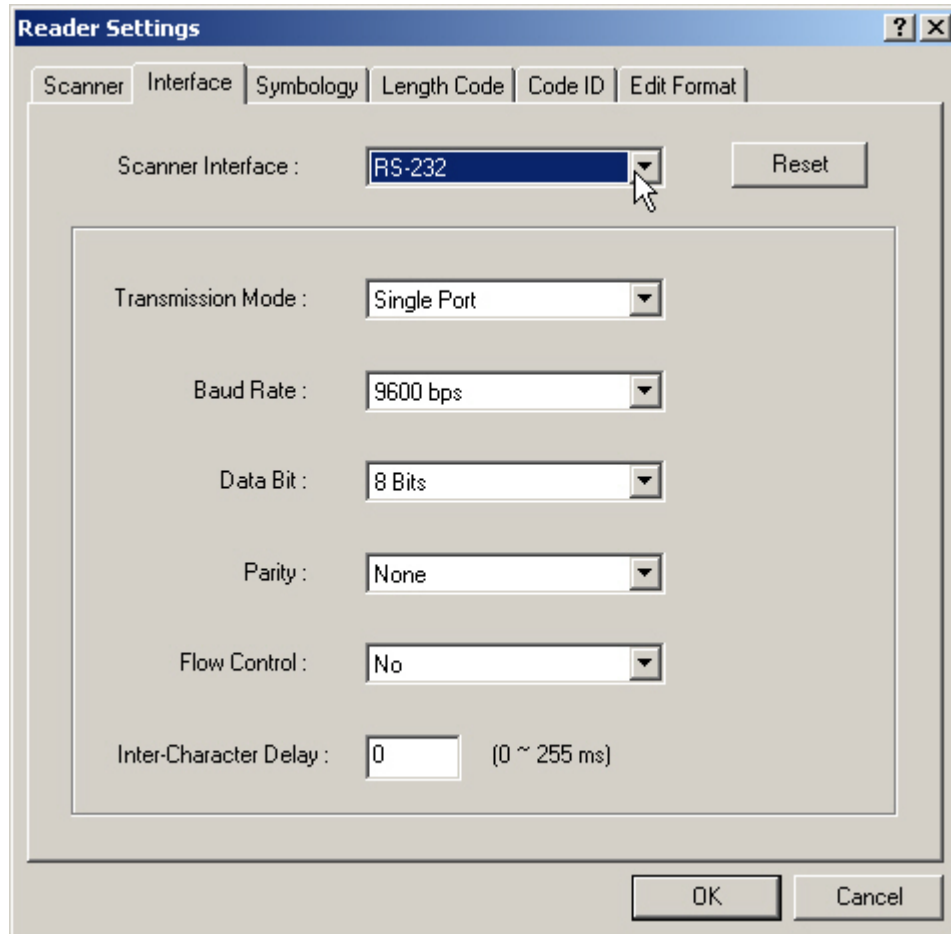
## **Inter-Character Delay**

By default, the inter-character delay is zero.

Specify a value, ranging from 0 to 255 in units of millisecond, 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.

### 3.1.2 RS-232

Connect the scanner to the serial port of the host computer using the RS-232 cable and join the power adaptor to the RS-232 connector. The associated RS-232 parameters must match those configured on the computer. The scanned data will be transmitted to the serial port.

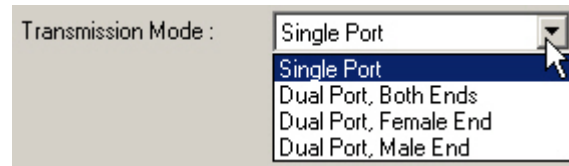


RS-232 Settings	Defaults
Transmission Mode:	Single Port
Baud Rate:	9600 bps
Data Bit:	8 Bits
Parity:	None
Flow Control:	No
Inter-Character Delay:	0

## **Transmission Mode**

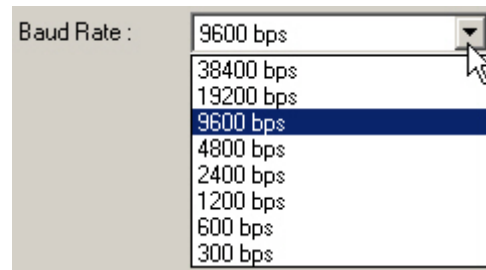
Single port operation is used where the scanner is connected directly to the host computer, whereas dual port operations are used when the scanner is connected between the host and a portable data terminal. The interface cable for dual port operations has two connectors; one is male connector and the other female. For dual port operations, you can select whether data is transmitted to either one connector or both.

By default, single port operation is in use. Specify other transmission mode if necessary.



## **Baud Rate**

By default, it is set 9600 bps for the baud rate setting. Specify other value that matches your computer settings.



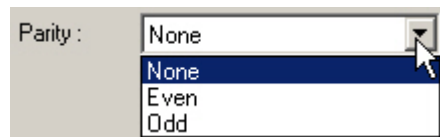
## **Data Bit**

By default, it is set 8 bits of data. Specify 7 bits of data if necessary.



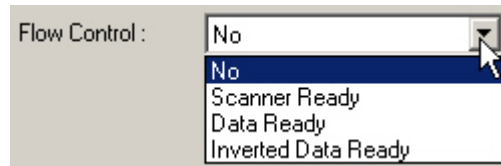
## **Parity**

By default, it is set no parity bit. Specify other parity setting, even or odd parity bit.



## **Flow Control**

By default, there is no flow control in use. Select the flow control (handshake) method.



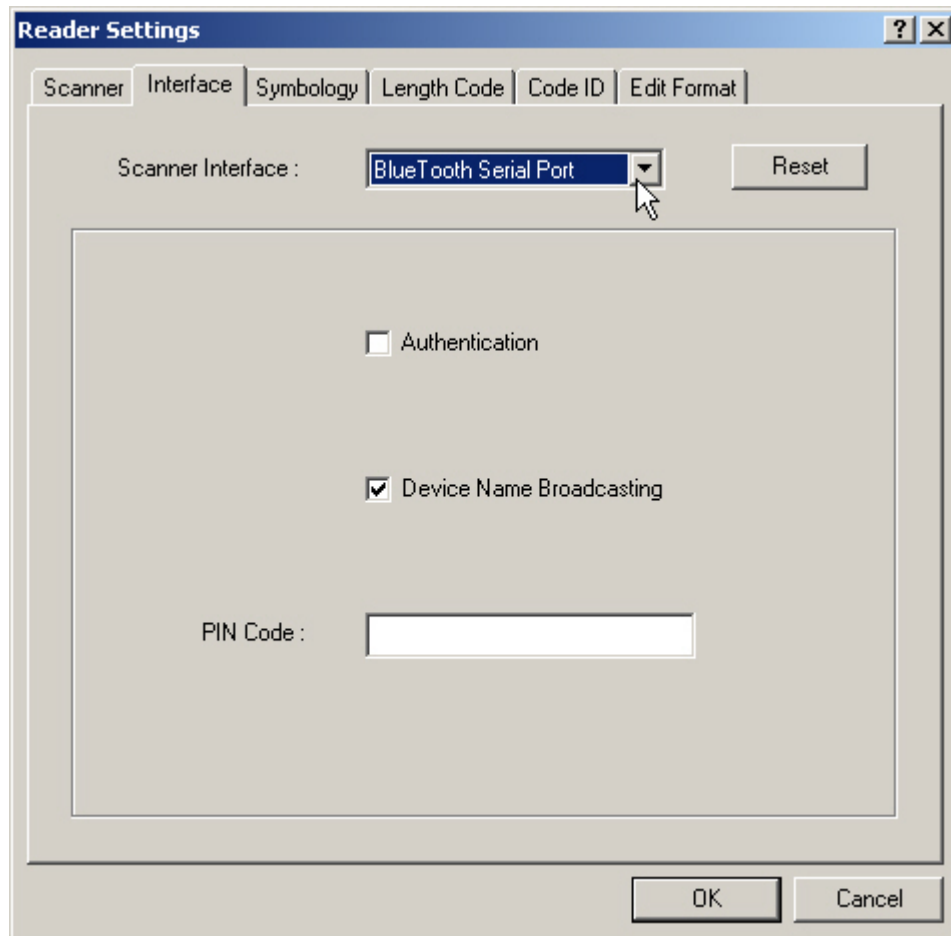
Options	Description
No	No flow control
Scanner Ready	The scanner will activate the RTS signal upon powering on. After each good read, the scanner will then wait for the CTS signal to become active. Data will not be sent until the CTS signal becomes active.
Data Ready	The RTS signal will be activated after each good read. The scanner will then wait for the CTS signal to become active. Data will not be sent until the CTS signal becomes active.
Inverted Data Ready	It works the same as the Data Ready flow control, except that the RTS signal level is inverted.

## **Inter-Character Delay**

By default, the inter-character delay is zero.

Specify a value, ranging from 0 to 255 in units of millisecond, to match the computer response time. Such delay time is inserted between every character being transmitted. The longer the delay time is, the slower the transmission speed will be.

### 3.1.3 Bluetooth Serial Port



Bluetooth Serial Port Settings	Defaults
Authentication:	Disabled
Device Name Broadcasting:	Enabled
PIN Code:	None

#### **Authentication**

By default, authentication is disabled.

Select the check box if authentication is required. Then, you may set a default PIN code to skip the input request.

### **Device Name Broadcasting**

By default, broadcasting is enabled so that the scanner can be discovered by nearby Bluetooth devices.

Cancel the check box if broadcasting is not required.

### **PIN Code**

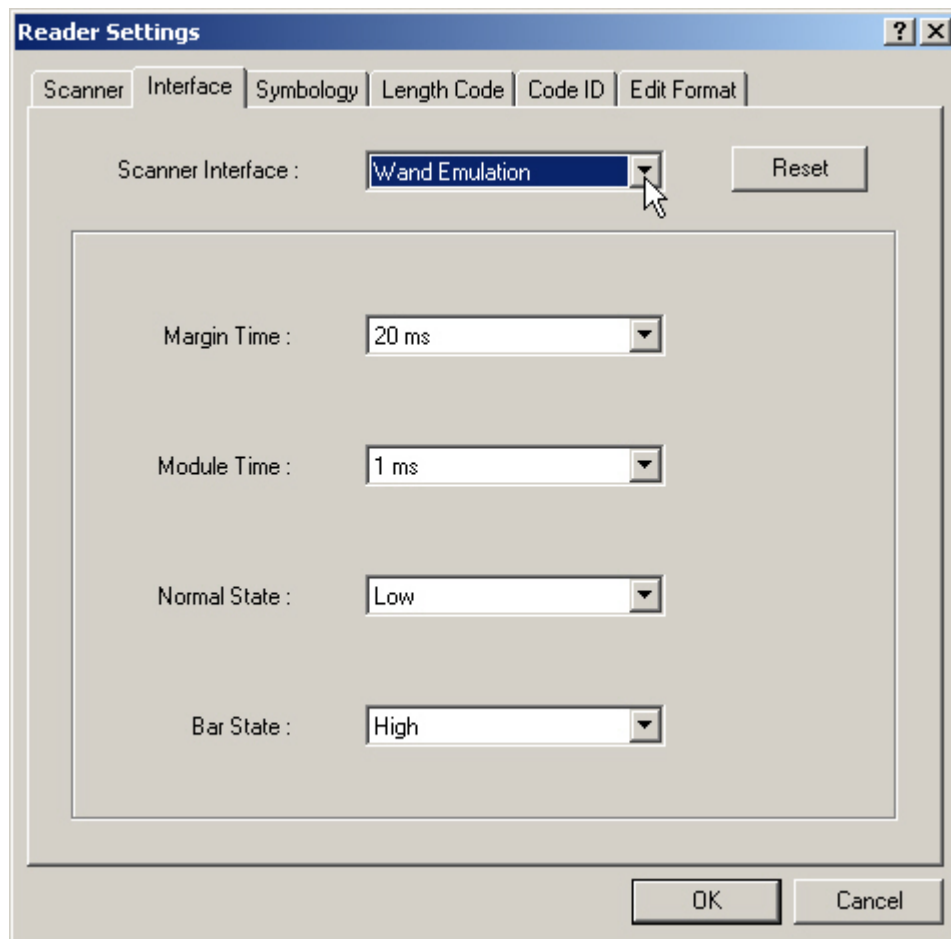
When authentication is required, you may specify the default PIN code to skip the input request.

Enter the same PIN code on your computer; otherwise, it will fail to pair.

### 3.1.4 Wand Emulation

All batch scanners support Wand Emulation. Connect the scanner to a portable data terminal or decoder that is expecting input from a wand scanner.

Note: Wands are handheld optical character readers used to read typewritten fonts, printed fonts, OCR fonts, and barcodes.

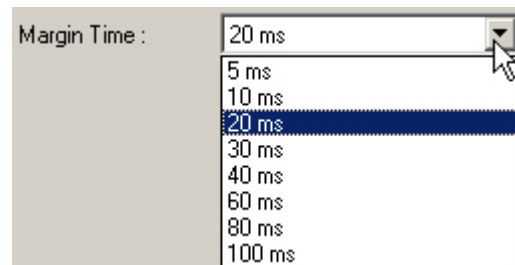


Wand Emulation Settings	Defaults
Margin Time:	20 ms
Module Time:	1 ms
Normal State:	Low
Bar State:	High

### **Margin Time**

By default, it is set 20 milliseconds as the time span for the change in state for bar and space modules.

Specify other value for the margin time.

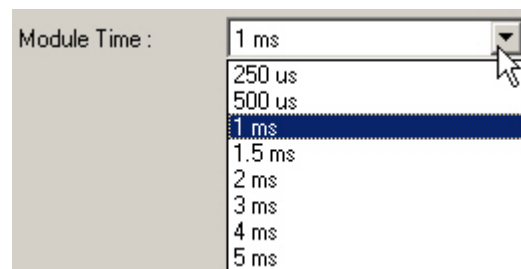


A screenshot of a software interface showing a dropdown menu for 'Margin Time :'. The menu is open, displaying a list of time values: 5 ms, 10 ms, 20 ms (highlighted in blue), 30 ms, 40 ms, 60 ms, 80 ms, and 100 ms. A mouse cursor is visible over the dropdown arrow.

### **Module Time**

By default, it is set 1 millisecond as the time span for bar and space modules.

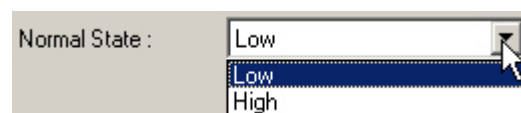
Specify other value for the module time, in units of micro-second or millisecond.



A screenshot of a software interface showing a dropdown menu for 'Module Time :'. The menu is open, displaying a list of time values: 250 us, 500 us, 1 ms (highlighted in blue), 1.5 ms, 2 ms, 3 ms, 4 ms, and 5 ms. A mouse cursor is visible over the dropdown arrow.

### **Normal State**

By default, the signal level is set "Low" for the normal state when not transmitting any barcode.



A screenshot of a software interface showing a dropdown menu for 'Normal State :'. The menu is open, displaying a list of signal levels: Low (highlighted in blue) and High. A mouse cursor is visible over the dropdown arrow.

### **Bar State**

By default, the signal level is set "High" for a bar when transmitting a barcode.



Specify "Low" for a bar if "High" for a space is desired.

Bar State : 

The image shows a graphical user interface element. On the left, the text "Bar State :" is displayed. To its right is a dropdown menu. The menu is currently open, showing three options: "High" (which is the currently selected option and has a small downward arrow next to it), "Low", and "High" (repeated). The menu has a light gray background and a thin border.

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## 3.2 Reset

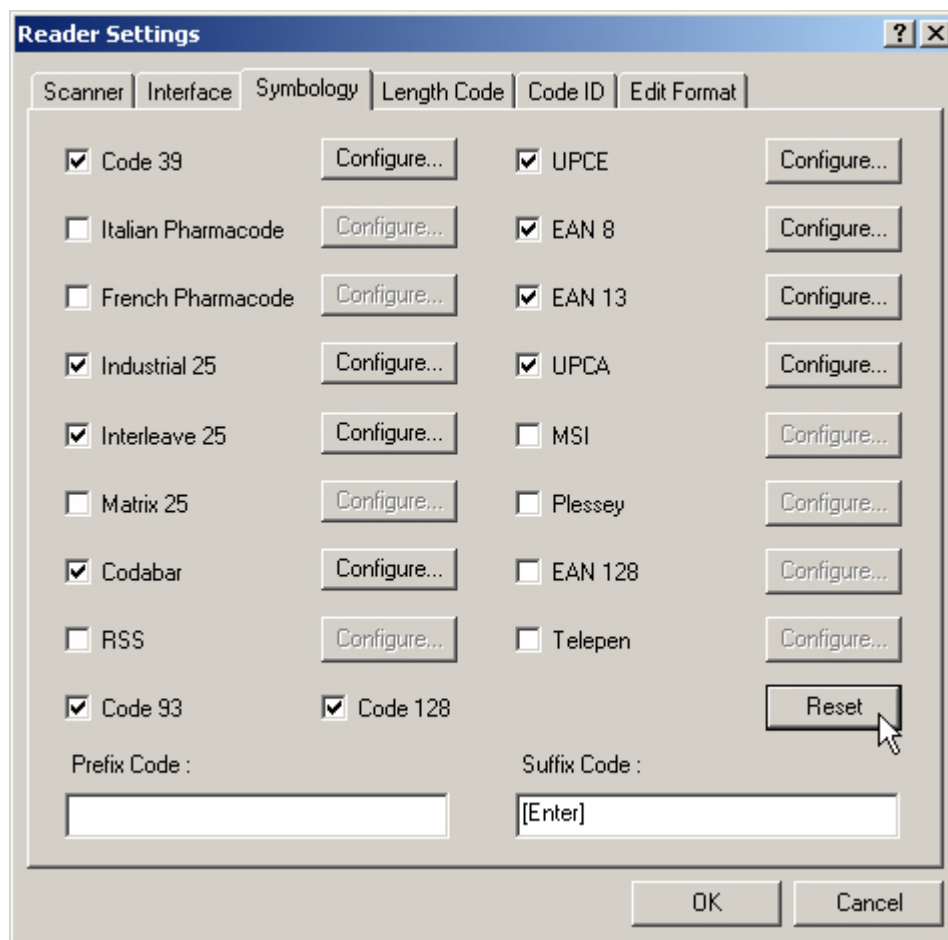
Click this button to load the default settings.

Note: Current settings will be cleared.

## CHAPTER 4

# Symbology Settings

Barcode symbologies are application-dependent. You may enable or disable any of them, and configure their parameters according to the requirements of a specific application.



## In This Chapter

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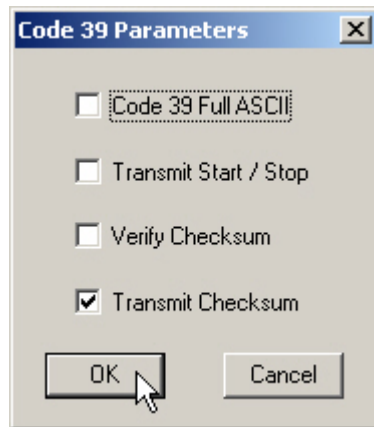
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## 4.1 Barcode Parameters

### 4.1.1 Code 39

By default, the scanner is set to read Code 39 barcodes.

- Advanced settings are provided as shown below.



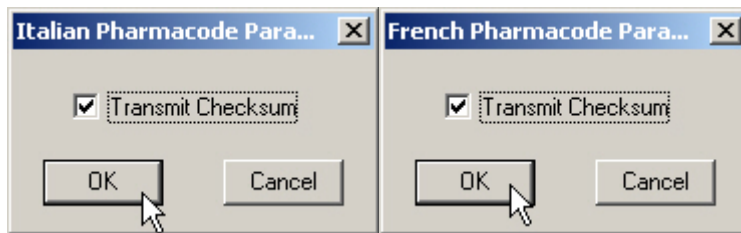
<b>Code 39 Full ASCII</b>
Select the check box so that the terminal will support Code 39 Full ASCII that includes all the alphanumeric and special characters.
<b>Transmit Start/Stop</b>
Select the check box so that the start/stop characters will be included in the data being transmitted.
<b>Verify Checksum</b>
Select the check box so that the terminal will perform checksum verification when decoding Code 39 barcodes. If the checksum is incorrect, the barcode will not be accepted.
<b>Transmit Checksum</b>
The checksum character will be included in the data being transmitted. Cancel the check box if the checksum character is not desired.

## 4.1.2 Italian/French Pharmacode

Select the check box so that the scanner can read Italian or French Pharmacode barcodes.

- Advanced settings are provided as shown below.

Checksum verification will be performed when decoding these barcodes because a checksum character is always included. However, it is optional to transmit the checksum character.



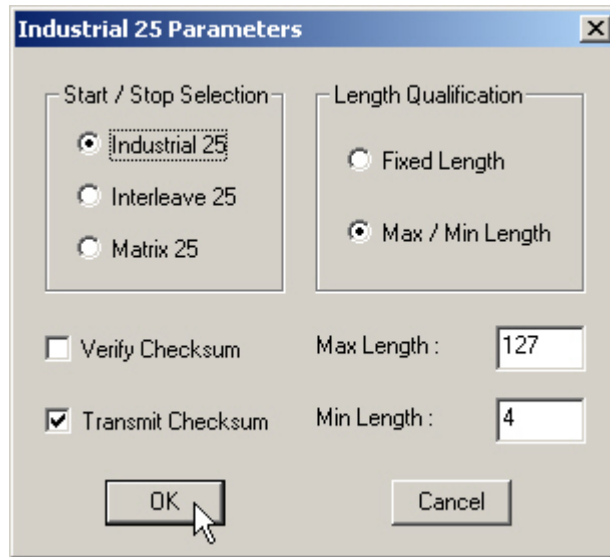
Transmit Checksum
The checksum character will be included in the data being transmitted. Cancel the check box if the checksum character is not desired.

Note: These barcodes share the **Transmit Start/Stop** setting with Code 39.

## 4.1.3 Industrial 25

By default, the scanner is set to read Industrial 25 barcodes.

- Advanced settings are provided as shown below.



### Start/Stop Selection

Specify a desired start/stop pattern. 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 of Industrial 25 should set to Interleaved 25.

### Verify Checksum

Select the check box so that the terminal will perform checksum verification when decoding Industrial 25 barcodes. If the checksum is incorrect, the barcode will not be accepted.

### Transmit Checksum

The checksum character will be included in the data being transmitted.

Cancel the check box if the checksum character is not desired.

### Length Qualification

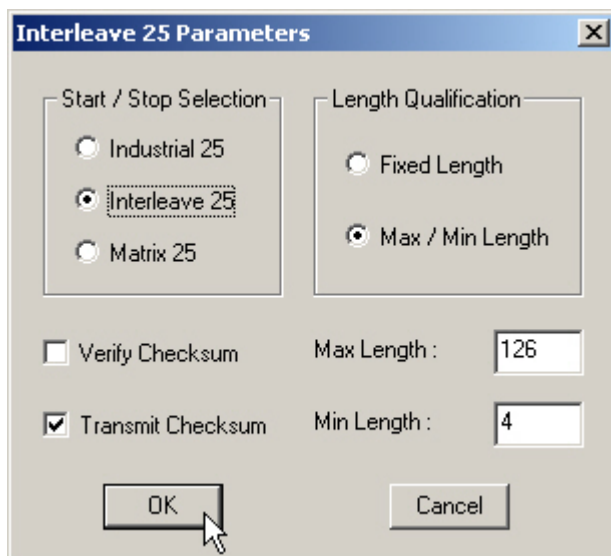
Because of the weak structure of the 2 of 5 barcodes, it is possible to make a "short scan" error. To prevent the "short scan" error, configure the "Length Qualification" settings to ensure that the correct barcode is read by qualifying the allowable code length. The barcode can be qualified by "Fixed Length" or "Max/Min Length".

- For "Fixed Length", up to 2 fixed lengths can be specified.
- For "Max/Min Length", the maximum length and the minimum length must be specified. The terminal will only accept those barcodes with lengths that fall between max/min lengths specified.

## 4.1.4 Interleaved 25

By default, the scanner is set to read Interleaved 25 barcodes.

- Advanced settings are provided as shown below. Refer to Industrial 25.

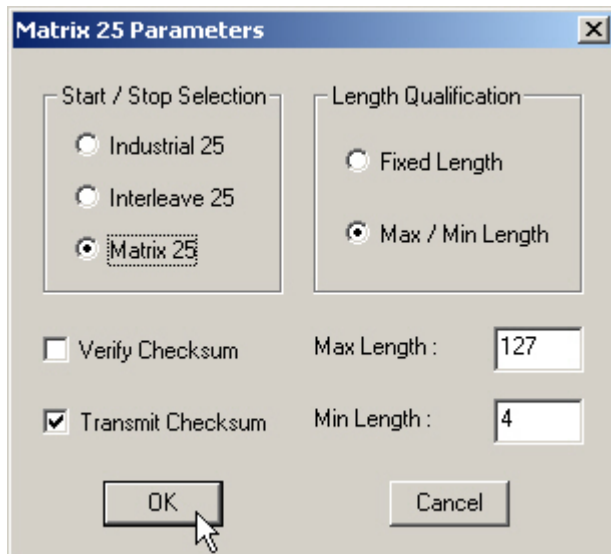


The 'Interleave 25 Parameters' dialog box is shown. It has a title bar with a close button. The dialog is divided into two main sections: 'Start / Stop Selection' and 'Length Qualification'. In 'Start / Stop Selection', there are three radio buttons: 'Industrial 25', 'Interleave 25' (which is selected and highlighted with a dashed border), and 'Matrix 25'. In 'Length Qualification', there are two radio buttons: 'Fixed Length' and 'Max / Min Length' (which is selected). Below these sections, there are two checkboxes: 'Verify Checksum' (unchecked) and 'Transmit Checksum' (checked). To the right of these checkboxes are two text input fields: 'Max Length' with the value '126' and 'Min Length' with the value '4'. At the bottom, there are 'OK' and 'Cancel' buttons. A mouse cursor is pointing at the 'OK' button.

## 4.1.5 Matrix 25

Select the check box so that the scanner can read Matrix 25 barcodes.

- Advanced settings are provided as shown below. Refer to Industrial 25.

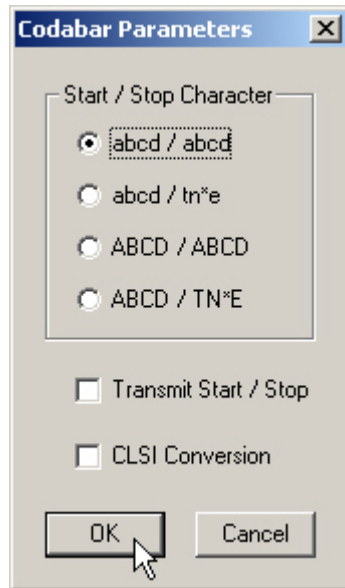


The 'Matrix 25 Parameters' dialog box is shown. It has a title bar with a close button. The dialog is divided into two main sections: 'Start / Stop Selection' and 'Length Qualification'. In 'Start / Stop Selection', there are three radio buttons: 'Industrial 25', 'Interleave 25', and 'Matrix 25' (which is selected and highlighted with a dashed border). In 'Length Qualification', there are two radio buttons: 'Fixed Length' and 'Max / Min Length' (which is selected). Below these sections, there are two checkboxes: 'Verify Checksum' (unchecked) and 'Transmit Checksum' (checked). To the right of these checkboxes are two text input fields: 'Max Length' with the value '127' and 'Min Length' with the value '4'. At the bottom, there are 'OK' and 'Cancel' buttons. A mouse cursor is pointing at the 'OK' button.

## 4.1.6 Codabar

By default, the scanner is set to read Codabar barcodes.

- Advanced settings are provided as shown below.



<b>Start/Stop Character</b>
Select the start/stop characters.
<b>Transmit Start/Stop Character</b>
Select the check box so that the selected start/stop characters will be included in the data being transmitted.
<b>CLSI Conversion</b>
Select the check box so that the start/stop characters will be stripped and a space be inserted after the first, fifth, and tenth characters of a 14-character barcode. <ul style="list-style-type: none"><li>This applies to 14-character barcodes only; barcode length does not include the start and stop characters.</li></ul>

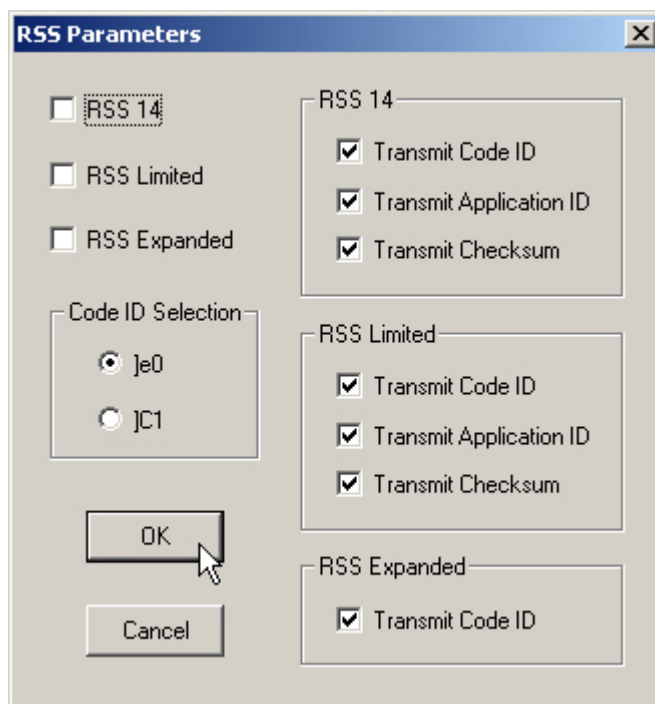
- This applies to 14-character barcodes only; barcode length does not include the start and stop characters.



## 4.1.7 RSS

Select the check box so that the scanner can read RSS-14 barcodes.

- Advanced settings are provided as shown below.



### RSS Family

Select the check box to enable at least one type of the RSS barcodes.

- ◆ RSS-14
- ◆ RSS Limited
- ◆ RSS Expanded

### Code ID Selection

By default, the Code ID of RSS barcodes is "Je0". You may select to use "JC1" instead.

- ◆ "JC1" is the Code ID of EAN-128 barcodes.

### Transmit Code ID

The selected Code ID will be included in the data being transmitted.

Cancel the check box if the Code ID is not desired.

### Transmit Application ID

The Application ID will be included in the data being transmitted.

Cancel the check box if the Application ID is not desired.

<b>Transmit Check Digit</b>
The checksum character will be included in the data being transmitted. Cancel the check box if the checksum character is not desired.

## 4.1.8 Code 93

By default, the scanner is set to read Code 93 barcodes.

- No advanced settings are available.

## 4.1.9 Code 128

By default, the scanner is set to read Code 128 barcodes.

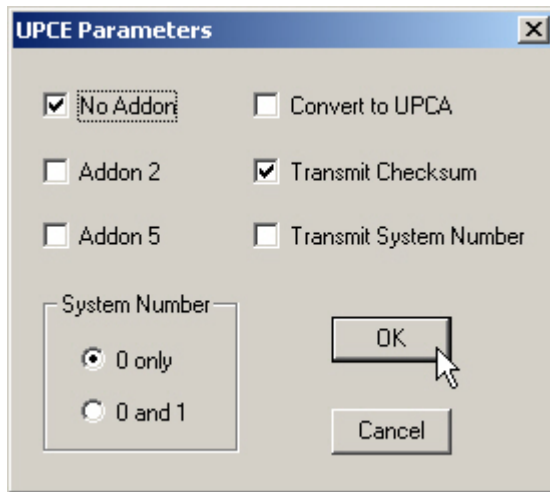
- No advanced settings are available.

## 4.1.10 UPC-E

By default, the scanner is set to read UPC-E barcodes. (= No Addon)

Options of 2-digit and 5-digit extensions are available. Select the check box so that it can read Addon 2 and/or Addon 5.

- Advanced settings are provided as shown below.



### UPC-E Family

Select the check box to enable at least one type of the UPC-E barcodes.

- ◆ UPC-E (No Addon)
- ◆ UPC-E Addon 2
- ◆ UPC-E Addon 5

### System Number

By default, the System Number is "0".

You may select to use both "0" and "1".

### Convert to UPC-A

Select the check box so that the UPC-E reading will be expanded into UPC-A. It will then be treated as a UPC-A barcode and processed according to the settings of UPC-A.

### Transmit System Number

Select the check box so that the system number will be included in the data being transmitted.

### Transmit Checksum

The checksum character will be included in the data being transmitted.

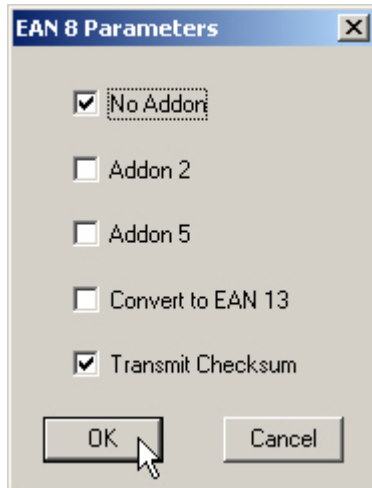
Cancel the check box if the checksum character is not desired.

## 4.1.11 EAN-8

By default, the scanner is set to read EAN-8 barcodes. (= No Addon)

Options of 2-digit and 5-digit extensions are available. Select the check box so that it can read Addon 2 and/or Addon 5.

- Advanced settings are provided as shown below.



### EAN-8 Family

Select the check box to enable at least one type of the EAN-8 barcodes.

- ♦ EAN-8 (No Addon)
- ♦ EAN-8 Addon 2
- ♦ EAN-8 Addon 5

### Convert to EAN-13

Select the check box so that the EAN-8 reading will be expanded into EAN-13. It will then be treated as an EAN-13 barcode and processed according to the settings of EAN-13.

### Transmit Checksum

The checksum character will be included in the data being transmitted.

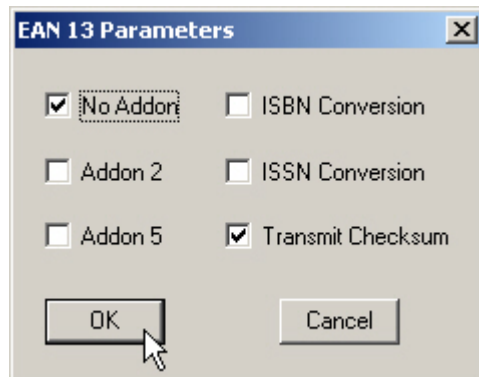
Cancel the check box if the checksum character is not desired.

## 4.1.12 EAN-13

By default, the scanner is set to read EAN-13 barcodes. (= No Addon)

Options of 2-digit and 5-digit extensions are available. Select the check box so that it can read Addon 2 and/or Addon 5.

- Advanced settings are provided as shown below.



### EAN-13 Family

Select the check box to enable at least one type of the EAN-13 barcodes.

- ♦ EAN-13 (No Addon)
- ♦ EAN-13 Addon 2
- ♦ EAN-13 Addon 5

### ISBN Conversion

Select the check box so that the reading of EAN-13 barcodes that starts with 978 and 979 will be converted to ISBN.

### ISSN Conversion

Select the check box so that the reading of EAN-13 barcodes that starts with 977 will be converted to ISSN.

### Transmit Checksum

The checksum character will be included in the data being transmitted.

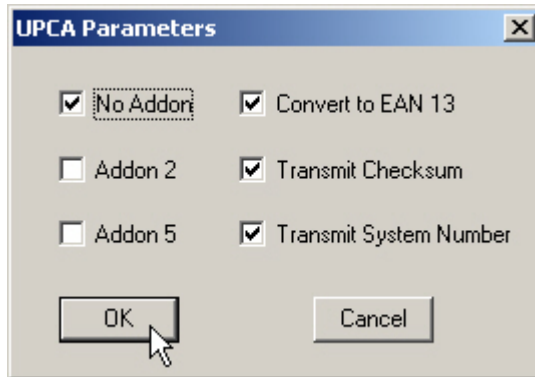
Cancel the check box if the checksum character is not desired.

## 4.1.13 UPC-A

By default, the scanner is set to read UPC-A barcodes. (= No Addon)

Options of 2-digit and 5-digit extensions are available. Select the check box so that it can read Addon 2 and/or Addon 5.

- Advanced settings are provided as shown below.



### UPC-A Family

Select the check box to enable at least one type of the UPC-A barcodes.

- ◆ UPC-A (No Addon)
- ◆ UPC-A Addon 2
- ◆ UPC-A Addon 5

### Convert to EAN-13

The UPC-A reading will be expanded into EAN-13. It will then be treated as an EAN-13 barcode and processed according to the settings of EAN-13.

Cancel the check box if the conversion is not desired.

### Transmit Checksum

The UPC-A checksum character will be included in the data being transmitted.

Cancel the check box if the checksum character is not desired.

### Transmit System Number

The system number will be included in the data being transmitted.

Cancel the check box if the system number is not desired.

## 4.1.14 MSI

Select the check box so that the scanner can read MSI barcodes.

- Advanced settings are provided as shown below.

**MSI Parameters**

**Checksum Verification**

☒ Single Modulo 10

☐ Double Modulo 10

☐ Modulo 11 & 10

**Checksum Transmission**

☒ Last digit not transmitted

☐ Transmitted

☐ Last 2 digits not transmitted

**Length Qualification**

☐ Fixed Length

☒ Max / Min Length

Max Length : 127

Min Length : 4

OK Cancel

### Checksum Verification

Specify the checksum calculation used to verify MSI barcodes. If the checksum is incorrect, the barcode will not be accepted.

### Checksum Transmission

Specify the way the check digits will be included in the data being transmitted.

### Length Qualification

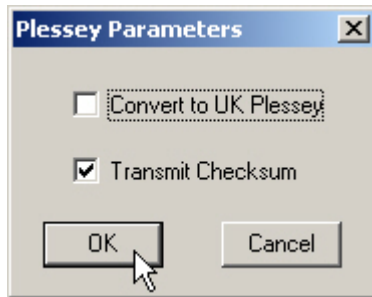
Because of the weak structure of MSI barcodes, it is possible to make a "short scan" error. To prevent the "short scan" error, configure the "Length Qualification" settings to ensure that the correct barcode is read by qualifying the allowable code length. The barcode can be qualified by "Fixed Length" or "Max/Min Length".

- For "Fixed Length", up to 2 fixed lengths can be specified.
- For "Max/Min Length", the maximum length and the minimum length must be specified. The terminal will only accept MSI barcodes with lengths that fall between max/min lengths specified.

## 4.1.15 Plessey

Select the check box so that the scanner can read Plessey barcodes.

- Advanced settings are provided as shown below.



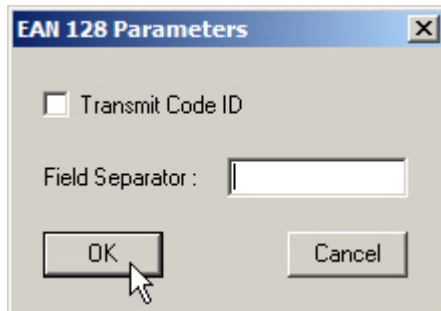
<b>Convert to UK Plessey</b>
Select the check box so that the terminal will change each occurrence of the character "A" to character "X" in the barcodes.
<b>Transmit Checksum</b>
The checksum characters (two digits) will be included in the data being transmitted. Cancel the check box if the checksum characters are not desired.



## 4.1.16 EAN-128

By default, the scanner is set to read EAN-128 barcodes.

- Advanced settings are provided as shown below.



<b>Transmit Code ID</b>
Select the check box so that the default Code ID ("]C1") will be included in the data being transmitted.
<b>Field Separator</b>
The FNC1 character is used to separate fields in the barcode. It is not represented in the readable text. To replace the FNC1 character with readable characters, click the field and choose characters from the pop-up window of Grid Control. <ul style="list-style-type: none"><li>Up to 2 characters can be chose from the <a href="#">Grid Control</a>.</li><li>When "Keyboard Wedge" is selected for interface, options of Key Type/Key Status are available.</li></ul>

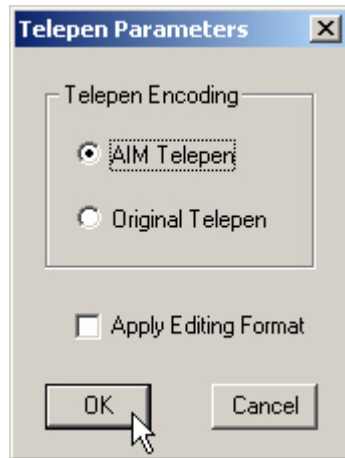


Note: Code 128 must be enabled first!

## 4.1.17 Telepen (All except for 14XX)

Select the check box so that the scanner can read Telepen barcodes.

- Advanced settings are provided as shown below.



<b>Telepen Full ASCII or Numeric</b>
Specify whether Telepen Full ASCII or Telepen Numeric is supported.
<ul style="list-style-type: none"><li>◆ AIM Telepen (Full ASCII)</li><li>◆ Original Telepen (Numeric)</li></ul>
<b>Apply Editing Format</b>
Select the check box so that editing formats can be applied if there is any. Refer to <a href="#">Edit Format</a> .



Note: It is not supported on the 14XX module.

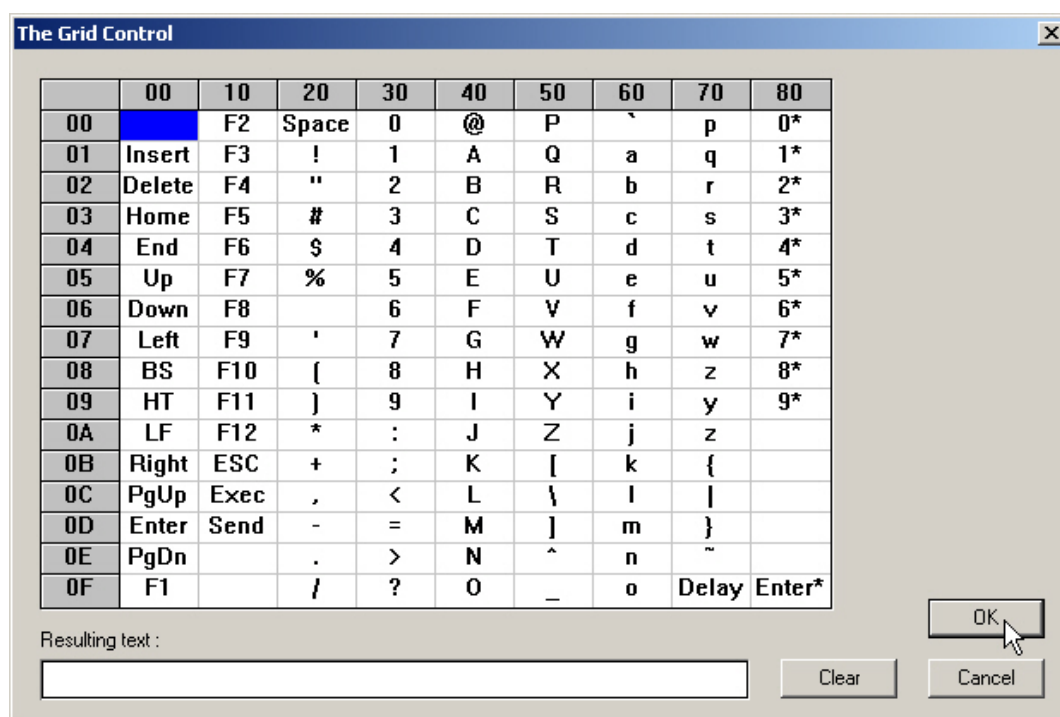
## 4.2 Prefix / Suffix Code

Click the Prefix Code or Suffix Code field so that you can select characters from the pop-up window of Grid Control (see Grid Control – Original below).

Up to 4 characters can be chose from the Grid Control.

- Prefix Code: None is specified by default.
- Suffix Code: By default, [ENTER] or [CR] (Carriage Return) is selected.

### 4.2.1 Grid Control - Original



Note: For a TAB character, click "HT".

If "Keyboard Wedge" is selected for interface, options of Key Type/Key Status are available.

Key Type		Key Status
<a href="#">Scan Code</a>	Up to 2 scan code values can be chose from the Grid Control.	N/A
<a href="#">Normal Key</a>	<ul style="list-style-type: none"><li>◆ Default setting</li></ul> Up to 4 characters can be chose from the Grid Control.	<ul style="list-style-type: none"><li>◆ Add Shift</li><li>◆ Add Left Ctrl</li><li>◆ Add Left Alt</li><li>◆ Add Right Ctrl</li><li>◆ Add Right Alt</li><li>◆ Add Break</li></ul> After adding any of these keys, up to 2 characters can be chose from the Grid Control.

## 4.2.2 Grid Control - Normal Key

By default, each character programmed is a "Normal Key". Such a character can have associate status settings by adding the Shift/Control/Alternate keys.

- Choose up to four characters from the Grid Control.
- After adding any of the Shift/Control/Alternate keys, up to two characters can be chose from the Grid Control. The selected key or keys will be sent with the programmed character.

If you want to program "Ctrl-Shift-B", "C" for Prefix Code, the programming sequence is as follows:

1. Click the Prefix Code field.
2. Select "Normal Key" for Key Type in the Grid Control window.
3. Select the check box of "Add Left Ctrl" and "Add Shift" for Key Status.
4. Choose "B" from the ASCII table.
5. Cancel the check box of "Add Left Ctrl" and "Add Shift".
6. Choose "C" from the ASCII table.
7. Click [OK] to confirm the setting.

Note: This is available only when Keyboard Wedge is selected for interface.

**The Grid Control**

	00	10	20	30	40	50	60	70	80
00		F2	Space	0	@	P	`	p	0*
01	Insert	F3	!	1	A	Q	a	q	1*
02	Delete	F4	"	2	B	R	b	r	2*
03	Home	F5	#	3	C	S	c	s	3*
04	End	F6	\$	4	D	T	d	t	4*
05	Up	F7	%	5	E	U	e	u	5*
06	Down	F8		6	F	V	f	v	6*
07	Left	F9	'	7	G	W	g	w	7*
08	BS	F10	{	8	H	X	h	z	8*
09	HT	F11	}	9	I	Y	i	y	9*
0A	LF	F12	*	:	J	Z	j	z	
0B	Right	ESC	+	;	K	[	k	{	
0C	PgUp	Exec	,	<	L	\	l		
0D	Enter	Send	-	=	M	]	m	}	
0E	PgDn		.	>	N	^	n	~	
0F	F1		/	?	O	_	o	Delay	Enter*

Key Type:

☐ Scan Code

☒ Normal Key

Key Status:

☐ Add Shift

☐ Add Left Ctrl

☐ Add Left Alt

☐ Add Right Ctrl

☐ Add Right Alt

☐ Add Break

Resulting text : [S]

OK Clear Cancel

## 4.2.3 Grid Control - Scan Code

Select "Scan Code" so that the scanner is configured to program a character by its scan code value.

- Up to two scan code values can be chose from the Grid Control.

Note: This is available only when Keyboard Wedge is selected for interface.

**The Grid Control**

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
00	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
01	01	11	21	31	41	51	61	71	81	91	A1	B1	C1	D1	E1	F1
02	02	12	22	32	42	52	62	72	82	92	A2	B2	C2	D2	E2	F2
03	03	13	23	33	43	53	63	73	83	93	A3	B3	C3	D3	E3	F3
04	04	14	24	34	44	54	64	74	84	94	A4	B4	C4	D4	E4	F4
05	05	15	25	35	45	55	65	75	85	95	A5	B5	C5	D5	E5	F5
06	06	16	26	36	46	56	66	76	86	96	A6	B6	C6	D6	E6	F6
07	07	17	27	37	47	57	67	77	87	97	A7	B7	C7	D7	E7	F7
08	08	18	28	38	48	58	68	78	88	98	A8	B8	C8	D8	E8	F8
09	09	19	29	39	49	59	69	79	89	99	A9	B9	C9	D9	E9	F9
0A	0A	1A	2A	3A	4A	5A	6A	7A	8A	9A	AA	BA	CA	DA	EA	FA
0B	0B	1B	2B	3B	4B	5B	6B	7B	8B	9B	AB	BB	CB	DB	EB	FB
0C	0C	1C	2C	3C	4C	5C	6C	7C	8C	9C	AC	BC	CC	DC	EC	FC
0D	0D	1D	2D	3D	4D	5D	6D	7D	8D	9D	AD	BD	CD	DD	ED	FD
0E	0E	1E	2E	3E	4E	5E	6E	7E	8E	9E	AE	BE	CE	DE	EE	FE
0F	0F	1F	2F	3F	4F	5F	6F	7F	8F	9F	AF	BF	CF	DF	EF	FF

Key Type: ☒ Scan Code ☐ Normal Key

Key Status: ☒ Add Shift ☐ Add Left Ctrl ☐ Add Left Alt ☐ Add Right Ctrl ☐ Add Right Alt ☒ Add Break

Resulting text :

Clear OK Cancel

## 4.3 Reset

Click this button to load the default settings.

Note: Current settings will be cleared.

## CHAPTER 5

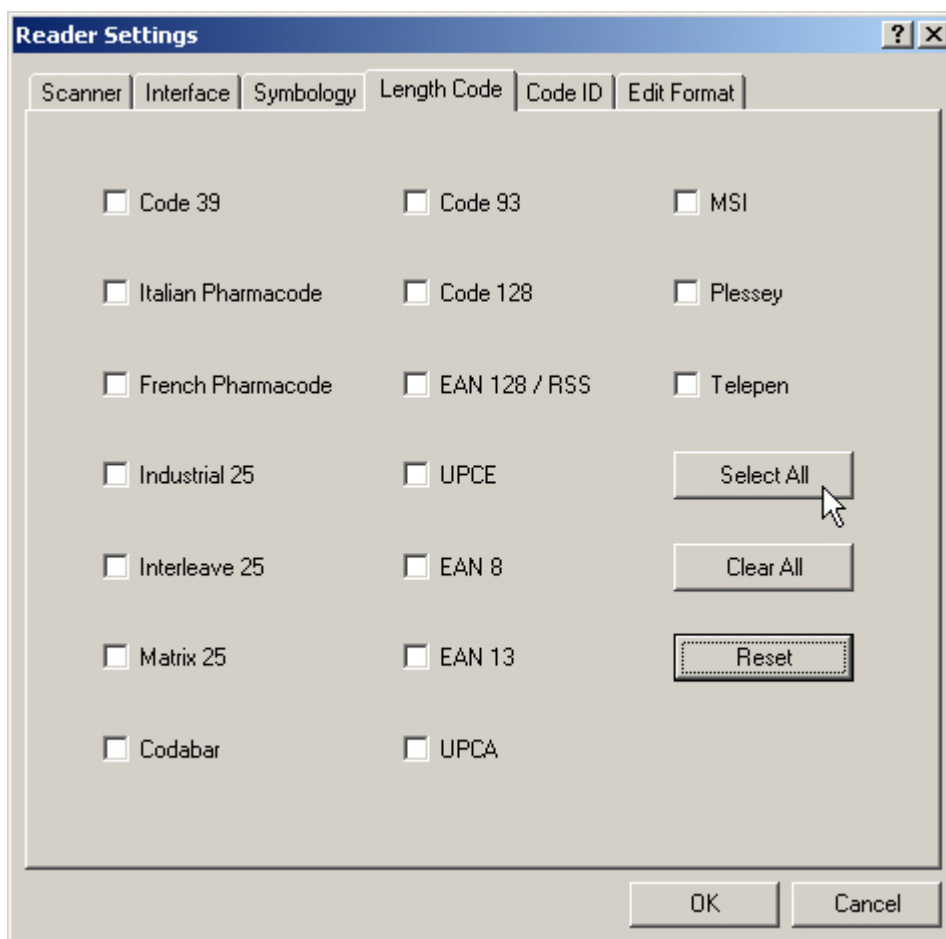
# Length Code & Code ID Settings

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## 5.1 Length Code

A two-digit code representing the length of data (character count) can be inserted in front of data being transmitted. Such "Length" code can be individually enabled or disabled for each symbology.



## 5.1.1 Default Setting

Symbology	Default Setting
Code 39	Disabled on all models
Italian Pharmacode	Disabled on all models
French Pharmacode	Disabled on all models
Industrial 25	Disabled on all models
Interleaved 25	Disabled on all models
Matrix 25	Disabled on all models
Codabar	Disabled on all models
Code 93	Disabled on all models
Code 128	Disabled on all models
RSS / EAN-128	Disabled on all models
UPC-E	Disabled on all models
EAN-8	Disabled on all models
EAN-13	Disabled on all models
UPC-A	Disabled on all models
MSI	Disabled on all models
Plessey	Disabled on all models
Telepen	Disabled on all models ♦ Not available on the 14XX module

## 5.1.2 Reset

Click this button to load the default settings.

Note: Current settings will be cleared.



## 5.2 Code ID

To make the Code ID configuration easier, the scanner provides five pre-defined Code ID sets that you can select one and make necessary changes on it.

The image shows a 'Reader Settings' dialog box with a tabbed interface. The 'Code ID' tab is selected. It contains two columns of settings, each with a label and a text input field. The inputs are pre-filled with specific characters. At the bottom, there are five buttons labeled 'Set 1' through 'Set 5', and a 'Clear' button. A mouse cursor is pointing at the 'Clear' button. At the very bottom are 'OK' and 'Cancel' buttons.

Label	Value	Label	Value
Code 39	[A]	Code 128	[C]
Italian Pharmacode	[A]	UPCE	[E]
French Pharmacode	[A]	EAN 8	[E]
Industrial 25	[S]	EAN 13	[E]
Interleave 25	[S]	UPCA	[E]
Matrix 25	[S]	MSI	[M]
Codabar	[F]	Plessey	[P]
Code 93	[G]	Telepen	

Set 1 Set 2 Set 3 Set 4 Set 5 Clear

OK Cancel

Note: "[C1]" is the Code ID of EAN-128 barcodes; "[e0]" is the default Code ID of RSS barcodes.

## 5.2.1 Code ID Set 1~5

Code ID options	Set 1	Set 2	Set 3	Set 4	Set 5
Code 39	A	C	Y	M	A
Italian Pharmacode	A	C	Y	M	A
French Pharmacode	A	C	Y	M	A
Industrial 25	C	H	H	H	S
Interleaved 25	D	I	Z	I	S
Matrix 25	E	G	G	G	S
Codabar	F	N	X	N	F
Code 93	I	L	L	L	G
Code 128	H	K	K	K	C
UPC-E	S	E	C	E	E
EAN-8	P	B	B	FF	E
EAN-13	M	A	A	F	E
UPC-A	J	A	A	A	E
MSI	V	V	D	P	M
Plessey	W	W	E	Q	P
Telepen	Z	---	---	---	---

## 5.2.2 Code ID - Grid Control

To modify the Code ID, click the field next to a symbology. Then, choose your Code ID from the pop-up window of Grid Control (see [Grid Control - Original](#)).

Up to 2 characters can be chose from the Grid Control.

However, when "Keyboard Wedge" is selected for interface, options of Key Type/Key Status are available.

Key Type		Key Status
<a href="#">Scan Code</a>	Only one scan code value can be chose from the Grid Control.	N/A

<a href="#">Normal Key</a>	<ul style="list-style-type: none"><li>◆ Default setting</li></ul> Up to 2 characters can be chose from the Grid Control.	<ul style="list-style-type: none"><li>◆ Add Shift</li><li>◆ Add Left Ctrl</li><li>◆ Add Left Alt</li><li>◆ Add Right Ctrl</li><li>◆ Add Right Alt</li><li>◆ Add Break</li></ul> After adding any of these keys, only one character can be chose from the Grid Control.
----------------------------	--	--

### 5.2.3 Clear

Click this button to clear the current settings.

Note: Default settings will be loaded. That is, the Code ID settings are empty.



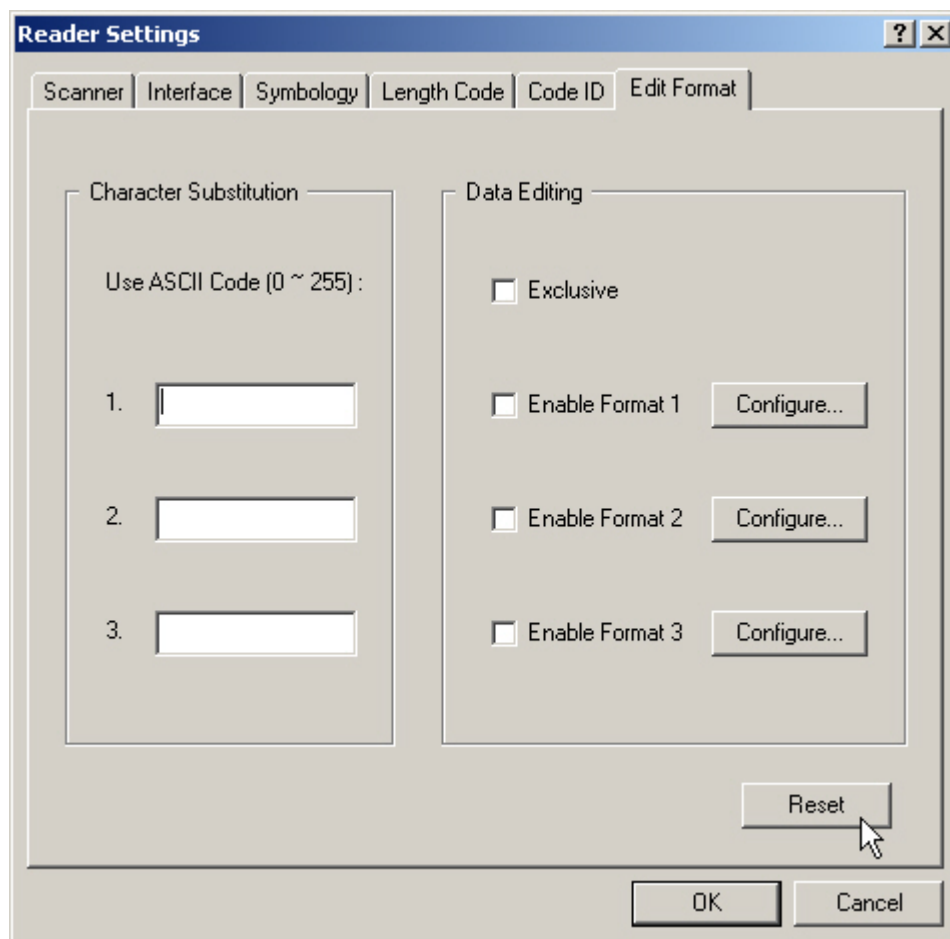
## CHAPTER 6

# Edit Format Settings

Barcode read by the scanner will be processed in the following sequence:

1. Perform character substitution on the data scanned.
2. Add [Code ID](#) and [Length Code](#) to the front of the data: [Code ID][Length Code][Data]
3. Process the whole data in step 2 with user formats. Data is now divided into fields by user specified rules.
4. Add [Prefix Code](#) and [Suffix Code](#) before transmission: [Prefix Code][Processed Data][Suffix Code]

Refer to [Configure the Scanner](#) for the flow chart of data process.



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---


## 6.1 Character Substitution

Character substitution is performed on every occurrence of the first character specified. Click the field to choose characters from the pop-up window of Grid Control, which displays the available ASCII Codes.

- The first character will be replaced by the second character.
- Up to three sets of character substitution can be performed.

Take the settings below for example:

- Set 1 - the character "0" in the scanned data will be replaced by "-".
- Set 2 - the character "9" in the scanned data will be replaced by "@9".



The screenshot shows a dialog box titled "Character Substitution". Inside, there is a label "Use ASCII Code (0 ~ 255) :". Below this label, there are three numbered rows, each with a text input field. Row 1 contains "[0][-]". Row 2 contains "[9][@][9]". Row 3 contains an empty field.

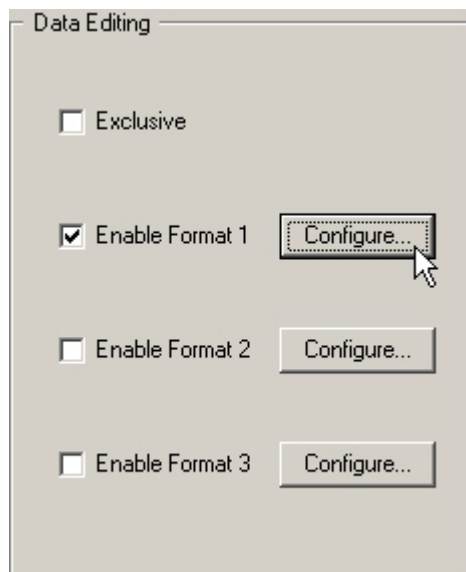
**Note:** The character substitution is performed only on the barcode itself and before the processing of editing formats. It is not applicable to the Prefix/Suffix Code, Code ID, Length Code, or any Additional Field.

---

## 6.2 Data Editing

The scanner provides advanced data editing by applying user formats.

- Up to three different formats can be specified.



### 6.2.1 Exclusive Data Editing

Select the check box to enable this feature. When enabled, all barcodes read by the scanner must be processed by the editing formats.

**Note:** If the barcode is not eligible for all enabled editing formats, the scanner will not accept the reading, and therefore, data will not be transmitted.

### 6.2.2 Enable Format 1~3

Select the check box to enable any of the three formats. Then, proceed to configure the selected format.

## Applicable Conditions

Three applicable conditions can be configured to check whether the data read by the scanner can be processed by the particular editing format.

**Configure Editing Format**

Applicable Conditions | Field Settings | Transmission Sequence

Applicable code type

<input checked="" type="checkbox"/> Code 39	<input checked="" type="checkbox"/> EAN 128 / RSS	<input checked="" type="checkbox"/> EAN 13 No Addon
<input checked="" type="checkbox"/> Italian Pharmacode	<input checked="" type="checkbox"/> UPCE No Addon	<input checked="" type="checkbox"/> EAN 13 Addon 2
<input checked="" type="checkbox"/> French Pharmacode	<input checked="" type="checkbox"/> UPCE Addon 2	<input checked="" type="checkbox"/> EAN 13 Addon 5
<input checked="" type="checkbox"/> Industrial 25	<input checked="" type="checkbox"/> UPCE Addon 5	<input checked="" type="checkbox"/> UPCA No Addon
<input checked="" type="checkbox"/> Interleave 25	<input checked="" type="checkbox"/> EAN 8 No Addon	<input checked="" type="checkbox"/> UPCA Addon 2
<input checked="" type="checkbox"/> Matrix 25	<input checked="" type="checkbox"/> EAN 8 Addon 2	<input checked="" type="checkbox"/> UPCA Addon 5
<input checked="" type="checkbox"/> Codabar	<input checked="" type="checkbox"/> EAN 8 Addon 5	
<input checked="" type="checkbox"/> Code 93	<input checked="" type="checkbox"/> MSI	<input type="button" value="Select All"/>
<input checked="" type="checkbox"/> Code 128	<input checked="" type="checkbox"/> Plessey	<input type="button" value="Clear All"/>

Minimum Length : 0      Matching String :

Maximum Length : 127      Matching String Location: 0

### Applicable Code Type

By default, barcodes of all the supported symbologies are eligible for data editing except for Telepen. If you wish to apply editing formats to Telepen, configure it under Telepen on the Symbology tab.

- ◆ Cancel the check box next to a symbology for which data editing is not desired.

### Data Length

By default, barcodes with length (character count) ranging from 0 to 127 are eligible for data editing.

- ◆ You may specify a value from 0 to 255.
- ◆ When zero is given to both, the scanner will not perform the length qualification.



**Matching String & Location**

By default, no matching string is specified, and therefore, it is disabled.

You may enable this feature by specifying a matching string. Choose up to four characters from the pop-up window of Grid Control.

- ♦ When the Matching String Location is zero, the scanner will only check for the existence of the matching string in the barcode data.
- ♦ You may specify a value from 1 to 255 to indicate where the matching string starts in the barcode data.

Note: Data editing cannot be performed unless the above three conditions are all met.

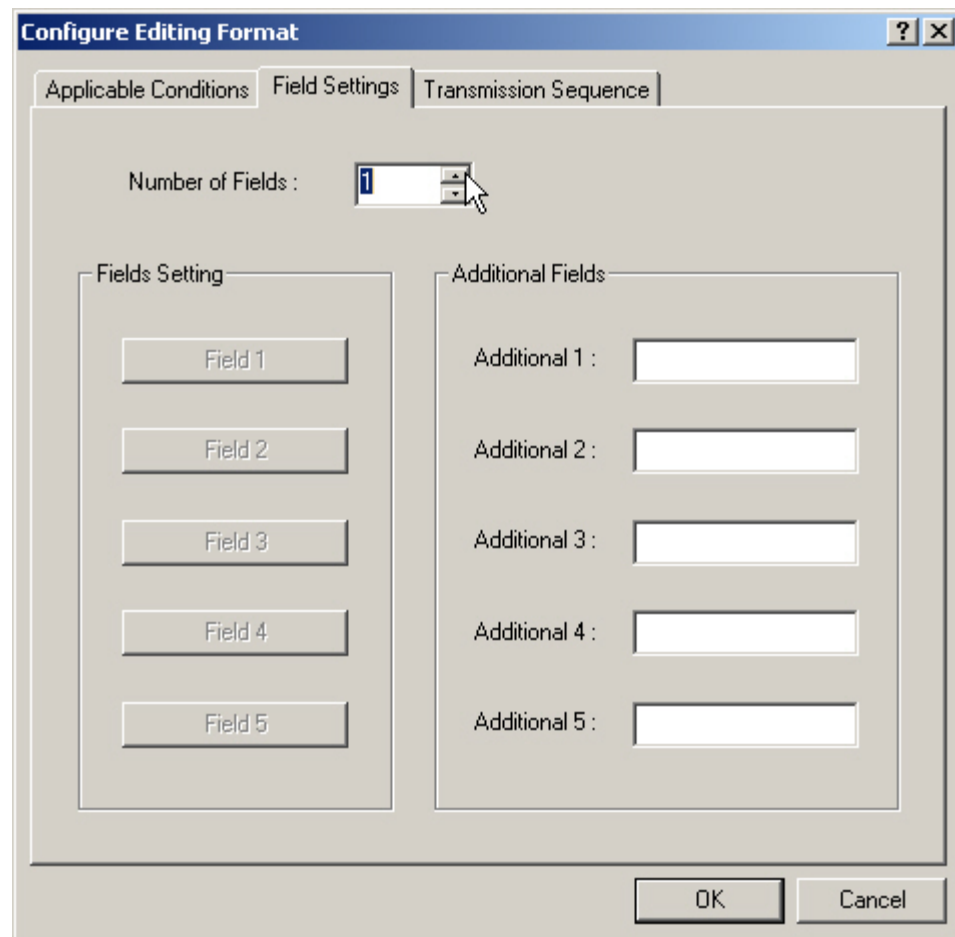
**Field Settings**

Data eligible for editing formats is now divided into fields by user specified rules. These fields together with user-configurable additional fields constitute the data actually sent to the host computer.

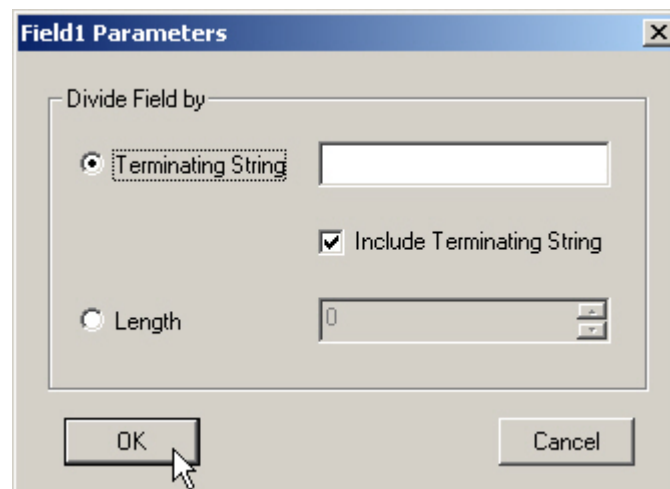
- Data can be divided into at most 6 fields; each of them is numbered from F1 to F6 accordingly. Only F1~F5 can be configured.

The total number of fields must be specified correctly. If three fields are configured for the editing format, the data characters after F3 will be assigned to F4 automatically. This feature is quite useful especially when data of variable lengths is processed by editing formats.

Note: The number of configurable fields is always one less than the total number of fields specified. The extra data characters beyond the last field configured will be automatically assigned to the next field.



- Apply one of the two rules to dividing fields.



<b>By Terminating String</b>
Specify the field terminating string. Choose up to two characters from the pop-up window of Grid Control. The scanner will search for the occurrence of this particular string in the data. <ul style="list-style-type: none"> <li>By default, this string will be included in the field. If you wish to discard it, cancel the check box.</li> </ul>
<b>By Length</b>
Alternatively, you may simply specify the field length. The scanner will assign the next specified number of characters into the field.

- User can create up to five additional fields for each editing format; each of them is numbered from A1 to A5 accordingly. To configure the Additional Fields setting, click the associated field and choose characters from the pop-up window of Grid Control (see [Grid Control - Original](#)).

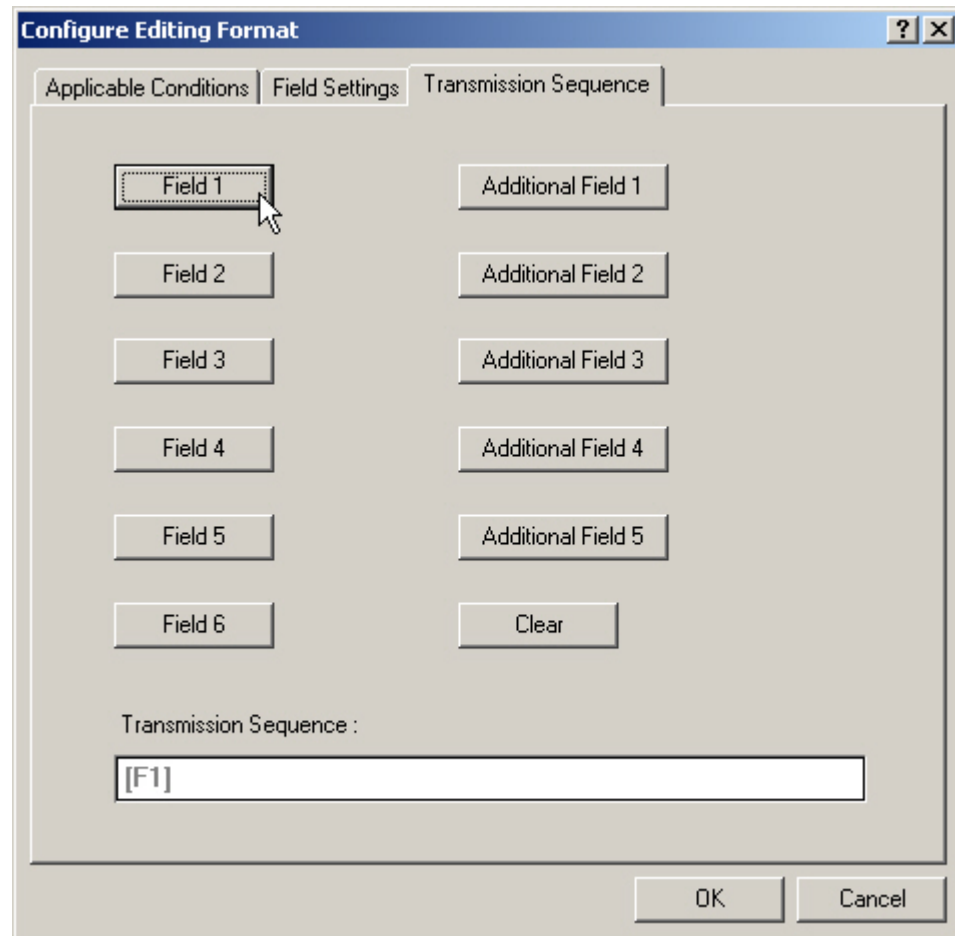
Up to 4 characters can be chose from the Grid Control.

However, when "Keyboard Wedge" is selected for interface, options of Key Type/Key Status are available.

Key Type		Key Status
<a href="#">Scan Code</a>	Up to 2 scan code values can be chose from the Grid Control.	N/A
<a href="#">Normal Key</a>	<ul style="list-style-type: none"> <li>Default setting</li> </ul> Up to 4 characters can be chose from the Grid Control.	<ul style="list-style-type: none"> <li>Add Shift</li> <li>Add Left Ctrl</li> <li>Add Left Alt</li> <li>Add Right Ctrl</li> <li>Add Right Alt</li> <li>Add Break</li> </ul> After adding any of these keys, up to 2 characters can be chose from the Grid Control.

## Transmission Sequence

After configuring the data fields and additional fields, user can now program the transmission sequence of these fields that comprise the final data. Simply click on the buttons of these fields in sequence, and they will appear in the Transmission Sequence field. This field transmission sequence can be assigned in any desired order and fields can be assigned multiple times as well. The maximum number of fields can be assigned is twelve.

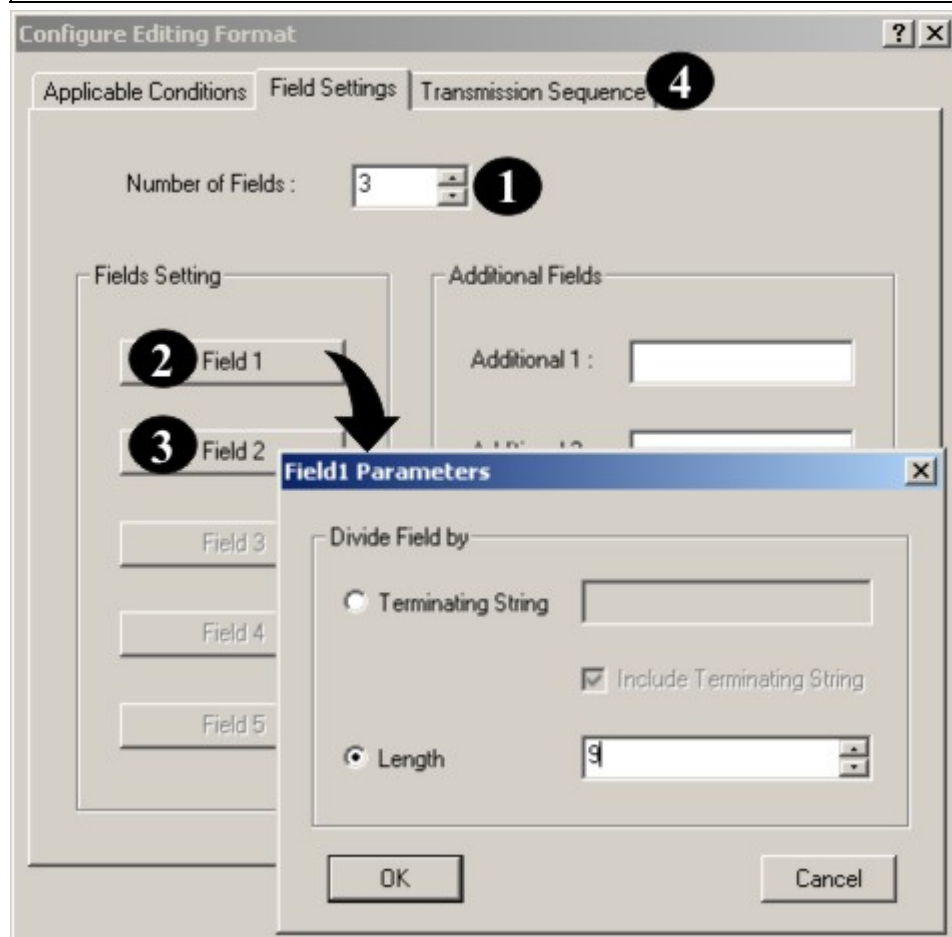


## Programming Examples

### Example 1 - Extract data from the 10th character to the 19th character...

The editing format should be configured as follows:

- ◆ Set Number of Fields to "3".
- ◆ Set Field1 Parameters: divide field by Length, and set length to "9".  
Field1 = from the 1th character to the 9th character
- ◆ Set Field2 Parameters: divide field by Length, and set length to "10".  
Field2 = from the 10th character to the 19th character
- ◆ Set Transmission Sequence to transmit "F2" only.



**Example 2 - Extract the date code, item number, and quantity information from barcodes.**

Data is encoded in the barcode like this:

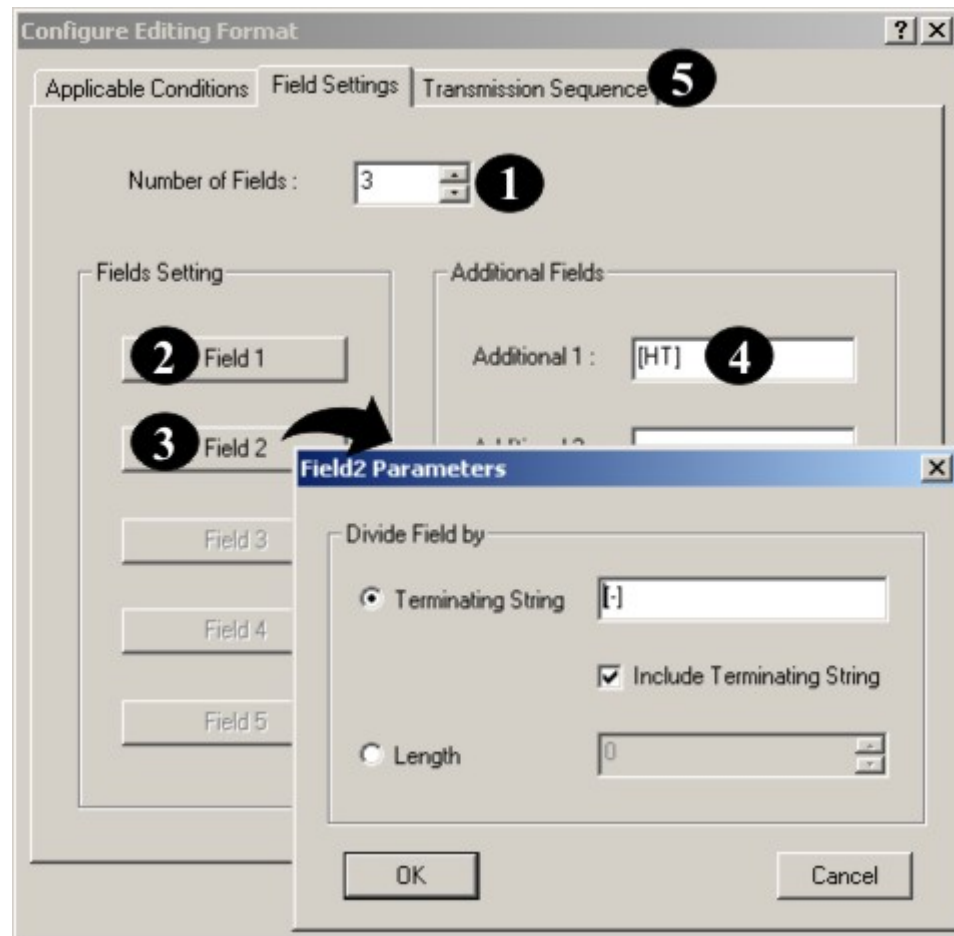
- From the 1st character to the 6th character is the date code.
- From the 7th character to the "-" character is the item number.
- After the "-" character is the quantity information.

Data will be transmitted like this:

- The item number goes first, then a TAB character, followed by the date code, then another TAB character, and finally the quantity information.

The editing format should be configured as follows:

- ◆ Set Number of Fields to "3".
- ◆ Set Field1 Parameters: divide field by Length, and set length to "6".  
Field1 = from the 1th character to the 6th character
- ◆ Set Field2 Parameters: divide field by Terminating String, and set the string to "-".  
Field2 = from the 7th character to the "-" character
- ◆ Set Additional Field 1 to one "TAB" character.
- ◆ Set Transmission Sequence to transmit "F2 A1 F1 A1 F3".



---

## 6.3 Reset

Click this button to load the default settings.

Note: Current settings will be cleared.





## APPENDIX I

# Default Settings

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## 1000/1090+ Defaults

Scanner tab	Default Setting
<b>Scan Mode:</b>	<b>Auto Off</b>
Read Redundancy:	None
Delay between Reread:	0.4 sec
Timeout:	10 (sec)
Disable Buzzer:	Enabled, 4 KHz
Read Negative Barcode:	Disabled
Disable Good Read LED:	Enabled
Interface tab	Default Setting
Scanner Interface:	Keyboard Wedge
Keyboard Type:	PCAT (US)
Alternate Composing:	No
Alphabets Transmission:	Case-sensitive
Digits Transmission:	Alpha-numeric Keypad
Capital Lock Type:	Normal
Capital Lock State:	OFF
Alphabets Layout:	Normal
Digits Layout:	Normal
Inter-Character Delay:	0 (ms)

Laptop Support:	Disabled
<b>Symbology</b>	<b>Default Setting</b>
Code 39	Enabled
Italian Pharmacode	Disabled
French Pharmacode	Disabled
Industrial 25	Enabled
Interleaved 25	Enabled
Matrix 25	Disabled
Codabar	Enabled
Code 93	Enabled
Code 128	Enabled
EAN-128	Disabled
UPC-E	Enabled
EAN-8	Enabled
EAN-13	Enabled
UPC-A	Enabled
MSI	Disabled
Plessey	Disabled
<b>RSS</b>	Disabled
Telepen	Disabled
Prefix Code	None
<b>Suffix Code</b>	<b>Enter</b>
<b>Code Length</b>	<b>Default Setting</b>
Same as Symbology	All disabled
<b>Code ID</b>	<b>Default Setting</b>
Same as Symbology except for RSS, EAN-128	All disabled
<b>Edit Format</b>	<b>Default Setting</b>
Character Substitution	None
Data Editing	Disabled

## 1100/1105/1200 Defaults

Scanner tab	Default Setting
<b>Scan Mode:</b>	<b>Laser</b>
Read Redundancy:	None
Delay between Reread:	0.4 sec
Timeout:	10 (sec)
Disable Buzzer:	Enabled, 4 KHz
Read Negative Barcode:	Disabled
Disable Good Read LED:	Enabled
<b>Auto Sense (1100 / 1105 only):</b>	Disabled
Interface tab	Default Setting
Scanner Interface:	Keyboard Wedge
Keyboard Type:	PCAT (US)
Alternate Composing:	No
Alphabets Transmission:	Case-sensitive
Digits Transmission:	Alpha-numeric Keypad
Capital Lock Type:	Normal
Capital Lock State:	OFF
Alphabets Layout:	Normal
Digits Layout:	Normal
Inter-Character Delay:	0 (ms)
Laptop Support:	Disabled
Symbology	Default Setting
Code 39	Enabled
Italian Pharmacode	Disabled
French Pharmacode	Disabled
Industrial 25	Enabled
Interleaved 25	Enabled
Matrix 25	Disabled
Codabar	Enabled

Code 93	Enabled
Code 128	Enabled
EAN-128	Disabled
UPC-E	Enabled
EAN-8	Enabled
EAN-13	Enabled
UPC-A	Enabled
MSI	Disabled
Plessey	Disabled
<b>RSS</b>	Disabled
Telepen	Disabled
Prefix Code	None
<b>Suffix Code</b>	<b>Enter</b>
<b>Code Length</b>	<b>Default Setting</b>
Same as Symbology	All disabled
<b>Code ID</b>	<b>Default Setting</b>
Same as Symbology except for RSS, EAN-128	All disabled
<b>Edit Format</b>	<b>Default Setting</b>
Character Substitution	None
Data Editing	Disabled

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## 1160/1166/1260/1266 Defaults

Scanner tab	Default Setting
<b>Scan Mode:</b>	<b>Laser</b>
Read Redundancy:	None
Delay between Reread:	0.4 sec
Timeout:	10 (sec)
Disable Buzzer:	Enabled, 4 KHz
Read Negative Barcode:	Disabled
Disable Good Read LED:	Enabled

<b>Auto Sense (1166 / 1266 only):</b>	Disabled
<b>RF Auto-Shutdown:</b>	10 (min.)
<b>Memory Scanner:</b>	Disabled
<b>Transmit Buffer (1166 / 1266 only):</b>	Disabled
<b>Interface tab</b>	<b>Default Setting</b>
Scanner Interface:	Keyboard Wedge
Keyboard Type:	PCAT (US)
Alternate Composing:	No
Alphabets Transmission:	Case-sensitive
Digits Transmission:	Alpha-numeric Keypad
Capital Lock Type:	Normal
Capital Lock State:	OFF
Alphabets Layout:	Normal
Digits Layout:	Normal
Inter-Character Delay:	0 (ms)
Laptop Support:	Disabled
<b>Symbology</b>	<b>Default Setting</b>
Code 39	Enabled
Italian Pharmacode	Disabled
French Pharmacode	Disabled
Industrial 25	Enabled
Interleaved 25	Enabled
Matrix 25	Disabled
Codabar	Enabled
Code 93	Enabled
Code 128	Enabled
EAN-128	Disabled
UPC-E	Enabled
EAN-8	Enabled
EAN-13	Enabled
UPC-A	Enabled
MSI	Disabled
Plessey	Disabled

<b>RSS</b>	Disabled
Telepen	Disabled
Prefix Code	None
<b>Suffix Code</b>	<b>Enter</b>
<b>Code Length</b>	<b>Default Setting</b>
Same as Symbology	All disabled
<b>Code ID</b>	<b>Default Setting</b>
Same as Symbology except for RSS, EAN-128	All disabled
<b>Edit Format</b>	<b>Default Setting</b>
Character Substitution	None
Data Editing	Disabled

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## 14XX Defaults

<b>Scanner tab</b>	<b>Default Setting</b>
<b>Scan Mode:</b>	<b>Continuous</b>
Read Redundancy:	None
Delay between Reread:	0.4 sec
Timeout:	10 (sec)
Disable Buzzer:	Enabled, 4 KHz
Read Negative Barcode:	Disabled
Disable Good Read LED:	Enabled
<b>Auto Sense:</b>	Disabled
<b>Interface tab</b>	<b>Default Setting</b>
Scanner Interface:	RS-232
Transmission Mode:	Single Port
Baud Rate:	9600 bps
Data Bit:	8 Bits
Parity:	None
Flow Control:	No
Inter-Character Delay:	0

<b>Symbology</b>	<b>Default Setting</b>
Code 39	Enabled
Italian Pharmacode	Disabled
French Pharmacode	Disabled
Industrial 25	Enabled
Interleaved 25	Enabled
Matrix 25	Disabled
Codabar	Enabled
Code 93	Enabled
Code 128	Enabled
EAN-128	Disabled
UPC-E	Enabled
EAN-8	Enabled
EAN-13	Enabled
UPC-A	Enabled
MSI	Disabled
Plessey	Disabled
<b>RSS</b>	Disabled
<b>Telepen</b>	Not supported on the 14XX module
Prefix Code	None
<b>Suffix Code</b>	<b>CR</b>
<b>Code Length</b>	<b>Default Setting</b>
Same as Symbology	All disabled
<b>Code ID</b>	<b>Default Setting</b>
Same as Symbology except for RSS, EAN-128	All disabled
<b>Edit Format</b>	<b>Default Setting</b>
Character Substitution	None
Data Editing	Disabled

## 1045 Defaults

Scanner tab	Default Setting
<b>Scan Mode:</b>	<b>Laser</b>
Read Redundancy:	None
Delay between Reread:	0.4 sec
Timeout:	10 (sec)
Disable Buzzer:	Enabled, 4 KHz
Read Negative Barcode:	Disabled
Disable Good Read LED:	Enabled
<b>Auto Sense:</b>	Disabled
Interface tab	Default Setting
Scanner Interface:	RS-232
Transmission Mode:	Single Port
Baud Rate:	9600 bps
Data Bit:	8 Bits
Parity:	None
Flow Control:	No
Inter-Character Delay:	0
Symbology	Default Setting
Code 39	Enabled
Italian Pharmacode	Disabled
French Pharmacode	Disabled
Industrial 25	Enabled
Interleaved 25	Enabled
Matrix 25	Disabled
Codabar	Enabled
Code 93	Enabled
Code 128	Enabled
EAN-128	Disabled
UPC-E	Enabled
EAN-8	Enabled



EAN-13	Enabled
UPC-A	Enabled
MSI	Disabled
Plessey	Disabled
<b>RSS</b>	Disabled
<b>Telepen</b>	Disabled
Prefix Code	None
<b>Suffix Code</b>	<b>CR</b>
<b>Code Length</b>	<b>Default Setting</b>
Same as Symbology	All disabled
<b>Code ID</b>	<b>Default Setting</b>
Same as Symbology except for RSS, EAN-128	All disabled
<b>Edit Format</b>	<b>Default Setting</b>
Character Substitution	None
Data Editing	Disabled