

USER GUIDE

# FORGE BATCH APPLICATION GENERATOR

For 8000/8300/8500 Series Mobile Computers

DOC Version 2.12



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## RELEASE NOTES

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VERSION	DATE	NOTES
2.12	Nov. 06, 2007	▶ Modified: section 4.1.2 RFID Reader – RFID tags in proximity will be read automatically by 8300/8500 when RFID reader is enabled
2.11	Oct. 18, 2007	▶ Modified: Features
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2.06	Apr. 14, 2006	▶ Modified: section 1.2.2 – Font_12x12 not supported ▶ Modified: sections 5.1 & 5.2.6 ▶ Modified: sections 6.2, 6.4 & 6.5
2.05	Apr. 10, 2006	AG for CPT-8500 is included



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# INTRODUCTION

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FORGE Application Generator for 8000/8300/8500 Series Mobile Computers, featuring easy-to-use and quick-to-apply, is designed for the users to develop custom templates for the use with AG runtime preloaded on the mobile computers. Users are then able to define their own data collection templates on any desktop computer without spending time writing any program code.

FORGE Application Generator is used to develop applications for many purposes, such as -

- ▶ Receiving in Retail
- ▶ Price Check
- ▶ Product labeling & Tracking
- ▶ Shelf Product Replenishment
- ▶ Mobile Point of Sale (POS)
- ▶ Mobile Inventory Management
- ▶ Order Picking & Staging
- ▶ Work-In-Process Tracking
- ▶ Material Flow Control
- ▶ Transportation & Distribution
- ▶ Warehousing
- ▶ Asset Management

FORGE Application Generator presents itself as a miniature image of the mobile computer. It simulates the program's running sequences on the actual mobile computer, and therefore, allows you to design a new application on screen in minutes. After having configured and saved your template, download the application template file and lookup file(s) to the mobile computer. When running the AG runtime on the mobile computer, data collection can commence immediately by making use of the template downloaded.

This manual serves to provide comprehensive understanding of FORGE Application Generator for 8000/8300/8500 Series Mobile Computers, and helps define custom template for a specific application. We recommend that you read the document thoroughly before use and keep it at hand for quick reference.

Thank you for choosing CipherLab products!

## FEATURES

- ▶ Definition of program flow
- ▶ Editing of screens and data
- ▶ Managing barcode reader and RFID reader
- ▶ Font size options and program localization
- ▶ Simple program simulation for debugging
- ▶ Password-protected user settings to prevent unauthorized user intervention
- ▶ Hot key selection for tasks or user settings' menus
- ▶ Definition of system initial settings for a quick start
- ▶ Easy cloning by downloading the template file
- ▶ Integrated interface for downloading lookup files and uploading data

## INSTALLING FROM THE POWER SUITE CD-ROM

Data collection mainly consists of three elements: input (scanning or key-in), data processing, and output (or updating database). FORGE Application Generator for 8000/8300/8500 Series Mobile Computers is specifically designed to deal with the sequences of data processing inside the mobile computers.

- 1) Install FORGE Application Generator for 8000/8300/8500 Series Mobile Computers from the Power Suite CD-ROM.

If you did not change to install to a different folder, it will install the application to the default directory "C:\CipherLab\ForgelBatch".

- ▶ Shortcuts to the AG programs are created and placed in **Start > Programs > CipherLab > Forge > Batch > Application Generator** (see table 1 below).
- ▶ Shortcuts to the AG utilities are created and placed in **Start > Programs > CipherLab > Forge > Batch > Utility** (see table 2 below).

- 2) Download the AG runtime program (U8\*.SHX) and desired font file (.SHX) to the mobile computer via the "Program Load" utility accessible in **Start > Programs > CipherLab > Forge > Batch > Utility** (see table 2 below).

On the mobile computer, press [7] + [9] + [Power] simultaneously to enter System Menu > Load Program.

Table 1

SHORTCUT NAME OF AG PROGRAM	AG PROGRAM	APPLIED TO
AG 8000	AG8000N.exe	8000, 8001, 8020, 8021
AG 8300	AG8300m.exe	8300
AG 8500	AG8500.exe	8500

Table 2

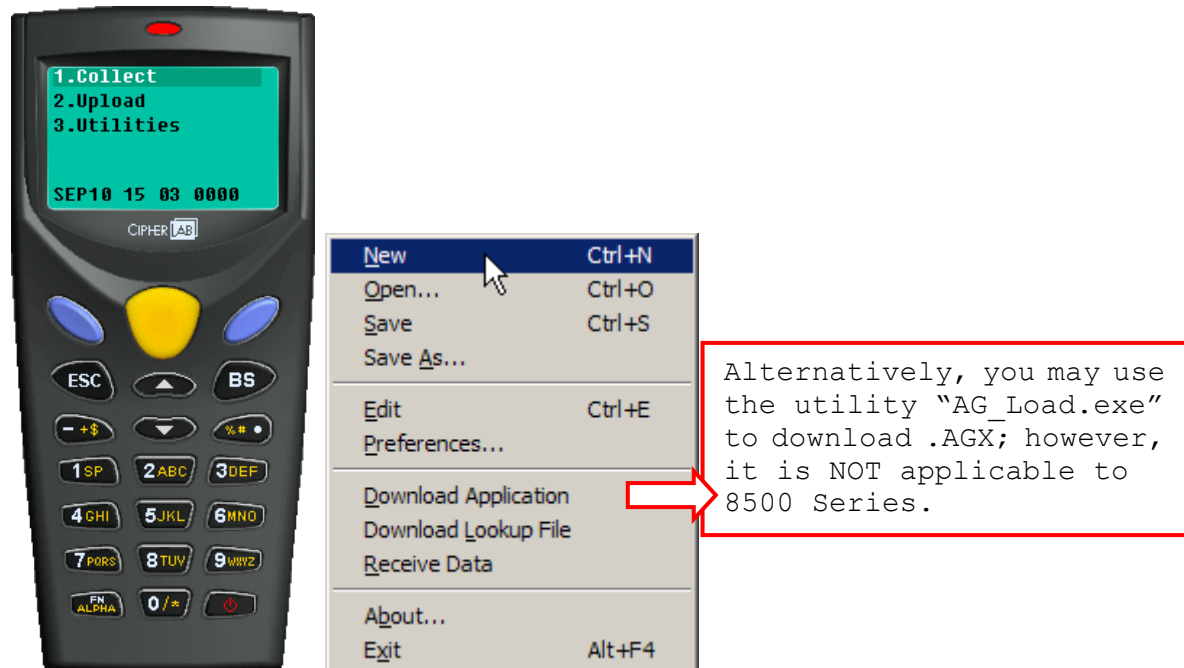
SHORTCUT NAME OF UTILITY	PROGRAM	APPLIED TO
AG Load	AG_Load.exe	8000, 8001, 8020, 8021, 8300
Download Lookup	DLookup.exe	8000, 8001, 8020, 8021, 8300, 8500
Data Read	Data_Read.exe	8000, 8001, 8020, 8021, 8300, 8500
Program Load	ProgLoad.exe	8000, 8001, 8020, 8021, 8300, 8500

Note: You may use the Batch AG program and runtime with any wireless mobile computer if wireless connectivity is not desired. Especially, when you use a Bluetooth mobile computer, say 8061, 8330 or 8360, you will be able to choose Bluetooth SPP for download and upload.

## GETTING STARTED

- 1) Run the AG program (AG8\*.exe) on your computer. The miniature image of the specific mobile computer pops up.
- 2) Right-click freely on the image or click the [Power] key on it.

The Command Menu appears as shown below.



### Design Application Template

- 3) Click [Edit] to start with a new or the latest application template, and upon completion, click [OK] to close the editing window.
- 4) Click [Save] or [Save As] to save the current editing template to file (\*.AGX for 8000/8300; \*.A85 for 8500).
- 5) Click [Preferences] to configure the download settings.

Make sure the download settings on the mobile computer and PC side are matching.

PC SIDE	MOBILE COMPUTER	
Command Menu > Preferences	▶ [3. Utilities] > [1. Settings] > [2. Download Port]	8000
	▶ [3. Utilities] > [1. Settings] > [3. Baud Rate]	
	▶ [3. Utilities] > [1. Program Settings] > [2. Download Interface]	8300, 8500
	▶ [3. Utilities] > [1. Program Settings] > [3. Transmission Speed]	

---

**Note:** For initial downloading of the application template, you must manually configure the download settings on the mobile computer. Then, the upload and download settings on the mobile computer will be overwritten by the settings of the application template after downloading.

---

- 6) Establish a proper connection between your mobile computer and the server.

### **Download Application Template File**

- 7) Click [Download Application] to download the template file (\*.AGX or \*.A85) to the mobile computer.

On the mobile computer, select [3. Utilities] > [6. Load Application] to download the template file. After downloading, the main menu is displayed.

---

**Warning:** In the application template file, the upload and download settings for the mobile computer and PC side must match. Refer to the Settings property page and Command Menu > [Preference].

---

### **Download Lookup Files**

- 8) If any lookup file is specified in use in the template file, you must download the lookup file(s).

Refer to section 1.5 [Lookup](#) (File) and 3 [Lookup](#).

Click [Download Lookup File] to download up to three lookup files for use. Alternatively, you may use the "DLookup.exe" utility to download text files for reference purpose.

On the mobile computer, select [3. Utilities] > [8. Load Lookup File] to download the associated lookup file(s). After downloading, the main menu is displayed.

### **Collect Data**

- 9) On the mobile computer, select [1. Collect Data] to start with the data collection task.

### **Upload Data**

- 10) Click [Receive Data] to receive the collected data (.txt) from to the mobile computer.

On the mobile computer, select [2. Upload Data] to send the collected data back to the server.

- ▶ Data file(s)
- ▶ Lookup file(s), if any in use
- ▶ All (one by one)
- ▶ All (append), that is, all-in-one

Refer to section 1.6 [Record](#) and 3.9 [Lookup Data Can Be Uploaded](#).

If no lookup files are defined on both the Form and Lookup property pages, you may receive data from the mobile computer via the "Data Read" utility.

### **Manipulate Data**

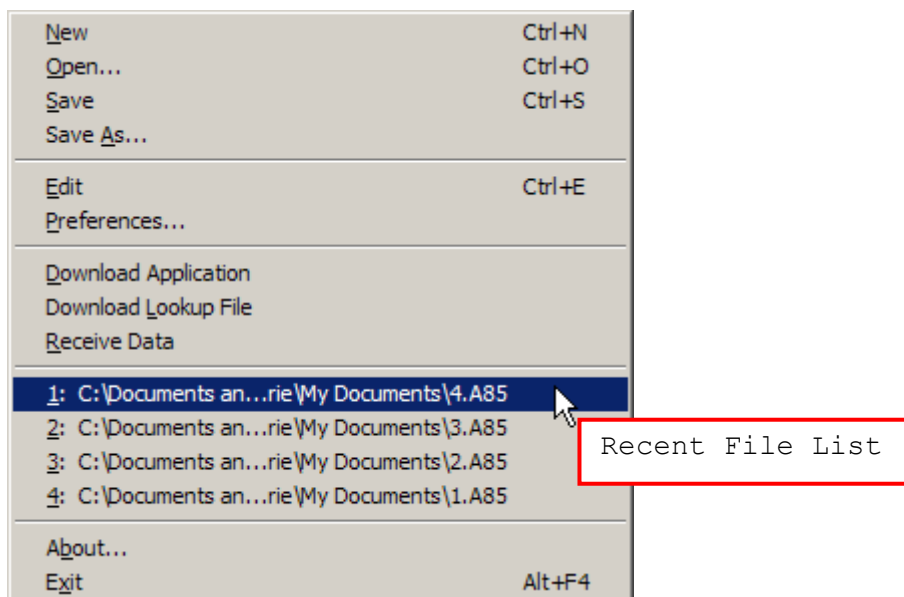
- 11) On the mobile computer, select the following submenus if you want to edit the collected data –
- [3. Utilities] > [2. Browse Data]
  - [3. Utilities] > [3. Delete Data] (Refer to section 5.1.6 [Data Deletion](#).)
-

## COMMAND MENU

When the Command Menu first appears, it displays the following commands.

COMMAND	ACTION...
New	To create a new application template.
Open	To open an existing application template. File path needs to be specified.
Save	To save the current editing template.
Save As	To save the current editing template to a new file.
Edit	To edit a new or the latest application template.
Preferences	To configure the COM port and language settings.
Download Application	To download the current application template to the mobile computer.
Download Lookup File	To download associated lookup file(s) to the mobile computer.
Receive Data	To receive data from the mobile computer.
About...	To show information about the Application Generator.
Exit	To close the Application Generator.

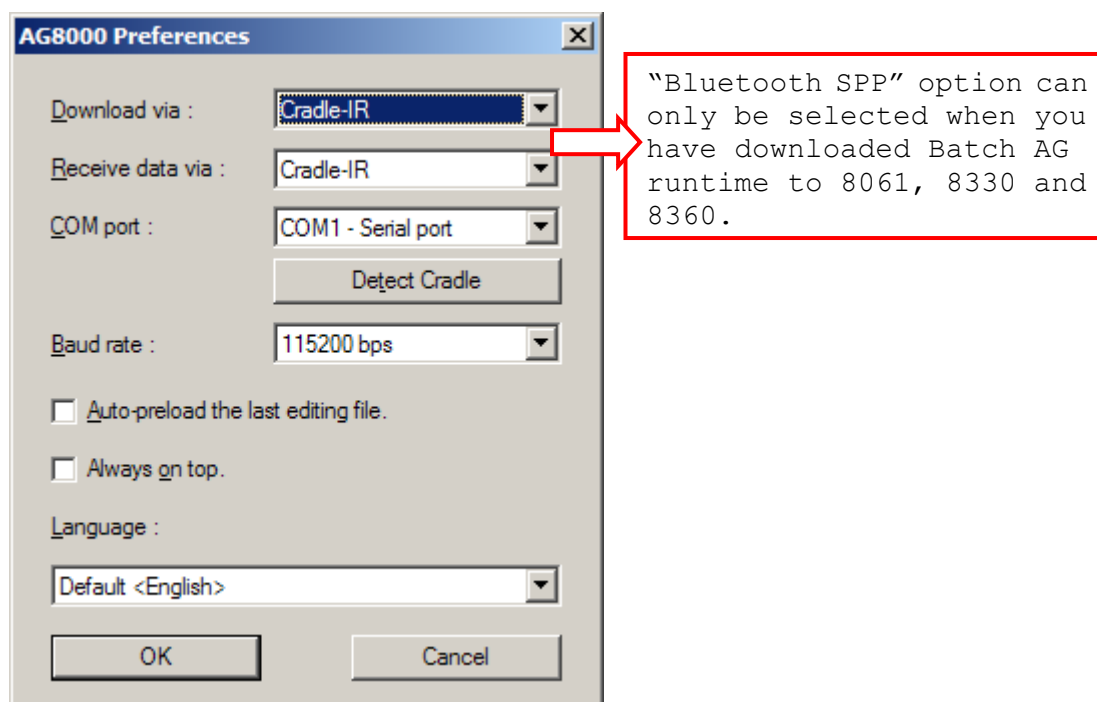
## RECENT FILE LIST



If you ever saved a template, it will be displayed in the Command Menu as well. Up to 4 recent template files are listed for quick access.

- ▶ The first file on the recent file list is the latest template you work on. If you accidentally clicked the Close button or [OK] of the template, simply click the Edit command to re-open it.
- ▶ You may click any of the four files to open the template for editing. It will then be placed on top of the list.

## PREFERENCES



### ► Download and Upload Settings

You have to specify correct download and upload interface, as well as the related settings, for downloading the template file and uploading the collected data to the server.

Refer to the [Settings](#) property page.

**Warning:** Download and upload settings on PC side and the mobile computer must match; otherwise, the downloading and uploading will fail.

### ► Auto-preload the last editing file.

You may select the check box so that the last editing file will be loaded upon running the AG program (AG8\*.exe).

### ► Always on top.

You may select the check box so that the AG program (AG8\*.exe) always remains on top of all other windows on the desktop.

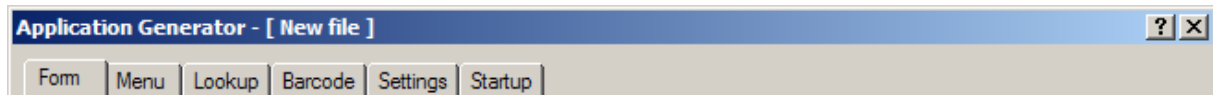
### ► Language

If there is any language file (\*.lng) saved in the same folder where the AG program (AG8\*.exe) is saved, language options will become available. You will be able to select a preferred language for the GUI of the program. Refer to [Localization](#).

## APPLICATION TEMPLATE

To work on a new or existing application template, click the New, Open, or Edit command.

An application template is composed of five tabs; each is a property page for custom configurations.



### PROPERTY PAGES

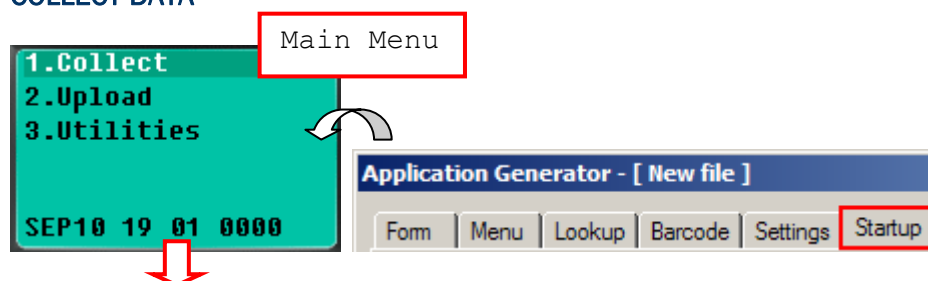
- Form** Forms are used to show information and allow for data input, which may be placed under a user menu, e.g. [I. Collect Data] > (Menu 1) > Form 1.
- Menu** Menus are used to provide multi-level options, which may be placed under the main menu, e.g. [I. Collect Data] > Menu 1 > (Menu 2) > Form 1.
- Lookup** Data of forms may make reference to one or up to 3 lookup files. You need to specify the data format of a lookup file.
- Barcode** You may configure symbologies and barcode parameters.
- Settings** You may configure system settings so that they will take effect when initialization is done on the mobile computer.
- Startup** You may configure program sequences and customize user interface on the mobile computer.

**Warning:** On the Barcode tab, you must select the correct barcode reader even though no modification is made to its settings. Otherwise, it will indicate "wrong reader type" after downloading the template file to the mobile computer and cause the reader to fail!

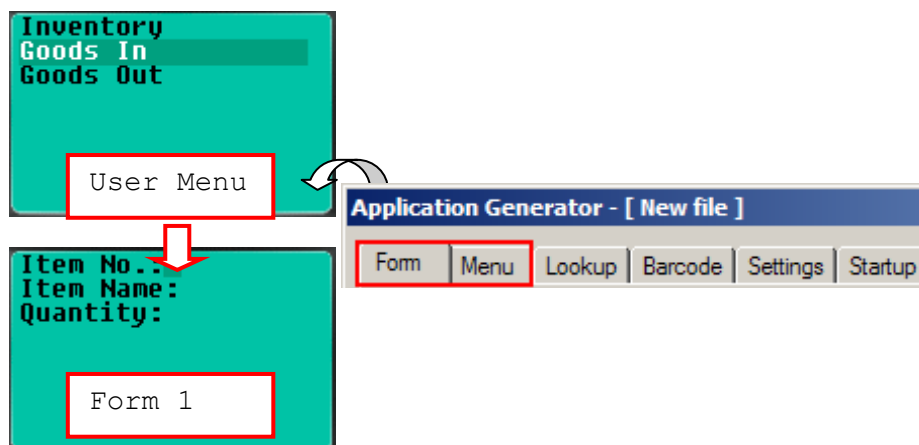
## PROGRAM SIMULATION

When you have completed the entire configuration, download the application template file (.AGX or .A85) to the mobile computer. On the other hand, you may run program simulation to verify that program sequences meet your requirements.

### COLLECT DATA



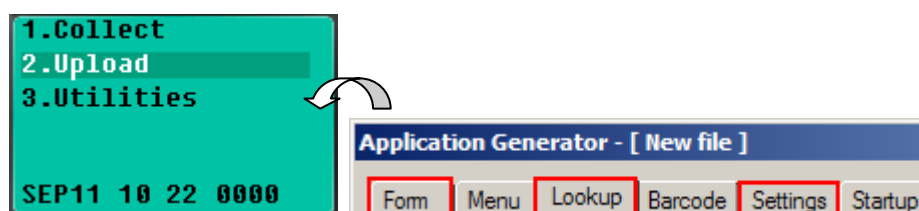




## UPLOAD DATA

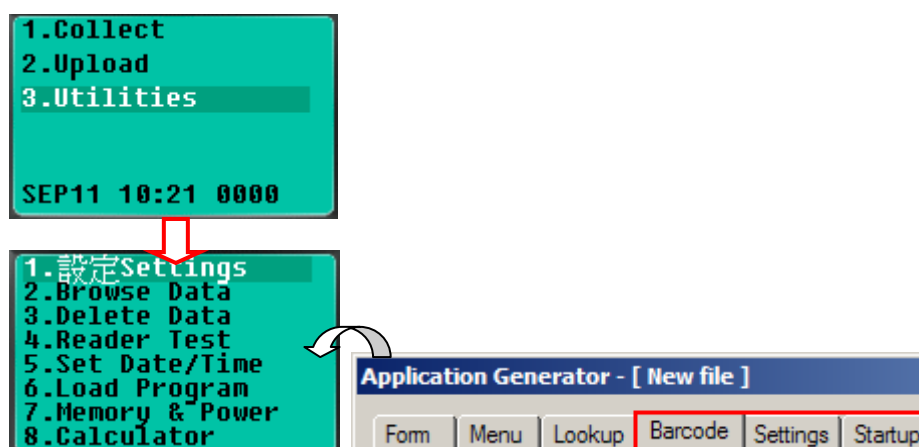
No simulation.

- ▶ Refer to section 1.6 [Record](#) and 3.9 [Lookup Data Can Be Uploaded](#). Normally, it will proceed to connect via the selected upload port.
- ▶ Refer to section 5.1.6 [Data Deletion](#) for data manipulation.



## UTILITIES

- ▶ In the application template file, the upload and download settings for the mobile computer and PC side must match. Refer to Command Menu > [\[Preference\]](#) and the [Settings](#) property page.
- ▶ If a lookup file is specified in use on the Lookup property page, [3. Utilities] > [8. Calculator] will be replaced by [3. Utilities] > [8. Load Lookup File] after you download the template file to the mobile computer.



## LOCALIZATION

If you want to customize the entire application to your local language, you must translate the text of the user interface into your own language, as well as re-define menus and messages for the runtime.

- 1) Download the desired font file (.SHX) to the mobile computer via the "Program Load" utility.  
On the mobile computer, press [7] + [9] + [Power] simultaneously to enter System Menu > Load Program.
- 2) Save the original language file (.lng) of the AG program as a new file - translate the text of the user interface from English to another language.
- 3) Click [[Preferences](#)] from the Command Menu and select this new .lng file for the current language.
- 4) Re-define the template prompts and messages on the [Startup](#) property page of the application template.
  - ▶ Apply large font on the [Form](#) and [Menu](#) property pages for double-byte languages such as Japanese, Chinese, etc., so that their contents will be displayed properly on the actual screen. However, the rest of prompts and messages can only be displayed in alphanumeric characters in the current system.
- 5) Click [Download Application] to download the template file (.AGX or .A85) to the mobile computer.
- 6) Turn on the mobile computer to run the AG runtime program, U8\*.SHX.  
Select [3. Utilities] > [6. Load Application] to download the template file.

## FORM

A form is a data collection template with input prompts. Data will be kept as a transaction record after the user completes all the input fields (lines) of a form. Then, it can be saved in a transaction file, added to its lookup database, or directly output to a printer, etc.

- ▶ Each form allows at most eight input fields (8 lines).
- ▶ Ten different forms can be defined.

The attributes on this property page are explained in detail as follows.

**Application Generator - [ New file ]**

Form | Menu | Lookup | Barcode | Settings | Startup

1 Name: form 1 3 Esc: main 5 Lookup: 1st lookup file 7 Time Stamp

2 Font: small 4 Next: form 1 6 Record: save 8 Branch

Line	Data type	Prompt	Input source	Min length	Max length	Lookup	Properties
#1	text	Item:	both	1	15	field 1	more...
#2	lookup	Description:	both	0	80	field 2	more...
#3	text	Bin:	both	1	5	field 3	more...
#4	integer	Q'ty:	keypad	1	5	field 4	more...
#5	nil		both	0	80	nil	more...
#6	nil		both	0	80	nil	more...
#7	nil		both	0	80	nil	more...
#8	nil		both	0	80	nil	more...

OK Cancel

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### 1.1 NAME

Select a name for the form you work on. Usually start with "form I".

- ▶ form I ~ 10

### 1.2 FONT

Large font (8x16) must be applied for double-byte languages, such as Chinese, Japanese, etc. On the Form and Menu property pages, font size needs to be changed accordingly. Refer to [Localization](#).

MOBILE COMPUTER	SMALL (FONT 6X8)	LARGE (FONT 8X16)
8000 Series	16 characters by 8 lines (default)	12 characters by 4 lines
8300 Series	20 characters by 8 lines (default)	15 characters by 4 lines
8500 Series	N/A	20 characters by 9 lines

Note: This setting is not available for 8500 Series because it must use large font.

### 1.3 ESC

Select a form or menu that will be displayed when you press the [ESC] key on the mobile computer. For settings of user menus, refer to the [Menu](#) property page.

- ▶ Main Menu
- ▶ form I ~ 10
- ▶ menu I ~ 10

Note: Normally, the [ESC] key is used to return to a previous form or menu.

## 1.4 NEXT

Select a form or menu that will be displayed when the last input field of the current form has been completed. For settings of user menus, refer to the [Menu](#) property page.

- ▶ Main Menu
- ▶ form 1 ~ 10
- ▶ menu 1 ~ 10

This function is invoked by sending the key value of [Enter] when you finish with the last input field. And, the setting of section 1.11 [Input Source](#) decides the way to produce the key value of [Enter].

INPUT SOURCE OF THE LAST LINE	OPERATION
Reader	In section 1.15 <a href="#">Properties</a> , Auto ENTER for barcode input must be configured as "Scan + ENTER".
Keypad	Press the [Enter] key on the 8000/8300/8500 Series mobile computer.
Both	See the two options above.
RFID	Press the [Enter] key on the 8300/8500 Series mobile computer.
All	See all the options above.

## 1.5 LOOKUP (FILE)

A lookup file is a database. Select whether or not a lookup file is associated with the form.

If a lookup file is used, its data format must be defined on the [Lookup](#) property page, especially the member length and number of fields.

On this property page, some related settings must be configured.

- ▶ section 1.9 [Data Type](#)
- ▶ section 1.14 [Lookup](#) (Field)

Note: The associated lookup file(s) must be downloaded to the mobile computer.

## 1.6 RECORD

Select which action to take as soon as the input fields of a form have been completed.

OPTIONS	ACTION...
save	To save the record to a sequential data file.

<i>update lookup</i>	To update the lookup file associated with the form.
<i>save &amp; update</i>	To save the record to a sequential data file, and update the lookup file.
<i>pass down</i>	To pass down data to the next form or menu without saving.
<i>output record</i>	To output the record directly to a printer through COM port instead of saving it to a file.
<i>output screen</i>	Similar to "output record". To output what is displayed on the screen, such as the prompts and data collected.
<i>save &amp; output record</i>	To save the record to a sequential data file and output it directly to a printer through COM port.
<i>save &amp; output screen</i>	To save the record to a sequential data file and output what is displayed on the screen to a printer through COM port.

Note: Instead of saving all the collected data to a data file, you may select to save the collected data for each form to separate data files on the Menu property page.

Based on the selected option of **Record** and section 3.9 [Lookup Data Can Be Uploaded](#), you can upload data file(s) or lookup file(s), or both files ("All, one by one"), or even merge them to a new file ("All, append").

Note: The uploaded file is a sequential file.

► Data file:

This is available only when you have selected "Save" or "Save & update" or "Save & output record" or "Save & output screen" for **Record**.

► Lookup file:

This is available only when you have specified a lookup file in use and allowed it to be uploaded.

On the mobile computer, select [2. Upload Data] after you have completed the data collection task and establish a proper connection with the server.

Warning: If you have selected "output record" or "output screen" for Record, [2. Upload Data] on the mobile computer will become unavailable.

## 1.7 TIME STAMP

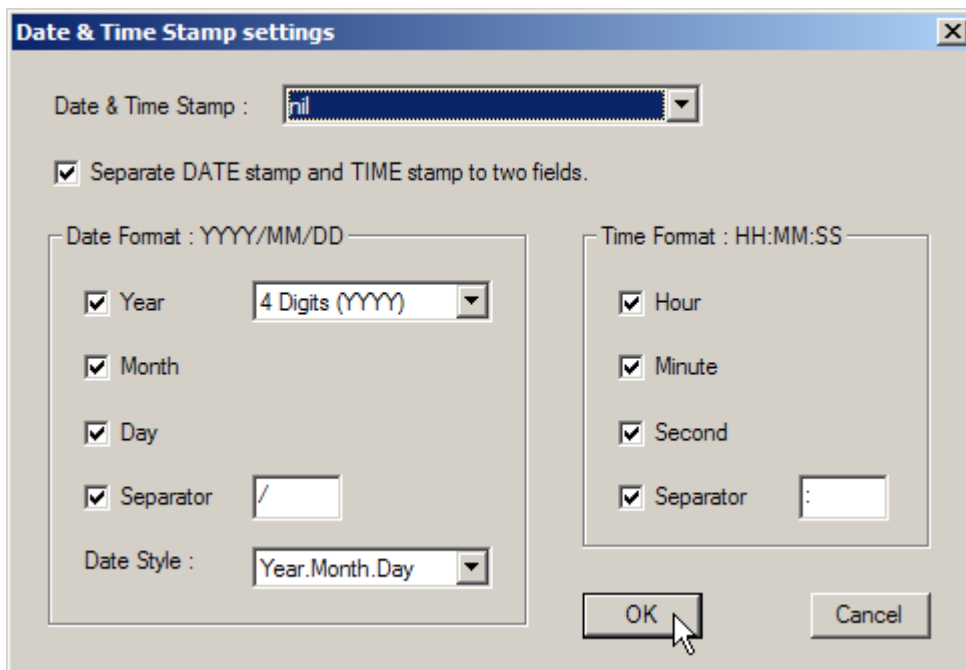
This feature actually includes Date and Time stamp. It may be helpful in analyzing data when the date and time information is joined in each record.

► Stamp Position

You can select whether or not to enable the stamp function and include the date/time information, either to the beginning or to the end of a record.

► Date/Time Format

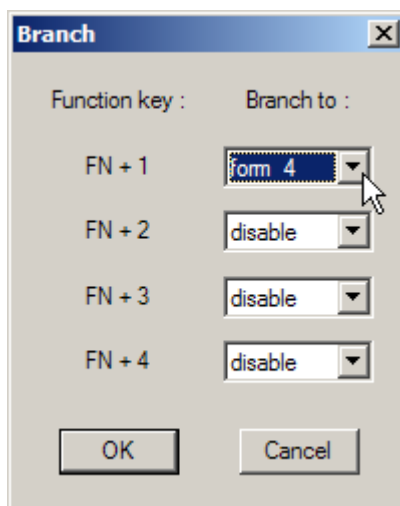
Select the format of the Date and Time stamps. To stop the use of either stamp, clear all the associated settings.



The 'Date & Time Stamp settings' dialog box has a title bar with a close button. It contains a 'Date & Time Stamp' dropdown menu currently set to 'nil'. Below this is a checked checkbox labeled 'Separate DATE stamp and TIME stamp to two fields.'. The dialog is divided into two main sections: 'Date Format : YYYY/MM/DD' and 'Time Format : HH:MM:SS'. The 'Date Format' section includes checkboxes for 'Year', 'Month', and 'Day', all of which are checked. The 'Year' checkbox has a dropdown menu set to '4 Digits (YYYY)'. There is also a 'Separator' checkbox (checked) with a text input field containing '/'. At the bottom of this section is a 'Date Style' dropdown menu set to 'Year.Month.Day'. The 'Time Format' section includes checkboxes for 'Hour', 'Minute', and 'Second', all of which are checked. It also has a 'Separator' checkbox (checked) with a text input field containing ':'. At the bottom right are 'OK' and 'Cancel' buttons. A mouse cursor is pointing at the 'OK' button.

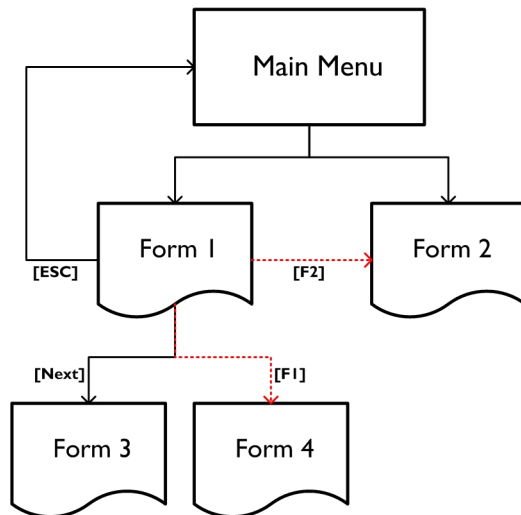
## 1.8 BRANCH

Normally, a form is to be followed by either another form or menu. This feature is provided when a form is designed to lead to more than one other form. Also, it allows the linking to another form, which may jump over a number of forms or menus. Up to four branches are provided through the use of function keys.



The 'Branch' dialog box has a title bar with a close button. It contains two columns: 'Function key :' and 'Branch to :'. There are four rows corresponding to function keys: 'FN + 1', 'FN + 2', 'FN + 3', and 'FN + 4'. The 'Branch to :' column has dropdown menus for each. 'FN + 1' is set to 'form 4', 'FN + 2' is set to 'disable', 'FN + 3' is set to 'disable', and 'FN + 4' is set to 'disable'. At the bottom are 'OK' and 'Cancel' buttons. A mouse cursor is pointing at the 'form 4' dropdown menu.

Take the following illustration for example.



Note: Data cannot be passed down through branches.

## 1.9 DATA TYPE

Specify the data type line by line to address your application requirements.

The associated settings for each data type are marked in the table below.

DATA TYPE	PROMPT		INPUT SOURCE	LENGTH	LOOKUP	PROPERTIES
	<i>on-screen</i>	<i>saved in record</i>		<i>Min / Max</i>	<i>Field</i>	<i>More...</i>
nil						
text	✓		✓	✓	✓	✓
letter	✓		✓	✓	✓	✓
alphanumeric	✓		✓	✓	✓	✓
integer	✓		✓	✓	✓	✓
real	✓		✓	✓	✓	✓
auto (+/-)	✓		✓	✓	✓	✓
extension						
pass down	✓					
boolean	✓		✓		✓	✓
lookup	✓	User-definable			✓	✓
fixed data	✓	✓				✓



prompt	✓					
pause	✓					
counter	✓					

### 1.9.1 NIL

No data input is allowed.

- ▶ This is the default setting. There will be single line spacing on the mobile computer screen.

### 1.9.2 TEXT

Any character is acceptable. For example, \$1a2b3c=-\*/...

### 1.9.3 LETTER

Any letter is acceptable, capital or small. For example, Aa ~ Zz

### 1.9.4 ALPHAMERIC

A combination choice of **alphabetic** (1.9.3) and **numeric** (1.9.5); any alphabet or number is acceptable. For example, ABC123xyz

### 1.9.5 INTEGER

Any Integer number is acceptable. For example, 1234567890

### 1.9.6 REAL

Any real number is acceptable. For example, 4.56

- ▶ When **integer** or **real** is selected along with lookup field specified, the lookup value will be first displayed in the input field on the mobile computer screen. Then, data input is allowed.

LOOKUP (FIELD)	IF YOU SELECT "SAVE & UPDATE" FOR RECORD...
field 1 ~ 8	The input value will overwrite the lookup value. No arithmetic operations are performed.
+ field 1 ~ 8	It will automatically add the input value to the lookup value.
- field 1 ~ 8	It will automatically subtract the input value to the lookup value.

```
Product Code:9950
Description:Coke
Bin:A1B01
Quantity:4000
```

Lookup field : field (no sign)

If input value is 5,  
the value saved in transaction record is 5,  
and the value saved to lookup file is 5 too.

```
Product Code:9950
Description:Coke
Bin:A1B01
Quantity:4000
```

Lookup field : +field

If input value is 5,  
the value saved in transaction record is +5,  
and the value saved to lookup file is 4005.

```
Product Code:9950
Description:Coke
Bin:A1B01
Quantity:4000
```

Lookup field : -field

If input value is 5,  
the value saved in transaction record is -5,  
and the value saved to lookup file is 3995.

## 19.7 AUTO (+/-)

Any Integer number is acceptable. For example, 123

- ▶ This is similar to data type **integer**, except that the lookup value is displayed before the input field. There may be an arithmetic sign (+, -) in front of the input field, which depends on the setting of the lookup field.

```
Product Code:9950
Description:Coke
Bin:A1B01
Quantity:1000 ■
```

Lookup field : field (no sign)

If input value is 5,  
the value saved in transaction record is 5,  
and the value saved to lookup file is 5 too.

```
Product Code:9950
Description:Coke
Bin:A1B01
Quantity:1000 + ■
```

Lookup field : +field

If input value is 5,  
the value saved in transaction record is 5,  
and the value saved to lookup file is 1005.

```
Product Code:9950
Description:Coke
Bin:A1B01
Quantity:1000 - ■
```

Lookup field : -field

If input value is 5,  
the value saved in transaction record is 5,  
and the value saved to lookup file is 995.

### 1.9.8 EXTENSION

No data input is allowed.

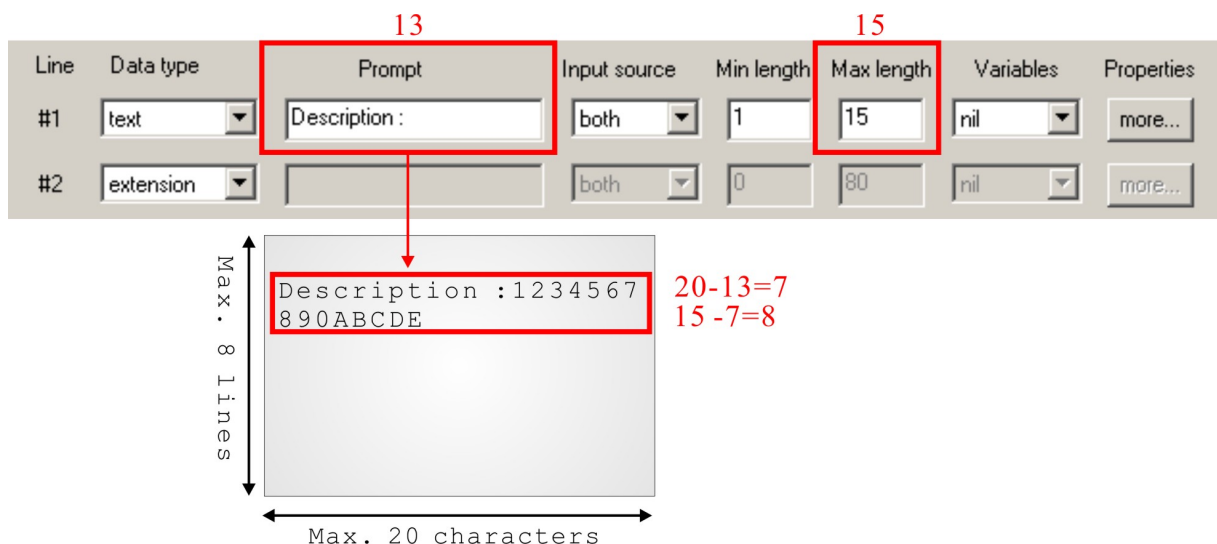
- ▶ The line needs to be reserved as an "extension" of the previous line so that the whole input data can be displayed on the mobile computer screen.

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.



### 1.9.9 PASS DOWN

No data input is allowed.

- ▶ Data of this line may be imported from a previous form, of which the setting of **Record** is specified as "pass down". When one line is not enough for displaying the inherited contents, set its following line(s) to be an "extension". Or, it may be imported from a menu, of which the setting of **Data** is specified as "pass down".

Note: This data type is used to combine a number of forms so that they can be saved as one record.

### 1.9.10 BOOLEAN

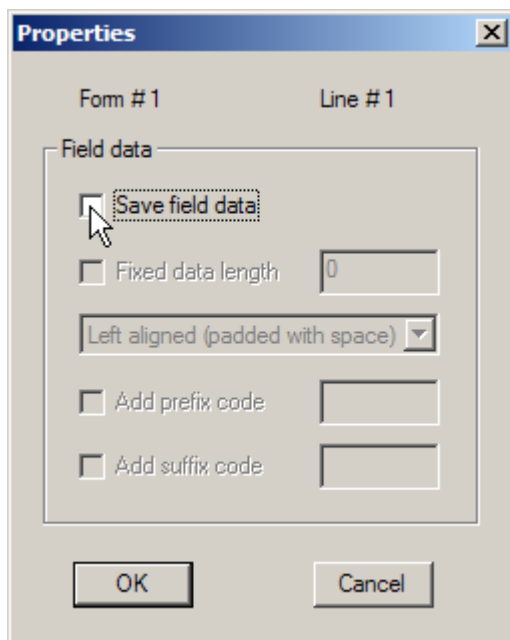
Only one of these sets of values are acceptable - "0 or I", "Y or N" and "T or F".

- ▶ 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!"

### 1.9.11 LOOKUP

No data input is allowed.

- ▶ When data of a previous input field is found matching with the "[key field](#)" of a lookup file, data of this input field will be imported from its associated lookup field. By default, the imported data will not be saved in the transaction record. In section 1.15 [Properties](#) as shown below, you may select **Save field data**.



The screenshot shows a 'Properties' dialog box with a title bar containing a close button. Inside, there are labels for 'Form #1' and 'Line #1'. A section titled 'Field data' contains several options: a checked checkbox for 'Save field data' (highlighted by a mouse cursor), an unchecked checkbox for 'Fixed data length' next to a text box containing '0', a dropdown menu set to 'Left aligned (padded with space)', an unchecked checkbox for 'Add prefix code' next to an empty text box, and an unchecked checkbox for 'Add suffix code' next to an empty text box. At the bottom are 'OK' and 'Cancel' buttons.

---

Note: The lookup value is imported for reference. No change is allowed.

---

### 1.9.12 FIXED DATA

No data input is allowed.

- ▶ The prompt string will be saved as part of the transaction record.

### 1.9.13 PROMPT

No data input is allowed.

- ▶ The prompt string will not be saved.

### 1.9.14 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.

### 1.9.15 COUNTER

No data input is allowed.

- ▶ The current record count will be displayed in five digits, starting from 00000. Refer to section 5.1.7 [Entry Options](#).

---

Note: When the main menu appears, the record count will be displayed on the bottom of the screen (next to date and time).

---

## 1.10 PROMPT

Specify a prompt string for a specific input field, if necessary.

---

Note: Unless data type of a line is "fixed data", a prompt string will not be saved in a transaction record.

---

## 1.11 INPUT SOURCE

Specify from which source data can be collected.

- ▶ Reader
- ▶ Keypad
- ▶ Both
- ▶ RFID (only applicable to 8300, 8500 Series)
- ▶ All (only applicable to 8300, 8500 Series)

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

When the input source is specified to "reader" only, you need to enable "Auto ENTER" for barcode input settings in section 1.15 [Properties](#).

---

Note: When "RFID" is selected, you may still press the [ESC] or [Enter] key to cancel or confirm a task. The rest keys on the keypad are disabled.

---

## 1.12 MINIMUM LENGTH

Specify the minimum length of an input field.

- ▶ If the input data is shorter than specified, it will be considered unacceptable. A warning message will be displayed to indicate "Data is too short!"

## 1.13 MAXIMUM LENGTH

Specify the maximum length of an input field. The value can be 80 at most.

You can facilitate data input by showing input marks on the screen. In section 1.15 [Properties](#), select **Show input mark**. The number of input marks equals to the maximum length specified here.

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

### 1.13.1 INPUT VIA BARCODE/RFID READER

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

### 1.13.2 INPUT VIA KEYPAD

For data input from the keypad, it will be allowed even though data has become 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	Data type	Prompt	Input source	Min length	Max length	Lookup	Properties
#1	text	Description:	both	1	10	nil	more...
#2	nil		both	0	50	nil	more...
#3	text	Description:	both	1	10	nil	more...
#4	extension		both	0	50	nil	more...
#5	text	Description:	both	1	15	nil	more...
#6	extension		both	0	50	nil	more...
#7	text	Description:	both	1	30	nil	more...
#8	extension		both	0	50	nil	more...

LINE	INPUT FROM KEYPAD	SCREEN READING	TRANSACTION RECORD
#1	I2345678	I2345678	I2345678
	I234567890	34567890	I234567890
	I234567890ABCDE	3456789E	I23456789E
#3, 4	I234567890A	I23456789A	I23456789A
#5, 6	I234567890LEMONADE	I234567890LEMOE	I234567890LEMOE
#7, 8	I234567890ORANGE_JUICE	I234567890ORANGE_JUICE	I234567890ORANGE_JUICE

## 1.14 LOOKUP (FIELD)/VARIABLES

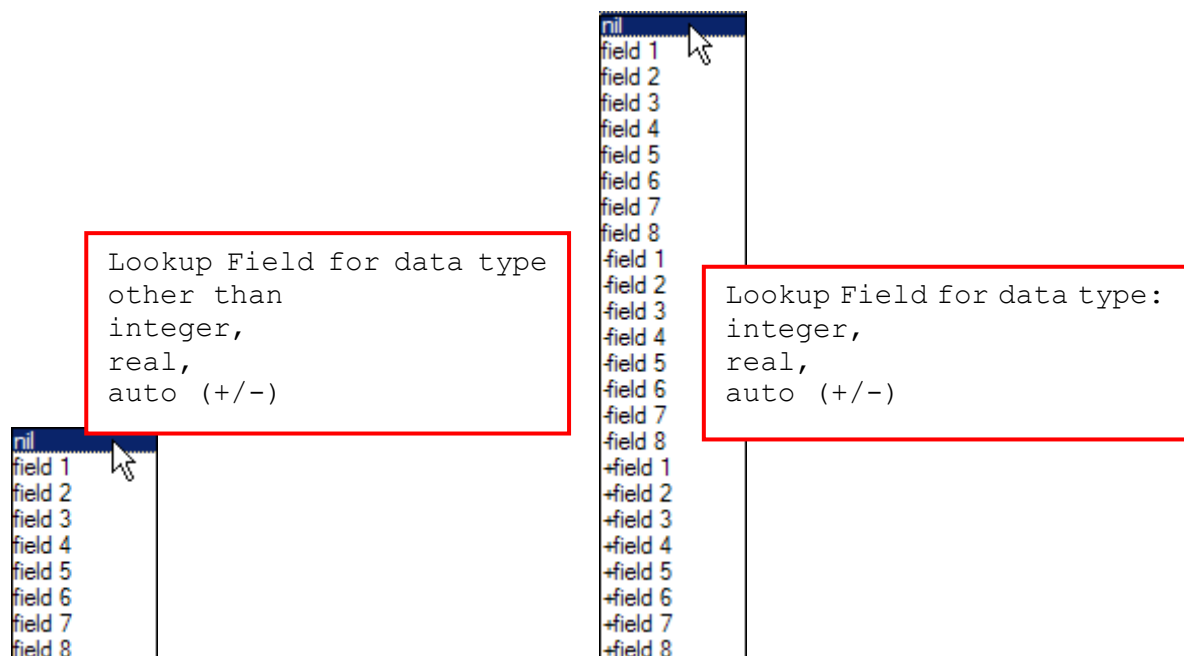
If there is no lookup file in use, this feature will be **Variables**. Refer to section 1.5 [Lookup](#) (File).

### 1.14.1 LOOKUP (FIELD)

If a lookup file is in use, you need to specify the corresponding lookup field line by line. For each lookup file, there will be a key field. Normally, the "[key field](#)" is Field #1. When an input field makes reference to the key field and its input data is found matching, data for its following input fields will be imported from each corresponding lookup fields.

- ▶ For those data types other than **integer**, **real**, and **auto (+/-)**, see left below.
- ▶ For data types **integer**, **real**, and **auto (+/-)**, see right below.

When an arithmetic sign (+, -) is prefixed to the lookup field, the input data will be added or subtracted from the lookup value.



### 1.14.2 VARIABLES

If there is no lookup file in use, it will provide variables, which can be accessed by different forms.

For example,

- ▶ Select **set vI** for input field #1 of form 1, and its input data will be saved in the first character array.
- ▶ Select **get vI** for input field #3 of form 2, and the previous input data will be imported.
- ▶ Select **get&set vI** for input field #3 of form 2, the previous input data will be imported and then updated.

### 1.15 PROPERTIES

Specify field properties if necessary.

The screenshot shows the 'Properties' dialog box for Form #1, Line # 1. The dialog is divided into two main sections: 'Field data' and 'Barcode input'. The 'Field data' section includes checkboxes for 'Fixed data length' (set to 0), 'Initial value or text', 'Add prefix code', 'Add suffix code', and 'Show input mark'. It also has a dropdown for 'Left aligned (padded with space)' and a 'Decimal places' dropdown set to 'variable'. The 'Barcode input' section includes checkboxes for 'Read partial barcode', 'Check leading code', and 'Check digit verification'. It has input fields for 'Start position' (1) and 'Maximum length' (20). A dropdown for 'MOD 10 Double-Add-Double (next high)' is present. The 'Auto ENTER' dropdown is set to 'Scan+ENTER'. At the bottom are 'OK' and 'Cancel' buttons.

#### 1.15.1 FIELD DATA

##### FIXED DATA LENGTH

Select the check box. The data length will be fixed to the value specified here.

- ▶ If the input data is longer, it will be truncated.
- ▶ If the input data is shorter, "Space" or "0" will be added in front of or to the end of the data based on either "Left" or "Right" alignment.



Below are some examples.

FIXED DATA LENGTH	ALIGNMENT	INPUT DATA	TRANSACTION RECORD
4	Left aligned / space	123456789	1234,
4	Right aligned / space	123456789	6789,
10	Left aligned / 0	7654321	7654321000
10	Right aligned / 0	7654321	0007654321

### 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. Click the editing box next to it, and select one or more codes from the Grid Control (ASCII 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. Click the editing box next to it, and select one or more codes from the Grid Control (ASCII codes).

Instead of using delimiters in section 6.2 [Data Field Delimiter](#), 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.

### SHOW INPUT MARK

Select the check box to show input marks, such as underline (\_) or asterisk (\*), which is to be replaced by input data.

The number of input marks shown on the screen equals to the maximum length of data specified in section 1.13 [Maximum Length](#).

### DECIMAL PLACES

A decimal place is the position of a digit to the right of a decimal point. When the data type is **real**, you may need to specify its decimal places.

- ▶ By default, it is set **variable** to accept all real numbers.

For example, 4 is selected for decimal places, however, there are only 2 decimal places in the input number, say "8.12". To follow this rule, the system will save the input data as "8.1200". If the input number is "8.12345", it will be saved as "8.1234".

### 1.15.2 BARCODE INPUT

#### 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.

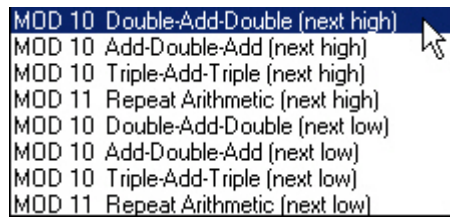
LEADING CODE	BARCODE SCANNED	TRANSACTION RECORD
9	9876543210	9876543210
2	9876543210	(Error: code not matching)

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)

#### CHECK DIGIT VERIFICATION

The check digit refers to the digit in the end of a barcode, as a one-digit derived checksum digit. Select the check box to verify the barcode input. You may apply different modulus 10 or 11 check digit as provided in the drop-down menu. When the check digit is not matching, the barcode will be rejected.



---

## 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 either to the next input field, or to the next form/menu specified. This function will automatically add a carriage return in front of or to the end of the barcode input.

- ▶ For barcode scanning, it proves to be timesaving when **Scan+ENTER** is enabled.
- ▶ For a typical application of continuous scanning, it is efficient by making use of **ENTER+Scan**.



## MENU

A menu is a list of selection items. Up to ten different menus can be defined.

Below are the settings for each field of a menu.

**Application Generator - [ New file ]**

Form | **Menu** | Lookup | Barcode | Settings | Startup

1 Name : menu 1

2 Font : small

3 Esc : main

4 ☐ Menu caption :

7 Data

- ☐ Save caption
- ☐ Save selected item
- ☐ Pass down

5

Item No.	Item Name
#1	
#2	
#3	
#4	
#5	
#6	
#7	
#8	
#9	
#10	

6

Next :

main

main

main

main

main

main

main

main

main

main

8 ☐ Save the collected data for each form to separate data files. Edit file name

9 Reset

OK Cancel

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2.8 Save the collected data.....	31
2.9 Reset.....	32

## 2.1 NAME

Select a name for the current menu you work on. Usually start with "menu 1".

- ▶ menu 1 ~ 10

## 2.2 FONT

Large font (8x16) must be applied for double-byte languages, such as Chinese, Japanese, etc. On the Form and Menu property pages, font size needs to be changed accordingly.

Refer to [Localization](#) and section 1.2 [Font](#).

## 2.3 ESC

Select a form or menu that will be displayed when you press the [ESC] key on the mobile computer.

- ▶ Main Menu
- ▶ form 1 ~ 10
- ▶ menu 1 ~ 10

---

Note: Normally, the [ESC] key is used to return to a previous form or menu.

---

## 2.4 MENU CAPTION

Select the check box and specify a caption for the current menu if necessary.

## 2.5 ITEM NAME

Specify a name for each menu item. It allows up to ten menu items.

For example, you may specify "1. Goods In" or "Goods In" (see below) in the first field of Item Name.



---

Note: Whether you have included Item No. in the name field, you can press [I] on the mobile computer to enter the "Goods In" menu.

---

## 2.6 NEXT

Select a form or menu that will be displayed when a menu item has been selected.

- ▶ Main Menu
- ▶ form 1 ~ 10
- ▶ menu 1 ~ 10

This function can be invoked by performing one of the following actions on the mobile computer -

- ▶ Press the shortcut key (Item No.) of a menu item, e.g. press [2] to select the second menu item. The form or menu you specified here will be displayed then.
- ▶ Press the [Up/Down] arrow keys to select a menu item, and then press [Enter].

## 2.7 DATA

Specify how to proceed when a menu item has been selected.

### 2.7.1 SAVE CAPTION

Save the menu caption to the transaction record if this menu is running.

### 2.7.2 SAVE SELECTED ITEM

Save the selected menu item to the transaction record if this menu applies.

### 2.7.3 PASS DOWN

If you have selected to save any of the above items, decide whether or not to pass it to the next menu or form. (No menu caption or item saved to the transaction record.)

- ▶ Save caption & pass down
- ▶ Save selected item & pass down
- ▶ Save both & pass down

---

Note: The selected option(s) will be passed down to an associated form or menu.

---

## 2.8 SAVE THE COLLECTED DATA...

When a menu leads to more than one form, you may select the check box to save the data collected from each form to individual files.

The check box of "Pass down" for **Data** will automatically be selected. That is, the menu caption or selected item name will be saved together with separate forms if you have selected the check box for each.

## 2.9 RESET

Click this button to load the default settings.

---

Note: The current settings for all menus will be cleared.

---



## LOOKUP

A lookup file is a database file created for information reference. Up to three lookup files can be defined.

If settings on this property page are specified improperly, it may go wrong when an input field makes reference to its corresponding lookup field.

If the default settings remain unchanged for the following items in the AG template file that has been downloaded to your mobile computer, [3. Utilities] > [8. Load Lookup File] will be unavailable.

- ▶ section 1.5 [Lookup](#) (File)
- ▶ section 3 [Lookup](#)

Other related settings:

- ▶ section 1.9.11 [Lookup](#) (Data Type)
- ▶ section 1.14.1 [Lookup](#) (Field)

**Application Generator - [ New file ]**

Form | Menu | **Lookup** | Barcode | Settings | Startup

**1** Name : 1st lookup file

Member length : **3** 0

Number of fields : **4** 0

**2** Field property

☒ Fixed length

☐ Delimiter 0 (ASCII)

**8** ☐ Only read data once

**9** ☒ Lookup data can be uploaded

**10** Action when the format of record is wrong : Stop the download process

**11** Action when the input data has no match : Continue

**12** Reset

Field	<b>5</b> Offset	<b>6</b> Length	<b>7</b> Key field
#1	1	0	<input type="radio"/>
#2	1	0	<input type="radio"/>
#3	1	0	<input type="radio"/>
#4	1	0	<input type="radio"/>
#5	1	0	<input type="radio"/>
#6	1	0	<input type="radio"/>
#7	1	0	<input type="radio"/>
#8	1	0	<input type="radio"/>

OK Cancel

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---

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### 3.1 NAME

Select a lookup file you want to define its settings. Up to 3 different lookup files can be specified. Usually start with the "1st lookup file".

### 3.2 FIELD PROPERTY

Specify the settings of data field of the database (lookup file).

#### 3.2.1 FIXED LENGTH

This is the default setting. Proceed to define related settings -

- ▶ Member length
- ▶ Number of fields
- ▶ Field Name (if there is)
- ▶ Offset
- ▶ Length

#### 3.2.2 DELIMITER

You may use a delimiter (ASCII code) to separate the data fields. Proceed to define related settings -

- ▶ Number of fields
- ▶ Field Name (if there is)
- ▶ Max. Length

If the maximum length of each field is set improperly, you will receive a warning message during downloading. You may fail to download the lookup file, depending on the action specified when the data format is wrong.

Refer to the settings of section 3.10 [Action When the Format of Record Is Wrong](#).

### 3.3 MEMBER LENGTH

This applies to **Fixed Length**. Specify the maximum record length of the database (lookup file) for downloading.

- ▶ If the record length of the original lookup file is longer than specified, it will be truncated to fit.

### 3.4 NUMBER OF FIELDS

It must at least cover the referred fields of the database (lookup file).

Refer to section 1.14 [Lookup](#) (Field).

### 3.5 FIELD NAME & OFFSET

#### 3.5.1 FIELD NAME (8000/8300)

This is available in AG8000 and AG8300 programs only. Specify a name for each lookup field, which will be displayed on the mobile computer to facilitate data editing when you select -

- ▶ [3. Utilities] > [2. Browse Data]
- ▶ [3. Utilities] > [3. Delete Data]

#### 3.5.2 OFFSET

This applies to **Fixed Length**. Specify the start position for each referred data field.

### 3.6 (MAX) LENGTH

- ▶ When the field property is set **Fixed Length**, specify the length for each referred data field.
- ▶ When the field property is set **Delimiter**, specify the maximum length for each referred data field.

Note: If a delimiter is used to separate data fields, any improper value would cause wrong data format.

### 3.7 KEY FIELD

The import of data depends on the key field. Select your key field so that an index file can be created for the database (lookup file).

- ▶ When a form makes reference to a lookup file, there must be one input field associated with the key field of the database (lookup file). When its input data is found matching with that of the key field, data of other input fields, if referring to a lookup field, will be imported accordingly.

If no matching, see section 3.11 [Action When the Input Data Has No Match](#).

Note: If offset and length of each field are specified improperly, it may go wrong with data import.

### 3.8 ONLY READ DATA ONCE

Select the check box to compare data of an input field and the key field of the lookup file it refers to.

If this function is enabled, **Insert to lookup file** will be automatically set in section 3.11 [Action When the Input Data Has No Match](#), and you may change it to **Show Warning Message & Insert**.

- ▶ When the data is found matching (i.e. data already exist), this record will be rejected.
- ▶ When the data is found no matching (i.e. new data), it will be inserted to the lookup file.

### 3.9 LOOKUP DATA CAN BE UPLOADED

This is the default setting. The lookup data can be uploaded from the mobile computer to your computer. On the mobile computer, select [2. Upload Data] after you have completed the data collection task and establish a proper connection with the server.

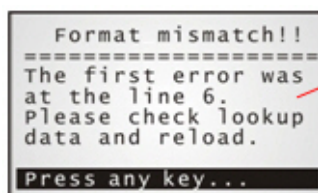
Refer to section 1.6 [Record](#).

### 3.10 ACTION WHEN THE FORMAT OF RECORD IS WRONG

This applies to **Delimiter**, when a delimiter is used to separate data fields of the lookup file. It provides several options to handle wrong data format when you download the lookup file to the mobile computer.

#### 3.10.1 STOP THE DOWNLOAD PROCESS

When wrong data format is encountered, a warning message will be displayed on the mobile computer to indicate which line is found format mismatching. The downloading process is stopped then. You will need to correct the data format, for example, remove an empty record (line) at the end of a file. Then, download the lookup file again.

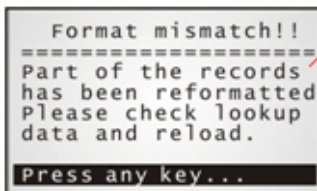


The preceding records (line 1~5 for example) can still be downloaded.

### 3.10.2 TRUNCATE / REFORMAT THE RECORD

When wrong data format is encountered, a warning message will be displayed on the mobile computer to indicate the mismatching part has been fixed, being automatically truncated or reformatted during downloading.

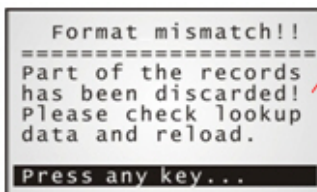
For example, the additional fields of a record will be left out. However, you may need to reload the lookup file after the data format has been corrected.



The downloading of lookup file will be completed with a successful fix to the mismatching line(s).

### 3.10.3 SKIP THE RECORD

When wrong data format is encountered, a warning message will be displayed on the mobile computer to indicate the mismatching part has been discarded. You may need to reload the lookup file after the data format has been corrected.



The downloading of lookup file will be completed without the mismatching line(s).

## 3.11 ACTION WHEN THE INPUT DATA HAS NO MATCH

Choose the appropriate action to take when the input data does not match that of the "[key field](#)".

### 3.11.1 CONTINUE

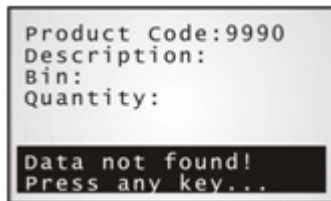
The program will allow data input to proceed without showing any message.

- ▶ Data can only be saved in a data file if you have selected "Save", "Save & update", "Save & output record", or "Save & output screen" in section 1.6 [Record](#).

### 3.11.2 SHOW WARNING MESSAGE

The program will suspend and a warning message "Data not found!" is displayed on the mobile computer.

- ▶ You will need to clear the input data manually (that is, 9990, in the example below).



### 3.11.3 INSERT TO LOOKUP FILE

The program will allow data input to proceed without showing any message.

- ▶ Data will be inserted to the target lookup file if you have selected "Update lookup" or "Save & update" in section 1.6 [Record](#).

### 3.11.4 SHOW WARNING MESSAGE & INSERT

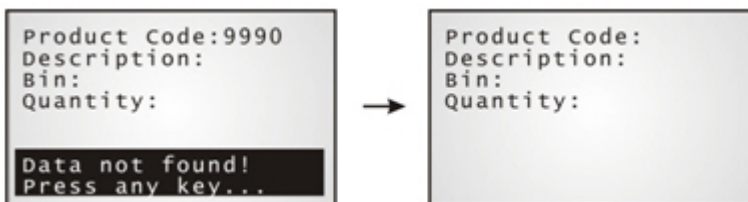
The program will suspend and a warning message "Data not found!" is displayed on the mobile computer. Then, it will resume to data input. Data will be inserted to the target lookup file if you have selected "Update lookup" or "Save & update" in section 1.6 [Record](#).

### 3.11.5 CLEAR THE SCREEN

The program will automatically clear the input data and wait for new entry.

### 3.11.6 SHOW WARNING & CLEAR SCREEN

The program will suspend and a warning message "Data not found!" is displayed on the mobile computer. Then, it will automatically clear the input data and wait for new entry.



## 3.12 RESET

Click this button to load the default settings.

---

Note: The current settings for all lookup files will be cleared.

---

## BARCODE

According to the requirements of a specific application, you may 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.

**Application Generator - [ New file ]**

Form | Menu | Lookup | Barcode | Settings | Startup

**1** Reader Type

Barcode Reader : 1D Laser/CCD Reader

☐ RFID Reader more...

**2** Reader Settings

Scan mode : Laser

Read redundancy : None

Time out : 3 sec AIM Duration : 0 sec

**4** Code ID

**5** Reset to default

**3** Barcode & Parameters

<input checked="" type="checkbox"/> Code 39 more...	<input checked="" type="checkbox"/> UPCE more...	<input type="checkbox"/> Telepen more...
<input type="checkbox"/> Italian Pharmacode more...	<input type="checkbox"/> UPCE Addon 2	<input type="checkbox"/> RSS14 more...
<input type="checkbox"/> French Pharmacode more...	<input type="checkbox"/> UPCE Addon 5	<input type="checkbox"/> RSS14 Limited more...
<input checked="" type="checkbox"/> Industrial 25 more...	<input checked="" type="checkbox"/> EAN8 more...	<input type="checkbox"/> RSS14 Expanded more...
<input checked="" type="checkbox"/> Interleave 25 more...	<input type="checkbox"/> EAN8 Addon 2	<input checked="" type="checkbox"/> Code 93
<input type="checkbox"/> Matrix 25 more...	<input type="checkbox"/> EAN8 Addon 5	<input checked="" type="checkbox"/> Code 128
<input checked="" type="checkbox"/> Codabar more...	<input checked="" type="checkbox"/> EAN13 & UPCA more...	<input checked="" type="checkbox"/> EAN128 more...
<input type="checkbox"/> MSI more...	<input type="checkbox"/> EAN13 Addon 2	<input type="checkbox"/> Negative Barcode
<input type="checkbox"/> Plessey more...	<input type="checkbox"/> EAN13 Addon 5	

OK Cancel

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4.2 Reader Settings .....	41
4.3 Barcode & Parameters .....	41
4.4 Code ID .....	41
4.5 Reset.....	41

## 4.1 READER TYPE

Refer to Appendix I - [Scan Engine Settings](#) for details.

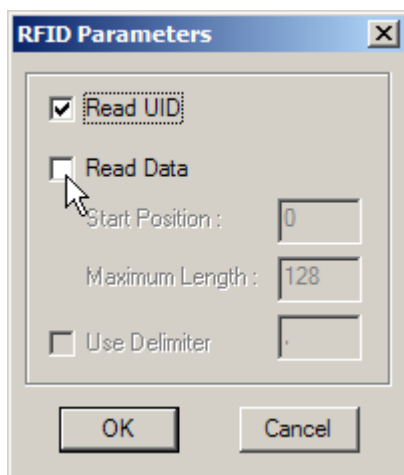
### 4.1.1 BARCODE READER

Select a reader type that matches the hardware configuration of your mobile computer. The associated barcode parameters will be displayed accordingly. If there is a **More** button next to the barcode symbology listed, advanced settings are available.

**Note:** In order to initialize the barcode reader, you must select the correct reader type when you first configure a template. Otherwise, a message will be displayed on the mobile computer to indicate "Wrong reader type!" after you download the template file.

### 4.1.2 RFID READER

Select the check box to enable the RFID reader. Advanced settings are provided as shown below. RFID tags in proximity will be read automatically by 8300/8500 when RFID reader is enabled.



#### READ UID

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

#### 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.

#### USER DELIMITER

Select the check box and specify a delimiter to separate UID from data.



## 4.2 READER SETTINGS

Refer to Appendix II - [CCD/Laser Scan Engine](#) for details.

Refer to Appendix III - [LR/ELR Laser Scan Engine](#) for details.

Refer to Appendix IV - [2D Scan Engine](#) for details.

## 4.3 BARCODE & PARAMETERS

Refer to Appendix II - [CCD/Laser Scan Engine](#) for details.

Refer to Appendix III - [LR/ELR Laser Scan Engine](#) for details.

Refer to Appendix IV - [2D Scan Engine](#) for details.

## 4.4 CODE ID

If this function is enabled, specify code ID for a listed barcode. The code ID will be prefixed to the decoding result of a barcode.

- ▶ Click the editing box next to the barcode, and select one code from the Grid Control (ASCII codes).

Alternatively, you may select Set 1 ~ 5. (Discrete 25 = Industrial 25)

---

Note: Code ID settings for RSS-14, RSS Limited, RSS Expanded, and EAN-128 are provided in section 4.3 Barcode & Parameters.

---

## 4.5 RESET

Click [Reset] to load the default settings. This applies to the following -

- ▶ section 4.1 Reader Type
- ▶ section 4.2 Reader Settings
- ▶ section 4.3 Barcode & Parameters

---

Note: The current settings will be cleared.

---



## SETTINGS

On this property page, basic settings for the application program can be changed.

- ▶ **Acoustic Coupler** is available in AG8000 only.
- ▶ **Wedge Settings** is available in AG8300 only.

**Application Generator - [ New file ]**

Form | Menu | Lookup | Barcode | **Settings** | Startup

**1** System initial settings

1. Upload Port	Cradle-IR	6. Data Deletion	Manual
2. Download Port	Cradle-IR	7. Entry Options	Show count
3. Modem Speed	115200 bps	Stay on the LCD	6 (1 ~ 99) x 100 ms
4. Baud Rate	115200 bps	Press any key to continue	
5. Backlight	Turn off	8. Key Click	Tone 2
Turn backlight off if idle for	2 (1 ~ 9) x 10 sec	9. Barcode Good Read	One beep
		10. Warning Beep	Two beeps
		11. Vibrator Duration	Off

**2** Security ...

**3** Function Key ...

**4** Reset

OK Cancel

### IN THIS CHAPTER


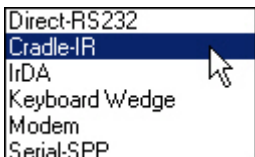
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5.5 Acoustic Coupler .....	48
5.6 Wedge Settings .....	48


## 5.1 SYSTEM INITIAL SETTINGS

SYSTEM SETTINGS	DEFAULT VALUE	REMARKS
1. Upload Port	Cradle-IR	Bluetooth SPP is not available on the mobile computer unless selected for downloading to 8061, 8360.
2. Download Port	Cradle-IR	
3. Modem Speed	(115200 bps)	
4. Baud Rate	115200 bps	
5. Backlight	Turn off	
6. Data Deletion	Manual	
7. Entry Options	Show count	Stay on the LCD for 600 ms
8. Key Click	Tone 2	
9. Barcode Good Read	One beep	
10. Warning Beep	Two beeps	
11. Vibrator Duration	Off	

### 5.1.1 UPLOAD PORT



Select a communication interface used on the mobile computer to upload data file(s) or lookup file(s) to your computer.


AG - UPLOAD PORT	REMARKS
<b>AG8000</b> 	<p>Normally, the interface options on the mobile computer are</p> <ul style="list-style-type: none"> <li>▶ Cradle-IR</li> <li>▶ IrDA</li> <li>▶ Modem</li> <li>▶ Acoustic Coupler</li> </ul> <p>However, if you download Batch AG runtime to 8061, <b>Bluetooth SPP</b> must be selected for initial settings, and it will replace <b>Modem</b> above; otherwise, this option will become unavailable on the mobile computer –</p> <ul style="list-style-type: none"> <li>▶ [3. Utilities] &gt; [1. Program Settings] &gt; [1. Upload Interface]</li> <li>▶ [3. Utilities] &gt; [1. Program Settings] &gt; [2. Download Interface]</li> </ul>
<b>AG8300</b> 	<p>Normally, the interface options on the mobile computer are</p> <ul style="list-style-type: none"> <li>▶ Direct RS-232</li> <li>▶ Cradle-IR</li> <li>▶ IrDA</li> <li>▶ Keyboard Wedge</li> </ul>

	<ul style="list-style-type: none"> <li>▶ Modem</li> </ul> <p>However, if you download Batch AG runtime to 8360, <b>Serial-SPP</b> (=Bluetooth SPP) must be selected for initial settings, and it will replace e <b>Modem</b> above; otherwise, this option will become unavailable on the mobile computer –</p> <ul style="list-style-type: none"> <li>▶ [3. Utilities] &gt; [1. Program Settings] &gt; [1. Upload Interface]</li> <li>▶ [3. Utilities] &gt; [1. Program Settings] &gt; [2. Download Interface]</li> </ul>
AG8500 	<p>Because the 8500 Series comes with Bluetooth integrated, the interface options on the mobile computer are</p> <ul style="list-style-type: none"> <li>▶ Cradle-IR</li> <li>▶ IrDA</li> <li>▶ Modem</li> <li>▶ Bluetooth SPP</li> </ul>

### 5.1.2 DOWNLOAD PORT

Select a communication interface used on the mobile computer to download the application template or lookup file(s) to your computer.

AG - DOWNLOAD PORT	REMARKS
AG8000 	<p>Normally, the interface options on the mobile computer are</p> <ul style="list-style-type: none"> <li>▶ Cradle-IR</li> <li>▶ IrDA</li> <li>▶ Modem</li> </ul> <p>However, if you download Batch AG runtime to 8061, <b>Bluetooth SPP</b> must be selected for initial settings, and it will replace <b>Modem</b> above; otherwise, this option will become unavailable on the mobile computer –</p> <ul style="list-style-type: none"> <li>▶ [3. Utilities] &gt; [1. Program Settings] &gt; [1. Upload Interface]</li> <li>▶ [3. Utilities] &gt; [1. Program Settings] &gt; [2. Download Interface]</li> </ul>
AG8300 	<p>Normally, the interface options on the mobile computer are</p> <ul style="list-style-type: none"> <li>▶ Direct RS-232</li> <li>▶ Cradle-IR</li> <li>▶ IrDA</li> <li>▶ Modem</li> </ul> <p>However, if you download Batch AG runtime to 8360, <b>Serial-SPP</b> (=Bluetooth SPP) must be selected for initial settings, and it will replace e <b>Modem</b> above; otherwise, this option will become unavailable on the mobile computer –</p> <ul style="list-style-type: none"> <li>▶ [3. Utilities] &gt; [1. Program Settings] &gt; [1. Upload Interface]</li> <li>▶ [3. Utilities] &gt; [1. Program Settings] &gt; [2. Download Interface]</li> </ul>

<p>AG8500</p> 	<p>Because the 8500 Series comes with Bluetooth integrated, the interface options on the mobile computer are</p> <ul style="list-style-type: none"> <li>▶ Cradle-IR</li> <li>▶ IrDA</li> <li>▶ Modem</li> <li>▶ Bluetooth SPP</li> </ul>
---	--

### 5.1.3 MODEM SPEED

Only when Modem is selected for **Upload Port** (5.1.1) or **Download Port** (5.1.2), this option will become available. By default, the baud rate setting is 115200 bps for communications.

#### DIP SWITCH

This baud rate setting depends on the IR control board of the modem cradle, which is set to 57600 bps by default. If you select any value other than 57600 bps, you need to adjust the DIP switch of the control board accordingly.

Note: For the 8000/8300 Series, the version of IR control board on the modem cradle must be greater than SV3.01.

### 5.1.4 BAUD RATE

By default, the baud rate setting is 115200 bps for communications via any interface except for **Modem**.

### 5.1.5 BACKLIGHT

By default, the backlight for the LCD and the keypad of the mobile computer is turned off.

- ▶ When the backlight is turned on, you may specify a period of idle time so that it can be automatically turned off. Such time-out is specified in the range of 1~9, in units of 10 seconds. The default time-out is 20 seconds.

### 5.1.6 DATA DELETION

By default, you need to select [3. Utilities] > [3. Delete Data] and manually delete a file. You may select to automatically delete data file(s) or lookup file(s) once it has been uploaded to the server. If so, the file will not be available any more when you select the following submenus -

- ▶ [2. Upload Data]
- ▶ [3. Utilities] > [2. Browse Data]

### 5.1.7 ENTRY OPTIONS

You may specify whether or not to display more information, either the record count (Show count) or the record preview (Show record), before proceeding to the next entry. By default, the record count will be displayed on the mobile computer screen for 600 milliseconds as soon as an entry is completed. Refer to 1.9.15 [Counter](#).

- ▶ When selecting "Show count" or "Show record", you will need to specify how long it will be displayed on the screen. Time-out is specified in the range of 1~99, in units of 100 milliseconds.

### 5.1.8 KEY CLICK

By default, "Tone 2" is used for the key click. You may select a desired tone or mute it.

### 5.1.9 BARCODE GOOD READ

You may specify whether or not to have a beep when decoding of a barcode is done successfully. By default, it will produce one beep to inform you of a successful reading.

### 5.1.10 WARNING BEEP

You may specify whether or not to have a warning beep when a specific event takes place. By default, it will produce two beeps to warn you of a specific event.

### 5.1.11 VIBRATOR DURATION

This is available in AG8500 program only. You may specify whether or not to turn on the vibrator to warn you of a specific event. By default, the vibrator is turned off.

- ▶ You may turn it on for a preset period of time.

## 5.2 SECURITY

For security concerns, you may specify a password and select the check box of one or more tasks that need security checking. By default, no password is required for any task.

If any task is selected and provided with a password, you will not be allowed to enter a submenu on the mobile computer without the password.

- ▶ A password can be up to 10 alphanumeric characters.

Note: The password is case-sensitive.

SECURITY OPTIONS	REMARKS
Settings	3. Utilities > 1. Program Settings

Edit Data	3. Utilities > 2. Browse Data
Delete Data	3. Utilities > 3. Delete Data
Set Date/Time	3. Utilities > 5. Set Date / Time
Load Application	3. Utilities > 6. Load Application
Load Lookup File	3. Utilities > 8. Load Lookup File
Key Click	3. Utilities > 1. Program Settings > 7. Buzzer > 1. Key Click
Warning Beep	3. Utilities > 1. Program Settings > 7. Buzzer > 3. Warning Beep
Upload Port	3. Utilities > 1. Program Settings > 1. Upload Interface
Download Port	3. Utilities > 1. Program Settings > 2. Download Interface
Baud Rate	3. Utilities > 1. Program Settings > 3. Transmission Speed
Backlight	3. Utilities > 1. Program Settings > 4. Backlight
Data Deletion	3. Utilities > 1. Program Settings > 5. Set Data Delete
Entry Options	3. Utilities > 1. Program Settings > 6. Entry Options
Barcode Good Read	3. Utilities > 1. Program Settings > 7. Buzzer > 2. Barcode Read

### 5.3 FUNCTION KEY

You may enable the function keys and define the mapping. That is, specify which task will be invoked when you press a key combination. By default, no function keys have been defined.

### 5.4 RESET

Click this button to load the default settings. This applies to the following -

- ▶ section 5.1 System Initial Settings
- ▶ section 5.2 Security
- ▶ section 5.3 Function Key

Note: The current settings will be cleared.

### 5.5 ACOUSTIC COUPLER

This feature is provided with the 8020/8021 mobile computers, and therefore, the settings are available in AG8000 program only.

### 5.6 WEDGE SETTINGS

This feature is provided with the 8300 Series mobile computers, and therefore, the settings are available in AG8300 program only.



## STARTUP

On this property page, startup settings for the application program can be customized.

- ▶ **Use large font for all prompts** is NOT available in AG8500.

**Application Generator - [ New file ]**

Form | Menu | Lookup | Barcode | Settings | **Startup**

**1** Program start from : form 1

**2** Data Field Delimiter

Number of Delimiter : 1

ASCII : 44 0

Text :

**3** ☐ Use large font for all prompts

**4** Import Prompts and Messages ...

**5** Redefine Prompts and Messages : Main menu (3x15)

**6** Reset

1. Collect data 1. Collect data

2. Upload data 2. Upload data

3. Utilities 3. Utilities

OK Cancel

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6.4 Import Prompts and Messages .....	50
6.5 Redefine Prompts and Messages.....	50
6.6 Reset.....	50

## 6.1 PROGRAM START FROM

Decide where the application program starts as soon as [I. Collect data] is selected on the mobile computer.

- ▶ form I
- ▶ menu I

## 6.2 DATA FIELD DELIMITER

The input data will be saved as transaction records. Specify the delimiters used to separate data fields, either in ASCII code or text. It allows using up to two different delimiters.

Type the ASCII code for a delimiter and its corresponding character will be shown automatically, and vice versa.

## 6.3 USE LARGE FONT FOR ALL PROMPTS

This is available in AG8000 and AG8300 programs only because small font (6x8) is applied by default.

Large font (8x16) must be applied for double-byte languages, such as Chinese, Japanese, etc. In that case, select the check box first so that all the prompts and messages will use large font. Proceed to section 6.5 [Redefine Prompts and Messages](#). On the [Form](#) and [Menu](#) property pages, font size needs to be changed accordingly. Refer to [Localization](#).

---

Note: This setting is not available for 8500 Series because it must use large font.

---

## 6.4 IMPORT PROMPTS AND MESSAGES

If the prompts and messages have already been re-defined with an existing template file, simply import the template file.

## 6.5 REDEFINE PROMPTS AND MESSAGES

For non-English environment, all the prompts and messages need to be re-defined in your local language. In addition, the appropriate font file has to be downloaded to the mobile computer so that it can display the prompts and messages correctly. Refer to [Localization](#).

## 6.6 RESET

Click this button to load the default settings.

---

Note: The current settings will be cleared.

---

## SCAN ENGINE SETTINGS

The **FORGE Application Generator** allows configuring the following reader types, depending on the module equipped on your mobile computer:

	8000	8300	8500
<b>Barcode Reader</b>			
<i>ID CCD Scan Engine</i>	✓	✓	✓
<i>ID Laser Scan Engine</i>	✓	✓	✓
<i>ID Long Range Laser Scan Engine (LR)</i>	✗	✓(N/A in AG)	✓
<i>ID Extra Long Range Laser Scan Engine (ELR)</i>	✗	✗	✓
<i>2D Scan Engine</i>	✗	✗	✓
<b>RFID Reader</b>			
<i>ACG_RFID Module v0.9</i>	✗	✗	✓
<i>ACG_RFID Module v1.0</i>	✗	✓	✓
<i>TI_RFID Module v1.0.A</i>	✗	✗	✗

Options of different reader combination are allowed, such as ID+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 you press the [Scan] button while running the AG 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: You cannot have ID+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	LR, ELR	2D
<b>Codabar</b>	✓	✓	✓
<b>Code 11</b>	✗	✗	✓
<b>Code 93</b>	✓	✓	✓

<b>Composite Code</b>		x	x	✓
<b>MSI</b>		✓	✓	✓
<b>Plessey</b>		✓	x	x
<b>Postal Codes</b>		x	x	✓
<b>Telepen</b>		✓	x	x
<b>Code 128</b>	Code 128	✓	✓	✓
	EAN-128	✓	✓	✓
	ISBT-128	x	✓	✓
<b>Code 2 of 5</b>	Industrial 25 (i.e. Discrete 25)	✓	✓	✓
	Interleaved 25	✓	✓	✓
	Matrix 25	✓	x	x
<b>Code 3 of 9</b>	Code 39	✓	✓	✓
	Trioptic Code 39	x	✓	✓
	Italian Pharmacode (i.e. Code 32)	✓	✓	✓
	French Pharmacode	✓	x	x
<b>EAN/UPC</b>	EAN-8	✓	✓	✓
	EAN-13	✓	✓	✓
	Bookland EAN (i.e. ISBN)	✓	✓	✓
	UPC-E0	✓	✓	✓
	UPC-EI	x	✓	✓
	UPC-A	✓	✓	✓
<b>RSS</b>	RSS-14	✓	✓	✓
	RSS Limited	✓	✓	✓
	RSS Expanded	✓	✓	✓
<b>2D Symbologies</b>	PDF417	x	x	✓
	MicroPDF417	x	x	✓
	Data Matrix	x	x	✓
	Maxicode	x	x	✓
	QR Code	x	x	✓

## 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 with RFID module version 1.0 are different from those found with version 0.9 or older versions.

Note: You should study the specifications of RFID tags before use. The "Write Page" functionality may not be supported.

ACG_RFID MODULE VERSION 1.0		UID ONLY	READ PAGE	WRITE PAGE*
<b>ISO 14443A</b>	Mifare Standard 1K	✓	✓	✓
	Mifare Standard 4K	✓	✓	✓
	Mifare Ultralight	✓	✓	✓
	Mifare DESFire	✓	---	---
	Mifare S50	✓	✓	✓
	SLE44R35	✓	---	---
	SLE66R35	✓	✓	✓
<b>ISO 14443B</b>	SRIX 4K	✓	✓	✓
	SR176	✓	✓	✓
<b>ISO 15693</b>	ICODE SLI	✓	✓	✓
	SRF55V02P	✓	---	---
	SRF55V02S	✓	---	---
	SRF55V10P	✓	---	---
	TI Tag-it HF-I	✓	✓	✓
<b>ICODE® (Phillips)</b>	ICODE	✓	✓	✓

ACG_RFID MODULE VERSION 0.9		UID ONLY	READ PAGE	WRITE PAGE*
<b>ISO 14443A</b>	Mifare Standard 1K	✓	---	---
	Mifare Standard 4K	✓	---	---
	Mifare DESFire	✓	---	---
	Mifare S50	✓	---	---
	SLE44R35	✓	---	---

	SLE66R35	✓	---	---
<b>ISO 15693</b>	ICODE SLI	✓	✓	✓
	SRF55V02P	✓	✓	✓
	SRF55V02S	✓	---	---
	SRF55V10P	✓	✓	✓
	TI Tag-it HF-I	✓	✓	✓
	ST LRI64	✓	✓	✓
	ST LRI512	✓	✓	✓
<b>Tagit®</b>	Tagit	✓	✓	✓
<b>ICODE® (Phillips)</b>	ICODE	✓	✓	✓

TI_RFID MODULE VERSION 1.0.A		UID ONLY	READ PAGE	WRITE PAGE*
<b>ISO 14443A</b>	Mifare Standard 1K	✓	---	---
	Mifare Standard 4K	✓	---	---
	Mifare Ultralight	✓	---	---
	Mifare DESFire	✓	---	---
	Mifare S50	✓	---	---
	SLE44R35	✓	---	---
	SLE66R35	✓	---	---
<b>ISO 14443B</b>	SRIX 4K	---	---	---
	SR176	---	---	---
<b>ISO 15693</b>	ICODE SLI	✓	✓	✓
	SRF55V02P	✓	✓	✓
	SRF55V02S	✓	---	---
	SRF55V10P	✓	✓	✓
	TI Tag-it HF-I	✓	✓	✓
	ST LRI512	✓	---	---
<b>ICODE® (Phillips)</b>	ICODE	---	---	---

## 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	DESCRIPTION	DEFAULT
<b>Scan Mode</b>		<b>Laser mode</b>
Continuous Mode	Non-stop scanning <ul style="list-style-type: none"> <li>▶ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning.</li> </ul>	
Test Mode	Non-stop scanning <ul style="list-style-type: none"> <li>▶ Capable of decoding the same barcode repeatedly</li> </ul>	
Repeat Mode	Non-stop scanning <ul style="list-style-type: none"> <li>▶ Capable of re-transmitting barcode data if triggering within one second after a successful decoding</li> </ul>	
Momentary Mode	Hold down the scan trigger to start with scanning. <ul style="list-style-type: none"> <li>▶ The scanning won't stop until you release the trigger.</li> </ul>	
Alternate Mode	Press the scan trigger to start with scanning. <ul style="list-style-type: none"> <li>▶ The scanning won't stop until you press the trigger again.</li> </ul>	
Aiming Mode	Press the scan trigger to aim at a barcode. Within one second, press the trigger again to decode the barcode. <ul style="list-style-type: none"> <li>▶ The scanning won't stop until (a) a barcode is decoded or (b) the pre-set timeout expires.</li> </ul>	
Laser Mode	Hold down the scan trigger to start with scanning. <ul style="list-style-type: none"> <li>▶ The scanning won't stop until (a) a barcode is read, (b) the preset timeout expires, or (c) you release the trigger.</li> </ul>	
Auto Off Mode	Press the scan trigger to start with scanning. <ul style="list-style-type: none"> <li>▶ The scanning won't stop until (a) a barcode is read or (b) the preset timeout expires.</li> </ul>	
Auto Power Off Mode	Press the scan trigger to start with scanning. <ul style="list-style-type: none"> <li>▶ The scanning won't stop until the preset timeout expires, and, the preset timeout period re-counts after each successful decoding.</li> </ul>	

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	<p>The higher the reading security is (that is, the more redundancy the user selects), the slower the reading speed gets.</p> <ul style="list-style-type: none"> <li>▶ If "Three Times" is selected, it will take a total of four consecutive successful decodings of the same barcode to make the reading valid.</li> </ul>	
Time-out		3 sec.
1~255 (second)	<p>It applies to the following scan modes only:</p> <ul style="list-style-type: none"> <li>▶ Aiming mode</li> <li>▶ Laser mode</li> <li>▶ Auto Off mode</li> <li>▶ Auto Power Off mode</li> </ul>	

## SYMBOLGY SETTINGS TABLE

CCD/LASER	DESCRIPTION	DEFAULT
<b>Codabar</b>		<b>Enable</b>
Transmit Start/Stop Characters	<p>Decide whether to include the start/stop characters in the data being transmitted.</p> <p>If "Transmit Start/Stop Characters" is desired, select one set:</p> <ul style="list-style-type: none"> <li>▶ abcd / abcd</li> <li>▶ abcd / tn*e</li> <li>▶ ABCD / ABCD</li> <li>▶ ABCD / TN*E</li> </ul>	No
<b>Code 128 / EAN-128</b>		<b>Enable</b>
Transmit Code ID (for EAN-128)	Decide whether to include Code ID ("]CI") will be included in the data being transmitted.	No
<b>Industrial 25 (= Discrete 25)</b>		<b>Enable</b>
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 Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.	No



Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Select Length	<ul style="list-style-type: none"> <li>▶ One or two fixed lengths</li> <li>▶ Range</li> </ul>	1~127
<b>Interleaved 25</b>		<b>Enable</b>
Start/Stop Selection	Refer to Industrial 25.	Interleaved 25
Verify Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Select Length	<ul style="list-style-type: none"> <li>▶ One or two fixed lengths</li> <li>▶ Range</li> </ul>	1~126
<b>Matrix 25</b>		<b>Disable</b>
Start/Stop Selection	Refer to Industrial 25.	Matrix 25
Verify Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Select Length	<ul style="list-style-type: none"> <li>▶ One or two fixed lengths</li> <li>▶ Range</li> </ul>	1~127
<b>French Pharmacode</b>		<b>Disable</b>
*Transmit Start/Stop Character	Controlled by the same setting of Code 39.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
<b>Italian Pharmacode (= Code 32)</b>		<b>Disable</b>
*Transmit Start/Stop Character	Controlled by the same setting of Code 39.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
<b>Code 39</b>		<b>Enable</b>
Transmit Start/Stop Character	Decide whether to include the start/stop characters "*" in the data being transmitted.	No
Verify Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes

Code 39 Full ASCII	Code 39 Full ASCII includes all the alphanumeric and special characters.	Disable
<b>Code 93</b>		<b>Enable</b>
<b>MSI</b>		<b>Disable</b>
Verify Checksum	<p>Select one of the three calculation formulas to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.</p> <ul style="list-style-type: none"> <li>▶ Single Modulo 10</li> <li>▶ Double Modulo 10</li> <li>▶ Modulo 11 &amp; 10</li> </ul>	Single Modulo 10
Transmit Checksum	<p>Decide whether to include the checksum in the data being transmitted.</p> <ul style="list-style-type: none"> <li>▶ Last digit not transmitted</li> <li>▶ Both digits transmitted</li> <li>▶ Both digits not transmitted</li> </ul>	Both digits transmitted
Select Length	<ul style="list-style-type: none"> <li>▶ One or two fixed lengths</li> <li>▶ Range</li> </ul>	0~127
<b>Negative Barcode</b>		<b>Disable</b>
<b>Plessey</b>		<b>Disable</b>
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 Checksum	Decide whether to include the checksum (2 digits) in the data being transmitted.	Yes
<b>Telepen</b>		<b>Disable</b>
Original Telepen (Numeric)	The original Telepen includes numeric characters.	Yes
AIM Telepen (Full ASCII)	AIM Telepen (Full ASCII) includes all the alphanumeric and special characters.	No
<b>RSS-14</b>		<b>Disable</b>
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 Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
<b>RSS Limited</b>		<b>Disable</b>
Transmit Code ID	Refer to RSS-14.	Yes

Transmit Application ID	Refer to RSS-14.	Yes
Transmit Checksum	Refer to RSS-14.	Yes
<b>RSS Expanded</b>		<b>Disable</b>
Transmit Code ID	Refer to RSS-14.	Yes
<b>EAN-8</b>		<b>Enable</b>
Convert to EAN-13	The EAN-8 barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Addon 2 / Addon 5	Decide whether to decode EAN-8 with supplementals.	No
<b>EAN-13 / UPC-A</b>		<b>Enable</b>
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 Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Addon 2 / Addon 5	Decide whether to decode EAN-13/UPC-A with supplementals.	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 Checksum	Decide whether to include the UPC-A checksum 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
<b>UPC-E</b>		<b>Enable</b>
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 Checksum	Decide whether to include the UPC-E checksum in the data being transmitted.	Yes
Transmit System Number	Decide whether to include the UPC-E System Number in the data being transmitted.	No
Addon 2 / Addon 5	Decide whether to decode UPC-E with supplementals.	No

*It cannot read UPC-EI barcodes!
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## LR/ELR LASER SCAN ENGINE

The tables below list reader settings as well as symbology settings for the Long Range Laser (LR) or Extra Long Range Laser (ELR) scan engine.

**READER SETTINGS TABLE**

LR/ELR	DESCRIPTION	DEFAULT
<b>AIM Duration</b>	<ul style="list-style-type: none"> <li>▶ 0~255, in units of 1 second.</li> <li>▶ Enter 0 if aiming is not desired.</li> </ul>	<b>No aiming</b>
<b>Decode Time-out</b>	Set the maximum time for decoding to continue during a scan attempt. <ul style="list-style-type: none"> <li>▶ 5~99, in units of 0.1 second.</li> </ul>	<b>3.0 sec.</b>

**SYMBOLGY SETTINGS TABLE**

LR/ELR/2D	DESCRIPTION	DEFAULT
<b>Codabar</b>		<b>Disable</b>
CLSI Editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. <ul style="list-style-type: none"> <li>▶ The 14-character barcode length does not include start/stop characters.</li> </ul>	No
NOTIS Editing	Decide whether to include the start/stop characters in the data being transmitted. <ul style="list-style-type: none"> <li>▶ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".</li> </ul>	No
Select Length	<ul style="list-style-type: none"> <li>▶ Any Length</li> <li>▶ One or two fixed lengths</li> <li>▶ Range (1~55)</li> </ul>	Any Length
<b>Code 128</b>		---
Code 128	Read standard Code 128 barcodes (=without leading FNC1 character).	Enable
UCC/EAN-128	Read UCC/EAN-128 barcodes with leading FNC1 character.	Enable
ISBT 128	Read ISBT 128 barcodes.	Enable

<b>Industrial 25 (= Discrete 25)</b>		<b>Enable</b>
Select Length	<ul style="list-style-type: none"> <li>▶ Any Length</li> <li>▶ One or two fixed lengths</li> <li>▶ Range (1~55)</li> </ul>	Any Length
<b>Interleaved 25</b>		<b>Enable</b>
Convert to EAN-13	Convert a 14-character barcode into EAN-13 if the following requirements are met: <ul style="list-style-type: none"> <li>▶ The barcode must have a leading 0 and a valid EAN-13 check digit.</li> </ul>	No
Verify Checksum	Decide whether to verify the checksum. If desired, select one of the algorithms below. If the checksum is incorrect, the barcode will not be accepted. <ul style="list-style-type: none"> <li>▶ No</li> <li>▶ USS algorithm</li> <li>▶ OPCC algorithm</li> </ul>	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted. <ul style="list-style-type: none"> <li>▶ "Verify Checksum" must be enabled so that the checksum can be left out (= "Transmit Checksum" disabled).</li> </ul>	No
Select Length	<ul style="list-style-type: none"> <li>▶ Any Length</li> <li>▶ One or two fixed lengths</li> <li>▶ Range (1~55)</li> </ul>	Any Length
<b>Code 39</b>		<b>Enable</b>
Convert to Code 32	Convert to Italian Pharmacode.	No
Code 32 Prefix	Prefix character "A" to Code 32 barcodes.	No
Verify Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted. <ul style="list-style-type: none"> <li>▶ "Verify Checksum" must be enabled so that the checksum can be left out (= "Transmit Checksum" disabled).</li> </ul>	No
Code 39 Full ASCII	Code 39 Full ASCII includes all the alphanumeric and special characters.	Disable
Select Length	<ul style="list-style-type: none"> <li>▶ Any Length</li> <li>▶ One or two fixed lengths</li> <li>▶ Range (1~55)</li> </ul>	Any Length
<b>Trioptic Code 39</b>		<b>Disable</b>

Code 93		Disable						
Select Length	<ul style="list-style-type: none"><li>Any Length</li><li>One or two fixed lengths</li><li>Range (1~55)</li></ul>	Any Length						
MSI		Disable						
Verify Checksum	<div>If Two Check Digits option is selected, an additional verification is required to ensure integrity. Select one of the algorithms below. If the checksum is incorrect, the barcode will not be accepted.</div> <table><tr><td>CHECK DIGIT</td><td>ALGORITHM</td></tr><tr><td>One Check Digit</td><td>Single Modulo 10</td></tr><tr><td>Two Check Digits</td><td><ul style="list-style-type: none"><li>Mod 10/Mod 11</li><li>Mod 10/Mod 10</li></ul></td></tr></table>	CHECK DIGIT	ALGORITHM	One Check Digit	Single Modulo 10	Two Check Digits	<ul style="list-style-type: none"><li>Mod 10/Mod 11</li><li>Mod 10/Mod 10</li></ul>	Single Modulo 10
CHECK DIGIT	ALGORITHM							
One Check Digit	Single Modulo 10							
Two Check Digits	<ul style="list-style-type: none"><li>Mod 10/Mod 11</li><li>Mod 10/Mod 10</li></ul>							
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	No						
Select Length	<ul style="list-style-type: none"><li>Any Length</li><li>One or two fixed lengths</li><li>Range (1~55)</li></ul>	Any Length						
RSS		---						
RSS-I4	"Convert to UPC/EAN" only applies to RSS-I4 and RSS Limited barcodes not decoded as part of a Composite barcode.	Enable						
RSS Limited		Enable						
RSS Expanded		Enable						
Covnert RSS to UPC/EAN		No						

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.	
<b>UPC-A</b>		<b>Enable</b>
Transmit Checksum	Decide whether to include the UPC-A checksum 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.	
<b>UPC-E0</b>		<b>Enable</b>
Transmit Checksum	Decide whether to include the UPC-E0 checksum 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
<b>UPC-EI</b>		<b>Disable</b>
Transmit Checksum	Decide whether to include the UPC-EI checksum in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-EI 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-EI barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
<b>UCC Coupon Extended Code</b>		<b>Disable</b>
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!		
<b>UPC/EAN Addon</b>		<b>---</b>
Addon 2 / Addon 5	Decide whether to decode EAN-8, EAN-13, UPC-E0, UPC-EI, UPC-A with supplementals. ▶ Ignore Supplementals ▶ Decode Only With Supplementals ▶ Decode With Supplementals (= Auto-discriminate)	Ignore...



Addon Redundancy	When "Decode with Supplementals" is applied, decide the number of times of supplementary decoding the same barcode that makes a valid reading.	10 times
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## 2D SCAN ENGINE

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

### READER SETTINGS TABLE

2D	DESCRIPTION	DEFAULT
<b>Focus Mode</b>	Select the focus mode to control the working range: <ul style="list-style-type: none"> <li>▶ Far Focus – optimized to read at its far position</li> <li>▶ Near Focus – optimized to read at its near position</li> <li>▶ Smart Focus – toggles the focus position after every frame</li> </ul>	<b>Far Focus</b>
<b>Decode Illumination</b>	Decide whether to flash illumination on every barcode capture to aid decoding. <ul style="list-style-type: none"> <li>▶ Turn On (Internal LED )</li> <li>▶ Turn Off</li> </ul>	<b>On</b>
<b>AIM Pattern</b>	Decide whether to project the aim pattern during barcode capture. <ul style="list-style-type: none"> <li>▶ Turn On</li> <li>▶ Turn Off</li> </ul>	<b>On</b>
<b>Decode Time-out</b>	Set the maximum time for decoding to continue during a scan attempt. <ul style="list-style-type: none"> <li>▶ 5~99, in units of 0.1 second.</li> </ul>	<b>9.9 sec.</b>

### SYMBOLGY SETTINGS TABLE

The symbology settings for the LR/ELR scan engine are all supported on the 2D scan engine. In addition, the 2D scan engine supports the following symbology settings:

2D	DESCRIPTION	DEFAULT
<b>Code 11</b>		
<b>Verify Checksum</b>	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted. <ul style="list-style-type: none"> <li>▶ No verification</li> <li>▶ One Check Digit</li> <li>▶ Two Check Digits</li> </ul>	<b>No</b>

Transmit Checksum	Decide whether to include the checksum in the data being transmitted. <ul style="list-style-type: none"> <li>▶ "Verify Checksum" must be enabled so that the checksum can be left out (= "Transmit Checksum" disabled).</li> </ul>	No
Select Length	<ul style="list-style-type: none"> <li>▶ Any Length</li> <li>▶ One or two fixed lengths</li> <li>▶ Range (1~55)</li> </ul>	Any Length
<b>Postal Codes</b>		---
US Postnet		Enable
US Planet		Enable
Transmit US Postal Checksum	US Postnet or US Planet must be enabled first!	Enable
UK Postal		Enable
Transmit UK Postal Checksum	UK Postal must be enabled first!	Enable
Japan Postal		Enable
Australian Postal		Enable
Dutch Postal		Enable
<b>Composite Codes</b>		<b>Disable</b>
Composite CC-C		Disable
Composite CC-A/B		Disable
Composite TLC-39		Disable
UCC/EAN Code 128 Emulation Mode	Transmit data as if it was encoded in Code 128 barcodes. <ul style="list-style-type: none"> <li>▶ Transmit AIM Code Identifier must be enabled first!</li> </ul>	Disable
UPC Composite Mode	UPC barcodes can be "linked" with a 2D barcode during transmission as if they were one barcode.	UPC Always Linked
	<b>UPC NEVER LINKED</b>	
	Transmit UPC barcodes regardless of whether a 2D barcode is detected.	
	<b>UPC ALWAYS LINKED</b>	
	Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted. <ul style="list-style-type: none"> <li>▶ CC-A/B or CC-C must be enabled!</li> </ul>	

	<div>AUTO-DISCRIMINATE UPC COMPOSITES</div> <div>Transmit UPC barcodes as well as the 2D portion if present.</div>	
2D Symbologies		---
PDF417		Enable
MicroPDF417		Disable
MicroPDF417 Code 128 Emulation	<div>Transmit data from certain MicroPDF417 barcodes as if it was encoded in Code 128 barcodes.</div> <div>▶ Transmit AIM Code Identifier must be enabled first!</div> <div>When applied, the MicroPDF417 barcodes are transmitted with one of these prefixes:</div> <div><div>THE FIRST CODEWORD OF MICROPDF417 IS 903-907, 912, 914, 915:</div><div>The original Code ID "]L3" will be changed to "]C1".</div><div>THE FIRST CODEWORD OF MICROPDF417 IS 908 OR 909:</div><div>The original Code ID "]L4" will be changed to "]C2".</div><div>THE FIRST CODEWORD OF MICROPDF417 IS 910 OR 911:</div><div>The original Code ID "]L5" will be changed to "]C0".</div></div>	Disable
Data Matrix		Enable
Maxicode		Enable
QR Code		Enable
2D Symbologies - Macro PDF		---
Macro PDF is a special feature for concatenating multiple PDF barcodes into one file, known as Macro PDF417 or Macro MicroPDF417.		
Transmit/Decode Mode	<div>Decide how to handle Macro PDF decoding.</div> <div><div>BUFFER ALL SYMBOLS / TRANSMIT MACRO PDF WHEN COMPLETE</div><div>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!</div><div>▶ The transmission of the control header must be disabled.</div></div>	Passthrough All Symbols

Transmit/Decode Mode	<b>TRANSMIT ANY SYMBOL IN SET / NO PARTICULAR ORDER</b>	
	Transmit data from each Macro PDF symbol as decoded, regardless of the sequence. <ul style="list-style-type: none"> <li>▶ The transmission of the control header must be enabled.</li> </ul>	
	<b>PASSTHROUGH ALL SYMBOLS</b>	
	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.	
Send Control Header	The control header contains the segment index and file ID. This option has no effect when "Passthrough All Symbols" is applied.	Yes
ESC Characters	When enabled, it uses the backlash "\" as an Escape character for systems that can process transmissions containing special data sequences. It will format special data according to the Global Label Identifier (GLI) protocol, which only affects the data portion of a Macro PDF symbol transmission. The Control Header, if enabled, is always sent with GLI formatting.	None

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