

CipherLab User Guide

FORGE Application Generator

For CP30 Mobile Computers

DOC Version 1.00



Copyright © 2011 CIPHERLAB CO., LTD.
All rights reserved

The software contains proprietary information of CIPHERLAB CO., LTD.; it is provided under a license agreement containing restrictions on use and disclosure and is also protected by copyright law. Reverse engineering of the software is prohibited.

Due to continued product development this information may change without notice. The information and intellectual property contained herein is confidential between CIPHERLAB and the client and remains the exclusive property of CIPHERLAB CO., LTD. If you find any problems in the documentation, please report them to us in writing. CIPHERLAB does not warrant that this document is error-free.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior written permission of CIPHERLAB CO., LTD.

For product consultancy and technical support, please contact your local sales representative. Also, you may visit our web site for more information.

The CipherLab logo is a registered trademark of CIPHERLAB CO., LTD.

Microsoft, Windows, and the Windows logo are registered trademarks of Microsoft Corporation in the United States and/or other countries.

Bluetooth is a trademark of Bluetooth SIG, Inc., U.S.A.

Other product names mentioned in this manual may be trademarks or registered trademarks of their respective companies and are hereby acknowledged.

The editorial use of these names is for identification as well as to the benefit of the owners, with no intention of infringement.

CIPHERLAB CO., LTD.

Website: <http://www.cipherlab.com>

RELEASE NOTES

Version	Date	Notes
1.00	Sep. 09, 2011	Initial release

CONTENTS

- RELEASE NOTES - 3 -**
- INTRODUCTION 1**
 - System Requirements..... 2
 - Features..... 2
 - Installing from the CD-ROM 3
 - How It Works..... 8
 - Getting Started 9
 - Command Menu..... 10
 - Application Template 12
- FORM 15**
 - 1.1 ID 16
 - 1.2 Key Field..... 16
 - 1.3 Esc 17
 - 1.4 Next 17
 - 1.5 Lookup (File) 17
 - 1.6 Record 18
 - 1.6.1 Export files 18
 - 1.6.2 Manipulate data 18
 - 1.7 Time Stamp..... 19
 - 1.7.1 Stamp Position 19
 - 1.7.2 Date/Time Format..... 19
 - 1.8 Advanced..... 20
 - 1.8.1 Only Read Data Once..... 20
 - 1.8.2 Change Export Name 20
 - 1.8.3 Auto Export... 20
 - 1.8.4 Enable Automatic Data Deletion 20
 - 1.8.5 Enable MSQI Function 21
 - 1.9 Data Type 28
 - 1.9.1 Nil 30
 - 1.9.2 Text..... 30
 - 1.9.3 Letter..... 31
 - 1.9.4 Alphameric..... 31
 - 1.9.5 Integer 31
 - 1.9.6 Real 32
 - 1.9.7 Auto (+/-) 33
 - 1.9.8 Extension 36
 - 1.9.9 Pass down 37
 - 1.9.10 Boolean 38
 - 1.9.11 Lookup..... 38
 - 1.9.12 Fixed data..... 39
 - 1.9.13 Prompt..... 39
 - 1.9.14 Pause..... 39

- 1.9.15 Counter 39
- 1.9.16 Image 40
- 1.9.17 Large Data 42
- 1.9.18 Read from 2D 42
- 1.10 Prompt 43
- 1.11 Input Source 43
- 1.12 Minimum Length 43
- 1.13 Maximum Length 43
- 1.14 Lookup (Field) / Variables 44
 - 1.14.1 Lookup (Field) 44
 - 1.14.2 Variables 45
- 1.15 Properties 46
 - 1.15.1 Field Data 46
 - 1.15.2 Barcode Input 48
- 1.16 Reset 49
- MENU 51**
- 2.1 ID 52
- 2.2 ESC 52
- 2.3 Menu Caption 52
- 2.4 Item Name 52
- 2.5 Next 54
- 2.6 Data 54
- 2.7 Reset 55
- LOOKUP 57**
- 3.1 ID 59
- 3.2 Field Property 59
 - 3.2.1 Fixed Length 59
 - 3.2.2 Delimiter 59
- 3.3 Number of Fields 59
- 3.4 Data Type 60
- 3.5 Field Name 61
- 3.6 (Max) Length 61
- 3.7 Key Field 61
- 3.8 Change Export Name 62
- 3.9 Auto Export Lookup Table When Close Application 62
- 3.10 Enable Automatic Data Deletion 62
- 3.11 Action When the Format of Record Is Wrong 62
 - 3.11.1 Stop the Import Process 62
 - 3.11.2 Truncate/Reformat the Record 62
 - 3.11.3 Skip the Record 62
- 3.12 Action When the Input Data Has No Match 63
 - 3.12.1 Continue 63
 - 3.12.2 Show Warning Message 63
 - 3.12.3 Insert to Lookup file 63

- 3.12.4 Show Warning Message & Insert..... 64
- 3.12.5 Clear the Screen 64
- 3.12.6 Show Warning & Clear Screen 64
- 3.13 Reset 64
- BARCODE 65**
- 4.1 Reader Type 66
 - 4.1.1 Barcode Reader 66
 - 4.1.2 Reset..... 68
- 4.2 Reader Settings 69
- 4.3 Barcode & Parameters 69
- SETTINGS 71**
- 5.1 Program Start From 72
- 5.2 Data Field Delimiter 72
- 5.3 Camera Initial Settings 72
- 5.4 System Initial Settings..... 73
 - 5.4.1 Auto-preload the Last Template File 73
 - 5.4.2 Data Deletion..... 74
 - 5.4.3 Entry Options 74
 - 5.4.4 Vibrator Duration..... 74
 - 5.4.5 Default Export Store..... 74
 - 5.4.6 Always Delete All Database ... 74
- 5.5 Security..... 75
- 5.6 Reset 77
- DEMONSTRATION ON MOBILE COMPUTERS 79**
- Main Menu (Reader Test) 80
- File Menu 81
 - Open .A30 file..... 81
 - Import lookup files 81
 - Export files 82
 - New Database 84
 - Exit the application..... 84
- Run the Application..... 85
- Utilities Menu..... 86
 - Browse 86
 - Delete..... 90
 - Settings..... 91
- About..... 91
- LASER (SE955) 93**
- Reader Settings Table..... 93
 - AIM Code ID – Code Characters..... 94
 - AIM Code ID – Modifier Characters..... 94
- Symbology Settings Table 97
- 2D IMAGER (SE4500) 103**
- Reader Settings Table..... 103

Symbology Settings Table104
 1D Symbologies104
 2D Symbologies111

INTRODUCTION

FORGE Application Generator for CP30 Mobile Computers, featuring easy-to-use and quick-to-apply, is designed for the users of Windows mobile computers to develop custom templates for the use with AG application 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

After having configured and saved your template, copy or move the template file to the mobile computer. When running the AG application on the mobile computer, data collection can commence immediately by making use of the template specified.

This manual serves to provide comprehensive understanding of FORGE Application Generator for CP30 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!

SYSTEM REQUIREMENTS

To run the program, one of the Windows operating system is required:

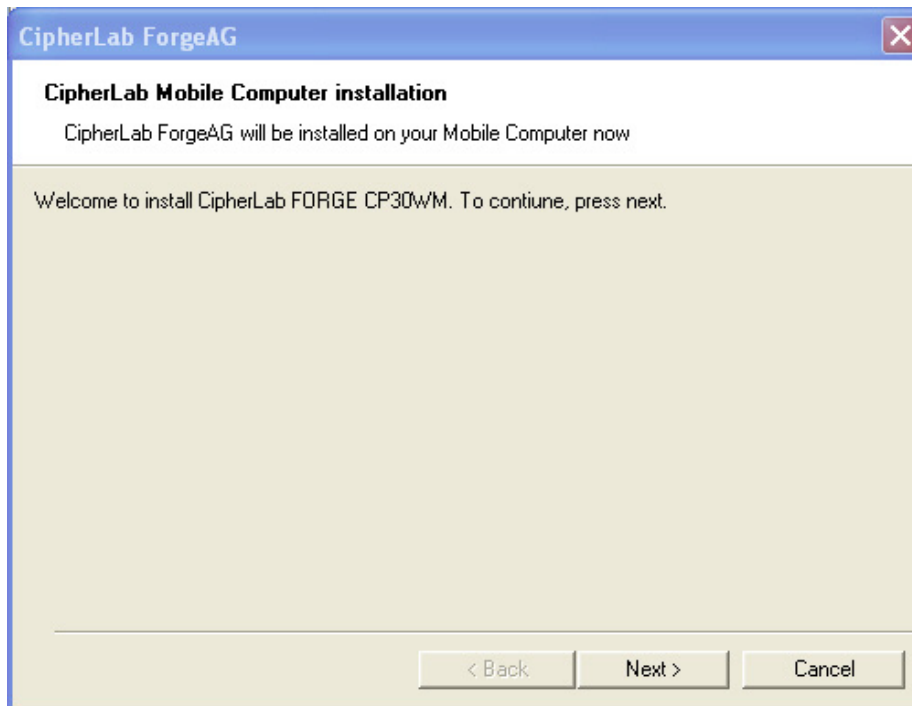
- ▶ Windows 2000
- ▶ Windows XP
- ▶ Windows Vista
- ▶ Windows 7

FEATURES

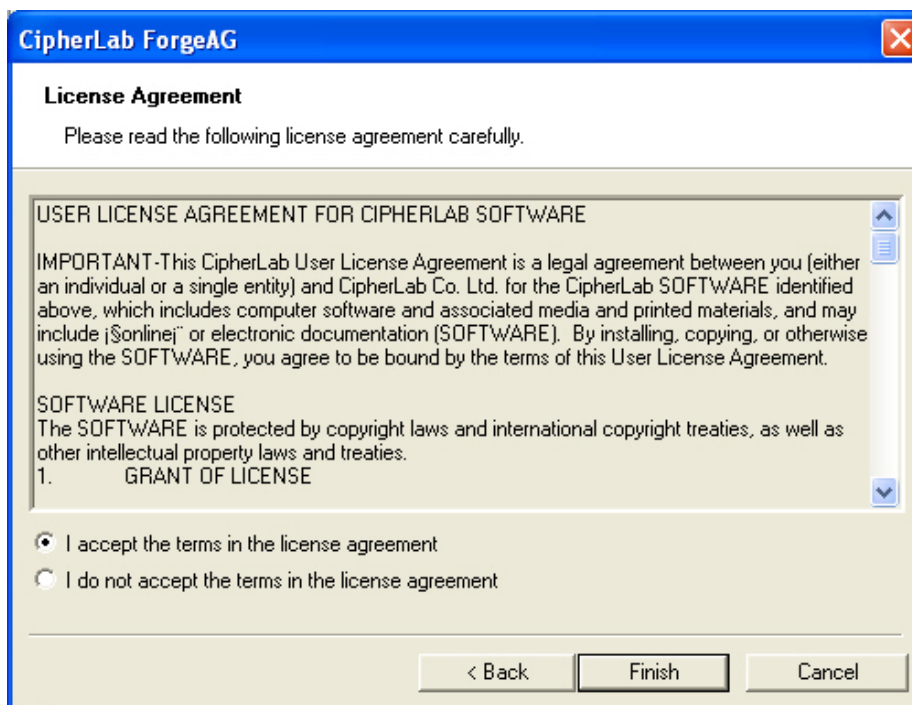
- ▶ Supports CipherLab Windows Mobile 6.5 mobile computers
- ▶ Definition of program flow
- ▶ Editing of screens and data
- ▶ Managing barcode reader
- ▶ Supports camera and program localization options
- ▶ Password-protected user settings to prevent unauthorized user intervention
- ▶ Definition of system initial settings for a quick start
- ▶ Easy cloning by delivering the template file

INSTALLING FROM THE CD-ROM

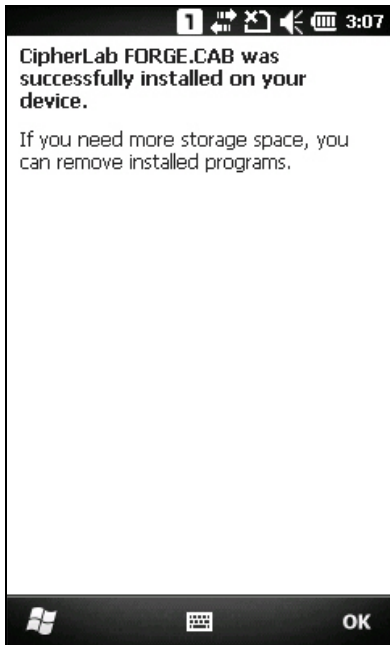
1) Insert the CD installer into the CD-ROM and run CP30_WM.exe on the product CD:



2) Click "Next", select "I accept the terms in the license agreement" check box then click "Finish".



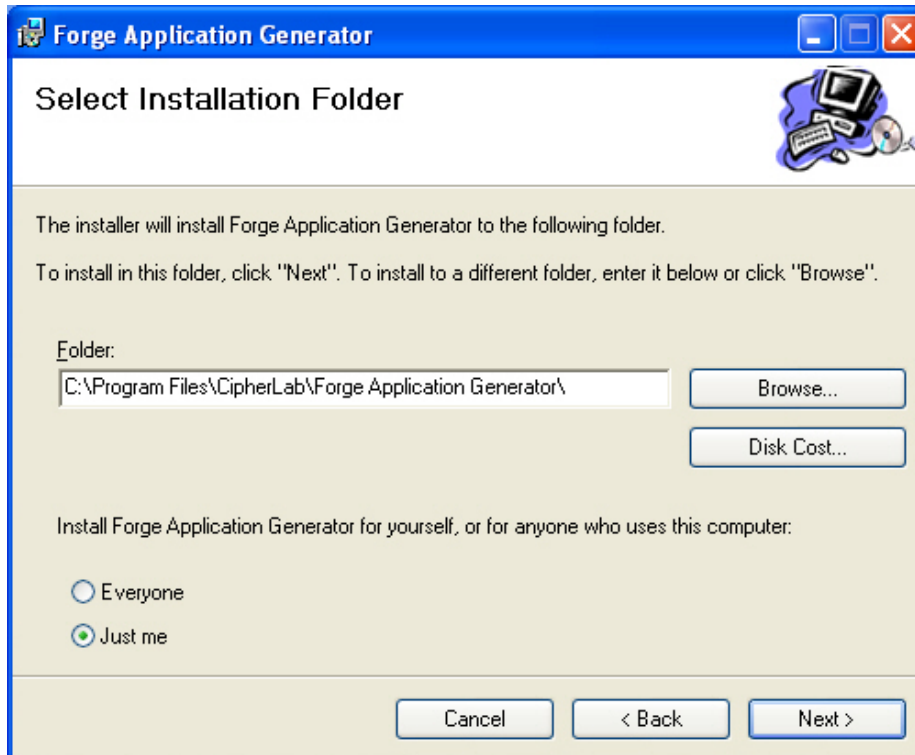
3) After installing, the mobile computer screen will show you the successful installation information as below:



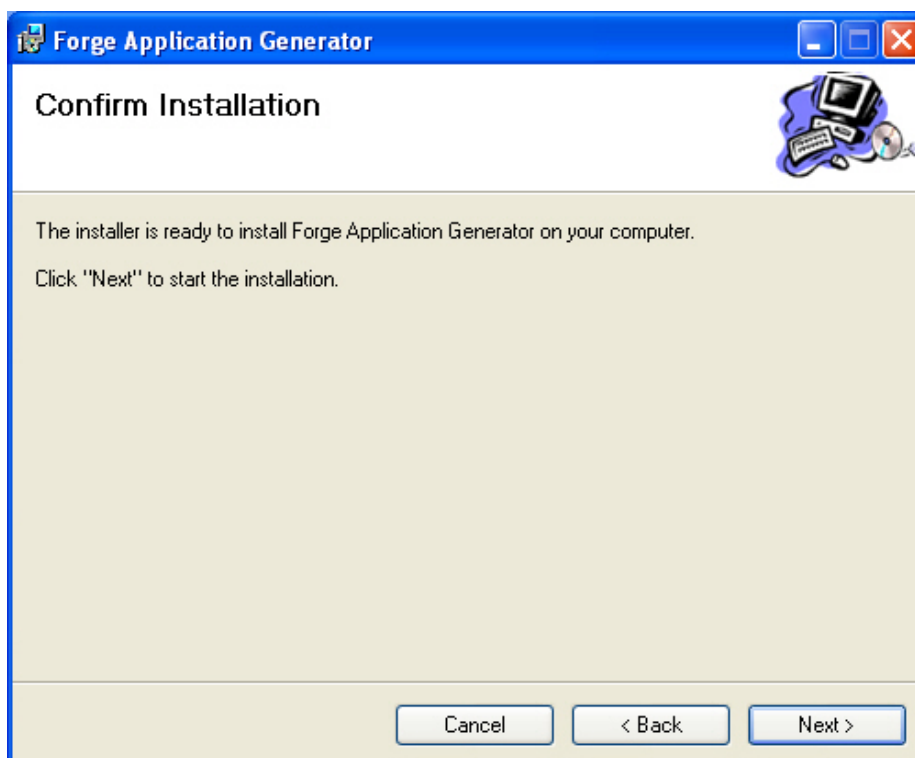
4) Please run AGCP30.msi on the product CD to install Forge Application Generator on your computer.



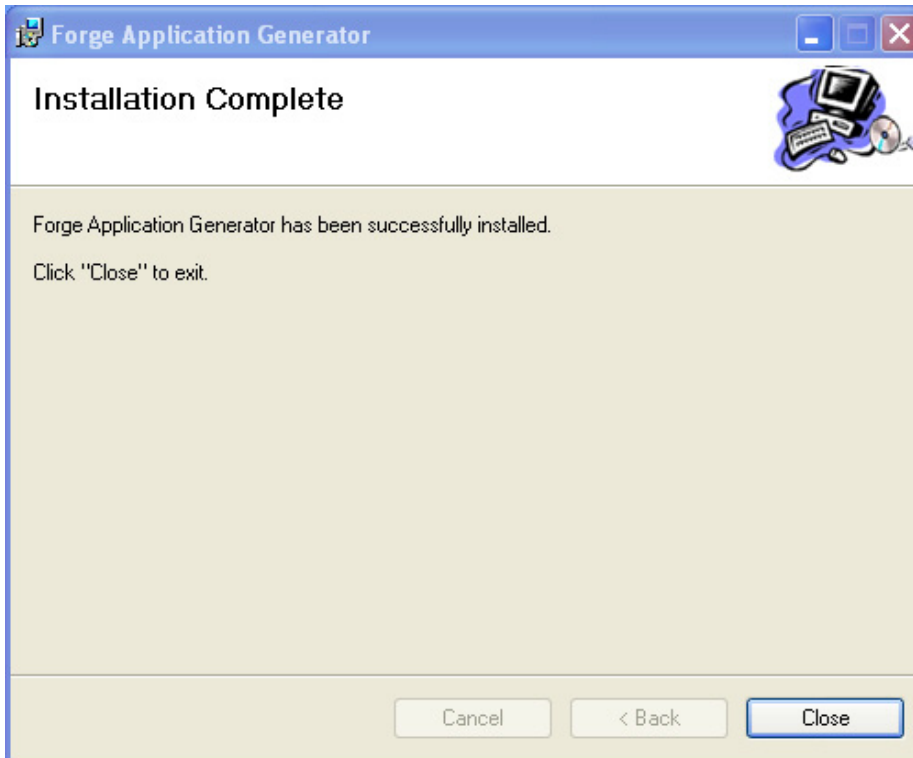
5) Click "Next" to indicate the root to install the Fore Application Generator, and then click "Next" to continue.



6) Click "Next" to start the installation.



7) Click "Close" to exit and finish the installation.



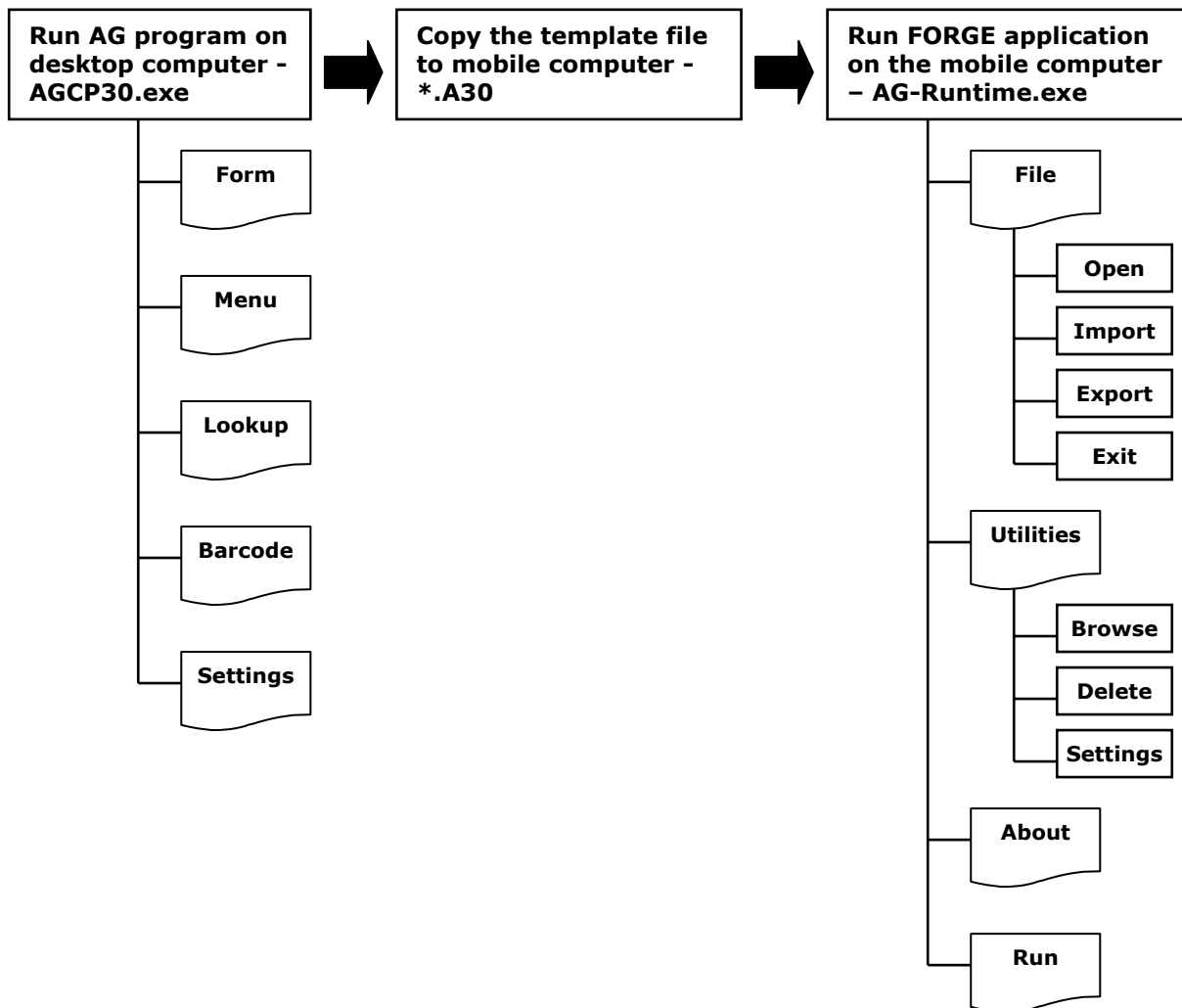
Note: Before installing, please make sure the connection via USB cable between your PC and Mobile Computer is normally.

The program files are provided on the product CD:

CP30 Application Generator CD Driver	
CP30_WM.exe	Application Generator installer for CP30 Terminal
AGCP30.msi	Application Generator installer for your PC
CP30 Application Generator (PC)	
AGCP30-xxxxxxx.lng	This language file for AGCP30.exe
AGCP30.exe	The setup file for installing the applet to “\Program Files\CipherLab\Forge Application Generator” on your PC.
AGCP30.ini	A configuration settings log file.
CP30 Application Generator (Mobile Computer)	
AG-Runtime.exe	<p>The setup file for installing the applet to “\Program Files\FORGE\” on the mobile computer.</p> <ul style="list-style-type: none"> ▶ The FORGE folder contains three files: AG-Runtime.exe, AG-Runtime.ini and CP30_WM.png ▶ A shortcut icon to the AG applet is created and placed in: Start AG Runtime.
AG-Runtime.ini	A configuration settings log file.
CP30_WM.png	A specific icon .png file for AG-Runtime.

HOW IT WORKS

Data collection mainly consists of three elements: input (scanning or key-in), data processing, and output (updating database). FORGE Application Generator for CP30 Mobile Computers is specifically designed to deal with the sequences of data processing inside the mobile computers.



Note: The generated *.A30 template file of PC will be saved to the default root \Program Files\CipherLab\Forge Application Generator.

GETTING STARTED

Let's take the example of CP30 Application Generator.

- 1) Run *AGCP30.exe* on your computer. The miniature image of CP30 pops up.
- 2) Right-click freely on the CP30 image.

The Command Menu appears as shown below.



- 3) Select **[Edit]** to start with a new or the latest application template.
- 4) In Application Generator Configuration screen, you can click **[OK]** to close the editing window upon completion or click **[Cancel]** to end editing without save.
- 5) Select **[Save]** or **[Save As]** to save the current editing template to file (*.A30).
- 6) Copy the template file (*.A30) to the mobile computer via ActiveSync.
- 7) Run the program *AG-Runtime.exe* on the mobile computer.
- 8) Tap **[Menu | File | Open]** to use the copied application template (*.A30).
- 9) Tap **[Menu | File | Import]** to import lookup file(s) if necessary.
- 10) Tap **[Run]** on the soft key bar to start with your data collection task.

COMMAND MENU

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

New	Ctrl+N
Open...	Ctrl+O
Save	Ctrl+S
Save As...	
<hr/>	
Edit	Ctrl+E
Preferences...	
<hr/>	
About...	
Exit	Alt+F4

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 language settings, application property and load action.
About...	To show information about the Application Generator.
Exit	To close the Application Generator.

RECENT FILE LIST

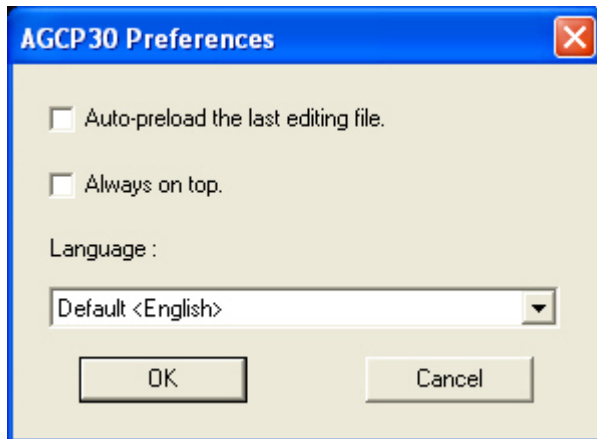
If you ever saved a template, it will be displayed in the Command Menu as well. Up to 4 recent template files are listed for quick access.

New	Ctrl+N
Open...	Ctrl+O
Save	Ctrl+S
Save As...	
<hr/>	
Edit	Ctrl+E
Preferences...	
<hr/>	
1: C:\Program File...cation Generator\4.A30	
2: C:\Program File...cation Generator\3.A30	
3: C:\Program File...cation Generator\2.A30	
4: C:\Program File...cation Generator\1.A30	
<hr/>	
About...	
Exit	Alt+F4

- ▶ 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 saved files to open the template for editing. The opened file will then be placed on top of the list.

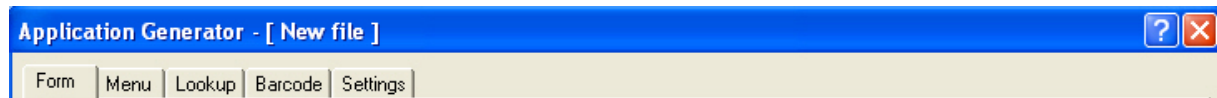
PREFERENCES



- ▶ 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 on the desktop computer.
- ▶ Always on top.
You may select the check box so that the AG program 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 is, a drop-down menu will be available. Then you will be able to select a preferred language for the GUI of your program.

APPLICATION TEMPLATE

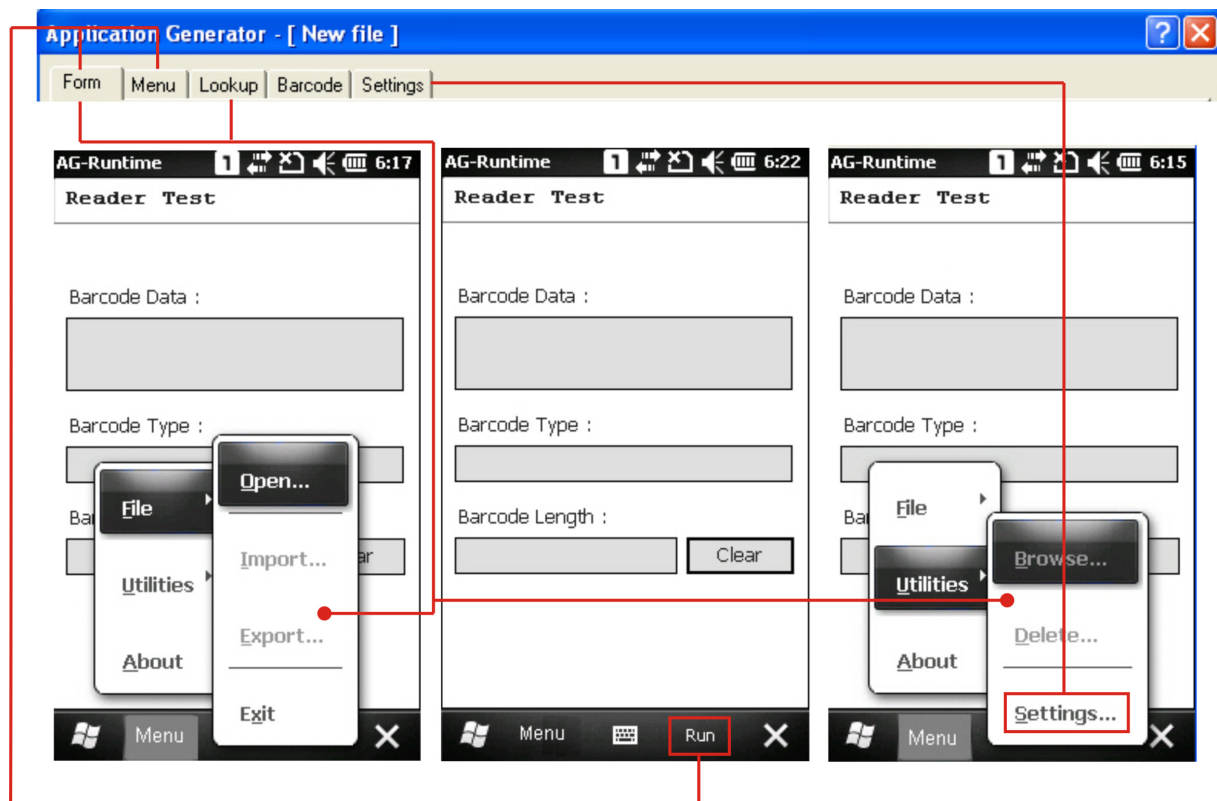
To work on a new or existing application template, click the New, Open, or Edit command. An application template is composed of five tabs; each is a property page for custom configurations.



Property Pages

Form	Forms are used to show information and allow for data input, which may be placed under a user menu, e.g. Main Menu > (Menu 1) > Form 1.
Menu	Menus are used to provide multi-level options, which may be placed under the main menu, e.g. Main Menu > Menu 1 > (Menu 2) > Form 1.
Lookup	Data of forms may make reference to one or up to 5 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 program sequences and system settings so that they will take effect when initialization is done on the mobile computer.

When you have completed all the configuration, copy the application template file (*.A30) to the mobile computer and open it. The submenus will become available now. If no lookup files are defined in both the Form and Lookup tabs, the associated options will become unavailable, as shown below.



Warning: On the Barcode tab of the AG program, you must select the correct barcode reader even though no modification is made to its settings. Otherwise, a warning dialog box is displayed to remind you of “wrong reader type” after opening the template file on the mobile computer. Then, you may choose to close the application directly or use the default setting to initialize the barcode reader.

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 data file, added to its lookup database, etc.

- ▶ Each form allows at most twelve input fields (12 lines).
- ▶ Twenty different forms can be defined.

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

The screenshot shows the 'Application Generator - [New file]' dialog box. The 'Form' tab is selected. The following elements are highlighted with red boxes and numbered 1 through 16:

- 1: ID field (value: form 1)
- 2: Key field dropdown (value: none)
- 3: Esc dropdown (value: main)
- 4: Next dropdown (value: form 1)
- 5: Lookup dropdown (value: 1st lookup file)
- 6: Record dropdown (value: save)
- 7: Time Stamp... button
- 8: Advanced... button
- 9: Data type dropdown for Line #1 (value: text)
- 10: Prompt field for Line #1 (value: Code:)
- 11: Input source dropdown for Line #1 (value: all)
- 12: Min length field for Line #1 (value: 1)
- 13: Max length field for Line #1 (value: 20)
- 14: Lookup dropdown for Line #1 (value: field 1)
- 15: Properties dropdown for Line #1 (value: more...)
- 16: Reset button

Line	Data type	Prompt	Input source	Min length	Max length	Lookup	Properties
#1	text	Code:	all	1	20	field 1	more...
#2	extension		all	0	160	nil	more...
#3	lookup	Name:	all	0	160	field 2	more...
#4	auto(+/-)	Amount:	keypad	0	5	+field 3	more...
#5	nil		all	0	160	nil	more...
#6	nil		all	0	160	nil	more...
#7	nil		all	0	160	nil	more...
#8	nil		all	0	160	nil	more...
#9	nil		all	0	160	nil	more...
#10	nil		all	0	160	nil	more...
#11	nil		all	0	160	nil	more...
#12	nil		all	0	160	nil	more...

Note: Before scanning data, please go to Barcode tab to set the Barcode Reader type firstly. The wrong selection of Barcode Reader type will display "Wrong Reader Type!!" information on your mobile computer AG Utility.

IN THIS CHAPTER

1.1 ID	16
1.2 Key Field	16
1.3 Esc	17
1.4 Next	17
1.5 Lookup (File)	17
1.6 Record	18
1.7 Time Stamp	19
1.8 Advanced	20
1.9 Data Type.....	21
1.10 Prompt	43
1.11 Input Source	43
1.12 Minimum Length	43
1.13 Maximum Length	43
1.14 Lookup (Field) / Variables	44
1.15 Properties	46
1.16 Reset	49

1.1 ID

Select an ID for the current form you work on. Usually start with "form 1".

- ▶ form 1 ~ 20

1.2 KEY FIELD

By default, data is to be saved to a sequential data file (by "form"). However, you may select a key field as the index so that data will be saved by index and a quick search is allowed when browsing data. Refer to [Menu > Utilities > Browse](#) in Appendix I – [Demonstration on Mobile Computers](#).

- ▶ Select **Save** or **Save & update** in [1.6 Record](#).
- ▶ This feature can be used together with the "Only read data once" feature, which is normally applied to prevent any repeated reading of the same barcode.

Record	Key Field	Advanced > "Only read data once"
Save	None	Regardless of this setting, data will be saved to a sequential file.
Save & update	Any (line 1~12)	<ul style="list-style-type: none"> ▶ If "Only read data once" is enabled, any reading of the same barcode will be rejected. A warning message will be displayed on the mobile computer to indicate "Data duplicated!" ▶ If "Only read data once" is disabled, the reading of the same barcode will be accepted but only the last one is saved. A message will be displayed on the mobile computer to indicate "Data updated!"

1.3 ESC

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

- ▶ [main](#)
- ▶ form 1 ~ 20
- ▶ menu 1 ~ 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.

- ▶ [main](#)
- ▶ form 1 ~ 20
- ▶ 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 [Input Source](#) decides the way to produce the key value of **[Enter]**.

Input Source of the last line	Operation
Reader	In 1.15 Properties , Auto ENTER for barcode input must be configured as "Scan + ENTER".
Keypad	Press the [Enter] key on the mobile computer.

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 number of fields and length of each field.

On this property page, related settings must be configured.

- ▶ [1.9 Data Type](#)
- ▶ [1.14 Lookup \(Field\) / Variables](#)

Note: The associated lookup file(s) must be imported 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 data file. <ul style="list-style-type: none"> ▶ Refer to the "Key Field" and "Advanced" settings.
update lookup	To update the lookup file associated with the form.
save & update	To save the record to a data file and update the lookup file. <ul style="list-style-type: none"> ▶ Refer to the "Key Field" and "Advanced" settings.
pass down	To pass down data to the next form or menu without saving.

Note: If data is to be saved in a data file, the default export file name can be changed in the "Advanced" setting.

1.6.1 EXPORT FILES

Refer to [File Menu > Export Files](#) in Appendix I – Demonstration on Mobile Computers. Based on the selected option of **Record**, you can export a data file (by "form") or lookup file, or even merge them to a new file.

- ▶ Data file:

This is available only when you have selected "Save" or "Save & update" for **Record**. Refer to [1.2 Key Field](#) about how to make use of an index. The default file name is "[Form 01](#)".

- ▶ Lookup file:

This is available only when you have specified a lookup file in use. The default file name is "[1st lookup file](#)".

1.6.2 MANIPULATE DATA

Refer to Utilities Menu in Appendix I – [Demonstration on Mobile Computers](#).

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.

Date & Time Stamp settings

Date & Time Stamp : nil

Separate DATE stamp and TIME stamp to two fields.

Date Format : YYYY/MM/DD

Year 4 Digits (YYYY)

Month

Day

Separator /

Date Style : Year.Month.Day

Time Format : HH:MM:SS

Hour

Minute

Second

Separator :

OK Cancel

1.7.1 STAMP POSITION

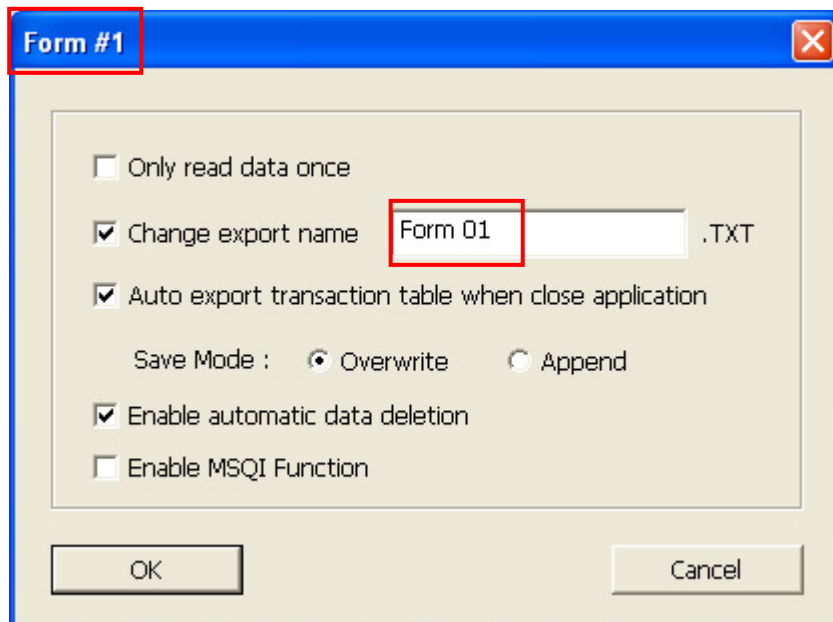
Decide whether or not to enable the stamp function and include the date/time information, either to the beginning or to the end of a record.

1.7.2 DATE/TIME FORMAT

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

1.8 ADVANCED

Here provides additional settings associated with the “[Key Field](#)” and “[Record](#)” features.



1.8.1 ONLY READ DATA ONCE

When the “Only read data once” feature is enabled, a warning message “Data duplicated!” is displayed on the mobile computer if the entry of input data already exists.

Note: To enable the “Only read data once” functionality, you must specify the key field.

1.8.2 CHANGE EXPORT NAME

By default, data is to be saved to a sequential data file (by “form”). Change the file name if necessary.

1.8.3 AUTO EXPORT...

If “Auto export transaction table when close application” is enabled, the data file will be exported automatically upon closing the application. Choose the save mode to decide whether the data file will overwrite or append to the existing file.

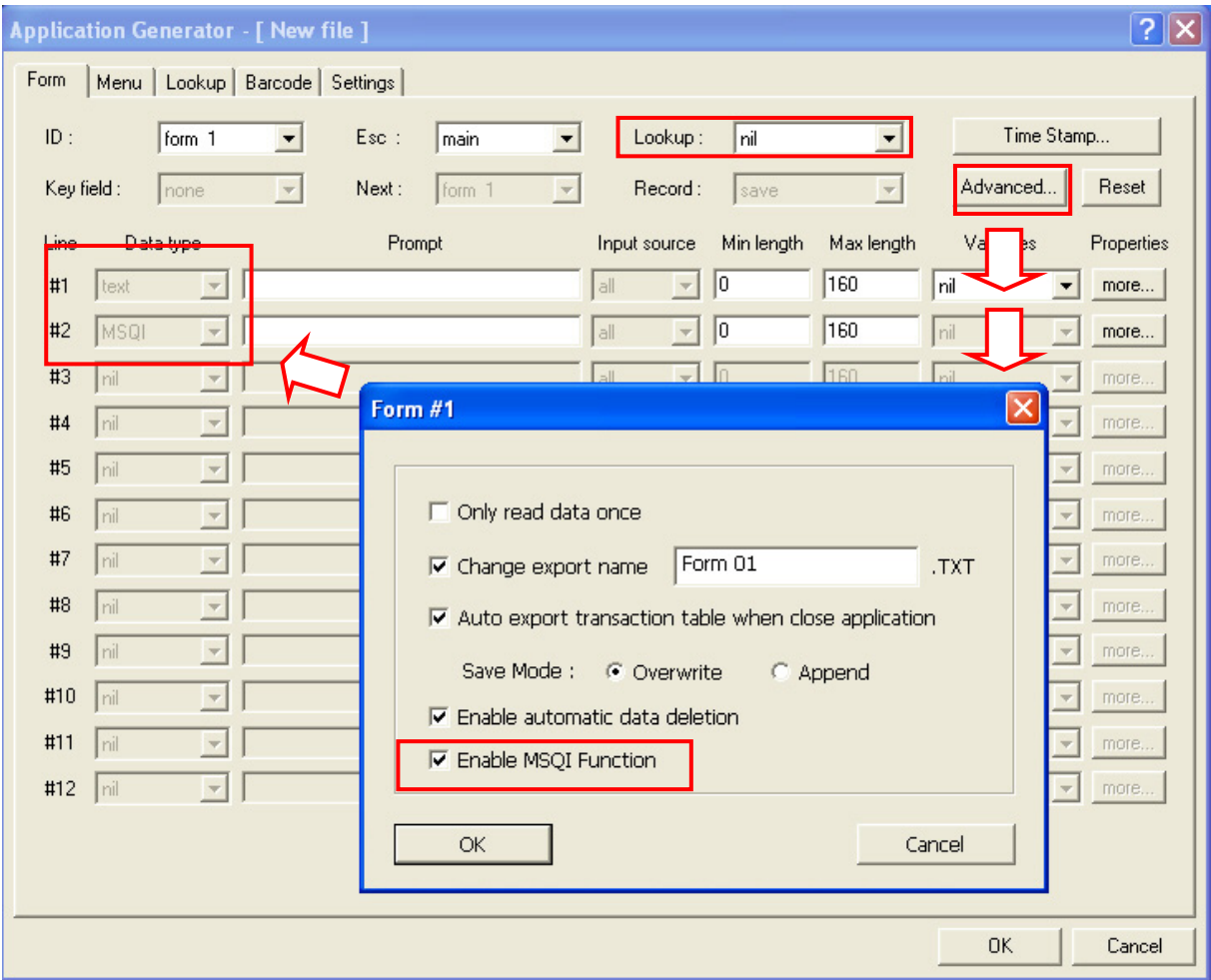
1.8.4 ENABLE AUTOMATIC DATA DELETION

When [Data Deletion](#) is set to “Automatic”, a data file is to be deleted once it has been exported to the host by default. You may disable the Automatic Data Deletion feature to keep the data file.

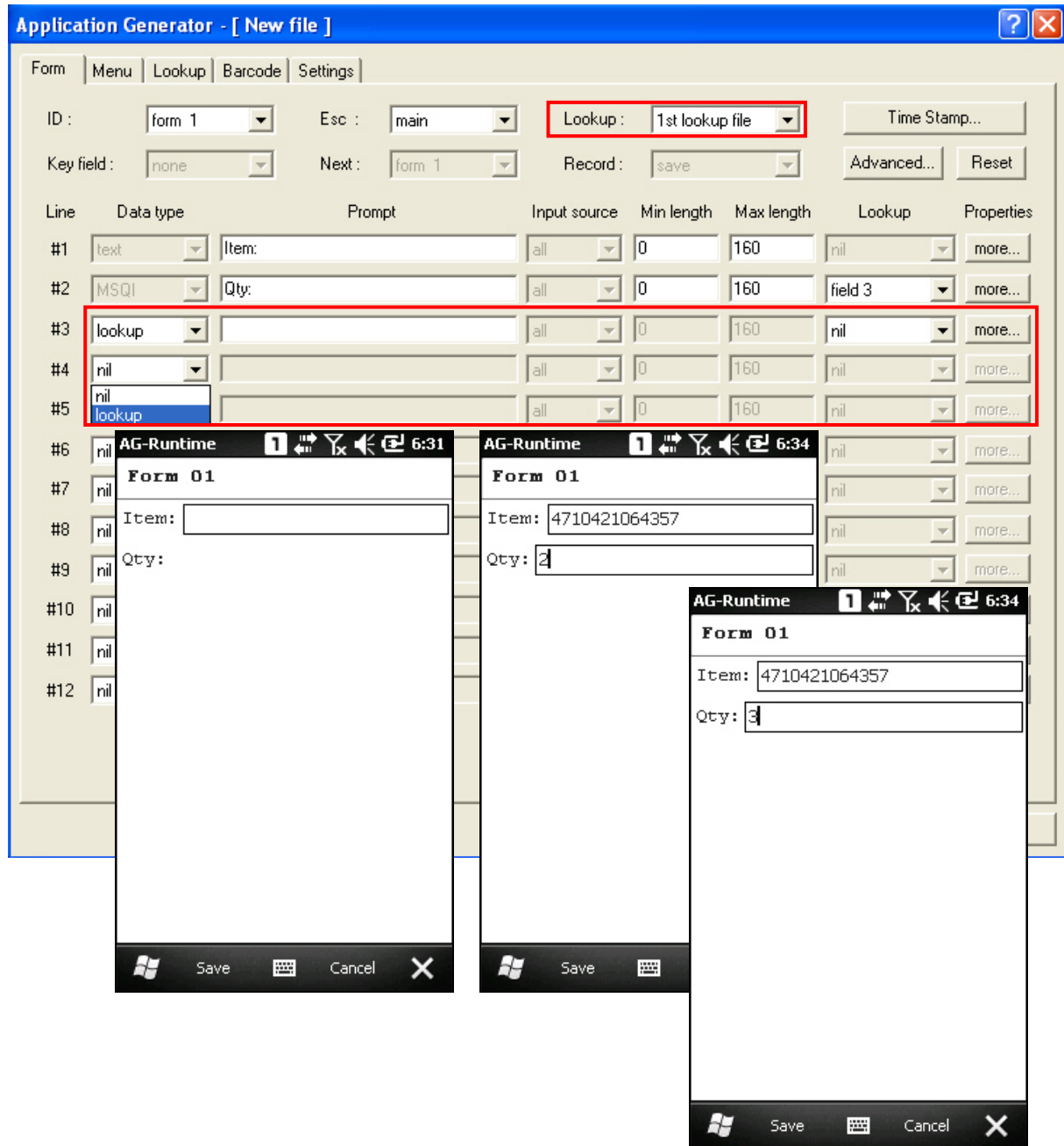
1.8.5 ENABLE MSQI FUNCTION

This function is used to multiple classifies with some same items manage. When the Multiple Scan Quantity Incrementing (MSQI) function is enabled, the Data type will be locked except for LookUp and nil items. Only Line#1 and #2 will be processed. And the form is set to be processed again and again until you tap the **[Save]** key on the soft key bar to save the data.

- ▶ Line 1 is set to "text" for data type.
- ▶ Line 2 is set to "MSQI" for data type. By default, the initial value is "0" that means the field of scan data is beginning from "1"; you may specify a value instead.



If a lookup file is specified in use, you may specify to import more information (line #3~) lookup selected item and display it on the mobile computer.



The process designed in Form 01, as shown above, will repeat as long as you are scanning barcodes.

- ▶ When you keep scanning the same barcode, it will accumulate the value for "Qty" field by add one for each scanning. (The example as shown above for MSQI initial vale is set to "1". Therefore, when you scan one data as same as "Item" No., the "Qty" will be changed to as "2", scan again as "3" and so on.

- ▶ When you scan a different barcode, it starts all over again with accumulating the quantity of this new item. Data for the previous item will be saved as a transaction record! (The example as below, the MSQI initial vale is set to "1".)

Run AG-Runtime. → Scan 4710421064357 barcode two times, Qty will show "3".

The first screenshot shows the AG-Runtime interface at 6:31. The form is titled "Form 01" and has two input fields: "Item:" and "Qty:". The "Item:" field is empty, and the "Qty:" field is also empty. The bottom navigation bar contains icons for "Save", "Cancel", and a close button.

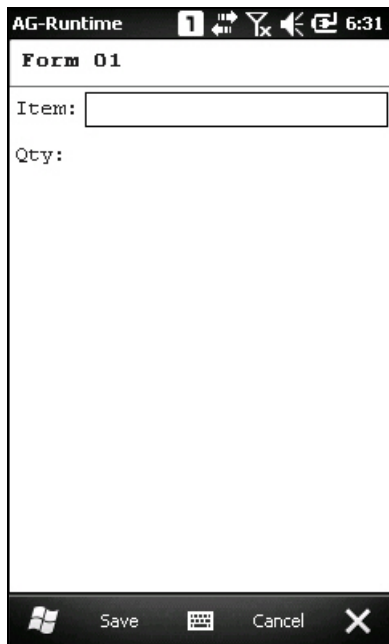
The second screenshot, taken at 6:34, shows the same form after scanning the barcode 4710421064357. The "Item:" field now contains the barcode number, and the "Qty:" field contains the number "3". An arrow between the two screenshots indicates the progression of time and the accumulation of the quantity.

Scan another barcode as 47113282 one time, Qty will show "2" (MSQI initial vale is "1").

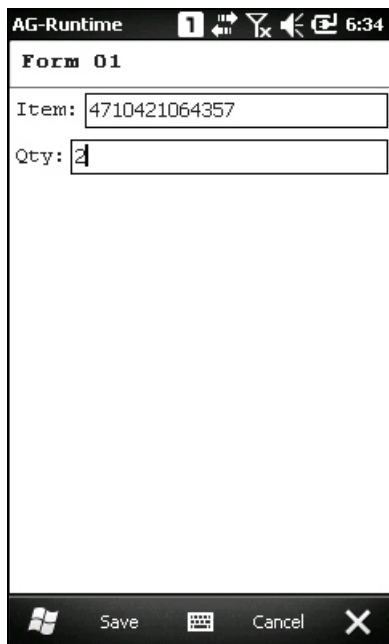
The screenshot shows the AG-Runtime interface at 1:57. The form is titled "Form 01" and has two input fields: "Item:" and "Qty:". The "Item:" field contains the barcode number 47113282, and the "Qty:" field contains the number "2". The bottom navigation bar contains icons for "Save", "Cancel", and a close button.

Below is the process flow explaining how MSQI function works.

- 1) Scan a barcode for an item. (line #1)

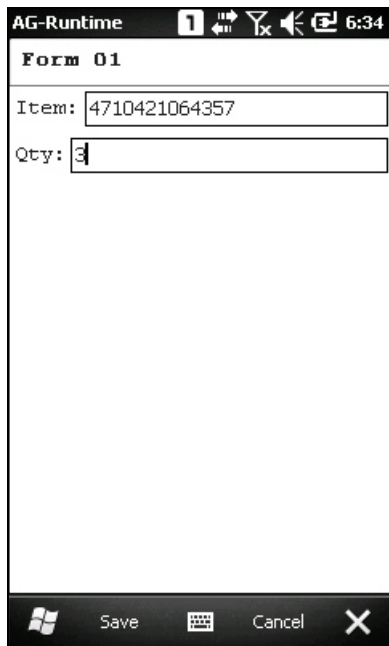


- 2) The lookup value will be displayed as the initial value. (line #2 for example initial value is "1" add scan one time say "2".)

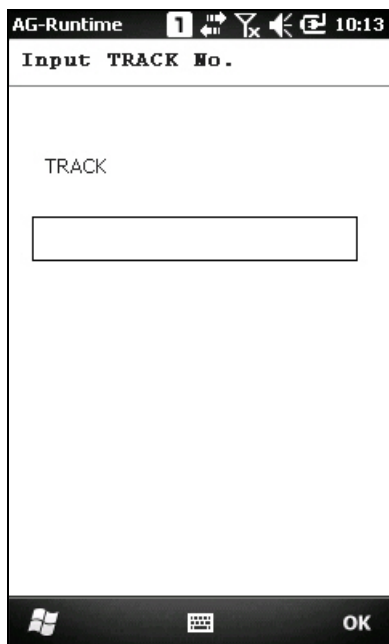


Note: If no lookup file is specified in use, the pre-defined initial value will be displayed. If any lookup file is specified in use as field1~12, the Qty initial value will disable. The output values will depend on the specified lookup .txt file.

- 3) Scan the barcode again, and it will accumulate the value by 1, say "3".



- 4) You may keep scanning barcodes for different items. Repeat step 2 and step 3.
Each different scan item will save automatically. To end the scanning, remember to tap "Save" on the soft key bar. Otherwise, the scanned data will be lost.
- 5) Tap **[Save]** on the soft key bar to save scanning data and tap **[X]** on the soft key bar or press **[ESC]** to end the scanning task.
- 6) A dialog box appears requesting you to input a track number as a scanned data separation. Enter a number if necessary; otherwise, tap **[OK]** to skip and close the dialog box.



Alternatively, if you have a large number of the same item, you may manually input the quantity, say "30". It will override the previous scanning of this item. Tap **[Save]**. Data for the quantity field saved with this transaction record is "30".

Start with initial scanning. When the MSOI initial value is "1".

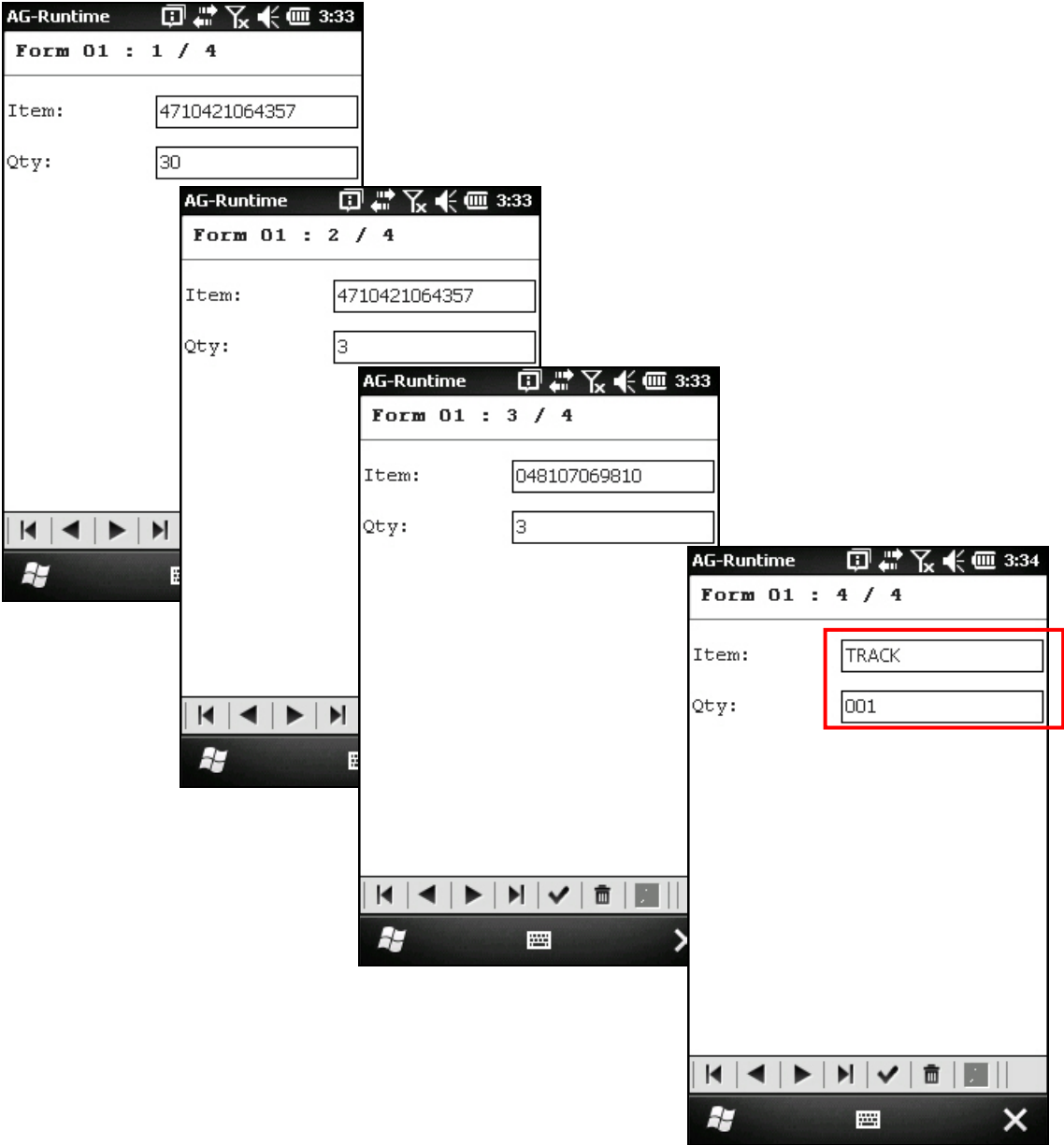
Scan the same barcode to accumulate the quantity.

Manually input a value to override the previous scanning. Tap **[Save]** to save data.

Tap **[X]** or press **[ESC]** to end the scanning task.

Input track no. if necessary.

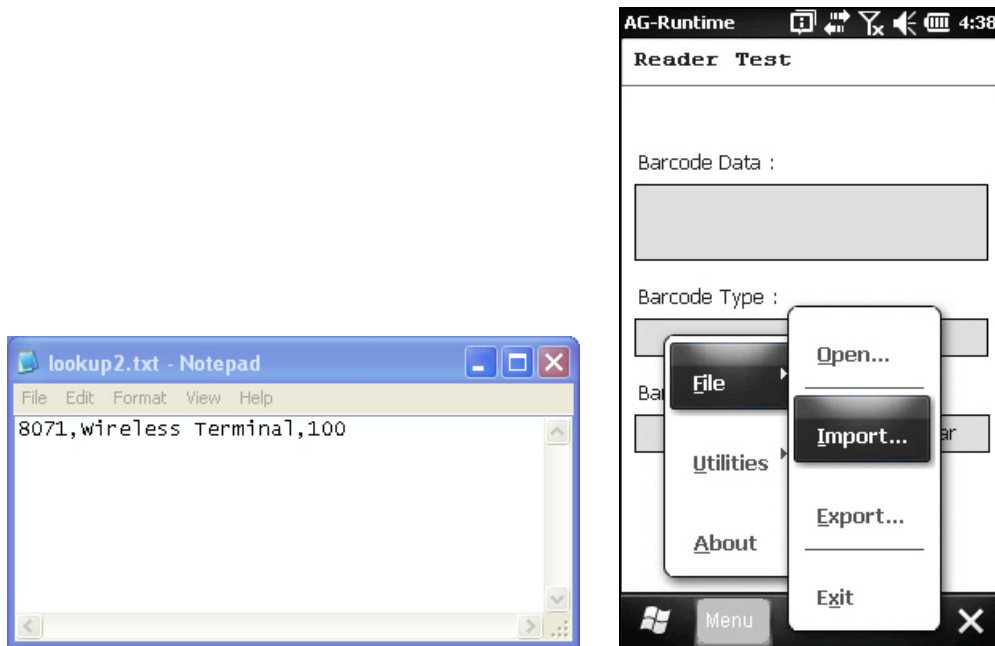
Tap **Menu | Utilities | Browse** to browse data, you will see records as shown below. The last one is for the track number.



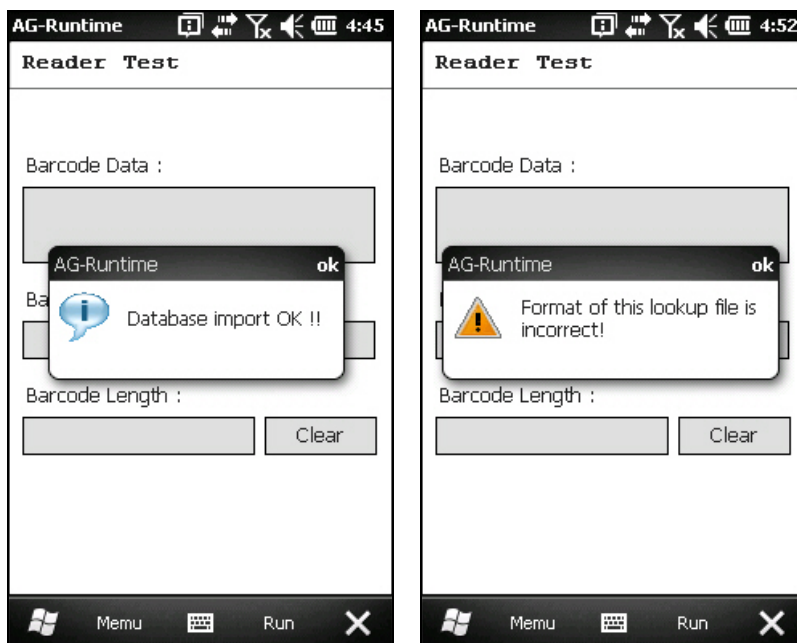
1.9 DATA TYPE

Before the beginning of below example, make a lookup file firstly and copy it to your mobile phone for AG-Runtime utility. Tap **Menu | Utilities | Import** to import lookup .txt file.

Make a lookup file as below. → Run AG-Runtime utility to import lookup .txt file.



After you importing specified lookup .txt file successfully, the screen will pop-up "Database import OK!!" information. If the screen pop-up you "Format of this lookup file is incorrect!" please check the Lookup related settings on Application Generator utility.



Specify the data type line by line to address your application requirements. Take the following for example.

Line	Data type	Prompt	Max length	Lookup	Properties
#1	text	Code:	160	field 1	more...
#2	extension		160	nil	more...
#3	lookup	Name:	160	field 2	more...
#4	auto(+/-)	Amount:	160	+field 3	more...
#5	prompt	----- End of Record -----	160	nil	more...
#6	pause	Press ENTER to continue ...	160	nil	more...
#7	nil		160	nil	more...
#8	nil		160	nil	more...
#9	nil		160	nil	more...
#10	nil		160	nil	more...
#11	nil		160	nil	more...
#12	counter	Data Count:	160	nil	more...

AG-Runtime 4:21

FORM 01

Code: 8071

Name: Wireless Terminal

Amount: 100 +

----- End of Record -----

Data Count: 00000000



AG-Runtime 4:24

FORM 01

Code: 8071

Name: Wireless Terminal

Amount: 100 + 2

----- End of Record -----

Press ENTER to continue ...

Data Count: 00000000

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>				
nil						
text	✓		✓	✓	✓	✓
integer	✓		✓	✓	✓	✓
real	✓		✓	✓	✓	✓
letter	✓		✓	✓	✓	✓
auto (+/-)	✓		✓	✓	✓	✓
boolean	✓		✓		✓	✓
lookup	✓	User-definable			✓	✓
fixed data	✓	✓				✓
prompt	✓					
counter	✓					
pass down	✓					
extension						
pause	✓					
alphanumeric	✓		✓	✓	✓	✓
image	✓			✓	✓	✓
large data	✓	✓		✓	✓	✓
read from 2D	✓	✓		✓	✓	✓

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.
- ▶ When the data type of the previous line is "image", you may need to reserve enough space for displaying the image.

1.9.2 TEXT

ASCII character – any character is acceptable. For example, \$1a2b3c=~/...

1.9.3 LETTER

Alphabetic character – any letter is acceptable, capital or small (Aa ~ Zz) .

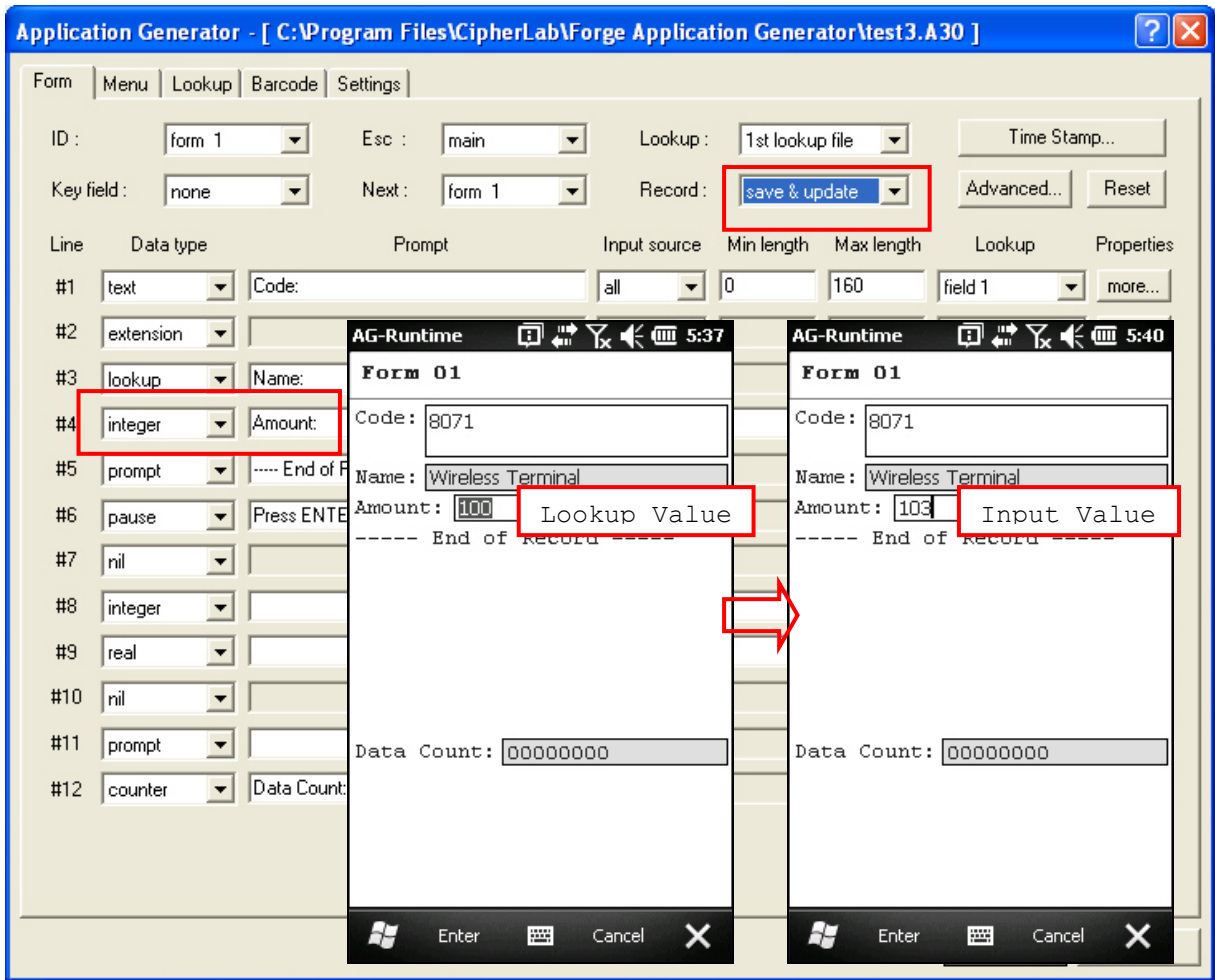
1.9.4 ALPHAMERIC

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

Whole number - any number is acceptable, such as ... -2, -1, 0, 1, 2 ...

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



LOOKUP (FIELD) – NO ARITHMETIC SIGN

For example, if you select "Save & Update" for **Record**, the input value will overwrite the lookup value. No arithmetic operations are performed

- ▶ Menu > Utilities > Browse (Data) > select "Form 01": the value of the entry is 103
- ▶ Menu > Utilities > Browse (Data) > select "1st lookup file": the value of the entry is 103

LOOKUP (FIELD) – ARITHMETIC SIGN "+"

For example, if you select "Save & Update" for **Record**, it will automatically add the input value to the lookup specified value. (Lookup item is set to "+" field X.)

- ▶ Menu > Utilities > Browse (Data) > select "Form 01": the value of the entry is 103
- ▶ Menu > Utilities > Browse (Data) > select "1st lookup file": the value of the entry is 203 (initial value 100+ input data 103=203.)

LOOKUP (FIELD) – ARITHMETIC SIGN "-"

For example, if you select "Save & Update" for **Record**, it will automatically subtract the input value to the lookup specified value. (Lookup item is set to "-" field X.)

- ▶ Menu > Utilities > Browse (Data) > select "Form 01": the value of the entry is -103
- ▶ Menu > Utilities > Browse (Data) > select "1st lookup file": the value of the entry is -3 (initial value 100-input data 103=-3)

1.9.6 REAL

Real number – any number with a decimal representation is acceptable, rational or irrational. For example, 4.56

1.9.7 AUTO (+/-)

Any Integer number is acceptable. For example, 123

- ▶ This is similar to data type **integer**, except that the lookup specified value whether is displayed or not 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 on Application Generator configuration (PC).

LOOKUP (FIELD) - NO ARITHMETIC SIGN

For example, if you select "Save & Update" for **Record**, the input value will simply overwrite the lookup specified value. No arithmetic operations are performed.

- ▶ Menu > Utilities > Browse (Data) > select "Form 01": the value of the entry is 8
- ▶ Menu > Utilities > Browse (Data) > select "1st lookup file": the value of the entry is 8

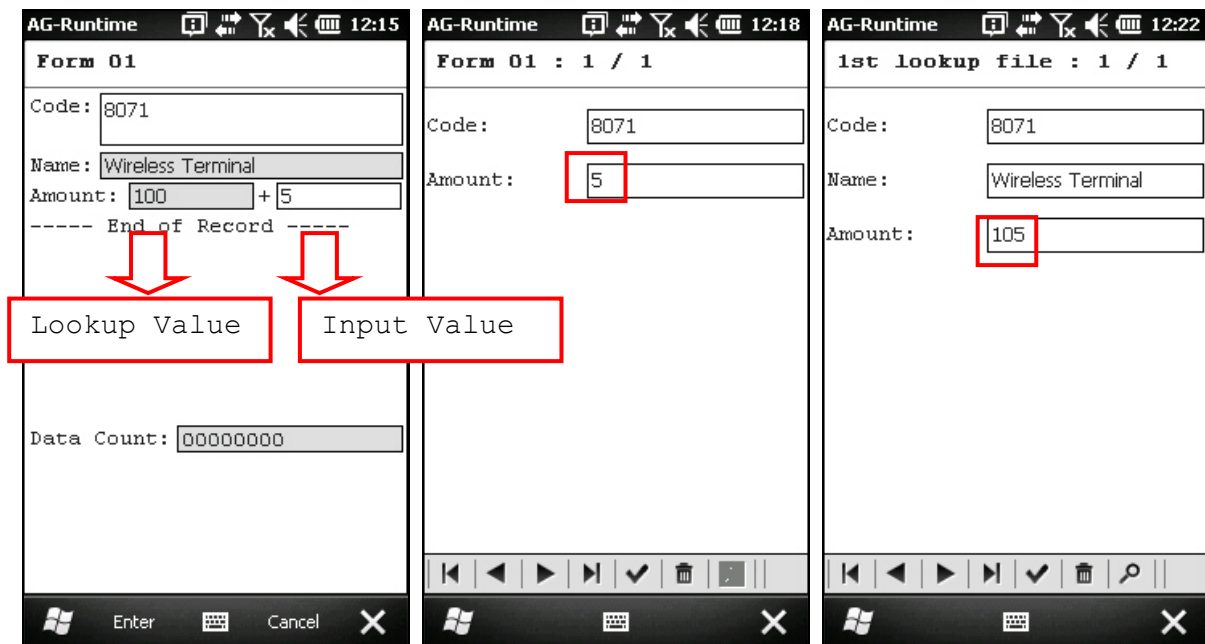
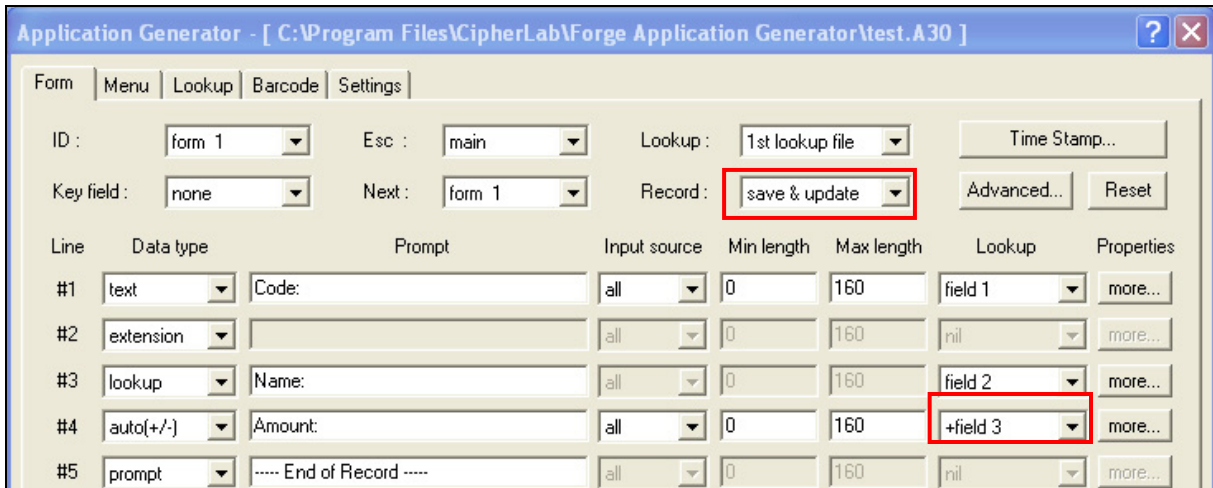
Line	Data type	Prompt	Input source	Min length	Max length	Lookup	Properties
#1	text	Code:	all	0	160	field 1	more...
#2	extension		all	0	160	nil	more...
#3	lookup	Name:	all	0	160	field 2	more...
#4	auto(+/-)	Amount:	all	0	160	field 3	more...
#5	prompt	----- End of Record -----	all	0	160	nil	more...

The screenshots show the runtime behavior of the application. The first screen shows the 'Form 01' with 'Code: 8071', 'Name: Wireless Terminal', and 'Amount: 100 + 8'. The second screen shows 'Form 01 : 1 / 1' with 'Code: 8071' and 'Amount: 8'. The third screen shows '1st lookup file : 1 / 1' with 'Code: 8071', 'Name: Wireless Terminal', and 'Amount: 8'. Red boxes highlight the 'Amount' field in the second and third screens, and red arrows point from these fields to labels 'Lookup Value' and 'Input Value'.

LOOKUP (FIELD) - ARITHMETIC SIGN “+”

For example, if you select “Save & Update” for **Record**, it will automatically add the input value to the lookup specified value.

- ▶ Menu > Utilities > Browse (Data) > select “Form 01”: the value of the entry is 5
- ▶ Menu > Utilities > Browse (Data) > select “1st lookup file”: the value of the entry is 105



LOOKUP (FIELD) - ARITHMETIC SIGN “-”

For example, if you select “Save & Update” for **Record**, it will automatically subtract the input value to the lookup specified value.

- ▶ Menu > Utilities > Browse (Data) > select “Form 01”: the value of the entry is -7
- ▶ Menu > Utilities > Browse (Data) > select “1st lookup file”: the value of the entry is 93

The image shows the Application Generator software interface, divided into a configuration window and three runtime screenshots.

Application Generator Configuration Window:

- Form: form 1
- Esc: main
- Lookup: 1st lookup file
- Key field: none
- Next: form 1
- Record: **save & update** (highlighted with a red box)

Line	Data type	Prompt	Input source	Min length	Max length	Lookup	Properties
#1	text	Code:	all	0	160	field 1	more...
#2	extension		all	0	160	nil	more...
#3	lookup	Name:	all	0	160	field 2	more...
#4	auto(+/-)	Amount:	all	0	160	-field 3 (highlighted with a red box)	more...
#5	prompt	----- End of Record -----	all	0	160	nil	more...

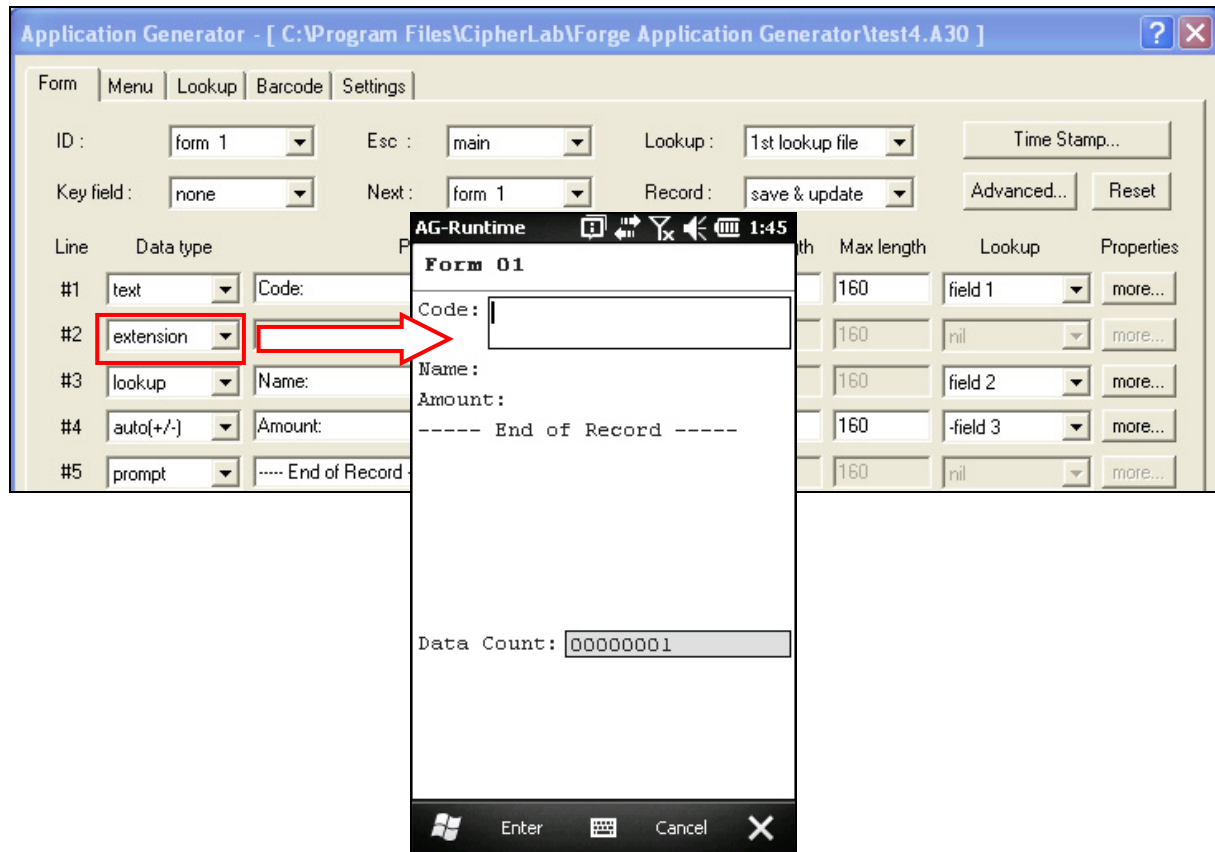
Runtime Screenshots:

- Form 01 (1:36):** Shows the form with Code: 8071, Name: Wireless Terminal, and Amount: 100 - 7. Red arrows point from the 'Lookup Value' and 'Input Value' labels to the '100' and '7' respectively.
- Form 01 : 1 / 1 (1:38):** Shows the form with Code: 8071 and Amount: -7. The '-7' is highlighted with a red box.
- 1st lookup file : 1 / 1 (1:38):** Shows the lookup file with Code: 8071, Name: Wireless Terminal, and Amount: 93. The '93' is highlighted with a red box.

1.9.8 EXTENSION

No data input is allowed.

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



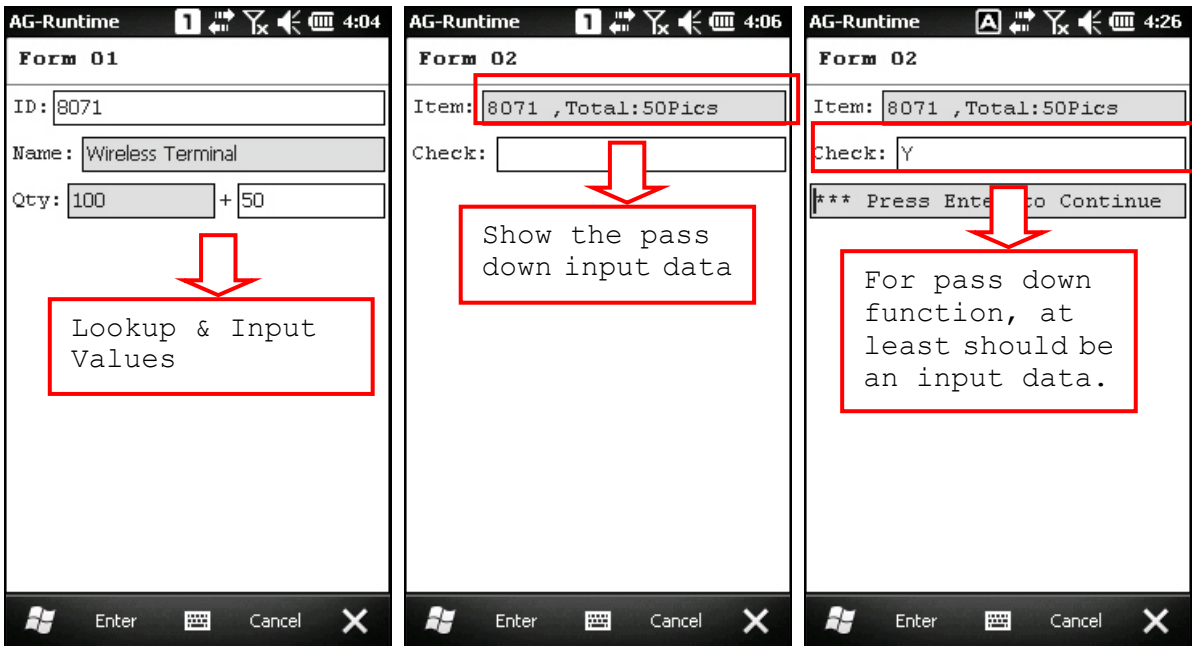
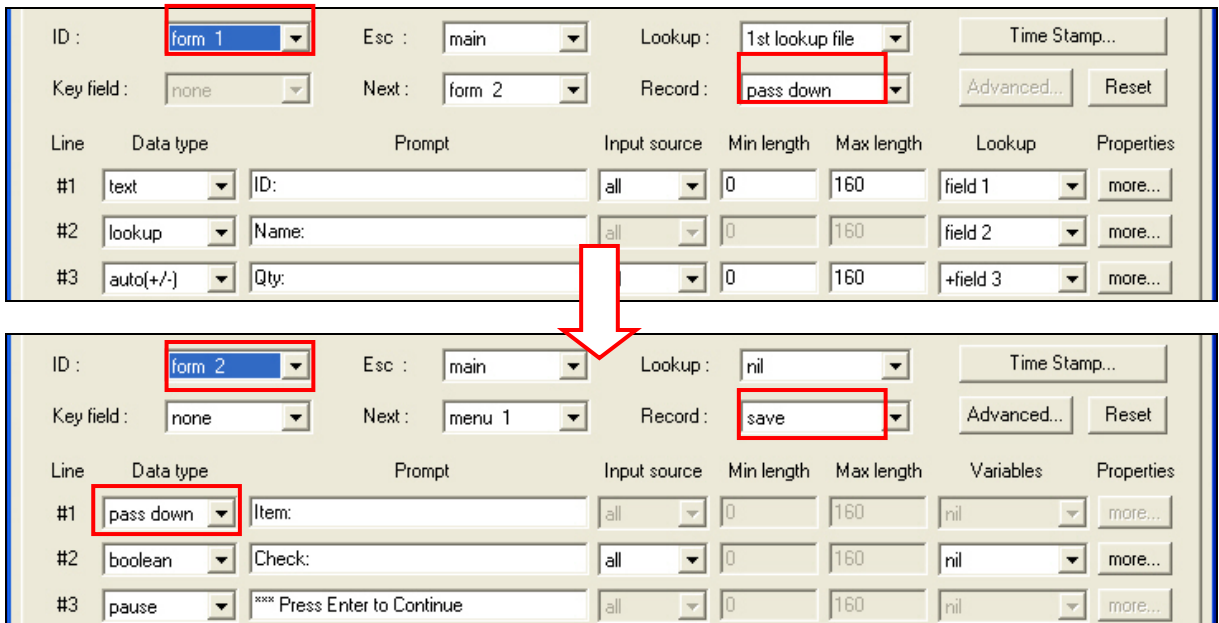
Note: The number of extension lines depends on the maximum length of your data and how many characters can be displayed per line of an input field.

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". The **Data type** of present form should at least one as "pass down". When one line is not enough for displaying the inherited contents, set its following line(s) to be an "extension".

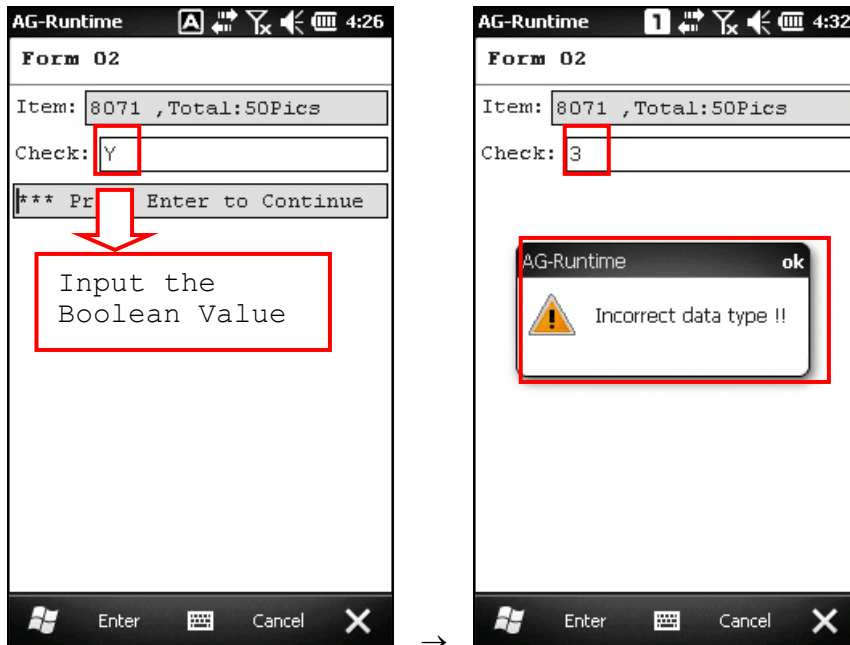
Note: This data type is used to combine input data of previous forms so that they can be saved as one record.



1.9.10 BOOLEAN

Only one of these sets of values are acceptable – “0 or 1”, “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 "Incorrect data type!"



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. This field will be displayed in grey on the mobile computer.
- ▶ By default, the imported data will not be saved in the transaction record. Click the **[more]** button and select **Save field data** in its associated [Properties](#) as shown below.

Properties

Form # 1 Line # 3

Field data

Save field data

Fixed data length 0

Left aligned (padded with space)

Add prefix code

Add suffix code

OK Cancel

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 displayed on the mobile computer as a message to catch your attention.

1.9.15 COUNTER

No data input is allowed.

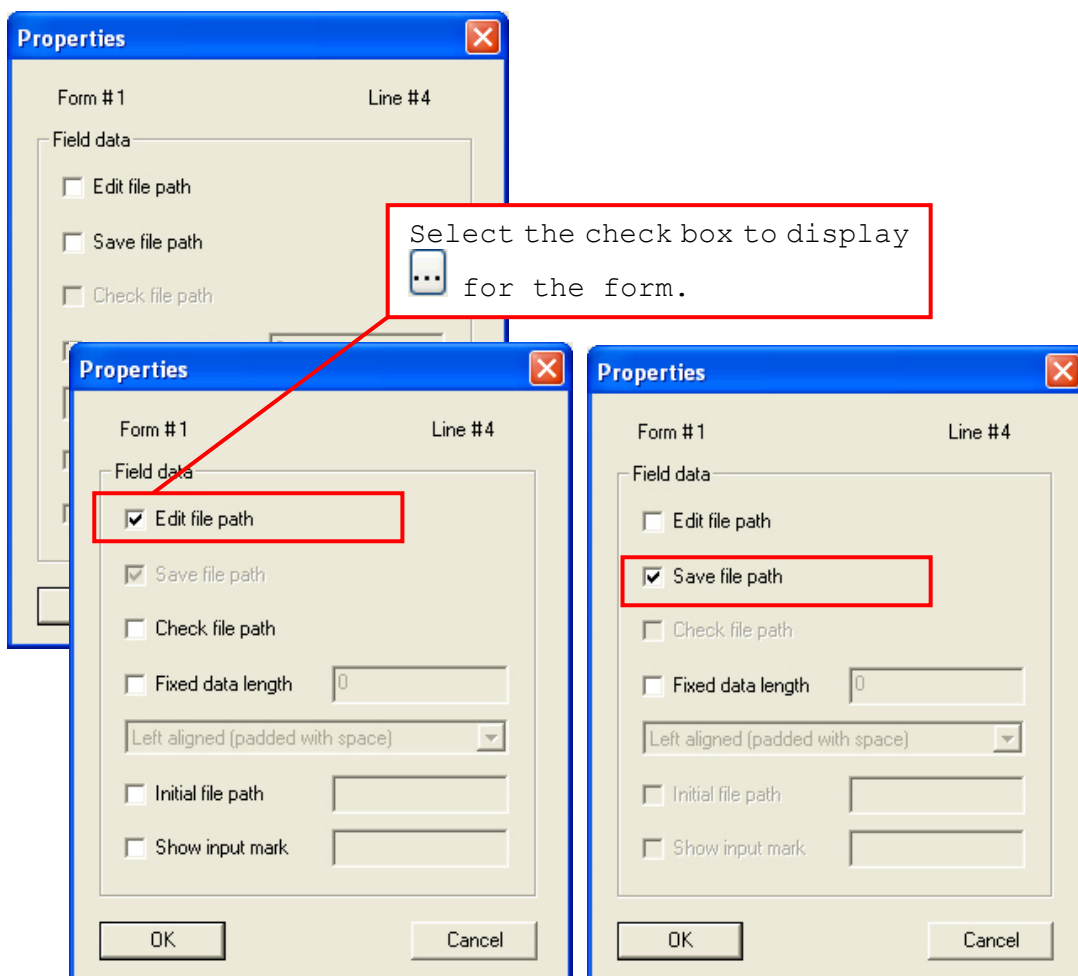
- ▶ The current record count will be displayed in eight digits, starting from 00000000. Refer to [5.4.3 Entry Options](#).

1.9.16 IMAGE

Only image data is allowed. The supported image file formats include BMP, JPEG, PNG, and GIF.

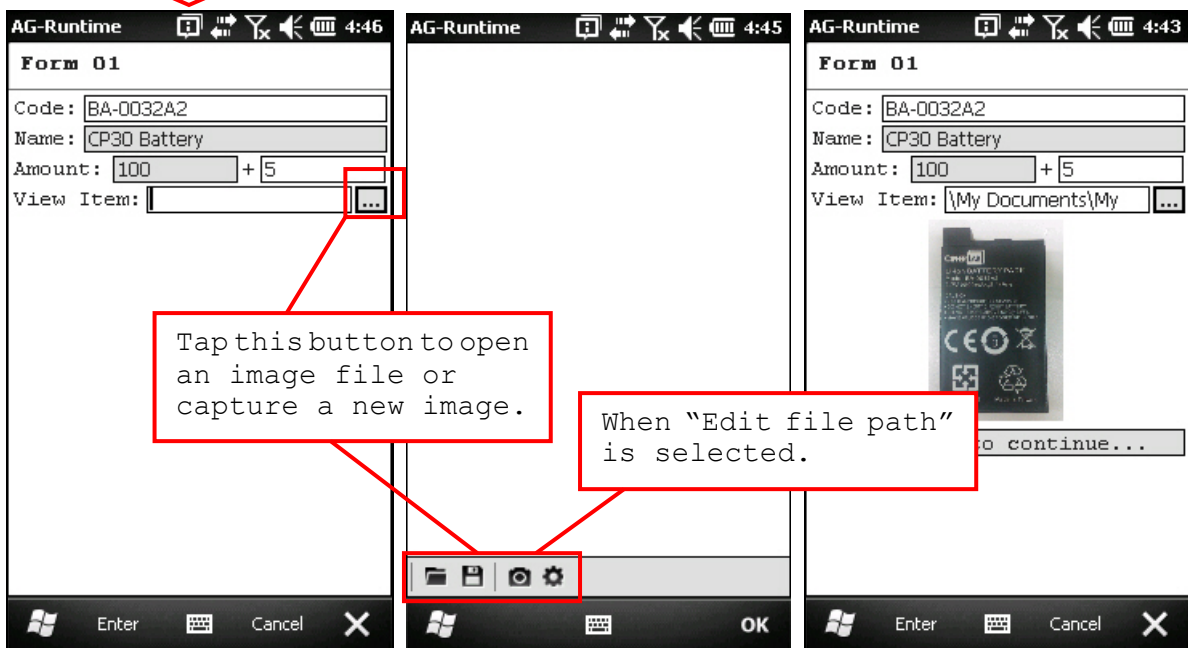
- ▶ The prompt string and the file path to an image will both be saved in the transaction record. Click the **[more]** button and select **Edit file path** to give a full path to an image file in the associated Properties dialog box as shown below. You may specify a default file path to an image file and change it later while collecting data.


Note: For CP30 mobile computer to capture an image, you must make sure that it is equipped with either a camera or reader. For the latter, the Barcode Reader setting on the Barcode tab must be enabled. If both camera and reader exist, it only allows using one capture utility for image capture.



- ▶ Reserve a number of lines ("nil" by default as shown below) to have enough space for displaying the image.

Line	Data type	Prompt	Input source	Min length	Max length	Lookup	Properties
#1	text	Code:	all	0	160	field 1	more...
#2	lookup	Name:	all	0	160	field 2	more...
#3	auto(+/-)	Amount:	all	0	160	+field 3	more...
#4	image	View Item:	all	0	160	field 4	more...
#5	nil		all	0	160	nil	more...
#6	nil		all	0	160	nil	more...
#7	nil		all	0	160	nil	more...
#8	nil		all	0	160	nil	more...
#9	nil		all	0	160	nil	more...
#10	nil		all	0	160	nil	more...
#11	nil		all	0	160	nil	more...
#12	pause	Press ENTER to continue...	all	0	160	nil	more...



Tap  to open an image or capture a new image.

Warning: When "Edit file path" is selected, the file path to an image can be specified or edited. If the "Edit file path" is not selected, the file path will not allow to be edited just only for viewing Image.

1.9.17 LARGE DATA

This data type option is available only when you have selected 2D scan engine for use on the mobile computer. Refer to [4.1 Reader Type](#).

- ▶ For each form, you can have only one field set to large data.
- ▶ It allows up to 2048 characters to be collected via the 2D scan engine.
- ▶ By default, the maximum field length is 160 characters, which requires manual adjustment for reading more and up to 2048 characters.
- ▶ By default, the "Read partial barcode" setting is enabled and set to read from the start position "1" and maximum length "20". It requires manual adjustment for reading more and up to 160 characters. For reading more than 160 characters, you need to disable the "Read partial barcode" setting. Refer to [1.15.2 Barcode Input](#).

Note: The Variable/Field setting will become disabled when both of the requirements are deployed: (1) the maximum field length is over 160 characters, and (2) the "Read partial barcode" setting is disabled.

1.9.18 READ FROM 2D

This data type option is available only when the following requirements are deployed: (1) you have selected 2D scan engine for using on the mobile computer, and (2) one of its preceding Data type fields must be set to "Large data".

- ▶ For each form, after having set one field to "Large data", you can set as many fields to "Read from 2D" as you need.
- ▶ It allows extracting partial data, up to 160 characters, from the fields set to "Large data". Refer to [1.15.2 Barcode Input](#).

1.10 PROMPT

Specify a prompt string for a specific input field, if necessary. Maximum 30 characters are allowed. Due to the screen size, the length of the prompt string will affect the looking display on the screen – it may be a very narrow input box if the prompt string is too long, and therefore, it will not display the whole input data on the screen, even though a number of its following lines are set to “extension”. It is better not to exceed 12 characters in browsing data because the prompt string is limited to 12 characters for displaying.

Note: Unless the 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.

- ▶ All
- ▶ Reader
- ▶ Keypad

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 [1.15 Properties](#).

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 160 at most.

You can facilitate data input by showing input marks on the screen. In [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.

Input via Barcode Reader
A warning message will be displayed to indicate "Data is too long!"
Input via Keypad
No warning message, however, you cannot input any more characters beyond the maximum length.

1.14 LOOKUP (FIELD) / VARIABLES

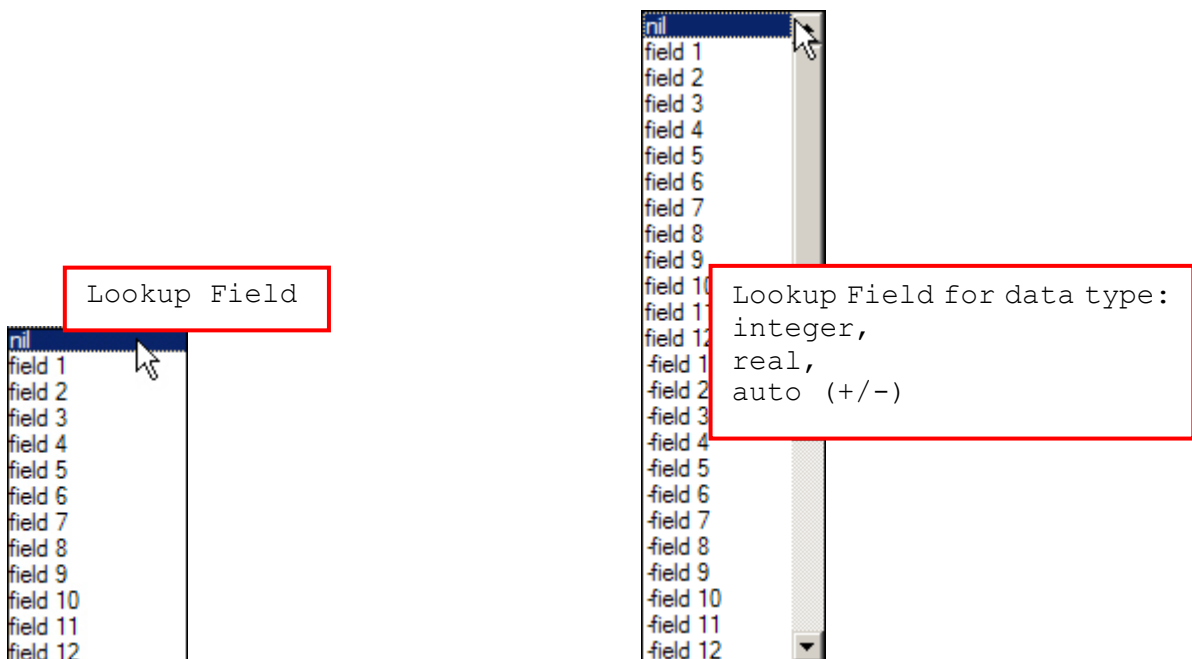
If there is no lookup file in use, this feature will be **Variables**.

1.14.1 LOOKUP (FIELD)

Refer to [1.5 Lookup \(File\)](#). 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. By default, the "key field" is Field #1. When an input field makes reference to the key field and its input data is matched, data for its specified input fields will be quoted to each corresponding lookup fields.

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

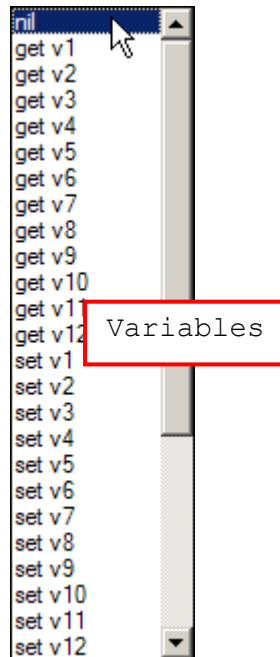
When an arithmetic sign (+, -) is prefixed to the lookup field, the input data will be added or subtracted from the lookup specified value.



1.14.2 VARIABLES

Refer to [1.5 Lookup \(File\)](#). If there is no lookup file in use, it will provide variables as shown below, which can be accessed by different forms.

For example, you may specify **set v1** for input field #1 of form 1, and its input data will be saved in the first character array. Specify **get v1** for input field #3 of form 2, and the previous input data will be quoted and imported. If you specify **get&set v1** 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.

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 and saved to transaction record for the exported file only. When browsing data, it will remain intact on the screen.
- ▶ 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 10 characters, specified here will be shown in the input field.

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. Only be showed to transaction record.

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). Only be showed to transaction record.

Instead of using delimiters in [5.2 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. The prefix/suffix code will be added to the exported file only.

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 [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 you try to input a number “8.12345” via the keypad, it will not allow the input of the fifth decimal digit. Only “8.1234” is considered acceptable and saved to file.

If the barcode “8.12345” is scanned via the barcode reader, a warning message “Incorrect decimal input” will be displayed on the mobile computer, and the system will automatically clear the input data and wait for new entry.

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	(Discarded: 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	(Discarded)

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**.

1.16 RESET

Click this button to load the default settings.

Note: The settings for the current form will be cleared once you click "RESET".

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.

The screenshot shows the 'Menu' tab of the 'Application Generator' dialog. It features a table for defining menu items and several configuration options. Red boxes are placed over the following elements:

- 1**: The 'ID' dropdown menu, currently showing 'menu 1'.
- 2**: The 'Esc' dropdown menu, currently showing 'main'.
- 3**: The 'Menu caption' checkbox and its associated text input field.
- 4**: The 'Item No.' input field for the first item, containing the text '4'.
- 5**: The 'Next' dropdown menu for the first item, currently showing 'main'.
- 6**: The 'Data' section, which includes two checkboxes: 'Save caption' and 'Save selected item', both of which are currently unchecked.
- 7**: The 'Reset' button located at the bottom left of the dialog.

IN THIS CHAPTER

2.1 ID	52
2.2 ESC	52
2.3 Menu Caption	52
2.4 Item Name	52
2.5 Next	54
2.6 Data	54
2.7 Reset	55

2.1 ID

Select an ID for the current menu you work on. Usually start with "menu 1".

- ▶ menu 1 ~ 10

2.2 ESC

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

- ▶ [main](#)
- ▶ form 1 ~ 20
- ▶ menu 1 ~ 10

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

2.3 MENU CAPTION

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

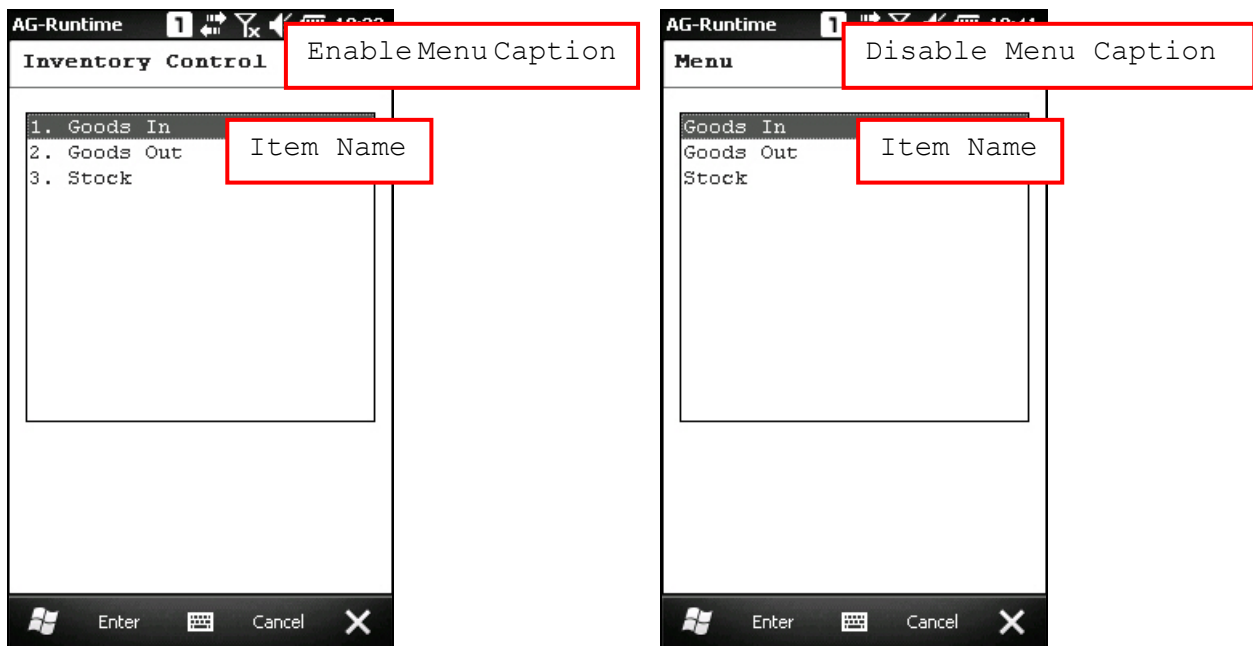
2.4 ITEM NAME

Specify a name for each menu item. For example, you may specify "1.Goods In" , "2.Goods Out" and "3.Stock" topic items (see below).

- ▶ Tap Settings tab.
- ▶ Select Program start from as menu1 or form1 depends on the Menu tab definition.
- ▶ Tap Menu tab to set Item Name as below.



Specify "1.Goods In" (see left below) or "Goods In" (see right below) topic items of menu. The only difference is the Item No. will not be displayed on the screen in the latter.



Note: To display the menu items on your mobile computer, you have to tap the Settings tab to set the program start from as **"menu1 or form1"** depends on the definition of Menu tab.

2.5 NEXT

Select the next form or menu that will be launched to display when tap a menu item.

- ▶ [main](#)
- ▶ form 1 ~ 20
- ▶ menu 1 ~ 10

This function can be activated by performing one of the following actions on the mobile computer –

- ▶ Double-tap the desired menu item.
- ▶ Press the **[Up/Down]** arrow keys to select a menu item, and then press **[Enter]**.

2.6 DATA

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

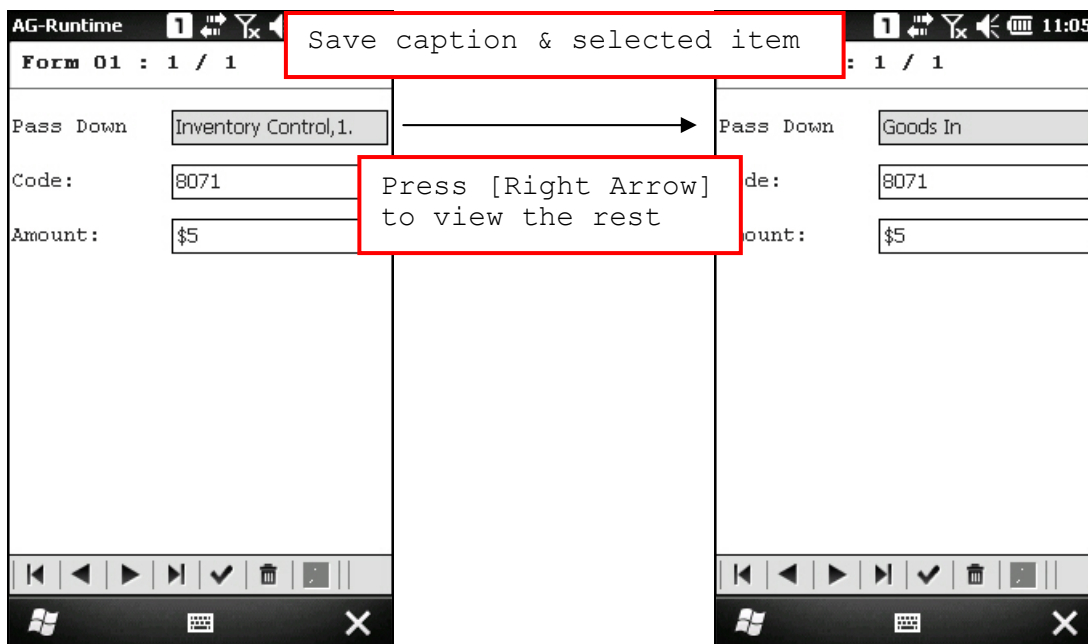
- ▶ Save caption – Save the menu caption to the transaction record as “Pass Down” data if this menu is running.
- ▶ Save selected item – Save the selected menu item to the transaction record as “Pass Down” data if this menu applies.

The screenshot shows the 'Menu' configuration screen. At the top, there are tabs for 'Form', 'Menu', 'Lookup', 'Barcode', and 'Settings'. The 'Menu' tab is selected and highlighted with a red box. Below the tabs, there are several input fields: 'ID:' with a dropdown menu showing 'menu 1', 'Esc:' with a dropdown menu showing 'main', and a checked checkbox for 'Menu caption:' with a text input field containing 'Inventory Control'. Below these is a 'Data' section, also highlighted with a red box, containing two unchecked checkboxes: 'Save caption' and 'Save selected item'. The main part of the screen is a table with three columns: 'Item No.', 'Item Name', and 'Next:'. The table contains 9 rows of data, with the first three rows having item names '1. Goods In', '2. Goods Out', and '3. Stock'. The 'Next:' column contains dropdown menus with values like 'form 1' and 'main'.

Item No.	Item Name	Next:
#1	1. Goods In	form 1
#2	2. Goods Out	form 1
#3	3. Stock	form 1
#4		main
#5		main
#6		main
#7		main
#8		main
#9		main



- ▶ Save caption and selected item – Save both to the transaction record as “Pass Down” data. If the data is too long to be displayed in full, press the **[Right Arrow]** key on the keypad to view the rest of it if necessary.



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

2.7 RESET

Click this button to load the default settings and the settings for the current menu will be cleared.

LOOKUP

A lookup file is a database file created for information reference. Up to five 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 copied to your mobile computer, **[File > Import]** and **[File > Export]** will be unavailable on the mobile computer.

Besides this chapter, you may refer to the following sections for a whole understanding of all related settings:

- ▶ [1.5 Lookup \(File\)](#)
- ▶ [1.9.11 Lookup \(Data Type\)](#)
- ▶ [1.14 Lookup \(Field\) / Variables \(Field\)](#)

Application Generator - [New file]

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

1 ID : 1st lookup file

Number of fields : **3**

2 Field property

- Fixed length
- Delimiter 0 (ASCII)

8 Change export name 1st lookup file .TXT

9 Auto export lookup table when close application

Save Mode Overwrite Append

10 Enable automatic data deletion

11 Action when the format of record is wrong : Stop the import process

12 Action when the input data has no match : Continue

13 Reset

Field	Data type	Field name	Length	Key field
#1	text		0	<input type="radio"/>
#2	text		0	<input type="radio"/>
#3	text		0	<input type="radio"/>
#4	text		0	<input type="radio"/>
#5	text		0	<input type="radio"/>
#6	text		0	<input type="radio"/>
#7	text		0	<input type="radio"/>
#8	text		0	<input type="radio"/>
#9	text		0	<input type="radio"/>
#10	text		0	<input type="radio"/>
#11	text		0	<input type="radio"/>
#12	text		0	<input type="radio"/>

OK Cancel

IN THIS CHAPTER

- 3.1 ID 59
- 3.2 Field Property..... 59
- 3.3 Number of Fields 59
- 3.4 Data Type..... 60
- 3.5 Field Name 61
- 3.6 (Max) Length 61
- 3.7 Key Field 61
- 3.8 Change Export Name..... 62
- 3.9 Auto Export Lookup Table When Close Application 62
- 3.10 Enable Automatic Data Deletion 62
- 3.11 Action When the Format of Record Is Wrong 62
- 3.12 Action When the Input Data Has No Match..... 63
- 3.13 Reset 64

Note: Before importing the Lookup AG template file on your mobile phone, you have to make the template file as a .txt file. The specified character numbers depend on the Lookup tab that can not exceed the Field Length.

3.1 ID

Select a lookup file you want to define its settings. Up to 5 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 –

- ▶ [3.3 Number of Fields](#)
- ▶ [3.6 \(Max\) Length](#)

3.2.2 DELIMITER

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

- ▶ [3.3 Number of Fields](#)
- ▶ [3.6 \(Max\) Length](#)

If the maximum length of each field is set improperly, you will receive a warning message in the import process. You may fail to import the lookup file, which depends on the action specified when the data format is wrong. Refer to the settings of [3.11 Action When the Format of Record Is Wrong](#).


3.3 NUMBER OF FIELDS

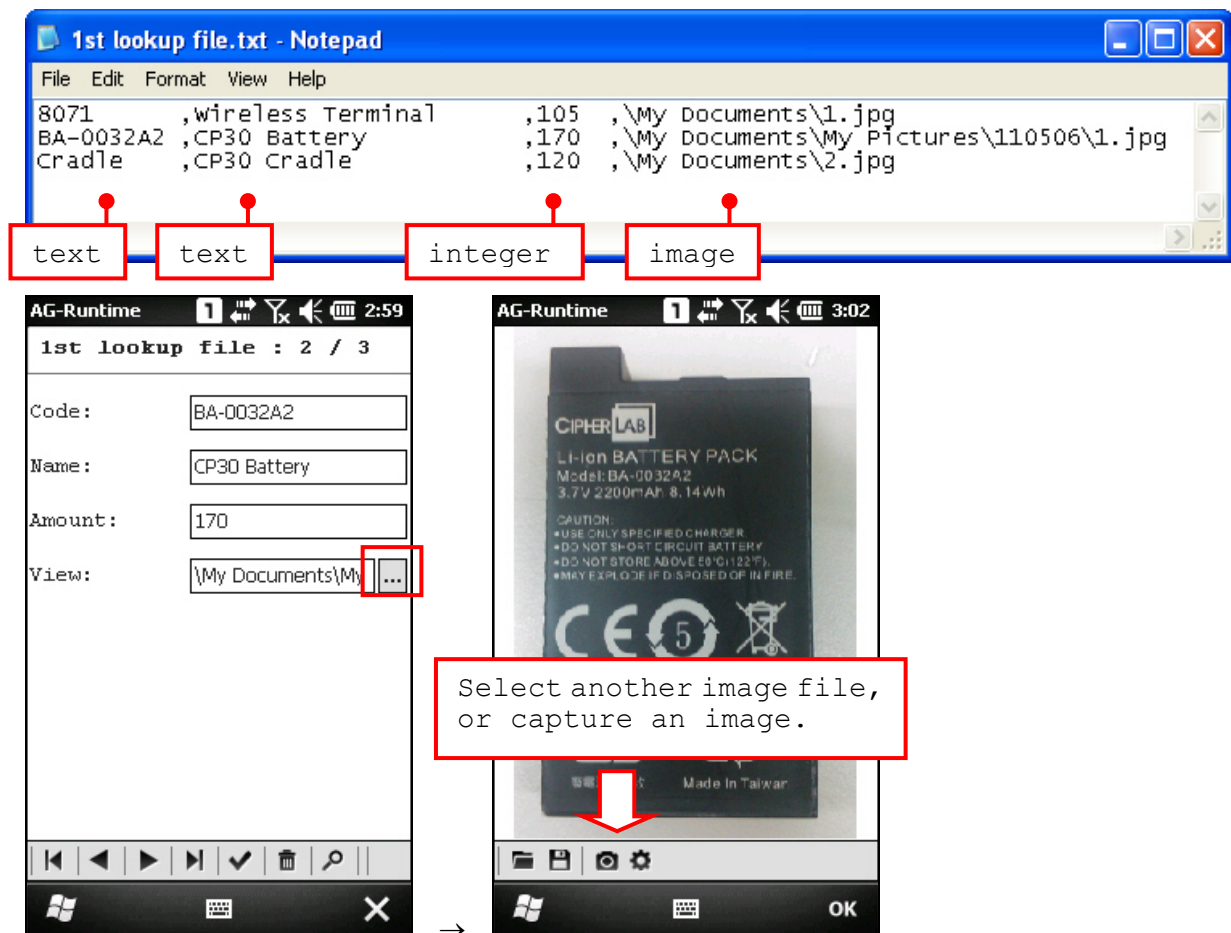
It must at least cover the referred fields of the database (lookup file). Refer to [1.14 Lookup \(Field\) / Variables](#).

3.4 DATA TYPE

A newly-added feature to help you verify whether the lookup file you are importing is correct or not. Be careful with the data type you set to each of the lookup field. If data in the lookup file is not as described, it may fail to import the lookup file and display a warning message. Refer to [1.9 Data Type](#) for details on each data type and [3.11 Action When the Format of Record Is Wrong](#).

- ▶ text
- ▶ integer
- ▶ real
- ▶ letter
- ▶ boolean
- ▶ image — same as “text”, full file path is required, such as “\My Pictures\battery.jpg”.

While browsing data, tap  to view image. It allows opening another image file or capturing a new image.



3.5 FIELD NAME

Specify a name for each lookup field, which will be displayed on the mobile computer to facilitate data editing under **[Utilities > Browse Data > Lookup File]**.

The screenshot shows a mobile application window titled 'AG-Runtime' with a status bar at the top showing signal strength, Wi-Fi, and the time 2:59. The main content area displays '1st lookup file : 2 / 3'. Below this, there are four input fields: 'Code:' with the value 'BA-0032A2', 'Name:' with the value 'CP30 Battery', 'Amount:' with the value '170', and 'View:' with the value '\My Documents\My ...'. A red rectangular box is drawn around the 'Name:' label and its corresponding input field. To the left of the form, the text 'Field Name' is enclosed in a red rectangular box. At the bottom of the screen, there is a navigation bar with several icons: a back arrow, a forward arrow, a checkmark, a trash can, and a magnifying glass. Below the navigation bar is a Windows-style taskbar with a Start button, a keyboard icon, and a close button.

3.6 (MAX) LENGTH

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

Note: If a delimiter is used to separate data fields, any improper Max length 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), and therefore enable searching by key field when you browse the lookup file.

Refer to [Utilities Menu > Browse](#) in Appendix I – [Demonstration on Mobile Computers](#).

- ▶ 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 the Key field input value (Field name) is matched to corresponding field of a lookup file, other input fields specified in lookup file will be brought up to relative fields.

If no matching, refer to [3.12 Action When the Input Data Has No Match](#).

3.8 CHANGE EXPORT NAME

If you have specified a lookup file in use, you can export it or even merge it with a data file. The default file name is "1st lookup file".

Note: The new name of a lookup file cannot be identical to that of the original file; otherwise, it will overwrite the original file!

3.9 AUTO EXPORT LOOKUP TABLE WHEN CLOSE APPLICATION

If a lookup file is in use and "Auto export lookup table when close application" is enabled, the lookup table will be exported automatically upon closing the application. Choose the Save Mode to decide whether the lookup table will overwrite or append to the existing table.

3.10 ENABLE AUTOMATIC DATA DELETION

When [Data Deletion](#) is set to "Automatic", a lookup file is to be deleted once it has been exported to the host by default. You may disable the Automatic Data Deletion feature to keep the lookup file.

3.11 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 import the lookup file.

3.11.1 STOP THE IMPORT PROCESS

When wrong data format is encountered, a warning message will be displayed on the mobile computer. The import 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, import the lookup file again.

3.11.2 TRUNCATE/REFORMAT THE RECORD

When wrong data format is encountered, it will automatically truncate or reformat the lookup file in the import process. For example, the additional fields of a record will be left out.

3.11.3 SKIP THE RECORD

When wrong data format is encountered, it will automatically skip the record.

3.12 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](#).

3.12.1 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** or **save & update** in [1.6 Record](#).

3.12.2 SHOW WARNING MESSAGE

A warning message "Data is not found!" is displayed on the mobile computer. If the Max length of Field is set to 10 on Barcode tab, the input value is "1234567891231" total for 13 characters, $13 > 10$ the warning will appear as below.

- ▶ Tap **[OK]** to close the message box. You will need to clear the input data manually.



3.12.3 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** on Form tab in [1.6 Record](#).

3.12.4 SHOW WARNING MESSAGE & INSERT

A warning message "Data is not found!" is displayed on the mobile computer.

- ▶ 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 [1.6 Record](#).

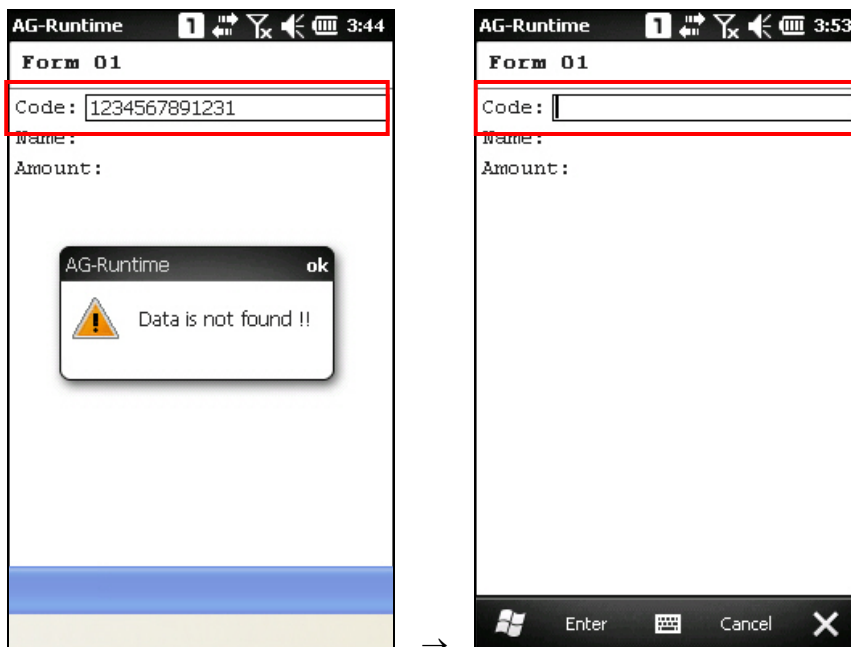
3.12.5 CLEAR THE SCREEN

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

3.12.6 SHOW WARNING & CLEAR SCREEN

A warning message "Data is not found!" is displayed on the mobile computer.

- ▶ It will automatically clear the input data and wait for new entry.



3.13 RESET

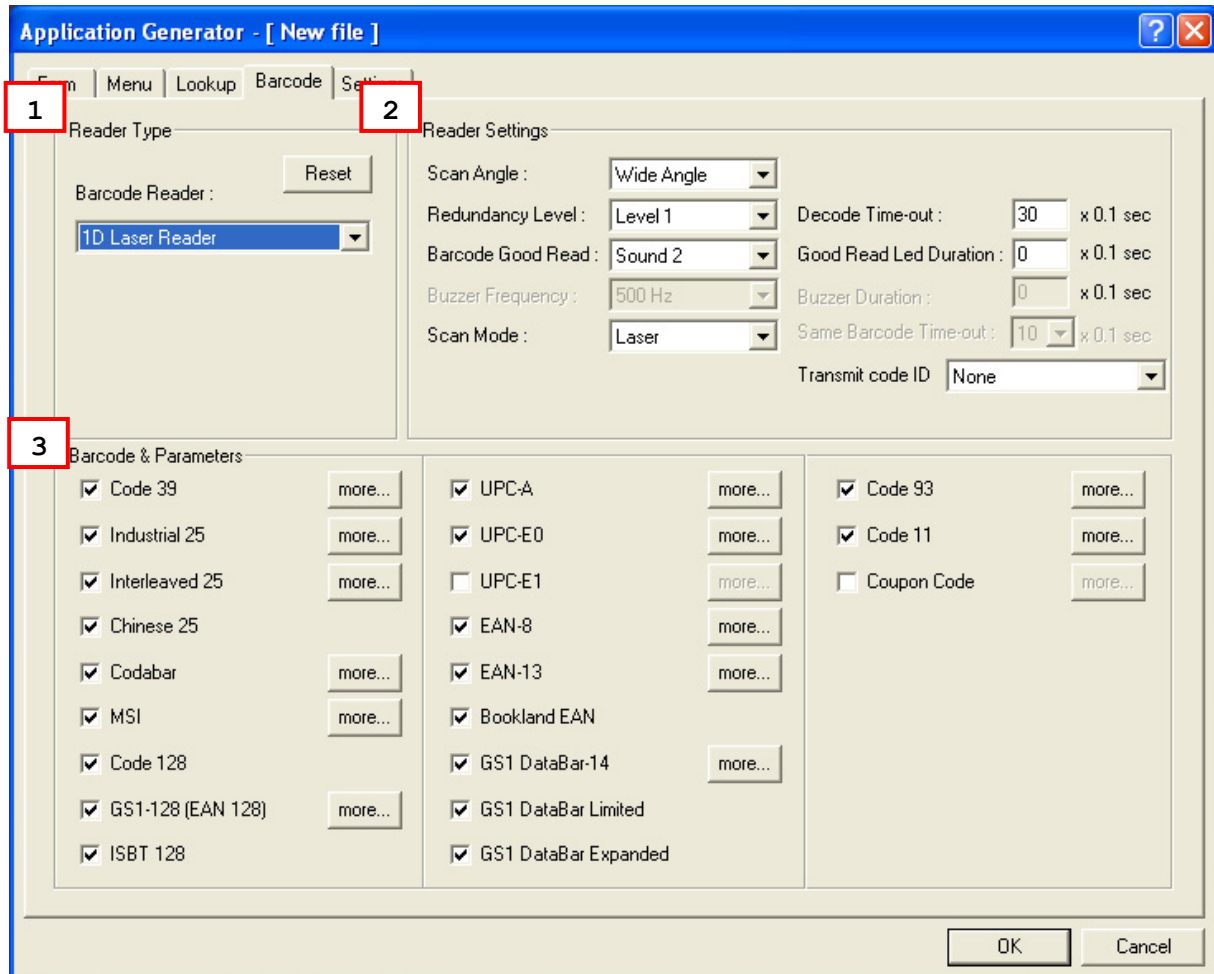
Click this button to load the default settings.

Note: The settings for the current lookup file 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.



IN THIS CHAPTER

4.1 Reader Type	66
4.2 Reader Settings	69
4.3 Barcode & Parameters	69

4.1 READER TYPE

Depending on the module equipped on your mobile computer, the following reader types are supported –

Scan Engine		ID
1D	Laser Reader	SE955I, SE955E
2D	2D Reader	SE4500 WITH PL4507

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

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 file. Otherwise, a message “Wrong reader type!” will be displayed on the mobile computer after you opening the template file.

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.

Symbology		Laser	2D
Codabar		✓	✓
Code 11		✓	✓
Code 93		✓	✓
Composite Code		x	✓
MSI		✓	✓
Postal Codes		x	✓
Industrial 25		✓	✓
Misc.		✓	✓
Interleaved 25	Convert to EAN-13	✓	✓
Matrix 25		x	✓
Macro PDF		x	✓
Code 128	Code 128	✓	✓
	GS1-128 (EAN-128)	✓	✓
	ISBT 128	✓	✓
Code 2 of 5	Industrial 25 (Discrete 25)	✓	✓
	Interleaved 25	✓	✓
	Matrix 25	x	✓
	Chinese 25	✓	✓
Code 3 of 9 EAN/UPC	Code 39	✓	✓
	Trioptic Code 39	✓	✓
	Italian Pharmacode (Code 32)	✓	✓
	EAN-8	✓	✓
	EAN-13	✓	✓
	Bookland EAN (ISBN)	✓	✓
	UPC-E0	✓	✓
	UPC-E1	✓	✓
	UPC-A	✓	✓
GS1 DataBar (RSS)	GS1 DataBar Omnidirectional (RSS-14)	✓	✓
	GS1 DataBar Truncated	✓	✓
	GS1 DataBar Stacked	✓	✓
	GS1 DataBar Stacked Omnidirectional	✓	✓

	GS1 DataBar Limited (RSS Limited)	✓	✓
	GS1 DataBar Expanded (RSS Expanded)	✓	✓
	GS1 DataBar Expanded Stacked	✓	✓
2D Symbologies	PDF417	x	✓
	MicroPDF417	x	✓
	Data Matrix	x	✓
	Maxicode	x	✓
	QR Code	x	✓
	MicroQR	x	✓
	Aztec	x	✓

4.1.2 RESET

Tap **[Reset]** to load the default settings. This applies to the following –

- ▶ [4.1 Reader Type](#)
- ▶ [4.2 Reader Settings](#)
- ▶ [4.3 Barcode & Parameters](#)

Note: The current settings will be cleared.

4.2 READER SETTINGS

Refer to the reader settings table in related appendixes.

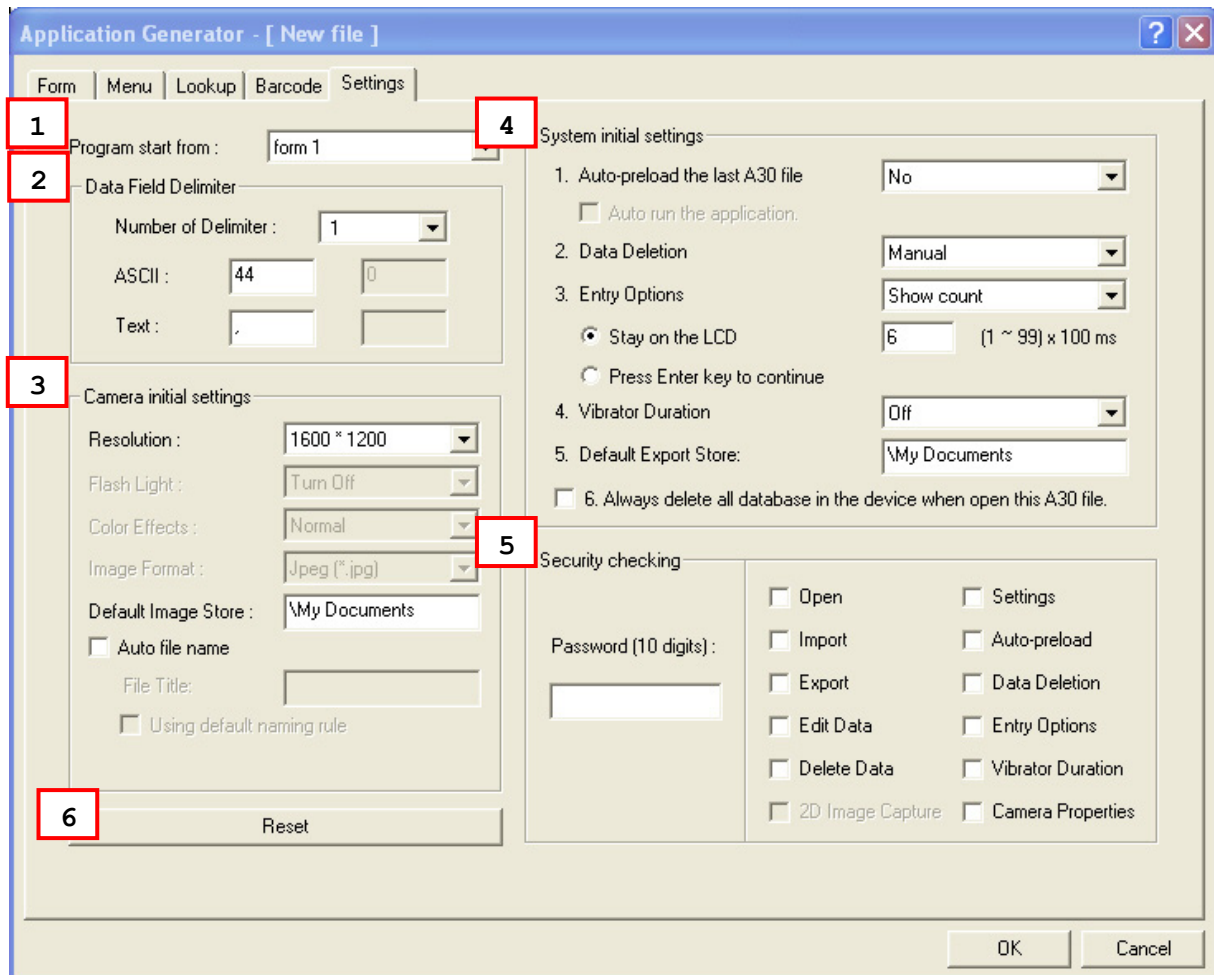
4.3 BARCODE & PARAMETERS

Refer to the symbology settings table in related appendixes.

Scan Engine	Reference
Laser (SE955)	Laser (SE955)
2D Imager (SE4500 with PL4507)	2D IMAGER (SE4500)

SETTINGS

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



IN THIS CHAPTER

5.1 Program Start From	72
5.2 Data Field Delimiter	72
5.3 Camera Initial Settings	72
5.4 System Initial Settings	73
5.5 Security	75
5.6 Reset	77

5.1 PROGRAM START FROM

Decide where the application program starts as soon as you tap **[Run]** on the soft key bar on the mobile computer.

- ▶ form 1
- ▶ menu 1

5.2 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.

5.3 CAMERA INITIAL SETTINGS

If a camera and 2D reader both exist, it only allows using the camera for image capture.

Camera Settings	Options
Resolution	By default, 1600 by 1200 pixels resolution is in use. <ul style="list-style-type: none"> ▶ 640 by 480 pixels resolution is supported. ▶ 1280 by 960 pixels resolution is supported.
Capture Settings	Options
Default image store	By default, the captured image is stored under the directory “\My Documents”. Specify a file name, and the full path name will be saved to the transaction record.
Auto file name	By default, the captured image is saved to a user-specified filename. When enabled, the captured image will be saved to a filename following the automatic naming rule explained below.
File Title	Specify a string prefixed to the filename. It allows up to 5 characters.

Using default naming rule	<ul style="list-style-type: none"> ▶ When enabled, the format of automatic filename is xxxxxfaabbccccc.jpg (or .bmp), where ▶ "xxxxx" is the file title specified above. ▶ "f" can be the capital letter F for Form, or L for Lookup. ▶ "aa" indicates in which Form (or Lookup) the image data is saved. ▶ "bb" indicates in which "Field" of Form (or Lookup) the image data is for. ▶ "ccccc" stands for a 5-digit serial number starting from "00001". ▶ When disabled, the format of automatic filename is xxxxxxxccc.jpg (or .bmp), where ▶ "xxxxx" is the file title specified above. ▶ "ccccc" stands for a 5-digit serial number starting from "00001".
---------------------------	---

5.4 SYSTEM INITIAL SETTINGS

System Settings	Default Value	Remarks
1. Auto-preload the last template file (.A30)	No	Select the check box of "Auto run the application (template)" if necessary.
2. Data Deletion	Manual	
3. Entry Options	Show count	Stay on the LCD for 600 ms
4. Vibrator Duration	Off	
5. Default export store	\My Documents	
6. Always delete all database in the device when open the template file	Disabled	

5.4.1 AUTO-PRELOAD THE LAST TEMPLATE FILE

You may select to automatically pre-load the last template file and the imported lookup file(s) upon running the AG-Runtime on the mobile computer.

- ▶ By default, you need to tap **[Menu > File > Open]** to open a template file.

Template File	FORGE AG Runtime
*.A30	AGCP30.exe

5.4.2 DATA DELETION

You may decide whether to delete data after exporting to the host. By default, it is set to "Manual", which means you have to decide whether or not to delete data upon completion of export. If you decide not to delete data, you can always tap **[Menu > Utilities > Delete]** to delete at a later time.

You may select "Automatic" to automatically delete data upon completion of export. The data file (by "form") or lookup file with its setting to automatic data deletion is enabled, will be deleted. If so, the exported data will not be available any more when you tap the following submenus –

- ▶ **[Menu > File > Export]**
- ▶ **[Menu > Utilities > Browse]**
- ▶ **[Menu > Utilities > Delete]**

If neither of the above two options are desired, select "No" to skip data deletion upon completion of export. The data file(s) and lookup file(s) will be kept on the mobile computer after exporting to the host. However, you can always tap **[Menu > Utilities > Delete]** to delete at a later time.

5.4.3 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. 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.

- ▶ 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](#).

5.4.4 VIBRATOR DURATION

You may specify whether or not to turn on the vibrator to warn you of a specific event.

5.4.5 DEFAULT EXPORT STORE

You may specify the storage directory which the export file will be saved to.

- ▶ By default, the default export storage directory is "\\My Documents".

5.4.6 ALWAYS DELETE ALL DATABASE ...

If this item is selected, then the database will be deleted every time you open the template file. It means the database will be the new one and there will be no records in the database every time you open this file.

5.5 SECURITY

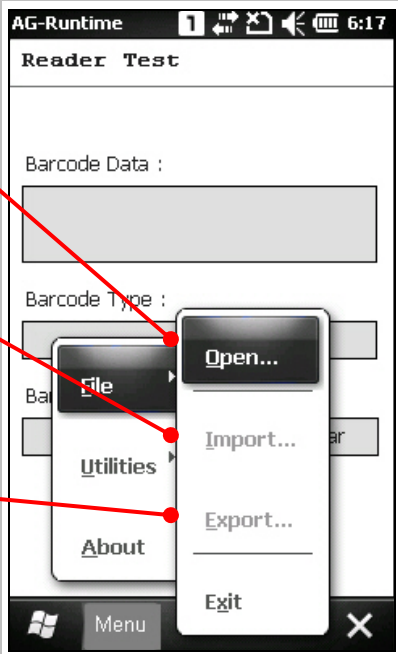
For security concerns, you may specify a password and select the check box of one or more tasks that need security checking.

- ▶ By default, no password is required for the listed tasks.
- ▶ A password can be up to 10 alphanumeric characters.

Note: The password is case-sensitive.

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.

Security Options	Password-protected Settings
<i>Open</i>	Menu > File > Open
<i>Import</i>	Menu > File > Import
<i>Export</i>	Menu > File > Export



The screenshot shows the AG-Runtime application interface. The title bar reads 'AG-Runtime' and 'Reader Test'. The main area contains 'Barcode Data :', 'Barcode Type :', and 'Barcode :'. A 'File' menu is open, showing options: 'Open...', 'Import...', 'Export...', 'Utilities', and 'About'. A 'Menu' button is visible at the bottom left, and a close button (X) is at the bottom right. Red arrows point from the 'Open', 'Import', and 'Export' entries in the table to their respective menu items in the screenshot.

Security Options	Password-protected Settings	
<i>Edit Data</i>	Utilities > Browse	
<i>Delete Data</i>	Utilities > Delete	
<i>Settings</i>	Utilities > Settings	
<i>Auto-preload</i>	Utilities > Settings > Auto-preload	
<i>Data Deletion</i>	Utilities > Settings > Data Deletion	
<i>Entry Options</i>	Utilities > Settings > Entry Options	
<i>Vibrator Duration</i>	Utilities > Settings > Vibrator Duration	
<i>Security checking</i>	Utilities > Settings > Security	
<i>Camera Properties</i>	Utilities > Settings > Camera Properties (hardware dependent)	

Note: (1) 2D Image Capture option is only available when the Image Capture setting on the Barcode tab is enabled for 2D reader.
 (2) Camera Properties option is only available on mobile computer when equipped with a camera. If a camera and 2D reader both exist, it only allows using the camera for image capture.

5.6 RESET

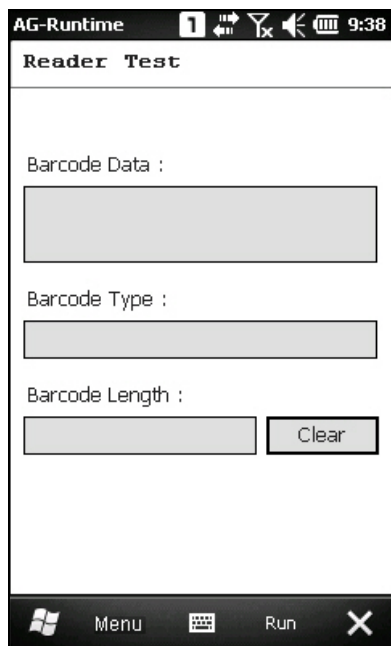
Tap this button to load the default settings.

Note: The current settings will be cleared.

DEMONSTRATION ON MOBILE COMPUTERS

Let's take the example of CP30 Application Generator.

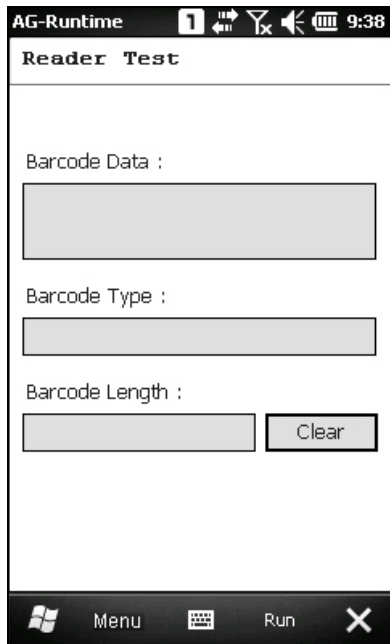
- 1) Run *AGCP30.exe* on your computer to configure application templates.
- 2) Save the template file (*.A30) and copy it to the mobile computer via ActiveSync.
- 3) Run *AG-Runtime.exe* on the mobile computer.



- 4) Tap **[Menu > File > Open]** to use the application template (*.A30).
- 5) Tap **[Menu > File > Import]** to import lookup file(s) if specified in the template file for use.
- 6) Tap **[Run]** to start with your application. It may start from a menu or form.
- 7) Tap **[Menu > Utilities > Browse]** to edit data collected.
Tap **[Menu > Utilities > Delete]** to manually delete a data file or lookup file.
Tap **[Menu > Utilities > Settings]** to change system settings directly.
- 8) Tap **[Menu > File > Export]** if you wish to export a data file or lookup file.

MAIN MENU (READER TEST)

Run the program and the main menu is displayed as shown below.



You can perform a reader test on sample barcodes if necessary. Refer to [4.1.1 Barcode Reader](#) for associated settings.

Note: The correct reader type must be selected when configuring your application template, even though you have not made any changes to it.

FILE MENU

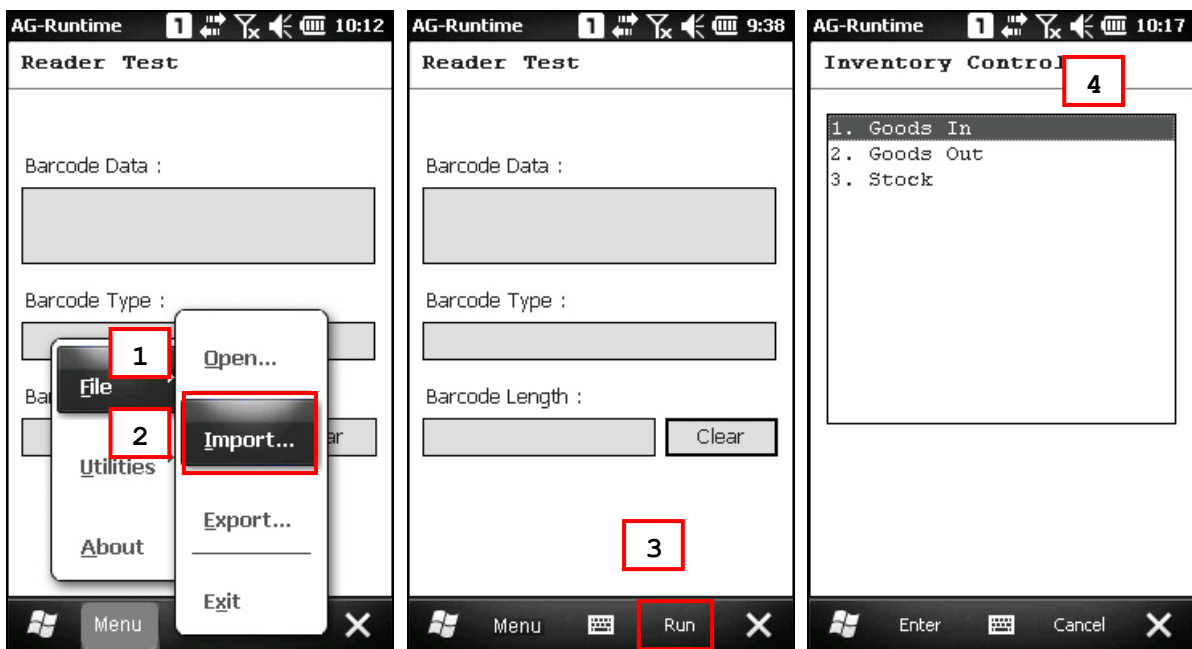
Refer to [5.5 Security](#). You may apply password-protection to these tasks.

OPEN .A30 FILE

You will need to open a *.A30 file first. The rest depends on the configuration of this template file.

IMPORT LOOKUP FILES

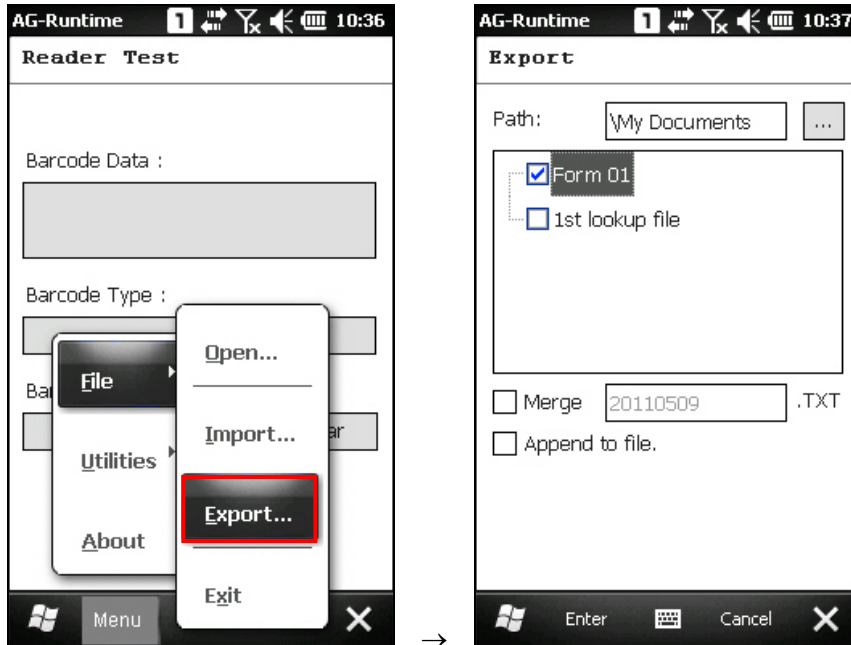
If you have associated a form to a lookup file, you will need to import the lookup file after opening the *.A30 file. Finally, run your application.



- 1) Open a *.A30 template file specified a form on your computer.
- 2) Import the corresponding .txt lookup file.
- 3) Run the application.
- 4) The Form or Menu combine with template file and lookup file will be displayed on the screen of your mobile phone.

EXPORT FILES

You can export a data file (by form) or lookup file, or even merge them to a new file. Refer to [1.6.1 Export files](#).

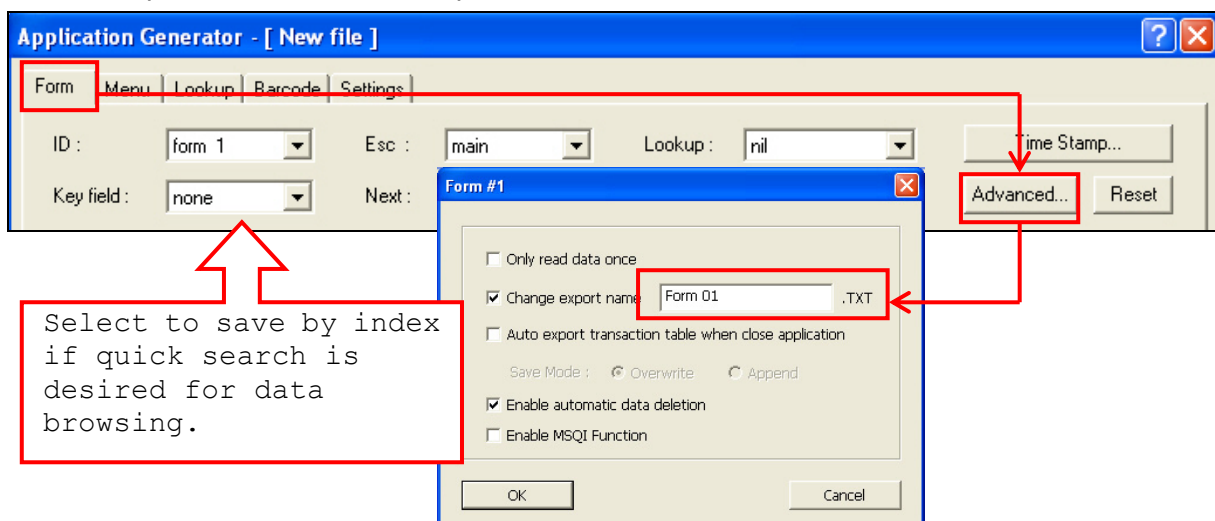


Note: If the export file name is the same as of an existing file, the exported data will overwrite the original one. Otherwise, you may select "Append to file".

DATA FILES

This is available only when you have selected **Save** or **Save & update** for [Record](#).

- ▶ The [default file name is "Form xx", start from Form 01](#).
- ▶ The exported data file is a sequential file.



- ▶ You may specify an automatic exporting function for a data file when closing the application and the save mode of the exporting.

LOOKUP FILES

This is available only when you have specified a lookup file in use.

- ▶ The [default file name is "xxx lookup file", starting from 1st lookup file.](#)
- ▶ If "Auto export lookup table when close application" is enabled, the lookup table will be exported automatically upon closing the application. It either overwrites or appends to the existing table.

Application Generator - [New file]

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

ID : 1st lookup file

Number of fields : 0

Field property

Fixed length

Delimiter 0 (ASCII)

Change export name 1st lookup file .TXT

Auto export lookup table when close application

Save Mode Overwrite Append

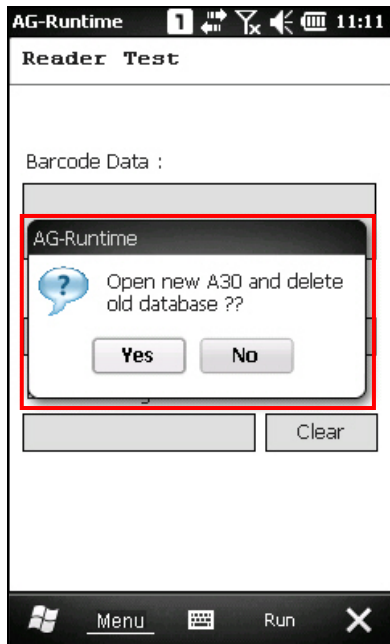
Enable automatic data deletion

NEW DATABASE

Below are FORGE applications that support upgrading database.

FORGE AG-Runtime	Application Generator Version
AGCP30.exe	0.00.0005 or later

The “Open new A30 and delete old database??” pop-up information screen will be displayed when you have an old database in use.



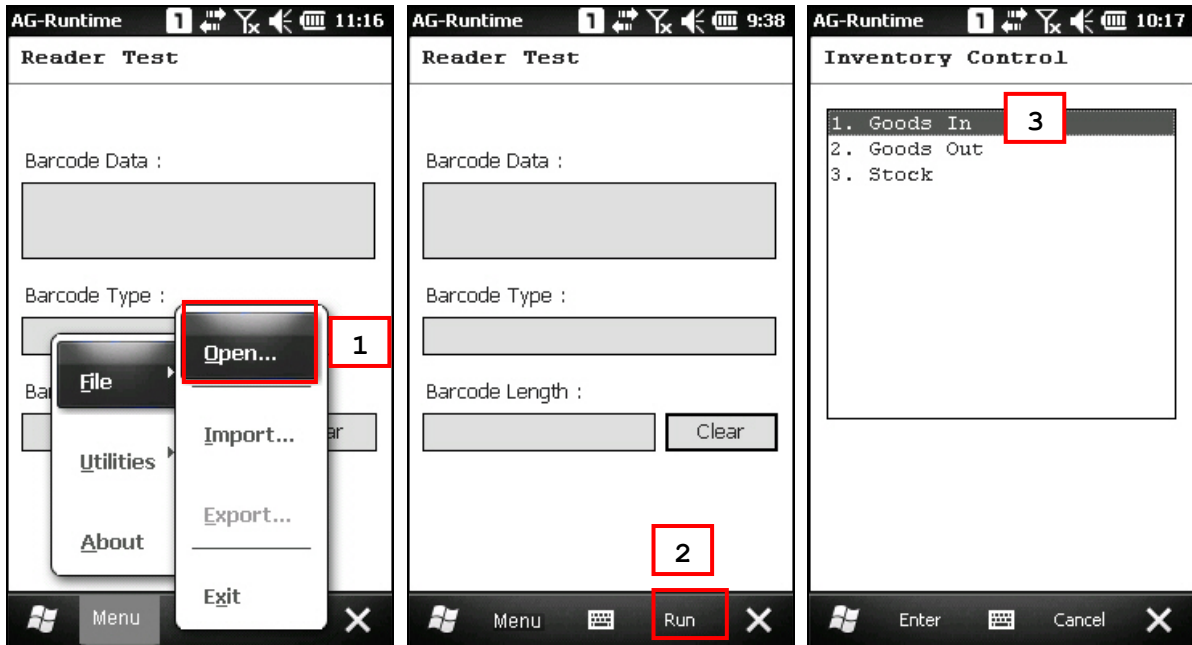
EXIT THE APPLICATION

Choose [**Menu > File > Exit**] to end the application properly.

RUN THE APPLICATION

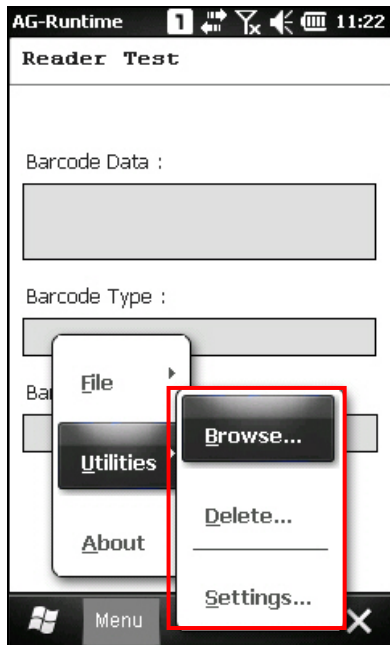
If no lookup files are associated with your forms, run your application after opening the template file.

Here is an example of starting from "menu 1".



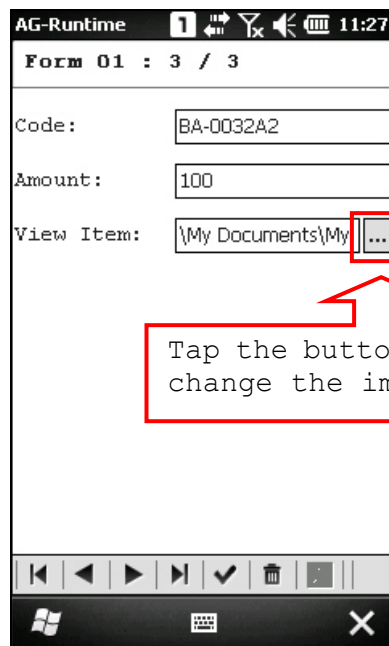
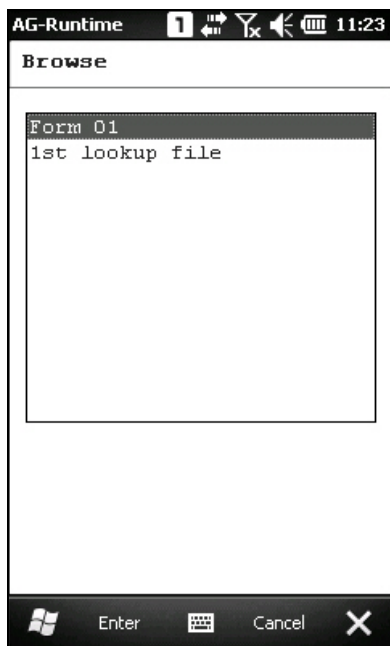
UTILITIES MENU









Unless a task is password-protected, you can edit data, delete files, and change the system settings. Refer to [5.5 Security](#).



BROWSE

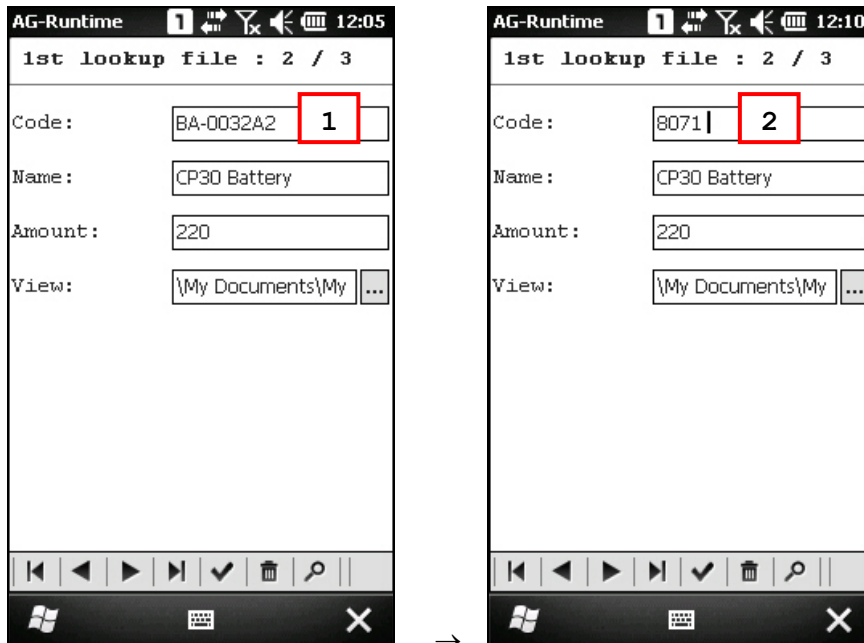
You can edit a data file or lookup file if necessary.




Editing Toolbar		
	First Record	Go to the first record.
	Previous Record	Go to the previous record.
	Next Record	Go to the next record.
	Last Record	Go to the last record.
	Update	Update the current record if you have made changes to any field.
	Delete	Delete the current record.
	Search	<p>Search in the saved data by form or lookup file. (only for full match; case-sensitive)</p> <ul style="list-style-type: none"> ▶ By "Form" – You must select the field that is the key field defined on the Form property page. ▶ By "lookup file" – You must select the field that is defined as the "key field" on the Lookup property page. <p>See below for how to search in the lookup file.</p>
	Esc	Exit data editing.

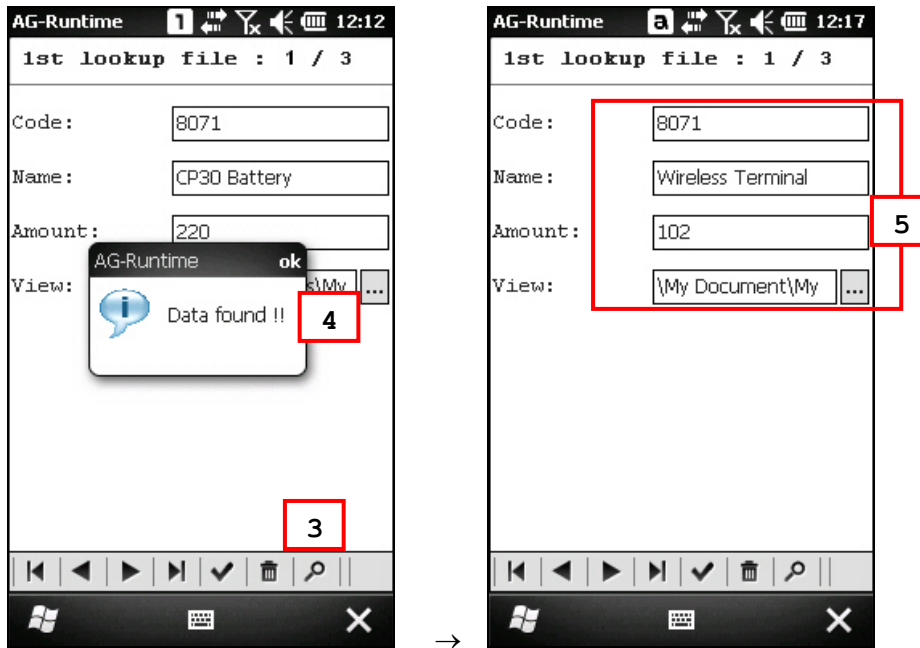
HOW TO SEARCH IN THE LOOKUP FILE?

- 1) Select the value of field 1 as Code, which is the key field defined on the Lookup property page of the template file.
- 2) Replace the original value with the new value that you want to search for, say, 8071.





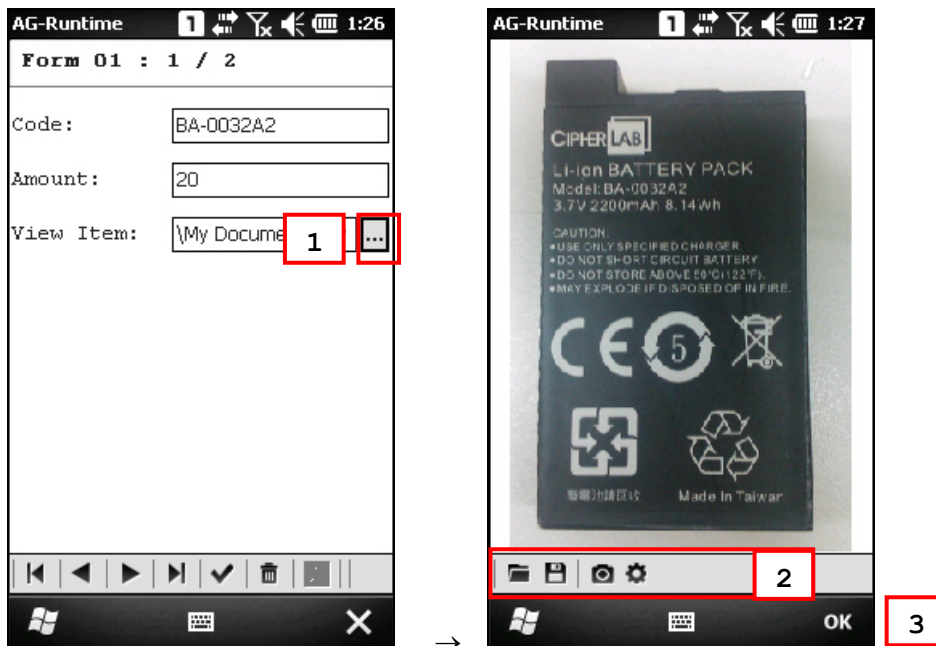
- 3) Tap  to start searching 8071 specified in the lookup .txt file.

- 4) If successful, it will display a "Data found!" message. Tap **[OK]**.
- 5) Based on the new value, the whole specified data for 8071 is displayed.








HOW TO VIEW OR UPDATE THE IMAGE FILE?

- 1) Tap  to view the image.
- 2) When the image is displayed, tap  on the screen to select another image, or tap  to get ready for capturing a new image.

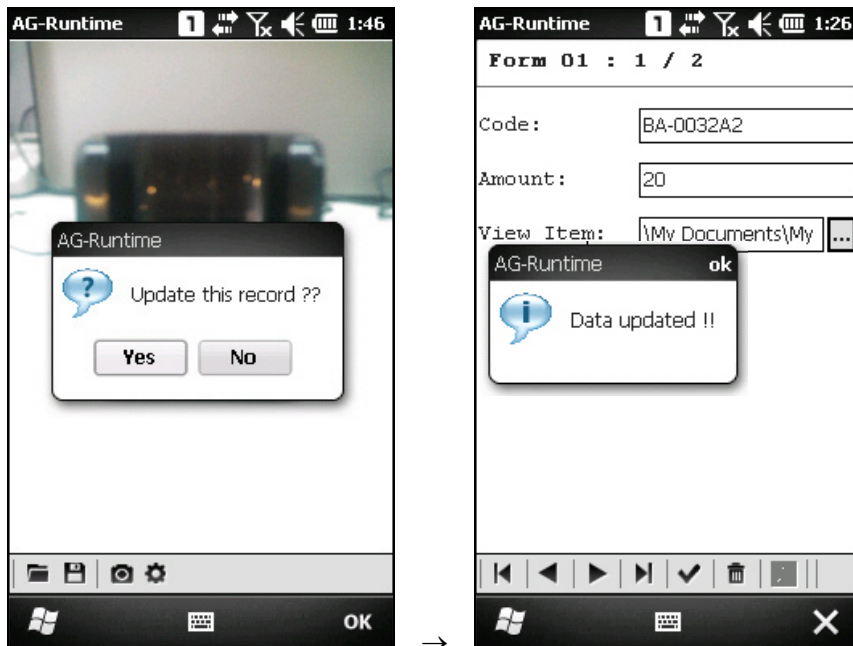


The icons on the toolbar, from left to right, are explained in the table below.

Button	Description
	Open an image. Any existing file in the following formats can be viewed — <ul style="list-style-type: none"> ▶ JPEG ▶ Bitmap ▶ PNG ▶ GIF
	Save the opened image to a different file name or format.
	<ul style="list-style-type: none"> ▶ Enter the Camera Preview Mode ▶ Display a camera preview image ▶ Capture a image
	Exit the Camera Preview Mode.
	Configure camera settings if necessary.

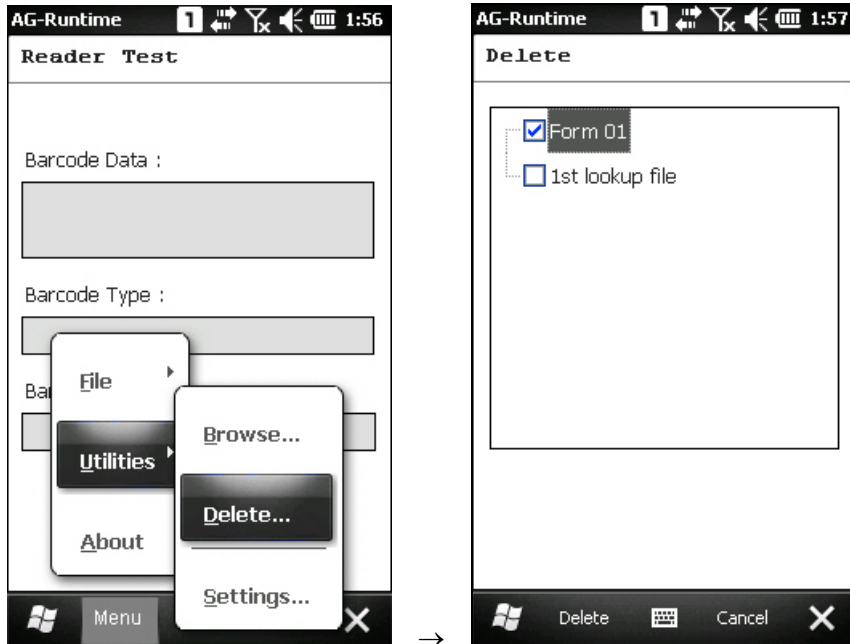
3) Tap **[OK]**.

A dialog box appears requesting you to confirm whether to update the image. Tap **[Yes]** to update the record with new image or **[No]** to keep the original image.



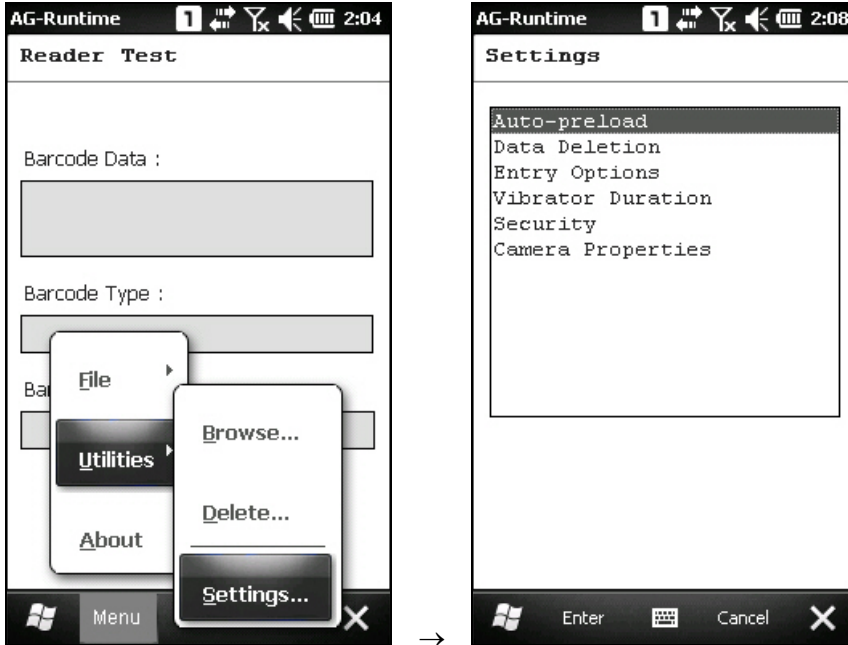
DELETE

You can manually delete a data file or lookup file if it is not desired any more.



SETTINGS

You can change system settings directly on the mobile computer. Refer to [5.4 System Initial Settings](#).



ABOUT

View the version information.



LASER (SE955)

The tables below list reader settings as well as symbology settings for the Linear Laser (SE955) scan engine.

READER SETTINGS TABLE

Laser Engine	Description	Default										
Scan Angle		Wide										
Wide Angle	Select the scan angle for Long Range Laser scan engine. "Wide Angle" is for 47°.											
Narrow Angle	Select the scan angle for Long Range Laser scan engine. "Narrow Angle" is for 35°.											
Redundancy Level		Level 1										
Level 1	<p>Following barcodes must be successfully read twice before being decoded:</p> <table border="1"> <thead> <tr> <th>Barcode Types</th> <th>Code Length</th> </tr> </thead> <tbody> <tr> <td>Codabar</td> <td>All</td> </tr> <tr> <td>MSI</td> <td>4 characters or less</td> </tr> <tr> <td>Industrial 25 (Discrete 25)</td> <td>8 characters or less</td> </tr> <tr> <td>Interleaved 25</td> <td>8 characters or less</td> </tr> </tbody> </table>	Barcode Types	Code Length	Codabar	All	MSI	4 characters or less	Industrial 25 (Discrete 25)	8 characters or less	Interleaved 25	8 characters or less	
Barcode Types	Code Length											
Codabar	All											
MSI	4 characters or less											
Industrial 25 (Discrete 25)	8 characters or less											
Interleaved 25	8 characters or less											
Level 2	All barcodes must be successfully read twice before being decoded.											
Level 3	<p>All barcodes except for the following barcodes must be successfully read twice before being decoded. Following barcodes must be read three times:</p> <table border="1"> <thead> <tr> <th>Barcode Types "Excluded"</th> <th>Code Length</th> </tr> </thead> <tbody> <tr> <td>MSI</td> <td>4 characters or less</td> </tr> <tr> <td>Industrial 25 (Discrete 25)</td> <td>8 characters or less</td> </tr> <tr> <td>Interleaved 25</td> <td>8 characters or less</td> </tr> </tbody> </table>	Barcode Types "Excluded"	Code Length	MSI	4 characters or less	Industrial 25 (Discrete 25)	8 characters or less	Interleaved 25	8 characters or less			
Barcode Types "Excluded"	Code Length											
MSI	4 characters or less											
Industrial 25 (Discrete 25)	8 characters or less											
Interleaved 25	8 characters or less											
Level 4	All barcodes must be successfully read three times before being decoded.											
Barcode Good Read		Sound 2										
Mute, or Sound 1~9	A sound reminder to prove a good read.											
Scan Mode		Laser										
Laser Mode	<p>Hold down the scan trigger to start with scanning.</p> <ul style="list-style-type: none"> ▶ The scanning won't stop until (a) a barcode is read, (b) the preset timeout expires, or (c) you release the trigger. 											

Continuous Mode	Non-stop scanning <ul style="list-style-type: none"> ▶ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning. 	
Decode Time-out		
1~9 (second)	Set the maximum time for decoding to continue during a scan attempt.	3 sec.
Good Read Led Duration		0 sec.
Same Barcode Time-out		
0.0~9.9 (second)	When in Continuous mode, set the minimum time that must stop detect before the scan engine decodes a second same barcode. This reduces the risk of accidentally scanning the same barcode twice.	1.0 sec.
Transmit code ID		None
None	Do not use any Transmit code ID.	
AIM code ID character	Each AIM Code ID contains the three-character string "]cm " – <ul style="list-style-type: none"> ▶] = Flag Character (ASCII 93) ▶ c = Code Character (see below) ▶ m = Modifier Character (see below) 	

AIM CODE ID – CODE CHARACTERS

Code Character	Code Type
A	Code 39, Code 39 Full ASCII, Code 32
C	Code 128, Coupon (Code 128 portion)
d	Data Matrix
E	UPC/EAN, Coupon (UPC portion)
e	GS1 DataBar (RSS)
F	Codabar
G	Code 93
H	Code 11
I	Interleaved 25
L	PDF417, Macro PDF417, Micro PDF417
M	MSI
Q	QR Code
S	Industrial 25 (Discrete 25), IATA 2 of 5
U	Maxicode
X	Code 39 Trioptic, Bookland EAN, US Postnet, US Planet, UK Postal, Japan Postal, Australian Postal, Dutch Postal

AIM CODE ID – MODIFIER CHARACTERS

Code Type	Option Value	Option
Code 39	0	No check character or Full ASCII processing.
	1	Check digit has been verified.
	3	Check digit has been verified and stripped.
	4	Full ASCII conversion has been performed.
	5	Result of option values 1 and 4.
	7	Result of option values 3 and 4.
Code 128	0	Standard data packet. No Function Code 1“FNC1” in the first character position.
	1	Function Code 1“FNC1” in the first character position.
	2	Function Code 1“FNC1” in the second character position.
Interleaved 25	0	No check digit processing.
	1	Check digit has been verified.
	3	Check digit has been verified and stripped.
Codabar	0	No check digit processing.
Code 93	0	Always transmit 0.
MSI	0	Modulo 10 check digit verified and transmitted.
	1	Modulo 10 check digit verified but not transmitted.
Industrial 25 (Discrete 25)	0	Always transmit 0.
UPC/EAN	0	Standard data packet in full EAN country code format, which is 13 digits for UPC-A and UPC-E (not including addons).
	3	Standard data packet with two-digit or five-digit addons.
	4	EAN-8 data packet.
	A UPC-A with Addon 2 barcode, 012345678905-10, is transmitted to the host as a 18-character string, 1E3001234567890510.	
Bookland EAN	0	Always transmit 0.
Trioptic Code 39	0	Always transmit 0.
Code 11	0	Single check digit (has been verified.)
	1	Two check digits (has been verified.)
	3	Check digit has been verified but not transmitted.
GS1 DataBar (RSS)	0	Always transmit 0.
	RSS-14 and RSS Limited will be transmitted with an Application Identifier “01”. For example, an RSS-14 barcode, 10012345678902, is transmitted as 1E00110012345678902.	

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

EAN.UCC	Native mode transmission
---------	--------------------------

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

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

PDF417, Micro PDF417	0	Scan engine is set to conform to protocol defined in 1994 PDF417 symbology specifications. ▶ When this option is transmitted, the receiver cannot reliably determine whether ECIs have been invoked or whether data byte 92 _{DEC} has been doubled in transmission.
	1	Scan engine is set to follow the ECI protocol (Extended Channel Interpretation). All data characters 92 _{DEC} are doubled.
	2	Scan engine is set for Basic Channel operation (no escape character transmission protocol). Data characters 92 _{DEC} are not doubled. ▶ When decoders are set to this mode, unbuffered Macro symbols and symbols requiring the decoder to convey ECI escape sequences cannot be transmitted.
	3	The barcode contains a GS1-128 symbol, and the first codeword is 903-907, 912, 914, 915.
	4	The barcode contains a GS1-128 symbol, and the first codeword is in the range 908-909.
	5	The barcode contains a GS1-128 symbol, and the first codeword is in the range 910-911.
	A PDF417 barcode, ABCD, with no transmission protocol enabled, is transmitted as]L2ABCD.	
Data Matrix	0	ECC 000-140, not supported.
	1	ECC 200.
	2	ECC 200, FNC1 in first or fifth position.
	3	ECC 200, FNC1 in second or sixth position.
	4	ECC 200, ECI protocol implemented.
	5	ECC 200, FNC1 in first or fifth position, ECI protocol implemented.

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

Note:(1) For JPEG files, these BPP settings are ignored for it always uses 8 bits per pixel!
(2) When the Camera feature is enabled, press the **[SCAN]** button and it will capture an image instead of reading a barcode.

SYMBOLGY SETTINGS TABLE

Laser Engine	Description	Default
Code 39		Enable
Convert to Code 32	Convert to Italian Pharmacode.	No
Code 32 Prefix	Prefix character "A" to Code 32 barcodes. ▶ "Convert to Code 32" must be enabled.	No
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. ▶ "Verify Check Digit" must be enabled.	No
Code 39 Full ASCII	Code 39 Full ASCII includes all the alphanumeric and special characters.	No
Trioptic 39	Decide whether to decode Trioptic Code 39. ▶ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.	No

Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	---
		4
		4, 55
		4~55
Industrial 25		Enable
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	---
		4
		4, 55
		4~55
Interleaved 25		Enable
Verify Check Digit	Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. <ul style="list-style-type: none"> ▶ "Verify Check Digit" must be enabled. 	No
Convert to EAN-13	Convert a 14-character barcode into EAN-13 if the following requirements are met: <ul style="list-style-type: none"> ▶ The barcode must have a leading 0 and a valid EAN-13 check digit. 	No
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	---
		4
		4, 55
		4~55
Chinese 25		Enable
Codabar		Enable
CLSI Editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. <ul style="list-style-type: none"> ▶ The 14-character barcode length does not include start/stop characters. 	No
NOTIS Editing	Decide whether to include the start/stop characters in the data being transmitted. <ul style="list-style-type: none"> ▶ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters". 	No
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	---
		4
		4, 55
		4~55

MSI		Enable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	No
Check digit verification	If Two Check Digits option is selected, an additional verification is required to ensure integrity. Select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted.	Single Modulo 10
Check Digits	One Check Digit	Single Modulo 10
	Two Check Digits	<ul style="list-style-type: none"> ▶ Mod 10/Mod 11 ▶ Mod 10/Mod 10
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	---
		4
		4, 55
		4~55
Code 128		Enable
GS1-128 (EAN 128)		Enable
Replace Field separator	Decide whether to replace the field separator. If the barcode contains Field Separator "0x1D", it will be changed to the desired Field Separator. For example, type the desired character ";" (semicolon) as the new field separator. Then if the barcode contains Field Separator "0x1D", it will be changed to ";".	No
ISBT 128		Enable
UPC-A		Enable
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted. <ul style="list-style-type: none"> ▶ No Preamble ▶ System Character ▶ System Character & Country Code 	System Character
Enable Addons	Decide whether to decode UPC-A with addons. <ul style="list-style-type: none"> ▶ Ignore Addons ▶ Decode Only With Addons ▶ Auto-discriminate 	Ignore Addons
Addons Redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	7 times
Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes

UPC-E0		Enable
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted. <ul style="list-style-type: none"> ▶ No Preamble ▶ System Character ▶ System Character & Country Code 	System Character
Enable Addons	Decide whether to decode UPC-A with addons. <ul style="list-style-type: none"> ▶ Ignore Addons ▶ Decode Only With Addons ▶ Auto-discriminate 	Ignore Addons
Addons Redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	7 times
Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes
Convert to UPC-A	The UPC-E0 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UPC-E1		Disable
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted. <ul style="list-style-type: none"> ▶ No Preamble ▶ System Character ▶ System Character & Country Code 	System Character
Enable Addons	Decide whether to decode UPC-A with addons. <ul style="list-style-type: none"> ▶ Ignore Addons ▶ Decode Only With Addons ▶ Auto-discriminate 	Ignore Addons
Addons Redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	7 times
Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
EAN-8		Enable
Enable Addons	Decide whether to decode UPC-A with addons. <ul style="list-style-type: none"> ▶ Ignore Addons ▶ Decode Only With Addons ▶ Auto-discriminate 	Ignore Addons
Addons Redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	7 times

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
EAN-13		Enable
Enable Addons	Decide whether to decode UPC-A with addons. <ul style="list-style-type: none"> ▶ Ignore Addons ▶ Decode Only With Addons ▶ Auto-discriminate 	Ignore Addons
Addons Redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	7 times
Bookland EAN		Enable
GS1 DataBar-14		Enable
Cover GS1 DataBar 14/Limited to UPC/EAN	GS1 DataBar-14 is short for GS1 DataBar Omnidirectional. This group consists of (1) GS1 DataBar Omnidirectional, (2) GS1 DataBar Truncated, (3) GS1 DataBar Stacked, and (4) GS1 DataBar Stacked Omnidirectional. "Convert to UPC/EAN" only applies to GS1 Databar-14 and GS1 Databar Limited barcodes not decoded as part of a Composite barcode. <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Convert to EAN-13</p> <p>Strip the leading "010" from barcodes.</p> <ul style="list-style-type: none"> ▶ "01" is the Application ID and must be followed by a single zero (the first digit encoded) </div> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Convert to UPC-A</p> <p>Strip the leading "0100" from barcodes.</p> <ul style="list-style-type: none"> ▶ "01" is the Application ID and must be followed by two or more zeros (but not six zeros) </div>	No
GS1 DataBar Limited		Enable
GS1 DataBar Expanded		Enable
Code 93		Enable
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	--- 4 4, 55 4~55
Code 11		Enable
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted. <ul style="list-style-type: none"> ▶ No verification ▶ One Check Digit ▶ Two Check Digits 	No verification

Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. <ul style="list-style-type: none"> ▶ "Verify Check Digit" must be enabled. 	No
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	---
		4
		4, 55
		4~55
Coupon Code		Disable
<p>Read UPC-A barcodes starting with digit "5", EAN-13 barcodes starting with digits "99", and GS1-128 (EAN 128) Coupon Codes.</p> <ul style="list-style-type: none"> ▶ UPC-A and EAN-13 must be enabled first! ▶ Use "Addon Redundancy" to control auto-discrimination of the GS1-128 (right half) of a coupon code. 		

2D IMAGER (SE4500)

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

READER SETTINGS TABLE

2D Engine	Description	Default										
Barcode Good Read		Sound 2										
Mute, or Sound 1~9	A sound reminder to prove a good read.											
Redundancy Level		Level 1										
Level 1	Following barcodes must be successfully read twice before being decoded:											
	<table border="1"> <thead> <tr> <th>Barcode Types</th> <th>Code Length</th> </tr> </thead> <tbody> <tr> <td>Codabar</td> <td>All</td> </tr> <tr> <td>MSI</td> <td>4 characters or less</td> </tr> <tr> <td>Industrial 25 (Discrete 25)</td> <td>8 characters or less</td> </tr> <tr> <td>Interleaved 25</td> <td>8 characters or less</td> </tr> </tbody> </table>	Barcode Types	Code Length	Codabar	All	MSI	4 characters or less	Industrial 25 (Discrete 25)	8 characters or less	Interleaved 25	8 characters or less	
Barcode Types	Code Length											
Codabar	All											
MSI	4 characters or less											
Industrial 25 (Discrete 25)	8 characters or less											
Interleaved 25	8 characters or less											
Level 2	All barcodes must be successfully read twice before being decoded.											
Level 3	All barcodes except for the following barcodes must be successfully read twice before being decoded. Following barcodes must be read three times:											
	<table border="1"> <thead> <tr> <th>Barcode Types "Excluded"</th> <th>Code Length</th> </tr> </thead> <tbody> <tr> <td>MSI</td> <td>4 characters or less</td> </tr> <tr> <td>Industrial 25 (Discrete 25)</td> <td>8 characters or less</td> </tr> <tr> <td>Interleaved 25</td> <td>8 characters or less</td> </tr> </tbody> </table>	Barcode Types "Excluded"	Code Length	MSI	4 characters or less	Industrial 25 (Discrete 25)	8 characters or less	Interleaved 25	8 characters or less			
Barcode Types "Excluded"	Code Length											
MSI	4 characters or less											
Industrial 25 (Discrete 25)	8 characters or less											
Interleaved 25	8 characters or less											
Level 4	All barcodes must be successfully read three times before being decoded.											
Decode Time-out												
1~9 (second)	Set the maximum time for decoding to continue during a scan attempt.	3 sec.										
Good Read Led Duration		0 sec.										
Security Level		Level 0										
Level 0	This default setting allows the scan engine to operate in its most aggressive state, providing sufficient security in decoding most "in-spec" barcodes.											
Level 1	Select this option if misdecodes occur. This level should eliminate most misdecodes.											

Level 2	Select this option if Security Level 1 fails to eliminate misdecodes.
Level 3	Select this option if Security Level 2 also fails to eliminate misdecodes. However, selecting this option impairs the decoding ability of the scan engine. If this level of security is necessary, try to improve the barcode quality.
Transmit code ID	
None	Do not use any Transmit code ID.
AIM code ID character	Each AIM Code ID contains the three-character string "]cm " – <ul style="list-style-type: none"> ▶] = Flag Character (ASCII 93) ▶ c = Code Character ▶ m = Modifier Character For more information, please refer to AIM Code ID – Code Characters

SYMBOLGY SETTINGS TABLE

1D SYMBOLOGIES

2D Engine	Description	Default
UPC-A		Enable
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted. <ul style="list-style-type: none"> ▶ No Preamble ▶ System Character ▶ System Character & Country Code 	System Character
Enable Addons	Decide whether to decode UPC-A with addons. <ul style="list-style-type: none"> ▶ Ignore Addons ▶ Decode Only With Addons ▶ Auto-discriminate 	Ignore Addons
Addons Redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	10 times
Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes
UPC-E0		Enable
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted. <ul style="list-style-type: none"> ▶ No Preamble ▶ System Character ▶ System Character & Country Code 	System Character

Enable Addons	Decide whether to decode UPC-A with addons. <ul style="list-style-type: none"> ▶ Ignore Addons ▶ Decode Only With Addons ▶ Auto-discriminate 	Ignore Addons
Addons Redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	10 times
Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes
Convert to UPC-A	The UPC-E0 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UPC-E1		Disable
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted. <ul style="list-style-type: none"> ▶ No Preamble ▶ System Character ▶ System Character & Country Code 	System Character
Enable Addons	Decide whether to decode UPC-A with addons. <ul style="list-style-type: none"> ▶ Ignore Addons ▶ Decode Only With Addons ▶ Auto-discriminate 	Ignore Addons
Addons Redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	10 times
Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
EAN-8		Enable
Enable Addons	Decide whether to decode UPC-A with addons. <ul style="list-style-type: none"> ▶ Ignore Addons ▶ Decode Only With Addons ▶ Auto-discriminate 	Ignore Addons
Addons Redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	10 times
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

EAN-13		Enable
Enable Addons	Decide whether to decode UPC-A with addons. <ul style="list-style-type: none"> ▶ Ignore Addons ▶ Decode Only With Addons ▶ Auto-discriminate 	Ignore Addons
Addons Redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	10 times
Bookland EAN		Enable
Code 128		Enable
GS1-128 (EAN 128)		Enable
Replace Field separator	Decide whether to replace the field separator. If the barcode contains Field Separator "0x1D", it will be changed to the desired Field Separator. For example, type the desired character ";" (semicolon) as the new field separator. Then if the barcode contains Field Separator "0x1D", it will be changed to ";".	No
ISBT 128		Enable
Concatenation	Decide whether to decode and concatenate pairs of ISBT barcodes. <ul style="list-style-type: none"> ▶ Disable ▶ Enable – When this option is selected, there must be two ISBT barcodes for the scanner to decode and perform concatenation. ▶ Auto-discriminate – When this option is selected, the scanner decodes and concatenates pairs of ISBT barcodes immediately. If only a single ISBT barcode is present, the scanner must decode 10 times before transmitting its data to confirm that there is no additional ISBT barcode. 	Disable
Concatenation Redundancy	When "Auto-discriminate" is applied, decide the concatenation redundancy (2~20 times).	10 times
Code 39		Enable
Convert to Code 32	Convert to Italian Pharmacode.	No
Code 32 Prefix	Prefix character "A" to Code 32 barcodes. <ul style="list-style-type: none"> ▶ "Convert to Code 32" must be enabled. 	No
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. <ul style="list-style-type: none"> ▶ "Verify Check Digit" must be enabled. 	No
Code 39 Full ASCII	Code 39 Full ASCII includes all the alphanumeric and special characters.	No

Trioptic 39	Decide whether to decode Trioptic Code 39. <ul style="list-style-type: none"> ▶ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters. 	No				
Code39/Codabar: Inter-Character Gap	The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various barcode printing technologies, this gap can grow larger than the maximum size allowed, preventing the scan engine from decoding a barcode. If this problem occurs, set it to "Large Intercharacter Gaps" to tolerate these out-of-specification barcodes. <ul style="list-style-type: none"> ▶ Normal ▶ Large 	Normal				
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	<table border="1"> <tr><td>---</td></tr> <tr><td>4</td></tr> <tr><td>4, 55</td></tr> <tr><td>4~55</td></tr> </table>	---	4	4, 55	4~55

4						
4, 55						
4~55						
Code 93		Enable				
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	<table border="1"> <tr><td>---</td></tr> <tr><td>4</td></tr> <tr><td>4, 55</td></tr> <tr><td>4~55</td></tr> </table>	---	4	4, 55	4~55

4						
4, 55						
4~55						
Codabar		Enable				
CLSI Editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. <ul style="list-style-type: none"> ▶ The 14-character barcode length does not include start/stop characters. 	No				
NOTIS Editing	Decide whether to include the start/stop characters in the data being transmitted. <ul style="list-style-type: none"> ▶ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters". 	No				
Code39/Codabar: Inter-Character Gap	The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various barcode printing technologies, this gap can grow larger than the maximum size allowed, preventing the scan engine from decoding a barcode. If this problem occurs, set it to "Large Intercharacter Gaps" to tolerate these out-of-specification barcodes. <ul style="list-style-type: none"> ▶ Normal ▶ Large 	Normal				

Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	<p>---</p> <p>4</p> <p>4, 55</p> <p>4~55</p>
Industrial 25		Enable
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	<p>---</p> <p>4</p> <p>4, 55</p> <p>4~55</p>
Interleaved 25		Enable
Verify Check Digit	Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. <ul style="list-style-type: none"> ▶ "Verify Check Digit" must be enabled. 	No
Convert to EAN-13	Convert a 14-character barcode into EAN-13 if the following requirements are met: <ul style="list-style-type: none"> ▶ The barcode must have a leading 0 and a valid EAN-13 check digit. 	No
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	<p>---</p> <p>4</p> <p>4, 55</p> <p>4~55</p>
GS1 DataBar-14		Enable
Cover GS1 DataBar 14/Limited to UPC/EAN	<p>GS1 DataBar-14 is short for GS1 DataBar Omnidirectional. This group consists of (1) GS1 DataBar Omnidirectional, (2) GS1 DataBar Truncated, (3) GS1 DataBar Stacked, and (4) GS1 DataBar Stacked Omnidirectional.</p> <p>"Convert to UPC/EAN" only applies to GS1 Databar-14 and GS1 Databar Limited barcodes not decoded as part of a Composite barcode.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Convert to EAN-13</p> <hr/> <p>Strip the leading "010" from barcodes.</p> <ul style="list-style-type: none"> ▶ "01" is the Application ID and must be followed by a single zero (the first digit encoded) </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Convert to UPC-A</p> <hr/> <p>Strip the leading "0100" from barcodes.</p> <ul style="list-style-type: none"> ▶ "01" is the Application ID and must be followed by two or more zeros (but not six zeros) </div>	No
GS1 DataBar Limited		Enable

GS1 DataBar Expanded		Enable
MSI		Enable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	No
Check Digits	If Two Check Digits option is selected, an additional verification is required to ensure integrity. Select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted.	One Check Digit
Check Algorithm	One Check Digit	Single Modulo 10
	Two Check Digits	<ul style="list-style-type: none"> ▶ Mod 10/Mod 11 ▶ Mod 10/Mod 10
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	---
		4
		4, 55
		4~55
Code 11		Enable
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted. <ul style="list-style-type: none"> ▶ No verification ▶ One Check Digit ▶ Two Check Digits 	No verification
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. <ul style="list-style-type: none"> ▶ "Verify Check Digit" must be enabled. 	No
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	---
		4
		4, 55
		4~55
Matrix 25		Enable
Enable Decode Redundancy	Decide whether to enable read redundancy.	No
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. <ul style="list-style-type: none"> ▶ "Verify Check Digit" must be enabled. 	No
Select Length	<ul style="list-style-type: none"> ▶ Any Length ▶ One Length ▶ Two Lengths ▶ Range (Min/ Max) 	---
		4
		4, 55
		4~55

Chinese 25		Enable			
Coupon Code		Enable			
<p>Read UPC-A barcodes starting with digit "5", EAN-13 barcodes starting with digits "99", and GS1-128 (EAN 128) Coupon Codes.</p> <ul style="list-style-type: none"> ▶ UPC-A and EAN-13 must be enabled first! ▶ Use "Addon Redundancy" to control auto-discrimination of the GS1-128 (right half) of a coupon code. 					
Postal Codes					
US Postnet		Enable			
US Planet		Enable			
Transmit US Postal Check Digit	US Postnet or US Planet must be enabled first!	Enable			
UK Postal		Enable			
Transmit UK Postal Check Digit	UK Postal must be enabled first!	Enable			
Japan Postal		Enable			
Australian Postal		Enable			
Dutch Postal		Enable			
Composite Codes					
Composite CC-C		Enable			
Composite CC-A/B		Disable			
Composite TLC-39		Disable			
GS1-128 Emulation Mode	Transmit UCC/EAN Composite Code data as if it was encoded in GS1-128 barcodes.	Disable			
UPC Composite Mode	<p>UPC barcodes can be "linked" with a 2D barcode during transmission as if they were one barcode.</p> <table border="1" style="width: 100%;"> <tr> <td> <p>UPC Never Linked</p> <p>Transmit UPC barcodes regardless of whether a 2D barcode is detected.</p> </td> </tr> <tr> <td> <p>UPC Always Linked</p> <p>Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted.</p> <ul style="list-style-type: none"> ▶ CC-A/B or CC-C must be enabled! </td> </tr> <tr> <td> <p>Auto-discriminate UPC Composites</p> <p>Transmit UPC barcodes as well as the 2D portion if present.</p> </td> </tr> </table>	<p>UPC Never Linked</p> <p>Transmit UPC barcodes regardless of whether a 2D barcode is detected.</p>	<p>UPC Always Linked</p> <p>Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted.</p> <ul style="list-style-type: none"> ▶ CC-A/B or CC-C must be enabled! 	<p>Auto-discriminate UPC Composites</p> <p>Transmit UPC barcodes as well as the 2D portion if present.</p>	UPC Always Linked
<p>UPC Never Linked</p> <p>Transmit UPC barcodes regardless of whether a 2D barcode is detected.</p>					
<p>UPC Always Linked</p> <p>Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted.</p> <ul style="list-style-type: none"> ▶ CC-A/B or CC-C must be enabled! 					
<p>Auto-discriminate UPC Composites</p> <p>Transmit UPC barcodes as well as the 2D portion if present.</p>					

2D SYMBOLOGIES

2D Engine	Description	Default						
2D Symbologies								
PDF417		Enable						
Maxicode		Enable						
MicroQR		Enable						
MicroPDF417		Disable						
Code 128 Emulation	<p>Transmit data from certain MicroPDF417 barcodes as if it was encoded in Code 128 barcodes.</p> <ul style="list-style-type: none"> ▶ Transmit AIM Code Identifier must be enabled first! ▶ MicroPDF417 must be enabled first! <p>When applied, the MicroPDF417 barcodes are transmitted with one of these prefixes:</p> <table border="1" style="width: 100%;"> <tr> <td>The first codeword of MicroPDF417 is 903-907, 912, 914, 915:</td> </tr> <tr> <td>The original Code ID "]L3" will be changed to "]C1".</td> </tr> <tr> <td>The first codeword of MicroPDF417 is 908 or 909:</td> </tr> <tr> <td>The original Code ID "]L4" will be changed to "]C2".</td> </tr> <tr> <td>The first codeword of MicroPDF417 is 910 or 911:</td> </tr> <tr> <td>The original Code ID "]L5" will be changed to "]C0".</td> </tr> </table>	The first codeword of MicroPDF417 is 903-907, 912, 914, 915:	The original Code ID "]L3" will be changed to "]C1".	The first codeword of MicroPDF417 is 908 or 909:	The original Code ID "]L4" will be changed to "]C2".	The first codeword of MicroPDF417 is 910 or 911:	The original Code ID "]L5" will be changed to "]C0".	Disable
The first codeword of MicroPDF417 is 903-907, 912, 914, 915:								
The original Code ID "]L3" will be changed to "]C1".								
The first codeword of MicroPDF417 is 908 or 909:								
The original Code ID "]L4" will be changed to "]C2".								
The first codeword of MicroPDF417 is 910 or 911:								
The original Code ID "]L5" will be changed to "]C0".								
Data Matrix		Enable						
Data Matrix Inverse	<p>Decide whether to decode Data Matrix Inverse.</p> <table border="1" style="width: 100%;"> <tr> <td>Regular Only</td> </tr> <tr> <td>Decode regular Data Matrix barcodes only.</td> </tr> <tr> <td>Inverse Only</td> </tr> <tr> <td>Decode inverse Data Matrix barcodes only.</td> </tr> <tr> <td>Inverse Autodetect</td> </tr> <tr> <td>Decode both regular and inverse Data Matrix barcodes.</td> </tr> </table>	Regular Only	Decode regular Data Matrix barcodes only.	Inverse Only	Decode inverse Data Matrix barcodes only.	Inverse Autodetect	Decode both regular and inverse Data Matrix barcodes.	Regular Only
Regular Only								
Decode regular Data Matrix barcodes only.								
Inverse Only								
Decode inverse Data Matrix barcodes only.								
Inverse Autodetect								
Decode both regular and inverse Data Matrix barcodes.								
QR Code		Enable						

QR Code Inverse	<p>Decide whether to decode QR Code Inverse.</p> <hr/> <p>Regular Only</p> <p>Decode regular QR Code only.</p> <hr/> <p>Inverse Only</p> <p>Decode inverse QR Code only.</p> <hr/> <p>Inverse Autodetect</p> <p>Decode both regular and inverse QR Code.</p>	Regular Only
Aztec		Enable
Aztec Inverse	<p>Decide whether to decode Aztec Inverse.</p> <hr/> <p>Regular Only</p> <p>Decode regular Aztec barcodes only.</p> <hr/> <p>Inverse Only</p> <p>Decode inverse Aztec barcodes only.</p> <hr/> <p>Inverse Autodetect</p> <p>Decode both regular and inverse Aztec barcodes.</p>	Regular Only
Macro PDF		---
<p>Macro PDF is a special feature for concatenating multiple PDF barcodes into one file, known as Macro PDF417 or Macro MicroPDF417.</p>		
Transmit/Decode Mode Symbols	<p>Decide how to handle Macro PDF decoding.</p> <hr/> <p>Buffer All Symbols / Transmit Macro PDF When Complete</p> <p>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!</p> <ul style="list-style-type: none"> ▶ The transmission of the control header must be disabled. <hr/> <p>Transmit Any Symbol in Set / No Particular Order</p> <p>Transmit data from each Macro PDF symbol as decoded, regardless of the sequence.</p> <ul style="list-style-type: none"> ▶ The transmission of the control header must be enabled. <hr/> <p>Pass through All Symbols</p> <p>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.</p>	Pass through All Symbols

Escape Characters	<p>When enabled, it uses the backslash “\” as an Escape character for systems that can process transmissions containing special data sequences. It will format special data according to the Global Label Identifier (GLI) protocol, which only affects the data portion of a Macro PDF symbol transmission. The Control Header, if enabled, is always sent with GLI formatting.</p> <ul style="list-style-type: none"> ▶ None ▶ GLI Protocol 	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!