AR-3201

CCD Scanner

User Guide

Revision History

Changes to the user manual are listed below:

Version	Date (Y/M/D)	Description	Page #
1.0	2019/3/5	Initial release	
1.6	2019/12/30	Updated the included items in section 1.1	2
		Updated section 2.1.1 (*Set up your scanner*)	7
		Added the Hungarian keyboard layout in section 3.1.1	27
1.7	2020/3/18	Added the section 2.4 titled *Re-connection*	21
1.8	2020/4/15	Updated the pin assignments	150

Regulatory Compliance

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

➢ Reorient or relocate the receiving antenna.
➢ Increase the separation between the equipment and receiver.
➢ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
➢ Consult the dealer or an experienced radio/ TV technician for help.

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

RF exposure warning

The equipment complies with FCC RF exposure limits set forth for an uncontrolled environment.

The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

AR-3201 Scanner/Cradle
Frequency: 2402MHz~2480MHz
RF Power EIRP 9.41 dbm
Hereby, Argox Information Co., Ltd. declares that the radio equipment type AR-3201 is in compliance with Directive 2014/53/EU.

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

RF EXPOSURE WARNING:

The equipment complies with FCC RF exposure limits set forth for an uncontrolled environment. The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

警告：電池若未妥善處理，可能會導致爆炸。

請勿拆卸電池或用火銷毀電池。請將電池放置於兒童拿不到的地方。請使用專用充電器充電，並請依照當地政府或法律規定妥善處理廢棄電池。

CAUTION: EXPLOSION HAZARD

Do not disassemble, short circuit, heat the battery or dispose of in fire. Store battery pack in a proper place. Do not expose to temperature above 60°C/140°F. Use specified charger only. Please dispose of the used batteries following the rules or laws issued by the local government.

CAUTION

LASER LIGHT—
DO NOT STARE INTO BEAM

630nm-680nm LASER
1.0 MILLIWATT MAX. OUTPUT
CLASS II LASER PRODUCT

Note   All brands and trademarks shall belong to their respective owner.

Note   Specification is subject to changes without notice.

ARGOX
a SATO company

警告使用者:

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

單元 Unit	限用物質及其化學符號（Restricted substances and its chemical symbols)					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr⁺⁶)	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
印刷電路板組件	—	○	○	○	○	○
機殼	○	○	○	○	○	○
線材	○	○	○	○	○	○
變壓器	—	○	○	○	○	○
掃描模組	—	○	○	○	○	○
電池模組	—	○	○	○	○	○
藍芽無線模組	—	○	○	○	○	○

設備名稱： 條碼閱讀器　　型號（型式）：AI-6821 / AI-6821HD
Equipment name　　Type designation (Type)

備考1. "○" 係指該項限用物質之百分比含量未超出百分比含量基準值。

Note 1 : "○" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.

備考2. "—" 係指該項限用物質為排除項目。

Note 2 : The "—" indicates that the restricted substance corresponds to the exemption.

AR-3201
User Guide

Contents

1   Introduction

AR-3201 is a cordless scanner that can read bar codes on objects or on screens. The high performance scanning engine delivers high speed and high readability, making it an ideal scanning solution for business.

- **High decoding performance**
  Fast and easy scan for 1D bar codes.

- **High optical resolution**
  Reading high density bar codes up to 3 mil.

- **Distortion processing**
  Even if your bar code is distorted, AR-3201 still recognizes it.

1.1 Unpacking

Make sure all of the following items are included in your package.

✓ Scanner x1
✓ Cradle x1
✓ Quick Start Guide x1
✓ USB Cable or RS-232 Cable x1
✓ Power adapter (optional)

When you receive your scanner, open the package immediately and inspect for shipping damage. If you discover any damage, contact the shipping company and file a claim. Argox is not responsible for any damage incurred during shipping. Save all package materials for the shipping company to inspect.

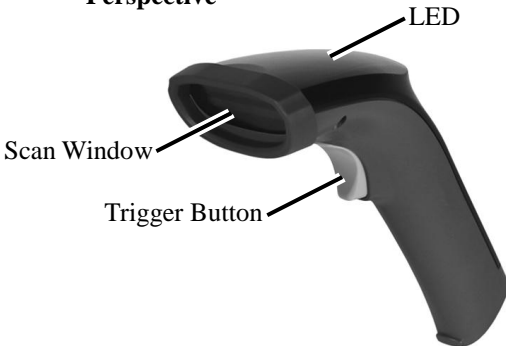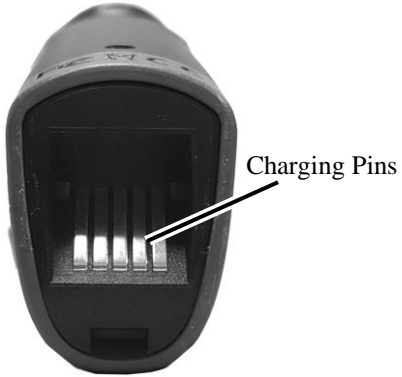**Note** If any item is missing, please contact your local dealer.
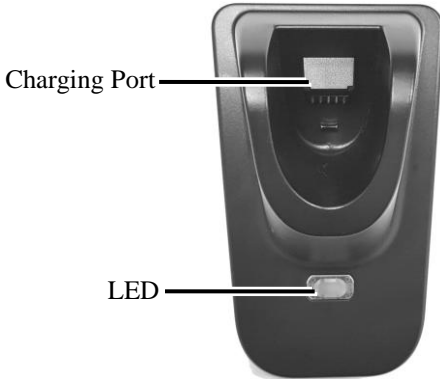
1.2 Understand your scanner

1.2.1 Scanner

■ **Perspective**

LED

Scan Window

Trigger Button

- **Bottom**

Charging Pins

1.2.2 Cradle

- **Perspective**

Charging Port

LED

■ **Bottom**

Cradle Barcode

I/O Port
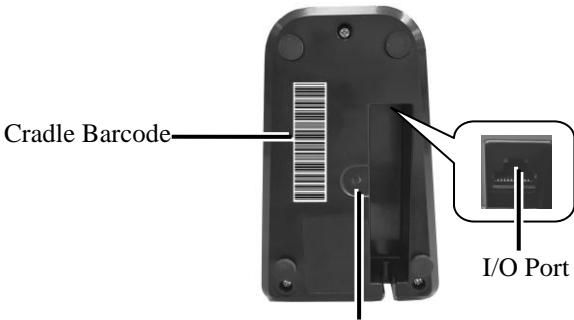
Reset / Paging Button
※ Long-time press → Reset
※ Short-time press → Paging

1.3 Indicators

1.3.1 Status lights

Status lights (LED) are helpful for checking your scanner's status. Both your scanner and cradle have LEDs, and each of them have four colors: blue, green, red and amber. The table below shows the LED behavior and the status it indicates.

Status	Scanner LED	Cradle LED
Scanner Connected	Flash **blue** at 1-second intervals	Flash **blue** at 1-second intervals
Scanner Disconnected	Off	Off
Good Scan	Flash **green** once	Flash **green** once
Cradle ACK Timeout	Flash **red** every 0.5 second until timeout	N/A

Status	Scanner LED	Cradle LED
Firmware Update	Flash **green** fast	Flash **green** fast
Cradle Inquiry	N/A	Flash **amber** and **green** slowly
Cradle Inquiry and Charging	N/A	Flash **amber**, **green** and **red** slowly
Charging	Solid **red**	Flash **green** every second
Battery Full	Off	Solid **green**

1.3.2   Status sound

In addition to status lights, your scanner and your cradle make sounds to indicate the status it is in.

Status	Scanner Sound	Cradle Sound
Scanner Connected	Sound 1	N/A
Scanner Disconnected	Sound 2	N/A
Good Scan	A short beep	N/A
Cradle Inquiry	N/A	Beeps five times at 1-second intervals
Cradle ACK Timeout	Beeps once in low tone	A short beep
Battery Low	Three short beeps (fast)	N/A
Memory Full	Sound 3	N/A
Programming	Two short beeps	N/A
Interface Ready	N/A	Sound 4
Power On	A long beep	A long beep
Reset	N/A	Sound 5

1.3.3   Vibration

Your scanner vibrates in certain status.

Status	Scanner
Power On	Vibrate
Wake up from Sleep Mode	Vibrate
Good Scan	Vibrate

2 Get started

This chapter provides information about how to install, connect and use your scanner to do your work, and how to charge and replace your battery.

2.1 Installation

This section describes how to set up your scanner.

2.1.1 Set up your scanner

1. Connect one end (RJ-45 connector) of the USB or the RS-232 cable to your cradle. Lay the cable into the notch on the cradle edge.

2. Connect the other end of the USB or the RS-232 cable to your computer.
   Note 1 You can connect the scanner to your computer with the USB cable to charge the scanner; to charge the scanner quickly, please connect the power connector and power plug of the purchased power adapter (DC output: 3.5V / 1.35A) to the power jack (outer diameter: 7mm) of USB cable and the wall outlet, respectively.
   **Note 2** If the scanner is purchased with an RS-232 cable, please connect the power connector and power plug of the purchased power adapter (DC output: 3.5V / 1.35A) to the power jack (outer diameter: 7mm) of the RS-232 cable and the wall outlet, respectively.

Charging by	Full Charge Time
Power Supply	5 hours
USB Cable	7 hours

3. Place your scanner on your cradle to charge it to full (cradle's LED glows green).
4. Scan the Cradle code at the bottom of your cradle to establish the connection between your scanner and cradle.
5. To test your scanner, start a text processing program like Notepad or Word. Scan a bar code and see if the data can be sent to your computer. If it's successful, you'll hear a beep and the bar code data shows in the program.

2.1.2   How to scan

AR-3201 emits a light bar when it is scanning. This bar needs to cross the bar code horizontally to decode it.
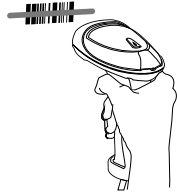
2.1.3   Work with the ASCII table

Sometimes, you might need to send some control characters that can't be typed or enter characters without a keyboard. You can do it by using ASCII codes.

In *Appendix B*, you'll find the ASCII table. Both column and row numbers are hexadecimal. The ASCII code of a character is the combination of a column and a row number, where the column comes first. For example, the ASCII code of BEL is "07" and the number sign (#) is "23." You can use the bar codes in *Appendix D* to scan ASCII codes.

2.1.4   Search your scanner

Sometimes you might leave your scanner somewhere and can't find it. In this case, press and hold the **RESET** button at the bottom of your cradle, until you receive a long beep from your scanner, and you can locate it by the beep sound.

2.2   Battery

AR-3201 contains a lithium-ion battery that is partially charged at the factory. You might want to charge it to full before your use it. The battery life varies depending on usage.

2.2.1   Charge the battery

You can charge the battery by connecting the USB cable to your computer, or by using a power supply (*optional*), which charges the battery faster. When your scanner is fully charged, your cradle's LED turns to green.

Charging by	Full Charge Time
Power Supply	5 hours
USB Cable	7 hours

> ⚠ **Caution**   Keep the charging pins dry when you put your scanner on your cradle to charge the battery. Wet charging pins may cause water seeping into your cradle and shortening its life.

2.2.2 Replacing the battery

The battery's life is consumed as you use and charge it. You need to replace the battery when it wears out. Please follow the steps below to replace the battery.

1. Remove the rubber band around the scan window of the scanner.
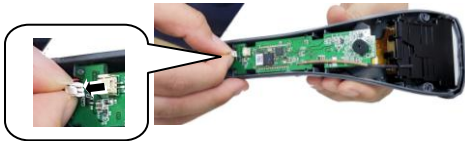

2. Remove the two fixing screws on the lower cover of the scanner by using a Phillips screwdriver.
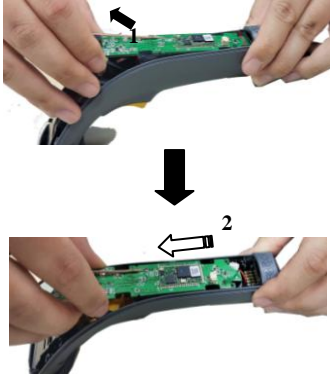

3. Please pull to remove the top cover of the scanner directly by hand.

4. Please remove the battery cable from the motherboard.

5. (1) Pull the motherboard up slightly and then (2) pull out the scanner board in the direction of the arrow.
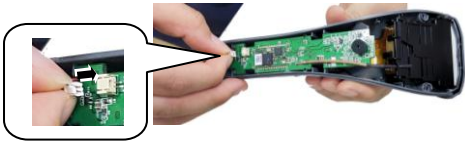

6. Take the old battery out. Next, install a new battery.

7. Install the scanner's motherboard back and insert the battery's cable into the projection of the motherboard.

8. Please insert the connector of the battery cable into the power jack of the motherboard.

9. Please install back the top cover of the scanner directly by hand.

10. Tighten the lower cover of the scanner with 2 screws by using a Phillips screwdriver.

11. Install back the rubber band around the scan window of the scanner.

2.3 Connection

Your scanner can connect to three types of
devices: your cradle, a Bluetooth adapter or a
mobile device.

2.3.1 Connecting the Scanner with the Cradle

Follow these instructions to link the two
devices:

1. Connect power to the cradle. The radio
   LED (marked with a light symbol) will
   blink amber and the cradle will beep.
2. To ensure the cradle is unlinked from any
   other imager, check if the cradle sends an
   inquiry beep or not (see Inquiry Beep
   Control in page 24th).
3. Read the link label on the bottom of the
   cradle with the imager. The imager will
   sound a good read beep and the LED will
   flash amber.
4. Re-place the imager in the cradle to
   continue the charge.

Once a scanner is linked to a cradle, they will
remain linked until specific action is taken to
unlink them (see Unlinking). They will remain
linked if the cradle is unplugged, if the battery
is removed from the imager or if the entire
charge is used up, and if the imager is taken
out of range of the cradle. Under normal
operation, scanning of the link label will only
be required once in the life of the product.

2.3.2   Disconnecting the Scanner from the Cradle

There are three ways to unlink an imager from a cradle:

Force imager to disconnect and sleep

1. **Scan the "Force imager to disconnect and sleep" barcode** – Reading the unlink barcode above while the imager is in range of the cradle will break the link between the two devices and allow another imager to link to the cradle. It will also have the imager in **Deep Sleep Mode**. If the barcode is read when the imager is out of range of its linked cradle, the imager will unlink, but the cradle will remain linked to the imager and will not allow another imager to be linked to it. In this case, you may perform the item 2 below to link another imager.

2. **Scan the Link Label on an alternate cradle** – Scanning the link label on a cradle will drop the link between the original pair and establish a link between the imager and new cradle. If the new link is performed within range of the old cradle, it is free to establish a link to the next imager that reads its link label. If it is done outside of the range of the old cradle, it retains its old link and will not allow a new imager to link to it until a new imager scan the link label and put on the cradle.

3. **Push the "Reset" button on the bottom of cradle** – If the cradle is linked with an imager and in range, pushing the "Reset" button (for about 2 seconds) on the bottom of cradle will drop the link between the devices. If the button is pushed while the imager is out of range, the cradle will unlink and make itself available to other imagers. The scanner will not drop its link with the cradle automatically, but can be linked to any other cradle by reading its link label.

* **Note**: If just push the button with a short time (less than one second), a "Paging" feature will be performed to page the imager which was linked with the cradle.

2.3.3 Connecting to your cradle again

If your scanner has connected to other device, and you want it to connect to your cradle again, do this:

1. Scan the following bar code.

$%-1AB01%%

2. Scan the bar code at the bottom of your cradle.
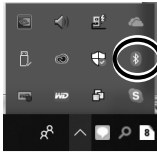
2.3.4 Connecting to a Bluetooth adapter

If your computer has a Bluetooth adapter, you can connect your scanner to your computer without a cradle.

To connect your scanner to a Bluetooth adapter:
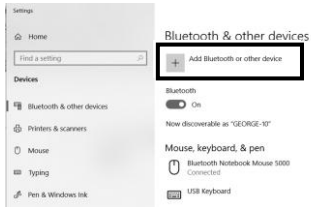
1. Scan the **PC/Android** bar code.

$%-1AB02%%

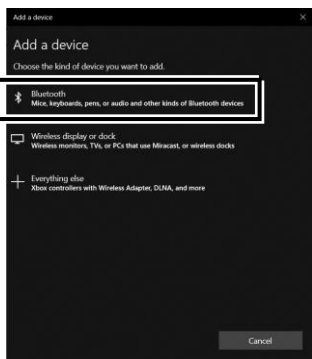2. Double click the Bluetooth icon in the notification area.

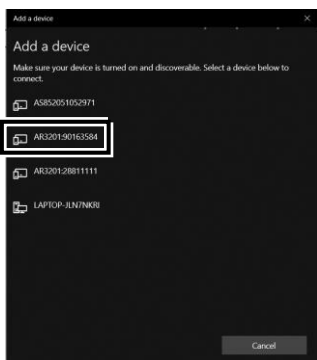**Note** Your computer needs to be Bluetooth-enabled.

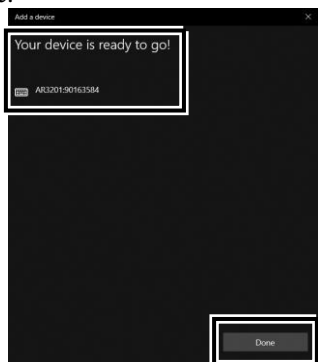3. In the **Bluetooth & other devices** page, tap **Add Bluetooth or other device**.

4. Tap Bluetooth.

5. If it detects your scanner, it shows "AR3201:XXXXXXXXX" (X is your scanner's serial number) in the list. Click your scanner.

6. The computer will try to connect to your scanner. If the connection is successful, you'll see the successful message. Click **Done**.

2.3.5 Connecting to a mobile device

AR-3201 is able to connect to an iOS or Android device that you can use to process bar codes.

Connecting to an iOS device

You can connect your scanner to an iOS device, such as iPhone, iPad or iPod touch. The setup screen may vary depending on your device. In this section, an iPhone is taken for example.

1. Scan the "iOS HID" bar code.

$%-1AB03%%

2. On your iPhone, Go to
   Settings > **Bluetooth**. Turn on
   Bluetooth, and your iPhone
   searches other Bluetooth
   devices automatically. If it
   detects your scanner, it shows
   "AR3201:XXXXXXXXX" (X
   is your scanner's serial
   number) under **DEVICES**.
   Tap your scanner to connect it.

3. When it connects successfully,
   the status of your scanner is
   changed to **Connected**.

4. Tap **Notes** to open a new note.
   Use your scanner to scan bar
   codes and the data shows in
   the note.
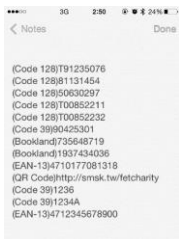
*Note: Apple iOS devices will allow only one input device working
at the same time. So when you connect an Argox Cordless
Scanner with your Apple device, the Apple Virtual Keyboard will
be invalid automatically. To have the Apple Virtual Keyboard be
available again, you need to scan the barcode below.*
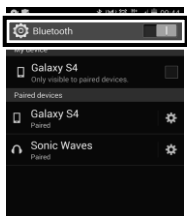
$%-ATX0%%

Connecting to an Android device

You can connect your scanner to an Android device, such as a smartphone or tablet. The setup screen may vary depending on your device. In this section, we use a smartphone as an example.

1. Scan the **Android HID** bar code.

$%-1AB02%%

2. On your Android smartphone, go to the Bluetooth setting screen. Turn on Bluetooth.

3. Tap **Scan** to search Bluetooth devices. If it detects your scanner, it shows "AR3201:XXXXXXXXX" (X is your scanner's serial number) in the list. Tap your scanner to connect it.

4. When it connects successfully, your scanner is shown under **Paired devices**.

5. Tap a memo App to open a new memo. Use your scanner to scan bar codes and the data shows in the memo.
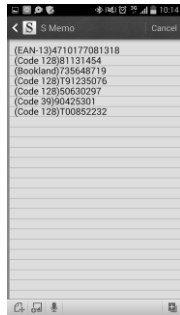
2.3.6 Shipping Mode Setup

When the scanner enters shipping mode, the scanner will be powered off. When being docked to cradle, the scanner will back to power.

Shipping Mode Barcode

2.4 Re-connection

From this section, you are instructed to disconnect with the smart device and re-connect the cradle and to re-connect in the HID mode from your scanner to a PC.

Disconnection with smart device and re-connect to cradle

$%-1AB01%%

HID Re-connect disable

$%-1AC00%%

HID Re-connect (20-second duration)

```
*$%-1AC02%%*
```

HID Re-connect (90-second duration)

```
*$%-1AC09%%*
```

Continuous HID Re-connect

※ *If you do the Continuous HID Re-connect setting, the scanner's battery will consume more power.*

```
*$%-1AC10%%*
```

3 Controls and settings

Customize your scanner to work efficiently. AR-3201 offers many features to match your preferences. This chapter provides information about how to change controls and settings of your scanner.

◼ User's Default Setting

After setting your device, you can save your setting as a User's default. If you reset your scanner to factory default, you can still load your setting in this function.

$%-+SU%%

Save your current setting as default

$%-+RU%%

Restore your default setting

To customize your scanner, you need to scan a series of programming bar codes in the correct order. On the last page of this manual, you'll see a table of hexadecimal bar codes that can be used with programming bar codes.

> **Important**   This function is work only when scanner is being connected to cradle.

To customize your scanner:

1. On the top of the setting table, scan the **Program** bar code.

2. In the setting table, in the **Setting** column, scan one of the bar codes.

3. On the last page, scan the bar codes that correspond to the value you want in the **Value** column. When you finish, scan the **Finish** bar code.

4. On the lower-right corner of the setting table, scan the **Exit** bar code.

Scan Process

①Program → ②Setting → ③Value (using bar codes on the last page) → ④Finish → ⑤Exit

①Program

$%+PRO Program

②Setting

③Value(The last page)

Setting	Option	Value
1AA Interface selection	RS-232	01
	USB HID	03
	RS-232/ USB HID Auto detection	04*
	USB Virtual COM	05

%$$ Exit

④Finish

⑤Exit

3.1 Interface selection

AR-3201 supports RS-232, USB HID and virtual COM. By default, your scanner is able to detect the interface automatically. When it detects USB, it selects HID as your scanner's interface.

||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
	RS-232	01
	USB HID	03
Interface selection *1AA*	RS-232/ USB HID Auto detection	04*
	USB Virtual COM	05

(*) Default

|||||||||||||||||||
%$$ Exit

3.1.1 USB HID key board

- **Keyboard layout**
  You can use it to change your keyboard layout,
  so your scanner can scan bar codes of different
  languages. Remember, you also need to change
  your input method.

- **Function key**
  It maps function keys to ASCII codes, so you can
  scan bar codes in place of the function key input.
  For example, if you scan the numeric bar code "1"
  and then "2," your scanner sends the specific
  character to your computer as though you press
  F2. The code mapping range is from 01 to 1F.
  For more information about ASCII codes, see
  ASCII table in *Appendix B*.

- **Numeric key**
  The keypad is located to the rightmost of a
  keyboard. You need to select this mode if your
  program only accepts numerals. When selecting
  Alt+Keypad, your bar code data will be sent as if
  you're pressing "Alt+number." It is useful when
  your bar code contains a special character, such
  as the Euro sign (€).

- **Caps lock**
  It determines whether the state of the Caps Lock
  key affects the output of bar codes.

- **Inter-character delay**
  It determines how fast your computer receives
  each character and displays it on the screen. If
  the speed is set too fast and your computer
  system is slow, your computer may lose data.

■ **Block Delay**

It is a delay timer between barcode data output. The feature is used to transfer continually with shorter barcode data or multi-field scanning.

$%+PRO   Program

Setting	Option	Value
2AB Keyboard layout	USA	00*
	Belgium	01
	Denmark	02
	France	03
	Germany	04
	Italy	05
	Portugal	06
	Spain	07
	Sweden	08
	Switzerland	09
	UK	10
	Latin American	11
	Japanese	12
	Hungarian	17
2AD Function key	Disable	00
	Enable	01*
2AE Numeric key	Alphabetic key	00*
	Numeric keypad	01
	Alt+Keypad	02

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Setting	Option	Value
‖‖‖‖‖‖‖‖‖‖‖‖‖ *2AF* Caps lock	Caps lock"ON"	00
	Caps lock"OFF"	01*
‖‖‖‖‖‖‖‖‖‖‖‖‖ *2AH* Inter-character delay	00 to 99.(ms)	00-99
		02 *
‖‖‖‖‖‖‖‖‖‖‖‖‖ *2AI* Block transmission delay	00-99 (10 ms)	00-99
		10*

(*) Default

‖‖‖‖‖‖‖‖‖‖‖‖‖
%$$ Exit

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3.1.2　RS-232

- **Flow control**

  - **None**

    Your computer and scanner only use TxD and RxD signals for communication. No hardware or software flow control is used.

  - **RTS/CTS**

    It is hardware flow control. If your scanner is ready to send bar code data to your computer, it sends an RTS signal, and waits to receive a CTS signal from your computer. If your scanner doesn't receive a CTS after a timeout, you'll hear five warning beeps from it.

  - **Xon/Xoff**

    It is software flow control. When your computer is unable to receive data, it sends an Xoff signal to notify your scanner to stop sending data; it sends an Xon signal when it's ready.

  - **ACK/NAK**

    Your scanner sends data after it received an ACK signal from your computer, and will resend data if it receives an NAK signal.

- **Inter-character delay**

  It determines how fast your computer receives each character and displays it on the screen. If the speed is set too fast and your computer system is slow, your computer may lose data.

Block Delay

It is a delay timer between barcode data output. The feature is used to transfer continually with shorter barcode data or multi-field scanning.

Response delay

If you use RTS/CTS or ACK/NAK for flow control, you can decide how long your scanner waits your computer to acknowledge the data transmission.

 Program

Setting	Option	Value
3AA Flow control	None	00*
	RTS/CTS	01
	Xon/Xoff	02
	ACK/NAK	03
3AB Inter-character delay	00-99 (msec)	00-99
		00*
3AC Block delay	00 to 99.	00 *
3AD Response delay	00-99 (100 msec)	00-99
		20*

(*) Default

 Exit

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||||||||||||||||||||||||||
$%+PRO   Program

Setting	Option	Value
|||||||||||||||||||||||| *3AE* Baud rate	2400 bps	03
	4800 bps	04
	9600 bps	05
	19200 bps	06
	38400 bps	07
	57600 bps	08
	115200 bps	09*
|||||||||||||||||||||||| *3AF* Parity	None	00*
	Odd	01
	Even	02
|||||||||||||||||||||||| *3AG* Data bit	8 bits	00*
	7 bits	01
|||||||||||||||||||||||| *3AH* Stop bit	One bit	00*
	Two bits	01

(*) Default

||||||||||||||||||||||||||
%$$ Exit

3.2 Scan properties

■ **Good-read off**
  After you pull the trigger, your scanner will keep
  emitting the light bar, until it captures a good
  scan or no bar code is decoded after the stand-by
  duration elapsed.

■ **Momentary**
  When you pull the trigger, the light bar is turned
  on; when you release the trigger, the light bar is
  turned off.

■ **Alternate**
  The trigger acts as a toggle. When you pull the
  trigger, the light bar is turned on; when you pull
  it again, the light bar is turned off.

■ **Timeout-off**
  When you pull the trigger, the light bar is turned
  on. If no bar code is decoded after the stand-by
  duration elapsed, the light bar is turned off.

■ **Continue**
  It automatically detects and decodes bar codes in
  your scanner's field of view. You can turn on this
  mode when you want to decode bar codes
  without pulling the trigger. If no bar code is
  decoded after the stand-by duration elapsed, the
  light bar will flash. You can move your scanner
  or pull the trigger to wake it up.

■ **Test only**
  It is reserved for engineers to test.

■ **Auto-sensing**
  Similar to **Continue**, it automatically detects and
  decodes bar codes in your scanner's field of view.
  If no bar code is decoded after the stand-by
  duration elapsed, the light bar will be turned off.

You can move your scanner or pull the trigger to wake it up.

- **Double confirm**
  It determines how many times the decoder needs to confirm a bar code.

- **Double read timeout**
  It determines the duration of **Double confirm**. For example, if you set 5 times in **Double confirm** and set 10 milliseconds in **Double read timeout**, the decoder will decode a bar code 5 times in 10 milliseconds. You need to turn on **Double confirm** to use this feature.

||||||||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
|||||||||||||||||||| *7AA* Scan mode	Good-Read Off	00
	Momentary	01*
	Alternate	02
	Timeout Off	03
	Continue	04
	Test only	05
	Auto-sensing	06
|||||||||||||||||||| *7AB* Stand-by duration	01-99 (second)	00-99
		06*
|||||||||||||||||||| *7AC* Double read timeout	01-99 (100 msec)	01-99
		50*
|||||||||||||||||||| *7AD* Double confirm	00-09	00-09
	(00: no double confirm)	00*

(*) Default

||||||||||||||||||||||
%$$ Exit

- **Global min/max code length**
  The min and max code length defines the decoding length of all bar codes. Note the following when you set their length:

  - If the length of a bar code is shorter than the min or longer than the max, the bar code won't be decoded.
  - If the min is equal to the max, the decoding length is fixed.
  - Some bar codes have their own decoding length. If you set the individual min or max decoding length for a bar code, your scanner will go by the individual setting.

- **Inverted image scan**
  When you turn on this feature, you can scan both regular and inverted bar codes.

- **Position indication**
  When you turn on this feature, the light bar keeps flashing. This feature determines how long the light bar flashes.

- **ISBT Concatenation time out**
  When scanning single ISBT barcode, scanner will wait 100ms, 200ms or 900ms to output barcode single ISBT barcode because it has to seek appended ISBT barcode until timeout.

- **Configuration Auto update**
  Every time your cradle connects to your scanner, Auto Update automatically updates your scanner's configuration.

||||| |||| ||| ||||||| |||| |||||
$%+PRO Program

Setting	Option	Value
‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *7AF* Global min. code length	00-99	00-99 4*
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *7AG* Global max. code length	00-99	04-99 99*
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *7AH* Inverted image scan	Disable Enable	00* 01
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *7AK* Position indication	Disable 30 seconds 60 seconds 90 seconds 120 seconds 150 seconds 180 seconds Continue	00* 01 02 03 04 05 06 07
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *7AO* ISBT Concatenation timeout	Disable 100ms 200ms 900ms	00 01 02 09
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *1BA* Configuration Auto update	Disable Enable	00 * 03

(*) Default

||||| ||||| |||| ||||||| ||||
%$$ Exit

3.3 Wireless Features

AR-3201 offers some operating modes that help prevent data loss and extend battery life. This section describes how to use these modes.

■ **Handcuff mode (Leash Alarm)**
You can decide how long your scanner beeps after it lost Bluetooth connection.

■ **Data Collection mode**
You can decide whether your scanner stores data in its storage when it lost Bluetooth connection. The storage size is 7 KB. If the storage is full, you'll hear an error beep when your scanner tries to store data in it.

Note:
1. The scanner will preserve barcode when the wireless is off, and will output data right after the scanner is wirelessly connected to the cradle.

2. The scanner will preserve barcode when the wireless is off, and will output data after the scanner is wirelessly connected to the cradle and its trigger key is pressed.

3. For the Force option, the scanner will preserve all barcode until it is placed on the cradle.

■ **Deep Sleep mode**
To save battery power, you can put your scanner into sleep if it doesn't work in a certain amount of time. To wake it up, just pull the trigger. Note that your scanner needs 2-3 seconds to wake up, since the engine needs a little time to start.

||||||| |||| |||| ||||||| ||||||
$%+PRO   Program

Setting	Option	Value
||||||||||||||||| 7AM Handcuff Mode (Leash Alarm)	Disable	00*
	10 seconds	10
	30 seconds	30
	60 seconds	60
||||||||||||||||| 7AN Data Collection Mode	Disable	00
	Enable[1]	01
	Default[2]	02*
	Force[3]	03
||||||||||||||||| 7AJ Deep Sleep Mode	Disable	00*
	10 minutes	01
	30 minutes	03
	60 minutes	06

(*) Default

||||||| |||| ||| ||||||
%$$ Exit

3.4 Indicator

- **Power on alert**
  When your scanner is turned on, you'll hear a long beep.

- **Good read indication**
  The reaction after your scanner gets a good read.

- **Beeper indication**
  Your scanner will beep after it gets a good read.

- **Beep loudness**
  It is the volume of the good read beep. The bigger the number, the higher the volume.

- **Beep tone freq.**
  It is the tone of the good read beep. The bigger the number, the higher the tone.

- **Beep tone duration**
  It is the duration of the good read beep. The bigger the number, the longer the duration.

- **Cradle Inquiry Beep**
  Adjust the cradle inquiry beep time.

- **Cradle Beep Loudness**
  Adjust the cradle Beep volume.

||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
5AA Power on alert	Disable	00
	Enable	01*
5AB Good read indication	Disable	00
	Enable LED	01
	Enable Vibration	02
	Enable both	03*
5AC Beeper indication	Disable	00
	Enable	01*
5AD Beep loudness	00-07	00-07
		07*
5AE Beep tone freq.	00-99 (100 Hz)	00-99
		40*
5AF Beep tone duration	00-99 (10 msec)	00-99
		10*
5AJ Cradle Inquiry Beep	Disable	00*
	10 seconds	01
	30 seconds	03
	Continue	08

41

	Disable	00
	Volume 1	01
5AK	Volume 7	07

Cradle Beep

Loudness

(*) Default

%$$ Exit

3.5 Characters and strings (transmission)

3.5.1 Prefix and suffix

Prefix / Suffix characters setting

You can add a character at the beginning (prefix) or at the end (suffix) of a bar code. You can use up to 22 ASCII characters to customize the prefix and suffix.

Prefix	Name	Preamble	ID	Code Length	Barcode Data	ID	Postamble	Suffix

⬆   ⬆

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
$%+PRO   Program
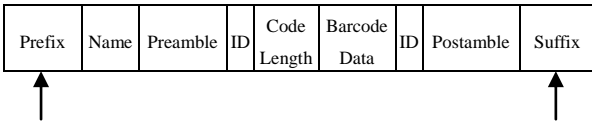
Setting	Option	Value
‖‖‖‖‖‖‖‖‖‖‖ *8AA* Prefix characters setting	None	00*
	1-22	00-ffH
	characters	ASCII code
‖‖‖‖‖‖‖‖‖‖‖ *8AB* Suffix characters setting	None	0D*
	1-22	00-ffH
	characters	ASCII code

(*) Default

‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%$$ Exit

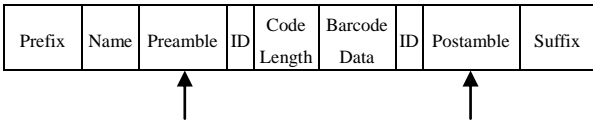## 3.5.2 Preamble and postamble

■ **Preamble / Postamble**
   In some cases, you may need additional
   characters to identify your bar code data. A
   preamble and postamble can help you to do
   that. Remember, you need to turn on
   preamble/postamble transmission to use it.

■ **Preamble transmission**
   Add a preamble character or characters to a bar
   code.

■ **Postamble transmission**
   Add a postamble character or characters to a
   bar code.

Prefix	Name	Preamble	ID	Code Length	Barcode Data	ID	Postamble	Suffix
		↑					↑	

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||||||||||||||||||||||
$%+PRO   Program

Setting	Option	Value
||||||||||||||||||| *8AC* Preamble characters setting	None	00*
	1-12characters	00-ffH
		ASCII
		code
||||||||||||||||||| *8AD* Postamble characters setting	None	00*
	1-12haracters	00-ffH
		ASCII
		code
||||||||||||||||||| *6AA* Preamble transmission	Disable	00*
	Enable	01
||||||||||||||||||| *6AB* Postamble transmission	Disable	00*
	Enable	01

(*) Default

||||||||||||||||||||||
%$$ Exit

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3.5.3　String groups

■ **Insert G1/G2/G3/G4 character setting**
You can insert up to two strings into a bar code. Each string can contain up to 12 characters. First, you need to set a string in a group, and then insert the group into your bar code. There are four string groups. You can decide which group you want to use and where you want to insert it. You can insert the same group two times if you want.

Note　if you want to insert G5-G10, use Data Magic.

■ **Insert data group position**
It determines the position that the string group will be inserted into. Note that the insertion position can't exceed the length of a bar code, or the group will be inserted at the end of the bar code. The value "00" inserts the group at the beginning of a bar code, and "64" inserts the group at the end of a bar code.

Example

To insert a string group into a bar code:

Step 1.　Set a string in a group.

1. Scan the **Program** and **Insert G1 characters setting** bar codes.

2. In the ASCII code table, find the value of the character you want to insert. For example, if you want to insert the string "AB," you'll find A→41, B→42.

3. On the last page, scan "41" and "42," and then scan the **Finish** bar code.

4. Scan the **Exit** bar code.

Step 2.   Insert the string into the specified position.

1. Scan the **Program** and **Insert data group 1 position** bar codes.

2. On the last page, scan "03," and then scan the **Finish** bar code. This means we're inserting the string into the third position of a bar code.

3. Scan the **Exit** bar code.

Step 3.   Specify the bar code you want to insert.

1. We're using Code 128 as an example. In the section *Code 128*, scan the **Program** and **Insert group number selection** bar codes.

2. On the last page, scan "01," and then scan the **Finish** bar code. This means we're inserting Group1 into a Code 128 bar code.

3. Scan the **Exit** bar code.

Original data: 258963
Result: 258<u>AB</u>963

$%+PRO Program

Setting	Option	Value
8AE Insert G1 characters setting	None 1-12 characters	00* 00-ffH ASCII code
8AF Insert G2 characters setting	None 1-12 characters	00* 00-ffH ASCII code
8AG Insert G3 characters setting	None 1-12 characters	00* 00-ffH ASCII code
8AH Insert G4 characters setting	None 1-12 characters	00* 00-ffH ASCII code
8AI Insert G5 characters setting	None 1-12 characters	00* 00-ffH ASCII code
8AJ Insert G6 characters setting	None 1-12 characters	00* 00-ffH ASCII code
8AK Insert G7 characters setting	None 1-12 characters	00* 00-ffH ASCII code

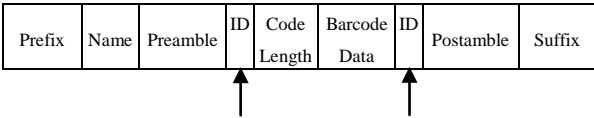| Setting	Option	Value
‖‖‖‖‖‖‖‖‖‖‖ *8AL* Insert G8 characters setting	None 1-12 characters	00* 00-ffH ASCII code
‖‖‖‖‖‖‖‖‖‖‖ *8AM* Insert G9 characters setting	None 1-12 characters	00* 00-ffH ASCII code
‖‖‖‖‖‖‖‖‖‖‖ *8AN* Insert G10 characters setting	None 1-12 characters	00* 00-ffH ASCII code
‖‖‖‖‖‖‖‖‖‖‖ *6AC* Insert data group 1 position	00-63 (00: no insertion)	00-63 00*
‖‖‖‖‖‖‖‖‖‖‖ *6AD* Insert data group 2 position	00-63 (00: no insertion)	00-63 00*
‖‖‖‖‖‖‖‖‖‖‖ *6AE* Insert data group 3 position	00-63 (00: no insertion)	00-63 00*
‖‖‖‖‖‖‖‖‖‖‖ *6AF* Insert data group 4 position	00-63 (00: no insertion)	00-63 00*

(*) Default

‖‖‖‖‖‖‖‖‖‖‖
%$$ Exit

3.5.4 ID, name and capitalization

- **Code ID position**

  You can choose to place Code ID before or after a bar code.

Prefix	Name	Preamble	ID	Code Length	Barcode Data	ID	Postamble	Suffix

- **Code ID transmission**

  Code ID is an identifier for a bar code. It has two modes, Proprietary ID and AIM ID. You can choose one of them. If you want to customize the code ID using an ASCII code, you need to choose Proprietary ID. AIM ID is fixed since it is defined by the AIM organization.

- **Code length transmission**

  It shows the length of a bar code at its beginning. For example, if your bar code is "258963," the result will be "06258963," in which 06 stands for the length of the bar code.

- **Code name transmission**

  It shows the name of a bar code type at the beginning of a bar code. For example, if your bar code type is Code 39, and your bar code is "09741258R," the result is "(Code-39) 09741258R."

- **Case conversion**

  You can change the capitalization of letters. For example, if you choose Upper case, the string "12aBcDeF" will be converted to "12ABCDEF."

||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
||||||||||||||||||||||| *6AG* Code ID position	Before code data	00*
	After code data	01
||||||||||||||||||||||| *6AH* Code ID transmission	Disable	00*
	Proprietary ID	01
	AIM ID	02
||||||||||||||||||||||| *6AI* Code length transmission	Disable	00*
	Enable	01
||||||||||||||||||||||| *6AJ* Code name transmission	Disable	00*
	Enable	01
||||||||||||||||||||||| *6AK* Case conversion	Disable	00*
	Upper case	01
	Lower case	02
	(For bar code data only)	

(*) Default

||||||||||||||||||||||||
%$$ Exit

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3.6 Scanner information

3.6.1 Parameters

It displays your scanner's information on the screen.

- **Bar code settings**
  It shows the current settings of all bar codes.

- **Unique parameters**
  It shows the current values of the common properties of all bar codes.

- **System parameters**
  It shows the current system settings of your scanner, such as interface selection, RS-232, indicator, transmission and the scan mode.

- **String settings**
  It shows all settings of strings, such as prefix, suffix, preamble, postamble and string groups.

‖‖‖‖‖‖‖‖‖‖‖‖‖
$%+PRO   Program

Setting

‖‖‖‖‖‖‖‖‖‖   ‖‖‖‖‖‖‖‖‖‖
!BS   *!BU*
Bar code settings   Unique parameters

‖‖‖‖‖‖‖‖‖‖   ‖‖‖‖‖‖‖‖‖‖
!SY   *!ST*
System parameters   String settings

‖‖‖‖‖‖‖‖‖‖‖‖‖
%$$ Exit

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3.6.2 Data Magic settings

It shows all settings of Data Magic.

||||| ||| ||||| ||||| |||| |||||
$%+PRO   Program

Setting

||||| ||||| ||||| ||||| |||
!DM   Data Magic settings

||||| ||| ||||| ||||| |||
%$$ Exit

3.6.3 Firmware version

It shows the firmware version of your scanner.

||||| ||| ||||| ||||| |||| |||||
$%+PRO   Program

Setting

||||| ||||| ||||| |||
!VR   Data Magic settings

3.7 Reset your scanner

By resetting your scanner, you can return your scanner to the state it was in when you receive it. This can help you solve some problems caused by settings changed between scans.

Scan the following bar code to reset your scanner and cradle:

There are two ways to reset your scanner.

■ Scan the bar code

Scan the following bar code to reset your scanner.

■ Press and hold the RESET button

Press and hold the **RESET** button until you hear the startup sound.

Remember the following when resetting your scanner:

1. If your scanner is connected to your cradle, when you scan the **Reset scanner** bar code or press the **RESET** button, you reset both of your scanner and cradle.
2. If your scanner is *not* connected to your cradle, when you scan the **Reset scanner** bar code, you only reset your scanner; when you press the **RESET** button, you only reset your cradle.

||||||||||||||||||||||||||||

$%+PRO Program

Setting

||||||||||||||||||||

!IN Reset scanner

||||||||||||||||||||

!IC Reset cradle

Note To meet the regulation of air transportation, the wireless imager should disconnect with the cradle during shipment. All the cordless scanner are suggested to scan the following command before packaging into boxes and ship to customers. This command will make the scanner power off, and the scanner will be powered on after being placed on the charging cradle.

||||||||||||||||||||||||||||||||||||

$%-$ZZ%%

3.8 Update firmware

Updating firmware improves functionalities and performance for your scanner. If you want to update the firmware of AR-3201, you need to update your cradle's firmware first. After that, your cradle will reset and try to connect to your scanner. Once they establish the connection, your cradle will update your scanner's firmware.
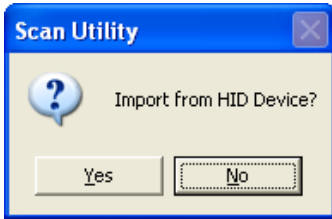
● USB connection

1. Start Scan Utility.
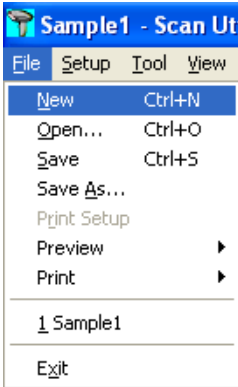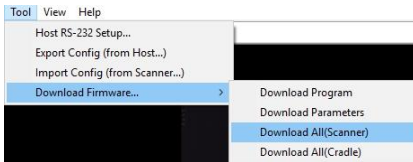
2. On the **File** menu, click **New**.

3. In the **NEW** dialog box, select **AR3201**
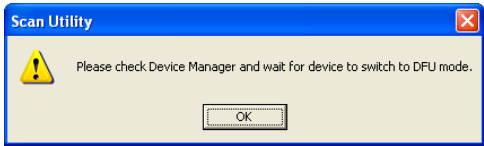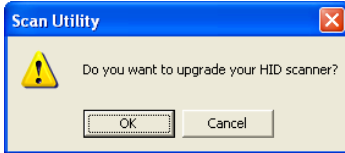   or **AR3201** from the **Select Model** list,
   and click **OK**.

4. In the **Scan Utility** dialog box, click **No**.

5. On the **Tool** menu, click **Download
   Firmware** > **Download All (Scanner)** or
   **Download All (Cradel)**.

6. Scan Utility will ask if you want to upgrade your scanner, click **OK**. In the next dialog box, click **OK**. Then, you need to wait 7 seconds for system to switch your scanner to the DFU mode.
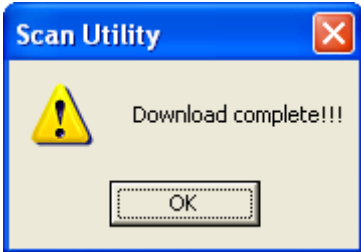

7. In the **Change Firmware** dialog box, click **Ask** to get the current firmware version of your scanner.
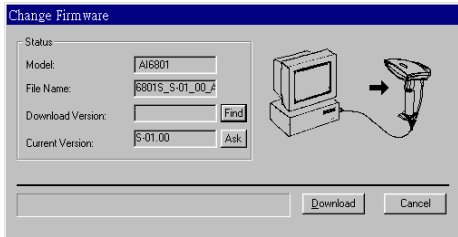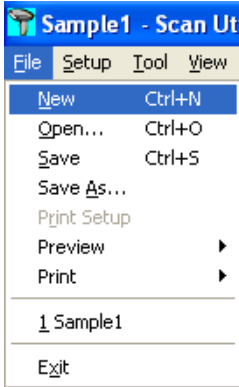
8. Click **Find** to load the firmware file. The firmware version in this file needs to be different from the current firmware version of your scanner. After loading the file, click **Download** to update the firmware.
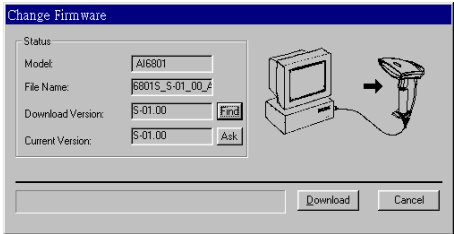
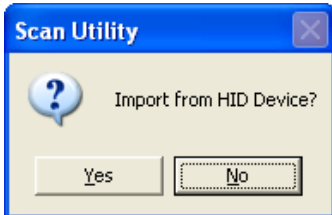9. After the update is completed, click **OK**.

- RS-232 connection
1. Start Scan Utility.

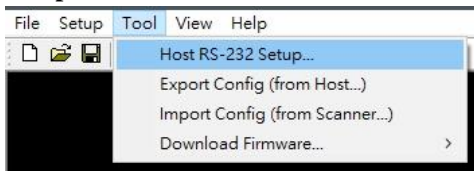2. On the **File** menu, click **New**.

3. In the **NEW** dialog box, select **AR3201**
   or **AR3201** from the **Select Model** list,
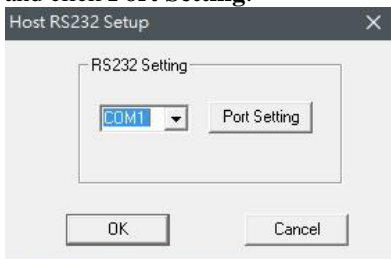   and click **OK**.

4. In the **Scan Utility** dialog box, click **No**.

5. On the **Tool** menu, click **Host RS-232 Setup**.

6. In the **Host RS-232 Setup** dialog box, select the COM port your scanner is using and click **Port Setting**.

7. In the **Port Setting** dialog box, in the **Baud rate** list, select **115200** and click **OK**.
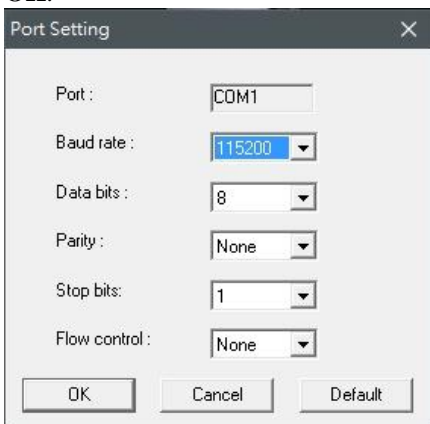
8. In the **Host RS-232 Setup** dialog box, click **OK**.
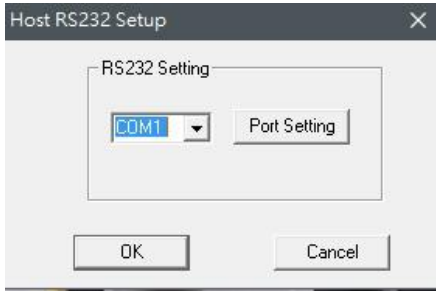
9. On the **Tool** menu, click **Download Firmware** > **Download All (Scanner)**.
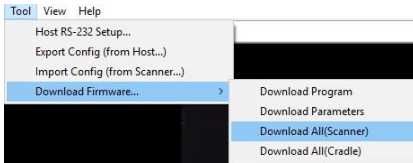
10. In the **Change Firmware** dialog box, click **Ask** to get the current firmware version of your scanner.
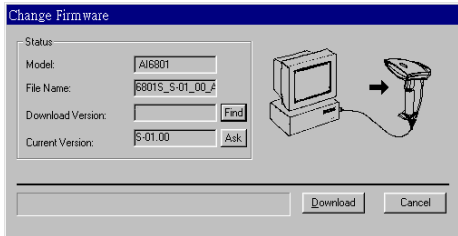
11. Click **Find** to load the firmware file. The firmware version in this file needs to be different from the current firmware version of your scanner. After loading the file, click **Download** to update the firmware.
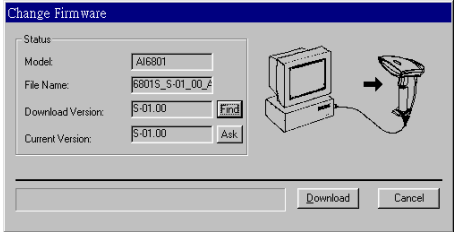
12. After the update is completed, click **OK**.

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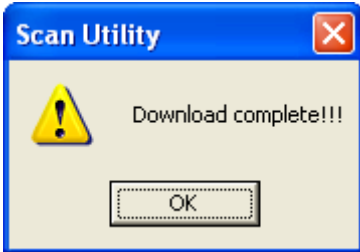
3.9 Data Magic

Data Magic offers 10 commands for you to customize text strings of bar codes. Each command can be specified in a rule. Data Magic allows up to 10 rules to be applied. With the flexibility Data Magic provides, you can define data as you want.

There are two ways to use Data Magic: scanning bar codes, or using Scan Utility. By scanning bar codes, you can quickly change the settings without using programs; by using Scan Utility, you can see the settings at a glance and change them through the easy-operated user interface. Choose the method that meets your need.

i

Important Data Magic default is disabled. To enable Data Magic function, go to chapter 4 Bar codes and find Data Magic column to enable it.

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Data Magic commands

InsertF	
Definition	**Attributes**
Insert a character or characters from the <u>left</u> of a text string.	■ Position: The position you want to insert the character. ■ String: The specified group.
InsertB	
Definition	**Attributes**
Insert a character or characters from the <u>right</u> of a text string.	■ Position: The position you want to insert the character. ■ String: The specified group.
CutF	
Definition	**Attributes**
Remove a character or characters from the <u>left</u> of a text string.	■ From: The starting position of the text to be removed. ■ To: The end position of the text to be removed.
CutB	
Definition	**Attributes**
Remove a character or characters from the <u>right</u> of a text string.	■ From: The starting position of the text to be removed. ■ To: The end position of the text to be removed.
KeepF	
Definition	**Attributes**
Retain a character or	■ From: The starting position of the text to be retained.

characters from the <u>left</u> of a text string.

- To: The end position of the text to be retained.

KeepB	
Definition	**Attributes**
Retain a character or characters from the <u>right</u> of a text string.	■ From: The starting position of the text to be retained.
	■ To: The end position of the text to be retained.

FindF	
Definition	**Attributes**
Remove a certain length of the string from the <u>left</u>.	■ String: The specified group.
	■ Include: Remove everything before the specified string.
	■ Exclude: Remove the specified string and everything before it.

FindB	
Definition	**Attributes**
Remove a certain length of the string from the <u>right</u>.	■ String: The specified group.
	■ Include: Remove everything before the specified string.
	■ Exclude: Remove the specified string and everything before it.

Replace	
Definition	**Attributes**
Replace the text in the original text string with a different text	■ String: The text in the original text string.
	■ With String: The string that

string.   replaces the specific text.

Erase

Definition   **Attributes**

Remove the   None.
specified rule.

Position Range: 0-99
Cut Range: From: 1-99, To: 1-99

> **Note**   If you use Data Magic by scanning
> bar codes, you don't need the Erase
> command.

3.9.1 Bar code scanning

Bar code scanning is a quick way to work with Data Magic. Just scan the bar codes in specific order, and you can customize your string in seconds.

Data format

Data Magic provides 10 rules for you to set. To set a rule, follow this data format to scan bar codes:

Program + **Rule** + **Command** + **Attribute 1** + **Attribute 2** + **Finish** + **Exit**

Item	Description
Rule	The rule number. The lower the number, the higher the priority. The rule with the high priority will be applied first.
Command	The command you specify in the rule.
Attribute 1	The attribute varies according to the command.
Attribute 2	The attribute varies according to the command.

Command	Attribute 1	Attribute 2
InsertF	Position	String
InsertB	Position	String
CutF	From	To
CutB	From	To
KeepF	From	To
KeepB	From	To
FindF	String	Include or Exclude

Item	Description	
FindB	String	Include or Exclude
Replace	String	With String
Erase	-	-

To set an InsertF rule with the sample data, scan the following bar codes:

Program

```
*$%+PRO*
```

⬇

RULE1

```
*90*
```

⬇

InsertF

```
*/0*
```

⬇

Attr1 (Two digits)

```
*/0*
```
➡
```
*/5*
```

◇

Attr2 (Two digits)

```
*/0*
```
➡
```
*/4*
```

⬇

Finish

```
*%%*
```

⬇

Exit

```
*%$$*
```

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Bar codes

The bar codes below are Data Magic rules. They consist of two digits. The first digit "9" indicates Data Magic; the second indicates the rule number.

Data Magic Rules			
RULE 1	*90*	RULE 2	*91*
RULE 3	*92*	RULE 4	*93*
RULE 5	*94*	RULE 6	*95*
RULE 7	*96*	RULE 8	*97*
RULE 9	*98*	RULE 10	*99*

The bar codes below are Data Magic commands.

Data Magic Commands	
/0	*/1*
0→InsertF	1→CutF
/2	*/3*
2→CutB	3→Replace

‖‖‖‖‖‖‖‖‖
* / 4 *

4→KeepF

‖‖‖‖‖‖‖‖‖
* / 5 *

5→KeepB

‖‖‖‖‖‖‖‖‖
* / 6 *

6→FindF

‖‖‖‖‖‖‖‖‖
* / 7 *

7→FindB

‖‖‖‖‖‖‖‖‖
* / 8 *

8→InsertB

‖‖‖‖‖‖‖‖‖
* / 9 *

9→Erase

Example

Original Text String: ARGOX89121121
Group 1: ARGOX   Group 2: argox
Group 3: GOX   Group 4: Tel:

InsertF

Insert Group 4 (Attr 2) into the fifth (Attr 1) position from the left side of the string.

Program							
Rule	Command	Attribute 1		Attribute 2		Finish	Exit
1	InsertF	0	5	0	4		

Data: ARGOX89121121
Result: ARGOXTel:89121121

InsertB

> Insert Group 4 (Attr 2) into the eighth (Attr 1)
> position from the right of the string.

Program							
Rule	Command	Attribute 1		Attribute 2		Finish	Exit
2	InsertB	0	8	0	4		

> Data: ARGOX89121121
> Result: ARGOXTel:89121121

CutF

> Remove first 5 characters from the left of the
> string.

Program							
Rule	Command	Attribute 1		Attribute 2		Finish	Exit
3	CutF	0	1	0	5		

> Data: ARGOX89121121
> Result: 89121121

CutB

> Remove first 8 characters from the right of the
> string.

Program							
Rule	Command	Attribute 1		Attribute 2		Finish	Exit
4	CutB	0	1	0	8		

> Data: ARGOX89121121
> Result: ARGOX

Replace

In the original string, replace the Group 1
(Attr1) with Group 4 (Attr2).

Program							
Rule	Command	Attribute 1		Attribute 2		Finish	Exit
5	Replace	0	1	0	4		

Data: <u>ARGOX</u>89121121
Result: Tel:89121121

KeepF

Keep the characters from (Attr1) to (Attr2)
from the left of the string.

Program							
Rule	Command	Attribute 1		Attribute 2		Finish	Exit
6	KeepF	0	3	0	8		

Data: AR<u>GOX891</u>21121
Result: GOX891

KeepB

Retain the characters from (Attr1) to (Attr2)
from the right of the string.

Program							
Rule	Command	Attribute 1		Attribute 2		Finish	Exit
7	KeepB	0	3	0	8		

Data: ARGOX<u>891211</u>21
Result: 891211

FindF

Remove Group 3 (Attr 1) and everything before it from the left of the string. Attribute 2 can be "00" or "01."

Program							
Rule	Command	Attribute 1		Attribute 2		Finish	Exit
8	FindF	0	3	0	1		

00: Include   01: Exclude
Data: AR<u>GOX</u>89121121   Data: <u>ARGOX</u>89121121
Result: GOX89121121   Result: 89121121

FindB

Remove Group 3 (Attr 1) and everything before it from the right of the string. Attribute 2 can be "00" or "01."

Program							
Rule	Command	Attribute 1		Attribute 2		Finish	Exit
9	FindB	0	3	0	1		

00: Include   01: Exclude
Data: ARGOX<u>89121121</u>   Data: AR<u>GOX89121121</u>
Result: ARGOX   Result: AR

Erase

Remove the specified rule.

Program	Rule	Command	Exit
	Rule 10	Erase	

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Erase

> To remove all values in Data Magic, scan the
> bar code below.

Display the current settings

> To display the current settings of Data Magic,
> scan the following bar codes:

Program

$%+PRO

OR

!DM

Display Data Magic
settings

!ST

Displays Inserted
Group settings

%$$

Scan Utility

Scan Utility provides a simple, clear interface that you can easily view and change Data Magic settings, and import or export the settings to your scanner. Currently, Scan Utility uses RS-232 for data transmission. If your scanner is connected via a USB port, you need to install Virtual COM for Scan Utility to transmit data. For more information about installing Virtual COM, see *Virtual COM*.

To use Data Magic, start Scan Utility and do this:

1. On the **File** menu, click **New**.
2. In the **NEW** dialog box, select **AR3201** or **AR3201** from the **Select Model** list, and click **OK**.
3. In the **Scan Utility** dialog box, click **No**.
4. On the **Setup** menu, Click **Linear Barcode setup**. Select which code you want to use then enable **Data matrix** function, click **OK**.
5. On the **Setup** menu, click **Scanner Setup**, and click the **Data Magic** tab.
6. In the **Data Magic** tab, select the **Data Magic** check box.
7. Click one of the rules you want to set. For example, if you want to set **Rule 1**, select its **Enable** check box. In the command list, click the command you want, such as **InsertF**. In the **position** box, type a position number. In the **string** list, click the group you want.

8. Repeat the previous step until you set all the rules you need, and click the **String** tab.

9. In the **String** tab, there are 10 string boxes: **Insert G1-G10 chars setting**. Each box corresponds to the group you've selected in the **string** list in the **Data Magic** tab. Depending on your selection, type the text you want in the specific box. For example, if you've selected **Group1**, type in the **Insert G1 chars setting** box. The string box accepts up to 12 single-byte characters. When you're done, click **OK**.

10. On the **Tool** menu, click **Export Config (from Host)**, and click **Export**. If the data is exported successfully, you'll hear a long beep.

In the **Data Magic** tab, you'll find 10 rules. Each rule can be set to one of the commands. The table below describes how to use those commands.
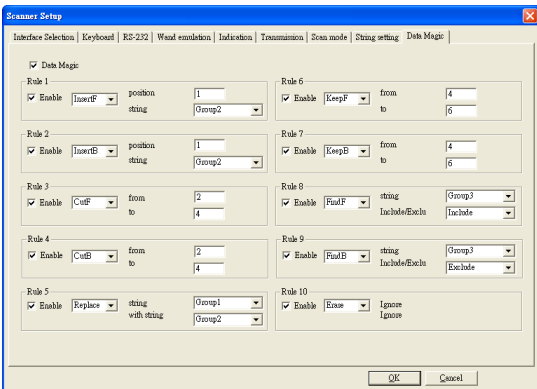
Command	Example
InsertF	Position: 1 String: Group 2 Group 2: Argox Original String: 12345678 Result: 1Argox2345678
InsertB	Position: 1 String: Group 2 Group 2: Argox Original String: 12345678 Result: 1234567Argox8
CutF	From: 2 To: 4 Original String: 12345678 Result: 15678
CutB	From: 2 To: 4 Original String: 12345678 Result: 12348
Replace	String: Group1 With String: Group 2 Group 1: 456 Group 2: Argox Original String: 12345678 Result: 123Argox78
KeepF	From: 2 To: 4 Original String: 12345678 Result: 234
KeepB	From: 2 To: 4 Original String: 12345678 Result: 567
FindF	String: Group 3 Group 3: 45 Original String: 12345678 Include/Exclu: Include ■ Result: 45678 Include/Exclu: Exclude ■ Result: 678

Command	Example
FindB	String: Group 3 Group 4: 45 Original String: 123<u>45</u>678 Include/Exclu: Include ■ Result: 123<u>45</u> Include/Exclu: Exclude ■ Result: 123
Erase	In Rule 10, In the command list, click **Erase**, and Rule 10 will be removed. You can also clear the **Enable** check box to remove the rule.

Virtual COM

You can configure Virtual COM to transmit data to a computer via a virtual COM port. After installing Virtual COM, your scanner will be assigned a virtual COM port, which you can use to receive or send data.

To configure Virtual COM on Windows XP and set up a virtual COM port in Scan Utility:

1. Connect your scanner to your computer.
2. Use the bar code in *Interface Selection* to switch the interface to **Virtual COM**. If the interface is set successful, you'll hear a long beep, and **Found New Hardware Wizard** will appear on screen.
3. In the **Found New Hardware Wizard** dialog box, click **Install from a list or specific location (Advanced)**, and click **Next**.
4. Click **Search for the best driver in these locations**, and select the **Include this location in the search** check box. Next, click **Browse**, and find the driver at your installation path of Scan Utility (default is C:\Program Files\Argox\Scan Utility\driver\virtual com), and then click **Next**.
5. After the driver installed, click **Finish**.
6. Right-click **My Computer** and click **Properties**.
7. Click the **Hardware** tab, and click **Device Manager**.

8. Click **Ports (COM & LPT)**. Find **ARGOX Virtual COM** and see the port number in the parenthesis.

9. Close **Device Manager**.

10. Start Scan Utility. On the **File** menu, click **New**. In the **Select Model** list, click **AR3201** or **AR3201**, and click **OK**.

11. On the **Tool** menu, click **Host RS-232 Setup**.

12. In the **Host RS-232 Setup** dialog box, in the **RS-232 Setting** list, click the port you've seen in step 8, and click **Port Setting**.

13. In the **Port Setting** dialog box, in the **Baud rate** list, click **115200**, and click **OK**.

> **Note** The installation steps may vary depending on your operating system.

4 Bar codes

Each bar code has different attributes for you to change as you need.

UPC-A

Format

Leading Zero	Data Digits (11 Digits)	Check Digit

- **Read** Turn on or turn off the read function.

- **Checksum transmission** Append the check digit to the end of a bar code.

- **Data Magic** Turn on or turn off Data Magic.

- **Truncate leading/ending** You can truncate characters from the left (Truncate leading) or the right (Truncate ending) of a bar code. Your scanner beeps if the truncate length is longer than the bar code, or the parts being truncated by Truncate leading and Truncate ending are overlapped. You can truncate up to 15 characters.

- **Code ID setting** Code ID is an identifier for a bar code. It has two modes: Proprietary ID or AIM ID. If you want to customize the code ID using an ASCII code, you need to choose Proprietary ID. You must turn on **Code ID transmission** to use Code ID. For further details, see Section 3.4.4, *ID, name and capitalization*.

||||||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
||||||||||||||||| *NAA* Read	Disable	00
	Enable	01*
||||||||||||||||| *NAB* Checksum transmission	Disable	00
	Enable	01*
||||||||||||||||| *NAC* Data Magic	Disable	00*
	Enable	01
||||||||||||||||| *NAF* Truncate leading	0-15	00-15
		00*
||||||||||||||||| *NAG* Truncate ending	0-15	00-15
		00*
||||||||||||||||| *NAH* Code ID setting	00-ffH	00-ffH
	ASCII code	< A >*

||||||||||||||||||||||||||||
%$$ Exit

- **Insertion group number selection**

  It allows you to insert up to two strings into a bar code. First, you need to set a string in a group, and then insert the group into your bar code. There are four string groups. You can insert the same group two times if you want. For more information about how to set a string in a group, see Section 3.4.3, *String groups*.

Example:

To insert Group 2, set the value as 02 or 20.

To insert Group 1 and 4, set the value as 14 or 41.

To insert Group 3 two times, set the value as 33.

Note Zero (0) means no group is inserted.

■ **Supplement digits** If your bar code has a supplemental bar code, you can use this feature to decode it. The supplemental bar code can be 2 or 5 digits.

Leading Zero	Data Digits (11 Digits)	Check Digit	Supplement digits 2 or 5 or UCC / EAN 128

 $%+PRO Program

Setting	Option	Value
NAI Insert group number selection	00-44 (The range of the single-digit number: 0-4)	00-44 00*
NAJ Supplement digits	None 2 digits 5 digits 2,5 digits UCC/EAN 128 2, UCC/EAN 128 5, UCC/EAN 128 All	00* 01 02 03 04 05 06 07

 %$$ Exit

- **Truncation/Expansion**

    - **Truncate** It truncates the leading zeros of a UPC-A bar code.

    - **Expansion** It converts a UPC-A bar code to the EAN-13 format.

- **Supplement check counter** The decoder needs to capture the supplemental bar code within the number of times the check counter specified, or it determines there's no supplement. If you setting 00, it will be failed when you read supplemental bar code.

|||||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
|||||||||||||||||||| *NAK* Truncation/ Expansion	None	00
	Truncate leading zero	01*
	Expand to EAN13	02
|||||||||||||||||| *7AE* Supplement check counter	00-99	00-99
	(verification)	5*

||||||||||||||||||||||
%$$ Exit

UPC-E

Format

Leading Zero	Data Digits (6 Digits)	Check Digits

- **Read** Turn on or turn off the read function.
- **Checksum transmission** Append the check digit to the end of a bar code.
- **Data Magic** Turn on or turn off Data Magic.
- **Truncate leading/ending** See the description in UPC-A.
- **Code ID setting** See the description in UPC-A.

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||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
||||||||||| *OAA* Read	Disable	00
	Enable	01*
||||||||||| *OAB* Checksum transmission	Disable	00
	Enable	01*
||||||||||| *OAC* Data Magic	Disable	00*
	Enable	01
||||||||||| *OAF* Truncate leading	0-15	00-15
		00*
||||||||||| *OAG* Truncate ending	0-15	00-15
		00*
||||||||||| *OAH* Code ID setting	00-ffH ASCII code	00-ffH < E >*

||||||||||||||||||||||||
%$$ Exit

- **Insertion group number selection** See the description in UPC-A.
- **Supplement digits** See the description in UPC-A.

Format

Leading Zero	Data Digits (6 Digits)	Check Digit	Supplement digits 2 or 5 or UCC / EAN 128

- **Truncate/Expansion**
  - • **Truncate** It truncates the leading zeros of a UPC-E bar code.
  - • **Expansion** It converts a UPC-E bar code to the EAN-13 or UPC-A format.
- **Expansion** It extends a UPC-E bar code to 13-digit.
- **UPC-E1** It allows your scanner to decode UPC-E bar codes that begin with the number one (1).
- **Supplement check counter** See the description in UPC-A.

||||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
|||||||||||||||||||| *OAI* Insert group number selection	00-44	00-44 00*
|||||||||||||||||||| *OAJ* Supplement digits	None	00*
	2 digits	01
	5 digits	02
	2,5 digits	03
	UCC/EAN 128	04
	2, UCC/EAN 128	05
	5, UCC/EAN 128	06
	All	07
|||||||||||||||||||| *OAK* Truncation/Expansion	None	00*
	Truncate leading zero	01
	Expand to EAN13	02
	Expand to UPCA	03
|||||||||||||||||||| *OAL* Expansion	Disable	00*
	Enable	01
|||||||||||||||||||| *OAM* UPCE-1	Disable	00*
	Enable	01
|||||||||||||||||||| *7AE* Supplement check counter	00-99 (verification)	00-99 05*

||||||||||||||||||||||||
%$$ Exit

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EAN-13

Format

Data Digits (12 Digits)	Check Digits

- **Read** Turn on or turn off the read function.
- **Checksum transmission** Append the check digit to the end of a bar code.
- **Data Magic** Turn on or turn off Data Magic.
- **Truncate leading/ending** See the description in UPC-A.

|||| *$%+PRO* |||| Program

Setting	Option	Value
GAA Read	Disable	00
	Enable	01*
GAB Checksum transmission	Disable	00
	Enable	01*
GAC Data Magic	Disable	00*
	Enable	01
GAF Truncate leading	0-15	00-15
		00*
GAG Truncate ending	0-15	00-15
		00*

|||| *%$$* Exit

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■ **Code ID setting**   See the description in UPC-A.

■ **Insertion group number selection**   See the description in UPC-A.

■ **Supplement digits**   See the description in UPC-A.

Format

Data Digits (12 Digits)	Check Digits	Supplement Digits 2 or 5 or UCC / EAN 128

■ **ISBN/ISSN conversion**   The ISBN (International Standard Book Number) and ISSN (International Standard Serial Number) are bar codes for books and magazines, respectively. The old ISBN is 10-digit and the old ISSN is 8-digit. When you turn on this feature, it converts the new ISBN and ISSN to their old format.

■ **ISBN ID Setting**   You can set ISBN ID with ASC II code.

■ **Supplement check counter**   See the description in UPC-A.

||||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
|||||||||||||||||||||| *GAH* Code ID setting	00-ffH ASCII code	00-ffH < F >*
|||||||||||||||||||||| *GAI* Insert group number selection	00-44	00-44 00*
|||||||||||||||||||||| *GAJ* Supplement digits	None 2 digits 5 digits 2,5 digits UCC/EAN 128 2, UCC/EAN 128 5, UCC/EAN 128 All	00* 01 02 03 04 05 06 07
|||||||||||||||||||||| *GAL* ISBN/ISSN conversion	Disable Enable	00* 01
|||||||||||||||||||||| *GAM* ISBN ID setting	00-ffH ASCII code	00-ffH < l >*
|||||||||||||||||||||| *7AE* Supplement check counter	00-99 (verification)	00-99 05*

||||||||||||||||||||||||||
%$$ Exit

EAN-8

Format

Data Digits (7 Digits)	Check Digits

- **Read** Turn on or turn off the read function.
- **Checksum transmission** Append the check digit to the end of a bar code.
- **Data Magic** Turn on or turn off Data Magic.
- **Truncate leading/ending** See the description in UPC-A.
- **Code ID setting** See the description in UPC-A.
- **Insertion group number selection** See the description in UPC-A.

||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
‖‖‖‖‖‖‖‖ *FAA* Read	Disable	00
	Enable	01*
‖‖‖‖‖‖‖‖ *FAB* Checksum transmission	Disable	00
	Enable	01*
‖‖‖‖‖‖‖‖ *FAC* Data Magic	Disable	00*
	Enable	01
‖‖‖‖‖‖‖‖ *FAF* Truncate leading	0-15	00-15
		00*
‖‖‖‖‖‖‖‖ *FAG* Truncate ending	0-15	00-15
		00*
‖‖‖‖‖‖‖‖ *FAH* Code ID setting	Two characters	00-ffH,
	00-ffH ASCII	00-ffH
	code	< FF
		>*
‖‖‖‖‖‖‖‖ *FAI* Insert group number selection	00-44	00-44
		00*

||||||||||||||||||||
%$$ Exit

■ **Supplement digits**   See the description in UPC-A.

Format

Data Digits (7 Digits)	Check Digits	Supplement Digits 2 or 5 or UCC/EAN 128

■ **Truncate/Expansion**

- **Truncate**   It truncates the leading zeros of an EAN-8 bar code.

- **Expansion**   It converts an EAN-8 bar code to the EAN-13 format.

■ **Expansion**   It extends an EAN-8 bar code to 13-digit.

■ **Supplement check counter**   See the description in UPC-A.

$%+PRO Program

Setting	Option	Value
 FAJ Supplement digits	None	00*
	2 digits	01
	5 digits	02
	2,5 digits	03
	UCC/EAN 128	04
	2, UCC/EAN 128	05
	5, UCC/EAN 128	06
	All	07
 FAK Truncation / Expansion	None	00*
	Truncate leading zero	01
	Expand to EAN13	02
 FAL Expansion	Disable	00*
	Enable	01
 7AE Supplement check counter	00-99 (verifications)	00-99 05*

%$$ Exit

Code 39

Format

Start	Data Digits	Checksum	End
"★"	(Variable)	(Optional)	"★"

- **Read**   Turn on or turn off the read function.

- **Checksum transmit/verify**   When you disable both of them, the check digit is sent as a regular character.

  - **Transmission**   Append the check digit to the end of a bar code.

  - **Verify**   Use the algorithm to calculate a check digit to verify the completeness of the bar code.

- **Data Magic**   Turn on or turn off Data Magic.

- **Max/Min code length**   The max and min code length defines the decoding length of a bar code. Note the following when you set it length:

  - If the code length is shorter than the min or longer than the max, the bar code won't be decoded.

  - If the min is equal to the max, the decoding length is fixed.

  - If the max or min is set to zero (00), **Global min/max code length** will take effect. For example, if the min is set to zero, it will apply **Global min. code length**.

- **Truncate leading/ending**   See the description in UPC-A.

- **Code ID setting**   See the description in UPC-A.

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||||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
|||||||||||||||||| *BAA* Read	Disable	00
	Enable	01*
|||||||||||||||||| *BAB* Checksum transmit/verify	Disable/Disable	00*
	Disable/Enable	01
	Enable /Enable	02
|||||||||||||||||| *BAC* Data Magic	Disable	00*
	Enable	01
|||||||||||||||||| *BAD* Max. code length	00-64	00-64
		00*
|||||||||||||||||| *BAE* Min. code length	00-64	00-64
		01*
|||||||||||||||||| *BAF* Truncate leading	0-20	00-20
		00*
|||||||||||||||||| *BAG* Truncate ending	0-15	00-15
		00*
|||||||||||||||||| *BAH* Code ID setting	00-ffH ASCII	00-ffH
	code	<*>

||||||||||||||||||||||||||
%$$ Exit

- **Insertion group number selection**   See the
  description in UPC-A.

- **Format**   It converts the ASCII codes in the
  Code 39 bar code to regular characters.

- **Append**   It decodes and concatenates several
  Code 39 bar codes that have a space character at
  their beginning. Your scanner stops
  concatenating and sends all concatenated data to
  your computer when it decodes a Code 39 bar
  code that doesn't have a space character at its
  beginning, or when it decodes a bar code that is
  not Code 39.
  If your scanner decodes a bar code that has a
  space character at its beginning, it won't send its
  Code ID, Preamble and Prefix; if it decodes a bar
  code that doesn't have a space character, it won't
  send its Code ID and Prefix.

- **Start/End transmission**
  It sends the start and the stop codes of a bar code
  to your computer.

$%+PRO Program

Setting	Option	Value
BAI Insert group number selection	00-44	00-44 00*
BAJ Format	Standard Full ASCII	00* 01
BAK Append	Disable Enable	00* 01
BAM Start/end transmission	Disable Enable	00* 01

%$$ Exit

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Interleaved 2 of 5

Format

Data Digits	Checksum
(Variable)	(Optional)

- **Read** Turn on or turn off the read function.
- **Checksum transmit/verify** See the description in Code 39.
- **Data Magic** Turn on or turn off Data Magic.
- **Max/Min code length** See the description in Code 39.
- **Truncate leading/ending** See the description in UPC-A.
- **Code ID setting** See the description in UPC-A.
- **Insertion group number selection** See the description in UPC-A.

||||||||||||||||||||||||||||||

$%+PRO   Program

Setting	Option	Value
||||||||||||||||||||||| *IAA* Read	Disable	00
	Enable	01*
||||||||||||||||||||||| *IAB* Checksum transmit/verify	Disable/Disable	00*
	Disable/Enable	01
	Enable /Enable	02
||||||||||||||||||||||| *IAC* Data Magic	Disable	00*
	Enable	01
||||||||||||||||||||||| *IAD* Max. code leading	00-64	00-64
		00*
||||||||||||||||||||||| *IAE* Min. code leading	00-64	00-64
		00*
||||||||||||||||||||||| *IAF* Truncate leading	0-15	00-15
		00*
||||||||||||||||||||||| *IAG* Truncate ending	0-15	00-15
		00*
||||||||||||||||||||||| *IAH* Code ID setting	00-ffH ASCII code	00-ffH
		< i >*
||||||||||||||||||||||| *IAI* Insert group number selection	00-44	00-44
		00*

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%$$ Exit

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Industrial 2 of 5

Format

Data Digits	Checksum
(Variable)	(Optional)

- **Read**   Turn on or turn off the read function.
- **Data Magic**   Turn on or turn off Data Magic.
- **Max/Min code length**   See the description in Code 39.
- **Truncate leading/ending**   See the description in UPC-A.
- **Code ID setting**   See the description in UPC-A.
- **Insertion group number selection**   See the description in UPC-A.

$%+PRO Program

Setting	Option	Value
HAA Read	Disable	00*
	Enable	01
HAC Data Magic	Disable	00*
	Enable	01
HAD Max. code length	00-64	00-64
		00*
HAE Min. code length	00-64	00-64
		00*
HAF Truncate leading	0-15	00-15
		00*
HAG Truncate ending	0-15	00-15
		00*
HAH Code ID setting	00-ffH ASCII code	00-ffH
		< i >*
HAI Insert group number selection	00-44	00-44
		00*

%$$ Exit

Matrix 2 of 5

Format

Data Digits	Checksum
(Variable)	(Optional)

- **Read**   Turn on or turn off the read function.

- **Checksum transmit/verify**   See the description in Code 39.

- **Data Magic**   Turn on or turn off Data Magic.

- **Max/Min code length**   See the description in Code 39.

- **Truncate leading/ending**   See the description in UPC-A.

- **Code ID setting**   See the description in UPC-A.

- **Insertion group number selection**   See the description in UPC-A.

||||||||||||||||||||||||||||
$%+PRO   Program

Setting	Option	Value
|||||||||||||||||||| *PAA* Read	Disable	00*
	Enable	01
|||||||||||||||||||| *PAB* Checksum transmit/verify	Disable/Disable	00*
	Disable/Enable	01
	Enable /Enable	02
|||||||||||||||||||| *PAC* Data Magic	Disable	00*
	Enable	01
|||||||||||||||||||| *PAD* Max. code length	00-64	00-64
		00*
|||||||||||||||||||| *PAE* Min. code length	00-64	00-64
		00*
|||||||||||||||||||| *PAF* Truncate leading	0-15	00-15
		00*
|||||||||||||||||||| *PAG* Truncate ending	0-15	00-15
		00*
|||||||||||||||||||| *PAH* Code ID setting	00-ffH ASCII code	00-ffH
		< B >*
|||||||||||||||||||| *PAI* Insert group number selection	00-44	44
		00*

||||||||||||||||||||
%$$ Exit

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Codabar

Format

Start	Data Digits (Variable)	Checksum (Optional)	End

- **Read** Turn on or turn off the read function.
- **Checksum transmit/verify** See the description in Code 39.
- **Data Magic** Turn on or turn off Data Magic.
- **Max/Min code length** See the description in Code 39.
- **Truncate leading/ending** See the description in UPC-A.
- **Code ID setting** See the description in UPC-A.

||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
|||||||||||||||||||| *EAA* Read	Disable	00*
	Enable	01
|||||||||||||||||||| *EAB* Checksum transmit/verifiy	Disable/Disable	00*
	Disable/Enable	01
	Enable /Enable	02
|||||||||||||||||||| *EAC* Data Magic	Disable	00*
	Enable	01
|||||||||||||||||||| *EAD* Max. code length	00-64	00-64
		00*
|||||||||||||||||||| *EAE* Min. code length	00-64	00-64
		00*
|||||||||||||||||||| *EAF* Truncate leading	0-15	00-15
		00*
|||||||||||||||||||| *EAG* Truncate ending	0-15	00-15
		00*
|||||||||||||||||||| *EAH* Code ID setting	00-ffH ASCII code	00-ffH < % >*

||||||||||||||||||||
%$$ Exit

- **Insertion group number selection** See the description in UPC-A.

- **Start/End type** Codabar has four pairs of characters for the star and stop codes. Select one pair to suit your needs.

- **Start/End transmission**
  See the description in Code 39.

|||||| *$%+PRO* |||||| Program

Setting	Option	Value
EAI Insert group number selection	00-44	00-44
		00*
EAJ Start/End type	ABCD/ABCD	00*
	abcd/abcd	01
	ABCD/TN*E	02
	abcd/tn*e	03
EAK Start/End transmission	Disable	00*
	Enable	01

|||||| *%$$* |||||| Exit

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Code 128/ GS1-128

Format

Data Digits	Checksum
(Variable)	(Optional)

- **Read** Turn on or turn off the read function.
- **Checksum transmit/verify** See the description in Code 39.
- **Data Magic** Turn on or turn off Data Magic.

$%+PRO Program

Setting	Option	Value
DAA Read	Disable	00
	Enable	01*
DAB Checksum Transmit/Verify	Disable/Disable	00*
	Disable/Enable	01
	Enable /Enable	02
DAC Data Magic	Disable	00*
	Enable	01
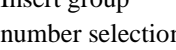
%$$ Exit

- **Max/Min code length** See the description in Code 39.
- **Truncate leading/ending** See the description in UPC-A.
- **Code ID setting** See the description in UPC-A.

- **Format** It converts Code 128 to UCC/EAN-128 if the bar code starts with the FNC1 character. The first FNC1 is translated to "]C1," and the next one is translated to a field separator, which is ASCII code 29, <GS>.

|]C1 | Data | <GS> | Data | Checksum |

|||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
DAD Max. code length	00-64	00-64 00*
DAE Min. code length	00-64	00-64 01*
DAF Truncate leading	0-15	00-15 00*
DAG Truncate ending	0-15	00-15 00*
DAH Code ID setting	00-ffH ASCII code	00-ffH < # >*
DAI Insert group number selection	00-44	00-44 00*
DAJ Format	Standard UCC/EAN-128(GS1-128)	00 01*

|||||||||||||||||||||||
%$$ Exit

113
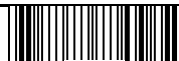
- **Append**　It decodes and concatenates several Code 128 bar codes that have the FNC2 character at their beginning. Your scanner stops concatenating and sends all concatenated data to your computer when it decodes a bar code that doesn't have an FNC2 character at its beginning, or when it decodes a bar code that is not Code 128.

- **ISBT enable**　Enable or disable ISBN barcode readable.

- **Field separator code**　It is used for the bar codes converted to UCC/EAN 128 only. You can use the ASCII code to customize your field separator. The default separator is <GS>.

- **GS1-128 ID** See the description in UPC-A.

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||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
|||||||||||||||| *DAK* Append	Disable/Enable	00*
	Enable/Disable	01
	Disable/Ignore	02
	Enable/ Ignore	03
|||||||||||||||| *DAL* **ISBT enable**	00-ffH ASCII code	00-ffH < # >*
|||||||||||||||| *DAM* Field separator code	00-ffH ASCII code	00-ffH 1DH*
|||||||||||||||| *8AQ* GS1-128 ID	00-ffH ASCII code	00-ffH Default : #

||||||||||||||||||||||
%$$ Exit

Code 93

Format

Data Digits	Checksum1	Checksum2
(Variable)	(Optional)	(Optional)

- **Read** Turn on or turn off the read function.

- **Checksum transmit/verify** See the description in Code 39.

- **Data Magic** Turn on or turn off Data Magic.

||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
CAA Read	Disable	00*
	Enable	01
CAB Checksum transmit/verify	Disable/Disable	00*
	Disable/Enable	01
	Enable /Enable	02
CAC Data Magic	Disable	00*
	Enable	01

||||||||||||||||||||||||
%$$ Exit

- **Max/Min code length** See the description in Code 39.

- **Truncate leading/ending** See the description in UPC-A.

- **Code ID setting** See the description in UPC-A.

■ **Insertion group number selection** See the
   description in UPC-A.

||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
CAD Max. code length	00-64	00-64 00*
CAE Min. code length	00-64	00-64 00*
CAF Truncate leading	0-15	00-15 00*
CAG Truncate ending	0-15	00-15 00*
CAH Code ID setting	00-ffH ASCII code	00-ffH < & >*
CAI Insert group number selection	00-44	00-44 00*

||||||||||||||||||||||||
%$$ Exit

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Code 11

Format

Data Digits	Checksum1	Checksum2
(Variable)	(Optional)	(Optional)

- **Read**   Turn on or turn off the read function.
- **Checksum transmit/verify**   See the description in Code 39.
- **Data Magic**   Turn on or turn off Data Magic.
- **Max/Min code length**   See the description in Code 39.
- **Truncate leading/ending**   See the description in UPC-A.
- **Code ID setting**   See the description in UPC-A.
- **Insertion group number selection**   See the description in UPC-A.

||||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
||||||||||||||||||| *AAA* Read	Disable	00*
	Enable	01
||||||||||||||||||| *AAB* Checksum transmit/verify	Disable/Disable	00
	Disable/One digit	01*
	Disable/Two digits	02
	Enable/One digit	03
	Enable/Two digits	04
||||||||||||||||||| *AAC* Data Magic	Disable	00*
	Enable	01
||||||||||||||||||| *AAD* Max. code length	00-64	00-64
		00*
||||||||||||||||||| *AAE* Min. code length	00-64	00-64
		00*
||||||||||||||||||| *AAF* Truncate leading	0-15	00-15
		00*
||||||||||||||||||| *AAG* Truncate ending	0-15	00-15
		00*
||||||||||||||||||| *AAH* Code ID setting	00-ffH ASCII code	00-ffH
		< O >*
||||||||||||||||||| *AAI* Insert group number selection	00-44	00-44
		00*

||||||||||||||||||||||||||
%$$ Exit

MSI/Plessey

Format

Data Digits	Checksum1	Checksum2
(Variable)	(Optional)	(Optional)

- **Read** Turn on or turn off the read function.
- **Checksum transmit/verify** There are three algorithms for you to calculate the check digit of a MSI bar code: MOD 10, MOD 10/MOD 10, MOD 11/MOD 10. For example, if you choose MOD 11/MOD 10, the system uses MOD 11 to calculate the check digit and append it to the bar code. The new bar code with the MOD 11 check digit will be calculated again using MOD 10, and then the system appends the MOD 10 check digit to the new bar code. The result of the bar code format is:
  <DATA><MOD 11 check digit><MOD 10 check digit>
- **Data Magic** Turn on or turn off Data Magic.
- **Max/Min code length** See the description in Code 39.
- **Truncate leading/ending** See the description in UPC-A.
- **Code ID setting** See the description in UPC-A.
- **Insertion group number selection** See the description in UPC-A.

||||||||||||||||||||||||||
$%+PRO　　Program

Setting	Option	Value
||||||||||||||||| *KAA* Read	Disable Enable	00* 01
||||||||||||||||| *KAB* Checksum transmit/verify	N/disable N/MOD 10 N/Mod 10,10 N/mod 11,10 Y/Mod10 Y/Mod 10,10 Y/Mod 11/10	00* 01 02 03 04 05 06
||||||||||||||||| *KAC* Data Magic	Disable Enable	00* 01
||||||||||||||||| *KAD* Max. code length	00-64	00-64 00*
||||||||||||||||| *KAE* Min. code length	00-64	00-64 00*
||||||||||||||||| *KAF* Truncate leading	0-15	00-15 00*
||||||||||||||||| *KAG* Truncate ending	0-15	00-15 00*
||||||||||||||||| *KAH* Code ID setting	00-ffH ASCII code	00-ffH < @ >*
||||||||||||||||| *KAI* Insert group number selection	00-44	00-44 00*

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%$$ Exit

UK/Plessey

Format

Data Digits	Checksum1+2
(Variable)	(Optional)

- **Read**   Turn on or turn off the read function.

- **Checksum transmit/verify**   UK/Plessey has two checksums. The first is calculated using modulo 10 and the second is calculated using modulo 11.

- **Data Magic**   Turn on or turn off Data Magic.

- **Max/Min code length**   See the description in Code 39.

- **Truncate leading/ending**   See the description in UPC-A.

- **Code ID setting**   See the description in UPC-A.

- **Insertion group number selection**   See the description in UPC-A.

||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
‖‖‖‖‖‖‖‖‖‖‖‖ *LAA* Read	Disable	00*
	Enable	01
‖‖‖‖‖‖‖‖‖‖‖‖ *LAB* Checksum transmit/verify	Disable/Disable	00
	Disable/Enable	01*
	Enable/Enable	02
‖‖‖‖‖‖‖‖‖‖‖‖ *LAC* Data Magic	Disable	00*
	Enable	01
‖‖‖‖‖‖‖‖‖‖‖‖ *LAD* Max. code length	00-64	00-64
		00*
‖‖‖‖‖‖‖‖‖‖‖‖ *LAE* Min. code length	00-64	00-64
		00*
‖‖‖‖‖‖‖‖‖‖‖‖ *LAF* Truncate leading	0-15	00-15
		00*
‖‖‖‖‖‖‖‖‖‖‖‖ *LAG* Truncate ending	0-15	00-15
		00*
‖‖‖‖‖‖‖‖‖‖‖‖ *LAH* Code ID setting	00-ffH ASCII code	00-ffH
		< @ >*
‖‖‖‖‖‖‖‖‖‖‖‖ *LAI* Insert group number selection	00-44	00-44
		00*

||||||||||||||||||||||||
%$$ Exit

Telepen

- **Read** Turn on or turn off the read function.
- **Checksum transmit/verify** See the description in UK/Plessey.
- **Data Magic** Turn on or turn off Data Magic.
- **Max/Min code length** See the description in Code 39.
- **Truncate leading/ending** See the description in UPC-A.
- **Code ID setting** See the description in UPC-A.
- **Insertion group number selection** See the description in UPC-A.

||||||||||||||||||||||||

\$%+PRO Program

Setting	Option	Value
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *MAA* Read	Disable	00*
	Enable	01
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *MAB* Checksum transmit/verify	Disable/Disable	00*
	Disable/Enable	01
	Enable /Enable	02
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *MAC* Data Magic	Disable	00*
	Enable	01
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *MAD* Max. code length	00-64	00-64
		00*
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *MAE* Min. code length	00-64	00-64
		00*
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *MAF* Truncate leading	0-15	00-15
		00*
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *MAG* Truncate ending	0-15	00-15
		00*
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *MAH* Code ID setting	00-ffH ASCII code	00-ffH < S >*
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *MAI* Insert group number selection	00-44	00-44
		00*
‖‖‖‖‖‖‖‖‖‖‖‖‖‖ *MAJ* Format	Numeric only	00*
	Full ASCII only	01

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‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖
%$$ Exit

Standard 2 of 5

Format

Data Digits	Checksum1
(Variable)	(Optional)

- **Read** Turn on or turn off the read function.

- **Checksum transmit/verify** The checksum is calculated using modulo 10.

- **Data Magic** Turn on or turn off Data Magic.

- **Max/Min code length** See the description in Code 39.

- **Truncate leading/ending** See the description in UPC-A.

- **Code ID setting** See the description in UPC-A.

- **Insertion group number selection** See the description in UPC-A.

||||||||||||||||||||||||||

$%+PRO Program

Setting	Option	Value
||||||||||||||||||||||||| *JAA* Read	Disable	00*
	Enable	01
||||||||||||||||||||||||| *JAB* Check-sum transmit/verify	Disable/Disable	00*
	Disable/Enable	01
	Enable /Enable	02
||||||||||||||||||||||||| *JAC* Data Magic	Disable	00*
	Enable	01
||||||||||||||||||||||||| *JAD* Max. code length	00-64	00-64 00*
||||||||||||||||||||||||| *JAE* Min. code length	00-64	00-64 00*
||||||||||||||||||||||||| *JAF* Truncate leading	0-15	00-15 00*
||||||||||||||||||||||||| *JAG* Truncate ending	0-15	00-15 00*
||||||||||||||||||||||||| *JAH* Code ID setting	00-ffH ASCII code	00-ffH < i >*
||||||||||||||||||||||||| *JAI* Insert group number selection	00-44	00-44 00*

||||||||||||||||||||||||||

%$$ Exit

China Post

Format

Data Digits	Checksum1
(Variable)	(Optional)

- **Read**   Turn on or turn off the read function.
- **Data Magic**   Turn on or turn off Data Magic.
- **Max/Min code length**   See the description in Code 39.
- **Truncate leading/ending**   See the description in UPC-A.
- **Code ID setting**   See the description in UPC-A.
- **Insertion group number selection**   See the description in UPC-A.

||||||| |||| |||| ||||| |||||
$%+PRO Program

Setting	Option	Value
|||||||||||||||||| *SAA* Read	Disable Enable	00* 01
|||||||||||||||| *SAC* Data Magic	Disable Enable	00* 01
|||||||||||||||| *SAD* Max. code length	00-64	00-64 11*
|||||||||||||||| *SAE* Min. code length	00-64	00-64 11*
|||||||||||||||| *SAF* Truncate leading	0-15	00-15 00*
|||||||||||||||| *SAG* Truncate ending	0-15	00-15 00*
|||||||||||||||| *SAH* Code ID setting	00-ffH ASCII code	00-ffH < t >*
|||||||||||||||| *SAI* Insert group number selection	00-44	00-44 00*

||||||| |||||| ||||| |||||
%$$ Exit

Italian Pharmacode (Code 32)

Format

Data Digits	Checksum1
(Variable)	(Optional)

- ■ **Read** Turn on or turn off the read function.
- ■ **Data Magic** Turn on or turn off Data Magic.
- ■ **Max/Min code length** See the description in Code 39.
- ■ **Truncate leading/ending** See the description in UPC-A.
- ■ **Code ID setting** See the description in UPC-A.
- ■ **Insertion group number selection** See the description in UPC-A.
- ■ **Leading "A"** Add the character "A" at the beginning of a Code 32 bar code.

||||||||||||||||||||||||||
$%+PRO　　Program

Setting	Option	Value
||||||||||||| *WAA* Read	Disable	00*
	Enable	01
||||||||||||| *WAC* Data Magic	Disable	00*
	Enable	01
||||||||||||| *WAD* Max. code length	00-64	00-64
		12*
||||||||||||| *WAE* Min. code length	00-64	00-64
		09*
||||||||||||| *WAF* Truncate leading	0-15	00-15
		00*
||||||||||||| *WAG* Truncate ending	0-15	00-15
		00*
||||||||||||| *WAH* Code ID setting	00-ffH ASCII code	01-ffH
		< p >*
||||||||||||| *WAI* Insert group number selection	00-44	00-44
		00*
||||||||||||| *WAJ* Leading "A"	Disable	00*
	Enable	01

133

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a SATO company

%$$ Exit

134

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a **SATO** company

Code 16K

- **Read** Turn on or turn off the read function.
- **Data Magic** Turn on or turn off Data Magic.
- **Truncate leading/ending** See the description in UPC-A.
- **Code ID setting** See the description in UPC-A.
- **Insertion group number selection** See the description in UPC-A.

$%+PRO Program

Setting	Option	Value
RAA Read	Disable	00*
	Enable	01
RAC Data Magic	Disable	00*
	Enable	01
RAF Truncate leading	0-15	00-15
		00*
RAG Truncate ending	0-15	00-15
		00*
RAH Code ID setting	00-ffH ASCII code	00-ffH
		< >*
RAI Insert group number selection	00-44	00-ffH
		00-44
		00*

%$$ Exit

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EAN UCC Composite

- ■ **Read** Turn on or turn off the read function.

- ■ **Data Magic** Turn on or turn off Data Magic.

- ■ **Max/Min code length** See the description in Code 39.

- ■ **Code ID setting** See the description in UPC-A.

- ■ **Insertion group number selection** See the description in UPC-A.

- ■ **UCC/EAN 128 emulation** See the description in GS1 Databar Omnidirectional.

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||||| ||| |||| ||| |||| |||
$%+PRO Program

Setting	Option	Value
||||| ||||| ||||| *YAA* Read	Disable	00*
	Enable	01
||||| ||||| ||||| *YAC* Data Magic	Disable	00*
	Enable	01
||||| ||||| ||||| *YAF* Truncate leading	0-15	00-15
		00*
||||| ||||| ||||| *YAG* Truncate ending	0-15	00-15
		00*
||||| ||||| ||||| *YAH* Code ID setting	00-ffH	00-ffH
	ASCII code	< RC >*
||||| ||||| ||||| *YAI* Insert group number selection	00-44	00-44
		00*
||||| ||||| ||||| *YAK* UCC / EAN128 emulation	Disable	00*
	Enable	01

||||| ||| |||| ||| ||||
%$$ Exit

GS1 Databar Omnidirectional

Format

Data Digits (Variable)	Checksum1 (Optional)

- **Read**   Turn on or turn off the read function.

- **Data Magic**   Turn on or turn off Data Magic.

- **Truncate leading/ending**   See the description in UPC-A.

- **Code ID setting**   See the description in UPC-A.

- **Insertion group number selection**   See the description in UPC-A.

- **UCC/EAN 128 emulation**   It adds "[C1" at the beginning of a GS1 bar code. You need to turn on AIM ID to use this feature. For more information about AIM ID, see Section 3.4.4, *ID, name and capitalization*.

$%+PRO Program

Setting	Option	Value
TAA Read	Disable	00*
	Enable	01
TAC Data Magic	Disable	00*
	Enable	01
TAF Truncate leading	0-15	00-15
		00*
TAG Truncate ending	0-15	00-15
		00*
TAH Code ID setting	00-ffH ASCII code	00-ffH
		< R4 >*
TAI Insert group number selection	00-44	00-44
		00*
TAK UCC/EAN128 emulation	Disable	00*
	Enable	01

%$$ Exit

GS1 Databar Limited

Format

Data Digits	Checksum1
(Variable)	(Optional)

- **Read** Turn on or turn off the read function.
- **Data Magic** Turn on or turn off Data Magic.
- **Code ID setting** See the description in UPC-A.
- **Insertion group number selection** See the description in UPC-A.
- **UCC/EAN 128 emulation** See the description in GS1 Databar Omnidirectional.

||||||||||||||||||||||||||||
$%+PRO Program

Setting	Option	Value
‖‖‖‖‖‖‖‖‖‖‖ *UAA* Read	Disable	00*
	Enable	01
‖‖‖‖‖‖‖‖‖‖‖ *UAC* Data Magic	Disable	00*
	Enable	01
‖‖‖‖‖‖‖‖‖‖‖ *UAD* Max. code length	00-64	00-64
‖‖‖‖‖‖‖‖‖‖‖ *UAE* Min. code length	00-64	00-64
‖‖‖‖‖‖‖‖‖‖‖ *UAF* Truncate leading	0-15	00-15
		00*
‖‖‖‖‖‖‖‖‖‖‖ *UAG* Truncate ending	0-15	00-15
		00*
‖‖‖‖‖‖‖‖‖‖‖ *UAH* Code ID setting	00-ffH ASCII	00-ffH
	code	< RL >*
‖‖‖‖‖‖‖‖‖‖‖ *UAI* Insert group number selection	00-44	00-44
		00*
‖‖‖‖‖‖‖‖‖‖‖ *UAK*	Disable	00*
	Enable	01

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Setting	Option	Value
UCC/EAN128 emulation		

%$$ Exit

GS1 Databar Expanded

Format

Data Digits	Checksum1
(Variable)	(Optional)

- **Read**   Turn on or turn off the read function.

- **Data Magic**   Turn on or turn off Data Magic.

- **Max/Min code length**   See the description in Code 39.

- **Code ID setting**   See the description in UPC-A.

- **Insertion group number selection**   See the description in UPC-A.

- **UCC/EAN 128 emulation**   See the description in GS1 Databar Omnidirectional.

||||||||||||||||||||||||||||
\$%+PRO   Program

Setting	Option	Value
‖‖‖‖‖‖‖‖‖‖‖ *VAA* Read	Disable	00*
	Enable	01
‖‖‖‖‖‖‖‖‖‖‖ ★VAC★ Data Magic	Disable	00*
	Enable	01
‖‖‖‖‖‖‖‖‖‖‖ *VAD* Max. code length	00-99	00-99
		99*
‖‖‖‖‖‖‖‖‖‖‖ *VAE* Min. code length	00-99	00-99
		01*
‖‖‖‖‖‖‖‖‖‖‖ *VAF* Truncate leading	0-15	00-15
		00*
‖‖‖‖‖‖‖‖‖‖‖ *VAG* Truncate ending	0-15	00-15
		00*
‖‖‖‖‖‖‖‖‖‖‖ *VAH* Code ID setting	00-ffH ASCII code	00-ffH
		< RX >*
‖‖‖‖‖‖‖‖‖‖‖ *VAI* Insert group number selection	00-44	00-44
		00*
‖‖‖‖‖‖‖‖‖‖‖ *VAK* UCC/EAN128 emulation	Disable	00*
	Enable	01

%$$ Exit

5 Troubleshooting

You might encounter some issues when you scan bar codes. This chapter provides information that helps you fix common issues.

5.1 Scanner issues
My scanner doesn't emit the aiming pattern.

- Did you charge your scanner?
- Did you turn off the aiming pattern?
- Your battery wears out. Replace the battery and make sure the new battery is charged.
- Your scanner is waiting your computer to acknowledge data and doesn't receive any response. Unplug your cradle's cable (USB or RS-232) and connect it again.
- Check your USB cable and power supply by connecting them to other compatible devices and test if they work properly. If not, replace them and charge your scanner again.

5.2 Bar code issues
My scanner doesn't read the bar code properly.

- Reset your scanner.
- Check the quality of your bar codes. Wrinkled, smudged, blurred or torn bar codes won't be read by your scanner.

- The reading window of your scanner may be dirty and block the field of view. Clean the reading window.

The data isn't sent to my computer.

- Did you establish the connection between your scanner and cradle?
- Did your scanner connect to other Bluetooth device?
- Make sure the USB cable is tightly plugged into your cradle and computer.
- Your scanner is connecting to another cradle. Break their connection and connect your scanner to your cradle.

My scanner doesn't decode the bar code, but the bar code type is supported.

- Did you turn on **Read** for the bar code type?
- The density of your bar code may be too high for your scanner to decode.

6   Specifications

Standard Feature	
Symbologies	Linear: Code11, Code39, Code93, Code32 (Pharmaceutical), Code128, Code bar, Interleaved 2 of 5, Industrial 2 of 5, IATA 2 of 5, Matrix 2 of 5, EAN/JAN-13, EAN/JAN-8, UPC-A, UPC-E, UPC-A/EAN-13 with EXtend Coupon code, Telepen, Plessey Code, GS1 Databar RSS14, GS1 Databar Limited, GS1 Databar, Omni directional, GS1 Databar Expanded, China Post Stacked Linear: GS1 Databar Expanded Stacked, GS1 Databar RSS14 Stacked, C16K, CodaBlockF
Depth of Field (Ambient Light: 270~330Lux)	Code39 (3mil): 1.6cm~8.4cm Code39 (4mil): 1.4cm~12.4cm Code39 (5mil): 1.0cm~16.1cm Code39 (20mil): 1.7cm~78.0cm EAN13 (13mil): 1.3cm~53.5cm
Characteristics	
Dimensions	Scanner: H140mm x W67mm x D169mm Cradle: H106mm x W90mm x D141mm
Weight	Scanner: 178g (Battery included) Cradle: 219g
Power	5V+-5%
Trigger Switch	>1,000,000 cycles
Light Source	Red LED 620nm~630nm
Interface	USB (HID/Virtual Com), RS-232
Indication	LED and adjustable beep sound, vibrator
Battery	Rechargeable Li-Ion battery pack (3.6V, 2600mAh, 9.36Wh)
Battery Charge Time	5 hours of full charge (by adapter) 7 hours of full charge (by USB cable only)
Standby Idle	>102 hours
Number of Scan	>96,000 reads
Expected Hours of Operation	>81 hours
Supported connection	BT 2.1+EDR, 100meter Support SPP/HID
Performance	
Resolution	3mil PCS>=30%

Scan Rate	500 scan/sec
Scan Width	25.7cm (code 39 , 20mil,pcs 90%)
Scan Angle	Yaw: ±60° / Pitch: ±70° / Roll: ±45°, EAN13, 13mil
Environment	
Light strength	80,000 Lux (PCS 90% / Code 39, 20mil "1234") Continue reading
Temperature	Operating: -20℃ to 60℃ (-4℉ to 140℉) Storage: -20℃ to 60℃ (-4℉ to 140℉) Battery Charge: 0℃ to 40℃ (32℉ to 104℉)
Humidity	5% to 95% relative humidity, non-condensing
ESD	±12KV Contact discharge, ±20KV Air discharge, ±12KV Vcp Hcp discharge
Drop	1.8M
Regulatory	
Regulatory Approvals	CE, FCC, BSMI, RoHS, WEEE, BIS
Environmental	ROHS compliant

*Argox reserves the right to enhance and modify the specification without prior notice. Please check Argox sales representative for most updated specifications.

6.1 Pin Assignments
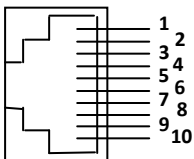
10-pin RJ45 Connector

Pin	RS-232	USB
1	NC	NC
2	VCC (+5V)	VCC (+5V)
3	TXD	NA
4	NA	USB_D+
5	NA	USB_D-
6	CTS	NA
7	RX	NA
8	RTS	NA
9	GND	GND
10	GND	GND

RS-232 DB-9F Connector (To Host Side):

Pin	Definition
1	NC
2	TXD
3	RXD
4	NC
5	GND
6	NC
7	CTS
8	RTS
9	NC
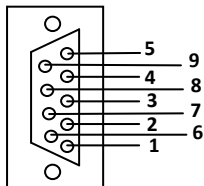
Appendix A. Test symbologies

Bar codes marked with asterisk (*) are turned on initially.

CODABAR

a154987a

CODE 11

654215

CODE-128 *

258963

CODE-39 *

741258

CODE-93

951263

EAN-13 *

7 534539 789813

STANDARD 2 of 5

65978

CODE 16K

87549

EAN-8 *

9456 2156

INDUSTRIAL 2 of 5

04976

UPC-E *

0 095601 1

INTERLEAVED 2 of 5 *

46820

MATRIX 2 of 5

4563535663

MSI/PLESSEY

754268

UPC-A *

5 73648 64734 5

UK/PLESSEY

64872

GS1

Appendix B. ASCII table

L \ H	0	1	0	1
0	Null		NUL	DLE
1	Up	F1	SOH	DC1
2	Down	F2	STX	DC2
3	Left	F3	ETX	DC3
4	Right	F4	EOT	DC4
5	PgUp	F5	ENQ	NAK
6	PgDn	F6	ACK	SYN
7		F7	BEL	ETB
8	Bs	F8	BS	CAN
9	Tab	F9	HT	EM
A		F10	LF	SUB
B	Home	Esc	VT	ESC
C	End	F11	FF	FS
D	Enter	F12	CR	GS
E	Insert	Ctrl+	SO	RS
F	Delete	Alt+	SI	US

L \ H	2	3	4	5	6	7
0	SP	0	@	P	`	p
1	!	1	A	Q	a	q
2	"	2	B	R	b	r
3	#	3	C	S	c	s
4	$	4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	'	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	★	:	J	Z	j	z
B	+	;	K	[	k	{
C	,	<	L	\	l		
D	-	=	M	]	m	}
E	.	>	N	^	n	~
F	/	?	O	_	o	DEL

Appendix C. Default settings of bar codes

Code Type	Read	Checksum Verification	Checksum Transmission	Code ID
UPC-A	V	V	V	A
UPC-E	V	V	V	E
EAN-13	V	V	V	F
EAN-8	V	V	V	FF
Code 39	V			*
Interleaved 2 of 5	V			i
Industrial 2 of 5		-	-	i
Matrix 2 of 5				B
Codabar				%
Code 128	V	V		#
Code 93		V two digits		&
Code 11		V One digit		O
MSI/Plessey		V		@
UK/Plessey		V		@
Telepen				S
Standard 2 of 5		-	-	i
China Post				t
Italian Pharmacode				p
Code 16K		-	-	
EAN UCC Composite		-	-	RC
GS1 databar Omnidirectional		-	-	R4
GS1 databar Limited		-	-	RL

Code Type	Read	Checksum Verification	Checksum Transmission	Code ID
GS1 databar Expanded		-	-	RX

AR-3201
User Guide

Appendix D. Data entry bar codes

|||||||||||||
/0 **0**

|||||||||||||
/1 **1**

|||||||||||||
/2 **2**

|||||||||||||
/3 **3**

|||||||||||||
/4 **4**

|||||||||||||
/5 **5**

|||||||||||||
/6 **6**

|||||||||||||
/7 **7**

|||||||||||||
/8 **8**

|||||||||||||
/A **A**

|||||||||||||
/B **B**

|||||||||||||
/C **C**

|||||||||||||
/D **D**

|||||||||||||
/E **E**

|||||||||||||
/F **F**

|||||||||||||
/9 **9**

|||||||||||||
%% **Finish**