



AR-3201

CCD Scanner

User Guide



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Version: V1.1
Date: June 28, 2019

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.

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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.



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



Note Specification is subject to changes without notice.

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。

| 設備名稱： 條碼閱讀器 Equipment name | | 型號（型式）：AI-6821 / AI-6821HD Type designation (Type) | | | | |
|-------------------------------|---|---|---------------|---|-------------------------------------|---|
| 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 ^{VI}) | 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 | — | ○ | ○ | ○ | ○ | ○ |

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.

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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.
- **Water resistant and dust-tight**
With the IP65 rating, AR-3201 can be used in various environments without being damaged by water and dust.
- **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 x1
- ✓ RS-232 Cable w/ Power Supply&Plug
(*Optional*) x1

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.

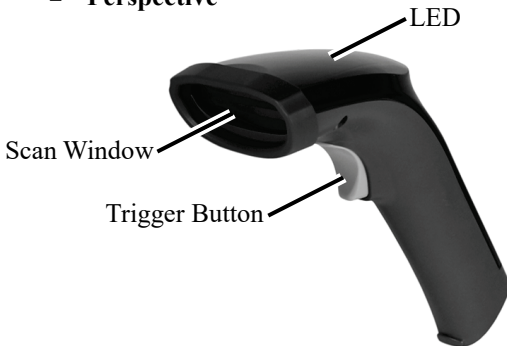


Note If any item is missing, please contact your local dealer.

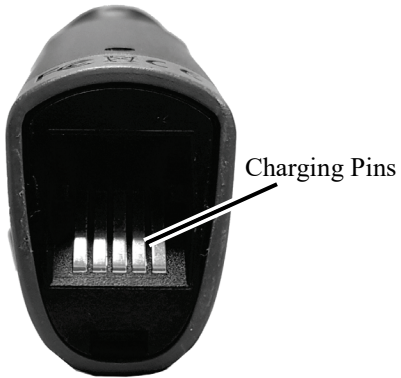
1.2 Understand your scanner

1.2.1 Scanner

■ Perspective

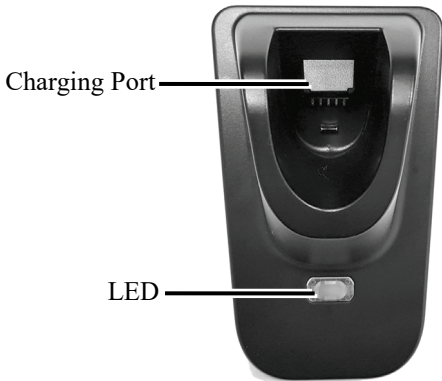


■ **Bottom**

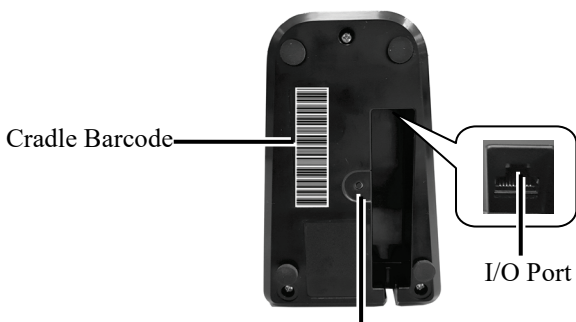


1.2.2 Cradle

■ **Perspective**



■ Bottom



- 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 If you've purchased the USB pack, you can charge your scanner by connecting the USB cable to your computer.

Note 2 If you've purchased the RS-232 pack, connect the power supply to the RS-232 cable and the wall outlet.

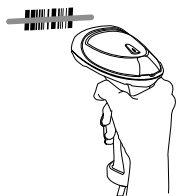
| Charging by | Full Charge Time |
|--------------|------------------|
| Power Supply | 4.5 hours |
| USB Cable | 6.5 hours |

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 | 4.5 hours |
| USB Cable | 6.5 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.

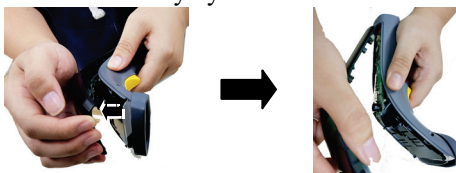
1. Remove the rubber band around the scan window of the scanner.



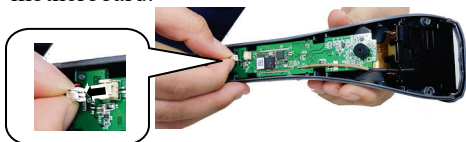
2. Remove the two fixing screws on the lower cover of the scanner by using a Phillips screwdriver.



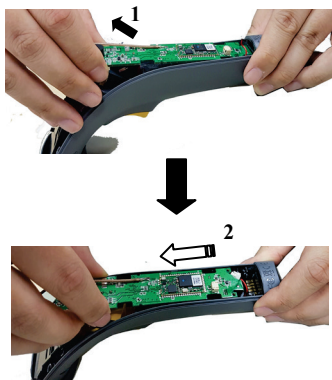
3. Please pull to remove the top cover of the scanner directly by hand.



4. Please remove the battery cable from the motherboard.



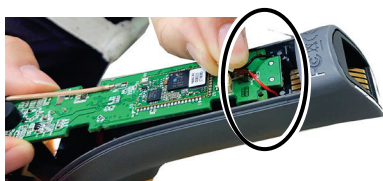
5. (1) Pull the motherboard slightly and then (2) pull out the scanner board in the direction of the arrow.



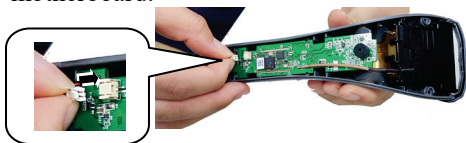
6. Take the old battery out. Next, install a new battery.



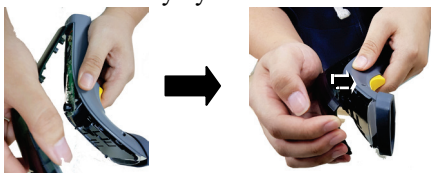
7. Install the scanner's motherboard back and insert the battery's cable into the projection of the motherboard.



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 and put on the original cradle** – If the cradle is linked with an imager and the original pair was stopped by out of range of the cradle or out of battery of the imager, scan the link label of the cradle with a new imager and then put on the cradle, the cradle will drop the original pair and establish a new link with the new imager.
3. **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.

4. **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.

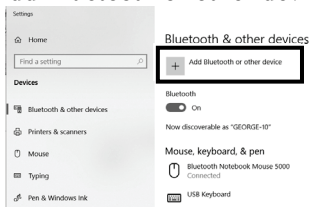


2. Double click the Bluetooth icon in the notification area.

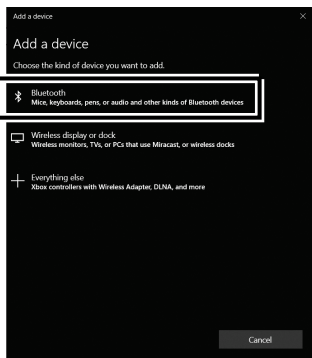


Note Your computer needs to be Bluetooth-enabled.

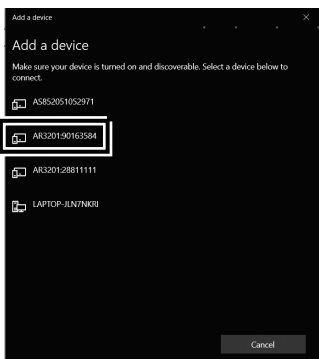
3. In the **Bluetooth & other devices** page, tap **Add Bluetooth or other device**.



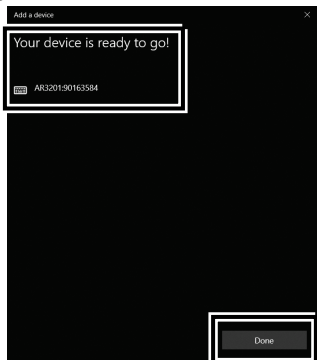
4. Tap Bluetooth.



5. If it detects your scanner, it shows “AR3201:XXXXXXXX” (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.



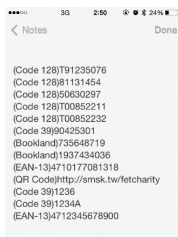
2. On your iPhone, Go to **Settings > Bluetooth**. Turn on Bluetooth, and your iPhone searches other Bluetooth devices automatically. If it detects your scanner, it shows “AR3201:XXXXXXXX” (X is your scanner’s serial number) under **DEVICES**. Tap your scanner to connect it.



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.



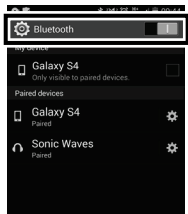
Connecting to an Android device

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.

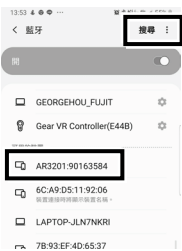
1. Scan the **Android HID** bar code.



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:XXXXXXXX” (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

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.



Save your current setting as default



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




\$%+PRO

Program

①Program

②Setting

③Value(The last page)

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



%\$\$

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 |
| | RS-232/ USB HID | } 04* |
| Interface selection | Auto detection | |
| | 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.



| 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 |
|  *2AD* Function key | Disable | 00 |
| | Enable | 01* |
|  *2AE* Numeric key | Alphabetic key | 00* |
| | Numeric keypad | 01 |
| | Alt+Keypad | 02 |

| 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

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.



| 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





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

(*) 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.



5%+PRO

Program

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



5AK

Disable 00

Volume 1 01

Volume 7 07

Cradle Beep

Loudness

(*) Default



%\$\$

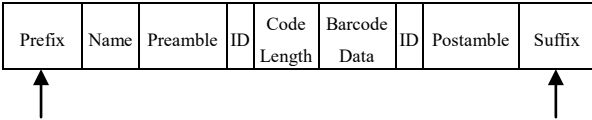
Exit

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.



| Setting | Option | Value |
|---------------------------|-----------------|----------------------|
| Prefix characters setting | None | 00* |
| | 1-22 characters | 00-ffH ASCII code |
| Suffix characters setting | None | 0D* |
| | 1-22 characters | 00-ffH ASCII code |

(*) Default



3.5.2 Preamble and postamble

- **Preamble / Postamble**

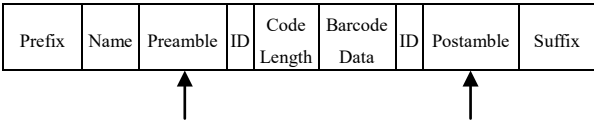
In some cases, you may need additional characters to identify your bar code data. A preamble and postamble can help you to do that. Remember, you need to turn on **preamble/postamble transmission** to use it.

- **Preamble transmission**

Add a preamble character or characters to a bar code.

- **Postamble transmission**





Add a postamble character or characters to a bar code.





\${}+PRO

Program

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

(*) Default



%\$\$

Exit

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: 258AB963



\$%+PRO

Program

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

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

(*) Default



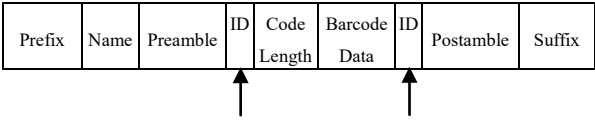
%\$\$

Exit

3.5.4 ID, name and capitalization

- **Code ID position**

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



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

(*) Default



%\$\$

Exit

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

Bar code settings



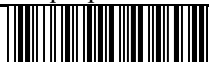
!BU

Unique parameters



!SY

System parameters



!ST

String settings



%\$\$

Exit

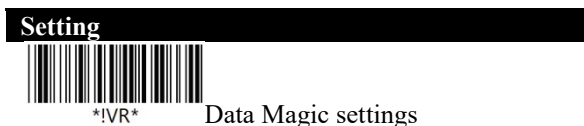
3.6.2 Data Magic settings

It shows all settings of Data Magic.



3.6.3 Firmware version

It shows the firmware version of your scanner.



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.

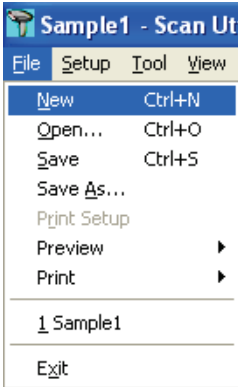


\$%-ZZZ%%

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.

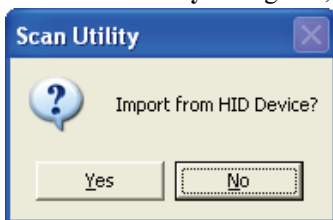
- USB connection
 1. Start Scan Utility.
 2. On the **File** menu, click **New**.



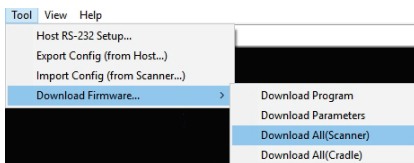
- In the **NEW** dialog box, select **AR3201** or **AR3201** from the **Select Model** list, and click **OK**.



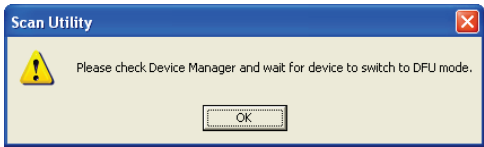
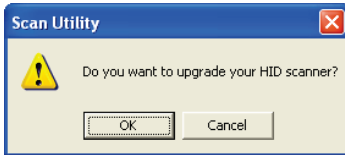
- In the **Scan Utility** dialog box, click **No**.



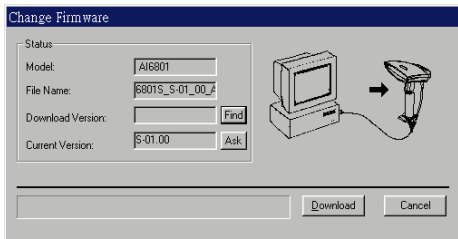
- On the **Tool** menu, click **Download Firmware > Download All (Scanner)** or **Download All (Cradel)**.



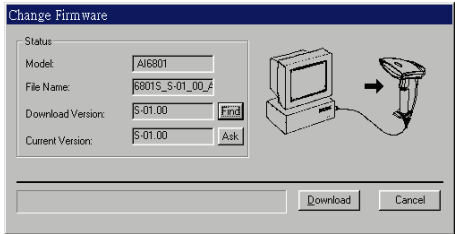
6. Scan Utility will ask if you want to upgrade your scanner, click **OK**. In the next dialog box, click **OK**. Then, you need to wait 7 seconds for system to switch your scanner to the DFU mode.



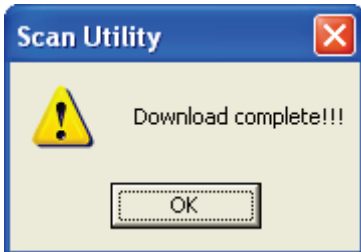
7. In the **Change Firmware** dialog box, click **Ask** to get the current firmware version of your scanner.



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**.



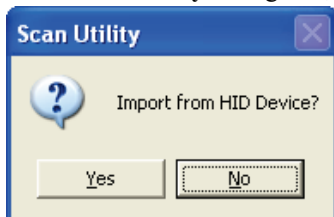
- RS-232 connection
1. Start Scan Utility.
 2. On the **File** menu, click **New**.



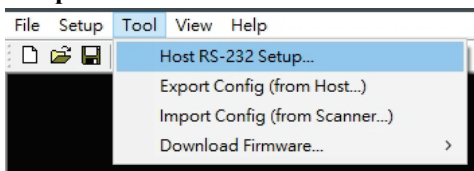
3. In the **NEW** dialog box, select **AR3201** or **AR3201** from the **Select Model** list, and click **OK**.



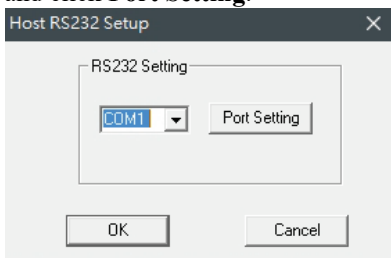
4. In the **Scan Utility** dialog box, click **No**.



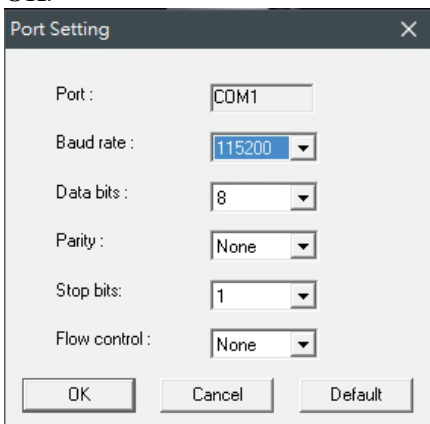
5. On the **Tool** menu, click **Host RS-232 Setup**.



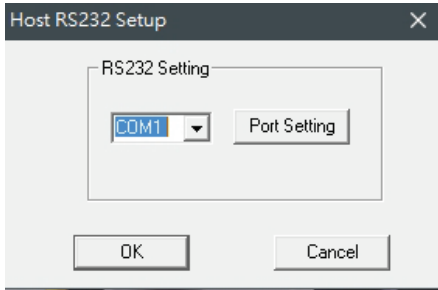
6. In the **Host RS-232 Setup** dialog box, select the COM port your scanner is using and click **Port Setting**.



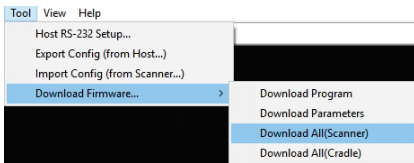
7. In the **Port Setting** dialog box, in the **Baud rate** list, select **115200** and click **OK**.



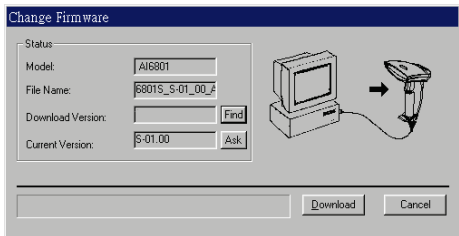
8. In the **Host RS-232 Setup** dialog box, click **OK**.



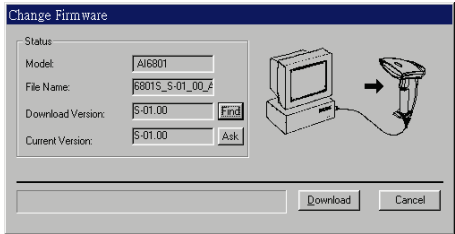
9. On the **Tool** menu, click **Download Firmware > Download All (Scanner)**.



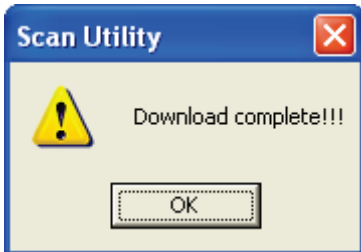
10. In the **Change Firmware** dialog box, click **Ask** to get the current firmware version of your scanner.



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**.



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.



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.

Data Magic commands

InsertF

Definition

Insert a character or characters from the left of a text string.

Attributes

- Position: The position you want to insert the character.
- String: The specified group.

InsertB

Definition

Insert a character or characters from the right of a text string.

Attributes

- Position: The position you want to insert the character.
- String: The specified group.

CutF

Definition

Remove a character or characters from the left of a text string.

Attributes

- From: The starting position of the text to be removed.
- To: The end position of the text to be removed.

CutB

Definition

Remove a character or characters from the right of a text string.

Attributes

- From: The starting position of the text to be removed.
- To: The end position of the text to be removed.

KeepF

Definition

Retain a character or

Attributes

- From: The starting position of the text to be retained.

characters from the left of a text string.

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

KeepB

Definition

Retain a character or characters from the right of a text string.

Attributes

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

FindF

Definition

Remove a certain length of the string from the left.

Attributes

- String: The specified group.
- Include: Remove everything before the specified string.
- Exclude: Remove the specified string and everything before it.

FindB

Definition

Remove a certain length of the string from the right.

Attributes

- String: The specified group.
- Include: Remove everything before the specified string.
- Exclude: Remove the specified string and everything before it.

Replace

Definition

Replace the text in the original text string with a different text

Attributes

- String: The text in the original text string.
- With String: The string that

string.

replaces the specific text.

Erase

Definition

Remove the specified rule.

Attributes

None.

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



RULE1



InsertF



Attr1 (Two digits)



Attr2 (Two digits)



Finish



Exit



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 *

0→InsertF



* / 1 *

1→CutF



* / 2 *

2→CutB



* / 3 *

3→Replace



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: ARGOX89121121

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: ARGOX89121121

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: ARGOX89121121

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: ARGOX89121121

Data:

ARGOX89121121

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: ARGOX89121121

Data:

ARGOX89121121

Result: ARGOX

Result: AR

Erase

Remove the specified rule.

| Program | Rule | Command | Exit |
|---------|---------|---------|------|
| | Rule 10 | Erase | |

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

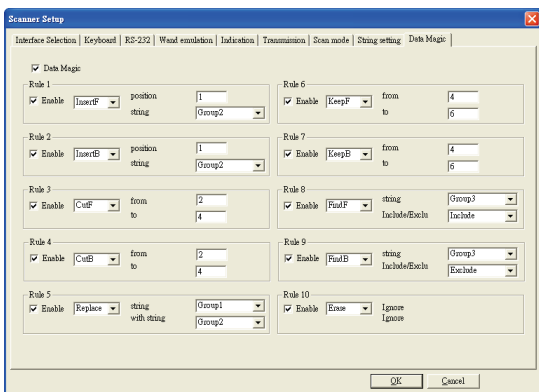
Scan Utility provides a simple, clear interface that you can easily view and change Data Magic settings, and import or export the settings to your scanner. Currently, Scan Utility uses RS-232 for data transmission. If your scanner is connected via a USB port, you need to install Virtual COM for Scan 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: 1 <u>Argox</u> 2345678 |
| InsertB | Position: 1 String: Group 2 Group 2: Argox Original String: 12345678 Result: 1234567 <u>Argox</u> 8 |
| CutF | From: 2 To: 4 Original String: 1 <u>234</u> 5678 Result: 15678 |
| CutB | From: 2 To: 4 Original String: 1234 <u>567</u> 8 Result: 12348 |
| Replace | String: Group 1 With String: Group 2 Group 1: 456 Group 2: Argox Original String: 1234 <u>567</u> 8 Result: 123 <u>Argox</u> 78 |
| KeepF | From: 2 To: 4 Original String: 1 <u>234</u> 5678 Result: 234 |
| KeepB | From: 2 To: 4 Original String: 1234 <u>567</u> 8 Result: 567 |
| FindF | String: Group 3 Group 3: 45 Original String: 1234 <u>567</u> 8 Include/Exclu: Include <ul style="list-style-type: none"> ■ Result: <u>45</u>678 Include/Exclu: Exclude <ul style="list-style-type: none"> ■ Result: 678 |

| Command | Example |
|---------|--|
| FindB | <p>String: Group 3 Group 4: 45 Original String: 123<u>4</u>5678 Include/Exclu: Include</p> <ul style="list-style-type: none"> ■ Result: 123<u>4</u>5 <p>Include/Exclu: Exclude</p> <ul style="list-style-type: none"> ■ Result: 123 |
| Erase | <p>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.</p> |

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* | Disable | 00 |
| Read | Enable | 01* |
|  *NAB* | Disable | 00 |
| Checksum transmission | Enable | 01* |
|  *NAC* | Disable | 00* |
| Data Magic | Enable | 01 |
|  *NAF* | 0-15 | 00-15 00* |
| Truncate leading | | |
|  *NAG* | 0-15 | 00-15 00* |
| Truncate ending | | |
|  *NAH* | 00-ffH | 00-ffH |
| Code ID setting | 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 | 00-44 |
| | (The range of the single-digit number: 0-4) | 00* |
|  *NAJ* Supplement digits | None | 00* |
| | 2 digits | 01 |
| | 5 digits | 02 |
| | 2,5 digits | 03 |
| | UCC/EAN 128 | 04 |
| | 2, UCC/EAN | 05 |
| | 128 | 06 |
| | 5, UCC/EAN | 07 |
| All | | |



%\$\$



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.



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



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.



\$%+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

00-44

00-44

00*

Insert group
number selection



OAJ

None

00*

2 digits

01

Supplement digits

5 digits

02

2,5 digits

03

UCC/EAN 128

04

2, UCC/EAN 128

05

5, UCC/EAN 128

06

All

07



OAK

None

00*

Truncate leading

01

Truncation/Expansion

zero

Expand to

02

EAN13

03

Expand to UPCA



OAL

Disable

00*

Enable

01

Expansion



OAM

Disable

00*

Enable

01

UPCE-1



7AE

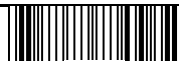
00-99

00-99

(verification)

05*

Supplement check
counter



%\$\$

Exit

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

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



%\$\$

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



%\$\$

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



%\$\$

Exit

Code 39

Format









| | | | |
|--------------|----------------------------|------------------------|------------|
| Start “★” | Data Digits (Variable) | Checksum (Optional) | End “★” |
|--------------|----------------------------|------------------------|------------|

- **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.



%+PRO

Program

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



%\$\$

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



%\$\$

Exit

Interleaved 2 of 5

Format

| | |
|---------------------------|------------------------|
| Data Digits (Variable) | Checksum (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 |
|----------------------------------|----------------------|------------------|
| Read | Disable | 00 |
| | Enable | 01* |
| Checksum transmit/verify | Disable/Disable | 00* |
| | Disable/Enable | 01 |
| | Enable /Enable | 02 |
| Data Magic | Disable | 00* |
| | Enable | 01 |
| Max. code leading | 00-64 | 00-64 |
| | | 00* |
| Min. code leading | 00-64 | 00-64 |
| | | 00* |
| Truncate leading | 0-15 | 00-15 |
| | | 00* |
| Truncate ending | 0-15 | 00-15 |
| | | 00* |
| Code ID setting | 00-ffH ASCII code | 00-ffH < i >* |
| | 00-44 | 00-44 |
| Insert group number selection | | 00* |



%\$\$

Exit

Industrial 2 of 5

Format









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



%\$\$

Exit

Matrix 2 of 5

Format










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



%\$\$

Exit

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






%\$\$

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.



| 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 |



Code 128/ GS1-128

Format

| | |
|---------------------------|------------------------|
| Data Digits (Variable) | Checksum (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 | Disable/Disable | 00* |
| | Disable/Enable | 01 |
| Transmit/Verify *DAC* Data Magic | Enable /Enable | 02 |
| | Disable | 00* |
| | Enable | 01 |



%\$\$ Exit







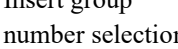
- **Max/Min code length** See the description in Code 39.
- **Truncate leading/ending** See the description in UPC-A.
- **Code ID setting** See the description in UPC-A.

- 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* | 00-64 | 00-64 00* |
| Max. code length | | |
|  *DAE* | 00-64 | 00-64 01* |
| Min. code length | | |
|  *DAF* | 0-15 | 00-15 00* |
| Truncate leading | | |
|  *DAG* | 0-15 | 00-15 00* |
| Truncate ending | | |
|  *DAH* | 00-ffH ASCII code | 00-ffH < # >* |
| Code ID setting | | |
|  *DAI* | 00-44 | 00-44 00* |
| Insert group number selection | | |
|  *DAJ* | Standard UCC/EAN-128(G S1-128) | 00 01* |
| Format | | |







%\$\$ Exit

- **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.



\$%+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 |
|  *8AQ* GS1-128 ID | | 00-ffH ASCII code |



%\$\$

Exit




Code 93

Format

| | | |
|---------------------------|-------------------------|-------------------------|
| Data Digits (Variable) | Checksum1 (Optional) | Checksum2 (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.









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



- **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.



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



Code 11

Format










| | | |
|---------------------------|-------------------------|-------------------------|
| Data Digits (Variable) | Checksum1 (Optional) | Checksum2 (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* | Disable | 00* |
| | Enable | 01 |
| Read | | |
|  *AAB* | Disable/Disable | 00 |
| | Disable/One digit | 01* |
| | Disable/Two digits | 02 |
| | Enable/One digit | 03 |
| | Enable/Two digits | 04 |
| Checksum transmit/verify | | |
|  *AAC* | Disable | 00* |
| | Enable | 01 |
| Data Magic | | |
|  *AAD* | 00-64 | 00-64 |
| | | 00* |
| Max. code length | | |
|  *AAE* | 00-64 | 00-64 |
| | | 00* |
| Min. code length | | |
|  *AAF* | 0-15 | 00-15 |
| | | 00* |
| Truncate leading | | |
|  *AAG* | 0-15 | 00-15 |
| | | 00* |
| Truncate ending | | |
|  *AAH* | 00-ffH ASCII code | 00-ffH |
| | | < O >* |
| Code ID setting | | |
|  *AAI* | 00-44 | 00-44 |
| | | 00* |
| Insert group number selection | | |



%\$\$

Exit

MSI/Plessey

Format










| | | |
|---------------------------|-------------------------|-------------------------|
| Data Digits (Variable) | Checksum1 (Optional) | Checksum2 (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* | Disable | 00* | |
| | Enable | 01 | |
| Read | | | |
|  *KAB* | N/disable | 00* | |
| | N/MOD 10 | 01 | |
| | Checksum | N/Mod 10,10 | 02 |
| | transmit/verify | N/mod 11,10 | 03 |
| | | Y/Mod10 | 04 |
| | | Y/Mod 10,10 | 05 |
| | | Y/Mod 11/10 | 06 |
|  *KAC* | Disable | 00* | |
| | Enable | 01 | |
| Data Magic | | | |
|  *KAD* | 00-64 | 00-64 | |
| | | 00* | |
| Max. code length | | | |
|  *KAE* | 00-64 | 00-64 | |
| | | 00* | |
| Min. code length | | | |
|  *KAF* | 0-15 | 00-15 | |
| | | 00* | |
| Truncate leading | | | |
|  *KAG* | 0-15 | 00-15 | |
| | | 00* | |
| Truncate ending | | | |
|  *KAH* | 00-ffH ASCII code | 00-ffH < @ >* | |
| | | | |
| Code ID setting | | | |
|  *KAI* | 00-44 | 00-44 | |
| | | 00* | |
| Insert group number selection | | | |



%\$\$

Exit

UK/Plessey

Format










| | |
|---------------------------|---------------------------|
| Data Digits (Variable) | Checksum1+2 (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* | Disable | 00* |
| | Enable | 01 |
| Read | | |
|  *LAB* | Disable/Disable | 00 |
| | Disable/Enable | 01* |
| | Enable/Enable | 02 |
| Checksum transmit/verify | | |
|  *LAC* | Disable | 00* |
| | Enable | 01 |
| Data Magic | | |
|  *LAD* | 00-64 | 00-64 |
| | | 00* |
| Max. code length | | |
|  *LAE* | 00-64 | 00-64 |
| | | 00* |
| Min. code length | | |
|  *LAF* | 0-15 | 00-15 |
| | | 00* |
| Truncate leading | | |
|  *LAG* | 0-15 | 00-15 |
| | | 00* |
| Truncate ending | | |
|  *LAH* | 00-ffH ASCII | 00-ffH |
| | code | < @ >* |
| Code ID setting | | |
|  *LAI* | 00-44 | 00-44 |
| | | 00* |
| Insert group number selection | | |



%\$\$

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



%\$\$

Exit

Standard 2 of 5

Format










| | |
|---------------------------|-------------------------|
| Data Digits (Variable) | Checksum1 (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* | Disable | 00* |
| | Enable | 01 |
| Read | | |
|  *JAB* | Disable/Disable | 00* |
| | Disable/Enable | 01 |
| Check-sum transmit/verify | Enable /Enable | 02 |
|  *JAC* | Disable | 00* |
| | Enable | 01 |
| Data Magic | | |
|  *JAD* | 00-64 | 00-64 |
| | | 00* |
| Max. code length | | |
|  *JAE* | 00-64 | 00-64 |
| | | 00* |
| Min. code length | | |
|  *JAF* | 0-15 | 00-15 |
| | | 00* |
| Truncate leading | | |
|  *JAG* | 0-15 | 00-15 |
| | | 00* |
| Truncate ending | | |
|  *JAH* | 00-ffH ASCII code | 00-ffH |
| | | < i >* |
| Code ID setting | | |
|  *JAI* | 00-44 | 00-44 |
| | | 00* |
| Insert group number selection | | |



%\$\$

Exit

China Post

Format









| | |
|---------------------------|-------------------------|
| Data Digits (Variable) | Checksum1 (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* | Disable | 00* |
| | Enable | 01 |
| Read | | |
|  *SAC* | Disable | 00* |
| | Enable | 01 |
| Data Magic | | |
|  *SAD* | 00-64 | 00-64 |
| | | 11* |
| Max. code length | | |
|  *SAE* | 00-64 | 00-64 |
| | | 11* |
| Min. code length | | |
|  *SAF* | 0-15 | 00-15 |
| | | 00* |
| Truncate leading | | |
|  *SAG* | 0-15 | 00-15 |
| | | 00* |
| Truncate ending | | |
|  *SAH* | 00-ffH ASCII code | 00-ffH < t >* |
| | | |
| Code ID setting | | |
|  *SAI* | 00-44 | 00-44 |
| | | 00* |
| Insert group number selection | | |



%\$\$

Exit

Italian Pharmacode (Code 32)

Format










| | |
|---------------------------|-------------------------|
| Data Digits (Variable) | Checksum1 (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* | Disable | 00* |
| | Enable | 01 |
| Read | | |
|  *WAC* | Disable | 00* |
| | Enable | 01 |
| Data Magic | | |
|  *WAD* | 00-64 | 00-64 |
| | | 12* |
| Max. code length | | |
|  *WAE* | 00-64 | 00-64 |
| | | 09* |
| Min. code length | | |
|  *WAF* | 0-15 | 00-15 |
| | | 00* |
| Truncate leading | | |
|  *WAG* | 0-15 | 00-15 |
| | | 00* |
| Truncate ending | | |
|  *WAH* | 00-ffH ASCII | 01-ffH |
| | code | < p >* |
| Code ID setting | | |
|  *WAI* | 00-44 | 00-44 |
| | | 00* |
| Insert group number selection | | |
|  *WAJ* | Disable | 00* |
| | Enable | 01 |
| Leading "A" | | |



%\$\$

Exit







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 |
| | | 00-44 |
| | | 00* |



%\$\$

Exit








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.



\$%+PRO

Program

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



%\$\$

Exit

GS1 Databar Omnidirectional

Format







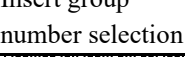
| | |
|---------------------------|-------------------------|
| Data Digits (Variable) | Checksum1 (Optional) |
|---------------------------|-------------------------|

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



%\$\$

Exit

GS1 Databar Limited

Format

| | |
|---------------------------|-------------------------|
| Data Digits (Variable) | Checksum1 (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* | Disable | 00* |
| | Enable | 01 |
| Read | | |
|  *UAC* | Disable | 00* |
| | Enable | 01 |
| Data Magic | | |
|  *UAD* | 00-64 | 00-64 |
| Max. code length | | |
|  *UAE* | 00-64 | 00-64 |
| Min. code length | | |
|  *UAF* | 0-15 | 00-15 |
| Truncate leading | | |
|  *UAG* | 0-15 | 00-15 |
| Truncate ending | | |
|  *UAH* | 00-ffH ASCII code | 00-ffH < RL >* |
| Code ID setting | | |
|  *UAI* | 00-44 | 00-44 |
| Insert group number selection | | |
|  *UAK* | Disable | 00* |
| | Enable | 01 |

| Setting | Option | Value |
|-------------------------|--------|-------|
| UCC/EAN128 emulation | | |



%\$\$

Exit

GS1 Databar Expanded

Format










| | |
|---------------------------|-------------------------|
| Data Digits (Variable) | Checksum1 (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* | Disable | 00* |
| | Enable | 01 |
| Read | | |
|  *VAC* | Disable | 00* |
| | Enable | 01 |
| Data Magic | | |
|  *VAD* | 00-99 | 00-99 |
| | | 99* |
| Max. code length | | |
|  *VAE* | 00-99 | 00-99 |
| | | 01* |
| Min. code length | | |
|  *VAF* | 0-15 | 00-15 |
| | | 00* |
| Truncate leading | | |
|  *VAG* | 0-15 | 00-15 |
| | | 00* |
| Truncate ending | | |
|  *VAH* | 00-ffH ASCII code | 00-ffH < RX >* |
| | | |
| Code ID setting | | |
|  *VAI* | 00-44 | 00-44 |
| | | 00* |
| Insert group number selection | | |
|  *VAK* | Disable | 00* |
| | Enable | 01 |
| UCC/EAN128 emulation | | |



%\$\$

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

PERFORMANCE CHARACTERISTICS

| | |
|-----------------------------|--|
| Light Source | Red LED |
| Sight | Red LED, 623 nm |
| Scan Pattern | Linear Imager(CCD) |
| Indicator | LED & beeper |
| Interface | USB (HID/Virtual COM), RS-232 |
| Scan Width | 39° |
| Print Contrast | 30% |
| Scan Rate | 700 scans/sec |
| Number of Scan | > 96,000 reads |
| Operation Mode | Handcuff mode, Deep Sleep mode, Data collection mode, Auto-sensing mode |
| Supported Connection | BT 2.1+EDR, 100meter Support SPP/HID |
| D.O.F. | 3mil, 60 ~ 80mm 4 mil, 60 ~ 110mm 5mil, 50 ~ 130mm 10mil, 40 ~ 310mm 13mil, 40 ~ 400mm 20mil, 45 ~ 550mm EAN13 , 13mil, 40 ~ 340mm |

Electrical

| | |
|-----------------------------|--|
| Battery | Rechargeable Li-Ion battery pack (3.6 V, 2600mAh, 9.36 Wh) |
| Battery Working Hrs. | > 81 hours |
| Standby/Idle | > 102 hours |

| | |
|----------------------|-----------------------|
| Battery | Power Supply: 5 hours |
| Charging Hrs. | USB Cable: 7 hours |
| Power Input | 5V \pm 10% VDC / 1A |

PHYSICAL CHARACTERISTICS

| | |
|-------------------|--|
| Dimensions | Scanner: 9.4 x 7.6 x 15.8 cm Cradle: 13x 8.8 x 9.5 cm |
| Weight | Scanner: 200 g (battery included) Cradle: 130 g |

SYMBOLGY DECODE CAPABILITY

| | |
|-----------------------|--|
| 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 |

USER ENVIRONMENT

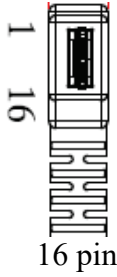
| | |
|------------------------------|----------------------------------|
| Operating Temperature | -20°C to 60°C (-4°F to 140°F) |
|------------------------------|----------------------------------|

| | |
|-----------------------------------|--|
| Storage Temperature | -20°C to 60°C (-4°F to 140°F) |
| Battery Charge Temperature | 0°C to 40°C (32°F to 104°F) |
| Humidity | 5% to 95% related humidity, non-condensing |
| Drop Specifications | 6 ft./1.8 m drop |
| Contaminants | Seals to resist airborne particulate contaminants (IP65) |
| Light level | 0 ~ 80,000 lux |

REGULATORY

EMI/RFI CE, FCC, BSMI, NCC

6.1 Pin Assignments



16pin Mini-usb Connector

| Pin | RS-232 | USB |
|-----|-----------|-----------|
| 1 | VCC (+5V) | VCC (+5V) |
| 2 | VCC (+5V) | VCC (+5V) |
| 3 | VCC (+5V) | VCC (+5V) |
| 4 | NC | NC |
| 5 | NA | VBUS |
| 6 | NA | USB D- |
| 7 | NA | USB D+ |
| 8 | GND | GND |
| 9 | GND | GND |
| 10 | GND | GND |
| 11 | CTS | NA |
| 12 | RTS | NA |
| 13 | RXD | NA |
| 14 | TXD | NA |
| 15 | NC | NC |
| 16 | NC | 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

-

-

RX

Expanded

.....

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