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# **EC320 User Settings Manual**



## Setting code switch

By turning on the setting code function, the parameter setting of the reading module can be performed by scanning the setting code.



\*Open the setup code

Output setup code content



Close setup code

Output setup code content

## Restore factory settings

By scanning the “Restore Factory Settings” barcode, all parameters of the reading module can be restored to the factory configuration.



Restore Factory Settings

## User default settings

In addition to the factory settings, the user can save the configuration that he often uses as the default setting of the user. By scanning “Save current settings as user default settings”, the current configuration information of the device can be saved as the default setting information of the user, if the module is read. If there is already user default setting information, the new configuration information will replace the original user default setting information after the operation.

By scanning "Restore User Defaults", you can switch the reading module to the user default

You can also modify the PC's access period to the HID device by scanning the following setup code.settings.



Save current settings as user defaults



Restore user default settings

1 communication interface

The EC320 reading module provides a TTL-232 serial communication interface for communication with the host. Through the communication interface, it is possible to receive reading data, control the reading module to issue commands, and change the function parameters of the reading module.

1.1 serial communication interface

The serial communication interface is a common way to connect the reading module to the host device (such as PC, POS, etc.). When the reading module is connected to the host using a serial cable, the system uses the serial communication mode by default. When using the serial communication interface, the communication module and the host device must be completely matched in the communication parameter configuration to ensure smooth communication and correct content.



Serial output

The serial communication interface of the reading module uses a TTL level signal (TTL-232), which adapts to most system architectures. If the system needs to use an RS-232 form of architecture, it is necessary to add a conversion circuit externally. The serial communication interface of the reading module uses a TTL level signal (TTL-232), which adapts to most system architectures. If the system needs to use an RS-232 form of architecture, it is necessary to add a conversion circuit externally.

The default serial communication parameters of the reading module are shown in Table 2 1. The baud rate of the reading module can be modified by the serial port command, but the remaining parameters cannot be modified.

Table 2 1 Default serial communication parameters

Parameter	Default
Serial communication type	standard TTL-232
Baud rate	9600
check	no
Data bit	8
Stop bit	1
Hardware flow control	no

Baud rate setting



**1200bps**



14400bps

**4800bps**



19200bps

**\*9600bps**



### 1.1.1 Serial Check Digit Configuration

Customers can modify the parity of the serial port by scanning the following configuration code.



### 1.1.1 Serial Port and Full Code Open Quick Configuration

In order to help customers quickly configure to serial port and full code open mode during the secondary development process, you can scan the following configuration code to achieve quick configuration.



Serial port & full code open

### 1.1 USB interface

When the reading module is connected to the host using a USB cable, the reading module can be configured to the standard keyboard input mode by scanning the USB PC setting code.



USB PC keyboard

\*USB PC keyboard You can also modify the PC's access period to the HID device by scanning the following setup code.



\*1ms



3ms



5ms



10ms

You can also modify the interval between valid messages and released messages by scanning the following



\*0ms



1ms



5ms



10ms



15ms

You can also modify the interval between the release of the message and the next valid message by scanning the following setup code.



0ms



\*1ms



5ms



10ms



15ms



You can also modify the state of CapsLock at the output by scanning the following setup code.



### 1.1 USB virtual serial port

When the reading module is connected to the host using a USB cable, the reading module can be configured as a virtual serial port output mode by scanning the USB virtual serial port setting code.



USB virtual serial port

## 1 reading mode

### 1.1 manual mode

The manual reading mode is the default reading mode. In this mode, the reading module starts reading after pressing the trigger button, and stops reading after the reading succeeds in outputting the



message or releasing the trigger button.

**\*manual mode**

In this mode, after the reading module is idle for a certain period of time, it automatically enters the deep sleep mode, which can be set by the following setting code.



**Enable hibernation**



**\*Disable sleep function**

After entering the sleep mode, you can wake up by pressing the button, and the device will restart after exiting the sleep mode.

In addition, when Deep Sleep is not enabled, you can also set the idle time for a light sleep by scanning the following setup code.



**0ms**



**\*500ms**



**3000ms**



**5000ms**

### 1.1 continuous mode

After setting, no need to trigger, the reading module immediately starts reading the code. When the reading succeeds in outputting the information or the single reading time is over, the reading module waits for a period of time (settable) to automatically start the next reading. If the following conditions do not occur, the reading module will cycle in the above manner: during the reading process, the user can also click the trigger button to manually pause the reading. Clicking the trigger button to read the module will continue to cycle through the code.



#### Reading interval

This parameter refers to the interval between two adjacent readings, that is, after the reading module finishes the last reading (regardless of whether the reading is successful or not), the reading is not performed within the set interval until the interval ends. Only after the next reading. The setting interval of the reading interval is 0~25.5 seconds and the step is 0.1 second. The default interval is 1.0 seconds.



No gap



500ms



\*1000ms



1500ms



2000ms

### Same barcode reading delay

The same bar code is not prevented from being read multiple times in succession, and the reading module may be required to read the same bar code in a continuous period of time in this mode, and the same bar code is allowed to be read.

The same bar code reading delay means that after reading the same bar code, the reading module compares with the last reading time. When the interval time is longer than the reading delay time, the same bar code is allowed to be read, otherwise the output is not allowed.



Same barcode reading delay



\*same barcode reading not delayed

### Same barcode reading delay time

When the same barcode reading delay is enabled, the same barcode reading delay time can be set by



the following setting code.



500ms



1000ms

Infinite delay



3000ms



5000ms

## 3.3 Automatic mode

After the setting is completed, the triggering module immediately starts to monitor the brightness of the surrounding environment without triggering. When the scene changes, the reading module waits for the set stabilization time to end before reading the code. After reading the successful output information or the single reading timeout, the reading module needs to be separated for a period of time (settable) before re-



entering the monitoring state. If the following conditions do not occur, the reading module will cycle in the above manner: the bar code is not scanned within a single reading time, and the reading module will automatically pause the reading and enter the monitoring state. In the inductive reading mode, the reading module can also start reading after pressing the trigger button, and continue to monitor the brightness of the surrounding environment after the reading succeeds in outputting the information or releasing the trigger button.

## Automatic mode

### Reading interval

After reading the successful output information or the single reading timeout, the reading module needs to be separated for a period of time (settable) before re-entering the monitoring state. The setting interval of the reading interval is 0~25.5 seconds and the step is 0.1 second. The default interval is 1.0 seconds.



No gap



500ms



\*1000ms



1500ms



2000ms

### Stable image length

The image stabilization time refers to the time in which the reading module that detects the scene change needs to wait for the image to stabilize before reading the code in the inductive reading mode. The image stabilization time setting range is 0~25.5 seconds and the step size is 0.1 second. The default image stabilization time is 0.4 seconds.



100ms



\*400ms



**1000ms**



**2000ms**

## Sensitivity

Sensitivity refers to the degree of change in the scene detected in the inductive reading mode. When the reading module determines that the degree of scene change meets the requirements, it will



switch from the monitoring state to the reading state.



**\*Normal sensitivity**

**Low sensitivity**



**High sensitivity**



**Extra high sensitivity**

### Same barcode read delay

If the same barcode is read several times continuously, it can be required that the reading module cannot read the same barcode for a continuous period of time in this mode, so that the same barcode setting code can be read the same as the continuous mode

## 3.4 Command Trigger Mode

In this mode, the reading module starts reading the code when it receives the scan command sent by the host (that is, bit 0 of flag 0x0002 is written to "1"), and stops reading after the successful reading of the



code reading or the end of the single reading time. .

**Command trigger mode**

Note: In the command trigger mode, the serial command that triggers the scan is: 7E 00 08 01 00 02 01 AB CD; after receiving the trigger command, the reading module will output seven bytes of response information and start the scan synchronously (response Information content: 02 00 00 01 00 33 31)

**Single reading time**

In the command trigger reading mode, this parameter refers to the maximum length of time that the reading module is allowed to continue to collect and recognize before the reading is successful. The single reading time setting range is 0.1~25.5 seconds and the step size is 0.1 second. When set to 0, it means that the reading time is infinitely long. The default duration is 5.0 seconds.

**1000ms****\*5000ms****3000ms*****Infinite length***



## 1 reading area

For different applications, the identifiable area that the user needs will have some differences, which can be set by scanning the following setting code.

### 1.1 full area

When the reading area is a full-width area, the reading module will scan the barcode around the center with priority, and the barcode can be located anywhere on the screen.



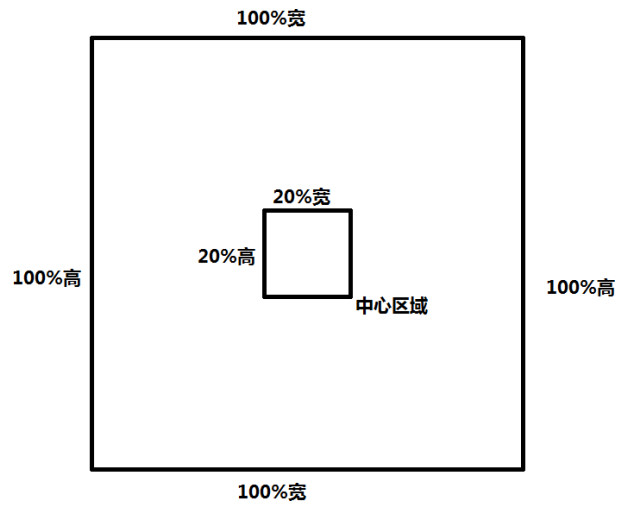
### 1.1 only the central area

When the reading area is the center area, the center position of the barcode must be within the set center area, and the barcodes that are not within the area are not recognized and output.



#### Set the size of the center area:

The central area is an area centered on the center of the entire image. The size of the area is set relative to the width or height of the entire image, ranging from 1-100; if the value is set to 20, An area located 20% of the width of the center and 20% of the height.



**Modify the size of the center area**

The commonly used center area size can be set by scanning the following setup code:



**Central region-20%**



**Central region-40%**



**Central region-60%**

When the size of the common center area is not enough, the user can also customize the configuration by scanning the “Modify Center Area Size” setting code.



**Modify the size of the center area**

Example: Modify the center area size to 50%

1. Check the character table to get the hexadecimal value of the "50" four characters: "32"
2. Confirm that the setup code is enabled. If it is not enabled, please scan the “Enable Setup Code” setup code (see section 1.5.2).
3. Scan the "Modify Center Area Size" setting code
4. Scan the data setting code "3", "2" in turn (see Appendix E)
5. Scan the “Save” setup code (see Appendix F)

## 1 lighting and aiming

### 1.1 lighting

The illuminator provides auxiliary illumination for the reading and reading, and the beam is illuminated on the reading target to improve the adaptability of reading performance and weak ambient lighting. Users can set it to one of the following states depending on the application environment:

**Normal (default setting):** The illuminator lights up during shooting and goes off at other times. **Steady light:** The illuminator continues to illuminate after the reading module is turned on.

**No lighting:** The light does not illuminate under any circumstances.



**\*ordinary**



**Constantly bright**



**No lighting**

### 1.2 aiming

The aiming beam projected by the EC320 helps the user find the best reading distance when shooting. Users can choose one of the following modes depending on the application environment.

**Normal (default setting):** The reading module only projects the aiming beam when shooting.

**Steady on:** After the reading module is powered on, the aiming beam is continuously projected.

**No aiming:** In any case the aiming beam is extinguished.



**\*ordinary**



**Constantly bright**



**No aiming**

## 2 prompt output

### 1.2 All prompts

Reading the "Buzzer Drive Frequency" sets the buzzer as an active/passive buzzer and also sets the drive frequency of the passive buzzer.



Buzzer drive frequency - passive low frequency



\*Buzzer drive frequency - passive intermediate frequency



Buzzer drive frequency - passive high frequency



Buzzer drive frequency - active drive

In the active buzzer mode, the read "buzzer working level - high" can be set to buzzer idle low, working high level; buzzer working level - low can be set to beep. The device is idle high and works low.



\*Buzzer working level - high



Buzzer working level - low

Read "Start Mute" to turn off all beeps. Read "Mute Off" to unmute the settings.



Start mute



\*Close mute

### 1.2 reading success tone

Reading “turn off the decoding success prompt tone” can prohibit the bar code reading success from prompting the sound, and read “turn on the decoding success prompt tone” to resume the bar code reading success prompt.



**\*Open the reading success tone**



**Turn off the reading success tone**

Read "Beep duration" to set the duration of the successful tone. Default 60ms



**Tone duration-30ms**



**\*Beep duration-60ms**



**Beep duration-90ms**



**Beep duration-120ms**

## 1.2 data encoding format

In order to enable the reading module to read Chinese barcodes of various encoding formats, it can be set by reading the "input data encoding format".



**\*Input data encoding format GBK**



**Input data encoding format UTF8**



**Input data encoding format AUTO**

In order for the host to print Chinese data according to the specified encoding format, it can be set by reading the "output data encoding format". Note: The GBK format can be used for Notepad, and the UNICODE format can be used for WORD and input boxes for common chat tools.



**\*Output data encoding format GBK**



**Output data encoding format UNICODE**





Output data encoding format UTF8

## 1.2 national keyboard settings

In order to enable the host of each country to use the device, it can be set by reading the "keyboard" of the corresponding country.



\*Keyboard - United States



Keyboard - Czech Republic



Keyboard - France

Keyboard - Germany



Keyboard - Hungary



Keyboard - Italy



Keyboard - Japan



Keyboard - Spain



Keyboard - Turkey F



**Keyboard - Turkey Q**

### **1.2 virtual keyboard enable**

In order to be able to use in more areas, we also provide a virtual keyboard function. After the virtual keyboard is enabled, it can be output in any keyboard mode, but it will lose relative output efficiency. In addition, when using a virtual keyboard, you must ensure that the keypad number keys are enabled. Note that the virtual keyboard must be available in version 1.21 and above.



**\*Standard keyboard**



**Virtual keyboard**

## 1.2 image flip

In practice, we will encounter images that are mirrored or flipped vertically, as shown in the following image:



原始图像



镜像翻转

When the barcode is flipped, the mirror flip mode can be entered by scanning the corresponding setup code.



Enter mirror flip mode



\* Exit mirror flip mode

Note: In the mirror flip mode, only the barcode of the mirror flip can be recognized. To identify the normal barcode or setup code, please exit the mirror flip mode first.

## 1.2 black and white flip

In some special scenarios, the black and white of the barcode may be reversed. By scanning the following setup code, the module can be configured to recognize both normal and reverse barcodes.



\*One-dimensional bar code forbidden color decoding



One-dimensional barcode enabling reverse color decoding



\*2D barcode anti-color decoding



2D barcode enabling reverse color decoding

## 1.2 two-dimensional code bidirectional identification

The QR code can be enabled or disabled by scan code to support both normal and image recognition, but it will reduce the recognition speed.



Enable



\* disable

## 1.2 Read version information

In order to allow the host to quickly read the version information of the current device, it can be confirmed by "reading the version information".



Read version information

## 2 Data editing

In practical applications, we sometimes need to edit the read data before outputting it, which is convenient for data differentiation and processing.

Date editing as follows:

- Add Prefix
- Add Suffix
- Decoding information Data segment interception
- Output barcode type
- Decoding failed will output specific RF information character
- Add terminating character Tail

The default output order of processed data is as follows:

【Prefix】【CodeID】【Data】【Suffix】【Tail】

### 2.1 Prefix

#### *Add Prefix*

The prefix is a string that is modified by user-defined before the information is decoded. It can be added by scanning the "Add prefix" setting code.



#### **Modify Prefix**

Scan the "Modify Prefix" setting code and combine the scan data setting code, the user can modify the prefix content. It uses two hexadecimal values for each prefix character. The prefix allows up to 15 characters. The hexadecimal conversion table of character values reference Appendix D.



e.g., modify the user-defined prefix to "DATA"

1. Check the character table and get the hexadecimal values of the four characters "DATA": "44", "41", "54", "41"
2. Confirm that the setup code is enabled. If it is not enabled, please scan the "Enable Setup Code" setup code (see section 1.5.2).
3. Scan the "Modify Prefix" setting code.
4. Scan data setting codes "4", "4", "4", "1", "5", "4", "4", "1" in sequence.
5. Scan the "Save" setting code.

## 2.2 Suffix

### Add Suffix

The suffix is a string that is customized by the user after decoding the information. It can be added by scanning the "Add suffix" setting code.



### Modify Suffix

Scan the "Modify Suffix " setting code and combine the scan data setting code,the user can modify the Suffix content. It uses two hexadecimal values for each suffix character. The suffix allows up to 15 characters. The hexadecimal conversion table of character values reference Appendix D.



#### e.g.,modify the user-defined suffix to "DATA"

1. Check the character table and get the hexadecimal values of the four characters "DATA": "44", "41", "54", "41"
2. Confirm that the setup code is enabled. If it is not enabled, please scan the "Enable Setup Code" setup code (see section 1.5.2).
3. Scan the "Modify Suffix " setting code.
4. Scan data setting codes "4", "4", "4", "1", "5", "4", "4", "1" in sequence.
5. Scan the "Save" setting code.

## 2.3 CODE ID

### Add CODE ID

Users can identify different barcode types by CODE ID. The CODE ID corresponding to each barcode type can be modified freely, and the CODE ID is identified by one character.



Add CODE ID



Clean All CODE ID



### CODE ID Default

Scan the "CODE ID Default" setting code, and the CODE ID corresponding to each barcode can be restored to the default value. For the default CODE ID, please refer to Appendix C.



### Modify CODE ID

The CODE ID corresponding to each barcode can be modified freely by scanning the corresponding setup code and combining the scan data setup code. The CODE ID character corresponding to each bar code is represented by a hexadecimal value. For the hexadecimal conversion table of character values, refer to Appendix D.

#### e.g., modify the CODE ID of the CODE 128 barcode to "A"

1. Check the character table to get the hexadecimal value of the "A" character: "41"
2. Confirm that the setup code is enabled. If it is not enabled, please scan the "Enable Setup Code" setup code (see section 1.5.2).
3. Scan the "Modify CODE ID of CODE 128" setting code
4. Scan the data setting code "4", "1" in sequence.
5. Scan the "Save" setting code



Modify the CODE ID setting code list for each barcode type:

Modify CODE ID of EAN13



Modify CODE ID of EAN8





Modify CODE ID of UPCA



Modify CODE ID of UPCE0

Modify CODE ID of UPCE1

Modify CODE ID of CODE 128





Modify CODE ID of CODE 39



Modify CODE ID of CODE 93



Modify CODE ID of CODE BAR



Modify CODE ID of Interleaved 2 of 5



Modify CODE ID of Industrial 25



Modify CODE ID of Matrix 2 of 5



Modify CODE ID of CODE 11



Modify CODE ID of MSI



Modify CODE ID of RSS



Modify CODE ID of RSS Limited



Modify CODE ID of RSS Omnidirectional



Modify CODE ID of QR CODE



Modify CODE ID of Data Matrix



Modify CODE ID of PDF417 Limited

## 2.4 Terminating Characters

In order to allow the host to quickly distinguish the results of the current decoding, this feature can be turned on.

After reading “Add Terminator” to enable this function, if the reading is successful, the reading module adds the corresponding terminator after decoding the data.



Disable terminator

Add terminator **CR**Add terminator **TAB**Add terminator **CRLF**

## 2.5 Data segment interception

This function can be turned on when the user only needs to output a part of the decoded information. We divide the decoding information [Data] into three parts:

[Start] [Center] [End]

The length of the characters in the Start and End segments can be controlled by scan code.

The user can select the decoding information of the corresponding position by scanning the code as follows.



**Transfer the entire Data segment**



**Transfer only the Start segment**





**Transfer only the Start segment End**



**Transfer only the Start segment Center**

### **Modify the length of the Start segment M**

Scan the "cut length M before modification" and combine the scan data setting code to modify the length of the Start segment. The Start segment allows up to 255 characters. The front intercept length M is represented by a hexadecimal character, and the conversion table of the hexadecimal value corresponding to the length M can be referred to Appendix D.



**Cut length M before modification**

### **Modify the length of the END segment N**

Scan the "cut length N after modification" and combine the scan data setting code to modify the length of the End segment. The End segment allows up to 255 Characters, the length of the interception N is represented by a hexadecimal character, and the conversion table of the hexadecimal value corresponding to the length N can be referred to Appendix D.



**Cut length N after modification**

### **Transfer only the Start segment**

**Example: When the decoding information is "1234567890123ABC", the first thirteen bytes "1234567890123" are output.**

1. Check the character table to get the hexadecimal character corresponding to the decimal data "13" as "0D"
2. Confirm that the setup code is enabled. If it is not enabled, please scan the "Enable Setup Code" setup code (see section 1.5.2).
3. Scan the "Cut length M before modification " setting code
4. Scan the data setting code "0", "D" in sequence.
5. Scan the "Save" setting code
6. Scan the "Transfer only segment" setting code

### **Transfer only the End segment**

**Example: When the decoding information is "1234567890123ABC", the last three bytes "ABC" are output.**

1. Check the character table to get the hexadecimal character corresponding to decimal data "3" as "03"
2. Confirm that the setup code is enabled. If it is not enabled, please scan the "Enable Setup Code" setup code (see section 1.5.2).
3. Scan the "Cut length N after modification " setting code
4. Scan the data setting code "0", "3" in sequence.
5. Scan the "Save" setting code
6. Scan the "Transfer only End segment" setting code

### **Transfer only the Center segment**

**Example: When the decoding information is "12345678900123ABC", the middle four bytes "0123" are output.**

1. Check the character table to get the decimal data "10", "3" corresponding hexadecimal characters are "0A", "03"
2. Confirm that the setup code is enabled. If it is not enabled, please scan the "Enable Setup Code" setup code (see section 1.5.2).
3. Scan the "Cut length N after modification" setting code
4. Scan the data setting code "0", "3" in sequence.
5. Scan the "Save" setting code
6. Scan the "Cut length M before modification" setting code
7. Scan the data setting code "0", "A" in sequence.
8. Scan the "Save" setup code
9. Scan the "Transfer only the segment" setting code



## 2.6 RF information

**RF (Read Fail)** information refers to the reading module in some modes, when the reading is unsuccessful, some information that the user is freely defined is output. After the user or the program detects the information, the corresponding adjustment or operation is performed.



Send RF information



Do not send RF information

### Modify RF information

Scan the “Modify RF Information” setting code and combine the scan data setting code. The user can modify the RF information content. It uses two hexadecimal values for each RF character. The RF can allow up to 15 characters. The hexadecimal value of the character value conversion table can refer to the appendix



Modify RF information

#### Example: Modify user-defined RF information to "FAIL"

1. Check the character table to get the hexadecimal value of the four characters "FAIL": "46", "41", "49", "4C"
2. Confirm that the setup code is enabled. If it is not enabled, please scan the “Enable Setup Code” setup code (see section 1.5.2).
3. Scan the "Modify RF Information" setting code
4. Scan the data setting codes "4", "6", "4", "1", "4", "9", "4", "C" in sequence.
5. Scan the "Save" setting code

## 2.7 The Output Protocol

You can modify the output format of the decoding result in the serial/virtual serial port mode by scanning the following setting code.

The format output with protocol is selected, and the format is as follows: <03> <length>



<decode data>.

In addition, when the protocol output mode is enabled in the serial/virtual serial mode, the module will not add a terminator to the decoded data.

Data



### 3 Barcode Type Enable/Disable Configuration

#### 3.1 All barcodes can be solved

Reading the following setup code will allow all supported barcode types to be read or disabled. After reading all types, only the setting code is allowed to be read.



Enable read all types



Disable read all types



Open the default reading type

#### 3.2 Bar code rotation function

Reading the following setup code will allow 360° rotation reading for all supported barcode types. Disabling 360° rotation will increase decoding speed.



Enable 360° rotation reading



Disable 360° rotation reading

#### 3.3 Enhancement of reading angle

By configuring the enable bar code reading angle enhancement, the reading angle of all bar codes will be improved. Disabling angle enhancement will increase the decoding speed.



Enable angle enhancement

Disable angle enhancement

### 3.4 EAN13

Read the following setup code to set the EAN13 barcode enable/disable reading.



Enable EAN13



Disable EAN13

Read the following setup code to configure EAN13 add-on code read enable or disable



Disable 2-digit add-on code



Enable 2-digit add-on code



Disable 5-digit add-on code



Enable 5-digit add-on code

### 3.5 EAN8

Read the following setup code to set the EAN8 barcode enable/disable reading.



Enable EAN8



Disable EAN8

Read the following setup code to configure EAN8 add-on code read enable or disable



**Disable 2-digit add-on code**

**Enable 2-digit add-on code**



**Disable 5-digit add-on code**



**Enable 5-digit add-on code**

### 3.6 UPCA

Read the following setup code to set the UPCA barcode enable/disable reading.



**Enable UPCA**



**Disabled UPCA**

Read the following setup code to configure UPCA add-on code read enable or disable



**Disable 2-digit add-on code**



**Enable 2-digit add-on code**



**Disable 5-digit add-on code**



**Enable 5-digit add-on code**

### 3.7 UPCE0

Read the following setup code to set the UPCE0 barcode enable/disable reading.



Enable UPCE0



Disable UPCE0

### 3.8 UPCE1

Read the following setup code to set the UPCE1 barcode enable/disable reading.



Enable UPCE1



Disable UPCE1

Read the following setup code to configure UPCE1 add-on code read enable or disable



Disable 2-digit add-on code



Enable 2-digit add-on code



Disable 5-digit add-on code



Enable 5-digit add-on code

### 3.9 Code128



Read the following setup code to set the Code128 barcode enable/disable reading.



**Enable Code128**



**Disable Code128**

Read the following setup code to set the minimum length of the Code128 barcode.



**minimum length 0 for Code128**



**Minimum length 4 for Code128**

Read the following setup code to set the maximum length of the Code128 barcode.



**maximum length 32 for Code128**



**maximum length 255 for Code128**

### 3.10 Code39

Read the following setup code to set the Code39barcode enable/disable reading.



**Minimum length 0 for Code39**



**Minimum length 4 for Code39**

Read the following setup code to set the maximum length of the Code39 barcode.

**Enable Code39**

**Disable Code39**

Read the following setup code to set the minimum length of the Code39 barcode.



Minimum length 0 for Code39



Minimum length 4 for Code39

Read the following setup code to set the maximum length of the Code39 barcode.



maximum length 32 for Code39



maximum length 255 for Code39

Read the following setup code to configure whether Code39 supports Code32 mode and FullAsc mode.



Disable Code32 mode



Enable Code32 mode



Disable FullAsc mode



Enable FullAsc mode

### 3.11 Code93

Read the following setup code to set the Code93 barcode enable/disable reading.



minimum length 0 for Code93



Minimum length 4 for Code93

Read the following setup code to set the maximum length of the Code93 barcode

**Enable Code93**

**Disable Code93**

Read the following setup code to set the minimum length of the Code93 barcode.



minimum length 0 for Code93



Minimum length 4 for Code93

Read the following setup code to set the maximum length of the Code93 barcode



maximum length 32 for Code93



maximum length 255 for Code93

### 3.12 CodeBar

Read the following setup code to set the CodeBar barcode enable/disable reading.



**Enable CodeBar**



**Disable CodeBar**

Read the following setup code to set the CodeBar barcode enable/disable send Start-stop operator.



Enable CodeBar Start-stop operator



Disable CodeBar Start-stop operator

Read the following setup code to set the minimum length of the CodeBar barcode.



minimum length 0 for CodeBar



Minimum length 4 for CodeBar

Read the following setup code to set the maximum length of the Code128 barcode.



**maximum length 32 for CodeBar**

**maximum length 32 for CodeBar**

### 3.13 QR

Read the following setup code to set the QR barcode enable/disable reading.



Enable QR



Disable QR

### 3.14 Interleaved 2 of 5

Read the following setup code to set the Interleaved 2 of 5 barcode enable/disable reading.



Enable Interleaved 2 of 5



Disable Interleaved 2 of 5

Read the following setup code to set the minimum length of the Interleaved 2 of 5 barcode.



minimum length 0 for Interleaved 2 of 5



Minimum length 4 for Interleaved 2 of 5

Read the following setup code to set the maximum length of the Interleaved 2 of 5 barcode.



maximum length 32 for Interleaved 2 of 5



maximum length 255 for Interleaved 2 of 5



### 3.15 Industrial 25

Read the following setup code to set the Industrial 25 barcode enable/disable reading.



**Enable Industrial 25**



**Disable Industrial 25**

Read the following setup code to set the minimum length of the Industrial 25 barcode.



**minimum length 0 for Industrial 25**



**Minimum length 4 for Industrial 25**

Read the following setup code to set the maximum length of the Industrial 25 barcode.



**maximum length 32 for Industrial 25**



**maximum length 255 for Industrial 25**

### 3.16 Matrix 2 of 5

Read the following setup code to set the Matrix 2 of 5 barcode enable/disable reading



**Enable Matrix 2 of 5**



**Disable Matrix 2 of 5**

Read the following setup code to set the minimum length of the Matrix 2 of 5 barcode.



**minimum length 0 for Matrix 2 of 5**



**Minimum length 4 for Matrix 2 of 5**

Read the following setup code to set the maximum length of the Matrix 2 of 5 barcode.



**maximum length 32 for Matrix 2 of 5**



**maximum length 255 for 32 Matrix 2 of 5**

Reading the following setup code will set the verification format for the Matrix2 of 5 barcode.



**Matrix 2 of 5 verification format is Mod10**



**Matrix 2 of 5 verification format is None**

### 3.17 Code11

Read the following setup code to set the Code11 barcode enable/disable reading.



Read the following setup code to set the minimum length of the Code11 barcode.



minimum length 0 for Code11



Minimum length 4 for Code11

Read the following setup code to set the maximum length of the Code11 barcode.



maximum length 32 for Code11



maximum length 255 for Code11

Read the following setup code to configure the Code11 verification mode.



Code11 verification format is 1bit



Code11 verification format is 2bit

### 3.18 MSI

Read the following setup code to set the MSI barcode enable/disable reading.



**Enable MSI**



**Disable MSI**

Read the following setup code to set the minimum length of the MSI barcode



**minimum length 0 for MSI**



**Minimum length 4 for MSI**

Read the following setup code to set the maximum length of the MSI barcode.



**maximum length 32 for MSI**



**maximum length 255 for MSI**

### 3.19 RSS

Read the following setup code to set the RSS barcode enable/disable reading.



**Enable RSS-14**



**Disable RSS-14**

Read the following setup code to set the RSS Limited barcode enable/disable reading.



**Enable RSS Limited**



**Disable RSS Limited**

Read the following setup code to set the RSS Omnidirectional barcode enable/disable reading.



**Enable RSS Omnidirectional**



**Disable RSS Omnidirectional**

Read the following setup code to set the minimum length of the RSS barcode



**minimum length 0 for RSS**



**Minimum length 4 for RSS**

Read the following setup code to set the maximum length of the RSS barcode



**maximum length 32 for RSS**



**maximum length 255 for RSS**

### 3.20 DM

Read the following setup code to set the DM barcode enable/disable reading.



**Enable DM**

**Disable DM**

Read the following setup code to set whether the module supports simultaneous decoding of multiple DM barcodes.



**Disable simultaneous decoding of multiple DM barcodes**



**Enable simultaneous decoding of multiple DM barcodes**

### 3.21 PDF417

Read the following setup code to set the PDF417 barcode enable/disable reading.



**Enable PDF417**



**Disable PDF417**



## 4 Appendix A: Default setting table

LIST 9 1 Default setting table

parameter		default setting	Remarks
<b>Interface</b>			
TTL-232	Baud rate	9600	
	check	None	
	Data bit	8 bit	
	Stop bit	1 bit	
	Hardware flow control	No hardware flow control	
<b>Mode parameter</b>			
Default reading mode		Manual mode	
Serial port trigger mode	Single reading time	5s	Parameter range: 0.1-25.5s,step size 0.1s;  0 means no limit for single decoding time
Manual mode	Trigger level	Low level trigger	Default high

## 5 Appendix B: Common serial command

List 10 1 Common serial command

Features	Serial command
Set baud rate 9600	7E 00 08 01 00 D9 D3 20 38
Save settings to EEPROM	7E 00 09 01 00 00 DE C8
Query baud rate	7E 00 07 01 00 2A 02 D8 0F

After the host sends a serial command to query the baud rate, the reading module will reply the following information:

returned messages	Corresponding baud rate
02 00 00 02 C4 09 SS SS	1200
02 00 00 02 71 02 SS SS	4800
02 00 00 02 39 01 SS SS	9600
02 00 00 02 D0 00 SS SS	14400
02 00 00 02 9C 00 SS SS	19200
02 00 00 02 4E 00 SS SS	38400
02 00 00 02 34 00 SS SS	57600

Note: SS SS is the check value.

## 6 Appendix C: Code ID List

List 11 1 Code ID

Barcode type	Corresponding character	Flag bit address
EAN-13	d	0x91
EAN-8	d	0x92
UPC-A	c	0x93
UPC-E0	c	0x94
UPC-E1	c	0x95
Code 128	j	0x96
Code 39	b	0x97
Code 93	i	0x98
Codabar	a	0x99
Interleaved 2 of 5	e	0x9A
Industrial 2 of 5	D	0x9B
Matrix 2 of 5	v	0x9C
Code 11	H	0x9D
MSI-Plessey	m	0x9E
GS1 Databar(RSS-14)	R	0x9F
GS1 Databar Limited(RSS)	R	0xA0
GS1 Databar Expanded(RSS)	R	0xA1
QR Code	Q	0xA2
Data Matrix	u	0xA3
PDF 417	r	0xA4

## 7 Appendix D: ASCII Code table

list 12 1 ASCII Code table

Hexadecimal	Decimal	character
00	0	NUL
01	1	SOH
02	2	STX
03	3	ETX
04	4	EOT
05	5	ENQ
06	6	ACK
07	7	BEL
08	8	BS
09	9	HT
0a	10	LF
0b	11	VT
0c	12	FF
0d	13	CR
0e	14	SO
0f	15	SI
10	16	DLE
11	17	DC1
12	18	DC2
13	19	DC3
14	20	DC4
15	21	NAK
16	22	SYN
17	23	ETB
18	24	CAN

19	25	EM
1a	26	SUB
1b	27	ESC
1c	28	FS
1d	29	GS

Hexadecimal	Decimal	character
1e	30	RS
1f	31	US
20	32	SP
21	33	!
22	34	"
23	35	#
24	36	\$
25	37	%
26	38	&
27	39	'
28	40	(
29	41	)
2a	42	*
2b	43	+
2c	44	,
2d	45	-
2e	46	.
2f	47	/
30	48	0
31	49	1
32	50	2
33	51	3
34	52	4
35	53	5
36	54	6
37	55	7
38	56	8

39	57	9
3a	58	:
3b	59	;
3c	60	<
3d	61	=
3e	62	>
3f	63	?

Hexadecimal	Decimal	character
40	64	@
41	65	A
42	66	B
43	67	C
44	68	D
45	69	E
46	70	F
47	71	G
48	72	H
49	73	I
4a	74	J
4b	75	K
4c	76	L
4d	77	M
4e	78	N
4f	79	O
50	80	P
51	81	Q
52	82	R
53	83	S
54	84	T
55	85	U
56	86	V
57	87	W
58	88	X
59	89	Y
5a	90	Z



5b	91	[
5c	92	\
5d	93	]
5e	94	^
5f	95	_
60	96	'
61	97	a

Hexadecimal	Decimal	character
62	98	b
63	99	c
64	100	d
65	101	e
66	102	f
67	103	g
68	104	h
69	105	i
6a	106	j
6b	107	k
6c	108	l
6d	109	m
6e	110	n
6f	111	o
70	112	p
71	113	q
72	114	r
73	115	s
74	116	t
75	117	u
76	118	v
77	119	w
78	120	x
79	121	y
7a	122	z
7b	123	{
7c	124	

7d	125	}
7e	126	~
7f	127	DEL

## 8 Appendix E: Data code

0 ~ 9



0



1



2



3



4



5



6



7



8



9

A — F



A



B



C



D



E



F

## 9 Appendix F: Save or Cancel

After reading the data code, you need to scan the "Save" setting code to save the read data. If an error occurs while reading the data code, you can cancel reading the wrong data.

For example, if a certain setting code is read and the data "A", "B", "C", and "D" are sequentially read, if the "Cancel the previous reading of one bit of data" is read, the last reading number "D" will be canceled. if you read "Cancel a series of data read before" will cancel the read data "ABCD", if you read "Cancel modification settings" will cancel the read data "ABCD" and exit the modification Settings.



Save



Cancel the previous reading of one bit of data



Cancel a series of data read before



Cancel modification settings