2D Barcode Hand Scanner
QR-Code Compatible



Digital Product Passport:

Scan the QR-Code for manuals,
declaration of conformity
and other documents

https://dpp.digitus.com/4016032473640

Manual

DA-81002 Rev.B

Table of content

1. Operating Setting 4

1.1 Use of the setting code 4
1.2 Factory Default Reset 4
1.3 User default settings 5

2. Communication Connection 5

2.1 Communication Mode Selection 5
2.2 Serial Communication Interfaces 6
2.3 USB-HID Interface-related configuration 7

3. Reading Mode 9

3.1 Manual Mode 9
3.2 Command trigger mode 11
3.3 Continuous Mode 12
3.4 Induction mode 14

4. Illumination and Aiming 15

4.1 Illumination 15
4.2 Aiming 16

5. Prompt output 16

5.1 Buzzer master switch 16
5.2 Buzzer settings 16
5.3 Set code reading prompt 17
5.4 Power-on prompt 18
5.5 Reading success prompt LED/ prompt tone 18
5.6 Data output encoding format 19
5.7 National keyboard settings 19
5.8 Virtual keyboard enable 20
5.9 Image mirroring mode 22
5.10 Reverse reading mode 23
5.11 Invoicing mode 23
5.12 Read device version information 24
5.13 Write/ read device ID 24

6. Data Edition 25

6.1 Prefix 25
6.2 Suffix 26
6.3 Code ID 26
6.4 Tail 28
6.5 Data section 28
6.6 RF Information 29
6.7 Output protocol 30
6.8 GS Character replacement 30

6.9 URL code reading 31
7. Quick Operation 31
7.1 Fast POS mode 31
7.2 Serial port & full code open mode 31
8. Barcode Setting 32
8.1 Global shortcuts 32
8.2 EAN 12 33
8.3 EAN 8 33
8.4 UPC-A 34
8.5 UPC-E0 35
8.6 UPC-E1 36
8.7 Code 128 37
8.8 Code 39 38
8.9 Code 39 39
8.10 Code Bar 40
8.11 Interleaved 2 of 5 41
8.12 Industrial 25 41
8.13 Matrix 2 of 5 42
8.14 Code 11 43
8.15 MSI 44
8.16 RSS-14 44
8.17 Limited RSS 45
8.18 Limited RSS 45
8.19 Two-dimensional barcode operation 46
9. Save and Cancel 47
9.1 Save 47
9.2 Cancel 47
10. Batch Processing Settings 47

1. Operating Setting

The factory default settings of DA-81002 can meet the needs of users for direct use in most cases. You can also set the parameters through the setting code according to actual needs.

1.1 Use of the setting code

Read the "Enable Setting Code" to configure the function of the reading module (setting code function). After the function is turned on, you can modify the parameters of the reader module by reading one or more setting codes. After reading the "Close Setting Code", the scanning module will exit the setting state.



**Enable Setting Code



Close Setting Code

Set the code content output enable and disable.



Output setting code content



**Do not output the content of the setting code

Note: The options marked with (**) in the setting code indicate the default functions or parameters.

1.2 Factory Default Reset

After reading this setting code, the current parameter setting will be lost and the factory default value will be restored. The factory default parameters and functions can be found in Appendix C.



Restore Factory Default

Note: Please use the "Restore Factory Default" function with caution.

1.3 User default settings

In addition to restoring factory settings, users can save frequently used settings as user default settings. By reading "Save current settings as user default settings", the current device configuration can be saved as user default information for quick settings when needed.



Save current settings as user default settings



Restore User Default Settings

2. Communication Connection

MJ104 reader module provides TTL-232 serial communication interface and USB interface (optional function) to communicate with the host. Through the communication interface, the reading data can be received.

2.1 Communication Mode Selection

The factory defaults to use USB-HID mode for communication. Users can switch between the communication port output modes (TTL-232 serial port mode/virtual serial port/USB-HID mode) through scan code settings. When users need USB and serial port to output at the same time, they can select HID & TTL simultaneous output mode by reading the setting code. When the user switches the communication mode, he needs to wait for the device initialization to complete before performing related operations.
Note: When the module is set as a USB virtual serial port and communicates with the host through this port, the host needs to install the corresponding driver.

Communication Port Output Mode
Read the following setting codes to set the communication output mode.



TTL-232 Serial Mode



**USB-HID Mode



USB Virtual Serial Mode



USB Virtual Serial Mode

2.2 Serial Communication Interfaces

The serial communication interface is a common way to connect the reading module and the host device. When using the serial communication interface, the communication parameter configuration must be completely matched between the reading module and the host device to ensure smooth communication and correct content.
The serial communication interface provided by the reading module is a TTL level signal. The TTL-232 format can be connected to most application architectures, but when the RS-232 format must be used, a conversion circuit needs to be added externally.
The default serial communication parameters of the reading module are as shown in the table below. If they are inconsistent with the host device, they can be modified by reading the setting code.

TTL-232 Default communication parameters:

Parameter	Default
Type	Standard TTL-232
Baud Rate	9600
Parity Type	None
Data Bits	8
Stop Bits	1

Baud Rate
The unit of Baud Rate is bits per second (bps: bits per second), you can read the following setting codes to select configuration parameters.

1200 bps

4800 bps

**9600 bps

38400 bps

19200 bps

38400 bps



57600 bps



115200 bps

Parity Mode



**No Parity (None)



Odd Parity



Even Parity

2.3 USB-HID Interface-related configuration

Communication Mode Selection

When the device is used as a HID device, it can be two different devices. Users can configure by reading the following setting codes.



**HID-KBW



HID-POS

PC to HID device access cycle

Read the following setting codes, you can modify the PC access cycle to the HID device, the cycle range: 1ms～64ms.



**1 ms



3 ms



5 ms



10 ms

Time interval before HID release

Read the following setting codes to modify the time interval before HID release (ie: the time interval from valid message to release message), interval range: 1ms～63ms.



**1ms



2ms



5ms



10ms

Time interval after HID release

Read the following setting codes to modify the time interval after HID release (ie: the time interval from the release of the message to the next valid message), the interval range: 1ms～63ms.



**1 ms



2 ms



5 ms



10ms

Caps Lock Setting



** CapsLock-Off



CapsLock-On

HID leading key output

Users can read the following setting codes to make HID output a leading message before outputting each piece of data, which is convenient for customer software development and positioning. The key value is Ctrl+Shift+r.



**HID Leading prohibition



HID Leading allowance

3. Reading Mode

3.1 Manual Mode

Manual mode is the default reading mode. In manual mode, press the trigger button, and the reading module will start shooting and reading; within the limited time range of "single reading time", if the reading is successful, the reading module will output the reading content through the communication interface and stop reading, if you need to start a new reading, you need to trigger the button again. If the reading exceeds the single reading time, the shooting and reading will be suspended.



**Manual Mode

Trigger Mode

The trigger condition can be selected in manual mode. The default trigger condition is level trigger, or edge trigger can also be selected.

- Edge triggering means that the level pulse of the trigger signal is detected, that is, the reading starts, and the reading ends when the reading is successful or the single reading time condition is reached
- The level trigger condition means that the level of the trigger signal needs to be maintained from the beginning of the reading to the end of the reading. When the trigger level is cancelled, the reading is successful or the reading exceeds the single reading time, the reading ends.
-



Edge triggering



** level trigger condition

Single reading time

The duration of a single reading refers to the longest time allowed to maintain the scanning and reading attempts after the reading is triggered and the reading is unsuccessful. When this time is exceeded, the reading state will be exited. The range of single reading time is 100ms～25500ms. Read the following setting codes to set the duration of a single reading.



1000 ms



3000 ms



** 5000 ms



Infinite

Deep sleep mode

The deep sleep can be set by the following setting codes. Deep sleep is turned on. After a certain period of idle time, the module automatically enters deep sleep.



Deep sleep mode open



** Deep sleep mode close

After entering the deep sleep mode, you can wake up by pressing a button or a serial port command to exit the sleep mode.

Note: The deep sleep function is only effective for manual mode and TTL-232 serial port mode output.

Light sleep idle time

When deep sleep is not enabled, you can also set the idle time for light sleep by scanning the following setting codes.

Note: The light sleep function is only effective for manual mode and TTL-232 serial port mode output.



Light sleep idle time-0ms



**Light sleep idle time-0ms - 500ms



Light sleep idle time-0ms -3000ms



Light sleep idle time-0ms - 5000ms

3.2 Command trigger mode

In command trigger mode, the reading module will start shooting and reading when it receives the trigger signal command sent by the host (that is, the bit 0 of the flag bit 0 x 0002 is written "1"); within the limited time range of "single reading time" If the reading is successful, the reading module will output the reading content through the communication interface and stop reading. If you need to start a new reading, you need to resend the trigger command. If the reading exceeds the single reading time, the reading will be suspended.



Command trigger mode

Note: In command trigger mode, the serial port command of the trigger signal is: 7E 00 08 01 00 02 01 AB CD; after the module receives the read command, the serial port returns the write success command: 02 00 00 01 00 33 31, read mode Turn on.

Read the following setting codes to enable and disable the trigger command response:



Trigger command response prohibition



**Trigger command response allowed

Single reading time
Please refer above to the single reading time length setting code.

3.3 Continuous Mode

Continuous mode is a working mode in which the reading module continuously and cyclically shoots, reads and outputs information.
In this mode, the default reading interval will be 1000ms after successful reading.
In continuous mode, you can use the trigger level control to pause continuous reading or continue continuous reading. During continuous reading, you need to maintain the trigger level above 50ms and then cancel, and the reading will be suspended; in the paused reading state, also maintain the trigger level above 50ms and then cancel to continue reading.



Continuous mode

Reading interval time

It refers to the interval time required for the next reading after the reading is successful. During this interval, no acquisition and reading are performed. Read the following setting codes to set the reading interval. The setting range is 0ms ～ 25500ms, and the default duration is 1000ms.



No interval



200 ms



500 ms



**1000 ms



3000 ms



5000 ms

Same code reading delay

To avoid the same bar code being read multiple times in continuous mode, you can request the read module to delay the set time in this mode before allowing the same bar code to be read. The same code reading delay refers to the refusal to read the same bar code within the set time after reading a bar code. Only after the duration has expired can it be read and output. By default, the same code reading delay is turned off.



The same code reading delay open



**The same code reading delay off

Read the following setting codes to set the same code reading delay time. Setting range：0ms～12700ms

Note: You need to turn on "Same code reading delay" before you can set the delay time.



Infinite delay



500ms



1000 ms



3000 ms



5000 ms

Single reading time

Please refer above to the single reading time length setting code.

3.4 Induction mode

The induction mode refers to a working mode in which the reading module enters the reading by sensing the changes in the brightness of the surrounding environment. When the scene changes, the reading module starts to read. After the reading is successful and the output information or the single reading time expires, the reading module needs a certain interval (settable) to re-enter the monitoring state. If the following conditions do not occur, the reading module will work in cycles as described above: if the barcode is not scanned within a single reading time, the reading module will automatically suspend the reading and enter the monitoring state. In the induction reading mode, the reading module can also start to read the code after pressing the trigger button and continue to monitor the brightness of the surrounding environment when the code is successfully output or the trigger button is released.



Induction mode

Single reading time

Please refer above to the single reading time length setting code.

Reading interval time

Please refer above to the setting code of reading interval time

Same code reading day

For the setting of code reading delay for the same code, please refer above to set the code reading delay for the same code.

Sensitivity

Sensitivity refers to the degree of change in the detection scene in the induction reading mode. When the reading module judges that the degree of scene change meets the requirements, it will switch from the monitoring state to the reading state.



Low sensitivity



**Normal sensitivity



High sensitivity



Very high sensitivity

Image stabilization time
Image stabilization time refers to the time required for the image stabilization of the reading module that detects the scene change in the induction reading mode before reading the code. The setting range of image stabilization time is 0~25500 ms, and the step length is 100ms. The default image stabilization time is 0ms.


**0 ms


100 ms


** 400 ms


1000 ms


2000 ms

4. Illumination and Aiming

4.1 Illumination

There is a set of LEDs on the reading module specially equipped for shooting and reading, providing auxiliary supplementary light, illuminating the light beam on the reading target, improving the reading performance and the ability to adapt to weak ambient light. You can set according to actual conditions of use:

- Illumination on: light is on during shooting, and it is off at other times
- Illumination on constantly: light will continue after the reading module is turned on
- Illumination off constantly: light will not light up under any circumstances


** Illumination on


Illumination on constantly


Illumination off constantly

4.2 Aiming

There is an auxiliary aiming device on the reading module, which projects an indicator line when photographing and reading, prompting the user to read the center of the scene image taken by the reading module.

- Aiming on when taking pictures: light is on during shooting, and it is off at other times
- Aiming on constantly when taking pictures: light is always on during shooting, and it is off at other times
- Aiming on constantly: The locating light will continue to glow after the reading module is turned on.
- Aiming off constantly: In any case, the aiming does not light up



**Aiming on



Aiming on when taking pictures



Aiming on constantly



Aiming off constantly

5. Prompt output

5.1 Buzzer master switch

Read the following setting codes to turn on/off all prompts.



Mute-on



** Mute off

5.2 Buzzer settings

Passive buzzer

Read the following setting codes to set the buzzer as passive and set the driving frequency of the passive buzzer.



** Passive buzzer



Passive_low frequency



** Passive_ medium frequency



Passive_high frequency

Active buzzer

Read the following setting codes to set the buzzer as active and set the working level of the active buzzer. Read "High Level", the buzzer is set to be active when the low level is idle, and the high level is effective when working; Read "Low", the buzzer is set to be active when the high level is idle, and low when working the level is valid.



Active buzzer



** High level



Low level

5.3 Set code reading prompt

Read the following configuration code, you can turn on/off the prompt tone of the configuration code:



** Set Prompt Tone_Enable



Set alert tone_off

5.4 Power-on prompt

When the reading module is successfully powered on, it can output or turn off the power-on prompt sound according to the setting requirements.



** Boot Prompt-On



Boot Prompt-Off

5.5 Reading success prompt LED/ prompt tone

After the reading module is successfully read, it will output BEEP and DLED prompt signals through the 12pin external interface by default, and prompt through the external passive buzzer and LED. According to user needs, these signals can be turned off.



** Turn on the LED indicating successful reading



Turn off the LED indicating successful reading



** Turn on the prompt tone



Turn off the prompt tone for sucessful reading

The user can set the BEEP duration of the prompt tone for successful reading by reading the following setting codes.



30 ms



** 60 ms



90 ms



120 ms

5.6 Data output encoding format

The user can set the output format of the reading module through the following setting codes, so that the host can output Chinese data according to the specified encoding format.

Note: GBK format is used for notepads, and UNICODE format is used for input boxes of Word and common chat tools. Original data output, serial port output for encrypted data.



** Output data format-GBK



Outout data format-UTF8



Output data format-original data



Output data format-UNICODE

5.7 National keyboard settings

To adapt to each country, the device can be set as the "keyboard" corresponding to each country through the following setting code.



** USA



Czekh



French



German



Hungary



Italian



Japanese



Spanish



Turkish Q



Turkish

5.8 Virtual keyboard enable

To adapt to the application environment in more regions, you can set the standard/virtual keyboard output by reading the following setting codes. However, a certain output efficiency will be lost. Note that when using the virtual keyboard, you must ensure that the numeric keys on the keypad are enabled.



** Standard keyboard



Virtual keyboard

Virtual keyboard output method

To be able to adapt to different application scenarios, the virtual keyboard has 2 different output methods for control characters smaller than 0 x 20, and the user can switch by scanning the following setting codes.



** Ctrl mode



Alt mode

Control character transmission

The ASCII characters located between 0 x 00 ~ 0 x 1F can be escaped into a certain control function key. When the virtual keyboard is enabled (other HID Keyboard related settings of the module are default values), the input operation of the control function keys is as follows: (For the specific ASCII value and the corresponding relationship between the control function keys, please refer to the control character correspondence table).

(1) The virtual keyboard Ctrl mode is turned on

- The read data is "A <HT>F (HT is an invisible character, not displayed on the terminal software)" (the hexadecimal value is 0x41/0x09/0x46), the operation of the virtual keyboard of the scan module is as follows:
- Input "A"-press button A
- Enter "Ctrl I" - Since the data of 0 x 09 corresponds to the control function key "I", the virtual keyboard will hold down Ctrl, then press the I key, and finally release the Ctrl and I keys at the same time

- Enter "F"-press button F
- Since "Ctrl I" corresponds to the function of converting characters into italics in some word processing software, you may see normal characters "A" and italic "F" after completing the above operations
- Currently, in the QL1601 small module, the virtual keyboard Ctrl mode "control character output only supports the US keyboard layout

(2) Virtual keyboard Alt mode

- If the virtual keyboard is turned on and set to "Alt mode", the corresponding control character output operation is: ALT+ "character corresponds to ASCII code decimal value". For example, for "<HT>" characters, the virtual keyboard operation of the scanning module is as follows:
- Enter "Alt 0 9"-the virtual keyboard will hold down Alt, then press "0" and "9" on the numeric keypad in turn, and finally release Alt
- When the standard keyboard is output, the control character output function is closed, and the ASCII characters smaller than 0x20 will output the corresponding key value function (For corresponding functions, please refer to the control character correspondence table)

ASCII Function	**ASCII Value（HEX）**	**Control character output is off**	**Control character output Ctrl mode**	**CTRL+X function**
NUL	0	Null	Ctrl+@	
SOH	1	Keypad Enter	Ctrl+A	Select all
STX	2	Caps Lock	Ctrl+B	Bold
ETX	3	ALT	Ctrl+C	Copy
EOT	4	Null	Ctrl+D	Bookmark
ENQ	5	CTRL	Ctrl+E	Center
ACK	6	Null	Ctrl+F	Find
BEL	7	Enter	Ctrl+G	
BS	8	Left Arrow	Ctrl+H	History
HT	9	Horizontal Tab	Ctrl+I	Italic
LF	0A	Down Arrow	Ctrl+J	Justify
VT	0B	Vertical Tab	Ctrl+K	hyperlink
FF	0C	Delete	Ctrl+L	list, left align

CR	0D	Enter	Ctrl+M	
SO	0E	Insert	Ctrl+N	New
SI	0F	Esc	Ctrl+O	Open
DLE	10	F11	Ctrl+P	Print
DC1	11	Home	Ctrl+Q	Quit
DC2	12	PrintScreen	Ctrl+R	
DC3	13	Backspace	Ctrl+S	Save
DC4	14	Tab + Shift	Ctrl+T	
NAK	15	F12	Ctrl+U	
SYN	16	F1	Ctrl+V	Paste
ETB	17	F2	Ctrl+W	
CAN	18	F3	Ctrl+X	
EM	19	F4	Ctrl+Y	
SUB	1A	F5	Ctrl+Z	
ESC	1B	F6	Ctrl+[	
FS	1C	F7	Ctrl+\	
GS	1D	F8	Ctrl+]	
RS	1E	F9	Ctrl+6	
US	1F	F10	Ctrl+-	

5.9 Image mirroring mode

When the image has a mirror flip, you can enter the mirror flip mode by reading the following setting codes.



Image mirror flip-on



**Image mirror flip-off

Note: In the mirror flip mode, only the barcode flipped by the mirror can be recognized. If you need to identify the normal barcode or the setting code, please exit the mirror flip mode first.

5.10 Reverse reading mode

In some special application scenarios, it is necessary to read special barcodes in black and white inverted. Users can enable/disable the reading function of inverted barcodes by reading the following setting codes.



**Reverse phase prohibition



Reverse phase allowed

5.11 Invoicing mode

To facilitate the use of this module in the invoicing system, the user can configure the invoicing mode by reading the setting code to realize the conversion and output of the invoice code format. Invoicing modes include local invoicing mode and online invoicing mode. After the invoicing mode is enabled, the default is local invoicing mode.
Users can realize the conversion and output of invoice code format by reading the following setting codes.



**Enable invoicing



Disable invoicing

After the invoice mode is turned on, you can select the invoicing mode by reading the following setting codes.



**Local invoicing mode



Online invoicing mode

It should be noted that when the user uses the online invoicing mode, the module must be switched to the HID-POS output mode only and used in conjunction with the invoicing assistant.

5.12 Read device version information

Users can quickly obtain the current device version information by reading the following setting codes.



Read device version information

5.13 Write/ read device ID

The user can read and write the ID through the serial port or virtual serial port, and the ID can be up to 16 Bytes (pure numbers and uppercase and lowercase letters)

Write ID format:
WriteDeviceID: What needs to be written. (It can be changed according to requirements)
The return value of the write ID command is the same as the write ID command
Read ID format:
Read DeviceID
Return: DeviceID: ID number
For example: write the device ID for the device: WSMQL16012019101, and read the device ID through instructions
Write ID:
Serial port sending: Write Device ID: WSMQL16012019101.
The serial port returns: Write Device ID: WSMQL16012019101.
Read ID:
Serial port sending: Read Device ID.
Serial port return: Device ID: WSMQL16012019101

Note:
1. There is "." after the instruction as the end mark.

2. When the ID is not written, the device ID is read and "Device ID: NULL" is returned.

3. If the write instruction ID data does not meet the requirements or the instruction format is wrong, the write instruction will not return and the write will fail.
Users can also read the DeviceID operation by reading the following setting codes, and return: DeviceID: ID number.



Read device ID

6. Data Edition

In actual applications, to facilitate data classification and processing, sometimes it is necessary to edit the read data before outputting.
Data editing includes:

- Add prefix (Prefix)
- Add suffix (Suffix)
- Data segment interception of decoded data
- Output barcode Code ID
- Decoding failure characteristic output information (RF information)
- Add ending character (Tail)

The output data format after processing:
(Prefix) (Code ID) (Data) (Suffix) (Tail)

6.1 Prefix

The prefix is a string of character strings defined by the user before the decoded data. The user can add and modify the prefix by reading the following setting codes.



Allow prefix



**Prohibit adding prefix

Read the following setting codes. With the "Data Code" setting code and the "Save" setting code, the user can modify the prefix content.



Modify prefix

Note: The prefix allows up to 15 characters. For each prefix character, two hexadecimal values are used to represent it. Refer to Appendix F for the hexadecimal conversion table of character values

6.2 Suffix

The suffix is a string of character strings defined by the user after the decoded data. The user can add and modify the suffix by reading the following setting codes.



Allow suffix



**Prohibit adding suffix

Read the following setting codes. With the "Data Code" setting code and the "Save" setting code, the user can modify the suffix content.



Modify suffix

Note: The suffix allows up to 15 characters. For each suffix character, two hexadecimal values are used to represent it. Refer to Appendix F for the hexadecimal conversion table of character values.

6.3 Code ID

Add Code ID

Code ID uses one character. Users can add Code ID by reading the following setting codes to identify different barcode types.



Allow Code ID



**Prohibit adding Code ID

Note: Read the following setting codes to restore the default Code ID value of the barcode. Refer to Appendix E for the default list.



Restore the default value of Code ID

Modify Code ID

Users can modify the Code ID corresponding to each barcode by reading the following setting codes.



Modify EAN13 Code ID



Modify EAN18 Code ID



Modify UPC-A Code ID



Modify UPC-E0 Code ID



Modify UPC-E1 Code ID



Modify Code 128 Code ID



Modify Code 39 Code ID



Modify Code 93 Code ID



Modify Codabar Code ID



Modify Interleaved 2 of 5 Code ID



Modify Industrial 25 Code ID



Modify Matrix 2 of 5 Code ID



Modify Code11 Code ID



Modify MS Code ID



Modify RSS Code ID



Modify limited RSS Code ID



Modify extended RSS Code ID



Modify QR Code Code ID



Modify Data Matrix Code ID



Modify PDF417 Code ID

6.4 Tail



Closing terminator



**Add CR terminator (0 x 0D)



Add TAB terminator(0x09)



Add CRLF Terminator (0 x 0D 0 x 0A)

6.5 Data section

Data segment interception
This function is used in scenarios where the user needs to output part of the decoded information.
The decoding information Data consists of 3 parts:
(Start) (Center) (End)
The user can select part of the information to be output by reading the following setting codes.



** Transfer the entire data



Only transfer the Start segment



Only transfer the End segment



Only transfer the middle segment

Data segment length modification

The user can modify the length of the Start segment and the length of the End segment by reading the following setting codes, combined with the "data code" and "saving" setting codes. Both the Start segment and the End segment allow up to 255 characters, and both lengths are represented by one hexadecimal character. Refer to Appendix F for the hexadecimal conversion table of characters.



Modify the length of the Start segment



Modify the End segment length

6.6 RF Information

Read Fail (RF) information refers to the information output when the reading module fails to read, so that the user or the program can make corresponding adjustments or operations after detecting this information. Users can freely define RF information.
Read the following setting codes to enable/disable the sending of RF information.



Allow sending RF information



**Prohibit sending RF information

Read the following setting codes, combined with the "data code" and "save" setting codes, you can define and modify the RF information content by yourself. Each RF character is represented by two hexadecimal values, and a maximum of 15 characters are allowed. Refer to Appendix F for the character corresponding hexadecimal conversion table.



Modify RF information

Note: When inputting an odd number of hexadecimal values, the last digit setting fails and only the first few characters are output.

6.7 Output protocol

The user can modify the output format of the decoding result in the virtual serial port/serial port mode by reading the following setting codes.
The format of the decoded result with protocol output is: <03><length><decoded data>



**Pure data output



With protocol ouput

6.8 GS Character replacement

As the group separator, GS was used in the European Medicines Agency barcode after the 2012 London Olympics. Since GS characters are invisible in many text display tools, some areas need to replace GS with characters that can be displayed. In other words, replace the 0x1D byte in the ASCII code table with the displayable byte in ASCII.
Currently, the QR decoding module temporarily supports replacing GS with characters 0x20-0x7E in ASCII.
The replacement method is as follows:
1) Read the setting code of "GS character replacement enable"
2) Read the setting code of "GS replacement character modification"
3) The character replaced by GS is represented by two hexadecimal values, and the corresponding hexadecimal conversion table of the character is shown in Appendix F
4) Read the "Save" setting code:



GS Character replacement enable



** GS Character replacement prohibited

Read the following setting codes. With the “Data Code” setting code and the “Save” setting code, the user can modify the GS replacement characters.



GS Replacement character modification

6.9 URL code reading

Read the following setting codes to allow and prohibit settings for the URL code reading function



**Allow to read URL codes



Prohibit reading URL codes

7. Quick Operation

7.1 Fast POS mode

POS mode features:

- Reading mode: command trigger mode
- Communication port: serial port
- Turn off the power-on prompt
- It is forbidden to add terminator
- Users can quickly configure the reading device to work in POS mode by reading the following setting codes.



Fast POS mode

7.2 Serial port & full code open mode

To facilitate customers to quickly configure to the serial port and full-code open mode during the secondary development process, the quick configuration function can be realized by reading the following setting codes.



Serial port & full code open mode

8. Barcode Setting

8.1 Global shortcuts

Global operation

Users can read the following setting codes to enable/disable reading globally and enable the default reading type for all supported symbologies. After prohibiting reading all types of symbologies, only setting codes are allowed to be read.



Allow reading all types



Prohibit reading all types



** Open the default reading type

Commodity barcode check digit output enable

The user can read the following setting codes to allow/prohibit the output of the product barcode check digit (the product barcode includes: EAN13/EAN8/UPC-A/UPC-E0/UPC-E1).



**Allow product code check digit output



Prohibit the output of product code check digit

Improved literacy

Enabling and disabling enhanced barcode reading ability can be performed by reading the following setting codes. After the enhanced reading ability is enabled, the ability to read special codes such as stained barcodes and QR code curved surfaces can be improved. Enhancing the literacy ability will increase the decoding speed.



**Prohibition of strengthening literacy



Reading ability enhancement enable

8.2 EAN 12

Permit and Prohibit the reading function
The user can allow or prohibit the EAN13 barcode reading function by reading the following setting codes.



**Allow EAN13 reading



Prohibit EAN13 reading

Additional code forced output function allows and prohibits
The user can enable or disable the forced output function of EAN13 additional codes by reading the following setting codes.



EAN13 Force output additional code



**EAN13No additional code required

Users can read the following setting codes to configure the EAN13 additional code enabling and disabling.



EAN13-2-digit additional code enable



** EAN13-2-digit additional code disable



EAN13-5-digit additional code enable



** EAN13-5-digit additional code disable

8.3 EAN 8

Data segment interception
The user can allow or prohibit the EAN8 barcode reading function by reading the following setting codes.



**Allow EAN8 reading



Prohibit EAN13 reading

Additional code forced output function allows and prohibits
Users can enable or disable the forced output of EAN8 additional codes by reading the following setting codes.



EAN8 Force output additional code



**EAN8 No additional code required

Users can read the following setting codes to configure the EAN8 additional code enabling and disabling.



EAN8-2-digit additional code enable



** EAN8-2-digit additional code disable



EAN8-5-digit additional code enable



** EAN8-5-digit additional code disable

8.4 UPC-A

Permit and prohibit the reading function
The user can allow and prohibit the UPC-A barcode reading function by reading the following setting codes.



**Allow UPC-A reading



Prohibit UPC-A reading

Additional code forced output function allows and prohibits



UPC-AForce output additional code



**UPC-A No additional output required

Users can read the following setting codes to configure the UPC-A additional code enabling and disabling.



UPC-A-2-digit additional code enable



** UPC-A-2-digit additional code disable



UPC-A-5-digit additional code enable



** UPC-A-5-digit additional code disable

UPC-A conversion EAN13 enable

The user can allow/disable the conversion of UPC-A to EAN13 by reading the following setting codes.



Allow UPC-A to EAN13



**Prohibit UPC-A to EAN13

8.5 UPC-E0

Permit and prohibit the reading function

The user can allow and prohibit the UPC-E0 barcode reading function by reading the following setting codes.



**Allow UPC-E0 reading



Prohibit UPC-E0 reading

Additional code forced output function allows and prohibits

The user can enable and disable the UPC-E0 additional code forced output function by reading the following setting codes.



UPC-E0 Force output additional code



**UPC-E0No additional code required

Users can read the following setting codes to configure the UPC-E0 additional code enabling and disabling.



UPC-E0-2-digit additional code enable



** UPC-E0-2-digit additional code disable



UPC-E0-5-digit additional code enable



** UPC-E0-5-digit additional code disable

8.6 UPC-E1

Permit and prohibit the reading function

The user can allow and prohibit the UPC-E1 barcode reading function by reading the following setting codes.



**Allow UPC-E1 reading



Prohibit UPC-E1 reading

Additional code forced output function allows and prohibits

The user can enable and disable the UPC-E1 additional code forced output function by reading the following setting codes.



UPC-E1 Force output additional code



**UPC-E1No additional output required

Users can read the following setting codes to configure the UPC-E1 additional code enabling and disabling.



UPC-E1-2-digit additional code enable



** UPC-E1-2-digit additional code disable



UPC-E1-5-digit additional code enable



** UPC-E1-5-digit additional code disable

8.7 Code 128

Permit and prohibit the reading function

The user can enable or disable the Code128 barcode reading function by reading the following setting codes.



**Allow Code128 reading



Prohibit Code128 reading

Reading length setting

Users can set the shortest and longest reading length of Code128 by reading the following setting codes.



Code128 min length of the message 0



**Code128 min length of the message 4



**Code128 max length of the message 32



Code128 max length of the message 255

8.8 Code 39

Permit and prohibit the reading function

The user can enable or disable the barcode reading function of Code 39 by reading the following setting codes.



**Allow Code 39 reading



Prohibit Code39 reading

Reading length setting

Users can set the shortest and longest reading length of Code39 by reading the following setting codes.



Code39 min length of the message 0



**Code39 min length of the message 4



**Code39 max length of the message 32



Code39 max length of the message 255

Start character and end character output settings

The user can set the output of Code 39 start character and end character by reading the following setting codes.



Code 39 Start character output



**Code 39 start character is not output



Code 39 Terminator output



**Code 39 Terminator is not output

Code 32 Mode

Users can set whether Code39 supports Code32 mode by reading the following setting codes.



Support Code 32 mode



**Not support Code 32mode

The user can set whether to output the Code32 prefix by reading the following setting codes.



**Code32 Prefix A output



Code 32 Prefix A not output

Full Asc Mode

Users can set whether Code39 supports FullAsc mode by reading the following setting codes.



Support Full Asc Mode



**Not support Full Asc Mode

8.9 Code 39

Permit and prohibit the reading function

The user can enable or disable the Code 93 barcode reading function by reading the following setting codes.



**Allow Code 93 reading



Prohibit Code 93 reading

Reading length setting

Users can set the shortest and longest reading length of Code93 by reading the following setting codes.



Code 93 min length of the message 0



**Code 93 min length of the message 4



**Code93 max length of the message 32



Code93 max length of the message 255

8.10 Code Bar

Permit and prohibit the reading function

The user can enable or disable the Code 93 barcode reading function by reading the following setting codes.



**Allow CodaBar reading



Prohibit CodaBar reading

Reading length setting

Users can set the shortest and longest reading length of Code93 by reading the following setting codes.



CodaBar min length of the message 0



**CodaBar min length of the message 4



**CodaBar max length of the message 32



CodaBar max length of the message 255

Start character and end character output settings

The user can set the start and end symbol output of CodaBar by reading the following setting codes.



CodaBar Start and end character output



**CodaBar Start and end characters not output

8.11 Interleaved 2 of 5

Permit and prohibit the reading function

Users can enable or disable the Interleaved 2 of 5 barcode reading function by reading the following setting codes.



Allow Interleaved 2 of 5 reading



**Prohibit Interleaved 2 of 5 reading

Reading length setting

Users can set the shortest and longest reading length of Interleaved 2 of 5 by reading the following setting codes.



Interleaved 2 of 5 min length of the message 0



**Interleaved 2 of 5 min length of the message 4



**Interleaved 2 of 5 max length of the message 32



Interleaved 2 of 5 max length of the message 255

8.12 Industrial 25

Permit and prohibit the reading function

Users can enable and disable the barcode reading function of Industrial 25 by reading the following setting codes.



Allow Industrial 25 reading



**Prohibit Industrial 25 reading

Reading length setting
Users can set the shortest and longest reading length of Industrial 25 by reading the following setting codes.



Industrial 25 min length of the message 0



**Industrial 25min length of the message 4



**Industrial 25 max length of the message 32



Industrial 25 max length of the message 255

8.13 Matrix 2 of 5

Permit and prohibit the reading function
Users can enable or disable the Matrix 2 of 5 barcode reading function by reading the following setting codes.



Allow Matrix 2 of 5 reading



** Prohibit Matrix 2 of 5 reading

Reading length setting
Users can set the shortest and longest reading length of Matrix 2 of 5 by reading the following setting codes.



Matrix 2 of 5 min length of the message 0



**Matrix 2 of 5min length of the message 4



**Matrix 2 of 5 max length of the message 32



Matrix 2 of 5 max length of the message 25

Verify format setting
Users can set the Matrix 2 of 5 verification format by reading the following setting codes.



Matrix2 of 5 verification format is Mod 10



**Matrix 2 of 5 verification format is None10

8.14 Code 11

Permit and prohibit the reading function
Users can enable and disable the Code11 barcode reading function by reading the following setting codes.



Allow Code11 reading



** Prohibit Code 11 reading

Reading length setting
Users can set the shortest and longest reading length of Code11 by reading the following setting codes.



Code11 min length of the message 0



**Code11 min length of the message 4



**Code11 max length of the message 32



Code11max length of the message 255

Verification method setting
The user can set the Code11 verification mode by reading the following setting codes.



**Code11-1 bit verification



Code11-2 bit verification

8.15 MSI

Permit and prohibit the reading function



Allow MSI reading



** Prohibit MSI reading

Reading length setting
Users can set the shortest and longest reading length of MSI by reading the following setting codes.



MSI min length of the message 0



**MSI min length of the message 4



**MSI max length of the message 32



MSI max length of the message 255

8.16 RSS-14

Permit and prohibit the reading function
Users can enable and disable the RSS-14 barcode reading function by reading the following setting codes.



Allow RSS-14 reading



** Prohibit RSS-14 reading

8.17 Limited RSS

Permit and prohibit the reading function
Users can allow and prohibit the limited RSS barcode reading function by reading the following setting codes.



Allow limited RSS reading



**Prohibit limited RSS reading

8.18 Limited RSS

Permit and prohibit the reading function
Users can allow and prohibit the restricted RSS barcode reading function by reading the following setting codes.



Allow extended RSS reading



**Prohibit extended RSS reading

Reading length setting



Extended RSS min length of the message 0



**Extended RSS min length of the message 4



**Extended RSS max length of the message 32



Extended RSS max length of the message 255

8.19 Two-dimensional barcode operation

QR Code

Users can enable and disable the QR Code reading function by reading the following setting codes.



**Allow QR reading



Prohibit QR reading

Data Matrix

Users can enable and disable the Data Matrix Code reading function by reading the following setting codes.



**Allow DM reading



Prohibit DM reading

The user can allow and prohibit the simultaneous reading of multiple DM codes by reading the following setting codes.



Allow reading multiple DM functions at same time



**Prohibit reading multiple DM functions at same time

PDF 417



**Allow PDF417 reading



Prohibit PDF417 reading

9. Save and Cancel

9.1 Save

After reading "Data Code", you need to read the "Save" setting code to save the data.



Save

9.2 Cancel

When there is an error in reading the data, the following setting codes can be read to cancel the current setting, cancel the data read previously, and cancel a string of data read previously.



Cancel one bit of data previously read



Cancel a string of data previously read



Cancel current setting

Note: To cancel the current setting, all the data codes read before are canceled, and the setting needs to be reset after canceling

10. Batch Processing Settings

When multiple settings are required to read the device, setting one by one may be cumbersome. The user can save all the information that needs to be set as a QR code, and the device can complete multiple settings after reading the QR code.
The following are the guidelines for batch processing:

1. Batch processing setting code content format:
   @WSM+ [Command parameter 1],
   [Command parameter 2],
   [Command parameter n]

For the command parameters that can be set in batches, please refer to Appendix G Batch Setting Command Parameter List.

2. Every two parameters are separated by an English semicolon ";", and the end is ended by an English semicolon. Note that there can be no spaces between the semicolon and the command.

3. The batch setting allows up to 30 parameter settings at the same time.

4. Make the setting content that conforms to the batch processing setting code format as a QR code in the coding software and read the setting code for batch setting.

For example: turn on the setting code (command parameter: 00000000), induction mode (command parameter: 02000003), the fill light is on when taking pictures (command parameter: 03000000), single reading time -3000ms (command parameter: 0202001E), prohibition Read the command code of Interleaved 2 of 5 (command parameter: 070A0100), then the batch setting code content is as follows:
@WSM00000000; 02000003; 03000000; 0202001E; 070A0100;
When batch setting is required, the setting can be completed by reading the batch setting code that has been produced.

Note:

1. When performing batch settings, you must ensure that "setup code is turned on"

2. If the content of the batch setting code does not meet the setting code rules, or the setting command parameters are not included in the list of settable parameters, the setting failure will occur.

Appendix

Appendix A: Data Code

0 ～ 9



0



1



2



3



4



5

6

7

8

9

A ~ F

A

B

C

D

E

F

Hereby Assmann Electronic GmbH declares that the Declaration of Conformity is part of the shipping content. If the Declaration of Conformity is missing, you can request it by posting under the below manufacturer address.

info@assmann.com
Assmann Electronic GmbH
Auf dem Schüffel 3
58513 Lüdenscheid
Germany