



# **Serial Programming Commands Manual**

**V1.2 2010816 Release**

## Revisions

Version	Description	Data
V1.0	Initial release	2008-07-12
V1.1	Add “Return Value”	2010-02-04
V1.2	Add Note to “Maximum allowed length of setting syntax”, Add “Engine commands control”	2010-08-11

## Contents

1.	Overview .....	1
2.	Reader .....	1
3.	Convention .....	1
4.	Query syntax .....	2
4.1.	Query syntax 1.....	2
4.2.	Query syntax 2.....	2
5.	Setting syntax .....	3
5.1.	Setting syntax 1: Command.....	3
5.2.	Setting syntax 2: Command + equal mark + number .....	3
5.3.	Setting syntax 3: command + equal mark + hex (e.g., 0x101a, 0x2C03) .....	3
5.4.	Setting syntax 4: command + equal mark+ double quotation marks.....	3
6.	Return Value.....	3
7.	Common functions and commands setting .....	4
7.1.	Engine commands control.....	4
8.	Query command list.....	5
9.	Setting command list.....	10
9.1.	Overall .....	10
9.2.	Communication Selection .....	10
9.3.	Hardware setting.....	11
9.4.	Data format .....	12
9.5.	Decoder Mode .....	13
9.6.	1D bar code selection.....	14
9.7.	2D Bar Code Selection .....	17
9.8.	OCR Selection .....	18
10.	Appendix .....	19
10.1.	A contrast list of default for CodeID and AIM .....	19
10.2.	Type number of Code.....	19
10.3.	Type number of Keyboard country .....	20

## 1. Overview

The serial programming commands can be used in place of the setting code. Both the serial programming commands and the setting code will set the device. The complete descriptions and function of the serial programming commands refer to corresponding < Setting code users manual >.

From the point of application, the customer can understand the communication protocol and the command list quickly, then the customer can control the device through program corresponding application software

The last section of this manual offer some solve ways of the problems happened under the control of application software or in the practice.

The following commands can be sent via a PC COM port using terminal emulation software or the users' application.

## 2. Reader

This manual is for the application software development engineers or the engineers who want to understand the device

## 3. Convention

The following conventions are used for item and query command descriptions:

Prefix	Prefix, or sign Prefix1: 0x7E 0x00 Prefix2: 0x02 0x00
Lens	Length of the data, 2bytes(len0,len1 ),namely $Len0 \ll 8 + len1 = lens$ e.g. If Lens=8, then len0= 0x00,len1= 0x08.
Types	Data types, 1bytes
Date1	Data, the length is within 32 bytes
LRC	Data checkout value 1bytes Accounting methof: $0xff \text{ xor } lens \text{ xor } types \text{ xor } data$
ASK:	Detect device '?'
Reply:	the character of the device reply '!'.

The other stipulation:

Alternation of the command and response delay

After a command is sent out, the alternation lies on the following two factors

a. Received the reply information

The natural waiting time of reply should be 500ms, if excess 500ms it can be thought as connect fail or access jam

b. The longest waiting time

The natural waiting time 500ms is the longest waiting time.

## 4. Query syntax

### 4.1. Query syntax 1

Enter: {prefix1} {lens} {data1} {LRC}

Response: {prefix2} {lens} {types} {data1} {LRC}

The syntax are used for Query parameters of Communication、Disable or Enable of 1D Bar codes、Disable or Enable of 2D Bar codes、Light and aiming、Self-suffix and self-prefix、CodeID、AIM、suffix of terminal character、Maximum and Minimum length、Prefix order、Reading mode、Sensibility、Delay Time Of Each Reading、No Duplicate Reading、version、ESN、S/N、Date、OCR etc.

E.g.: Query ESN of the device

The syntax structure :

Enter: **prefix1** + **lens** + "3H**020**" + LRC

Response: **prefix2** + **lens** + **types(0x34)** + "**02**" + **Datalens(2bytes, decimalist)+**" "+LRC

The enter and response :

Enter(HEX):

**\7E\00\00\05\33\48\30\32\30\B3**

Response(HEX):

**\02\00\00\12\34\30\32\31\33\53\57\30\35\38\33\38\33\4B\48\2D\35\36\F5**

That means:

The ESN of the device is **SW058383KH-56**.

### 4.2. Query syntax 2

Enter: {ASK}

Response: {Reply}

e.g.: Query the device is in the state of connection or not

The enter and response :

Enter: ?

Response: !

The result of the Query is only, if the answer is not "!" or there is no answer, that means the communication parameter between the device is not consistent or the device is in the state of reading barcode or sending the information.

## 5. Setting syntax

Multi-command is allowed, every command is ended with semicolon.

NOTE: Using this setting syntax, the maximum length for batch commands is 100 bytes.

Command structure: “nls” or “NLS” + command (+ equal mark + setting information)

The setting command list is provided below

There are 4 setting command modes

### 5.1. Setting syntax 1: Command

The most command is the one can be set at one time without the command.

e.g.:

The command setting the baud rate as 38400 bps: NLS0100060

The command setting auto barcode reading: NLS0302010

### 5.2. Setting syntax 2: Command + equal mark + number

This command is used for setting the value of parameter, including the longest and shortest length of the barcode, barcode reading delay setting, same delay time setting, sensitive value setting, barcode reading times setting, non-standard parameter, etc.

e.g.:

The command setting the delay of barcode reading as 3000ms: NLS0313000 = 3000

The command setting the sensitive value as 10: NLS0312040 = 10

### 5.3. Setting syntax 3: command + equal mark + hex (e.g., 0x101a, 0x2C03)

This command can be used as setting the user-defined prefix, user-defined suffix, ending suffix, CodeID, increase or cancel the barcode length value, information intercepting, etc. Note: every two hexes in the command stand for a setting character

e.g.:

Append the fixed length 4 of interleaved 2of 5 to 26: NLS0405160 = 0x041a

Setting the suffix information of the ending as CR/LF: NLS0310000 = 0x0d0a

### 5.4. Setting syntax 4: command + equal mark+ double quotation marks

If the setting information is viewable character, then this mode of setting is appropriate .

e.g.:

The command setting the user-defined prefix information as AUTO-ID :  
NLS0300000 = “AUTO-ID”

## 6. Return Value

When received a set command, the equipment would process it and returned a byte of response data.

0x06 expressed successfully set; 0x15 expressed failure

## **7. Common functions and commands setting**

### **7.1. Engine commands control**

**Analog trigger setting:** Sent "0x1b, 0x31" to the device through the serial port such as to press analog-trigger buttons. If the device answers "0x06" that setting is successful. The default trigger timeout is 3000ms. Time-out can be changed by "Set Delay Of Reading". (Via serial port to send "nls0313000 = timeout," timeout unit is ms)

**Trigger stop settings:** Send "0x1b, 0x30" to the device through the serial port such as to release the analog-trigger buttons. If the device answers "0x06" that setting is successful and the device will stop reading barcode (The device will wait for hardware triggering or the triggering command).

**Automatic reading settings:** Device through the serial port to send "0x1b, 0x32" such as to press analog trigger button. If the device answers "0x06" that setting is successful.

**Continuous reading settings:** Device through the serial port to send "0x1b, 0x33" such as to press analog trigger button, If the device answers "0x06" that setting is successful.

## 8. Query command list

Query syntax 1:

Enter: {prefix1} {lens} {types} {data1} {LRC}

Response: {prefix2} {lens} {types} {data1} {LRC}

NOTE: The prefix 1 of all the Query Syntax 1 are "0x7E\0X00", types are "0x33", the prefix 2 of all the Response are "0x02\0X00", types are "0x34", the lens value is the length of data 1+1.

Query Syntax 1 command list

Selection	Length and information of the Query command																								
Communication	Query	Byte	4																						
		Data l	0x30																						
	Response	Byte	4																						
		Data l	32 Bits																						
			<table><tr><td>31</td><td>30..9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td></tr></table>			31	30..9	8	7	6	5	4	3	2	1	0									
			31	30..9	8	7	6	5	4	3	2	1	0												
			Bit 3-0: Baud Rate		<table><tr><td>0000:</td><td>1200</td></tr><tr><td>0001:</td><td>2400</td></tr><tr><td>0010:</td><td>4800</td></tr><tr><td>0011:</td><td>9600</td></tr><tr><td>0100:</td><td>14400</td></tr><tr><td>0101:</td><td>19200</td></tr><tr><td>0110:</td><td>38400</td></tr><tr><td>0111:</td><td>57600</td></tr><tr><td>1000:</td><td>115200</td></tr><tr><td>1001...1111:</td><td>Reserved</td></tr></table>	0000:	1200	0001:	2400	0010:	4800	0011:	9600	0100:	14400	0101:	19200	0110:	38400	0111:	57600	1000:	115200	1001...1111:	Reserved
			0000:	1200																					
			0001:	2400																					
			0010:	4800																					
			0011:	9600																					
			0100:	14400																					
0101:	19200																								
0110:	38400																								
0111:	57600																								
1000:	115200																								
1001...1111:	Reserved																								
Bit 5-4: check bits		<table><tr><td>00:</td><td>None</td></tr><tr><td>01:</td><td>even</td></tr><tr><td>10:</td><td>odd</td></tr></table>	00:	None	01:	even	10:	odd																	
00:	None																								
01:	even																								
10:	odd																								
Bit 6: Stop bits		<table><tr><td>0:</td><td>1</td></tr><tr><td>1:</td><td>2</td></tr></table>	0:	1	1:	2																			
0:	1																								
1:	2																								
Bit 8-7: data bits		<table><tr><td>00:</td><td>5</td></tr><tr><td>01:</td><td>6</td></tr><tr><td>10:</td><td>7</td></tr><tr><td>11:</td><td>8</td></tr></table>	00:	5	01:	6	10:	7	11:	8															
00:	5																								
01:	6																								
10:	7																								
11:	8																								
Bit 30-9:		Reserved																							
Bit 31: communication port		<table><tr><td>0:</td><td>COM1</td></tr><tr><td>1:</td><td>COM2</td></tr></table>	0:	COM1	1:	COM2																			
0:	COM1																								
1:	COM2																								



Selection	Length and information of the Query command																																								
Disable or Enable of 1D Bar codes	Query	Byte	4																																						
		Data1	0x32																																						
	Response	Byte	4																																						
		Data1	32 Bits <div style="display: flex; align-items: center; justify-content: center; gap: 10px;"> <div style="border: 1px solid black; padding: 2px 5px;">31</div> <div style="border: 1px solid black; padding: 2px 5px;">.....</div> <div style="border: 1px solid black; padding: 2px 5px;">1</div> <div style="border: 1px solid black; padding: 2px 5px;">0</div> </div> <p>1 means the relevant code can be read, 0 means prohibitive</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>Bit0</td><td>ZASETUP</td><td>Bit10</td><td>Reserved</td></tr> <tr> <td>Bit1</td><td>SETUP128</td><td>Bit11</td><td>ChinaPost25</td></tr> <tr> <td>Bit2</td><td>CODE128</td><td>Bit12</td><td>Reserved</td></tr> <tr> <td>Bit3</td><td>UCC/EAN128</td><td>Bit13</td><td>CODE39</td></tr> <tr> <td>Bit4</td><td>EAN-8</td><td>Bit14</td><td>Reserved</td></tr> <tr> <td>Bit5</td><td>EAN-13</td><td>Bit15</td><td>CODABAR</td></tr> <tr> <td>Bit6</td><td>UPC-E</td><td>Bit16</td><td>Reserved</td></tr> <tr> <td>Bit7</td><td>UPC-A</td><td>Bit17</td><td>CODE93</td></tr> <tr> <td>Bit8</td><td>Interleaved2OF5</td><td>Bit18</td><td>CODEZ</td></tr> <tr> <td>Bit9</td><td>Reserved</td><td>Bit19~31</td><td>Reserved</td></tr> </table>	Bit0	ZASETUP	Bit10	Reserved	Bit1	SETUP128	Bit11	ChinaPost25	Bit2	CODE128	Bit12	Reserved	Bit3	UCC/EAN128	Bit13	CODE39	Bit4	EAN-8	Bit14	Reserved	Bit5	EAN-13	Bit15	CODABAR	Bit6	UPC-E	Bit16	Reserved	Bit7	UPC-A	Bit17	CODE93	Bit8	Interleaved2OF5	Bit18	CODEZ	Bit9	Reserved
Bit0	ZASETUP	Bit10	Reserved																																						
Bit1	SETUP128	Bit11	ChinaPost25																																						
Bit2	CODE128	Bit12	Reserved																																						
Bit3	UCC/EAN128	Bit13	CODE39																																						
Bit4	EAN-8	Bit14	Reserved																																						
Bit5	EAN-13	Bit15	CODABAR																																						
Bit6	UPC-E	Bit16	Reserved																																						
Bit7	UPC-A	Bit17	CODE93																																						
Bit8	Interleaved2OF5	Bit18	CODEZ																																						
Bit9	Reserved	Bit19~31	Reserved																																						

Selection	Length and information of the Query command												
Disable or Enable of 2D Bar codes	Query	Byte	4										
		Data1	0x33										
	Response	Byte	4										
		Data1	32 Bits <p>1 means the relevant code can be read, 0 means prohibitive</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>Bit0</td><td>PDF417</td><td>Bit3</td><td>DataMatrix</td></tr> <tr> <td>Bit1</td><td>QR Code</td><td>Bit4</td><td>MaxiCode</td></tr> <tr> <td>Bit2</td><td>AZTEC</td><td>Bit5~31</td><td>Reserved</td></tr> </table>	Bit0	PDF417	Bit3	DataMatrix	Bit1	QR Code	Bit4	MaxiCode	Bit2	AZTEC
Bit0	PDF417	Bit3	DataMatrix										
Bit1	QR Code	Bit4	MaxiCode										
Bit2	AZTEC	Bit5~31	Reserved										

Selection	Length and information of the Query command		
Light and aiming	Query	Byte	4
		Data1	0x35
	Response	Byte	4
		Data1	32 Bits <div style="display: flex; align-items: center; gap: 5px;"> <div style="border: 1px solid black; padding: 2px;">31..4</div> <div style="border: 1px solid black; padding: 2px;">3</div> <div style="border: 1px solid black; padding: 2px;">2</div> <div style="border: 1px solid black; padding: 2px;">1</div> <div style="border: 1px solid black; padding: 2px;">0</div> </div>
		Bit 1-0: Aiming mode	00: general aiming mode, the aiming lights when the scan trigger is pressed 01: LED Always On 10: LED Always Off 11: reserved
		Bit 3-2: Light mode	00: general light mode, only light when read the CMOS data 01: LED Always On 10: LED Always Off 11: reserved
		Bit 31-4:	Reserved
Self-suffix and self-prefix	Query	Byte	1
		Data1	0x37
	Response	Byte	4 byte +prefix data length +suffix data length
		Data1	Prefix enable or disable (1byte:0x30 or 0x31, 0x30: disable, 0x311: enable) +prefix length (1byte) +prefix data +suffix enable or disable (1byte:0x30 or 0x31, 0x30: disable, 0x311: enable) +suffix length (1byte) +suffix data
CodeID	Query	Byte	3
		Data1	Byte1: 0x38 Byte2-3: Query barcode type serial number refer to the attach table-Type number of Code
	Response	Byte	4
		Data1	enable or disable (1byte:0x30 or 0x31, 0x30: disable, 0x311: enable) + barcode type number (2bytes) + Code ID (1byte)
AIM	Query	Byte	1
		Data1	0x39
	Response	Byte	1
		Data1	0x30: Disable 0x31: One character mode (c) 0x32: Two character mode (cm) 0x33: Full mode (jcm)

Selection	Length and information of the Query command		
suffix of terminal character	Query	Byte	1
		Data1	0x40
	Response	Byte	2byte + length of terminal character suffix
		Data1	Enable or disable (1byte:0x30 or 0x31, 0x30: disable, 0x31: enable) + length of terminal character suffix (1byte) + terminal character suffix
Maximum and Minimum length	Query	Byte	3
		Data1	Byte1: 0x41 Byte2-3: Query barcode type serial number refer to the attach table: Type number of Code
	Response	Byte	10
		Data1	Barcode type number (2bytes) + maximal barcode length (4bytes) + minimal barcode length (4bytes)
Prefix order	Query	Byte	1
		Data1	0x42
	Response	Byte	1
		Data1	0x30: CodeID+AIM +Self-prefix 0x31: CodeID+Self-prefix+AIM 0x32: AIM + CodeID+Self-prefix 0x33: AIM +Self-prefix+ CodeID 0x34: Self-prefix+CodeID+AIM 0x35: Self-prefix+AIM +CodeID
Reading mode	Query	Byte	4
		Data1	0x42+0x30+0x30+0x 30
	Response	Byte	3
		Data1	0x30+0x30+0x30: Trigger 0x30+0x30+0x31: Auto Scan 0x30+0x30+0x32: Continue Scan
Sensibility	Query	Byte	4
		Data1	0x42+0x30+0x32+0x30
	Response	Byte	5
		Data1	0x30+0x32+0x31+ Sensibility value (2bytes)
Delay Time Of Each Reading	Query	Byte	4
		Data1	0x42+0x30+0x33+0x30
	Response	Byte	11
		Data1	0x30+0x33+0x30+ 0x30 +delay value (7bytes:0~3600000)

Selection	Length and information of the Query command		
No Duplicate Reading	Query	Byte	4
		Data1	0x42+0x30+0x33+0x31
	Response	Byte	14
		Data1	0x30+0x33+0x31 +completely delay or no (1byte:0x30 or 0x31, 0x30: disable, 0x31: enable) + delay value (7bytes:0~3600000)
version	Query	Byte	1
		Data1	0x47
	Response	Byte	160
		Data1	Translate the hex number to visible characters, you will get the version information
ESN	Query	Byte	4
		Data1	0x48+0x30+0x32+0x30
	Response	Byte	4byte + length of ESN
		Data1	0x30+0x32+ length of ESN (2bytes) + ESN
S/N	Query	Byte	4
		Data1	0x48+0x30+0x33+0x30
	Response	Byte	4byte + length of S/N
		Data1	0x30+0x33+ length of S/N (2bytes) + S/N
Date	Query	Byte	4
		Data1	0x48+0x30+0x34+0x30
	Response	Byte	4byte + length of Date
		Data1	0x30+0x34+ length of Date (2bytes) + Date
OCR	Query	Byte	1
		Data1	0x49
	Response	Byte	4
		Data1	32 Bits <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px;">31.....1</div> <div style="border: 1px solid black; padding: 2px 5px;">0</div> </div> Bit0: 1 :Enable SPEC_OCR_B 0: DisablePEC_OCR_B Bit31-1: Reserved

NOTE: If other Query command parameter is required, please contact us.

## 9. Setting command list

NOTE: The detailed description of the Setting Command refers to < Setting code user's manual >.

### 9.1. Overall

Selection	Command	Setting	Format example of Special command	Remark
Overall	0001000	Default all commands		
	0001010	Disable all bar codes		
	0001020	Enable all bar codes		
	0001030	Disable all 1D bar codes		
	0001040	Enable all 1D bar codes		
	0001050	Disable all 2D bar codes		
	0001060	Enable all 2D bar codes		
Double-1D	0001070	Only read single 1D bar code		
	0001080	Read single and double 1D bar codes(the same type)		
	0001090	Only read double 1D bar codes(the same type)		
Send setting code information	0002000	Don't transmit		default
	0002010	Transmit		
Send system information	0003000	Send related information of system		
Setting code turn-on/off	0006000	Turn off		default
	0006010	Turn on		
Display information when power on	0007000	Don't display		default
	0007010	Display		

### 9.2. Communication Selection

Selection	Command	Setting	Format example of Special command	Remark
Communication port selection	1100000	RS232		Default
	1100010	USB-DataPipe		Only for EM2027 and HR200
	1100020	HID-KBW		Only for EM1030, EM2027 and HR200
	1100040	BlueTooth		Only for HR200
	1100060	USB COM Port Emulation		Only for EM2027 and HR200
RS232 parameter	0100000	Baud Rate : 1200 bps		
	0100010	Baud Rate : 2400 bps		
	0100020	Baud Rate : 4800 bps		
	0100030	Baud Rate : 9600 bps		Default
	0100040	Baud Rate : 14400 bps		Invalid in some devices
	0100050	Baud Rate : 19200 bps		
	0100060	Baud Rate : 38400 bps		
	0100070	Baud Rate : 57600 bps		
	0100080	Baud Rate : 115200 bps		

Selection	Command	Setting	Format example of Special command	Remark
RS232 parameter	0101000	Verify code: no verify		Default
	0101010	Verify code: even verify		
	0101020	Verify code: odd verify		
	0102000	Stop code: one stop		Default
	0102010	Stop code: two stops		
	0103000	Data code: 5 digits		
	0103010	Data code: 6 digits		
	0103020	Data code: 7 digits		
	0103030	Data code: 8 digits		Default
HID-KBW	1103000	Set keyboard for languages		
	1103010	Caps Lock off		Default
	1103020	Caps Lock on		
	1103030	Unknown Characters Beep off		Default
	1103031	Unknown Characters Beep on		
	1103040	No Case Conversion		Default
	1103041	Convert All to Upper Case		
	1103042	Convert All to Lower Case		
	1103050	Disable USB Keystroke Delay		Default
	1103051	USB Keystroke Delay for 20ms		
	1103052	USB Keystroke Delay for 40ms		
	1103060	Disable Keypad Emulation		Default
	1103061	Enable Keypad Emulation		
	1103110	Numeric Keypad off		Default
	1103120	Numeric Keypad on		
	1103130	Ctrl+ASCII Mode off		Default
	1103140	Ctrl+ASCII Mode on		
BlueTooth	1105000	Reset		
	1105010	Device name setup		Up to 16 characters
	1105020	Turn off password verify		
	1105021	Turn on password verify		Default
	1105022	Password setup		Up to 6 characters

### 9.3. Hardware setting

Selection	Command	Setting	Format example of Special command	Remark
Light	0200000	LED Flash When Scan		default
	0200010	LED Always On		
	0200020	LED Always Off		
	0200030	LED On When Scan		
Aiming	0201000	LED Flash When Scan		default
	0201010	LED Always On		
	0201020	LED Always Off		
	0201030	Sense mode		
Voice of decode	0203000	Disable		
	0203010	Enable		default

#### 9.4. Data format

Selection	Command	Setting	Format example of Special command	Remark
All Prefix Or Suffix Enable Selection	0311000	Disable All Prefix And Suffix		Default
	0311010	Enable All Prefix And Suffix		
prefix order	0317000	CodeID+AIM+ Self-Prefix		Default
	0317010	CodeID+ Self-Prefix +AIM		
	0317020	AIM+CodeID+ Self-Prefix		
	0317030	AIM+ Self-Prefix +CodeID		
	0317040	Self-Prefix +CodeID+AIM		
	0317050	Self-Prefix +AIM+CodeID		
Self-Prefix Selection	0305000	Disable Self-Prefix		Default
	0305010	Enable Self-Prefix		
	0300000	Set Message Of Self-Prefix	NLS0300000="123456" or NLS0300000=0x313233343536	≤10bytes
Self-Suffix Selection	0306000	Disable Self-Suffix		Default
	0306010	Enable Self-Suffix		
	0301000	Set Message Of Self-Suffix	NLS0301000="NEWLAND"	≤10bytes
AIM	0308000	Don't Add AIM-Prefix To Decoding Result		Default
	0308010	Add 1 AIM-Prefix Character To Decoding Result		
	0308020	Add 2 AIM-Prefix Characters To Decoding Result		
	0308030	Add all AIM-Prefix Characters To Decoding Result		
CodeID	0307000	Disable CodeID		Default
	0307010	Enable CodeID		
	0307020	All Barcode use default CodeID		
1D CodeID	0004020	Code128	NLS0004020="Y" or NLS0004020=0x59	
	0004030	UCC/EAN-128		
	0004040	EAN-8		
	0004050	EAN-13		
	0004060	UPC-E		
	0004070	UPC-A		
	0004080	Interleaved 2 of 5		
	0004110	China Post 25		
	0004130	Code39		
	0004150	Codabar		
2D CodeID	0004170	Code93		
	0005000	PDF417		
	0005010	QR Code		
	0005020	Aztec		
	0005030	DataMatrix		
Data Packed Selection	0005070	Chinese Information Code		
	0314000	Set Data Unpacked		Default
Intercept message	0314010	Set Data Packed		
	0315000	Disable		Default
	0315010	Enable		
Terminator Selection	0316000	Set Intercept message Mode		
	0309000	Disable Terminator		Default
	0309010	Enable Terminator		
	0310000	Set Message Of Terminator	NLS0310000=0x0D0A	

## 9.5. Decoder Mode

Selection	Command	Setting	Format example of Special command	Remark
Reading mode	0302000	Trigger		default
	0302010	Auto Scan		
	0302020	Continue Scan		
	0302030	Once continue auto scan		
Sensibility Selection	0312000	Low		
	0312010	Normal		
	0312020	High		default
	0312030	Higher		
	0312040	Set value of sensitivity	NLS0312040=5	Default 4, max 50
Delay Selection	0313000	Set Delay Of Reading	NLS0313000=3000	default value 2000ms
	0313010	Set No Duplicate Reading time	NLS0313010=1000	default value 1500ms
	0313020	incompletely delay		default
	0313030	completely delay		
Vibration motor control	1216000	Turn off		Default
	1216010	Turn on		
	1216020	Set time of vibration		0~20000(ms)



## 9.6. 1D bar code selection

Selection	Command	Setting	Format example of Special command	Remark
CODE128	0400000	Set Code128 All Default		default
	0400010	Disable		
	0400020	Enable		default
	0400030	Set The Minimum Message Length Value Of Code128	NLS0400030=1	default value 1
	0400040	Set The Maximum Message Length Value Of Code128	NLS0400040=48	default value 48
	0400050	Don't Read UCC-EAN		default
	0400060	Read UCC-EAN And FNC1 Is In The First Place After Start		
	0400070	Read UCC-EAN And FNC1 Is In The Second Place After Start		
	0400080	Don't Read Bar Code Which Has FNC2		default
Code128	0400090	Read Bar Code That FNC2 Is After The First Character Of Start		
	0400100	Read Bar Code That FNC2 Is After The Second Character Of Start		
	0400110	Read UCC-EAN And FNC3 Is In The First Place After Start		
	0400120	Read UCC-EAN And FNC3 Is In The First Place After Start		
	0400130	Read UCC-EAN And FNC4 Is In The First Place After Start		
	0400140	Read UCC-EAN And FNC4 Is In The First Place After Start		
EAN-8	0401000	Set EAN-8 All Default		default
	0401010	Disable		
	0401020	Enable		default
	0401030	Don't Transmit Check Character		
	0401040	Transmit Check Character		default
	0401050	Disable 2 bits expand Characters		default
	0401060	Enable 2 bits expand Characters		
	0401070	Disable 5 bits expand Characters		default
	0401080	Enable 5 bits expand Characters		
	0401090	Don't Expand To EAN-13		default
	0401100	Expand To EAN-13		
EAN-13	0402000	Set EAN-13 All Default		default
	0402010	Disable		
	0402020	Enable		default
	0402030	Don't Transmit Check Character		
	0402040	Transmit Check Character		default
	0402050	Disable 2 bits expand Characters		default
	0402060	Enable 2 bits expand Characters		
	0402070	Disable 5 bits expand Characters		default
	0402080	Enable 5 bits expand Characters		

Selection	Command	Setting	Format example of Special command	Remark
UPC-E	0403000	Set UPC-E All Default		default
	0403010	Disable		
	0403020	Enable		default
	0403030	Don't Transmit Check Character		
	0403040	Transmit Check Character		default
	0403050	Disable 2 bits expand Characters		default
	0403060	Enable 2 bits expand Characters		
	0403070	Disable 5 bits expand Characters		default
	0403080	Enable 5 bits expand Characters		
	0403090	Don't Transmit Precursor '0'		default
	0403100	Transmit Precursor '0'		
	0403110	Don't Expand To UPC-A		default
	0403120	Expand To UPC-A		
UPC-A	0404000	Set UPC-A All Default		default
	0404010	Disable		
	0404020	Enable		default
	0404030	Don't Transmit Check Character		
UPC-A	0404040	Transmit Check Character		default
	0404050	Disable 2 bits expand Characters		default
	0404060	Enable 2 bits expand Characters		
	0404070	Disable 5 bits expand Characters		default
	0404080	Enable 5 bits expand Characters		
	0404090	Don't Transmit Precursor '0'		default
Interleaved 2 of 5	0404100	Transmit Precursor '0'		
	0405000	Set Interleaved 2 Of 5 All Default		default
	0405010	Disable		
	0405020	Enable		default
	0405030	Set The Minimum Message Length Value Of Interleaved 2 Of 5	NLS0405030=4	default value 4
	0405040	Set The Maximum Message Length Value Of Interleaved 2 Of 5	NLS0405040=80	default value 80
	0405050	No Check Digit		default
	0405060	Set Check Digit Validate, But Don't Transmit		
	0405070	Set Check Digit Validate And Transmit		
	0405080	Set ITF14 Disable		default
	0405090	Set ITF14 Enable, But Don't Transmit Check Digit		
	0405100	Set ITF14 Enable And Transmit Check Digit		
	0405110	Set ITF6 Disable		default
	0405120	Set ITF6 Enable, But Don't Transmit Check Digit		
	0405130	Set ITF6 Enable And Transmit Check Digit		
	0405140	Set Interleaved 2 Of 5 Fixed Message Length Disable		default
	0405150	Set Interleaved 2 Of 5 Fixed Message Length Enable		
	0405160	Set Interleaved 2 Of 5 Fixed Message Length Value	NLS0405160=0x0c NLS0405160=0x040e	
	0405170	Disable Fixed Message Length Value (range)	NLS0405170=0x0c NLS0405170=0x040e	

Selection	Command	Setting	Format example of Special command	Remark
China Post 25	0406000	Set China Post 25 All Default		default
	0406010	Disable		default
	0406020	Enable		
	0406030	Set The Minimum Message Length Value Of China Post 25	NLS0406030=4	default value 4
	0406040	Set The Maximum Message Length Value Of China Post 25	NLS0406040=80	default value 80
	0406050	No Check Digit		default
	0406060	Set Check Digit Validate, But Don't Transmit		
	0406070	Set Check Digit Validate And Transmit		
Code39	0408000	Set Code39 All Default		default
	0408010	Disable		
	0408020	Enable		default
	0408030	Set The Minimum Message Length Value Of Code39	NLS0408030=1	default value 1
	0408040	Set The Maximum Message Length Value Of Code39	NLS0408040=48	default value 48
	0408050	No Check Digit		default
	0408060	Set Check Digit Validate, But Don't Transmit		
	0408070	Set Check Digit Validate And Transmit		
	0408080	Don't Transmit Start/Stop Characters		
	0408090	Transmit Start/Stop Characters		default
	0408100	Set FULLASCII39 Disable		default
	0408110	Set FULLASCII39 Enable		
Codabar	0409000	Set Codabar All Default		default
	0409010	Disable		
	0409020	Enable		default
	0409030	Set The Minimum Message Length Value Of Codabar	NLS0409030=2	default value 2
	0409040	Set The Maximum Message Length Value Of Codabar	NLS0409040=60	default value 60
	0409050	No Check Digit		default
	0409060	Set Check Digit Validate, But Don't Transmit		
	0409070	Set Check Digit Validate And Transmit		
	0409080	Don't Transmit Start/Stop Characters		
	0409090	Transmit Start/Stop Characters		default
Code93	0410000	Set Code93 All Default		default
	0410010	Disable		default
	0410020	Enable		
	0410030	Set The Minimum Message Length Value Of Code93	NLS0410030=1	default value 1
	0410040	Set The Maximum Message Length Value Of Code93	NLS0410040=48	default value 48
UCC/EAN-128	0412000	Set UCC/EAN-128 All Default		default
	0412010	Disable		
	0412020	Enable		default

## 9.7. 2D Bar Code Selection

Selection	Command	Setting	Format example of Special command	Remark
Macro	0500000	Delete The Data Of Buffer		
	0500010	Mode 1 : Transmit The Block's Data Directly After Reading		
	0500020	Mode 2 : Transmit The Data Base On Reading Order (The Saving Data Can't Be Larger Than 64k Byte) , viz. When The Blocks Whose Connection Numbers Are Less Than The Current Block's, The Data Which Has Been Connected Will Be Transmitted (Including The Current Block)		
	0500030	Mode 3: Connect After Reading All Data Blocks, If The Data Is Larger than 64k Byte, The Data Would Be Transmitted By Mode 2		Default
PDF417	0501000	Set PDF417 All Default		Default
	0501010	Disable		
	0501020	Enable		Default
	0501030	Set The Min. Message Length Value	NLS0501030=30	1~2710(min<max)
	0501040	Set The Max. Message Length Value	NLS0501030=80	1~2710(min<max)
QR Code	0502000	Set QR All Default		Default
	0502010	Disable		
	0502020	Enable		Default
	0502030	Set The Min. Message Length Value	NLS0501030=1	Default Value Is 1
	0502040	Set The Max. Message Length Value	NLS0501030=3500	Default Value Is 3500
	0502070	Read single QR code only		Default
	0502080	Read Double QR codes only		
	0502090	Both types		
Aztec	0503000	Set Aztec All Default		Default
	0503010	Disable		
	0503020	Enable		Default
	0503030	Set The Min. Message Length Value		Default Value Is 1
	0503040	Set The Max. Message Length Value		Default Value Is 3832
DataMatrix	0504000	Set DataMatrix All Default		Default
	0504010	Disable		
	0504020	Enable		Default
	0504030	Set The Min. Message Length Value	NLS0504030=1	Default Value Is 1
	0504040	Set The Max. Message Length Value	NLS0504040=1500	Default Value Is 1500
	0504070	Read single DataMatrix only		Default
	0504080	Read Double DataMatrixs only		
	0504090	Both types		
Chinese Information Code	0508000	Set Chinese Information Code All Default		
	0508010	Disable		Default
	0508020	Enable		
	0508030	Set The Min. Message Length Value		Default Value Is 1
	0508040	Set The Max. Message Length Value		Default Value Is 7827
User-defined 2D barcode	0510000	Set all default		Default
	0510010	Disable		Default
	0510020	Enable		

## 9.8. OCR Selection

Selection	Command	Setting	Format example of Special command	Remark
SPEC_OCR_B	0600000	Set SPEC_OCR_B All Default		default
	0600010	Disable		default
	0600020	Enable		

## 10. Appendix

### 10.1. A contrast list of default for CodeID and AIM

Type of Barcode	Code ID	Hex	AIM ID	Hex
CODE128	j	6A	C	43
UCC/EAN-128	j	6A	C	43
UPC-E	c	63	E	45
UPC-A	c	63	E	45
EAN-8	d	64	E	45
EAN-13	d	64	E	45
INTERLEAVED 2 OF 5	e	65	I	49
ITF14	e	65	I	49
ITF6	e	65	I	49
MATRIX25	e	65	I	49
CODE39	b	62	A	41
FULLASCII39	b	62	A	41
CODABAR	a	61	F	46
CODE93	i	69	G	47
PDF417	r	72	L	4C
QR	s	73	Q	51
DATAMATRIX	u	75	d	6D
Aztec	z	7A	z	7A
MaxiCode	x	78	U	55

### 10.2. Type number of Code

Code	Type NO.	Code	Type NO.
ZASETUP	001	CODABAR	015
SETUP128	002	CODE93	017
CODE128	003	CODEZ	018
UCC/EAN128	004	PDF417	032
EAN-8	005	QR Code	033
EAN-13	006	Aztec	034
UPC-E	007	DataMatrix	035
UPC-A	008	MaxiCode	036
Interleaved2OF5	009	VeriCode	037
ChinaPost25	011	SPEC_OCR_B	064

CODE39	013		
--------	-----	--	--

### 10.3. Type number of Keyboard country

Country	Type NO.	Country	Type NO.
U.S(default)	0	Netherlands(Dutch)	14
Belgium	1	Norway	15
Brazil	2	Poland	16
Canada(French)	3	Portuagal	17
Czechoslovakia	4	Romania	18
Denmark	5	Russia	19
Finland(Sweden)	6	SCS	20
France	7	Slovakia	21
Germany/Austria	8	Spain	22
Greece	9	Sweden	23
Hungary	10	Switzerland(German)	24
Israel(Hebrew)	11	Turkey F	25
Italy	12	Turkey Q	26
Latinamerica	13	U.K	27