

NLS-EM1300

1D Barcode Scanning Engine

Integration Guide

Revisions

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About this guide

Introduction

This NLS-EM1300 (“EM1300”) Scan Engine Integration Guide provides general instructions for OEM integration.

Chapter Description

About EM1300: The chapter of About EM1300 gives a brief description of the EM1300. It covers the general, overall specifications of the EM1300.

Mechanical Interface: The chapter of Mechanical Interface describes the mechanical interface of the EM1300. It includes the dimensions and locations of EM1300 mechanical components.

Electrical Interface: The chapter of Electrical Interface describes the electrical interface of the EM1300. It mainly explains the EM1300 interface socket and flexible cable. Samples of schematics are also included.

Software Interface: The chapter of Software Interface describes the software interface of EM1300.

EM1300 Development Tools: The chapter of EM1300 Development Tools lists the development tools and brief descriptions of the tools.

Programming the Engine: The chapter of Configuration lists all the configurations of EM1300. The configuration can be done through pre-printed configuration barcodes, serial port commands, and/or Quickset, a Newland software package.

Graphic Notations



Tool – Handy item for a task.



Attention – Important subject to be aware of or to avoid.



Tips – Helpful information about a topic or a feature.



Example – Illustration of how to use a feature.



About this guide

Newland Auto-ID Support Center

If you have a problem with your equipment, contact the Newland Support Center in your region. Before calling, have the model number, serial number, and several of your barcodes at hand.

Call the support Center from a phone near the scanning equipment so that the service person can try to talk you through your problem. If the equipment is found to be working properly and the problem is barcode readability, the Support Center will request samples of your bar codes for analysis at our plant.

If your problem cannot be solved over the phone, you may need to return your equipment for servicing. If that is necessary, you will be given specific directions.

Note: Newland Auto-ID Tech. is not responsible for any damages incurred during shipment.

For service information, warranty information or technical assistance contact or call the Support Center listed below. For the latest service information go to <http://www.nlscan.com>





About EM1300

Introduction

EM1300 is an embedded barcode reading engine. Its gray scale CCD image capturer and the Newland patented UIMG, a Computerized Image Recognition System, ensure the fast scanning and decoding accuracy on different barcode media such as paper, plastic card, and metal surface. It can be easily integrated into OEM equipments or systems (hand-held, portable, and mounted) to provide solutions for image capture, barcode reading, and barcode message processing.

Highlights of the EM1300

- » Compact design allowing easy integration into OEM equipments and systems.
- » Outstanding decoding performance for major 1D barcodes.
- » High performance CPU ensuring fast and accurate scans.
- » Easy OEM software development and firmware upgrade.





Unpacking

Remove EM1300 and accessories from the package. Check for missing parts and inspect for damage. EM1300 is packed in anti-static bag. Please handle accordingly.



If there is any damage or missing parts, please contact your supplier at once. Keep the original package for return services, if necessary.

Outline of EM1300

The outline of EM1300 is shown in Figure 1. The topside has the electrical control components, including a flexible cable socket, Interface Socket, through which EM1300 interfaces with external device.

The front side has the optical components, such as Image Lens, through which EM1300 captures image, Illumination Light, which sends a linear, red light beam for illuminating and aiming.

The bracket covers the sides and bottom of the Engine. Two mounting holes on the bottom side are available for mounting the Engine to external device.

The back side is CCD circuit for image capture.

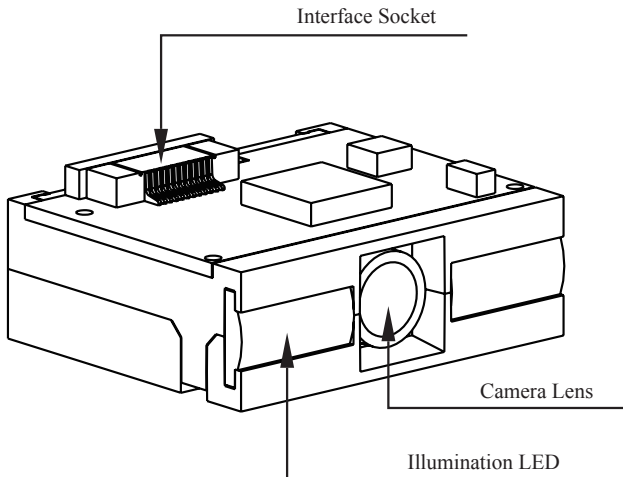
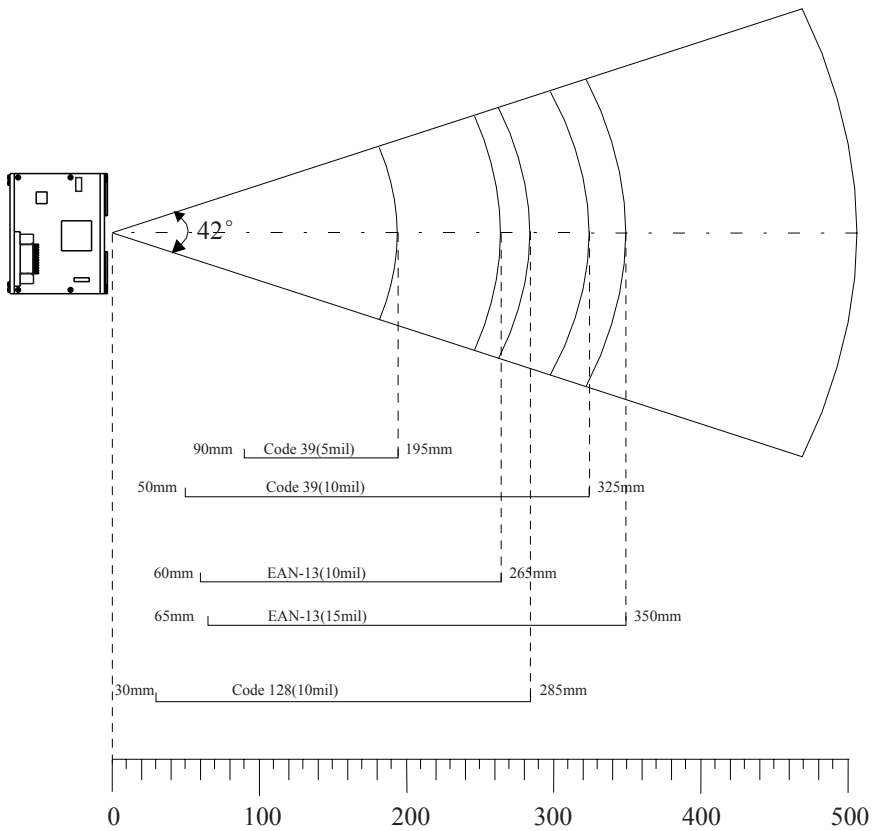


Figure 1. EM1300 Outline





Performance

Interface	TTL232
Image Sensor	CCD
Resolving	2500
Scan Rate	up to 300 scans/sec
Decode Rate	200 decodes/sec (default)
Symbologies	Code128, EAN-13, EAN-8, Code39, UPC-A, UPC-E, Codabar, Interleaved 2 of 5, ISBN/ISSN, Code 93, etc.
Precision	≥ 5mil (Condition:PCS=0.9, testing code: Code 39)
Light Source	LED(622 nm - 628 nm)
Light Intensity	265 LUX (130 mm)
Depth of Scan Field	Code128(10mil):30mm-285mm; Code39(5mil):90mm-195mm; Code39(10mil):50mm-325mm; EAN-13(10mil):60mm-265mm; EAN-13(15mil):65mm-350mm;
Print Contrast Signal	≥ 30%
Pitch	± 65° @ 0° Roll and 0° Skew
Roll	± 30° @ 0° Pitch and 0° Skew
Skew	± 60° @ 0° Roll and 0° Pitch
Illumination	0 ~ 100,000 LUX

Mechanical/ Electrical

Power Consumption	0.33 W
Voltage	DC 3.3 V
Max	100mA
Current	Idle 45 mA
Sleep	1 mA
Weight	6g

Environment

Operate Temperature	-20° C - +60° C
Storage Temperature	-40° C - +85° C
Humidity	5% - 95% (non-condensing)

Certificates

FCC Part15 Class B, CE EMC Class B

**Test Condition:

Code39: 3 Bytes ; Resolution = 10mil; W:N = 3:1 ; PCS = 0.8 ;

Barcode Height = 11mm; Distance = 120mm; T=23° C; Illumination= 200 LUX





Mechanical Interface

Introduction

This section describes the Mechanical Interface.





EM1300 Front View

Following figures show the dimensions of EM1300. The figure 2 is EM1300 Front View.

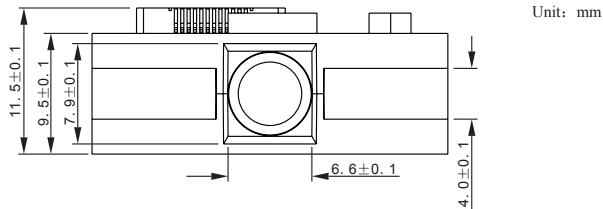


Figure 2. EM1300 Front View

EM1300 Left Side View

The Figure 3 is EM1300 Left Side View.

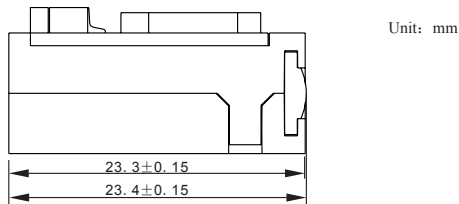


Figure 3. EM1300 Left Side View

EM1300 Bottom View

The figure 4 EM1300 Bottom View has the mounting screw specifications. The mounting screw is M1.4, 1.4mm screw. The length of the screw into EM1300 must be less than 2.5 mm.

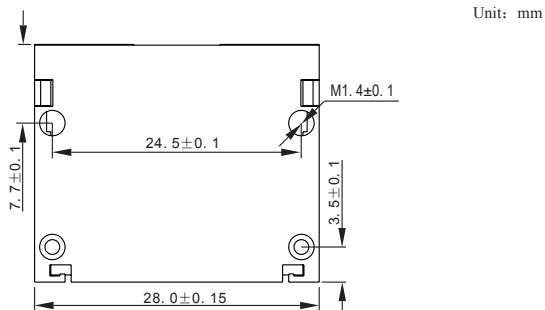


Figure 4. EM1300 Bottom View



Interface Socket

EM1300 uses a 12-pins flex cable socket to interface with external device (Host), such as EVK3000&1300, the EM1300 Evaluation Kit. Figure 5 below shows the socket. For reference purpose, the EM1300 Evaluation Kit uses a connector to connect the flex cable.

Unit: mm

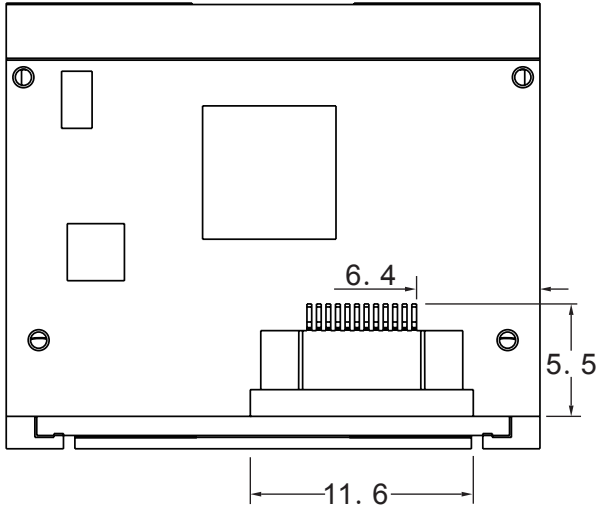
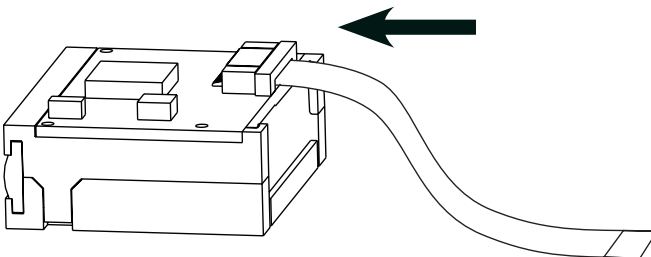


Figure 5. Interface Socket

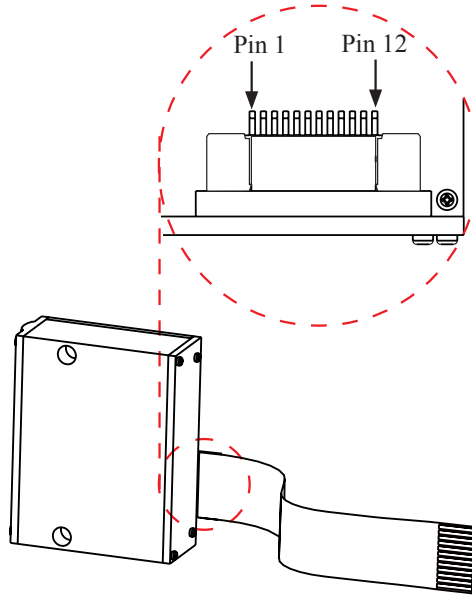
Interface Cable

A 50 mm flexible cable is included in the EM1300 package. Both of the two ends are 12 PINS. One connects to the EM1300 interface socket, the other connects to external device. Figure below shows how the cable is connected to the interface socket.





Interface Socket Pin Assignment and Definition



Pin	Type	I/O*	Description
PIN 1	Flash Download	I	Operation Mode Control: » Flash Download Mode – Level Low when engine is powered on; » Normal Mode – otherwise.If users don' t need the function, it can be not connected(N/C).
Pin 2	VCC	P	DC 3.3 ± 0.3V
Pin 3	Ground	GND	Ground
Pin 4	TXD	O	RS233 Receiving, TTL
Pin 5	RXD	I	RS232 Transmission, TTL
Pin 6	Reserved for CTS		Reserved for CTS, not implemented
Pin 7	Reserved for RTS		Reserved for RTS, not implemented
Pin 8	N/C		Not connected
Pin 9	Beeper	O	Beeper output. Need an external current amplifier.
Pin 10	DLED	O	Decode LED. Need an external current amplifier.
Pin 11	N/C		Not connected
Pin 12	Trigger	I	Trigger read and decode

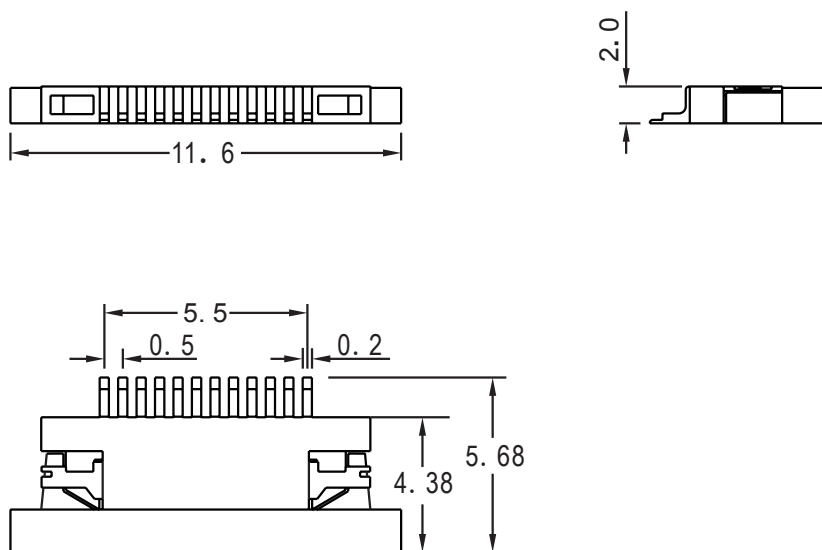
* I/O Definitions: I – Input, O – Output, and P – Power, GND – Ground





Schematic of Interface Socket

Unit: mm

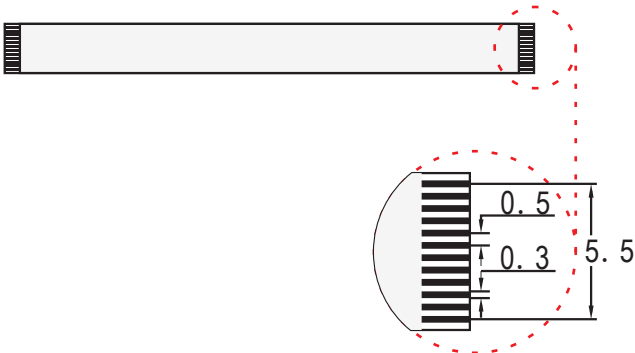
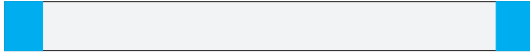




Interface Flexible Cable Specifications

The interface flexible cable is designed by Newland Auto-ID.

Unit: mm





Housing Structure

The housing for the Engine should make sure that no pressure should be put on the Engine. There should have sufficient space for the flexible cable and stress release of the cable should also be considered.

Scan Window

A scan window is needed to protect camera lens and illumination lights. This scan window design should follow:

- » Housing must not block or shade illumination LED' s aiming light, and camera lens.
- » Use high transparent and scratch resistant material.
- » The gap and angle between housing window and illumination LED (highest point) must ensure that the illumination light should not be reflected into lens by window glass.





Electrical Interface

Introduction

This section describes the electrical specifications of the interface signals.





The table below lists the interface input and output level voltage ranges

Signal Type	Voltage Level	Voltage Range
Input	High	2.4V - 3.6V
	Low	-0.3V - 0.6V
Output	High	2.9V - 3.3V
	Low	0V - 0.4V





Electrical Interface

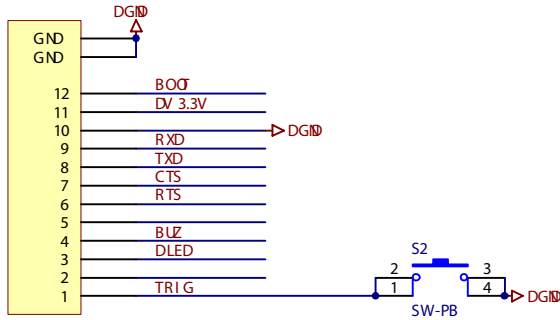
Input signals

Trigger Input

When the Trigger line is pull low for 10 ms, the Engine starts a read. The Engine keeps reading until a successful reading, a timeout or the line is high. After a successful reading, the line must go high in order to make another read.

A Sample Schematic of Trigger Input Circuit

Here is a schematic from the evaluation board, EVK3000&1300. The signal can connect to external device's output port.





Here are the descriptions of the output signals, such as Beeper, LED and inter-character timeout. They can be used to detect the status of the scanning, message uploading and the state of the Engine.

LED Output

When the Engine completes the initialization, the LED line is high. The LED line goes low for 150 ms after a successful reading and, if programmed, transmission of the code message.

Beeper Output

Table below is the definitions of the beeper outputs:

Beep Pattern	Definition
Low-higher-higher-higher	Power ON completed
1 beep	Successful reading of an ordinary barcode
2 beeps	Successful reading of a programming barcode

Inter-Character Timeout

The message upload format is in binary. It is the binary value of the decoded barcode value including prefix, suffix, and so on.

Inter-Character Timeout is used to determine the end of barcode message.

Host could use inter-character timeout to determine the end of data upload. An inter-character timeout means the longest delay time between 2 consecutive (binary) characters in a sequence of (binary) characters sent over serial line. It is usually enabled only after the first character is received to avoid unwanted timeout events during the waiting of a message.

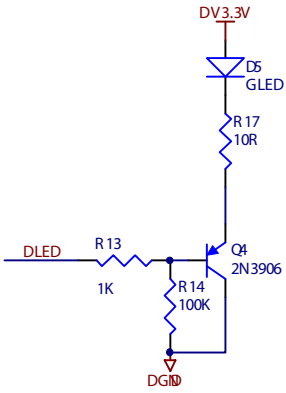
The inter-character timeout value should be set to about 5 times of a character' s transmission time. When the inter-character timeout occurs, it is the end of data upload. For example, 5 ms can be used as an inter-character timeout for the baud rate of 9600, 8 data bit, no parity bit, and one stop bit.





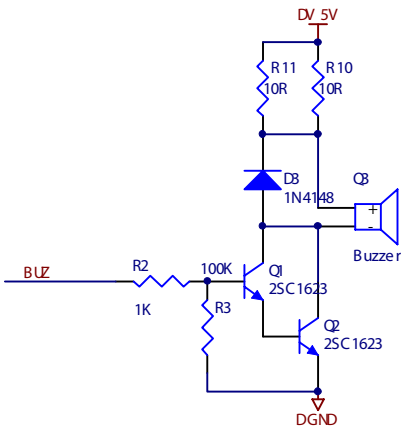
A Sample Schematic of LED Circuit

Here is the LED circuit used in the evaluation board, EVK3000&1300.



A Sample Schematic of Beeper Circuit

Here is a beeper circuit used in the evaluation board, EVK3000&1300.





EM1300 Development Tools

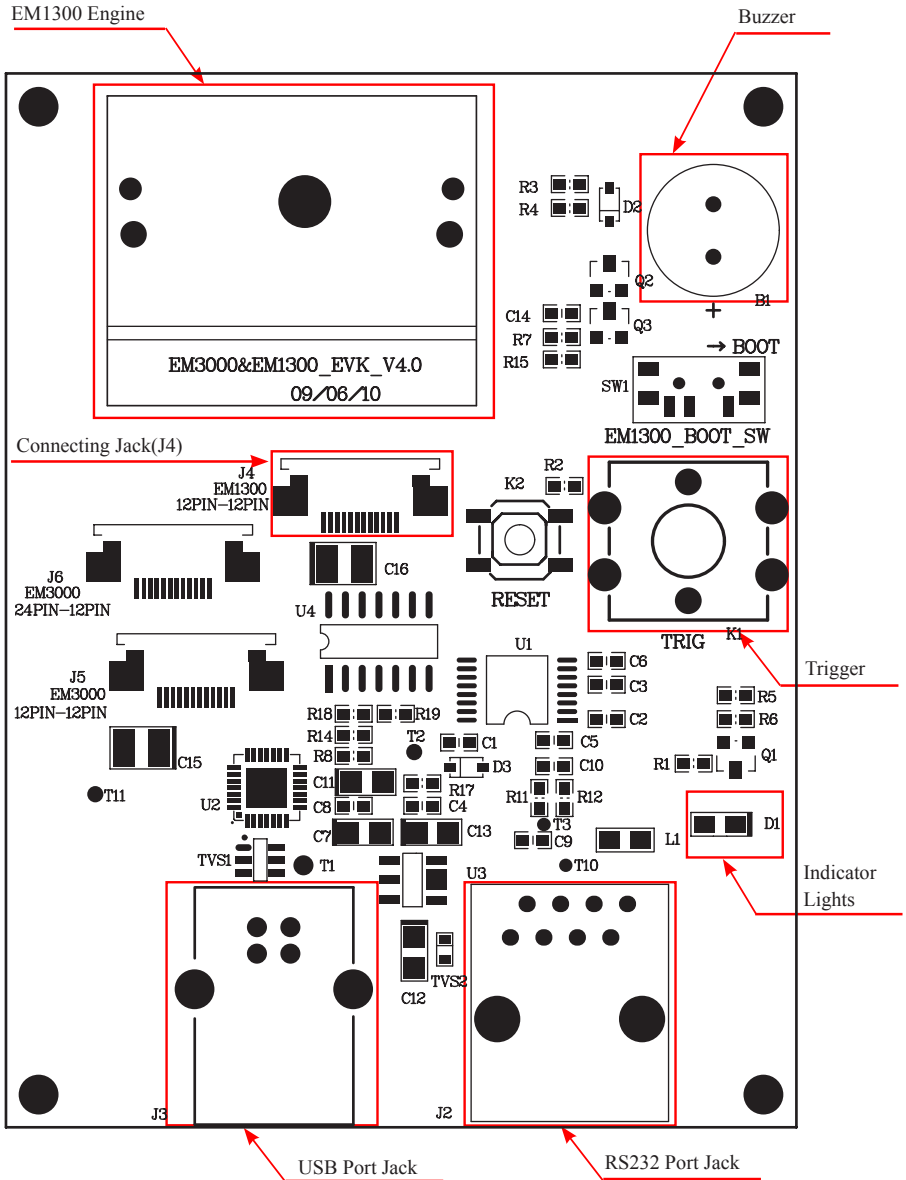
Introduction

Sections below list some EM1300 development tools. A brief introduction to each tool is included.





Here is a brief introduction to the EM1300 Evaluation Kit, EVK3000&1300. The layout of the EVK3000&1300 circuit board is shown in figure below. The board contains beeper, LED and trigger button. A USB connector and an alternative RS232 is for communication. The J4 connector is where the EM1300 flex cable connects to.





General Programming

Introduction

There are 2 ways to program (configure) the Engine, Code Programming and Command Programming.

Code Programming

The Engine reads a set of specially encoded barcodes to program options and features. In the following sections, we will explain the options and features available and provide the barcodes to program them.

This method of programming the Engine is most straight forward. However, it requires manually readings of each barcode. As all manual operations, errors are more likely to occur.

Command Programming

The Host can send the Pro CMD strings to program the Engine. In the following sections, the Pro CMD strings will be included with the barcodes for Code Programming.

This method of programming the Engine could be automated. A software program can be developed to download all the configuration data to the Engine. The program can also verify the download.

Note: Except some temporary programming, the programming results are restored in non-volatile memory. They will not be lost when the Engine is powered off.





Code Programming ON



Code Programming OFF



This is the notation to disable the Code Programming.

There are 3 parts of a notation:

- 1、The barcode for Code Programming
- 2、The name of the options or features, such as Disable Code Programming.
- 3、The corresponding Pro CMD string of the Code Programming.



Read the “Code Programming ON” barcode to activate “Code Programming” function. More than one Code Programming barcodes can be read to configure the Engine.

If an option or feature needs additional parameters, such as digits, they can be found at the end of this chapter.

The value of code programming can be sent to the Host. For factory default, “No Send Pro Code Value”, the value of programming codes will not be sent to the Host; by reading “Send Pro Code Value”, the reader will send the value of Programming Code to the Host.

Code Programming ON



Code Programming OFF



The factory default setting is “Code Programming ON”. Because it has low probability that a data barcode is the same as a programming barcode, it doesn’t need to close the function of Code Programming. Keeping it on won’t affect the daily using.

Some working parameters could be programmed. The data type of parameters is Dec or Hex and the numbers are also input through programming barcodes. The Appendix of the Integration Guide includes all needed data barcodes.

Programming barcodes are used to program the engine. For factory default, the reader will not send code value to the Host. But if needed, the engine could be programmed to "Send Pro Code Value". And whether the value is sent or not won't affect the programming function. But "Send Pro Code Value" is a temporary setting. It will restore to "No Send Pro Code Value" when the engine is restarted or closed.



Code Programming ON
【Pro CMD: 99900031】



Code Programming OFF
【Pro CMD: 99900032】



No Send Pro Code Value
【Pro CMD: 99900033】



Send Pro Code Value
【Pro CMD: 99900034】

Commands under RS232 connection mean using 0x20-0x7D (the displayable characters) to express all commands information.

1、 Configuration State

The engine should be in configuration state when programming functions under RS232 connection. In the state, the engine would only accept and execute the commands from communication and feed back.

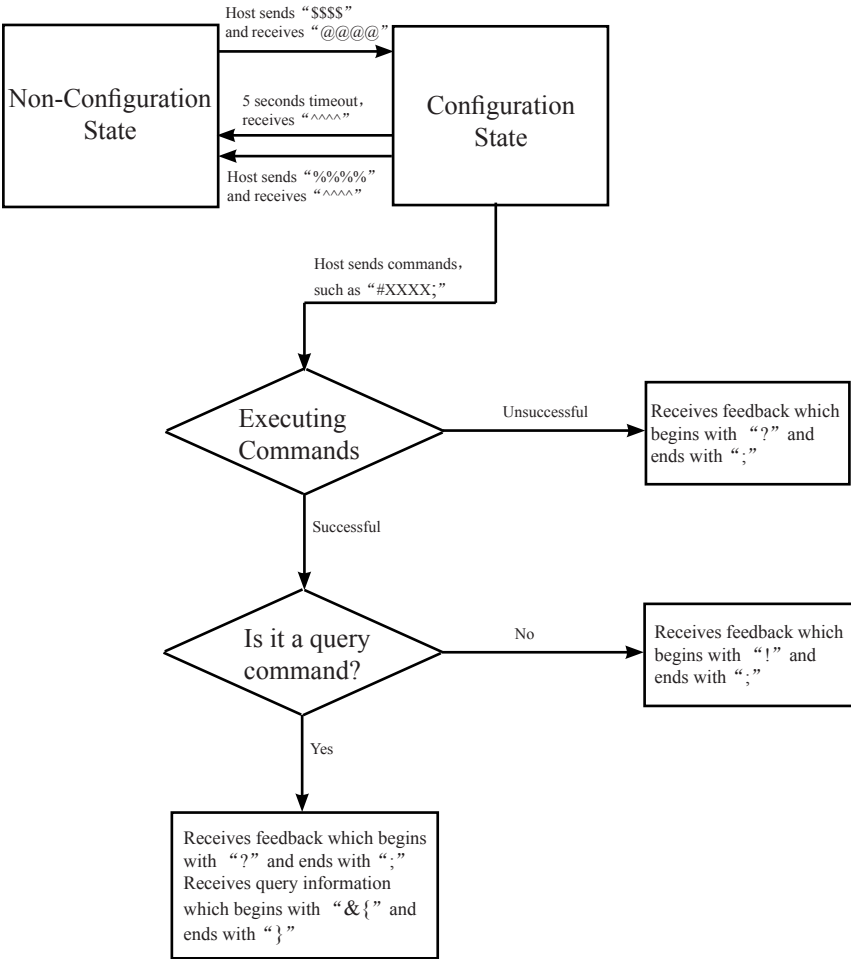
Sending certain command to the engine will make it enter or quit the configuration state. Or if in configuration state the engine hasn't received new information for five seconds, the engine will quit the state automatically.

2、Express Regulation

- [illegible]



3、Flow Chart





Factory Default

Read “Load All Factory Default” to reset all parameters to factory default.

Applicable conditions:

- » User options programming wrong configuration leads to reading malfunction
- » Forget details of previous programming and start over.
- » Restore to default after unusual settings are not needed.

Code Programming ON



Code Programming OFF



Load All Factory Default
【Pro CMD: 99900030】





Code Programming ON



Code Programming OFF



Shut Down¹

【Pro CMD: 99900100】



Deep Sleep²

【Pro CMD: 99900101】



Sleep³

【Pro CMD: 99900102】



Test Mode⁴

【Pro CMD: 99900103】



Restart

【Pro CMD: 99900104】

Note:

- 1、The engine couldn't be awaked. It must restart or power on.
- 2、It should be awaked by a trigger.
- 3、It could be awaked by communication or a trigger.
- 4、Use a trigger to quit test mode.



All these five modes are temporary. They will disappear and restore to former mode if the engine restarts or powers off.



Hand-held Mode

Factory Default, scan engine will begin to scan when triggered. And when it scans successfully or the trigger is released, the engine will stop scanning.



Hand-held Mode

【Pro CMD: 99900110】

In hand-held mode, the engine could set Reading a barcode time length.



Reading a barcode time length

【Pro CMD: 99900150】

Code Programming ON



Code Programming OFF





Auto Mode

First program the engine, then trigger it, the engine will start to scan. After a scan, the engine will not stop but start a new one automatically until another trigger. By default, the engine will not repeat reading a same barcode.

Code Programming ON



Code Programming OFF



Auto Mode

【Pro CMD: 99900111】

In auto mode, the engine could set Reading a barcode time length, and set if it could read same barcode.



Reading a barcode time length

【Pro CMD: 99900150】



Disable Reading Same Barcode

【Pro CMD: 99900155】



Restart Timer After a Valid Reading

【Pro CMD: 99900157】



Enable Reading Same Barcode

【Pro CMD: 99900156】



Do Not Restart Timer After a Valid Reading

【Pro CMD: 99900160】

» Reading Same Barcode

When enabled, after a successful read, the engine will not stop but start a new one automatically until another trigger.

When disabled, after a successful read, if the next barcode is the same one, the engine will keep waiting. If the next barcode is different, the engine will not stop but start a new one automatically until another trigger.

» Restart Timer After a Valid Reading

When enabled, after a successful read, the engine will revert the reading time to zero and restart timer.

When disabled, no matter how many barcodes have been read, when the length of reading time is equal to the default value of "Reading a barcode time length", the engine will stop reading.



Interval Mode

After programming, the engine will start interval scan without trigger. The interval between two scans is fixed whether the scan is successful or not. The value of interval could be programmed by user and the default value is 1s.

Code Programming ON



Code Programming OFF



Interval Mode

【Pro CMD: 99900112】



Reading a barcode time length

【Pro CMD: 99900150】



Interval Length

【Pro CMD: 99900151】

Interval takes 500ms as a unit and could be classed in fifteen levels:0-15.For instance, interval could be programmed to 5000ms:

- 1、Read “Code Programming ON”
- 2、Read “Interval Length”
- 3、Read numbers “1” “0”
- 4、Read “Code Programming OFF”



Sensor Mode

After programming, the engine will start to sense the environment without trigger. After a scan, it will stop and keep sensing to wait another illumination changing. In sensor mode, a trigger also can start a scan. The sensitivity level could be chosen.

Code Programming ON



Code Programming OFF



Sensor Mode

【Pro CMD: 99900113】

In sensor mode, the engine could set Reading a barcode time length, and set interval length as sensing stabilization time.



Reading a barcode time length

【Pro CMD: 99900150】



Interval Length

【Pro CMD: 99900151】

Sensitivity is used to evaluate the engine's ability to sense the changing environment. Users can choose a sensitivity level which suits the environment.



High Sensitivity

【Pro CMD: 99900152】



Low Sensitivity

【Pro CMD: 99900154】



Medium Sensitivity

【Pro CMD: 99900153】



User Sensitivity

【Pro CMD: 99900161】

Sensitivity Level Programming

There are sixteen levels of 0 to F. The lower the value is, the higher the sensitivity level is.

For instance, we could program sensitivity level as 5 level.

- 1、Read “Code Programming ON”
- 2、Read “User Sensitivity”
- 3、Read number “5”
- 4、Read “Code Programming OFF”



Continuous Mode

After programming, the engine will be in continuous mode without trigger. After a successful scan, the engine will be in waiting state until another scan, then wait again.

Code Programming ON



Code Programming OFF



Continuous Mode

【Pro CMD: 99900114】

In continuous mode, the engine could set Reading a barcode time length and interval length.



Reading a barcode time length

【Pro CMD: 99900150】



Interval Length

【Pro CMD: 99900151】





Delayed Sensor Mode

After programming, the engine will start to sense the environment without trigger. There will be a delay before a scan. After a scan, it will stop and keep sensing to wait another illumination changing. In delayed sensor mode, a trigger also can start a scan. The sensitivity level could be chosen.

Code Programming ON



Code Programming OFF



Delayed Sensor Mode
【Pro CMD: 99900115】

In delayed sensor mode, the engine could set Reading a barcode time length and interval length.



Reading a barcode time length
【Pro CMD: 99900150】



Interval Length
【Pro CMD: 99900151】



In delayed sensor mode, reading a barcode time takes 2s as a unit and the range is from 0 to 30ms, 0 is infinite time; Interval takes 200ms as unit and the range is from 0 to 7.5s.



Command Triggered Mode

After programming, when HR100 receives trigger sweep command from terminal (e.g. PC) , then the device is begun working.

PS: If the scan is completed then should be returned a value and automatic shutdown. Else the scanner would continue to scan till Stop command coming.

When HR100 receives stop command from terminal (e.g. PC) ,then the device is stopped. In the meanwhile the device must be returned 2 byte data(e.g. 0A;0B)

Code Programming ON



Code Programming OFF



Command Triggered Mode

【Pro CMD: 99900116】

If a reading is failed, the engine will send a character which means a reading failure. Users could set the character themselves.



Set Reading Failure Character

【Pro CMD: 99904200】





The higher the value of Security Level is, the lower the probability of mis-decoding and the decoding speed are. Otherwise, the speed is higher.

Code Programming ON



Code Programming OFF



Security Level 1
【Pro CMD: 99900120】



Security Level 3
【Pro CMD: 99900122】



Security Level 2
【Pro CMD: 99900121】



Security Level 4
【Pro CMD: 99900123】





Code Programming ON



Code Programming OFF



No Beeper Output
【Pro CMD: 99900130】



High Frequency & Loud Volume
【Pro CMD: 99900131】



High Frequency & Medium Volume
【Pro CMD: 99900132】



High Frequency & Low Volume
【Pro CMD: 99900133】



Medium Frequency & Loud Volume
【Pro CMD: 99900134】



Medium Frequency & Medium Volume
【Pro CMD: 99900135】



Medium Frequency & Low Volume
【Pro CMD: 99900136】



Low Frequency & Loud Volume
【Pro CMD: 99900137】



Low Frequency & Medium Volume
【Pro CMD: 99900140】



Low Frequency & Low Volume
【Pro CMD: 99900141】



150ms Sound Length
【Pro CMD: 99900142】



100ms Sound Length
【Pro CMD: 99900143】



50ms Sound Length
【Pro CMD: 99900144】





Start/Stop Analog Trigger

Code Programming ON



Code Programming OFF



Start Analog Trigger
【Pro CMD: 99900035】



Stop Analog Trigger
【Pro CMD: 99900036】

Start/Stop Temporary Mute



Start Temporary Mute
【Pro CMD: 99900040】



Stop Temporary Mute
【Pro CMD: 99900041】





Query Command

Introduction

After reading interrelated programming barcodes, the engine will feed information needed back to the Host to achieve the purpose of query.



Code Programming ON



Code Programming OFF



Query Product Information
【Pro CMD: 99900300】



Query Manufacturing Date
【Pro CMD: 99900303】



Query Hardware Version
【Pro CMD: 99900301】



Query Product Name
【Pro CMD: 99900304】



Query Product ID
【Pro CMD: 99900302】





Communication Programming

Introduction

Under TTL232 connection the engine and the Host use the same communication parameters: baud rate, parity check, data bits select and stop bits select.





Under TTL232 connection, the engine and the Host should set communication baud rate to the same to keep normal communication.
Baud rate is the bits transmitted per second (8 bits per bytes). The engine and the Host must communicate at the same baud rate.
The reader supports baud rate as the following:

Code Programming ON



Code Programming OFF



** 9600

【Pro CMD: 99902104】



1200

【Pro CMD: 99902101】



2400

【Pro CMD: 99902102】



4800

【Pro CMD: 99902103】



14400

【Pro CMD: 99902105】



19200

【Pro CMD: 99902106】



38400

【Pro CMD: 99902107】



57600

【Pro CMD: 99902110】



115200

【Pro CMD: 99902111】





Check

Code Programming ON



Code Programming OFF



** No Check

【Pro CMD: 99902120】



Even Check

【Pro CMD: 99902122】



Odd Check

【Pro CMD: 99902121】





Stop Bit

Code Programming ON



Code Programming OFF



** 1 Stop Bit

【Pro CMD: 99902131】



2 Stop Bit

【Pro CMD: 99902133】





Flow Control

Code Programming ON



Code Programming OFF



** No Flow Control

【Pro CMD: 99902140】





Data Bit

Code Programming ON



Code Programming OFF



** 8 Data Bit

【Pro CMD: 99902150】



8 Data Bit, No Check, 2 Stop Bit

【Pro CMD: 99902163】



8 Data Bit, No Check, 1 Stop Bit

【Pro CMD: 99902160】



8 Data Bit, Even Check, 2 Stop Bit

【Pro CMD: 99902164】



8 Data Bit, Even Check, 1 Stop Bit

【Pro CMD: 99902161】



8 Data Bit, Odd Check, 2 Stop Bit

【Pro CMD: 99902165】



8 Data Bit, Odd Check, 1 Stop Bit

【Pro CMD: 99902162】





Code Programming ON



Code Programming OFF



7 Data Bit

【Pro CMD: 99902151】



7 Data Bit, Even Check, 2 Stop Bit

【Pro CMD: 99902170】



7 Data Bit, Even Check, 1 Stop Bit

【Pro CMD: 99902166】



7 Data Bit, Odd Check, 2 Stop Bit

【Pro CMD: 99902171】



7 Data Bit, Odd Check, 1 Stop Bit

【Pro CMD: 99902167】





Data Format

Introduction

1D barcodes could contain digits, letters and symbols, etc. 2D barcodes could contain more data, such as Chinese characters and other multi-byte characters. However, in reality, they do not and should not have enough information we need, such as barcode type, date and time of scan, delimiter, and so on, in order to keep the code short and flexible.

Prefix and Suffix are how to fulfill the needs mentioned above. They can be added, removed, and modified while the original barcode message is still in tact.



Barcode processing sequences: first add Prefix/Suffix, then terminate with
Terminal and transmit.



Code Programming ON



Code Programming OFF



CodeID+User Prefix+AIMID

【Pro CMD: 99904010】



User Prefix+CodeID+AIMID

【Pro CMD: 99904011】





Disable or Enable User Prefix

User Prefix is added before barcode message. For example, if the user prefix is “AB” and the barcode message is “123” , the Host receives “AB123” .

Code Programming ON



Code Programming OFF



Disable User Prefix
【Pro CMD: 99904020】



Enable User Prefix
【Pro CMD: 99904021】

Program User Prefix

Enable “Program User Prefix” . Then program user prefix byte(s). To end the prefix, read “Save programming” The user prefix byte is programmed in its hex values. See example below.



Program User Prefix
【Pro CMD: 99904022】

E

xample

Program “CODE” as user prefix (The hex of “CODE” are 0x43/0x4F/0x44/0x45):

1. Read “Code Programming ON”
2. Read “Program User Prefix”
3. Read “4,3,4,F,4,4,4,5” in order
4. Read “Save Programming”
5. Read “Code Programming OFF” .
6. Read “Allow User Prefix” to enable above programming. “CODE” will appear to the left of a barcode.





AIM (Automatic Identification Manufactures) defines AIM prefix for many standard barcode formats. The engine will add the identifier before the barcodes. And this identifier is the AIM Prefix. And please see Appendix to find the AIM ID list.

Code Programming ON



Code Programming OFF



No AIM Prefix

【Pro CMD: 99904030】



Full Characters Mode

【Pro CMD: 99904031】





Besides AIM prefix, Code ID prefix can be used to denote barcode format and can be customized.

The Code ID prefix MUST be one (1) or two(2) visible English letters, capital or small, only.

Code Programming ON



Code Programming OFF



No Code ID Prefix

【Pro CMD: 99904040】



Allow Code ID Prefix

【Pro CMD: 99904041】



Load Code ID Factory Default

【Pro CMD: 99904042】





Disable or Enable User Suffix

Code Programming ON



User suffix is appended to the right of barcode message. For example, if user suffix is “AB” , and the barcode message is “123” , The Host receives “123AB” .

Code Programming OFF



Disable User Suffix
【Pro CMD: 99904100】



Enable User Suffix
【Pro CMD: 99904101】

Program User Suffix

Read “Program User Suffix” . Then program user suffix byte(s). To end the suffix, read “Save programming” . The user suffix byte is programmed in its hex values. See example below.



Program User Suffix
【Pro CMD: 99904102】

E
xample

Program “AGE” as user suffix (The hex of “AGE” are0x41/0x47/0x45):

1. Read “Code Programming ON”
 2. Read “Program User Suffix”
 3. Read “4,1,4,7,4,5” in order
 4. Read “Save Programming”
 5. Read “Code Programming OFF”
 6. Read “Allow User Suffix” to enable above programming. “AGE” will appear to the right of a barcode.
-





Disable or Enable Terminal

“Terminal” is the termination for a string of barcode messages. It is fixed to the right and the very end of a barcode transmission. The major difference between "Terminal" and "User Suffix" is that the information and the decoded messages in user suffix could be formatted but couldn't in terminal.

Code Programming ON



Code Programming OFF



Disable Terminal
【Pro CMD: 99904110】



Enable Terminal
【Pro CMD: 99904111】

Program Terminal

Read “Program Terminal” . Then program terminal byte(s). At last, read “Save programming” . The terminal byte is programmed in its hex values. See example below.



Program Terminal
【Pro CMD: 99904112】



Set Terminal as 0x0D and Enable Sending
【Pro CMD: 99904113】



Set Terminal as 0x0D,0x0A and Enable Sending
【Pro CMD: 99904114】

E
xample

Program a Windows OS general line feed and carriage return as terminal

1. Read “Code Programming ON”
 2. Read “Program Terminal”
 3. Read “Set Terminal as 0x0D,0x0A and Enable Sending”
 4. Read “Save ”
 5. Read “Code Programming OFF”
 6. Read “Allow Terminal” to enable above programming. A line feed will appear to the right of a barcode.
-





Symbols

Introduction

Each type of barcode has its unique attribute. With the programming code, the engine will adjust to the changes of these attributes. Disabling reading of the symbols which do not apply will improve reading performance.





Load Factory Default



Load Code 128 Factory Default

【Pro CMD: 99910000】

Code Programming ON



Code Programming OFF



Enable/Disable Code 128



Enable Code 128

【Pro CMD: 99910002】



Disable Code 128

【Pro CMD: 99910001】



When the engine can not read Code 128, please read “Enable Code 128” and try again.

Code 128 Code ID



Code ID Setting

【Pro CMD: 99910005】

Example

Example of setting Code 128 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Code 128 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.





Select Message Length

It is used to program the valid reading length of Code 128. The engine will send an error beep, if the decoded data length does not match the valid length.

Code 128 Message Length is defined by “Min. Message Length” and “Max. Message Length” .

Code Programming ON



Code Programming OFF



Min Message Length

【Pro CMD: 99910003】



Max Message Length

【Pro CMD: 99910004】



1D bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of Code 128 to 8 bytes and Max Message Length to 12 bytes, read these programming codes

- 1、 “Code Programming ON”
- 2、 “Select Min Message Length”
- 3、 Digit Code “8” , see Digit Code
- 4、 “Save Programming” , see Digit Code
- 5、 “Select Max Message Length”
- 6、 Digit Code “1”
- 7、 Digit Code “2”
- 8、 “Save Programming”
- 9、 “Code Programming OFF”



Load Factory Default



Load UCC/EAN-128 Factory Default

【Pro CMD: 99910100】

Code Programming ON



Code Programming OFF



Enable/Disable UCC/EAN-128



Enable UCC/EAN-128
【Pro CMD: 99910102】



Disable UCC/EAN-128
【Pro CMD: 99910101】



When the engine can not read UCC/EAN-128, please read “Enable UCC/EAN-128” and try again.

UCC/EAN-128 Code ID



Code ID Setting
【Pro CMD: 99910105】

Example

Example of setting UCC/EAN-128 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read UCC/EAN-128 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Select Message Length

It is used to program the valid reading length of UCC/EAN-128. The engine will send an error beep, if the decoded data length does not match the valid length.

UCC/EAN-128 Message Length is defined by “Min. Message Length” and “Max. Message Length” .

Code Programming ON



Code Programming OFF



Min Message Length

【Pro CMD: 99910103】



Max Message Length

【Pro CMD: 99910104】



1D bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of UCC/EAN-128 to 8 bytes and Max Message Length to 12 bytes, read these programming codes

- 1、 “Code Programming ON”
- 2、 “Select Min Message Length”
- 3、 Digit Code “8” , see Digit Code
- 4、 “Save Programming” , see Digit Code
- 5、 “Select Max Message Length”
- 6、 Digit Code “1”
- 7、 Digit Code “2”
- 8、 “Save Programming”
- 9、 “Code Programming OFF”



Load Factory Default



Load AIM 128 Factory Default

【Pro CMD: 99910200】

Code Programming ON



Code Programming OFF



Enable/Disable AIM 128



Enable AIM 128

【Pro CMD: 99910202】



Disable AIM 128

【Pro CMD: 99910201】



When the engine can not read AIM 128, please read “Enable AIM 128” and try again.

AIM 128 Code ID



Code ID Setting

【Pro CMD: 99910205】

Example

Example of setting AIM 128 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read AIM 128 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Select Message Length

It is used to program the valid reading length of AIM 128. The engine will send an error beep, if the decoded data length does not match the valid length.

AIM 128 Message Length is defined by “Min. Message Length” and “Max. Message Length” .

Code Programming ON



Code Programming OFF



Min Message Length

【Pro CMD: 99910203】



Max Message Length

【Pro CMD: 99910204】



1D bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of AIM 128 to 8 bytes and Max Message Length to 12 bytes, read these programming codes

- 1、 “Code Programming ON”
- 2、 “Select Min Message Length”
- 3、 Digit Code “8” , see Digit Code
- 4、 “Save Programming” , see Digit Code
- 5、 “Select Max Message Length”
- 6、 Digit Code “1”
- 7、 Digit Code “2”
- 8、 “Save Programming”
- 9、 “Code Programming OFF”



Load Factory Default



Load EAN-8 Factory Default
【Pro CMD: 99910400】

Code Programming ON



Code Programming OFF



Enable/Disable EAN-8



Enable EAN-8
【Pro CMD: 9991402】



Disable EAN-8
【Pro CMD: 99910401】



When the engine can not read EAN-8, please read “Enable EAN-8” and try again.

EAN-8 Code ID



Code ID Setting
【Pro CMD: 99910416】

Example

Example of setting EAN-8 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read EAN-8 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



2 Digits Addenda Code

2 Digits Addenda Code is the one to the right of an ordinary code.



Disable 2 Digits Addenda Code
【Pro CMD: 99910405】



Only Read With 2 digits Addenda Code
【Pro CMD: 99910407】



Enable 2 Digits Addenda Code
【Pro CMD: 99910406】

Code Programming ON



Code Programming OFF



5 Digits Addenda Code

5 Digits Addenda Code is the one to the right of an ordinary code.



Disable 5 Digits Addenda Code
【Pro CMD: 99910410】



Only Read With 5 digits Addenda Code
【Pro CMD: 99910412】



Enable 5 Digits Addenda Code
【Pro CMD: 99910411】



“ Enable 2 Digits Addenda Code “ — read an ordinary code and 2 digits Addenda Code.
“ Disable 2 Digits Addenda Code “ — read an ordinary code only, and ignore 2 digits Addenda Code.
“ Only Read With 2 digits Addenda Code “ — read 2 digits Addenda Code and only read code with 2 digits Addenda Code.



EAN-8 expand to EAN-13

“ Do Not Expand to EAN-13 “ — keep original type and digits, do not expand.

“ Expand to EAN-13 by Adding Leading 0s “ — expand to EAN-13 but keep code type.

“ Expand Message and Convert to EAN-13 “ — expand code digits and convert code type.

Code Programming ON



Code Programming OFF



Do Not Expand to EAN-13
【Pro CMD: 99910413】



Expand Message and Convert to EAN-13
【Pro CMD: 99910415】



Expand to EAN-13 by Adding Leading 0s
【Pro CMD: 99910414】

Check Digit

EAN-8 is fixed 8 digits barcode and the last digit is check digit. Check digit is a value calculated from all digits. It is used for checking if the all 8 digits are right.



Transmit Check
【Pro CMD: 99910404】



Do Not Transmit Check
【Pro CMD: 99910403】





Load Factory Default

Code Programming ON



Code Programming OFF



Load EAN-13 Factory Default

【Pro CMD: 99910500】

Disable/Enable EAN-13



Enable EAN-13

【Pro CMD: 99910502】



Disable EAN-13

【Pro CMD: 99910501】



When the engine can not read EAN-13, please read “Enable EAN-13” and try again.



Check Digit

EAN-13 is fixed 13 digits barcode and the last digit is check digit. Check digit is a value calculated from all digits. It is used for checking if the all 13 digits are right.

Code Programming ON



Code Programming OFF



Transmit Check

【Pro CMD: 99910504】



Do Not Transmit Check

【Pro CMD: 99910503】

EAN-13 Code ID



Code ID Setting

【Pro CMD: 99910513】

Example

Example of setting EAN-13 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read EAN-13 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.





2 Digits Addenda Code

2 Digits Addenda Code is the one to the right of an ordinary code.



Disable 2 Digits Addenda Code

【Pro CMD: 99910505】



Only Read With 2 digits Addenda Code

【Pro CMD: 99910507】



Enable 2 Digits Addenda Code

【Pro CMD: 99910506】

Code Programming ON



Code Programming OFF



5 Digits Addenda Code

5 Digits Addenda Code is the one to the right of an ordinary code.



Disable 5 Digits Addenda Code

【Pro CMD: 99910510】



Only Read With 5 digits Addenda Code

【Pro CMD: 99910512】



Enable 5 Digits Addenda Code

【Pro CMD: 99910511】



“ Enable 2 Digits Addenda Code “ — read an ordinary code and 2 digits Addenda Code.

“Disable 2 Digits Addenda Code “ — read an ordinary code only, and ignore 2 digits Addenda Code.

“ Only Read With 2 digits Addenda Code “ — read 2 digits Addenda Code and only read code with 2 digits Addenda Code.



Load Factory Default



Load ISSN Factory Default
【Pro CMD: 99910600】

Code Programming ON



Code Programming OFF



Enable/Disable ISSN



Enable ISSN
【Pro CMD: 99910602】



Disable ISSN
【Pro CMD: 99910601】



When the engine can not read ISSN, please read “Enable ISSN” and try again.

ISSN Code ID



Code ID Setting
【Pro CMD: 99910603】

Example

Example of setting ISSN Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read ISSN Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Load Factory Default



Load ISBN Factory Default
【Pro CMD: 99910700】

Code Programming ON



Code Programming OFF



Enable/Disable ISBN



Enable ISBN
【Pro CMD: 99910702】



Disable ISBN
【Pro CMD: 99910701】



When the engine can not read ISBN, please read “Enable ISBN” and try again.



ISBN Digits



Use 13 Digits
【Pro CMD: 99910704】

Code Programming ON



Code Programming OFF



Use 10 Digits
【Pro CMD: 99910703】

ISBN Code ID



Code ID Setting
【Pro CMD: 99910705】

E xample

Example of setting ISBN Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read ISSN Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.





Load Factory Default



Load UPC-E Factory Default

【Pro CMD: 99911000】

Code Programming ON



Code Programming OFF



Disable/Enable UPC-E



Enable UPC-E

【Pro CMD: 99911002】



Disable UPC-E

【Pro CMD: 99911001】



When the engine can not read UPC-E, please read “Enable UPC-E” and try again.



Check Digit

UPC-E is fixed 8 digits barcode and the last digit is check digit. Check digit is a value caculated from all digits. It is used for checking if the all 8 digits are right.

Code Programming ON



Code Programming OFF



Transmit Check

【Pro CMD: 99911004】



Do Not Transmit Check

【Pro CMD: 99911003】

UPC-E Code ID



Code ID Setting

【Pro CMD: 99911020】

E

xample

Example of setting UPC-E Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read UPC-E Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



2 Digits Addenda Code

2 Digits Addenda Code is the one to the right of an ordinary code.



Disable 2 Digits Addenda

【Pro CMD: 99911005】



Only Read With 2 digits Addenda Code

【Pro CMD: 99911007】



Enable 2 Digits Addenda Code

【Pro CMD: 99911006】

Code Programming ON



Code Programming OFF



5 Digits Addenda Code

5 Digits Addenda Code is the one to the right of an ordinary code.



Disable 5 Digits Addenda Code

【Pro CMD: 99911010】



Only Read With 5 digits Addenda Code

【Pro CMD: 99911012】



Enable 5 Digits Addenda Code

【Pro CMD: 99911011】



“ Enable 2 Digits Addenda Code “ — read an ordinary code and 2 digits Addenda Code.
 “Disable 2 Digits Addenda Code “ — read an ordinary code only, and ignore 2 digits Addenda Code.

“ Only Read With 2 digits Addenda Code “ — read 2 digits Addenda Code and only read code with 2 digits Addenda Code.



Transmit Default “0”

The first byte of UPC-E is default to “0” .



Do Not Transmit “0”
【Pro CMD: 99911013】



Transmit “0”
【Pro CMD: 99911014】

Code Programming ON



Code Programming OFF



UPC-E Expand to UPC-A

“ Do Not Expand “ — keep original type and digits, do not expand.

“Expand to UPC-A “ — expand to UPC-A but keep code type.

“ Expand Message and Convert to UPC-A “ — expand code digits and convert code type.



Do Not Expand
【Pro CMD: 99911015】



Expand Message and Convert to UPC-A
【Pro CMD: 99911017】



Expand to UPC-A
【Pro CMD: 99911016】





Load Factory Default



Load UPC-A Factory Default

【Pro CMD: 99911100】

Code Programming ON



Code Programming OFF



Disable/Enable UPC-A



Enable UPC-A

【Pro CMD: 99911102】



Disable UPC-A

【Pro CMD: 99911101】



When the engine can not read UPC-A, please read “Enable UPC-A” and try again.

UPC-A Code ID



Code ID Setting

【Pro CMD: 99911115】

Example

Example of setting UPC-A Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read UPC-A Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.





Check Digit

Code Programming ON



UPC-A is fixed 13 digits barcode and the last digit is check digit. Check digit is a value caculated from all digits. It is used for checking if the all 13 digits are right.

Code Programming OFF



Transmit Check

【Pro CMD: 99911104】



Do Not Transmit Check

【Pro CMD: 99911103】

Transmit Default “0”

The first byte of UPC-A is default to “0” .



Do Not Transmit “0”

【Pro CMD: 99911113】



Transmit “0”

【Pro CMD: 99911114】



2 Digits Addenda Code

2 Digits Addenda Code is the one to the right of an ordinary code.



Disable 2 Digits Addenda Code

【Pro CMD: 99911105】



Only Read With 2 digits Addenda Code

【Pro CMD: 99911107】



Enable 2 Digits Addenda Code

【Pro CMD: 99911106】

Code Programming ON



Code Programming OFF



5 Digits Addenda Code

5 Digits Addenda Code is the one to the right of an ordinary code.



Disable 5 Digits Addenda Code

【Pro CMD: 99911110】



Only Read With 5 digits Addenda Code

【Pro CMD: 99911112】



Enable 5 Digits Addenda Code

【Pro CMD: 99911111】



“ Enable 2 Digits Addenda Code “ — read an ordinary code and 2 digits Addenda Code.

“Disable 2 Digits Addenda Code “ — read an ordinary code only, and ignore 2 digits Addenda Code.

“ Only Read With 2 digits Addenda Code “ — read 2 digits Addenda Code and only read code with 2 digits Addenda Code.



Load Factory Default



Load Interleaved 2 of 5 Factory Default

【Pro CMD: 99911200】

Code Programming ON



Code Programming OFF



Disable/Enable Interleaved 2 of 5



Enable Interleaved 2 of 5

【Pro CMD: 99911202】



Disable Interleaved 2 of 5

【Pro CMD: 99911201】



When the engine can not read Interleaved 2 of 5, please read “Enable Interleaved 2 of 5” and try again

Interleaved 2 of 5 Code ID



Code ID Setting

【Pro CMD: 99911210】

Example

Example of setting Interleaved 2 of 5 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Interleaved 2 of 5 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.





Check Digit

Interleaved 2 of 5 may include Check Digit (not compulsory) following its barcode messages. If included, it could be the last digit. It verifies the barcode message.

» “NO Check, Transmit All” means to read without check and transmit all bytes including barcode message and Check digit.

» “Check, Do Not Transmit Check Digit” means to read and check. If verification is successful, transmit barcode message; if not, engine sends an error beep.

» “Check, Transmit All” means to read and check. If verification is successful, transmit all messages; if not, engine sends an error beep.

Code Programming ON



Code Programming OFF



“NO Check, Transmit All”
【Pro CMD: 99911203】



Check, Do Not Transmit Check Digit
【Pro CMD: 99911204】



Check, Transmit All
【Pro CMD: 99911205】



When “Check, Do Not Transmit Check digit” is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.
E.g.: Reading a 4-byte (include check Digit) Interleaved 2 of 5 with the Min Message Length being 4 bytes and “Check, Do Not Transmit Check digit” enabled leads to error beep.



Select Message Length

It is used to program the valid reading length of Interleaved 2 of 5. The engine will send an error beep, if the decoded data length does not match the valid length.

Interleaved 2 of 5 Message Length is defined by “Min. Message Length” and “Max. Message Length”

Code Programming ON



Code Programming OFF



Min Message Length
【Pro CMD: 99911206】



Max Message Length
【Pro CMD: 99911207】



1D bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of Interleaved 2 of 5 as 8 bytes, and Max Message length as 12 bytes, read these programming codes:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8” , see Digit Code Appendix (Pxxx)
4. “Save Programming” , see Digit Code Appendix (Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”



ITF-6 is a fixed length 6 bytes Interleaved 2 of 5 barcode with check digit.
When enabled, ITF-6 precedes 6-byte Interleaved 2 of 5 barcode.



Load ITF-6 Factory Default
【Pro CMD: 99911300】



Disable ITF-6 User Selection
【Pro CMD: 99911301】



Enable ITF-6, Do Not Transmit Check Digit
【Pro CMD: 99911302】



Enable ITF-6, Transmit Check Digit
【Pro CMD: 99911303】



For instance, when ITF-6 is enabled and Interleaved 2 of 5 is disabled, the ITF-6 and 6 bytes Interleaved 2 of 5 with check digit can be read, but other Interleaved 2 of 5 can not.

ITF-6 Code ID



Code ID Setting
【Pro CMD: 99911304】

Example

- Example of setting ITF-6 Code ID to “p” (0x70)
1. Read Enable Code Programming barcode.
 2. Read ITF-6 Code ID Setting barcode.
 3. Read Following Barcodes: “7” , and “0”
 4. Read Save barcode
 5. Read Disable Code Programming barcode.



ITF-14 is a fixed length of 14 bytes Interleaved 2 of 5 barcode with Check digit. By factory default, it is disabled.

Code Programming ON



When enabled, ITF-14 precedes 14-byte Interleaved 2 of 5 barcode.

Code Programming OFF



Load ITF-14 Factory Default
【Pro CMD: 99911400】



Enable ITF-14, Do Not Transmit Check Digit
【Pro CMD: 99911402】



Disable ITF-14
【Pro CMD: 99911401】



Enable ITF-14, Transmit Check Digit
【Pro CMD: 99911403】



For instance, when ITF-14 is enabled and Interleaved 2 of 5 is disabled, the ITF-14 and 14 bytes Interleaved 2 of 5 with check digit can be read, but other Interleaved 2 of 5 can not. If the programming of ITF-14 violates the one of Deutsche 14, ITF-14 precedes Deutsche 14.

ITF-14 Code ID



Code ID Setting
【Pro CMD: 99911404】

Example

Example of setting ITF-14 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read ITF-14 Code ID Setting barcode.
3. Read Following Barcodes: “7”, and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Load Factory Default



Load Deutsche14 Factory Default
【Pro CMD: 99911500】

Code Programming ON



Code Programming OFF



Disable/Enable Deutsche14



Enable Deutsche14, Do Not Transmit Check Digit
【Pro CMD: 99911502】



Disable Deutsche14
【Pro CMD: 99911501】



Enable Deutsche14, Transmit Check Digit
【Pro CMD: 99911503】



When the engine can not read Deutsche14, please read “Enable Deutsche14” and try again. If Deutsche 14 and ITF-14 are enabled at the same time, the engine may mis-decode or has chaos in programming. So it is better to disable ITF-14 if not used.

Deutsche14 Code ID



Code ID Setting
【Pro CMD: 99911504】

E
xample

Example of setting Deutsche14 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Deutsche14 Code ID Setting barcode.
3. Read Following Barcodes: “7”, and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Load Factory Default



Load Deutsche12 Factory Default

【Pro CMD: 99911600】

Code Programming ON



Code Programming OFF



Disable/Enable Deutsche12



Enable Deutsche12, Do Not Transmit Check Digit

【Pro CMD: 99911602】



Disable Deutsche12

【Pro CMD: 99911601】



Enable Deutsche12, Transmit Check Digit

【Pro CMD: 99911603】



When the engine can not read Deutsche12, please read “Enable Deutsche12” and try again. If Deutsche 12 and ITF-12 are enabled at the same time, the engine may mis-decode or has chaos in programming. So it is better to disable ITF-14 if not used.

Deutsche12 Code ID



Code ID Setting

【Pro CMD: 99911604】

Example

Example of setting Deutsche12 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Deutsche12 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Load Factory Default



Load COOP25 Factory Default

【Pro CMD: 99911700】

Code Programming ON



Code Programming OFF



Enable/ Disable COOP25



Enable COOP25

【Pro CMD: 99911702】



Disable COOP25

【Pro CMD: 99911701】



When the engine can not read COOP25, please read “Enable COOP25” and try again.

COOP25 (Japanese Matrix 25) Code ID



Code ID Setting

【Pro CMD: 99911710】

Example

Example of setting COOP25 (Japanese Matrix 25) Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read COOP25 (Japanese Matrix 25) Code ID Setting barcode.
3. Read Following Barcodes: “7”, and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.





Check Digit

COOP25 may include Check Digit (not compulsory) following its barcode messages. If included, it may be the last digit. It verifies the barcode message.

» “NO Check, Transmit All” means to read without check and transmit all bytes including barcode message and Check Digit.

» “Check, Do Not Transmit Check Digit” means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» “Check, Transmit All” means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

Code Programming ON



Code Programming OFF



NO Check, Transmit All
【Pro CMD: 99911703】



Check, Transmit All
【Pro CMD: 99911704】



Check, Do Not Transmit Check Digit
【Pro CMD: 99911705】



When “Check, Do Not Transmit Check Digit” is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.

E.g.: Reading a 4-byte (include Check Digit) COOP25 with the Min Message Length being 4 bytes and “Check, Do Not Transmit Check Digit” enabled leads to error beep.



Select Message Length

It is used to program the valid reading length of COOP25. The engine will send an error beep, if the decoded data length does not match the valid length. COOP25 Message Length is defined by “Min. Message Length” and “Max. Message Length” .

Code Programming ON



Code Programming OFF



Min Message Length
【Pro CMD: 99911706】



Max Message Length
【Pro CMD: 99911707】



ID bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of COOP25 to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8” , see Digit Code (Appendix Pxxx)
4. “Save Programming” , see Digit Code (Appendix Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”



Load Factory Default



Load Matrix 25 Factory Default
【Pro CMD: 99912000】

Code Programming ON



Code Programming OFF



Enable/ Disable Matrix 25



Enable Matrix 25
【Pro CMD: 99912002】



Disable Matrix 25
【Pro CMD: 99912001】



When the engine can not read Matrix 25, please read “Enable Matrix 25” and try again.

Matrix 25 Code ID



Code ID Setting
【Pro CMD: 99912010】

Example

Example of setting Matrix 25 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Matrix 25 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.





Check Digit

Matrix 25 may include Check Digit (not compulsory) following its barcode messages. If included, it may be the last digit. It verifies the barcode message.

» “NO Check, Transmit All” means to read without check and transmit all bytes including barcode message and Check Digit.

» “Check, Do Not Transmit Check Digit” means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» “Check, Transmit All” means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

Code Programming ON



Code Programming OFF



NO Check, Transmit All

【Pro CMD: 99912003】



Check, Transmit All

【Pro CMD: 99912004】



Check, Do Not Transmit Check Digit

【Pro CMD: 99912005】



When “Check, Do Not Transmit Check Digit” is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.

E.g.: Reading a 4-byte (include Check Digit) Matrix 25 with the Min Message Length being 4 bytes and “Check, Do Not Transmit Check Digit” enabled leads to error beep.



Select Message Length

It is used to program the valid reading length of Matrix 25. The engine will send an error beep, if the decoded data length does not match the valid length.

Matrix 25 Message Length is defined by “Min. Message Length” and “Max. Message Length” .

Code Programming ON



Code Programming OFF



Min Message Length
【Pro CMD: 99912006】



Max Message Length
【Pro CMD: 99912007】



ID bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of Matrix 25 to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8” , see Digit Code (Appendix Pxxx)
4. “Save Programming” , see Digit Code (Appendix Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”





Load Factory Default



Load Industrial 25 Factory Default

【Pro CMD: 99912100】

Code Programming ON



Code Programming OFF



Enable/ Disable Industrial 25



Enable Industrial 25

【Pro CMD: 99912102】



Disable Industrial 25

【Pro CMD: 99912101】



When the engine can not read Industrial 25, please read “Enable Industrial 25” and try again.

Industrial 25 Code ID



Code ID Setting

【Pro CMD: 99912110】

Example

Example of setting Industrial 25 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Industrial 25 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Check Digit

Industrial 25 may include Check Digit (not compulsory) following its barcode messages. If included, it may be the last digit. It verifies the barcode message.

» “NO Check, Transmit All” means to read without check and transmit all bytes including barcode message and Check Digit.

» “Check, Do Not Transmit Check Digit” means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» “Check, Transmit All” means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

Code Programming ON



Code Programming OFF



NO Check, Transmit All
【Pro CMD: 99912103】



Check, Transmit All
【Pro CMD: 99912104】



Check, Do Not Transmit Check Digit
【Pro CMD: 99912105】



When “Check, Do Not Transmit Check Digit” is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.

E.g.: Reading a 4-byte (include Check Digit) Industrial 25 with the Min Message Length being 4 bytes and “Check, Do Not Transmit Check Digit” enabled leads to error beep.



Select Message Length

It is used to program the valid reading length of Industrial 25. The engine will send an error beep, if the decoded data length does not match the valid length.

Industrial 25 Message Length is defined by “Min. Message Length” and “Max. Message Length” .

Code Programming ON



Code Programming OFF



Min Message Length
【Pro CMD: 99912106】



Max Message Length
【Pro CMD: 99912107】



ID bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of Industrial 25 to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8” , see Digit Code (Appendix Pxxx)
4. “Save Programming” , see Digit Code (Appendix Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”



Load Factory Default



Load Standard 25 Factory Default

【Pro CMD: 99912200】

Code Programming ON



Code Programming OFF



Enable/ Disable Standard 25



Enable Standard 25

【Pro CMD: 99912202】



Disable Standard 25

【Pro CMD: 99912201】



When the engine can not read Standard 25, please read “Enable Standard 25” and try again.

Standard 25 Code ID



Code ID Setting

【Pro CMD: 99912210】

E xample

Example of setting Standard 25 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Standard 25 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.





Check Digit

Standard 25 may include Check Digit (not compulsory) following its barcode messages. If included, it may be the last digit. It verifies the barcode message.

» “NO Check, Transmit All” means to read without check and transmit all bytes including barcode message and Check Digit.

» “Check, Do Not Transmit Check Digit” means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» “Check, Transmit All” means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

Code Programming ON



Code Programming OFF



NO Check, Transmit All
【Pro CMD: 99912203】



Check, Transmit All
【Pro CMD: 99912204】



Check, Do Not Transmit Check Digit
【Pro CMD: 99912205】



When “Check, Do Not Transmit Check Digit” is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.

E.g.: Reading a 4-byte (include Check Digit) Standard 25 with the Min Message Length being 4 bytes and “Check, Do Not Transmit Check Digit” enabled leads to error beep.



Select Message Length

It is used to program the valid reading length of Standard 25. The engine will send an error beep, if the decoded data length does not match the valid length.

Standard 25 Message Length is defined by “Min. Message Length” and “Max. Message Length” .

Code Programming ON



Code Programming OFF



Min Message Length
【Pro CMD: 99912206】



Max Message Length
【Pro CMD: 99912207】



1D bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of Standard 25 to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8” , see Digit Code (Appendix Pxxx)
4. “Save Programming” , see Digit Code (Appendix Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”





Load Factory Default



Load Code 39 Factory Default
【Pro CMD: 99912400】

Code Programming ON



Code Programming OFF



Enable/Disable Code 39



Enable Code 39
【Pro CMD: 99912402】



Disable Code 39
【Pro CMD: 99912401】



When the engine can not read Code 39, please read “Enable Code 39” and try again

Code 39 Code ID



Code ID Setting
【Pro CMD: 99912414】

E xample

Example of setting Code 39 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Code 39 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.





Check Digit

Code 39 may include Check Digit (not compulsory) following its barcode message. It verifies the barcode message.

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» "Check, Transmit All" means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

Code Programming ON



Code Programming OFF



NO Check, Transmit All
【Pro CMD: 99912403】



Check, Do not transmit Check Digit
【Pro CMD: 99912404】



Check, Transmit All
【Pro CMD: 99912405】



When "Check, Do not Transmit Check digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.

E.g.: Reading a 4-byte (include check byte) Code 39 with the Min Message Length being 4 bytes and "Check, Do not transmit Check Digit" enabled leads to error beep.



Transmit Start & Stop Character

Code 39 has one "*" before and another after digits as Start & Stop Character.
Transmission of "*" can be selected.

Code Programming ON



Code Programming OFF



Transmit Both "*"

【Pro CMD: 99912407】



Transmit Neither "*"

【Pro CMD: 99912406】

Decode ASCII

Code 39 can include full ASCII characters. For factory default, the engine only decodes part of them.
Read "Enable Full ASCII decode" to decode full ASCII characters.



Partial ASCII Decode

【Pro CMD: 99912410】



Full ASCII Decode

【Pro CMD: 99912411】





Select Message Length

Code 39 Message Length is defined by “Min. Message Length” and “Max. Message Length”. It is used to program the valid reading length of Code 39. The engine will send an error beep, if the decoded data length does not match the valid length.

Code Programming ON



Code Programming OFF



Min Message Length
【Pro CMD: 99912412】



Max Message Length
【Pro CMD: 99912413】



1D bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of Code 39 to 8 bytes, and Max Message Length to 12 bytes, read these programming codes:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8”, see Digit Code (Appendix Pxxx)
4. “Save Programming”, see Digit Code (Appendix Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”



Load Factory Default



Load Codabar Factory Default
【Pro CMD: 99912500】

Code Programming ON



Code Programming OFF



Enable/Disable Codabar



Enable Codabar
【Pro CMD: 99912502】



Disable Codabar
【Pro CMD: 99912501】



When the engine can not read Codabar, please read “Enable Codabar” and try again.

Codabar Code ID



Code ID Setting
【Pro CMD: 99912516】

E
xample

Example of setting Codabar Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Codabar Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Check Digit

Codabar may include Check Digit (not compulsory) following its barcode message. It verifies the barcode message.

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» "Check, Transmit All" means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

Code Programming ON



Code Programming OFF



NO Check, Transmit All
【Pro CMD: 99912503】



Check, Do not transmit Check Digit
【Pro CMD: 99912505】



Check, Transmit All
【Pro CMD: 99912504】



When "Check, Do not Transmit Check digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.

E.g.: Reading a 4-byte (include check byte) Codabar with the Min Message Length being 4 bytes and "Check, Do not transmit Check Digit" enabled leads to error beep.



Transmit Start & Stop Character

Code Programming ON



Code Programming OFF



Do Not Transmit Both Start & Stop Character
【Pro CMD: 99912506】



Transmit Both Start & Stop Character
【Pro CMD: 99912507】



Use ABCD/ABCD As Start & Stop Character
【Pro CMD: 99912510】



Use ABCD/TN*E As Start & Stop Character
【Pro CMD: 99912511】



Use abcd/abcd As Start & Stop Character
【Pro CMD: 99912512】



Use abcd/tn*e As Start & Stop Character
【Pro CMD: 99912513】





Select Message Length

Codabar Message Length is defined by “Min. Message Length” and “Max. Message Length”. It is used to program the valid reading length of Codabar. The engine will send an error beep, if the decoded data length does not match the valid length.

Code Programming ON



Code Programming OFF



Min Message Length
【Pro CMD: 99912514】



Max Message Length
【Pro CMD: 99912515】



1D bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of Codabar to 8 bytes, and Max Message Length to 12 bytes, read these programming codes:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8”, see Digit Code (Appendix Pxxx)
4. “Save Programming”, see Digit Code (Appendix Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”



Load Factory Default



Load Code 93 Factory Default

【Pro CMD: 99912600】

Code Programming ON



Code Programming OFF



Enable /Disable Code 93



Enable Code 93

【Pro CMD: 99912602】



Disable Code 93

【Pro CMD: 99912601】



When the engine can not read Code 93, please read “Enable Code 93” and try again.

Code 93 Code ID



Code ID Setting

【Pro CMD: 99912610】

E xample

Example of setting Code 93 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Code 93 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Check Digit

Code 93 may include Check Digits (not compulsory) following its barcode message. If included, they are the last two digits. They verify the barcode message.

» "NO Check, Transmit All" means to read without check and transmit all bytes including barcode message and Check Digit.

» "Check, Do Not Transmit Check Digit" means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» "Check, Transmit All" means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

Code Programming ON



Code Programming OFF



NO Check, Transmit All
【Pro CMD: 99912603】



Check, Do not transmit Check Digit
【Pro CMD: 99912604】



Check, Transmit All
【Pro CMD: 99912605】



When "Check, Do not Transmit Check digit" is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.

E.g.: Reading a 4-byte (include check byte) Code 93 with the Min Message Length being 4 bytes and "Check, Do not transmit Check Digit" enabled leads to error beep.



Select Message Length

It is used to program the valid reading length of Code 93. The engine will send an error beep, if the decoded data length does not match the valid length.

Code 93 Message Length is defined by “Min. Message Length” and “Max. Message Length.”

Code Programming ON



Code Programming OFF



Min Message Length

【Pro CMD: 99912606】



Max Message Length

【Pro CMD: 99912607】



1D bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of Code 93 to 8 bytes and Max Message Length to 12 bytes, read these programming codes:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8”, see Digit Code (Appendix Pxxx)
4. “Save Programming”, see Digit Code (Appendix Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”



Load Factory Default



Load Code 11 Factory Default

【Pro CMD: 99912700】

Code Programming ON



Code Programming OFF



Enable/ Disable Code 11



Enable Code 11

【Pro CMD: 99912702】



Disable Code 11

【Pro CMD: 99912701】



When the engine can not read Code 11, please read “Enable Code 11” and try again.

Code 11 Code ID



Code ID Setting

【Pro CMD: 99912715】

Example

Example of setting Code 11 Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Code 11 Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Check Digit

Code 11 may include Check Digit (not compulsory) following its barcode messages. If included, it may be the last one or two digits. It verifies the barcode message.

» “NO Check, Transmit All” means to read without check and transmit all bytes including barcode message and Check Digit.

Code Programming ON



Code Programming OFF



No Check

【Pro CMD: 99912703】



Single Check Digit, MOD11

【Pro CMD: 99912704】



Double Check Digits, MOD11/MOD11

【Pro CMD: 99912705】



Double Check Digits, MOD11/MOD9

【Pro CMD: 99912706】



Single Check Digit MOD11 (Len <= 10)

Double Check Digits MOD11/
MOD11 (Len > 10)

【Pro CMD: 99912707】



Single Check Digit MOD11 (Len <= 10)

Double Check Digits MOD11/
MOD9 (Len > 10)

【Pro CMD: 99912710】



Do not transmit Check Digit

【Pro CMD: 99912711】



Transmit Check Digit

【Pro CMD: 99912712】



When “Check, Do Not Transmit Check Digit” is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.

E.g.: Reading a 4-byte (include Check Digit) Code 11 with the Min Message Length being 4 bytes and “Check, Do Not Transmit Check Digit” enabled leads to error beep.



Select Message Length

It is used to program the valid reading length of Code 11. The engine will send an error beep, if the decoded data length does not match the valid length.

Code 11 Message Length is defined by “Min. Message Length” and “Max. Message Length” .

Code Programming ON



Code Programming OFF



Min Message Length
【Pro CMD: 99912713】



Max Message Length
【Pro CMD: 99912714】



ID bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of Code 11 to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8” , see Digit Code (Appendix Pxxx)
4. “Save Programming” , see Digit Code (Appendix Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”





Load Factory Default



Load Plessey Factory Default

【Pro CMD: 99913000】

Code Programming ON



Code Programming OFF



Enable/ Disable Plessey



Enable Plessey

【Pro CMD: 99913002】



Disable Plessey

【Pro CMD: 99913001】



When the engine can not read Plessey, please read “Enable Plessey” and try again.

Plessey Code ID



Code ID Setting

【Pro CMD: 99913010】

Example

Example of setting Plessey Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read Plessey Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Check Digit

Plessey may include Check Digits (not compulsory) following its barcode messages. If included, they are the last two digit. They verify the barcode message.

» “NO Check, Transmit All” means to read without check and transmit all bytes including barcode message and Check Digit.

» “Check, Do Not Transmit Check Digit” means to read and check. If verification is successful, transmits barcode message; if not, engine sends an error beep.

» “Check, Transmit All” means to read and check. If verification is successful, transmits all messages; if not, engine sends an error beep.

Code Programming ON



Code Programming OFF



NO Check, Transmit All
【Pro CMD: 99913003】



Check, Do not transmit Check Digit
【Pro CMD: 99913005】



Check, Transmit All
【Pro CMD: 99913004】



When “Check, Do Not Transmit Check Digit” is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.

E.g.: Reading a 4-byte (include Check Digit) Plessey with the Min Message Length being 4 bytes and “Check, Do Not Transmit Check Digit” enabled leads to error beep.



Select Message Length

It is used to program the valid reading length of Plessey. The engine will send an error beep, if the decoded data length does not match the valid length.

Plessey Message Length is defined by “Min. Message Length” and “Max. Message Length” .

Code Programming ON



Code Programming OFF



Min Message Length
【Pro CMD: 99913006】



Max Message Length
【Pro CMD: 99913007】



ID bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of Plessey to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8” , see Digit Code (Appendix Pxxx)
4. “Save Programming” , see Digit Code (Appendix Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”



Load Factory Default



Load MSI-Plessey Factory Default

【Pro CMD: 99913100】

Code Programming ON



Code Programming OFF



Enable/ Disable MSI-Plessey



Enable MSI-Plessey

【Pro CMD: 99913102】



Disable MSI-Plessey

【Pro CMD: 99913101】



When the engine can not read MSI-Plessey, please read “Enable MSI-Plessey” and try again.

MSI-Plessey Code ID



Code ID Setting

【Pro CMD: 99913113】

E xample

Example of setting MSI-Plessey Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read MSI-Plessey Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Check Digit

MSI-Plessey may include Check Digit (not compulsory) following its barcode messages. If included, it may be the last one or two digits. It verifies the barcode message.

» “NO Check, Transmit All” means to read without check and transmit all bytes including barcode message and Check Digit.

Code Programming ON



Code Programming OFF



No Check
【Pro CMD: 99913103】



Single Check Digit, MOD10
【Pro CMD: 99913104】



Double Check Digits, MOD10/MOD10
【Pro CMD: 99913105】



Double Check Digits, MOD10/MOD11
【Pro CMD: 99913106】



Do not transmit Check Digit
【Pro CMD: 99913107】



Transmit Check Digit
【Pro CMD: 99913110】



When “Check, Do Not Transmit Check Digit” is enabled and barcode message length minus one is less than Min Message Length, it will lead to error beep.

E.g.: Reading a 4-byte (include Check Digit) MSI-Plessey with the Min Message Length being 4 bytes and “Check, Do Not Transmit Check Digit” enabled leads to error beep.



Select Message Length

MSI-Plessey Message Length is defined by “Min. Message Length” and “Max. Message Length”. It is used to program the valid reading length of MSI-Plessey. The engine will send an error beep, if the decoded data length does not match the valid length.

Code Programming ON



Code Programming OFF



Min Message Length
【Pro CMD: 99913111】



Max Message Length
【Pro CMD: 99913112】



ID bar code Message Length should not exceed 255 bytes. If Max Message Length is less than Min Message Length, it means the engine will only support barcodes of the two lengths. If Max Message Length is equal to Min Message Length, the engine will only support barcodes of the length.

Example

To set Min Message Length of MSI-Plessey to 8 bytes and the Max Message Length to 12 bytes. Read these programming code:

1. “Code Programming ON”
2. “Select Min Message Length”
3. Digit Code “8”, see Digit Code (Appendix Pxxx)
4. “Save Programming”, see Digit Code (Appendix Pxxx)
5. “Select Max Message Length”
6. Digit Code “1”
7. Digit Code “2”
8. “Save Programming”
9. “Code Programming OFF”



Load Factory Default



Load GS1 Databar Factory Default

【Pro CMD: 99913200】

Code Programming ON



Code Programming OFF



Enable/ Disable GS1 Databar



Enable GS1 Databar

【Pro CMD: 99913202】



Disable GS1 Databar

【Pro CMD: 99913201】



When the engine can not read GS1 Databar, please read “Enable GS1 Databar” and try again.

GS1 Databar Code ID



Code ID Setting

【Pro CMD: 99913203】

Example

Example of setting GS1 Databar Code ID to “p” (0x70)

1. Read Enable Code Programming barcode.
2. Read GS1 Databar Code ID Setting barcode.
3. Read Following Barcodes: “7” , and “0”
4. Read Save barcode
5. Read Disable Code Programming barcode.



Appendix

Factory Default List

Parameters	Factory Default	Remark
General Programming		
Code Programming	On	
Send Pro Code Value	Off	
Working Mode	Hand-held Mode	
Reading a Barcode Time Length	3s	Range: 0-15s, 0 is infinite time.
Interval Length	1s	Range: 0-7.5s
Sensitivity	High Sensitivity	Enabled in Sensor Mode
Security Level	Level 1	
Beeper	Medium Frequency & Loud Volume, 150ms sound length	Beeper for a successful reading
Reading Same Barcode	Off	Enabled in Auto Mode
Restart Timer After a valid Reading	On	Enabled in Auto Mode
Communication Programming		
Baud Rate	9600	
Serial Port Check	No Check	
Stop Digit	1 Digit	Fixed
Flow Controlling	No Flow Controlling	Fixed
Data Bit	8 Bit	
Data Format Programming		
Prefix Sequences	CodeID+User Prefix+AIMID	CodeID+Prefix+(AIMID+Data) +Suffix+Terminal
AIMID	Off	]Cm Mark
CodeID	Off	One or two Digit, Capital or Small Letter
User Prefix	Off	No more than 11 digits
User Suffix	Off	No more than 11 digits
Terminal	Off	No more than 7 digits



Parameters	Factory Default	Remark
Symbol		
Code 128		
Enable	On	
Max Message Length	255	
Min Message Length	1	
UCC/EAN-128		
Enable	On	
Max Message Length	255	
Min Message Length	1	
AIM 128		
Enable	Off	
Min Message Length	1	
EAN-8		
Enable	On	
Send Check Digit	On	
Enable 2 Digits Addenda Code	Off	
Enable 5 Digits Addenda Code	Off	
Only Read With 2 digits Addenda Code	Off	
Only Read With 5 digits Addenda Code	Off	
Expand to EAN-13	Off	
Expand and Change Type to EAN-13	Off	
EAN-13		
Enable	On	
Send Check Digit	On	
Enable 2 Digits Addenda Code	Off	
Enable 5 Digits Addenda Code	Off	
Only Read With 2 digits Addenda Code	Off	
Only Read With 5 digits Addenda Code	Off	





ISSN		
Enable	Off	
ISBN		
Enable	Off	
Use 10 Digits	Off	
UPC-E		
Enable	On	
Send Check Digit	On	
Enable 2 Digits Addenda Code	Off	
Enable 5 Digits Addenda Code	Off	
Only Read With 2 digits Addenda Code	Off	
Only Read With 5 digits Addenda Code	Off	
Expand to UPC-A	Off	
Expand and Change Type to UPC-A	Off	
Send Default "0"	Off	
UPC-A		
Enable	On	
Send Check Digit	On	
Enable 2 Digits Addenda Code	Off	
Enable 5 Digits Addenda Code	Off	
Only Read With 2 digits Addenda Code	Off	
Only Read With 5 digits Addenda Code	Off	
Send Default "0"	Off	
Interleaved 2 of 5		
Enable	On	
Check	Off	
Send Check Digit	Off	
Max Message Length	255	
Min Message Length	6	No less than 4
ITF-6		
Enable	Off	
Send Check Digit	On	
ITF-14		
Enable	Off	
Send Check Digit	On	





Appendix

Factory Default List

Deutsche 14		
Enable	Off	
Send Check Digit	On	
Deutsche 12		
Enable	Off	
Send Check Digit	On	
COOP 25(Japanese Matrix 25)		
Enable	Off	
Check	Off	
Send Check Digit	Off	
Max Message Length	255	
Min Message Length	6	No less than 4
Matrix 25(European Matrix 25)		
Enable	On	
Check	Off	
Send Check Digit	Off	
Max Message Length	255	
Min Message Length	6	No less than 4
Industrial 25		
Enable	On	
Check	Off	
Send Check Digit	Off	
Max Message Length	255	
Min Message Length	6	No less than 4
Standard 25		
Enable	On	IATA 25
Check	Off	
Send Check Digit	Off	
Max Message Length	255	
Min Message Length	6	No less than 4
Code 39		
Enable	On	
Check	Off	
Send Check Digit	Off	
Send Start & Stop Character	On	





Appendix

Factory Default List

Support Full ASCII	On	
Max Message Length	255	
Min Message Length	4	No less than 4 (including Start & Stop Character)
Codabar		
Enable	On	
Check	Off	
Send Check Digit	Off	
Send Start & Stop Character	On	
ABCD/ABCD as Start & Stop Character	On	Choose 1 In 4
ABCD/TN*E as Start & Stop Character	Off	
abcd/abcd as Start & Stop Character	Off	
abcd/tn*e as Start & Stop Character	Off	
Max Message Length	255	
Min Message Length	4	No less than 4
Code 93		
Enable	On	
Check	On	
Send Check Digit	Off	
Max Message Length	255	
Min Message Length	2	No less than 1
Code 11		
Enable	Off	
Send Check Digit	Off	
No Check	On	
1 Digit, MOD11 Check	Off	
2 Digits, MOD11/MOD11 Check	Off	
2 Digits, MOD11/MOD9 Check	Off	
Auto 2 Digits, MOD11/MOD11	Off	
Auto 2 Digits, MOD11/MOD9	Off	
Max Message Length	255	
Min Message Length	4	No less than 4
Plessey		
Enable	Off	
Check	Off	
Send Check Digit	Off	





Max Message Length	255	
Min Message Length	4	No less than 1
<i>MSI-Plessey</i>		
Enable	Off	
Send Check Digit	Off	
No Check	On	
1 Digit, MOD10 Check	Off	
2 Digits, MOD10/MOD10 Check	Off	
2 Digits, MOD10/MOD11 Check	Off	
Max Message Length	255	
Min Message Length	4	No less than 1
<i>GS1 Databar</i>		
Enable	On	
Max Message Length	255	
Min Message Length	1	





Symbol	AIM ID	Possible AIM ID Modifiers(m)
Code 128	]C0	
UCC/EAN-128	]C1	
AIM 128	]C2	
ISBT 128	]C4	
EAN-8	]E4	
EAN-13	]E0	
EAN-13 with Addon	]E3	
ISSN	]X0	
ISBN	]X0	
UPC-E	]E0	
UPC-E with Addon	]E3	
UPC-A	]E0	
UPC-A with Addon	]E3	
Interleaved 2 of 5	]Im	0,1,3
ITF-6	]Im	1,3
ITF-14	]Im	1,3
Deutsche 14	]X0	
Deutsche 12	]X0	
COOP 25 (Japanese Matrix 25)	]X0	
Matrix 25(European Matrix 25)	]X0	
Industrial 25	]S0	
Standard 25	]R0	
Code 39	]Am	0,1,3,4,5,7
Codabar	]Fm	0,2,4
Code 93	]G0	
Code 11	]Hm	0,1,3
Plessey	]P0	
MSI-Plessey	]Mm	0,1
GS1 Databar	]e0	

Reference:

- » ISO/IEC 15424:2008
- » Information technology – Automatic identification and data capture techniques – Data Carrier Identifiers (including Symbology Identifiers)





Symbol	Code ID
Code 128	j
UCC/EAN-128	u
AIM 128	f
ISBT 128	t
EAN-8	g
EAN-13	d
ISSN	n
ISBN	B
UPC-E	h
UPC-A	c
Interleaved 2 of 5	e
ITF-6	r
ITF-14	q
Deutsche 14	w
Deutsche 12	l
COOP 25 (Japanese Matrix 25)	o
Matrix 25(European Matrix 25)	v
Industrial 25	i
Standard 25	s
Code 39	b
Codabar	a
Code 93	y
Code 11	z
Plessey	p
MSI-Plessey	m
GS1 Databar	R





It is must to read save after reading digit code.

Code Programming ON



Code Programming OFF



0

【Pro CMD: 99900000】



4

【Pro CMD: 99900004】



1

【Pro CMD: 99900001】



5

【Pro CMD: 99900005】



2

【Pro CMD: 99900002】



6

【Pro CMD: 99900006】



3

【Pro CMD: 99900003】



7

【Pro CMD: 99900007】





Code Programming ON



Code Programming OFF



8

【Pro CMD: 99900010】



C

【Pro CMD: 99900014】



9

【Pro CMD: 99900011】



D

【Pro CMD: 99900015】



A

【Pro CMD: 99900012】



E

【Pro CMD: 99900016】



B

【Pro CMD: 99900013】



F

【Pro CMD: 99900017】





In order to save the received data “Save” has to be read after data transition completed. If error occurs when reading data, the wrong data can be deleted and the setting up can be done again..

Eg, after a program code is received then ‘1 2 3’ in order is received, if then read “Abort One Data of Current Setting” the “3” will be deleted; if read “Abort One String of Current Setting” the ‘123’ will be deleted; if read “Abort Current Setting” both the program code and ‘123’ will be deleted, the device will be on status of “initiating program code” .

Code Programming ON



Code Programming OFF



Save

【Pro CMD: 99900020】



Abort One Data of Current Setting

【Pro CMD: 99900021】



Abort Current Setting

【Pro CMD: 99900023】



Abort All String of Current Setting

【Pro CMD: 99900022】





Version	Data Source	Description	Date	Approved
Pre-release version			20090826	

