FI-300

Fixed-Mount Area Imager Scanner

User's Manual

Contents

1.Configuring

1.1 Preface

How to configure this device: The Barcode Programming Feature gives the possibility to change the scanner settings with use programming codes.

1.2 Changing Scanner Settings with Programming Codes

You can setup your device by scanning all necessary programming codes for parameters that meet applications. After these scans, the device will save directly and permanently. To go back to the factory default settings, just scans the programming code factory default.

In order to change the scanner settings please follow the sequence below:

1) Power-up the scanner.
2) Change scanner settings by scanning any of the programming code that meet applications.

An Example:
For changing the Baud rate to 38400 only scan the programming code that represents this.

After reading a valid programming code the scanner will give a High beep and the green led indicator will lights on.

At any moment, you can stop your programming and read programming code factory default to go back to default.

1.3 Changing Scanner Settings with Utility Tool

Manufacturer has setup this scanner with the most common used programming codes, it could be possible that you need more advanced settings to use the scanner without any problems into your application.

In this case you can setup your scanner by using the advanced Utility Tool. This tool can be used with the following operation systems: Windows98, Windows2000, Windows XP en Windows Vista.

This Utility Tool can be delivered on request. Please contact your dealer

1.4 Factory Default Settings

The factory default settings are shown with * and bold in the followings sections

The readable and default enable symbologies list, please see Appendixes C.

2.Operating Settings

2.1 Scanning Triggering

<Level>

A reading session begins (lighting and decode processing on) when beam is activated and stops when beam is deactivated.

Continuous Scanning

When the scanner is turned on a continuous reading session begins (lighting and decode processing on).

Pulse

A reading session begins when beam is activated and stays on until a period of inactivity lasting the time specified by the timeout.
After the timeout, the scan engine turns off.

Flashing

Flashing mode allows power up the lighting and decoding are on (no need to activate the trigger line) and after a period of inactivity lasting the time specified by the trigger timeout, the scanner starts flashing, checking for a bar code to be read.
When a bar code is detected, the lighting and decoding automatically turn on and stay on until another period of inactivity (timeout), after the timeout the scanner starts flashing again.

Autostand

This mode allows you to switch from Flashing trigger mode to Level trigger mode.
Autostand begins in flashing mode: At power up the lighting and decoding are on (no need to activate the trigger line) and after a period of inactivity lasting the time specified by the trigger timeout, the scanner starts flashing.
To switch to Level trigger mode activate the trigger line (press the trigger).
When in Level trigger mode, after a period of inactivity lasting the time specified by the trigger timeout, the scanner switches back to flashing mode.

Toggle

This mode allows lighting and decoding toggle when the trigger line is activated.

First trigger activation = lighting and decoding on, second trigger activation = lighting and decoding off.

Presentation

*This mode allows power up lighting an*d decoding are on. After a period of inactivity lasting the time specified by the trigger timeout, the lighting turns off or is dimmed. When a new bar code is presented the lighting and decoding restart and stay on until another period inactivity.

2.2 Time Out

<2 sec>

4 sec

6 sec

2.3 Good Read Mode

When active, the scan engine stops the reading session after a successful decoding.

Note: This parameter is NOT used with continuous and continuous + flashing modes.

<Active >

Not Active

2.4 Buzzer Beep Tone

2.4.1 Beep Tone Setup

<High >

Medium

Low

2.4.2 Good Read Beeps

<One Beep >

Two Beeps

None

2.4.3 Beep Duration

60 msec

<80 msec>

200 msec

Off

2.4.4 Timing

<During Transmission>

Before Transmission

After Transmission

2.5 Good Read Duration

2.5.1 Good Read Led Duration

<80 msec >

0.5 sec

1 sec

Off

2.5.2 Error Beep

<On >

Off

2.5.3 Setup Beep

<On>

Off

2.6 Bad Read Message Settings

<Default = "NOREAD" >

Active

<Not Active >

3.Imager Settings

3.1 Imager Mode

You can set the best reading performance depends on the environment, your used application and type of barcodes.

- Linear mode for decode 1D Barcodes.
- Area mode for decode 1D and 2D barcodes.

Area mode allows you to set the position of the FI-300 in any direction regardless of the orientation of the barcode, and perform a good read on 1D and 2D barcodes.

Linear mode allows you to increase your decoding speed while scanning 1D barcodes. But, you need to position the beam across all bars in the 1D barcode.

Linear imager

<Area imager>

Area imager
Bright Environment

Area imager with
Reflective Surface

3.2 Firmware Version

Display the firmware version of the scanner, please scan below barcode.

Firmware Version

4.Programming Codes

4.1 Factory Default

The default RS232 settings are 57600 baud, 8 data bits, and no parity.

The factory default settings are shown with bold **< >** in the following pages.

To set the scanner parameters to factory default

Set factory default

Reset all configuration parameters to their factory default setting. After this reset you must select all required parameters that meet applications.

Note: The “Set factory default” setting would return to the original default setting instead of the customized setting. That is, if you are using the USB HID interface, your device will lose USB interface settings when the “Set factory default” be set. Then you must to chapter 7.3 to re-configure USB HID mode setting barcode again.

4.2 RS232 Parameters Baud Rate

4800

9600

19200

38400

<57600>

115200

4.2.1 Data Bits

Data Bits 7

<Data Bits 8>

4.2.2 Stop Bits

<Stop Bits 1>

Stop Bits 2

4.2.3 Parity

<None>

Even

Odd

4.2.4 Hardware/Software Protocols Timeout

Compose (ms): 500

<Compose (ms):1000>

Compose (ms): 1500

Compose (ms): 2000

Compose (ms): 2550

4.2.5 RS-232 Parameters–ENQ

<Not Active>

Active

<Default: 05H>

4.2.6 RS-232 Parameters–ACK

<Not Active>

Active

<Default: 06H>

4.2.7 RS-232 Parameters–NAK

<Not Active>

Active

<Default: 15H>

4.2.8 Software Protocol–XON/XOFF

Active

<Not Active>

4.2.9 Hardware Protocol–RTS/CTS

<Not Active>

Active, RTS idle after each character

Active, RTS idle after whole message

4.2.10 RS-232 Parameters-LRC

(Longitudinal Redundancy Check)

<Not Active>

Active

4.2.11 RS-232 Parameters-Inter-Character Delay

<None>

10 ms

20 ms

30 ms

40 ms

50 ms

4.2.12RS-232 Parameters-Inter-Message Delay

<None>

10 ms

30 ms

50 ms

80 ms

100 ms

4.3 USB HID Parameter

USB HID Mode

Note: The “Set factory default” setting (Chapter 7.1) would return to the original default setting instead of the customized setting. That is, if you are using the USB interface, your device will lose USB HID interface settings when the “Set factory default” be set. Then you must to re-configure USB HID mode setting barcode again.

4.4 Decoding Selection

4.4.1 Symbologies Selection

Australian Post ON

<Australian Post OFF>

AZTEC ON

<AZTEC OFF>

BPO ON

<BPO OFF>

Canada Post ON

<Canada Post OFF >

CODABAR ON

<CODABAR OFF>

Codablock A ON

<Codablock A OFF>

Codablock F ON

<Codablock F OFF>

CODE 11 ON

<CODE 11 OFF>

<CODE 39 ON>

CODE 39 OFF

CODE 93 ON

<**CODE 93 OFF>**

<CODE 128 ON>

CODE 128 OFF

<GS1-128 ON>

GS1-128 OFF

<DATAMATRIX ON>

DATAMATRIX OFF

DATAMATRIX - MIRROR ON

<DATAMATRIX - MIRROR OFF>

Dutch Post ON

<Dutch Post OFF>

<EAN-8 ON>

EAN-8 OFF

<EAN-13 ON>

EAN-13 OFF

<EAN 128 ON>

EAN 128 OFF

GS1 CC-A/B ON

<GS1 CC-A/B OFF>

GS1 CC-C ON

<GS1 CC-C OFF>

GS1 DataBar-Omni ON

<GS1 DataBar Omni OFF >

GS1 DataBar Limited ON

<GS1 DataBar Limited OFF>

GS1 DataBar Expanded ON

<GS1 DataBar Expanded>

Infomail ON

<Infomail OFF>

Interleaved 2 of 5 ON

<Interleaved 2 of 5 OFF>

Japan Post ON

<Japan Post OFF>

Matrix 2 of 5 ON

<Matrix 2 of 5 OFF>

MaxiCode ON

<MaxiCode OFF>

MicroPDF417 ON

<MicroPDF417 OFF>

MSI ON

<MSI OFF>

<PDF417 ON>

PDF417 OFF

Planet ON

<Planet OFF>

PLESSEY ON

<PLESSEY OFF>

Postnet ON

<Postnet OFF>

QR Code ON

<QR Code OFF>

Standard 2 of 5 ON

<Standard 2 of 5 OFF>

Sweden Post ON

<Sweden Post OFF >

Telepen ON

<Telepen OFF>

TLC 39 ON

<TLC 39 OFF>

<UPC-A ON>

UPC-A OFF

<UPC-E ON>

UPC-E OFF

4.4.2 Disable All Symbologies

If you want to disable all Symbologies, please scan below programming code. Or you can scan the “Off” option to disable individual symbologies.

Disable All Symbologies

Note: Do not reset individual parameters settings for each symbology. When you enable a symbology, you will recover the parameter settings stored in memory.

Anytime, you may reset to factory defaults by scanning the programming code of “Set factory default” .

4.4.3 Multi Code

The multicode function is used configure the scanner to read a series of bar codes and then transmit them all at once.

<Not active>

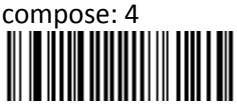
Active

Active exclusive

Number of bar codes – compose: 2

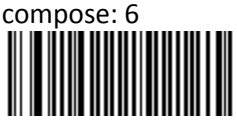
Number of bar codes – compose: 3

Number of bar codes - compose: 4



Number of bar codes – compose: 5

Number of bar codes - compose: 6



4.4.4 Activates user defined symbology identifier (UDSI) transmission for all symbologies.

[UDSI symbology id] <data>

<not transmitted>

UDSI transmitted

[UDSI symbology id] <data>

symbology	default identifier
Australia Post	P3
Aztec	D3
BPO	P2
Canada Post	P6
Codabar	B7
Codablock A	K0

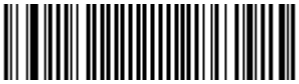
Codablock F	K1
Code 11	C1
Code 39	B1
Code 93/93i	B6
Code 128	B3
DataMatrix	D0
Dutch Post	P4
EAN-8	FF
EAN-13	F
GS1-128	C9
GS1 Composite A/B	G0
GS1 Composite C	G1
GS1 DataBar	C3
GS1 DataBar Limited	C4
GS1 DataBar Expanded	C5
Interleaved 2 of 5	B2
Japan Post	P5
Matrix 2 of 5	B4
MaxiCode	D2
MicroPDF417	C8
MSI Code	B8
PDF417	C7
Planet	P1
Plessey Code	C2
Postnet	P0
QR Code	D1
Standard 2 of 5	B5
Sweden Post	P7
Telepen	C6
TLC 39	H0
UPC-A	A0
UPC-E	E0

4.4.5 Postambles

The scanner can be programmed to output Barcode data according to the following format: [BAR CODE DATA] [POSTAMBLE STRING]
Example:
To send a <ETX> after the Barcode, scan only programming code <ETX>.
As a result, the scanner will give the following barcode data output:
[BAR CODE DATA] [<ETX>]

Postamble None

<CR+LF >



CR

LF

TAB

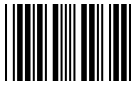
SP

Appendixes

A. Decimal Value Table

0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

B. ASCII Table

A		B		C	
D		E		F	
G		H		I	
J		K		L	
M		N		O	
P		Q		R	
S		T		U	
V		W		X	
Y		Z			

C. Readable Symbologies

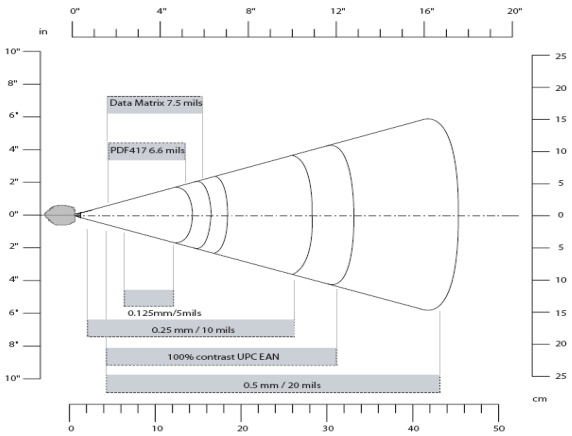
1D Symbologies

Symbologies	Readable	Default Enable
EAN/UPC	◯	◯
UCC/EAN128	◯	◯
ISBN	◯	
ISBT	◯	
Code 11	◯	
Code 39	◯	◯
Code 93/93i	◯	
Code 128	◯	◯
Interleaved 2 of 5	◯	
Matrix 2 of 5	◯	
Instustrial 2 of 5	◯	
Standard 2 of 5	◯	
Codabar	◯	
MSI	◯	
Plessey	◯	
Telepen	◯	
BPO	◯	
Codablock	◯	
Informail	◯	
Planet	◯	
TLC 39	◯	
Postnet	◯	
Postal codes	◯	
GS1-128		◯
GS1 CC-A/B/C	◯	
GS1 DataBar Omnidirectional	◯	
GS1 DataBar Limited	◯	
GS1 DataBar Expanded	◯	

2D Symbologies

Symbologies	Readable	Default Enable
Data Matrix	◯	
PDF417	◯	◯
MicroPDF417	◯	
MaxiCode	◯	
QR code	◯	
Aztec	◯	
EAN.UCC composite	◯	

D. Scan Map



Symbology	Density	Minimum Distance (+/- 10%)	Maximum Distance (+/- 10%)
Code 39	0.125 mm	5.2 cm	12.1 cm
	0.20mm	2.0 cm	21.5 cm
	0.25mm	2.4 cm	26 cm
	0.5mm	4 cm	44 cm
	1mm	7 cm	82 cm
UPC / EAN	0.33 mm	4 cm	31 cm
Data matrix	0.191 mm	5.3 cm	16.2 cm
	0.254 mm	3.8 cm	21 cm
	0.381 mm	*	28 cm
PDF417	0.16 mm	5.2 cm	14.4 cm
	0.254 mm	3.5 cm	22 cm
	0.381 mm	3 cm	36 cm

E. Test Symbologies

Scan one or more of these barcodes to test barcode symbologies you enabled.

Codabar

Code 39

Code 93

Code 128

DataMatrix

EAN 8

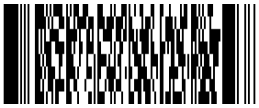
EAN13

EAN 128

Interleaved 2 of 5

MSI code

PDF417



GS1 DataBar Omnidirectional

GS1 DataBar Omni Stacked

GS1 DataBar Expanded

GS1DataBar Expanded Stacked

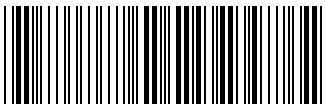
GS1 DataBar Limited

UPC A

UPC E

F. Complement

AIM identifier transmitted



AIM identifier not transmitted

Set factory default

Engine Firmware Version

Scanner Decoder Firmware Version

Due to Champtek's / Scantech ID's continuing product improvement programs, specifications and features are subject to change without notice.

October 2010