CCD Barcode Scanner
User Manual

BROCHURE

Feature:

- Linear barcode scanning：fast and easy to scan print code, paper code, screen code, and have nice performance in scanning abrasion code, fuzzy code and even damaged code
- Humanization design：ergonomical design ensures easy and comfortable operation
- Plug and play: Universal data interfaces ,support multiple Linux,MAC、Windows systems perfectly
- Directly feedback by customer: high red light Aim Line, visual and suitable with natural light. High quality LED indicator and buzzer also promote a direct user's experience
- Mobile Payment:Support all kinds of 1D screen codes

Application Field:

Medical,supermarket,retail trade,industry and mobile payment.

Performance index:

Physical Parameter

Weight（USB）	170g
Package weight（USB）	230g
Material	ABS
Device Dimension	95mmL* 70mm W * 150mm H
Package Dimension	220mm L * 100mm W * 75mm H
Cable Length	1500mm
Interface	USB、RS232、USB COM

Performance Parameter

Light source	632nm red light
Sensor	Linear CCD Sensor
Processor	ARM32-bit
Decoding speed	Up to 300 times/sec
Resolution	≥4mil/0.1mm@PCS90%
Depth of field	10-500mm
Promoting mode	buzzer，LED indicator light
Power adapter	input：DC5V,1A output：AC100~240V，50~60Hz
Power supply	110mA（work）；30mA（standby）
Ambientillumination	100,000Lux Max
Decode Capability	EAN-8, EAN-13,Codabar, CODE11, CODE 39, CODE 93, CODE128, China Post, German Post, GS1-128, GS1 Limited, GS1 Omnidirectional, UPC-A, UPC-E, ISBN/ISSN, ISBT, Interleaved 2 of 5, ITF14, Matrix 2 of 5, Industrial 2 of 5, MSI, Plessey,etc.

Depth of field

Range of decoding

Code	Code dimension	Nearest	Farthest
Code 39	0.1mm(4mil)	50mm	100mm
Code 39	0.15mm(6.0mil)	30mm	150mm
Code 39	0.25mm(9.8mil)	10mm	250mm
Code 39	0.5mm(20mil)	10mm	450mm
Code 39	1.0mm(40mm)	100mm	700mm
UPC	0.26mm(10mil)	10mm	250mm
EAN 13	0.33mm(13.0mil)	10mm	300mm

Test condition：25℃ indoor，ambient illumination200LUX，PCS=0.9

Environment Parameter

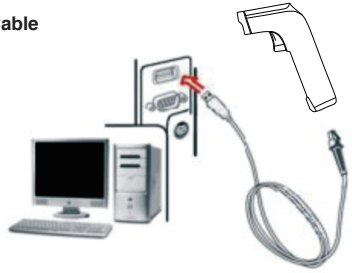
Operating Temperature	-20℃ to 50℃
Storage Temperature	-40℃ to 70℃
Relative Humidity	20% to 95%（non-condensing）
IP Level	Ip42
Drop test	1.2M，100times
Temperature test	30 minutes for high Temp., 30 minutes for low Temp.,
Highest temp	60℃
Lowest temp	-20℃
Shock resistance	10H@125RPM

Relevant regulations

Electrical safety：In accordance with UL1950、CSA C22.2 No.950、EN60950/IEC950 EMI/RFI:FCC Part 15 Class B、European Union EMC Directive、Taiwan EMC、
the environment in accordance with RoHS directive 2002/95/EEC

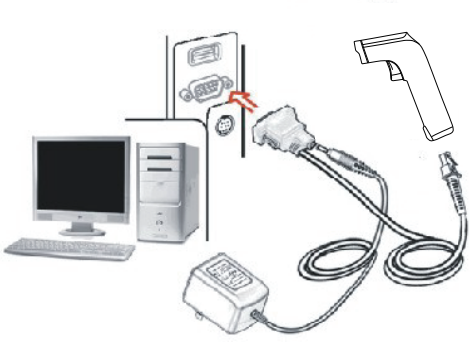
Installation of cable

USB Cable



1、Refer to the picture, connect the host with the scanner;
2、Switch on the host. If the installation is successful, the beeper and LED will work.
3、Scanner can work without External power supply.
4、Host will automatically detect the scanner.

RS232 cable



1、Make sure the power off。
2、Insert the RJ45 into the scanner。
3、Connect the RS232 to the host。
4、Plug the power adapter。
5、Power on the host. If connect right, it will prompt from beeper and LED.

Chapter 3 System Setting

Introduction

The scanner can be configured by scanning programming barcodes. All user programmable features/options are described along with their programming barcodes/commands in the following sections.

Programming Barcode

000602 — Programming Command

USB* — Features

Indicates Default

Scanning introduction

Manual scanning mode,please follow the scanning steps:

1. Press and hold the trigger button, then the light is activated, and appear the red light and the red light of sight.
2. Aim the center of the codes by red light of sight, to move the scanner between the codes to find the best scanning distance.
3. Decode successfully when you hear the buzzersound and the red light will be off,the codes will be transmitted to the host.

Note: During scanning the same series codes, you will find there will be a highly success rate between the scanner and the codes in some distance, this refers to the best reading distance.

Factory Defaults

Scanning the following barcode can restore the scanner to the factory defaults.

You need to reset your scanner when meet following situation:

1. Scanner is not configured properly which result in fails to decode barcodes;
2. You forget the settings you made before and want to avoid its influence;
3. Functions that are rarely used have been enabled for the time being.

000B0

Restore All Factory Defaults

Check the version

Scanning the code to check the scanner version.

000A0

Check the version

Send Enter Setup Barcode

Enter Setup can be sent to the host. When you set <Enter Setup Barcode Permission>successfully, the content of Enter Setup Barcode will be sent to the host. When you set <Enter Setup Barcode Forbidden>successfully, the content of Enter Setup Barcode will not be sent to the host. The Default is <Enter Setup Barcode Forbidden>.

02501
Enter Setup Barcode Permission

02500

Enter Setup Barcode Forbidden*

Scan mode

Trigger Mode:Every scanning by press button

013300
Trigger Mode

Continuous Mode:After entering into this mode,no need to press button,the LED light will be always on.The scanner can read the barcodes automatically.Note:When you read one code twice,you need to move the scanner and then get close to code.

013304
Continuous Mode

Trigger Delay Mode:After pressing the button,the LED light will be on for 3 seconds.The scanner will finish reading a code during 3 seconds.

013301
Trigger Delay Mode

Auto-sense Mode

When you finish setting the barcode scanner, it is unnecessary to trigger to scan, scanner will proceed immediately itself to detect its ambient environment change over the scanning window. After finishing scanning it stops to detect the next ambient environment change. In Auto-sense mode, you can also trigger to start scanning.

02311
Enable Auto-sense Mode

02310
Disable Auto-sense Mode

Note: When working in Auto-sense mode, please switch from "Trigger Mode".

Trigger Timeout

When users use <Trigger Delay Mode>, you can setup the timeout according to your needs, the default timeout is 3 seconds, the timeout ranges from 1s to 9.9s.

023510
set timeout to 1S

023530
set timeout to 3S*

023550
set timeout to 5S

023599
set timeout to 9.9S

Data transmission speed

The scanner can control the transmission speed by scanning the programming codes. For some non-standard Windows USB interface (i.e. through PS2 to connect USB interface), this interface can be cut down the transmission speed to guarantee the integrity and stability of the barcode scanner. The default is to close the USB high speed transmission, by using the <full speedtransmission mode>.

02301
USB High Speed

02302
USB Full Speed

02300
To close USB High Speed Transmission*

Users can setup the speed of the USB device.

001500
High Transmission Speed

001502
Medium Transmission Speed*

001504
Low Transmission Speed

001506
Lowest Transmission Speed

Buzzer Setting

When users read a barcode successfully, you will hear buzzer sound once, and also you can turn it on or off according to your needs.

014201
Buzzer on*

014200
Buzzer off

Chapter 3 Communication Settings

Introduction

The scanner provides a USB interface to communicate with the host device. The host device can receive scanned data and send commands to control the scanner or to access/alter the configuration information of the scanner via the USB interface.

USB Keyboard Types for Countries

000602
USBKeyboard(default)*

Country/language Choose

Keyboard layouts vary from country to country. All supported keyboard types are listed below.

0005000
U.S./China（American English）*

0005001
Canada（French）

0005002
Netherland（Dutch）

0005003
Spain (Spanish)

0005004
Argentina (Spanish)

0005005
Brazil (Portuguese)

0005006
Denmark (Danish)

0005007
UK (British English)

0005008
Italy (Italian)

0005009
France (French)

0005010
Germany (German)

0005011
Norway (Norsk)

0005012
Sweden/Finland（Swedish/Finnish）

0005013
Slovakia（Slovak）

0005014
Portuguesa（Portuguese）

0005015
Czech（Czech）

0005016
Belgium（Dutch）

0005017
Turkish-F

0005018
Turkish-Q

0005019
Poland（Polish 214）

0005020
Switzerland（German/French）

0005021
Croatia (Srb-Crt)

0005022
Hungary (Hungarian)

0005023
Japan (Japanese)

0005024
Russia (Russian)

USB COM Port Emulation

This feature allows the host to receive data in the way as a serial port does. However, you need to set communication parameters on the scanner to match the Host requirements. A driver is required for this feature.

000603
USB COM Port Emulation

Note：In USB COM Port Emulation, the port protocol parameter of the scanner can match the port parameter of application of the host automatically.

RS232 Interface

Serial communication interface is usually used to connect the scanner to a host device (like PC, POS).When the scanner is connected to a host device through its RS-232 interface, you need to setcommunication parameters to match the host device.

000601
RS232 Serial Port

Baud rate

Baud rate is the number of bits of data transmitted per second. Set the scanner's baud rate to match the host requirements. All supported baud rate are listed below.

000701
600bps

000702
1200bps

000703
2400bps

000704
4800bps

000705
9600bps*

000706
19200bps

000707
38400bps

000708
57600bps

000709
115200bps

Chapter 5 Data Edition

Introduction

After a successful barcode read, a string containing numbers, letters or symbols will be returned.In real applications, barcode data may be found insufficient for your needs. You may wish to includeadditional information such as barcode type, data acquisition time or delimiter in data being scanned.Adding extra information to printed barcodes does not seem like a sensible solution since that willincrease the barcode size and make them inflexible. Instead, we come up with the idea of appendingprefix and suffix to the data without making any change to barcodes. We will show you how to conduct theconfiguration in the following sections.
Note: Customized data: <Prefix><Data><Suffix><Terminating Character>

Ending Character Setting

Corresponding terminating character can be added during using the scanner to meet the user's requirements

0212@\r
Add Return CR*

0212@\n
Add Newline LF*

0213@\r\n
Add Return and Newline

0210@
None

Code ID Setting

Users usually need to know barcode type in the process of scanning, you can use Code ID prefix to recognize the barcode type. Please read “Appendix A” for the reference of the Code ID corresponding barcode type. No Code ID default setting.

01400
Enable Code ID*

01401
Disable Code ID（prefix）

01402
Enable Code ID（suffix）

Convert Case

This parameter is valid when the Covert Case is set.When the Convert All to Lower Case feature is enabled, barcode data “aBC123” is transmitted as “abc123”.

02510

No Case Conversion*

02511

Convert All to Upper Case

02512

Convert All to Lower Case

02513

Invert Upper and Lower Case Characters

Custom Prefix and Suffix

Users can custom the prefix and suffix of the output code for your requirements. For example, when you add prefix “VC” to barcode “123”, the host will receive “VC123”. When you add suffix “DE” to barcode “123”, the host will receive “123DE”.

Set Custom Prefix

To set a custom prefix, scan the “Add Prefix” barcode first, then scan the corresponding barcodein"Appendix B"for your requirement, at last setting is done.
Note: A custom prefix cannot exceed 32 characters.

02240
Add Prefix

02220
Clear All Prefix

Set Custom Suffix

To set a custom suffix, scan the “Add Suffix” first, then scan the corresponding barcode in"Appendix B"for your requirement, at last setting is done.

Note: Terminating character is not including when eliminate the suffix characters.

02241

Add Suffix

02200

Clear All Suffix

Note：When you clear suffix, you will not clear the terminating character.

Quit setting prefix and suffix

Scan the "Quit Adding the Prefix&Suffix" programming codes when you don't want to add the prefix&suffix after the "Add Prefix/Suffix" being scanned.

02242

Quit Adding the Prefix&Suffix

Chapter 6 Symbologies

Introduction

Every symbology (barcode type) has its own unique attributes. This chapter provides programming barcodes for configuring the scanner so that it can identify various barcode symbologies. It is recommended to disable those that are rarely used to increase the efficiency of the scanner.

EAN-8

Enable/Disable EAN-8

00371

Enable EAN-8*

00370

Disable EAN-8

Transmit Check Digit

EAN-8 is 8 digits in length with the last one as its check digit used to verify the integrity of the data.The default mode opens “transmit EAN-8 Check Digit”.Users can scan the code below to choose it.

00571

Transmit EAN-8 Check Digit*

00570

Do Not Transmit EAN-8 Check Digit

Add-On Code

An EAN-8 barcode can be augmented with a two-digit or five-digit add-on code to form a new one. In the examples below, the part surrounded by blue dotted line is an EAN-8 barcode while the part circled by red dotted line is add-on code. The default mode opens “Disable Add-on Code”. Users can take “Add-On Code Setting”as reference.

Enable/Disable EAN-13

00361
Enable EAN-13*

00360
Disable EAN-13

Transmit Check Digit
EAN-13 is 13 digits in length with the last one as its check digit used to verify the integrity of the data. The default mode opens “Transmit EAN-13 Check Digit”. Users can choose to send it or not.

00461
Transmit EAN-13 Check Digit*

00460
Do Not Transmit EAN-13 Check Digit

Add-On Code

An EAN-13 barcode can be augmented with a two-digit or five-digit add-on code to form a new one. In the examples below, the part surrounded by blue dotted line is an EAN-13 barcode while the part circled by red dotted line is add-on code. Users can take “Add-On Code Setting” for reference.

EAN-13 Transfer to ISBN

The International Standard Book Number (ISBN) is a unique numeric commercial book identifier. The ISBN is 13 digits long, When you scan “EAN-13 Transfer to ISBN”programming code, the output code will be 10 digits long ISBN code. The default closes this mode.

00481

Enable EAN-13 Transfer to ISBN

00480

Disable EAN-13 Transfer to ISBN

EAN-13 Transfer to ISSN

An International Standard Serial Number (ISSN) is used to uniquely identify a serial publication. When you scan “EAN-13 Transfer to ISSN”programming code, the output code will be 10 digits long ISSN code. The default closes this mode.

01501

Enable EAN-13 Transfer to ISSN

01500

Disable EAN-13 Transfer to ISSN

Codabar

Enable/Disable Codabar

00851
Enable Codabar

00850
Disable Codabar

Start/Stop Characters

00861
Enable CodabarStart/Stop Character

00860
Disable Codabar Start/Stop Characters*

Code 11

Enable/Disable Code 11

01261
Enable Code 11*

01260
Disable Code 11

Code 39

Enable/Disable Code 39

00221
Enable Code 39*

00220
DisableCode 39

Start/Stop Characters

There is a code like this <*Code39*>, These hash keys refers to Start and Stop, you can set it whether the start and stop character transmit with the barcode.

00281
Enable Code39Start/Stop Characters

00280
Disable Code39Start/Stop Characters*

Enable/Disable Code 39 Full ASCII

The scanner can be configured to identify all ASCII characters by scanning the appropriate barcode below.

00231
Enable Code 39 Full ASCII*

00230
Disable Code 39 Full ASCII

Code 93

Enable/Disable Code 93

00621
Enable Code 93*

00620
Disable Code 93

Code 128

Enable/Disable Code 128

00691
Enable Code 128*

00690
Disable Code 128

GS1 DataBar Limited（RSS Limited）

Enable/Disable RSS Limited

01771
Enable RSS Limited

01770
Disable RSS Limited*

GS1 DataBar Omnidirectional（RSS Omnidirectional）

Enable/Disable RSS Omnidirectional

01671
Enable RSS Omnidirectional

01670
Disable RSS Omnidirectional*

UPC-A

Enable/Disable UPC-A

00341
Enable UPC-A*

00340
Disable UPC-A*

Transmit Check Digit
UPC-A is 12 digits in length with the last one as its check digit used to verify the integrity of the data. The default mode opens “Transmit UPC-A Check Digit”. Users can choose to send it or not.

00421
Transmit UPC-A Check Digit*

00420
Do Not Transmit UPC-A Check Digit

Add-On Code

A UPC-A barcode can be augmented with a two-digit or five-digit add-on code to form a new one. In the examples below, the part surrounded by blue dotted line is a UPC-A barcode while the part circled by red dotted line is add-on code. Users can take “Add-On Code Setting” for reference.

UPC-A transfer toEAN-13

Users can set to transfer UPC-A to EAN-13 according to your needs. The default closes this mode.

00391
Enable UPC-A Transfer toEAN13

00390
Disable UPC-A Transfer toEAN13*

UPC-E

Enable/Disable UPC-E

00351
Enable UPC-E*

00340
Disable UPC-E

Transmit Check Digit
In the examples below, the part surrounded by blue dotted line is a UPC-A barcode while the part circled by red dotted line is add-on code. Users can take “Add-On Code Setting” for reference.

UPC-E transfer to UPC-A

Users can set to transfer UPC-E to UPC-A according to your needs. The default closes this mode.

00381
Enable UPC-E Transfer to UPC-A

00380
Disable UPC-E Transfer to UPC-A*

Interleaved 2 of 5

Enable/DisableInterleaved 2 of 5

00961
EnableInterleaved 2 of 5*

00960
DisableInterleaved 2 of 5

Industrial 2 of 5

Enable/DisableIndustrial 2 of 5

01061
EnableIndustrial 2 of 5*

01060
DisableIndustrial 2 of 5

Standard 2 of 5

Enable/DisableStandard 2 of 5

01871
Enable Standard 2 of 5*

01870
DisableStandard 2 of 5

Matrix 2 of 5

Enable/DisableMatrix 2 of 5

01461
EnableMatrix 2 of 5*

01460
DisableMatrix 2 of 5

MSI

Enable/DisableMSI

01151
EnableMSI

01150
Disable MSI*

Plessey

Enable/DisablePlessey

01161
EnablePlessey

01160
DisablePlessey*

Add-On Code Setting

Users can scan the code below to open or close the setting of UPC/EAN/JAN.

00551
Enable 2-Digit Add-On Code

00552
Enable 5-Digit Add-On Code

00553
Enable 2&5-Digit Add-On Code

00550
Disable Digit Add-On Code*

Chapter 8 Appendix

Appendix A

Number	Code ID	Barcode Type（For prefix&Suffix）	Symbology
1	@	00	All Codes
2	A	01	CODE 128
3	C	03	EAN 8
4	D	04	EAN 13
5	E	05	UPC-A
6	F	06	UPC-E
7	I	09	CODE 93
8	J	0A	GS1 Omnidirectional
9	K	0B	GS1 Limited
10	M	0D	CODE 39
11	N	0E	Interleaved 2 of 5
12	O	0F	Industrial 2 of 5
13	P	10	Standard 2 of 5
14	Q	11	Matrix 2 of 5
15	S	13	MSI
16	T	14	Plessey
17	U	15	CODE 11
18	V	16	Codebar

Appendix B（ASCII）


1001
SOH（01）


1002
STX（01）


1003
ETX


1004
EOT（04）


1005
ENQ（05）


1006
ACK（06）


1007
BEL（07）


1008
Backspace（08）


1009
HT （09）


1010
LF（0A）


1011
VT（0B）


1012
FF（0C）


1013
CR（0D）


1014
SO（0E）


1015
SI（0F）


1016
DEL（10）


1017
DC1（11）


1018
DC2（12）


1019
DC3（13）


1020
DC4（14）


1021
NAK（15）


1022
SYN（16）


1023
ETB（17）


1024
CAN（18）

1025

EM（19）

1028

FS（1C）

1031

US（1F）

1034

“（22）

1037

%（25）

1040

(（28）

1043

+（2B）

1046

.（2E）

1026

SUB（1A）

1029

GS（1D）

1032

Space（20）

1035

#（23）

1038

&（26）

1041

)（29）

1044

,（2C）

1047

/（2F）

1027

ESC（1B）

1030

RS（1E）

1033

!（21）

1036

$（24）

1039

‘（27）

1042

*（2A）

1045

-（2D）

1048

0（30）

1049

1（31）

1050

2（32）

1051

3（33）

1052

4（34）

1053

5（35）

1054

6（36）

1055

7（37）

1056

8（38）

1057

9（39）

1058

:（3A）

1059

;（3B）

1060

<（3C）

1061

=（3D）

1062

>（3E）

1063

?（3F）

1064

@（40）

1065

A（41）

1066

B（42）

1067

C（43）

1068

D（44）

1069

E（45）

1070

F（46）

1071

G（47）

1072

H（48）

1073

I（49）

1074

J（4A）

1075

K（4B）

1076

L（4C）

1077

M（4D）

1078

N（4E）

1079

O（4F）

1080

P（50）

1081

Q（51）

1082

R（52）

1083

S（53）

1084

T（54）

1085

U（55）

1086

V（56）

1087

W（57）

1088

X（58）

1089

Y（59）

1090

Z（5A）

1091

[（5B）

1092

\（5C）

1093

]（5D）

1094

^（5E）

1095

_（5F）

1096

`（60）

1097

a（61）

1098

b（62）

1099

c（63）

1100

d（64）

1101

e（65）

1102

f（66）

1103

g（67）

1104

h（68）

1105

i（69）

1106

j（6A）

107

k（6B）

1108

l（6C）

1109

m（6D）

1110

n（6E）

1111

o（6F）

1112

p（70）

1113

q（71）

1114

r（72）

1115

s（73）

1116

t（74）

1117

u（75）

1118

v（76）

1119

w（77）

1120

x（78）

1121

y（79）

1122

z（7A）

1123

{（7B）

1124

|（7C）

1125

}（7D）

1126

~（7E）

1127

Delete（7F）

Appendix C（Function Key Sheet）

1128

F1（80）

1131

F4（83）

1134

F7（86）

1137

F10（89）

1140

Insert（8C）

1143

Delete（8F）

1146

Right arrow（92）

1149

Uparrow（95）

1129

F2（81）

1132

F5（84）

1135

F8（87）

1138

F11（8A）

1141

Home（8D）

1144

End（90）

1147

Leftarrow（93）

1130

F3（82）

1133

F6（85）

1136

F9（88）

1139

F12（8B）

1142

Page UP（8E）

1145

Page Down（91）

1148

Down arrow（94）