2D Image Barcode Scanner

I2DBC024

Decoder & Platform

Programming Manual

CONTENTS

Getting Started

Installing USB Interface Scanner

I2DBC024 is 2D image bar code scanner which can read all 1D and 2D bar codes. It is Plug and Play, no need to install any driver or software to read bar codes. What you need to do is inserting its USB cable into USB port of tablet, PC or POS device. When you hear two buzzer sound, meaning the scanner is ready for reading. If no buzzer sound after inserting the USB cable. Please change into another USB port and try again. Besides, this scanner support bar codes reading though phone/PC screen.

1) The default mode of I2DBC024 is **USB-HID**, which means you can use the scanner as a input device, to display the bar codes' result at anywhere you wanna input by reading the bar code.

2) If you wanna add Suffix or Prefix, please follow the guide in page **25**.

3) If you wanna read bar code in languages like Italy, German, French, Spain, Japanese, etc, please follow the guide in page **13**. Just be sure your keyboard and hardware is in same language.

4) If you set the bar code incorrectly by mistake, please read "Restore factory settings" in page **5** to reset the scanner.

Using as Virtual Serial Interface Scanner

1) If you need Virtual Serial port, please setup by reading the setting barcode **"USB Virtual COM Port"** in page **3**.

2) You need to download **"Virtual Serial Driver"** at: http://bit.ly/2KIdq3Q.

3) Run the **"Serial Driver"** when you read bar codes as a virtual serial device.

USB Virtual COM Port

Baud Rate Settings

1200bps

4800bps

*9600bps

14400bps

19200bps

38400bps

57600bps

Setting Procedures

1) Locate a group that contains the parameters to be changed.

2) Scan the Setting label. The scanner will sound beeps indicate that set is in progress

3) Scan the label representing the parameter to be changed

4) Scan the "Save" to end the group currently selected, the scanner will sound beeps

5) Repeat the procedure for other groups including the parameters to be changed

Scan the bar code below to watch training video of I2DBC024 about installment and setup on Youtube.

Youtube Training Video

Please read "SAVE" barcode after every setup.

SAVE

Setting Flow Chart

```
┌─────────────────────────┐
│    SELECT COMMANDS      │
└─────────────────────────┘
             │
┌─────────────────────────┐
│      PARAMETER          │
│      (OPTIONAL)         │
└─────────────────────────┘
             │
┌─────────────────────────┐
│         SAVE            │
└─────────────────────────┘
```


Set Default to Factory

Show Version

Scan the bar code below to download user manual of

I2DBC024.

Download User Manual

1.1   USB Interface

After inserting of USB cable, scan "USB PC keyboard" to configure the device to standard keyboard input mode.

USB PC keyboard

2.   Scanning Mode

2.1   Manual Mode

Manual mode is the default mode. Under this mode, device starts to read after the trigger button is pressed, stop reading while reading completed and output message or trigger button is released.

Manual mode

2.2   Continuous Mode

After configuration, module starts to read without being triggered, it waits for certain time (available to be set) to automatically start another reading while read succeeds and output message or finish single read. Module works with the loop if the following situation does not happen: users can single click trigger button to pause reading. Single click the trigger button to continue with loop.

Continuous mode

Single read time

Under the continuous mode, the parameter means the max. length of time for continuous reading before it succeeds. After reading succeeds or single read timeout, the module will enter interval that it doesn＇t read. The single read range is set 0.1~25.5s, step size 0.1s; while it is set as 0, means infinite. The default time is 5.0s.

1000ms

3000ms

*5000ms

Infinite

Read interval time

The parameter means interval between adjacent two readings, which is after last reading (succeed or not), do not read during the set interval time, and start next reading until it ends. The time range is set 0~25.5s, step size 0.1s. The default time is 1.0s.

No interval

500ms

*1000ms   **1500ms**

2.3   Inductive Mode

After configuration, module immediately starts to monitor the brightness of surroundings without being triggered, it waits until the set image stabilization time ends to read while the scene changes. The module waits for certain time (available to be set) to start monitoring again while read succeeds and output message or single read timeout. Module works the loop if the following situation does not happen: it doesn't scan a bar code within a single read time, the module will automatically pause and enter monitor status. Under the inductive mode, it starts to read while the trigger button is pressed, and keep monitoring the brightness of surroundings while read succeeds and output message or trigger button is released.
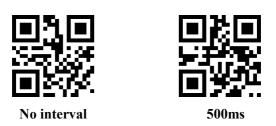

Inductive mode

Single read time

Under the inductive mode, the parameter means the max. length of time for continuous reading before it succeeds. After reading succeeds or single read timeout, the module will enter interval that it doesn't read. The single read range is set 0.1~25.5s, step size 0.1s; while it is set as 0, means infinite. The default time is 5.0s.

1000ms

3000ms

5000ms

Infinite

Read interval time

After reading succeeds and output message or single read timeout, the module will enter monitor status again after a certain time (available to be set). The time range is set 0~25.5s, step size 0.1s. The default time is 1.0s.

No interval

500ms

*1000ms

1500ms

Image stabilization time

Image stabilization time means under the inductive mode, time needed for image to be stabilized while scene change is detected. The time range is set 0~25.5s, step size 0.1s. The default time is 0.4s.

100ms

400ms

1000ms

2000ms

3. Reminder Setting

3.1 Lighting

Users to select any of them based on application environment.

Normal (default): Light is on while work, otherwise off.

Always on: Light is always on while module starts to work.

No lighting: No lighting under any circumstances.

*Normal

Always on

No lighting

3.2 Aiming

It helps to find the best read distance. Users to select any mode based on application environments.

Normal (**default**): Aiming while module works only.

Always on: Always on while module starts to work.

No aiming: No aiming under any circumstances.

*Normal   **Always on**   **No lighting**

4.1   All Indication Sound

Scan "buzzer drive frequency" to set buzzer to active or passive buzzer, and set drive frequency of passive buzzer as well.

Buzzer drive frequency-passive low frequency

*Buzzer drive frequency-passive mid frequency

Buzzer drive frequency-passive high frequency

Scan "enable silence" to disable all indication sound. Scan "disable silence" to cancel silence.

Enable silence

*Disable silence

4.2 Tail

Enable the function for host to distinguish the decoding results quickly.

Read "Add tail" to enable the function, if read succeeds, add related tail after decoding.

Disable tail

*Add tail CR

Add tail TAB

Add tail CRLF

4.3 Keyboard Settings

Scan "Keyboard" of different countries for host of different countries to use devices.

USA

French

German

Italy

Spain

Japanese

Czech

Hungry

5.1　All Bar Code

Scan the following setup codes to enable/disable reading all readable types of bar code. Enable to read setup code only after disabling all types.

Enable to read all types

Disable to read all types

*Open default reading types

5.2 Bar Code Tilt

Scan the following setup codes to enable/disable 360° tilt reading all readable types of bar code. Disable 360° tilt reading will improve decoding speed.

*360° tilt read allowed

360° tilt read not allowed

6. Bar code Type Setting

6.1 EAN13

Scan the following setup codes to enable/disable reading

EAN13.

*Enable to read EAN13   **Disable to read EAN13**

Add Additional Code to EAN13

*Disable 2 bits Add-Code   **Enable 2 bits Add-Code**

*Disable 5 bits Add-Code   **Enable 5 bits Add-Code**

6.2　EAN8

Scan the following setup codes to enable/disable reading EAN8.

*Enable to read EAN8

Disable to read EAN8

*Disable 2 bits Add-Code

Enable 2 bits Add-Code

*Disable 5 bits Add-Code

Enable 5 bits Add-Code

6.3　UPC-A

Scan the following setup codes to enable/disable reading UPCA.

*Enable to read UPC-A **Disable to read UPC-A**

*Disable 2 bits Add-Code **Enable 2 bits Add-Code**

*Disable 5 bits Add-Code **Enable 5 bits Add-Code**

6.4 UPC-E0

Scan the following setup codes to enable/disable reading UPC-E0.

*Enable to read UPC-E0 **Disable to read UPC-E0**

6.5　UPC-E1

Scan the following setup codes to enable/disable reading UPC-E1.

*Enable to read UPC-E1

Disable to read UPC-E1

*Disable 2 bits Add-Code

Enable 2 bits Add-Code

*Disable 5 bits Add-Code

Enable 5 bits Add-Code

6.6　Code128

Scan the following setup codes to enable/disable reading Code128.

　　

*Enable to read Code128　　**Disable to read Code128**

Scan the following setup codes to configure min. reading length of Code128.

　　

Min. Code128 length is 0　　***Min. Code128 length is 4**

San the following setup codes to configure max. reading length of Code128.

*Max. Code128 length is 32   **Max. Code128 length is 255**

6.7 Code39

Scan the following setup codes to enable/disable reading Code39.

*Enable to read Code39   **Disable to read Code39**

Scan the following setup codes to configure min. reading length of Code39.

Min. Code39 length is 0   **Min. Code39 length is 4**

Scan the following setup codes to configure max. reading length of Code39.

*Max. Code39 length is 32   Max. Code39 length is 255

6.8   Code93

Scan the following setup codes to enable/disable reading Code93.

*Enable to read Code93   Disable to read Code93

6.9   CodeBar

Scan the following setup codes to enable/disable reading CodeBar.

*Enable to read CodeBar   **Disable to read CodeBar**

Scan the following setup codes to enable/disable to send CodeBar start/tail.

Enable to send CodeBar start/tail

*Disable to send CodeBar start/tail

6.10   QR code

Scan the following setup codes to enable/disable reading QR.

*Enable to read QR   **Disable to read QR**

6.11   Interleaved 2 of 5

Scan the following setup codes to enable/disable reading Interleaved 2 of 5.

Enable to read Interleaved 2 of 5   **Disable**

Read the following Setup code to set the minimum read length of the Interleaved 2 of 5 code.

The Min length is 0   **The Min length is 4**

Read the following Setup code to set the maximum read length of the Interleaved 2 of 5 code.

The Max length is 32　　　**The Max length is 255**

6.12　Industrial 25

Scan the following setup codes to enable/disable reading Industrial 25.

Enable to read Industrial 25　　　**Disable**

6.13　Matrix 2 of 5

Scan the following setup codes to enable/disable reading Matrix 2 of 5.

Enable to read Matrix 2 of 5   **Disable**

6.14 Code11

Scan the following setup codes to enable/disable reading Code11.

Enable to read Code11   ***Disable to read Code11**

6.15 MSI

Scan the following setup codes to enable/disable reading MSI.

Enable to read MSI   **Disable to read MSI**

6.16 RSS

Scan the following setup codes to enable/disable reading RSS-14.

Enable to read RSS-14   **Disable to read RSS-14**

6.17 DM

Scan the following setup codes to enable/disable reading DM.

*Enable to read DM   ***Disable to read DM**

6.18 PDF417

Scan the following setup codes to enable/disable reading PDF417.

*Enable to read PDF417   ***Disable to read PDF417**

7　Data Edit

7.1　Add Prefix

Read "Add prefix", then, read number setting code, you can define the prefix content according to your needs.

Add Prefix

Prefix off

Modify Prefix

For example:If you wanna add Prefix "DATA".

a. From the The hexadecimal value of "DATA" four characters is: "44", "41", "54", "41"

b. Confirm the setting code is open or not. If it is not enabled, please scan "**Enable setup code**" in page **16**.

c. Scan the "**Modify Prefix**" setting code.

d. Scan Data Set Code "4", "4", "4", "1", "5", "4", "4", "1" successively.

e. Scan "**Save**" setting code.

7.2 Add Suffix

Read "Add Suffix", then, read number setting code, you can define the prefix content according to your needs.

Add Suffix

Suffix off

Modify Suffix

For example:If you wanna add Suffix "DATA".

a. From the The hexadecimal value of "DATA" four

characters is: "44", "41", "54", "41"

b.   Confirm the setting code is open or not. If it is not enabled, please scan "**Enable setup code**" in page **16**.

c.   Scan the "**Modify Suffix**" setting code.

d.   Scan Data Code "4", "4", "4", "1", "5", "4", "4", "1" successively.

e.   Scan "**Save**" setting code.

7.3   Convert UPC-A to EAN-13

Enable   **Disable**

7.4   Output the check digit of UPC

To setup the Check Digit of bar code (including EAN-8/EAN-13/UPC-E0/UPC-E1/UPC-A) by scanning the following settings code.

Enable   **Disable**

Appendix A: Default Settings

Table **Error! No text of specified style in document.**-1   Default settings

Parameter		Default settings	Remarks
Communication interface			
TTL-232	Baud rate	9600	
	Check	No	
	Data bit	8-bit	
	Stop bit	1-bit	
	Hardware fluidic	No	

Appendix B: Common Serial Instructions

Table **Error! No text of specified style in document.**-2   Common serial instructions

Function	Instruction
Set Baud rate at 9600	7E 00 08 01 00 D9 D3 20 38

Save settings to EEPROM	7E 00 09 01 00 00 DE C8
Check Baud rate	7E 00 07 01 00 2A 02 D8 0F

After host transmits serial instruction of Baud rate inquiry, module would return following messages:

Return	Corresponding Baud rate
02 00 00 02 C4 09 SS SS	1200
02 00 00 02 71 02 SS SS	4800
02 00 00 02 39 01 SS SS	9600
02 00 00 02 D0 00 SS SS	14400
02 00 00 02 9C 00 SS SS	19200
02 00 00 02 4E 00 SS SS	38400
02 00 00 02 34 00 SS SS	57600

Appendix C:Code ID List

Bar code Type	Corresponding characters	Byte Address
EAN-13	d	0x91
UPC-A	c	0x93

UPC-E0	c	0x94
UPC-E1	c	0x95
Code 128	j	0x96
Code 39	b	0x97
Code 93	i	0x98
Codabar	a	0x99
Interleaved 2 of 5	e	0x9A
Industrial 2 of 5	D	0x9B
Matrix 2 of 5	v	0x9C
Code 11	H	0x9D
MSI-Plessey	m	0x9E
GS1 Databar(RSS-14)	R	0x9F
GS1 Databar Limited(RSS)	R	0xA0
GS1 Databar Expanded(RSS)	R	0xA1
QR Code	Q	0xA2
Data Matrix	u	0xA3
PDF 417	r	0xA4

Appendix D:ASCII

Hexadecimal	Decimal	ASCII

00	0	NUL
01	1	SOH
02	2	STX
03	3	ETX
04	4	EOT
05	5	ENQ
06	6	ACK
07	7	BEL
08	8	BS
09	9	HT
0a	10	LF
0b	11	VT
0c	12	FF
0d	13	CR
0e	14	SO
0f	15	SI
10	16	DLE
11	17	DC1
12	18	DC2
13	19	DC3
14	20	DC4
15	21	NAK
16	22	SYN
17	23	ETB
18	24	CAN
19	25	EM
1a	26	SUB
1b	27	ESC
1c	28	FS

1d	29	GS
1e	30	RS
1f	31	US
20	32	SP
21	33	!
22	34	"
23	35	#
24	36	$
25	37	%
26	38	&
27	39	`
28	40	(
29	41	)
2a	42	*
2b	43	+
2c	44	,
2d	45	-
2e	46	.
2f	47	/
30	48	0
31	49	1
32	50	2
33	51	3
34	52	4
35	53	5
36	54	6
37	55	7
38	56	8
39	57	9

3a	58	:
3b	59	;
3c	60	<
3d	61	=
3e	62	>
3f	63	?
40	64	@
41	65	A
42	66	B
43	67	C
44	68	D
45	69	E
46	70	F
47	71	G
48	72	H
49	73	I
4a	74	J
4b	75	K
4c	76	L
4d	77	M
4e	78	N
4f	79	O
50	80	P
51	81	Q
52	82	R
53	83	S
54	84	T
55	85	U
56	86	V

57	87	W
58	88	X
59	89	Y
5a	90	Z
5b	91	[
5c	92	\
5d	93	]
5e	94	^
5f	95	_
60	96	'
61	97	a
62	98	b
63	99	c
64	100	d
65	101	e
66	102	f
67	103	g
68	104	h
69	105	i
6a	106	j
6b	107	k
6c	108	l
6d	109	m
6e	110	n
6f	111	o
70	112	p
71	113	q
72	114	r
73	115	s

74	116	t
75	117	u
76	118	v
77	119	w
78	120	x
79	121	y
7a	122	z
7b	123	{
7c	124	|
7d	125	}
7e	126	~
7f	127	DEL

Appendix E:Data Code

0

1

2 **3**

4 **5**

6 **7**

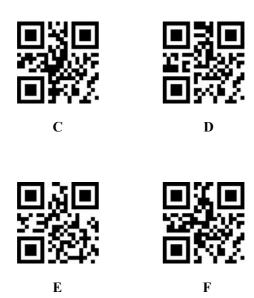**8** **9**

A **B**

C

D

E

F

Appendix F:Save and Cancel

1. After reading the data code, you need to scan the [**Save**] code to save the setting.

2. When error occurs while reading the data code, you can cancel the reading of wrong data.

3. For example, when you reading one setting code, and sequentially read the data "A", "B", "C", "D". Then, if you read "**Cancel the last data number**", it will cancel the last

reading of data number "D". If read "**Cancel the last string of data**", it will cancel all data "ABCD". If read "**Cancel All Modify Settings**" The data "ABCD" that were read is canceled and the modification settings are exited.

SAVE

Cancel the last data number

Cancel the last string of data

Cancel All Modify Settings

Frequently Asked Questions (FAQ)

1. Can I add Prefix and Suffix with this scanner?

A: Yes, you can setup prefix and suffix by User Manual in page **25**.

2. Is it possible to turn off the sound?

A:Yes, you can set sound by read specific barcode on user manual in page **11**.

3. Can you recommend a suitable scanner for my business?

A. **Wired scanner** is suitable for small business, like convenience store or retail shop. (You can search IPBS058 on Amazon).

B. **Omni handsfree scanner** is suitable for mall or supermarket for its faster speed and high efficiency. (You can search IOBC029 on Amazon).

C. **2D/QR scanner** can read both 1D and QR code. (You can search IOBC036 on Amazon).

D. **Wireless scanner** is suitable for warehouse or delivery usage with inventory mode and long reading distance.(You can search I2DBC028 on Amazon).

E. **Bluetooth scanner** is to be connected with mobile device, including android/iOS device. (You can search IPBS034 on Amazon).

4. Does this scanner comes with inventory function?

A: No, this scanner don't have inventory function. Only wireless scanner has inventory function.You can search I2DBC028 from our store.

5. Can this scanner convert UPC code into EAN-13?

A: Yes, you can setup by User Manual in page **27**.

6. How to add [Enter] after reading a barcode?

A:You can set according to the manual in page **12**.

For more setting, welcome to contact us for tech support.

1. You can search **I2DBC024** on Youtube to watch its training video about installment and setup.

2. If you need Thermal Printer and Handheld POS device for retail shop, delivery, restaurant, etc, please search from our store. We are glad to offer discount for regular customer.

3. If you wanna purchase in bulk quantity, please contact us for better offer.

4. Your support is well appreciated if you like our products.

5. OEM and ODM is available.

6. Our contact information as below:

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Website: www.munbyn.com   Facebook: munbyn

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