KP2230 Wireless Imager Barcode Scanner
User Manual

KP2230 User Manual Version 1.0 EN
www.kaptur-id.com

Trovi Technology Co., LTD.
410, 4th floor, Sunrise Industry Building, 10 Hong Man Street, Chai Wan, Hong Kong

Email:
Sales: sales@kaptur-id.com
Assistance: support@kaptur-id.com
Website: http://www.kaptur-id.com

We appreciate your comments and suggestions. Send them to: support@kaptur-id.com

Trademarks

Trademarks cited in this manual are property of the respective owners.

Index

Safety information
Carefully read the general information regarding safety before using the device for the first time. An improper use of the device could damage the device or cause harm to both people and things.

CE certification

The device conforms to **European Directive 1999/5/EC**.

Disposal (RAEE)

The barred mobile container present on the product, the documentation or the packaging indicates the necessity, within the European Union, of a separate collection for expired electric and electronic products, including the batteries and the accumulators.
The user should, therefore, take the equipment at the end of its useful life separate waste collection of electronic and electrical waste, or return it to the dealer.
Do not dispose of these products in unsorted municipal refuse. Return the product to an authorized collection center to avoid damage to the environment or human health caused by uncontrolled disposal of waste and to promote the sustainable re cycling of materials

Improper disposal of the product by the user entails the application of administrative sanctions provided by law

RoHS

This device and all its components, subcomponents and consumables were produced in accordance with European directive 2002/95/EC also known as RoHS (Restrictions on the use of certain Hazardous Substances). This directive serves to reduce the polluting substances used in electronic devices.

Antistatic devices

Before working on the device, it is necessary to apply the correct antistatic procedures to avoid possible damage by ESD (Electrostatic Discharge) on the internal circuitry.

Label

The product label is showed below

Symbology used in the definitions table:

Symbol/Text	Description
Reserved	User reserved for Kaptur must remained disconnected
	Notified potential danger or possible malfunctioning
	Instructions that must be followed in order to guarantee the device functions correctly

Technical Assistance

If you have a technical question regarding the product's installation or detect a problem with the device's operation send an email to technical support at

email: support@kaptur-id.com.com.

Before returning any materials for any reason it is necessary to send an email to technical support at Kaptur at the above address which includes the following information:

- Model
- Serial number
- Detailed and complete description of the malfunction
- Your company information
- The reference person within your company

In response to your mail you will receive an RMA number (Returned Material Authorization) which authorizes the material's return.

The device must be returned in a protective antistatic bag and adequately packaged to ensure that the product is well protected during transport.

In case you have bought the product from Distributor channel please contact them for the first assistance .

Returning a device to Kaptur without adeguate packaging will result in the nullification of the product warranty.

Device informations

Packaging Information

Inside the standard packaging you will find: A Barcode Reader, a flexible stand (optional), the Quick Guide

Part of the scanner

Use a piece of dry and soft cloth when cleaning the scanner. Be careful and do not scrap the reading windows.

Installation

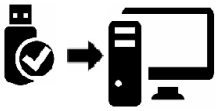
Connect Scanner to computer

1. Switch Off the Computer
2. Refer to the below pictures, insert the USB Radio dongle to the computer
3. Ensure that all the connection are secure
4. Switch on the Computer.
5. Proceed with pairing

Pairing the Barcode Device

Into the package you will find the 2.4GHz USB Radio dongle.

The dongle is the 2.4GHz Radio receiver and have to be inserted into an USB Port of Computer.



	Every device is paired in factory. In case of no data trasnsmission proceed with pairing operation.

Pairing Device

If the scanner is not correctly paired with the dongle, after a reading, will emit 3 short high frequency tone. In this case proceed with pairing

- Remove the dongle from the USB port of Computer
- Turn on the Scanner
- Read the below code

Pairing

- Insert the USB Radio Dongle into the USB port of Computer within 5 seconds.

If the pairing will be successfully made the scanner will emit one low frequency tone and one high frequency tone.
If the pairing fails, the scanner will emit 2 low frequency tone and one high frequency tone

	Every device is paired in factory. In case of no data trasnsmission proceed with pairing operation.
	If there is failure on transmission the read barcode will be lost.

Setting

To configure the device, it is sufficient to read the setting barcode. If the configuration code is read the scanner will emit a dual high frequency beep

Note: The factory default settings are indicated with “Default”

	These are the most common settings. If more settings are required please contact the manufacturer.

Reset to Factory

To restore the factory settings read the below code

Reset to Factory default

OPERATING MODE

The scanner can be configured to work in:

- Wireless Mode: In this mode the data read will be sent immediately to computer
- Storage Mode: In this mode the data will be saved in the internal memory of the device

To configure the operating mode follow the below settings:

Wireless Operating

In wireless mode the data is transmitted directly to the computer through the 2.4GHz integrated Radio. After the successful transmission the device will emit a low frequency short tone and the blue light will flash.

	If there is failure on transmission the barcode will be lost.

To set wireless mode scan the code

Wireless mode

Storage Mode

This mode can be used when the device is out of the wireless transmission range.
In storage mode the data is stored in the internal memory of the device. After reading the barcode the device will make a short sound (low frequency and high frequency) while the blue light will flash.

	When the storage memory is full, the device will issue 6 high frequency beep.
	Up to 50.000 character can be saved into the storage memory.

To configure the scanner in Storage operating mode scan the below code

Enable Storage Mode

Storage Data Information

To have informations on number of storage data read, to download and delete the data use the below barcode

Display Number of Barcode saved:
To read the number of Barcode saved read this code

Download Saved Barcode:
To Download the saved Barcode scan this code. The saved Barcode will not be deleted after the download. To delete scan the Clear Saved Barcode.

Delete Saved Barcode:
After the download of the saved data read this code to clear the memory.
After 5 seconds the device will emit a high frequency tone to indicate the end of the operation

	For the operating of Dowload Saved barcode, and Dsiplay number of Saved Barcode ensure to have the device into the wireless transmission range. Open a text editor to read/save the informations
	To use the device in wireless mode scan the

Keyboard Language settings

Language keyboard Setting

The scanner supports different national keyboard layouts. Commonly an appropriate encoding system must be selected.

It is possible configure the scanner for different keyboard layout just reading the below programming code.

US Keyboard (Default)

French Keyboard 

Hungarian Keyboard

Italian Keyboard 

Japan Keyboard

Spanish Keyboard 

Czech Keyboard

Germany Keyboard 

Turkish Keybord

Norwegian Keyboard 

Dutch Keyboard

Danish Keyboard

Portuguese Keyboard

Brasil Keyboard

Swedish Keyboard

Scan Reading Mode

Select one of the below codes to select the reading mode

Trigger Mode

This is the default mode of operating. When the trigger button is pressed the device start reading the code. The aiming light and illumination are switched on.

Trigger Mode

	Read this code also to disable Continuos Mode

Continuous mode

In this configuration the device start reading in continuous mode when the trigger button is pressed. The device stop at the second pression of the Trigger. *After the read of the configuration code the device enters in reading mode. To stop it just press the trigger button.*

Continuous Mode

Same Barcode Reading

When in Continuous Mode to avoid multiple reading of same bar code is it possible to set the function “Same barcode Time out”.

No time out 

 0.5sec time out (Default)

1sec time out 

 2sec time out

3sec time out 

 Infinite time out. Use this settings if is necessary avoid the reading of the same barcode

Lighting and Aiming

Lighting

The device provides auxiliary lighting to improve the reading in dark conditions.

Turn on Light during reading operation (Default)

Auxiliary light always ON 

Auxiliary light always OFF

Aiming

Red aiming light is projected by the device on the reading are to best detect the barcode.

Project Aiming light during reading operation (Default)

Amining light always ON 

Aiming light always OFF

Buzzer Setup

On the device there is buzzer to indicate the successful of reading and programming operation.

Sound at Power On

Enable the double beep when the device is powered on (Default)

No beep at power on

Success Read Tone

At success read the Buzzer will emit a sound (Default)

At success read the Buzzer will be mute

Data Editing

In some application it is necessary to edit the output of data read in order to optimize the process of the read data. The possible editing are:

- ADD PREFIX
- ADD SUFFIX
- ADD Barcode Type ID
- ADD Termination Character

The structure of the transmitted code will be

Prefix	*Barcode Type ID*	*Barcode Value*	*Suffix*	Termination Character

Prefix and Suffix can be max 15 ASCII characters
For the ASCII Table refer to the chapter relative chapter

Add Prefix

Prefix is a string that is customizable by the user. The sting will be added before the data

Enable Prefix

Disable Prefix (Defaut)

Program / Modify Prefix

Save Prefix

If Prefix is disabled (as per Default Configuration) the scanned doesn't sent out it also if programmed.
Be sure to enable Prefix after having programmed it.

In order to add the Prefix or Suffix proceed as indicate below

1. Scan the barcode "Modify Prefix"
2. Check the ASCII table and get the ASCII Code for the Character to add
3. Scan the barcode of ASCII
4. Scan the barcode Save Prefix or Suffix

Example: Add character "+" as prefix
On the ASCII Table the character "+" is equal to 2B

Program / Modify Prefix

Scan value 2 on ASCII Table 

Scan Value B on ASCII Table

Save Prefix or Suffix 

Enable Prefix

Add Suffix

Prefix is a string that is customizable by the user. The sting will be added after the data

Enable Suffix

Disable Suffix (Defaut) 

Program / Modify Suffix

Save Suffix 

If Suffix is disabled (as per Default Configuration) the scanned doesn't sent out it also if programmed. Be sure to enable Suffix after having programmed it.

In order to add the Prefix or Suffix proceed as indicate below

1. Scan the barcode "Modify Prefix"
2. Check the ASCII table and get the ASCII Code for the Character to add
3. Scan the barcode of ASCII
4. Scan the barcode Save Prefix or Suffix

Example: Add character "*" as Suffix

On the ASCII Table the character “+” is equal to 2A

Program / Modify Suffix

Scan value 2 on ASCII Table

Scan Value A on ASCII Table

Save Prefix or Suffix

Enable Suffix

If Prefix or Suffix has been configured some configuration barcode won’t be read. In this case it is necessary made the Engine Reset to Default.

Restore Engine default setting

In case of prefix or suffix settings before reading the RESET TO FACTORY DEFAULT is necessary to Reset the Engine Defaults using the below barcode

Reset Engine Defaults

Add Barcode Type ID

The Barcode Type ID can be transmitted if is necessary to identify the type of readed barcode

ADD Barcode Type ID

DO NOT ADD Barcode Type ID (Default)

Bar code type	Corresponding characters
EAN-13	d
EAN-8	d
UPC-A	c
UPC-E0	c
UPC-E1	c
Code 128	j
Code 39	b
Code 93	i
Codabar	a
Interleaved 2 of 5	e
Industrial 2 of 5	D
Matrix 2 of 5	v
Code 11	H
MSI-Plessey	m
GS1 Databar(RSS-14)	R
GS1 Databar Limited (RSS)	R
GS1 Databar Expanded (RSS)	R
QR Code	Q
Data Matrix	u
PDF 417	r

Add Terminator Character

It is possible to add a terminator at the end of the transmission of the code readed. The selection can be “None” - “Return (CR)” - “TAB” - “Return/Line Feed (CR/LF)”.

None

CR (Default)

TAB

CR / LF

LF

Symbologies Selection

All the symbology indicated on the table 1 are enabled as default parameter. Is it possible to enable/disable every single code just reading the relative configuration code.
To increase the speed on decoding time in some case it is necessary to disable the 2D Symbology.

Is it possible to Enable / Disable in block all the supported Barcodes. After having disabled all the barcode it is possible enable the single standard reading the relative code to enable it.

Enable & Disable all Barcodes

Enable All Barcode (Default)

Disable All Barcodes 

Symbology Selection and configurations

EAN 13

Enable EAN13 (Default)

Disabled EAN13

EAN 8

Enable EAN13 (Default)

Disabled EAN13

UPC A

Enable UPC A(Default)

Disabled UPC A

UPC E0

Enable UPC E0(Default)

Disabled UPC E0

UPC E1

Enable UPC E1(Default)

Disabled UPC E1

Code 128

Enable Code 128 (Default)

Disable Code 128

Code 39

Enable Code 39 (Default)

Disable Code 39

Code32

Code 32 Enable

Code 32 Disabled (Default)

Code 93

Enable Code 93 (Default)

Disable Code 93

Codebar

Enable Codebar(Default)

Disable Codebar

QR Code

Enable QR Code (Default)

Disable QR Code

Interleaved 2 of 5

Enable Interleaved 2 of 5(Default)

Disable Interleaved 2 of 5

Industrial 25

Enable Industrial 25(Default)

Disable Industrial 25

Matrix 2 of 5

Enable Matrix 2 of 5(Default)

Disable Matrix 2 of 5

Code 11

Enable Code 11(Default)

Disable Code 11

MSI

Enable MSI (Default)

Disable MSI

Datamatrix

Enable Datamatrix (Default)

Disable Datamatrix

PDF417

Enable PDF417 (Default)

Disable PDF417

User and factory default settings

Restore factory default setting

To reset the parameter to factory refault. Use this code carefully and only if you are not sure how is configured the scanner.

RESET TO FACTORY DEFAULTS

Restore Engine default setting

In case of prefix or suffix settings before reading the RESET TO FACTORY DEFAULT is necessary to Reset the Engine Defaults using the below barcode

Reset Engine Defaults

Appendix

Supported Barcode & Default setting for each barcode

The table indicate the supported barcode as the Enabled barcode at factory default.

Code type	Read enable	Check digit verification	Check digit transmission	Min. code length
UPC-A	V	V	V	(12)[1]
UPC-E	V	V	V	(8)[1]
EAN-13	V	V	V	(13)[1]
EAN-8	V	V	V	(8)[1]
Code 39	V	-	-	4
Code 32	V	-	-	4
Interleaved 2 of 5	V	-	-	4
Codabar	V	-	-	4
Code 128	V	V	-	4
Code 93	V	-	-	4
Industrial 25	V	-	-	4
Matrix 2 of 5	V	-	-	4
Code 11	V	-	-	4
GS1 DataBar	V	-	-	(16)[1]
GS1 DataBar Truncated[2]	V	-	-	(16)[1]
GS1 DataBar Limited	V	-	-	(16)[1]
GS1 DataBar Expanded	V	-	-	1
PDF417	V	-	-	1
DataMatrix	V	-	-	1
QR Code	V	-	-	1

Notes

[1] Fixed-length barcodes.

[2] The settings for GS1 DataBar Truncated and GS1 DataBar must be the same.

ASCII Table

#	0	1	2	3	4	5	6	7
0	NUL	DLE	SP	0	@	P	`	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	“	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	‘	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	|
D	CR	GS	-	=	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	_	o	DEL

To have the right code select the column and that the row.
Example: To value of the “A” is 41 Column 4 Row 1 - the value of “+” is 2B Column 2 Row B
Use the ASCII Code Value to set the value

Programming ASCII Code

0 

1 

2 

3 

4 

5 

6 

7 

8 

9 

A 

B 

C 

D 

E 

F 

Troubleshooting

Problem	Possible causes	Possible solutions
Nothing happens when you follow the operating instructions.	No power to the scanner.	Check the system power. Ensure the power supply is connected.
Illumination and aimed red line are on, but the scanner does not decode.	Bar code symbol is unreadable.	Check the symbol to make sure it is not disabled. Try scanning test symbols of the same bar code type.
	Scanner is not programmed for the correct bar code type.	Be sure the scanner is programmed to read the type of bar code you are scanning.
	Distance between scanner and bar code is incorrect.	Move the scanner closer to or further from the bar code.
Scanned data is incorrectly displayed on the host.	Scanner is not programmed to work with the host. Check scanner host type parameters or editing options.	Be sure proper host is selected. For RS-232, ensure the scanner's communication parameters match the host's settings. For a USB-HID keyboard or a keyboard wedge configuration, ensure the system is programmed for the correct keyboard type and language, and the CAPS LOCK key is in the correct state.
Others		Contact your distributor or the manufactory support Centre.

Specifications

Technical specifications

Input voltage	5 VDC ± 0.25V
Current	190 mA (Operating.)
Standby current	10mA
2D Imager	Area Image (640 x 480 pixel array)
Decoding rate	200 times/sec
Scanning angle	±75°, ±65°, ±360°(Skew, Pitch, Roll)
Print contrast	25% minimum reflection difference
Decode capability	UPC-A, UPC-E, UPC-E1, EAN-13, EAN-8, ISBN (Bookland EAN), ISSN, Code 39, Code 39 full ASCII, Code 32, Trioptic Code 39, Interleaved 2 of 5, Industrial 2 of 5 (Discrete 2 of 5), Matrix 2 of 5, Codabar (NW7), Code 128, UCC/EAN 128, ISBT 128, Code 93, Code 11 (USD-8)
Indicator	Beeper, LED
Interface supported	USB Keyboard
Operating mode	Hand-held
Dimensions	Height x Width × Depth - 99 × 60 × 170mm
Weight	30g, without cable
Cable	Straight 1.5m
Case material	PC+TPU
Temperature	Operating -5°to 65°C Storage -20°to 70°C
Humidity	5% to 95% (non-condensing)
Program upgrade	Online
Safety	EMC: EN55022, EN55024 Electrical Safety: EN60950 Drop resistance: Multiple Drop 2m Protection: IP52

Maintenance

1. Cleaning the exit window is the only maintenance required. A dirty window may affect scanning accuracy.
2. Do not allow any abrasive material to touch the window.
3. Remove any dirt particles with a damp cloth.
4. Wipe the window using a tissue moistened with water.
5. Do not spray water or other cleaning liquids directly into the window.
6. Use a piece of soft and dry cloth when cleaning the scanner.

Test barcode

UPC-A *Value 123456790124*

UPC-E *Value 01234565*

UPC-E(1) Value “01234565”

EAN 13 *Value 1234567890128*

EAN 8 *Value 12345670*

ISBT/ISSN *Value 9781234567897*

CODE 39 *Value 1234-ABCD*

Code Interleaved 2 of 5 *Value 0123456784*

CODABAR *Value A12345678$B*

CODE128 *Value A12345678B*

UCC ENA128 Value 0101234567890128

Code 93 *Value ABC-1234-/+*

GS1 DataBar *Value 0100123456784444*

GS1 DataBar Limited *Value 0101234567890128*

GS1 DataBar Expanded *Value 0112345678901231BCabc*

PDF417 *Value This is a MicroPDF417 by Kaptur*

DataMatrix *Value This is a Data Matrix by Kaptur*

QR Code *Value This is a QR Code by Kaptur*