KP2000 Linear CCD Barcode Scanner
User Manual

KP2000 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
Web-site: 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.

Indice

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 Eurotpean 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 (Electro Static Discharge) on the internal circuitry.

Label

The product label is showed below

Provisions used

The following provisions could be used in this manual:

Registers

Symbol/Text	Definition
RW	Read/write register
RO	Read only register
W	Written register meaning

Hexadecimal numbering

the hexadecimal numbers are indicated with an H suffix example or in form 0x… : Example 2A3BH or 0x2A3B

Symbology used in the definitions table:

Symbol/Text	Description
I	Input
X	Output
I/O	Bi-Directional
—	Passive
Model specific	Depends on the device
NC	Not connected
Reserved	User reserved for Kaptur must remained disconnected
#	Signal active low
	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's 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.

Getting Started

Packaging Information

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

Part of the scanner

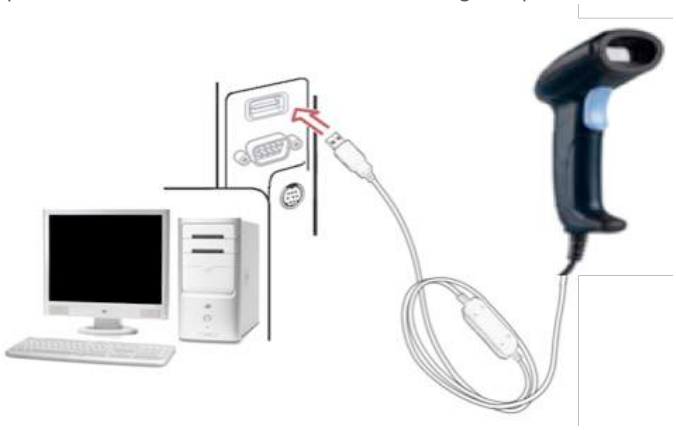
,

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

Installation

Connect Scanner to computer

1. Switch Off the Computer
2. Refer to the below pictures, connect the USB Cable to the computer
3. Ensure tha all the connection are secure
4. Switch On the Computer. If installation is correct the LED ① will lights Up and the Buzzer ⑤ will emit a beep.



Disconnect Scanner from Computer

1. Switch Off the computer and unplug the USB Cabe

Restore factory default parameters

To restore the factory default parameters read the below barcodes in sequence

1 Start Configuration((+SETF))

2 Set All default((+RETF))

3 End Configuration((+ENDF))

Programming instruction and example

To set the device just scan the related code. Example

1 Start Configuration((+SETF))

2 Set All US Keyboard((+B2A))

3 End Configuration((+ENDF))

For more and detailed information howmto configure the scanner please refere to the ***Settings chapter***

Indication

Power on alert

After power-on the scanner will generate an alert signal to indicate a successful self-test.

LED indication

After each successful reading, the LED above the scanner will light up to indicate a good barcode reading.

Beeper indication

After each successful reading, the scanner will beep to indicate a good barcode reading, and its beep tone duration is adjustable.

USB interface

The communication interface of the reader is USB

USB device type

HID keyboard

By setting, the scanner is used as a USB HID keyboard emulation device.

USB virtual COM

By setting, the scanner emulates a regular RS232-based COM port. If a Microsoft Windows PC is connected to the scanner, a driver is required to be installed. The driver will use the next available COM Port number. The driver and the installation guide can be found in the software package provided on the manufacturer website. A Windows-based software COM_Text is recommended to display the barcode data in text format. COM_Text emulates some kind of serial-key typing.

Keyboard layout

The scanner supports different national keyboard layouts. Commonly an appropriate encoding system must be selected. Please refer to Settings to configure and for details

	Inter-character delay: This delay is inserted after each data character transmitted. By selecting, the user can change the output speed of the scanner to match the speed of the host USB communication port. Ask factory for this settings

Scan mode

Trigger Mode

The trigger button must be pressed, and keep pressed, to activate scanning. The scanner will stop scanning when there is a successful reading or no code is decoded after the Stand-by duration elapsed.

Continuos Mode

In this configuration the scanner always keeps scanning, and it does not matter when the trigger button is pressed or duration is elapsed. If a valid code is readed the scanner will emit a beep.

Decode illumination and aim pattern

The scanner for a better quality images use a with light to illuminate the code. The effectiveness of the illumination decreases as the distance to the target increases.
The scanner will project the aiming red patter during the code capture

Vertical centering read

The scanner reads only the barcode centered by the aimer in vertical direction. However, the scanner will read either one of two barcodes which are positioned horizontally. See the below example.

Setting

To configure the scanner it is necessary to follow the sequence:

1. *Start Configuration((+SETF))*
2. *Parameter to configure (one or more in sequence)*
3. *End Configuration((ENDF))*

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

System Information

Start Configuration((+SETF))

Set All default((+RETF))

End Configuration((+ENDF))

Interface configuration

The scanner support different interface, USB HID and USB Virtual COM

Start Configuration((+SETF))

USB HID((+A1C))

USB Virtul COM((+A1D))

End Configuration((+ENDF))

When the scanner is configured in USB Virtual COM the Driver have to be installed on Windows PC

Language Keyboard Setting

Is possible to configure the scanner for different keyboard Layout just reading the below barcode

Start Configuration((+SETF))

USA((+B2A)) Default

Italian((+B2B))

Spanish((+B2C))

French((+B2D))

Germany((+B2G))

Japan((+B2F))

Portugal((+B2G))

End Configuration((+ENDF))

Select Terminator

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

Start Configuration((+SETF))

None((+B9A))

CR((+B9B)) Default

TAB((+B9C))

ESC((+B9D))

End Configuration((+ENDF))

Add Prefix / Suffix

Is it possible to add a Prefix or a Suffix at any code read. The structure of the trasmitted code will be

Prefix	*Barcode*	*Suffix*

Prefix and Suffic can be max 10 ASCII chatacters
For the ASCII Table refere to the chatper relative chapter

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

1. Scan the barcode “Start Configuration”
2. Check the ASCII table and get the ASCII Code for the Character to add
3. Scan the barcode of ASCII
4. Scan End Configuration


Start Configuration((+SETF))


ADD Prefix((+E4A))


ADD Suffix((+E5A))


End Configuration((+ENDF))

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

1 
Start Configuration((+SETF))

2 
Add Prefix

3 
2

4 
B

3 
End Configuration((+ENDF))

The defualt value for Prefix and Suffix is 00
To remove the Prefix or Suffix procede as per configuration procedure and scan ASCII 00

Scan Reading Mode

It is possible conconfigure the scanner for different scanning mode

Start Configuration((+SETF))

 TriggerOn((+E1B)) Default	In this configuration the scan start when the trigger button is pressed. At a good read, or after a time out, the Scanner stop
 TriggerOn/Off((+E1A)	In this configuration the scanner start when the trigger button is pressed and stay on until the trigger is released. At a good read the scanner stop
 Continuos/Trigger OFF((+E1C))	In this configuration the scan start reading in continuos mode when the trigger button is pressed. The scanner stop at the second pression of the Trigger. *In this configuration is not necessary press the trigger to read a code.*
 Contin./Time Out Off((+E1F))	In this configurationthe scanner star reading in continuos mode when the trigger button is pressed. The scanner stop after for a time ouf after the last good read. *In this configuration is not necessary press the trigger to read a code.*
 Continuos((+E1H))	In this configurationthe scanner star reading in continuos mode at power on, and stay always on. *In this configuration is not necessary press the trigger to read a code.*

End Configuration((+ENDF))

Buzzer Setup

The buzzer can be configured to emit the sound at power on and at good read

Start Configuration((+SETF))

 Power Beep On((+EBA)) Default	Buzzer On or Off at power on of the scanner	 Power Beep Off((+EBB))
 Good Read On((+ECA)) Default	Buzzer On or Off after a good read	 Good Read Off((+ECB))

End Configuration((+ENDF))

Symbologies Selection

All the symbologies indicated on the table 1 are enabled as default parameter.
To increse the speed on decoding time in some case it is necessary to disable the 2D Symbologies.

UPC-A

Start Configuration((+SETF))

UPC-A Disabled((+F1A))

Enable/ Disable UPC-A Code

UPC-A Enabled((+F1B)) Default

Convert OFF(+F3A)) Default

UPC-A Convert to EAN 13

Convert ON((+F3B))

Trasmit Check OFF((+F4A))

UPC-A Trasmit Check Character

Trasmit Check ON((+F4B)) Default

End Configuration((+ENDF))

UPC-A Add-On 2 or 5 Digit

Start Configuration((+SETF))

None((+F8A)) Default

Enable/ Disable UPC-A Add-On

2 digit((+F8B))

Number of Digit

5 digit((+F8C))

2 or 5 digit((+F8D))

Number of Digit

AUTO_Enable ((+F8E))

End Configuration((+ENDF))

UPC-E

Start Configuration((+SETF))

OFF((+G1A))

Enable/ Disable UPC-E Code

ON((+G1B)) Default

OFF((+G3A)) Default

UPC-E Convert to UPC-A

ON((+G3B))

OFF((+G4A))

UPC-E Trasmit Check Character

ON((+G4B)) Default

OFF((+G7A)) Default

UPC-E Truncate Leading Zero

ON((+G7B))

End Configuration((+ENDF))

UPC-E Add-On 2 or 5 Digit

Start Configuration((+SETF))

None((+G8A))

Enable/ Disable UPC-E Add-On 2 of 5

2digit((+G8B))

Number of Digit

5digit((+G8C))

2 or 5 digit((+G8D))

Number of Digit

AUTO_Enable ((+G8E))

End Configuration((+ENDF))

EAN 13

Start Configuration((+SETF))

OFF((+H1A))

Enable/ Disable EAN 13 Code

ON((+H1B)) Default

OFF((+H3A))

EAN 13 Trasmit Check Character

ON((+H3B)) Default

End Configuration((+ENDF))

EAN-13 Add-On 2 or 5 Digit

Start Configuration((+SETF))

None((+H6A)) Default

Enable/ Disable EAN 13 Add-On 2 or 5

2 Digit((+H6B))

Number of Digit

5 Digit((+H6C))

2or 5 Digit((+H6D))

Number of Digit

AUTO_Enable ((+H6E))

End Configuration((+ENDF))

EAN 8

Start Configuration((+SETF))

OFF((+I1A))

Enable/ Disable EAN 8 Code

ON((+I1B)) Default

OFF((+H3A))

EAN 8 Trasmit Check Character

ON((+I3B)) Default

End Configuration((+ENDF))

EAN-8 Add-On 2or 5 Digit

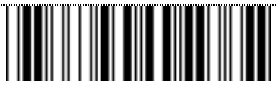
Start Configuration((+SETF))

None((+I6A)) Default

Enable/ Disable EAN 13 Add-On 2 or 5

2 digit((+I6B))

Number of Digit



5 digit((+I6C))

2 or 5 digit((+I6D))

Number of Digit

AUTO_Enable ((+I6E))

End Configuration((+ENDF))

Code 39

Start Configuration((+SETF))

OFF((+J1A))

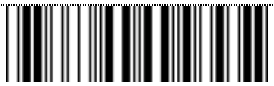
Enable/ Disable Code 39

ON((+J1B)) Default

Character OFF((+J4A)) Defaut

Code 39 Trasmit Check Character

ON((+J3B))



<01H-50H>((+J6A))

Code 39 Min Length (Default 01)

Code 39 Max Length (Default 50)

<01H-50H>((+J7A))

Std Code39 ((+J9A)) Default

Full ASCII Code39 ((+J9B))

Trioptic CODE39 ((+J9C))

End Configuration((+ENDF))

Codabar

Start Configuration((+SETF))

OFF((+K2A))

Enable/ Disable Codabar

ON((+K1B)) Default

OFF((+K4A)) Default

Codabar Trasmit Check Character

ON((+K4B))

OFF((+K9A))

Codabar Trasmit End Character

ON((+K9B)) Default

End Configuration((+ENDF))

Code93

Start Configuration((+SETF))

OFF((+L1A))

Enable/ Disable Code93

ON((+L1B)) Default

OFF((+L4A)) Default

Code93 Trasmit Check Character

ON((+L4B))

End Configuration((+ENDF))

Code 128

Start Configuration((+SETF))

OFF((+M1A))

Enable/ Disable Code 128

ON((+M1B)) Default

OFF((+M4A)) Default

Code128 Trasmit Check Character

ON((+M4B))

End Configuration((+ENDF))

Interleaved 2 of 5

Start Configuration((+SETF))

OFF((+N1A))

Enable/ Disable Interleaved 2 of 5

ON((+N1B)) Default

OFF((+N4A))

Interleraved Trasmit Check Character

ON((+N4B)) Default

End Configuration((+ENDF))

Code 32

Start Configuration((+SETF))

 OFF((+S1A)) Default	Enable/ Disable Code 32	 ON((+S1B))
 OFF((+S4A)) Default	Code32 Trasmit Check Character	 ON((+S4B))
 OFF((+S8A)) Default	Code32 Trasmit “A”	 ON((+S8B))

End Configuration((+ENDF))

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

ASCII Code Value

0		A	
1		B	
2		C	
3		D	
4		E	
5		F	
6			
7		Y	
8		N	
9			

Specifications

Technical specifications

Input voltage	5 VDC ± 0.25V
Power	500 mW (Operating); 650 mW (Max.)
Current	100 mA (Operating); 130 mA (Max.)
Standby current	<250μA
2D Imager	2500 Pixel Linear CCD
Decoding rate	200 times/sec
Scanning angle	±60°, ±65°, ±42°(Skew, Pitch, Roll)
Print contrast	25% minimum reflection difference
Decode capability	UPC-A, UPC-E, EAN-13, EAN-8, ISBN, ISSN, Code 39, Code 38 Full Ascii, Code 32, Interleaved 2 of 5, Industrial 2 of 5, Matrix 2 of 5, Codabar, Code 128, UCC/ENA 128, Code 93, Code 11, MSI/Plessey
Indicator	Beeper, LED
Interface supported	USB Keyboard, USB virtual COM
Dimensions	Height x Width × Depth - 90 × 70 × 164mm
Weight	190g, without cable
Cable	Straight 2.0m
Case material	PC+TPU
Temperature	Operating 0°to 40°C Storage -40°to 60°C
Humidity	5% to 95% (non-condensing)
Program upgrade	Online
Safety	EMC: EN55022, EN55024 Electrical Safety: EN60950 Drop resistance: Multiple Drop 1.2m Protection: IP41

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	√	√	√	(12)[1]
UPC-E	√	√	√	(8)[1]
EAN-13	√	√	√	(13)[1]
EAN-8	√	√	√	(8)[1]
Code 39	√	-	-	1
Interleaved 2 of 5	√	-	-	6
Codabar	√	-	-	6
Code 128	√	√	-	3
Code 93	√	-	-	3
Code 32	√	-	-	(16)[1]

Notes

[1] Fixed-length barcodes.

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

The following barcodes are supported but non enabled as factory default. Ask factory for settings

CODE 32 - CODE 11 - MSI / Plessey - China Post Code - Matrix 2 of 5 - Industrial 2 of 5 - UCC/EAN128

Troubleshooting

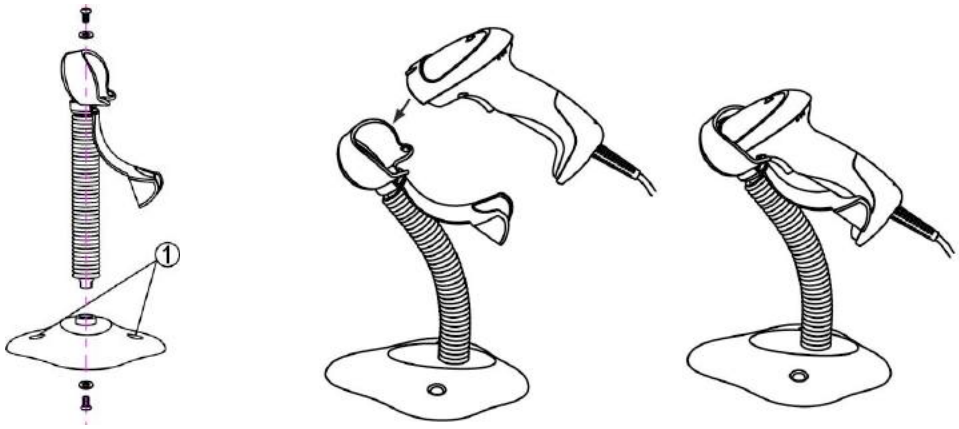
Problem	Possible causes	Possible solutions
Nothing happens when you follow the operating instructions.	No power to the scanner.	Check the system power. Ensure the power supply is connected.
Illumination and aimed red line are on, but the scanner does not decode.	Bar code symbol is unreadable.	Check the 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 technical support.

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 thewindow.
3. Remove any dirt particles with a dampcloth.
4. Wipe the window using a tissue moistened withwater.
5. Do not spray water or other cleaning liquids directly into thewindow.
6. Use a piece of soft and dry cloth when cleaning thescanner.

Assembling the stand

Standing is an optional part you can order separatelly.
Below the instruction how to assembly



See the figure above, tighten thescrews.

1. Bend the neck to the desired position for scanning and insert the scanner Picture 2
2. Screw mounting: Fix the flexible stand on the working station with right screw for the material of the working station (ex. Wood). Ensure the flexible stand is fixed and stable. Screws are not included.
3. Adhesive tape mounting: ①Peel the paper liner off one side of each piece of tape and place the sticky surface over each of the three rectangular tape holders. ②Peel the paper liner off the exposed sides of each piece of tape and press the stand on a flat surface until it is secure. Ensure the flexible stand is fixed and stable. Adhesive Tape are not included.

Installing the Driver for USB VCOM Mode

The scanned can be configured to be used in USB Virtual COM on Windows XP, 7, 8/8.1, 10 Operarting System. On this chapter it is described the prodedure to install the Windows driver for the KP2200 Scanner.

The default configuration of the KP2200 is USB HID. When plugged on PC the operating system will setup a default keyboard emulator driver.
In order to switch in USB Virtual COM follow the next steps:

1. Unplug the Kaptur device from your PC
2. Unzip **Kaptur USB Virtual COM Drivers V1.0.zip** folder
3. Launch **dpinst_x86.exe** or **dpinst_amd64.exe** according to the version of the Operating System you are currently using (right-click on *This PC* → *Properties* → *System* → *System type*) and follow the on-screen installation procedure

If you are using Windows 8/8.1 or 10, you must disable the digital signature check option of your Operating System before the launch of the executable (this will require a reboot). See Disable Digital Signature Check chapter

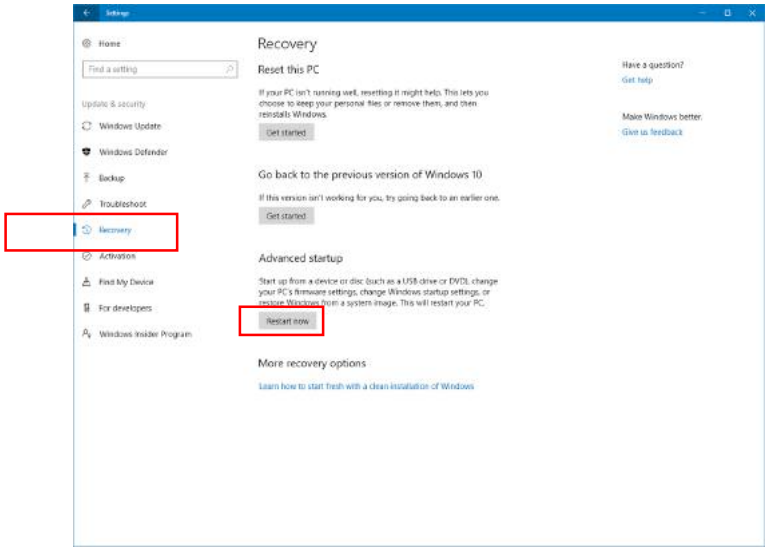
4. Plug the Kaptur device to your PC and scan the ***Enable USB Virtual COM*** QR code in order to switch to serial emulation. The driver just installed will automatically setup your device in few moments

In you are experiencing other kind problems during the driver installation, please try to install **VCP_V1.4.0_Setup.exe** instead.

Feel free to contact the support for every issue encountered during this procedure.

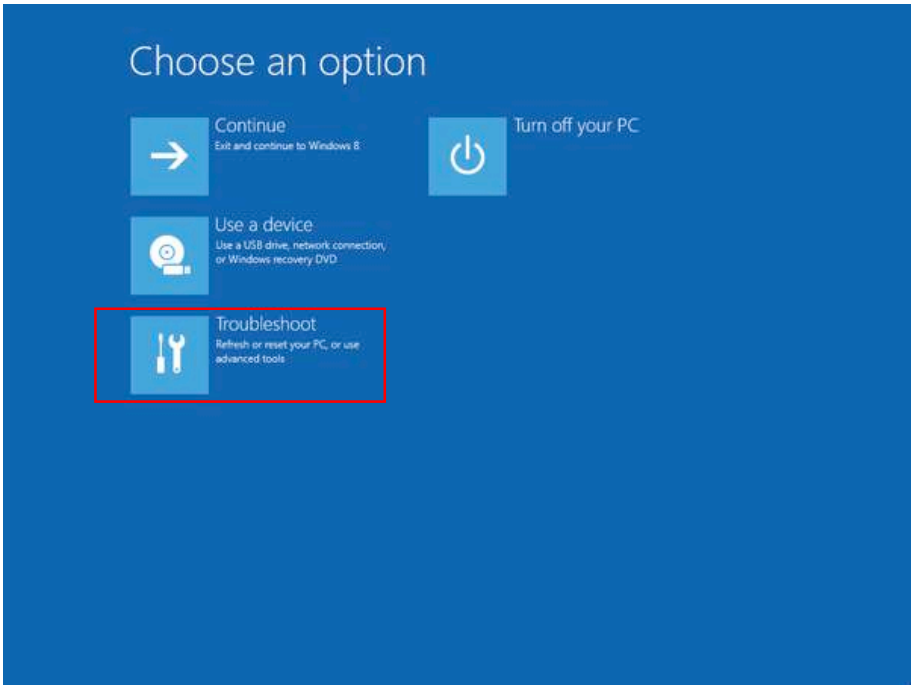
Disable digital signature check

In *Start* → *Settings* → *Update & security* → *Recovery* click **Restart now** from the *Advanced startup* section.

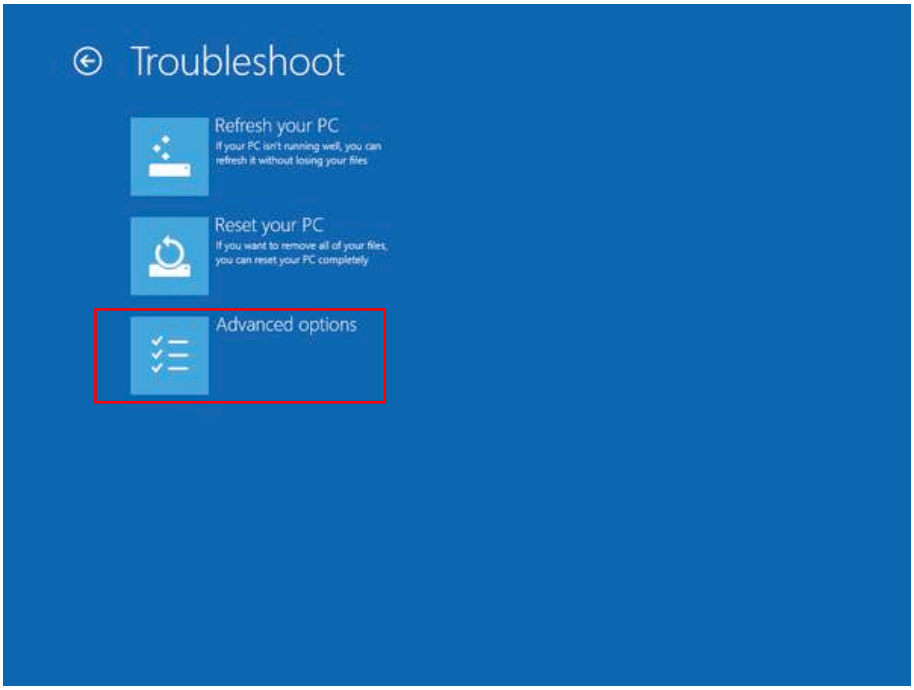


The computer will restart.

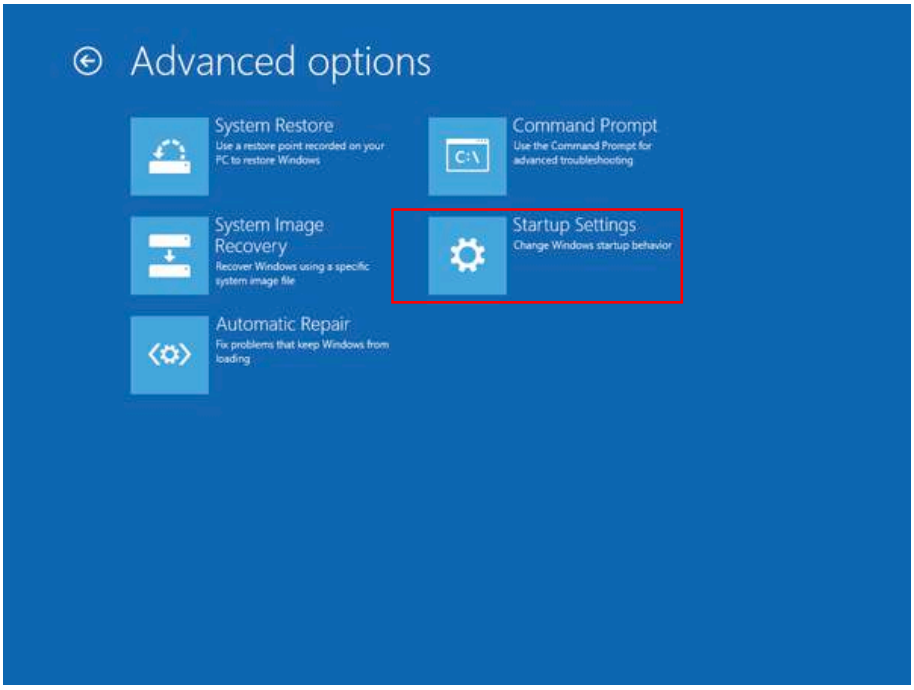
Choose **Troubleshoot** from the options menu it appears.



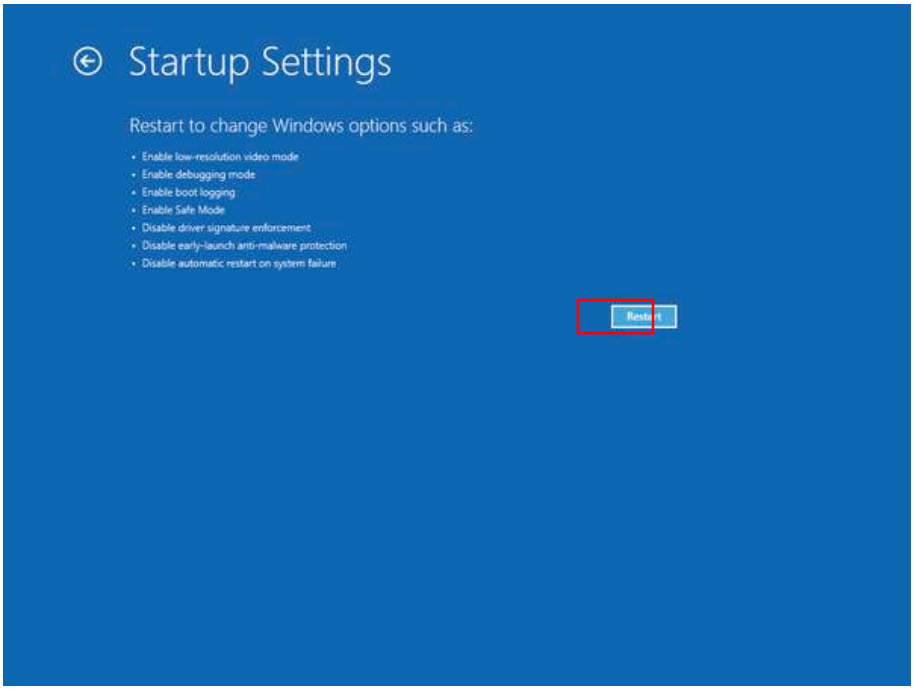
Choose **Advanced options** from the *Troubleshoot* menu.



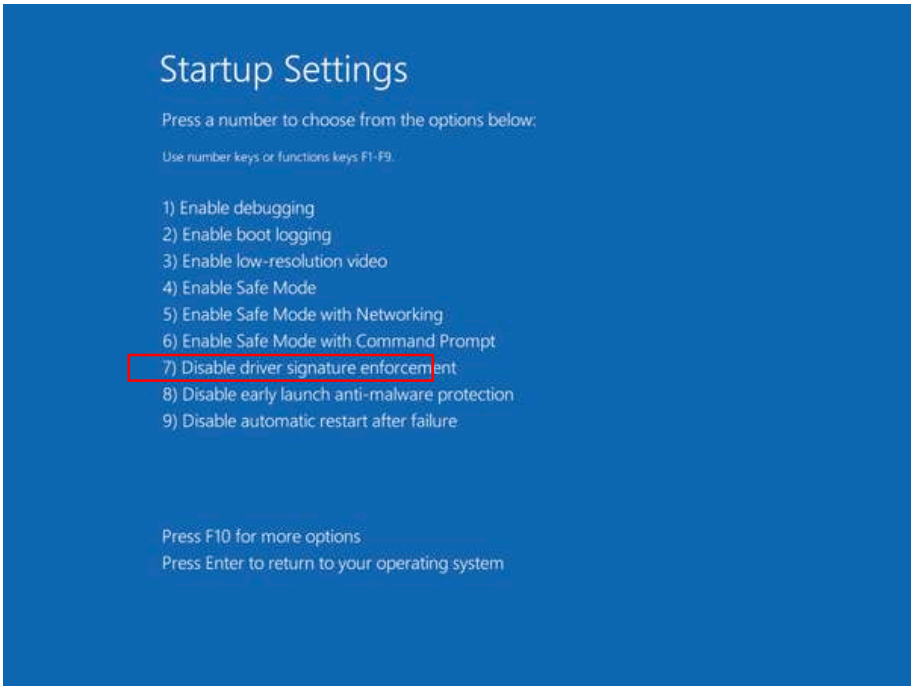
Choose **Startup Settings** from the *Advanced options* menu.



Click **Restart**.



The computer will restart. Press the **F7** key from the keyboard when the following menu appears on the screen.



The system will boot with the digital signature check disabled. This will allow installing any unsigned USB Driver.

After a reboot of the system, the digital signature check will be enabled again. The drivers that have already been installed will remain on your system, but if you want to install new unsigned drivers, you will need to perform this procedure again.

Test barcode

UPC-A *Value 123456790124*

UPC-E *Value 01234565* 

UPC-E(1) Value “01234565”

EAN 13 *Value 1234567890128* 

EAN 8 *Value 12345670*

ISBN/ISSN *Value 9781234567897* 

CODE 39 *Value 1234-ABCD*

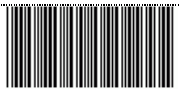
Code Interleaved 2 of 5 *Value 0123456784* 

CODABAR *Value A12345678$B*

CODE128 *Value A12345678B* 

UCC ENA128 Value 0101234567890128

Code 93 *Value ABC-1234-/+* 



Code 32 *Value 87654612*