

HEROJE[®]

PRODUCT OPERATION MANUAL

Rev1.2

Handheld DPM Code Reader

H296 Series



Please read this manual before use.
This manual should be kept in a safe place for future reference.

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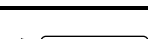
China

Revision history

Edit Date	Version	What's New
2022-12	Rev 1.0	
2023-01	Rev 1.2	Fixed errors

■ Symbol

The following symbols are important reminders in this manual. Be sure to read it carefully.

	Indicates that personal injury or death will result if the precaution is not followed.
	Indicates that personal injury or death could result if the precaution is not followed.
	Indicates that minor or moderate injury may result if the precaution is not observed.
	Indicates that failure to observe this precaution will result in damage to the product and property loss.

■ Introduction

This manual describes the connection and wiring methods, setting methods, and precautions of the H296 series of "handheld two-dimensional barcode readers. In order to fully utilize the performance of the H296 series, please read carefully before use. In addition, please keep the manual in a safe place for easy use at any time.

■ Object series designation




In the explanations of this manual, the items of the object series are indicated as follows.

H296 Series

CATALOGUE


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General Notes

 DANGER	<ul style="list-style-type: none"> Do not use this product for personal or body part protection. This product is not suitable for use as an explosion-proof product. Do not use this product in hazardous locations and/or potentially explosive atmospheres.
 CAREFUL	<ul style="list-style-type: none"> Before starting and operating the H296 Series, it must be verified that the H296 Series is functioning and performing properly. We recommend effective safety measures to prevent any damage in the event of a malfunction. Do not use the H296 Series in any manner not specified here. Failure to do so may result in fire, electric shock or malfunction.
 ATTENTION	<ul style="list-style-type: none"> HEROJE cannot guarantee the function or performance of the H296 series if it is operated in a manner other than the specifications of the H296 series described in this operating manual, or if the H296 series is modified without authorization. When using the H296 series with other devices, its functions and performance may decrease depending on the operating conditions and surrounding environment.

Security Information

Precautions for correct use

 ATTENTION	<ul style="list-style-type: none"> Do not use voltages other than those stated in the H296 series specifications. Failure to do so may damage the device. The H296 series adopts the external power supply connection mode, 5V DC power supply. Be sure to use one of these when connecting the H296 series to a power source. Simultaneous use of both power sources may result in damage to the equipment. When plugging and unplugging the cables, please be sure to turn off the power of the devices connected to the H296 series. Failure to do so may damage the H296 series. Do not disassemble or modify the H296 series. Failure to do so may damage the device. When laying cables, try to keep them away from high voltage lines and power lines. Otherwise, electrical noise may be generated, causing product malfunction or failure. Do not allow water, oil, dust or other foreign matter to adhere to the scanner. Failure to do so may result in read errors. Use a soft, dry cloth to wipe any foreign objects from the scanner. (Do not use a cloth dampened with alcohol or other cleaners.)
--	---

1. Check Package Contents

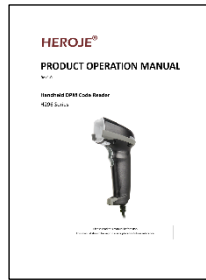
The H296 series package contains the following parts.

■ H296 Series

Major device (Handheld DPM Code Reader, USB Cable)
H296 series



Product Operation Manual



Optional Parts

■ Accessories Cable, Power Supply

Accessories Cables (Power, RS-232C)

- CAB-HJ-NETD-3DB9PWR (3 meters)



RS232 Power Supply (5V/2A DC)

- WT24- 0502000-C (US Plug)



Configuration Software

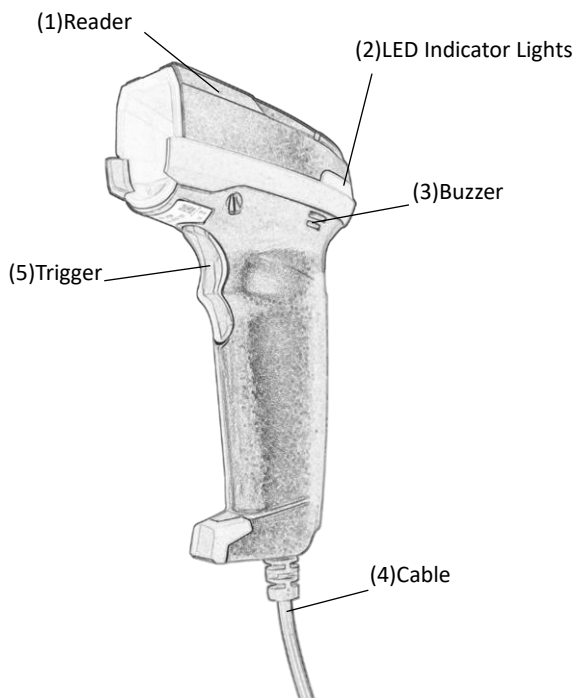
■ Configuration Software

HEROJE Code Reader Configuration Software



2. Component Name and Functions

This section describes the component names and functions of the H296 series.

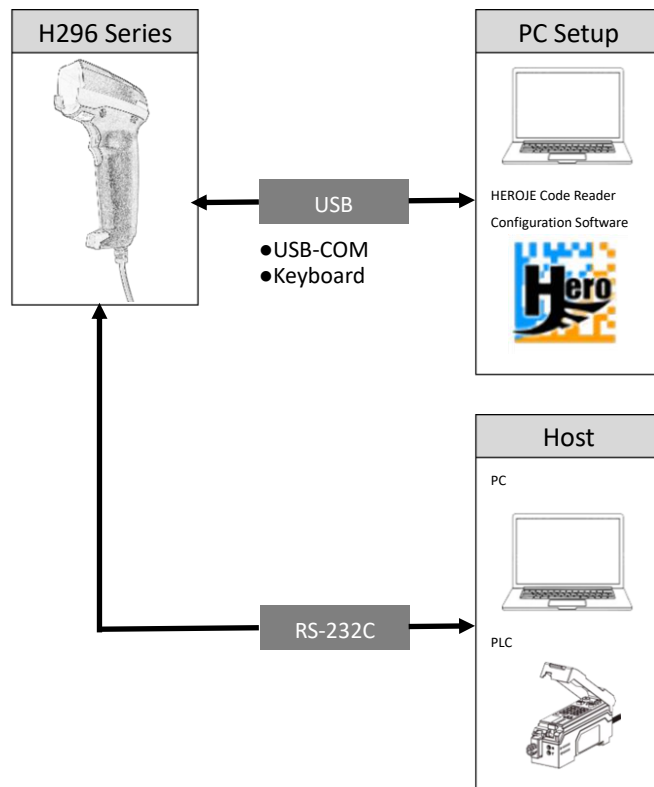


No.	Name	Function
(1)	Reader	Reading 1D 2D and DPM codes.
(2)	LED Indicator LED	LED that indicates reading completion and status.
(3)	Fixing Holes	Fixing the reader on the position.
(4)	Cable	3 meter USB cable.
(5)	Trigger	Button that starts reading.

3. System Configuration and Setup Process

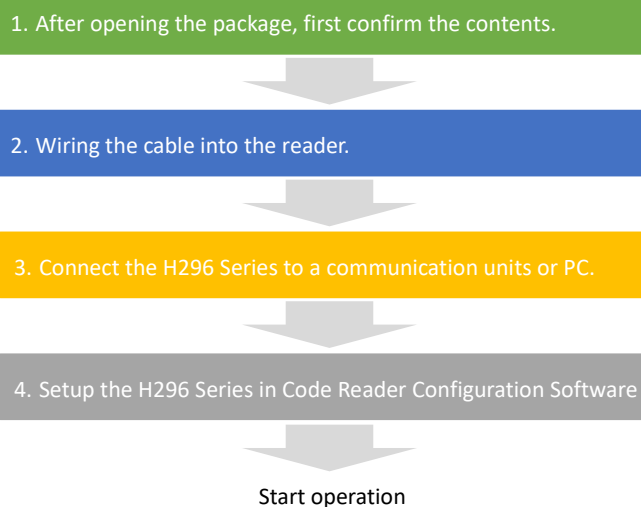
System Configuration

H296 Series has the following configurations.



Setup Process

This section describes the flow of the setup steps required to start operating the H296 Series.

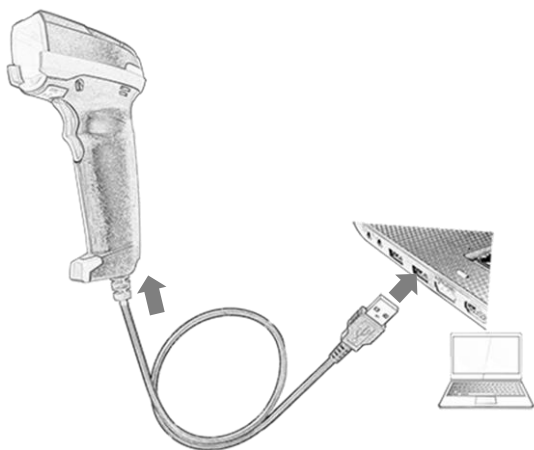


4. Device Connection

This section describes how to connect the H296 series with USB and RS232 cables.

USB Cable Connection

Inserting the RJ45 into the reader and the USB into a PC or the Host.



Below setting codes for switching between USB-HID and USB-COM.



*USB-HID



USB-COM

ATTENTION

- Make sure the USB port on PC or Host the power is 5V.
- Don't insert the reader into USB port above 5V, the reader may broke.

RS232 Cable Connection

Inserting the RJ45 into the reader and the RS232 into the Host. And connect the power.



Setting codes for switching the baud rate, If the default(*) does not meet your requirements, scan other bar code below.



1200 bps



4800 bps



*9600 bps



14400 bps



19200 bps



38400 bps



57600 bps



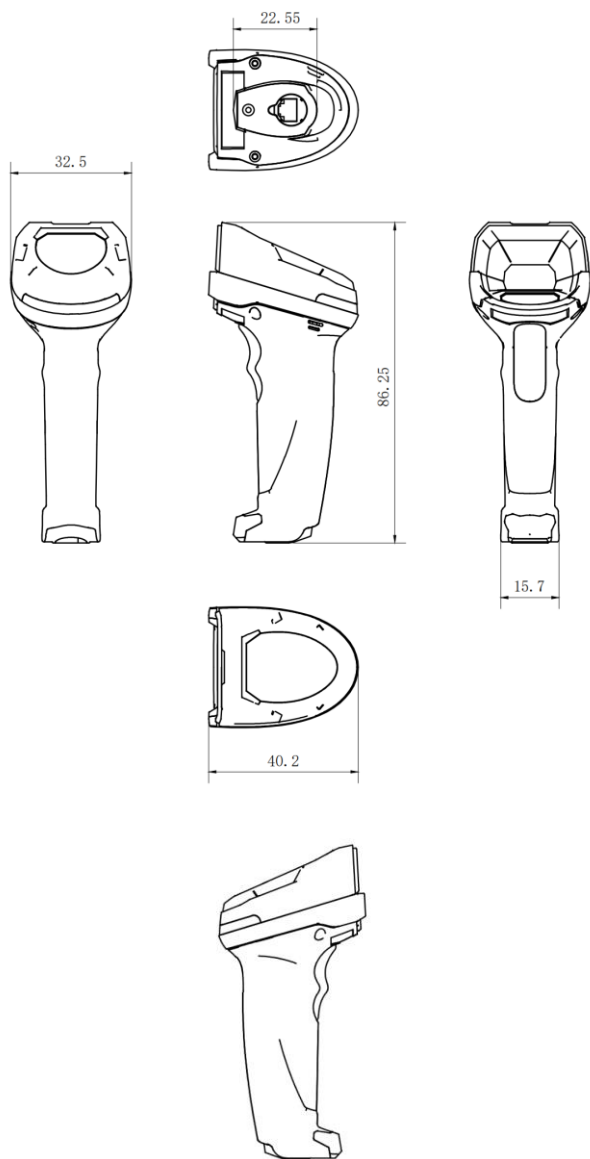
115200 bps

ATTENTION

- Always turn off the power before attempting to connect or disconnect the RS232 cable.
- Please use the power adapter provided by HEROJE to avoid any issues.

5. Dimensions

Unit: mm



6. Illumination Control

This section describes how to set H296 series with different lighting modes.

Intelligent Lighting Mode

This is the default mode that the reader will automatic switch between diffuse light and direct light to select the right lighting for reading code, scan another code below to switch to single lighting mode.



*Intelligent Lighting



Single Lighting



ATTENTION

If switching to single lighting mode, the illumination will only keep direct-lights on. Then you could control the light separately according to application needed.

Single Lighting Switch

Once entering to single lighting mode, you could select the right lighting for application by scanning code below.



White Light Disable



White Light Enable



Red Light Disable



Red Light Enable



Blue Light Disable



Blue Light Enable



Diffuse Light Disable



Diffuse Light Enable



ATTENTION

Different lighting has different effect for reading code applications. Choose the right one will provide optimal performance.

7. Useful Codes

This section describes the useful setting code for H296 series.

Check Scanner Version



Check Version

Set Default



Factory Reset

Trigger Mode



Presentation Trigger



*Manual Trigger

Set Terminator



None



*CR



CRLF



TAB

Set Buzzer



*Enable



Disable

Set Vibration



*Enable



Disable

Set Code Type



Enable All



Disable All



EAN/UPC Enable



EAN/UPC Disable



Codabar Enable



Codebar Disable



Code128 Enable



Code128 Disable



QR Enable



QR Disable



PDF417 Enable




PDF417 Disable



DataMatrix Enable



DataMatrix Disable

 ATTENTION	<ul style="list-style-type: none"> • Disable the unnecessary code types to improve decoding speed. • Disable all code type that the reader will not read any code.
---	--

8. Connecting Device To The Configuration Software

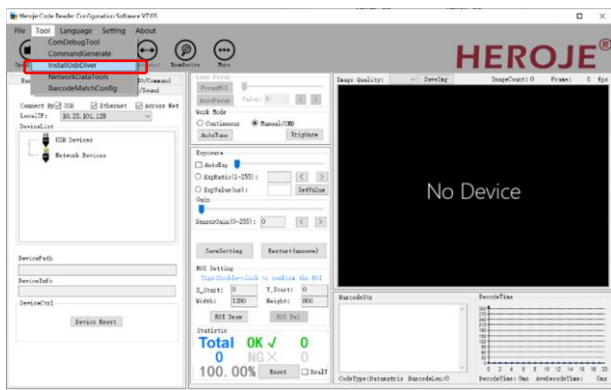
This section describes the connection method the H296 series to the HEROJE Code Reader Configuration Software.

H296 series reader can only connect to software with USB cable.

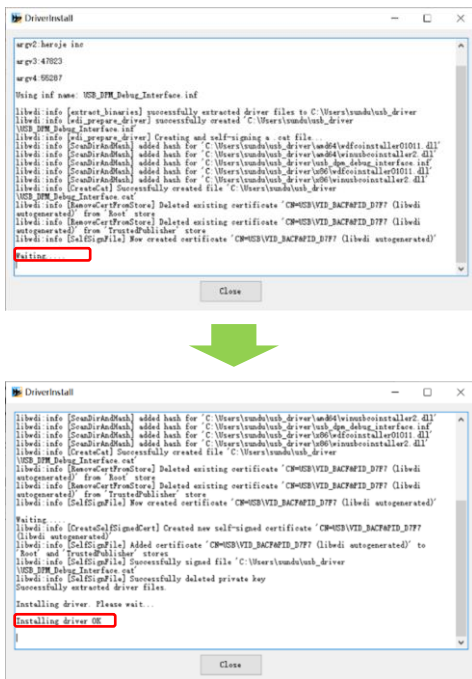
Connecting To Software

1 Connect the H296 series to a person computer by USB cable.

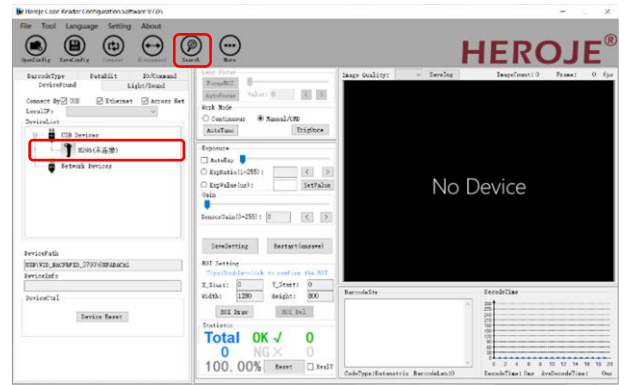
2 Install USB driver, find in software "Tool" - "InstallUSBDriver" and click.



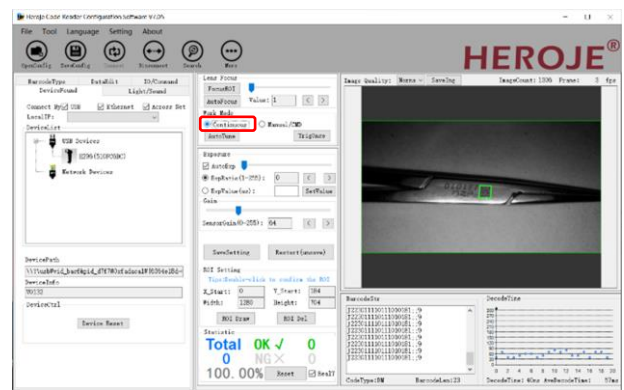
3 Driver will automatic install, please wait till it finish.



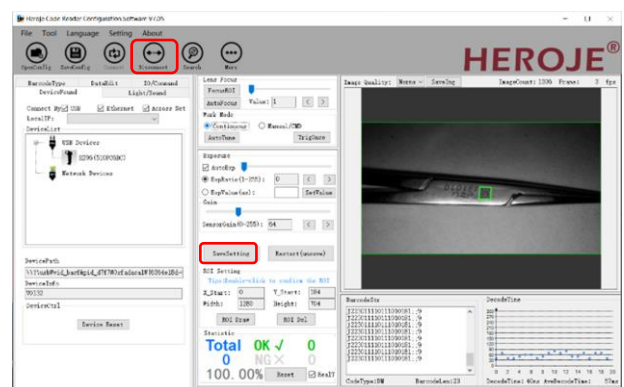
4 After driver installed, click "Search" for searching the reader, and double-click the symbol of H296 series reader.



5 Activate work mode to "Continuous" to monitoring the real-time image.



6 After parameter been set, click "SaveSetting" and "Disconnect" the parameter will be save into the reader.



ATTENTION

- Double-click the reader enter configuration mode, the reader will restart.
- Disconnect the reader will restart and good to use.
- During the installation of the USB driver, please don't quit the software.
- If the connection fails, check whether the cable connect well.
- After done configuration, "SaveSetting" and "Disconnect".

9. Installation, Startup, And Quit

This section describes the installation, startup and quit of HEROJE_Code Reader Configuration Software.

PC Environment

Before installation, please confirm the following operating environment.

Applicable OS

- Windows Vista
- Windows 7
- Windows 8
- Windows 10
- .NET Framework 4.0 installed

Notes On Installation

Quit all active applications before starting the installation. If antivirus software or other applications are activated on the computer, the unpacking installation process software may be deleted.

Trademark

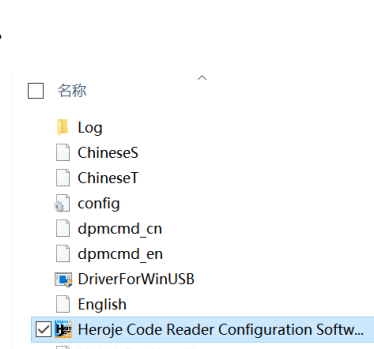
Windows10/Windows 8/Windows 7/Vista are registered trademarks of Microsoft Corporation.

Installation Process

- 1 Turn on the PC and start Windows.
- 2 Unzip the package archive to a folder.

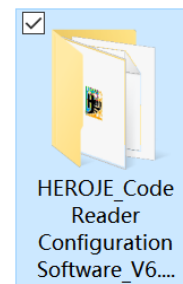


- 3 Run the software exe file directly after decompressing to the folder.



Uninstall Method

Find out the software folder, and delete.

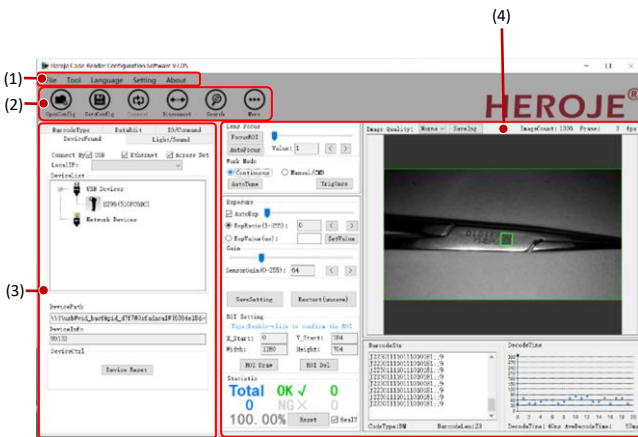


10. Software Interface

Layout

This section describes the interface layout of the HEROJE_Code Reader Configuration Software.

Software Interface Layout



TemplateMode ... Saving configuration parameters as a template or loading a configuration template.

AdvanceMode ... Multi code reading setting, barcode verification setting or FTP connection.

IO/Command ... Configuring I/O.

ImgProcess ... Image process setting.

Algorithm ... Reading algorithms configuration.

(4): SET VIEW

When confirming the read image of the H296 series device, adjust the imaging settings, or the mode of operation or test the read rate.

(For operation of the set view, please refer to [Page 12](#)).

(1): MANU

Can check the operation of some functions, tools and software version in HEROJE_Code Reader Configuration Software.

(2): SYSTEM ICONS

Search for devices, save configurations or more parameter settings on HEROJE_Code Reader Configuration Software.



... Opening a configuration file.



... Saving configuration parameters as a file.



... Disconnect with device.



... Searching devices.



... More setting options.

(3): SETTING LISTS

Display search results, Image setting, algorithms setting, IO setting, output setting or data edition.

DeviceFound ... Search results, choose a device to connect. Check device path and version. Reset Device.

Device Reset

... Click will restore to original configuration.

Light/Sound

... Lightings setting.

BarcodeType

... Enable and disable barcode types.

DataEdit

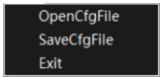
... Editing output data.

OutputConfig

... Setting output encoding, USB setting, RS232 setting, Network setting or FTP image saving setting.

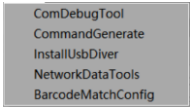
MANU

File

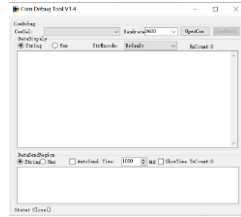


- OpenCfgFile : Open a configuration file
- SaveCfgFile : Save configuration parameters as a file.
- Exit : Exit the software.

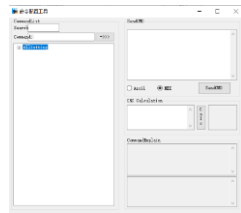
Tool



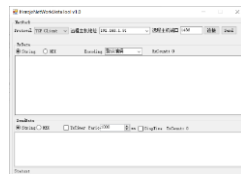
- ComDebugTool : Monitor serial communication and send commands.



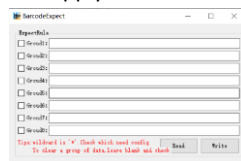
- CommandGenerate : Display all extended functions, generate ASCII or HEX code commands, and send setting command directly to H296 series through software.



- InstallUsbDriver : USB driver for usb devices for connecting to the software. (See "Connecting to Software" on [Page 6](#))
- NetworkDataTools : Monitoring network port data.



- BarcodeMatchConfig : Configurates rules for reading specified code and apply.



Language



- 简体中文 : Simplified Chinese.
- 繁體中文 : Traditional Chinese.
- English : English

Setting



- SaveSettingToDeviceWhenExit : Saving the configuration parameters into device when exit the software.
- ChangeToManualTrigger : Setup the device to manual/command trigger mode when exit the software.
- QuitDebugMode(USBDevice) : Quit the debugging model for USB device when exit the software.

About



- Version : Checking version of the software.

SETTING LISTS

■ DeviceFound



- Connect By** : Choose the connection way to connect device to the software.
- LocalIP** : The local IP of network port of the PC.
- DeviceList** : Displaying connected devices and choose to connect with.
- DevicePath** : Check device path here.
- DeviceInfo** : Check device version here.
- DeviceCtrl** : Reset the device to the factory setting.

■ Light/Sound



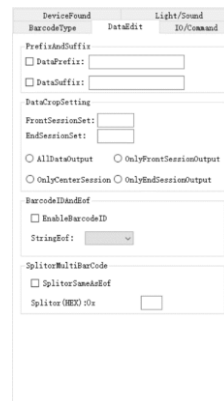
- AimingLight** : Setup the working status of the aiming light.
- MainLight** : Setup the brightness of the lighting of the device. (available for some models only)
- AuxiliaryIllumination** : Control the brightness of the external lighting. (available for some models only)
- ReadGoodBeep** : Setup the working status of the beep when a success read.
- PolarizedLight** : Setup the working status of the polarized light. (available for some models which feature of polarized light)
- Mainlight** : Turning on or off group of the main lighting of the device. (available for models which feature of controllable group lightings)
- SecondaryLight** : Turning on or off group of the secondary lighting of the device. (available for models which feature of controllable group lightings)

■ BarcodeType



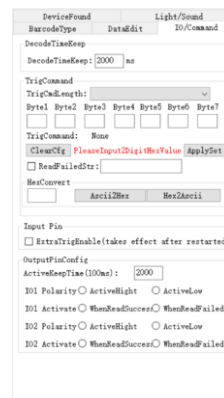
- 1D Code** : Turn on or off the 1D code types which need to read. (turn off the no needed barcode type will increase the decoding performance.)
- 2D Code** : Turn on or off the 2D code types which need to read. (turn off the no needed barcode type will increase the decoding performance.)
- OtherType** : Select to turn on or off for infrequently read barcode types.
- OpenDefaultType** : Turn on the default code types.
- CloseAllType** : Turn off all code types.
- OpenAllType** : Turn on all code types.

■ DataEdit



- PrefixAndSuffix** : Setup the prefix or suffix to the output data.
- DataCropSetting** : Cropping the length of the output data, and setup the specified data.
- BarcodeIDandEof** : Turn on or off output the information of the code type. And setup the terminator.
- SplitorMultiBarcode** : Turn on or off delimiter follows terminator. And setup the delimiter.

■ IO/Command



- DecodeTimeKeep** : Setup the decoding time for each trigger.
- TrigCommand** : Setup the command length for each trigger. Setup feedback contents after a failed read. And a tool for converting query characters to hexadecimal or querying hexadecimal to character.

- InputPin** : Enable or disable working with external trigger.
- OutputPinConfig** : Setup the time for a output signal. And polarity and activate of output1 and output2.

■ OutputConfig



- Encoding** : Setup encoding modes.
- USB Setting** : Setup USB modes.
- RS232Setting** : Setup RS232 parameters.
- ImageSaveMode** : Setup image save parameters.
- NetworkSetting** : Check and modify the network parameters of the device.

■ ImgProcess



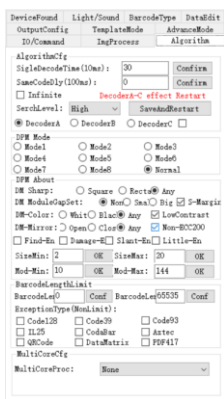
- ImgProcess** : Setup the image formation modes to have a better reading rate.

■ TemplateSetting



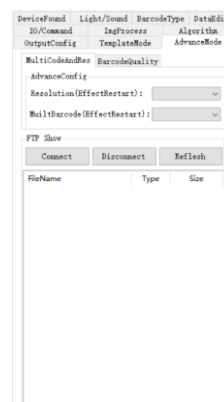
- TemplateSetting** : Check and modify the set parameters of the device.
- TemplateMode** : Save as a template, and load a template.
- TemplateFileList** : Save templates and load a saved templates more intuitively here.

■ Algorithm



- AlgorithmCf** : Setup decode time for one frame of image, same code delay time, and decode algorithm.
- DPM Mode** : Select DPM mode to have different decode algorithms.
- DPM About** : For difficult-to-read DPM codes, select corresponding parameters according to the actual DPM status to improve the decoding rate.
- BarcodeLengthLimit** : Set only to read and output fixed-length or range-length barcodes, and allow exception barcode types.
- MultiCoreProc** : Select different multi core reading modes. (available for some models)

■ AdvanceMode



- MultiCodeAndRes** : Setup the image resolution and multi-code reading functions.
- BarcodeQuality** : Verify barcode print quality. (available for some models)
- FTP Show** : Display FTP connection and disconnect. (available for some models)

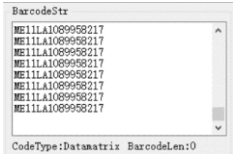
SET VIEW

Monitor Screen



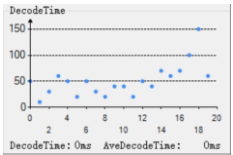
- DisplmageSize : Setup the image quality.
- Savelmg : Save the current image as a picture.
- ImageCount : Count of images.
- FrameCount : Image frame.

BarcodeStr

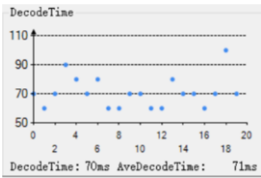


- BarcodeStr : The result of decoding will be showing here.

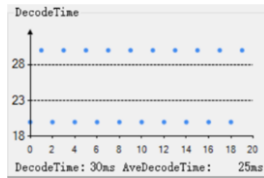
DecodeTime



- DecodeTime : Display reading status, Determine whether the parameter adjustment achieves the optimal decoding state.



The decoding frequency is not stable, and parameters (exposure, gain, ROI, etc.) need to be adjusted to have better decode rate.



The decoding frequency is stable, The reader is in optimal read condition.

LensFocus



- FocusROI : Manually adjust the lens focus parameters. (only for models which feature with auto-focus)

- AutoFocus : , Automatically adjust the lens focus. (only for models which feature with auto-focus)

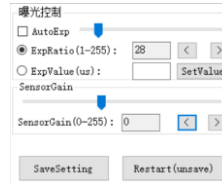
WorkMode



- Continue : Reader get into continue reading mode.
- Manual/CMD : Reader will trigger by receiving command or IO

- AutoTune : Automatically adjust read parameters. (only for models which feature with auto-tune)

ExposureControl



- AutoExp : Automatic exposure mode, or setup the fixing exposure parameters.
- ExpRatio(1-255) : Enter fixing value to setup the exposure from 1 to 255.
- ExpValue(us) : Setup exposure value, unit is microsecond.
- SensorGain : Setup the gain value of the sensor.
- SensorGain(0-255) : Enter fixing value to setup the exposure from 0 to 255.
- SaveSetting : Save the parameters to the device.
- Restart(unsave) : Restart the device, parameters that are not saved are lost.

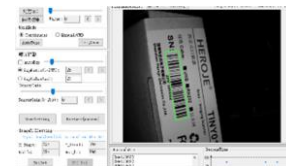
ATTENTION

- The longer the exposure, the brighter the image.
- The exposure time should not be too high or too low to keep the image in high contrast.
- When reading dynamic codes, the lower the exposure time, the stronger the bar code catching ability.
- Sensor gain can make the image brighter. The higher the value, the brighter the image and the greater the image noise. Appropriate gain value can lead to better decoding ability.

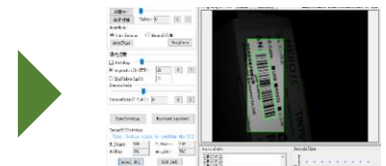
ImageROISetting



- ROI Draw : Draw the ROI area.
- ROI Del : Delete the drew ROI.

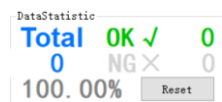


Click "ROI Draw" and draw a area on the image.



Double-click to confirm the ROI area.

DataStatistic



- DataStatistic : Statistics on the read rate triggered by external and instruction.

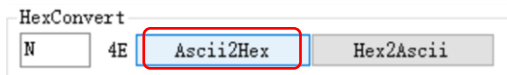
11. ASCII List

		High Order 4 Digits								
Hexadecimal		0	1	2	3	4	5	6	7	
Binary		0000	0001	0010	0011	0100	0101	0110	0111	
Low Order 4 Digits	0	0000	DLE	(SP)	0	@	P	.	p	
	1	0001	SOH	DC1	!	1	A	Q	a	q
	2	0010	STX	DC2	"	2	B	R	b	r
	3	0011	ETX	DC3	#	3	C	S	c	s
	4	0100	EOT	DC4	\$	4	D	T	d	t
	5	0101	ENQ	NAK	%	5	E	U	e	u
	6	0110	ACK	SYN	&	6	F	V	f	v
	7	0111	BEL	ETB	'	7	G	W	g	w
	8	1000	BS	CAN	(	8	H	X	h	x
	9	1001	HT	EM	)	9	I	Y	i	y
	A	1010	LF	SUB	*	:	J	Z	j	z
	B	1011	VT	ESC	+	;	K	[	k	{
	C	1100	CL	FS	,	<	L	\	l	|
	D	1101	CR	GS	-	=	M	]	m	}
	E	1110	SO	RS	.	>	N	^	n	~
	F	1111	SI	US	/	?	O	_	o	del

■ You Can Also Query The HEX Code Through The HEX ConvertTool.

Find in [IO/Command] – [HexConvert] of the HEROJE Code Reader Configuration Software.

Enter the character in the form and click Ascii2Hex.



12. Troubleshooting

If you suspect that the H296 series equipment is not working properly, please check the following items. If the problem persists, please contact the nearest HEROJE sales office.

Unable To Read Codes

■ Is the power of the H296 series turned on?

Check is the communication cable connect tight. Confirm the power status according to the configuration used See "RS232 Cable Connection ([Page 3](#))"

■ Is the barcode setting correct?

Confirm the following settings in HEROJE_Code Reader Configuration Software.

- Enabled barcode types See" Set Code Type" [Page 5](#) or" BarcodeType" [Page 10](#)
- the number of bits read
- Additional settings for each barcode

■ Is the reader dirty?

Use a soft cloth to remove water, oil, or dust from the read window of the reader.

■ Is reading distance too far?

It may not be possible to read codes that have small cell sizes when the reader is installed too far away from the codes. Reduce the distance between the reader and the codes, and then tune the reader again.

■ Is there a problem with the barcode print quality??

Cracked, chipped, speckled or blurred barcodes can be difficult to read. This problem often occurs with barcodes printed by impact dot printers or inkjet printers.

Unable to connect to HEROJE Code Reader Configuration Software

If the H296 series cannot be connected with HEROJE Code Reader Configuration Software, please confirm the following

■ Confirm if the USB driver installed?

USB driver installation
See" 8. Connecting Device To The Configuration Software" on [Page 6](#)

■ Security Software

The installation may be impeded by security software. Temporarily disable the security software.

Data is not output through the USB interface

■ Confirm communication settings

The H296 series has two types of communication settings: USB keyboard and USBCOM. Check that the correct setting has been selected.

■ Wiring

If you are using a hub or other intermediary device between the H296 series and the host device, remove the intermediary device to establish a direct connection, and then check if it is possible to communicate.

Data is not output through the RS232C interface

■ Confirm communication settings

Check that the baud rate settings of the H296 series match those of the host device.

See "RS232 Cable Connection" on [Page 3](#)

13. Product Warranty

HEROJE's products have undergone strict factory inspection. In case of failure, please contact the nearest HEROJE office and provide details of the failure.

1. Warranty period

The warranty period is one year, starting from the date when the product is delivered to the place designated by the buyer.

2. Warranty coverage

(1) If a failure caused by HEROJE company occurs within the above warranty period, we will repair the product free of charge.

But the following situations are not covered by the warranty.

- Malfunctions caused by incorrect operation in environments not in accordance with the conditions and environments specified in the operation manual, user manual, or technical requirements specifically agreed between the purchaser and HEROJE company.

- The failure is not due to a defect in the product but is due to Buyer's equipment or Buyer's software design.

- Malfunctions caused by modifications or repairs performed by persons other than HEROJE.

- Faults that can be completely avoided according to the operation manual or user manual, such as correct maintenance or replacement of wearing parts.

- Failures caused by factors such as unforeseen changes in the level of science and technology after the product has been shipped from HEROJE.

- Our company is not responsible for the warranty for failures caused by natural disasters such as fire, earthquake and flood, or external factors such as abnormal voltage.

(2) The scope of the warranty is limited to the conditions specified in Article (1), and HEROJE is not responsible for any indirect losses (equipment damage, loss of opportunities, loss of profits, etc.) or other losses of the purchaser caused by its equipment.

3. Product suitability

HEROJE's products are designed and manufactured for general-purpose products in general industries. Therefore, our products must not be used in the following applications and are not suitable for their use. However, if the buyer consults us about the use of the product in advance with a responsible attitude, understands the technical specifications, grades and performance of the product, and takes necessary safety measures, the product can be used. In this case, the product warranty coverage is the same as above.

- Facilities that have a serious impact on life and property, such as nuclear power plants, airports, railways, ships, mobile devices, and medical equipment

- Utilities such as electricity, gas and water services

- Outdoor use in similar conditions or environments

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Changes in specifications, etc. are not subject to notice.

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