Hangzhou Hikrobot Technology Co.,Ltd.

Logistics Code Reading Set

User Manual

HIKROBOT

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Note

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Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Directive 2014/30/EU(EMCD),Directive 2001/95/EC(GPSD) and Directive 2011/65/EU(RoHS).

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Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
Danger	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.
Caution	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Note	Provides additional information to emphasize or supplement important points of the main text.

Available Model

This manual is applicable to the logistics code reading set.

Contact Information

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Website: ***https://en.hikrobotics.com/***

Contents

Chapter 1 Safety Instruction

The safety instructions are intended to ensure that the user can use the device correctly to avoid danger or property loss. Read and follow these safety instructions before installing, operating and maintaining the device.

1.1 Safety Claim

- To ensure personal and device safety, when installing, operating, and maintaining the device, follow the signs on the device and all safety instructions described in the manual.
- The note, caution and danger items in the manual do not represent all the safety instructions that should be observed, but only serve as a supplement to all the safety instructions.
- The device should be used in an environment that meets the design specifications, otherwise it may cause malfunctions, and malfunctions or component damage caused by non-compliance with relevant regulations are not within the scope of the device's quality assurance.
- Our company will not bear any legal responsibility for personal safety accidents and property losses caused by abnormal operation of the device.

1.2 Safety Instruction

⚠**Caution**:

- Do not install the device if it is found that the device and accessories are damaged, rusted, water ingress, model mismatch, missing parts, etc., when unpacking.
- Avoid storage and transportation in places such as water splashing and rain, direct sunlight, strong electric fields, strong magnetic fields, and strong vibrations.
- Avoid dropping, smashing or vigorously vibrating the device and its components.
- It is forbidden to install the indoor device in an environment where it may be exposed to water or other liquids. If the device is damp, it may cause fire and electric shock hazard.
- Place the device in a place out of direct sunlight and ventilation, away from heat sources such as heaters and radiators.
- In the use of the device, you must be in strict compliance with the electrical safety regulations of the nation and region.
- Use the power adapter provided by the official manufacturer. The power adapter must meet the Limited Power Source (LPS) requirements. For specific requirements, please refer to the device’s technical specifications.
- If the device emits smoke, odor or noise, please turn off the power and unplug the power cord immediately, and contact the dealer or service center in time.
- It is strictly forbidden to touch any terminal of the device when operating it. Otherwise

there is a danger of electric shock.
- It is strictly forbidden for non-professional technicians to detect signals during device operation, otherwise it may cause personal injury or device damage.
- It is strictly forbidden to maintain the device is powered on, otherwise there is a danger of electric shock.
- Avoid aiming the lens at strong light (such as lighting, sunlight, or laser beams, etc.), otherwise the image sensor will be damaged.
- If it is necessary to clean the device, use a damp paper towel or a soft clean cloth to moisten a little pure water, gently wipe off the dust, and do not use alcohol-based corrosive solutions. Make sure to power off the device and unplug the power socket when cleaning.
- Keep clean of the device's image acquisition window. It is recommended to use cleaning water to wipe off the dust.
- If the device does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the device yourself (we shall not assume any responsibility for problems caused by unauthorized repair or maintenance).
- Caution: If the device has battery, risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- Please dispose of the device in strict accordance with the relevant national or regional regulations and standards to avoid environmental pollution and property damage.

Note:

- Check whether the device's package is in good condition, whether there is damage, intrusion, moisture, deformation, etc. before unpacking.
- Check the surface of the device and accessories for damage, rust, bumps, etc. when unpacking.
- Check whether the quantity and information of the device and accessories are complete after unpacking.
- Store and transport the device according to the storage and transport conditions of the device, and the storage temperature and humidity should meet the requirements.
- It is strictly prohibited to transport the device in combination with items that may affect or damage the device.
- Quality requirements for installation and maintenance personnel:
  - Qualification certificate or working experience in weak current system installation and maintenance, and relevant working experience and qualifications. Besides, the personnel must possess the following knowledge and operation skills.
  - The basic knowledge and operation skills of low voltage wiring and low voltage electronic circuit connection.
  - The ability to comprehend the contents of this manual.
- Please read the manual and safety instructions carefully before installing the device.
- Please install the device strictly according to the installation method in this manual.
- The case of the device may be overheated, and it needs to be powered off for half an hour before it can be touched.
- The device should not be placed with exposed flame sources, such as lighted candles.

1.3 Electromagnetic Interference Prevention

- Make sure that the shielding layer of cables is intact and 360° connected to the metal connector when using shielded cables.
- Do not route the device together with other equipment (especially servo motors, high-power devices, etc.), and control the distance between cables to more than 10 cm. Make sure to shield the cables if unavoidable.
- The control cable of the device and the power cable of the industrial light source must be wired separately to avoid bundled wiring.
- The power cable, data cable, signal cable, etc. of the device must be wired separately. Make sure to ground them if the wiring groove is used to separate the wiring and the wiring groove is metal.
- During the wiring process, evaluate the wiring space reasonably, and do not pull the cables hard, so as not to damage the electrical performance of the cables.
- If the device is powered on and off frequently, it is necessary to strengthen the voltage isolation, and consider adding a DC/DC isolation power supply module between the device and the adapter.
- Use the power adapter to supply power to the device separately. If centralized power supply is necessary, make sure to use a DC filter to filter the power supply of the device separately before use.
- The unused cables of the device must be insulated.
- When installing the device, if you cannot ensure that the device itself and all equipment connected to the device are well grounded, you should isolate the device with an insulating bracket.
- To avoid the accumulation of static electricity, ensure that other equipment (such as machines, internal components, etc.) and metal brackets on site are properly grounded.
- Make sure that the connector metal barrier of the device is well connected to the PC and other chassis, and if necessary, copper foil should be used to enhance the grounding effect.
- During the installation and use of the device, high voltage leakage must be avoided.
- Use a figure-eight bundle method if the device cable is too long.
- When connecting the device and metal accessories, they must be connected firmly to maintain good conductivity.
- Use a shielded network cable to connect to the device. If you use a self-made network cable, make sure that the shielding shell at the aviation head is well connected to the aluminum foil or metal braid of the shielding cable.

Chapter 2 Overview

2.1 Introduction

Logistics code reading set consists of standard industrial camera, lens, light source, etc. Relying on code recognition technology, logistics code reading set can automatically locate and read codes, output corresponding code information, and connect to major express information management platforms.

2.2 Key Features

- Adopts code recognition technology.
- Supports acquisition and integration of data and images.
- Supports local data storage, uploading, and tracking.
- Adopts integrated structure to facilitate installation.
- Centralized light with high luminescence efficiency.
- Long service life time, and stable performance.
- Provides real-time and effective data for logistics related enterprises.

Note

- Refer to the device's datasheet for detailed parameters.
- Key features may differ by device models.

Chapter 3 Appearance

Note

- For specific appearance and dimension, please refer to the device's datasheet for details.
- The appearance is subject to change, and the actual device you purchased shall prevail.

Currently, the device has two types of appearance, as shown below.

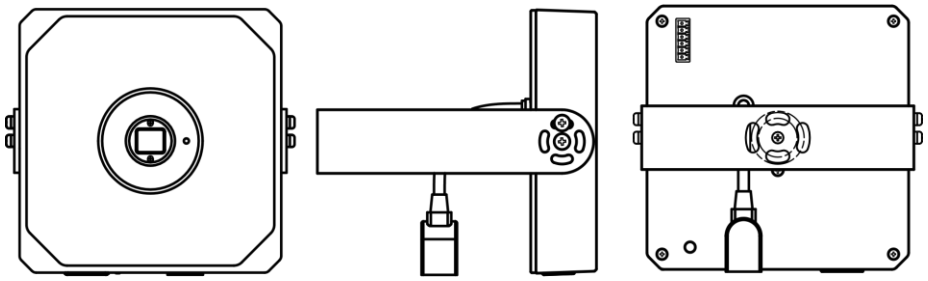

Figure 3-1 Appearance (Type I)

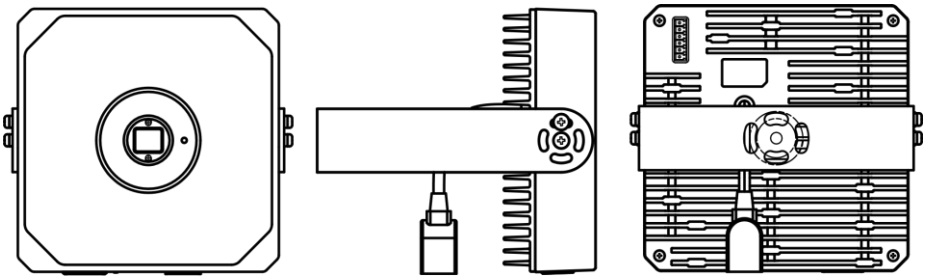

Figure 3-2 Appearance (Type II)

The device has a 6-pin terminal as its power and I/O connector, a RJ45 GigE interface, and a switch, as shown below.

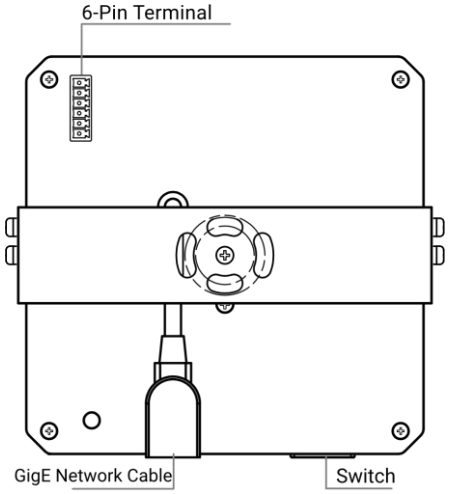

Figure 3-3 Component

Table 3-1 Component Description

Name	Description
Switch	It is used to turn on or off the light source of the device.
6-Pin Terminal	It provides power supply and I/O interface. Refer to section ***6-Pin Terminal*** for details.
GigE Interface	It is used to transmit data.

Chapter 4 6-Pin Terminal

The device has a 6-pin terminal that provides power supply and I/O interface. Refer to the table below for detailed pin definitions.

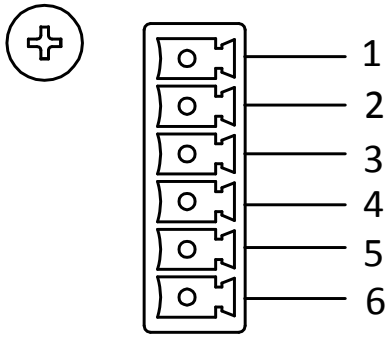

Figure 4-1 6-Pin Terminal

Table 4-1 Pin Definitions

Pin No.	Signal	I/O Type	I/O Signal Source	Description
1	GPIO	Input or Output	Line 2 Signal Line	Configure to Input or Output
2	Reserved			
3	I/O Ground	Input or Output	Line 0 Signal Ground	Signal Ground
4	Opt-Iso In	Input	Line 0 Signal Line	Opto-isolated Input
5	GND	--	Line 2 Signal Ground	Power Supply Ground
6	DC_PWR	--	--	DC Power Supply

Chapter 5 Installation

5.1 Installation Preparation

You need to prepare following accessories before installation.

Table 5-1 Accessories

No.	Name	Quantity	Description
1	Lens	1	It refers to FA lens.
2	Power Adapter	1	It refers to 24 V, 2.5 A power adapter.
3	Network Cable	1	It refers to CAT-5e network cable or above.

5.2 Install Device

Before You Start

- Make sure that the device in package is in good condition and all accessories are included.
- Make sure that all related devices are powered off during the installation.

Steps

1. Install the lens to the device.
2. Fix the device to the proper installation position.
3. Use CAT5E or CAT6 Ethernet cable to connect the device to a switch or NIC.
4. Use the power adapter to power the device.

Chapter 6 Device Connection

Device connection to the client software is required for device's configuration and operations. This section introduces how to set PC environment, install the client software, connect the device to the client software, etc.

6.1 Set PC Environment

Setting PC environment is required before installing and using the client software to ensure stable running of the client software and data transmission.

6.1.1 Turn off Firewall

Steps

Note

For different Windows versions, the path name or interface may differ. Please refer to the actual condition.

1. Go to Windows Firewall.
- Windows XP system: Click **Start** → **Control Panel** → **Security Center** → **Windows Firewall**.
- Windows 7 system: Click **Start** → **Control Panel** → **Windows Firewall**.
- Windows 10 system: Click **Start** → **Control Panel** → **System and Security** → **Windows Defender Firewall**.
2. Click **Turn Windows Defender Firewall on or off** on the left.
3. Select **Turn off Windows Defender Firewall (not recommended)**.

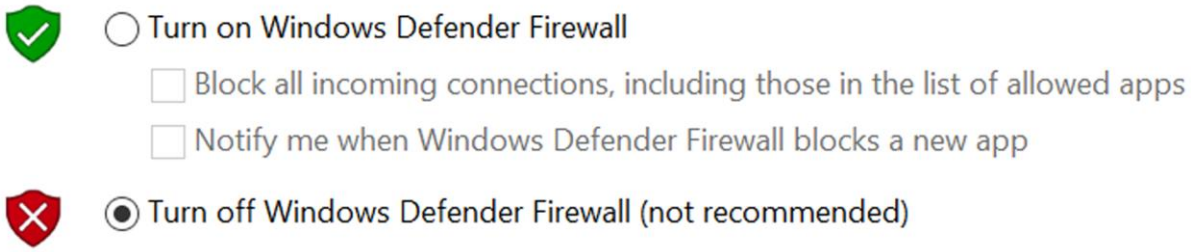

Figure 6-1 Windows Defender Firewall

4. Click **OK**.

6.1.2 Set PC Network

To ensure stable data transmission and normal communication between the PC and the device via the client software, you should set the PC network and make sure that they are in the same network segment.

Steps

Note

For different Windows versions, the specific setting path and interface may differ. Please refer to the actual condition.

1. Go to PC network settings page: **Start** → **Control Panel** → **Network and Internet** → **Network and Sharing Center** → **Change adapter settings**.
2. Select NIC and set the IP obtainment mode according to actual demands.
- Select **Obtain an IP address automatically** to get an IP address of the PC automatically.
- Select **Use the following IP address** to set an IP address for the PC manually.

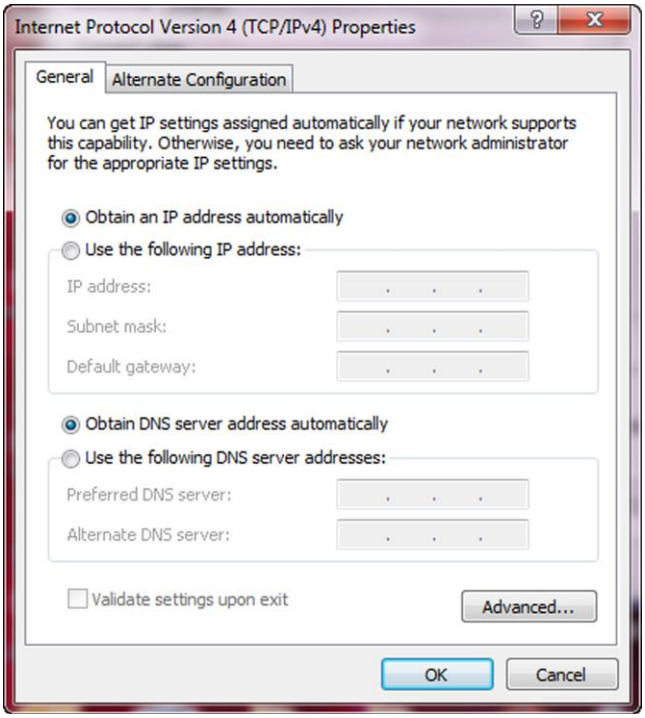

Figure 6-2 Set PC Network

3. Set NIC property.
   1) Go to NIC settings page: **Control Panel** → **Hardware and Sound** → **Device Manager** → **Network Adapter**.
   2) Select corresponding network interface card, and click **Advanced**.
   3) Set **Jumbo Packet** value to **9014 Bytes**, **Transmit Buffers** and **Receive Buffers** to **2048**, **Interrupt Moderation Rate** to **Extremum**.

6.2 Install MVS Client Software

MVS client software is used to connect and set parameters of the standard industrial camera in the device, and acquire images.

Note

- The MVS client software is compatible with 32/64-bit Windows 7/10 operating systems, and you can download it from **https://en.hikrobotics.com/**.
- The graphic user interface may differ by different versions of the client software you use.

Steps

1. Double click the MVS installation package.
2. Select the language.
3. Read and check **Terms of the License Agreement**.

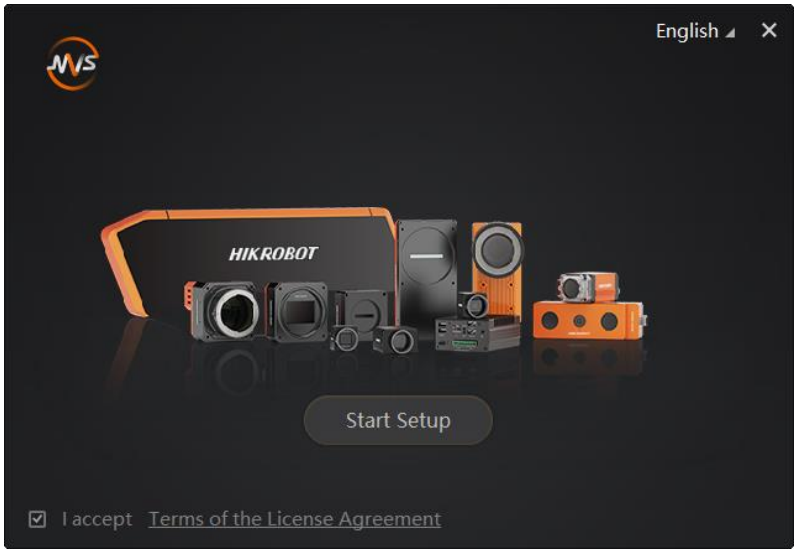

Figure 6-3 Installation Interface

4. Click **Start Setup**.

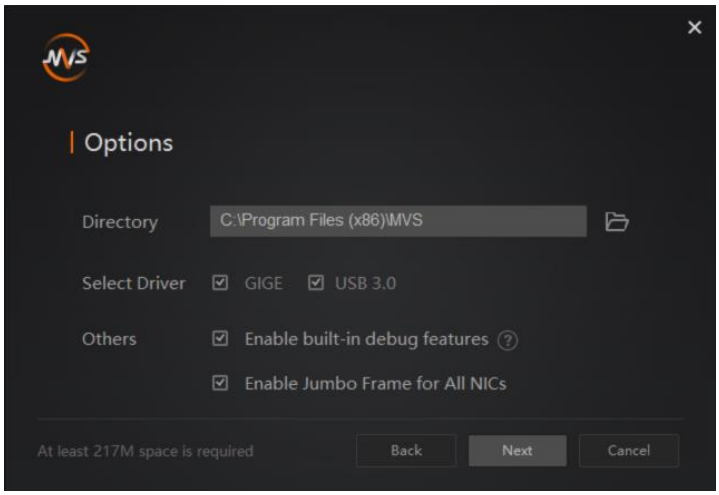

Figure 6-4 Default Settings

5. Keep default settings, and click **Next**.
6. Finish the installation according to the interface prompts.

6.3 Install Code Platform Software

The code platform software is used to recognize codes and set filtering rules for code reading.

Note

- Contact the technical support to get the code platform software.
- The graphic user interface may differ by different versions of the software you use.

Steps

1. Double click the code platform installation package.
2. Click **Start Install**.

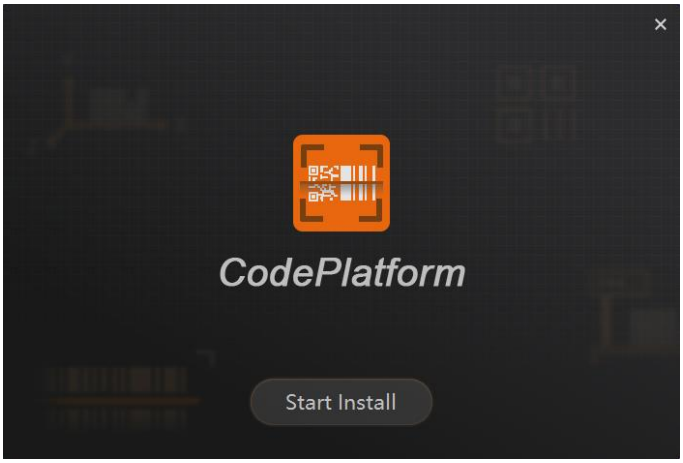

Figure 6-5 Start Install

3. Check **Read and Accept the LICENSE**, and click **Next**.
4. Select the installation path, and click **Next**.

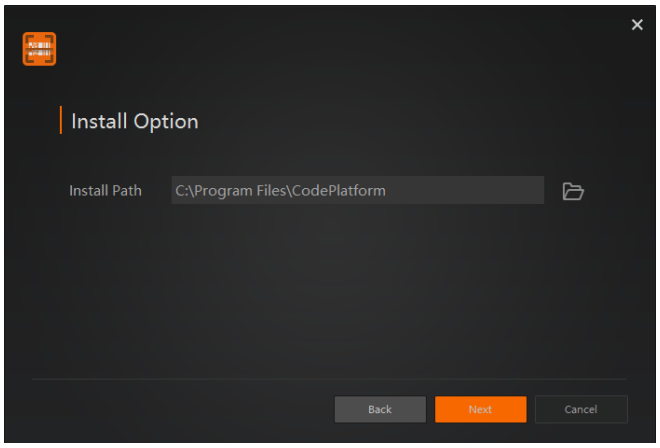

Figure 6-6 Select Installation Path

5. Finish the installation according to the interface prompts.

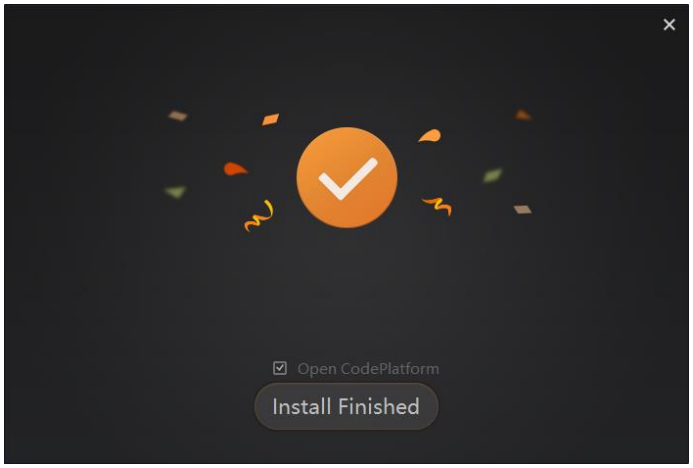

Figure 6-7 Finish Installation

6.4 Set Device Network

You can set and operate the device in the MVS client software only when the device is in the same network segment with the PC where the client software is installed.

Steps

1. Double click the MVS client software.
2. Click  to find the device.
3. Right click the device to be connected.
4. Click **Modify IP**.
5. Set the IP address of the device in the same network segment with the PC.

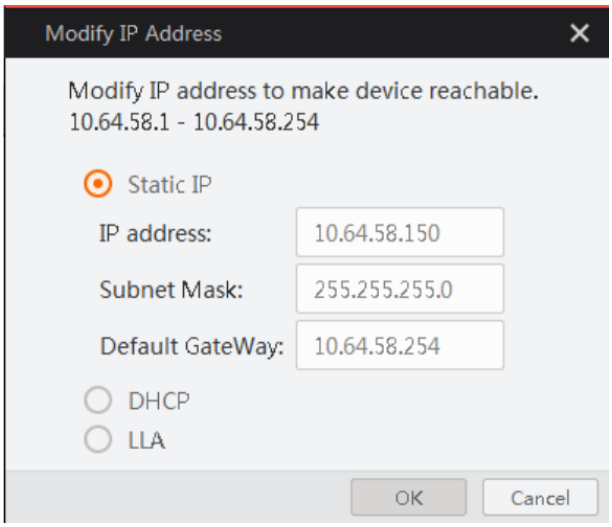

Figure 6-8 Modify IP Address

6. Click **OK**.

6.5 Connect Device to Client Software

Make sure your device IP address is in the same network segment with the PC where you installed the MVS client software before connecting the device to it.

Double click the device in the device list, or click  to connect the device to the client software.

Chapter 7 I/O Electrical Features and Wiring

7.1 I/O Electrical Features

7.1.1 Input Signal

The device's Line 0 is opto-isolated input, and its internal circuit is as follows.

Note

- The maximum input current is 25 mA.
- The breakdown voltage is 30 VDC. Keep voltage stable.
- Make sure that the input voltage is not from 0.9 VDC to 3.2 VDC because the input level is not stable between this range.
- The test condition here is 5 V level high, 0 V level low, and 1 KHz signal source input.

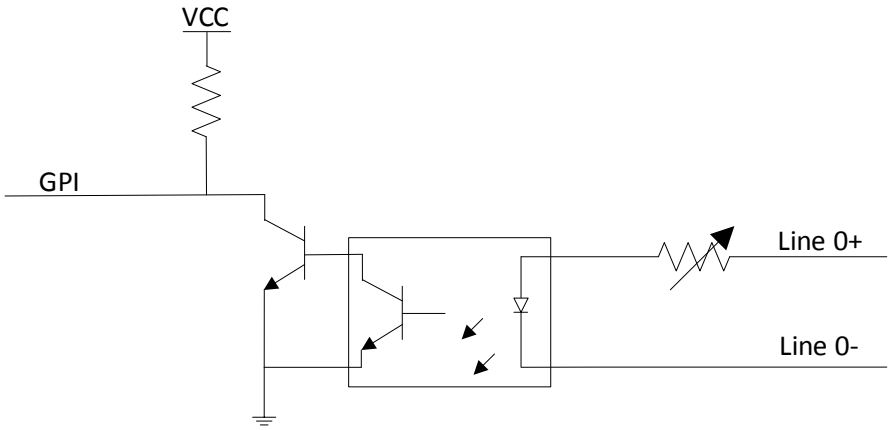

Figure 7-1 Internal Circuit of Input Signal

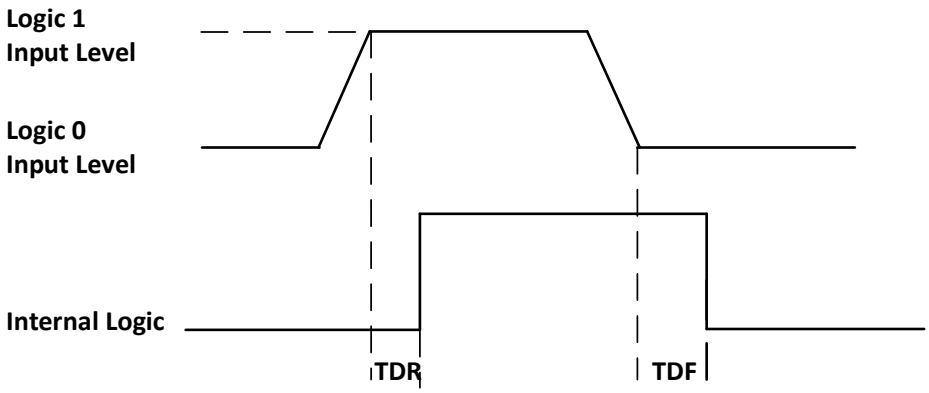

Figure 7-2 Input Logic Level

Table 7-1 Input Electrical Feature

Parameter Name	Parameter Symbol	Value
Input Logic Level Low	VL	0 VDC to 0.8 VDC
Input Logic Level High	VH	3.3 VDC to 24 VDC
Input Falling Delay	TDF	18 μs to 22 μs
Input Rising Delay	TDR	0.8 μs to 1.1 μs

7.1.2 Bi-Directional Signal

The device's Line 2 is directional I/O, and you can set it as input signal or output signal according to demands.

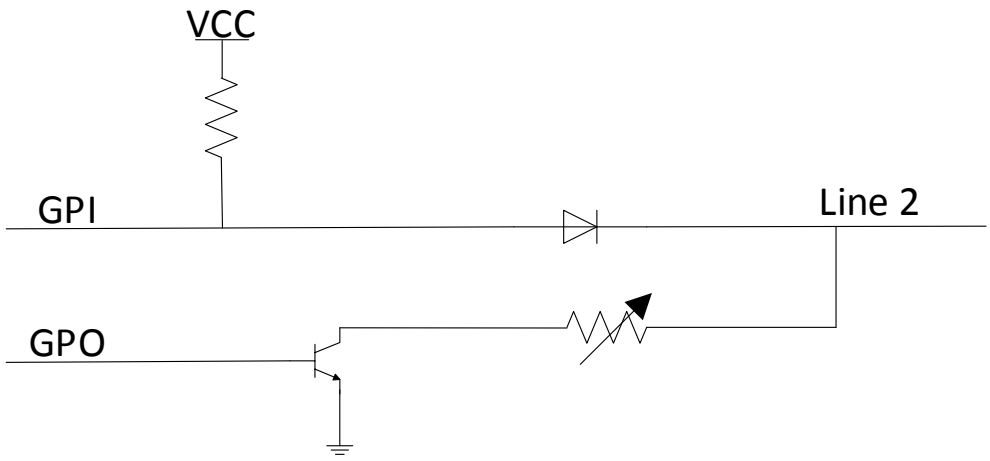

Figure 7-3 Internal Circuit of Bi-Directional Signal

Configured as Input Signal

With the condition of 100 Ω and 5 VDC, the logic level and electrical feature of configuring Line 2 as output are shown below.

Note

- The breakdown voltage is 30 VDC. Keep voltage stable.
- Make sure that the input voltage is not from 0.3 VDC to 3.2 VDC because the input level is not stable between this range.
- To prevent damage to GPIO pin, connect GND first and then input voltage in Line 2 pin.

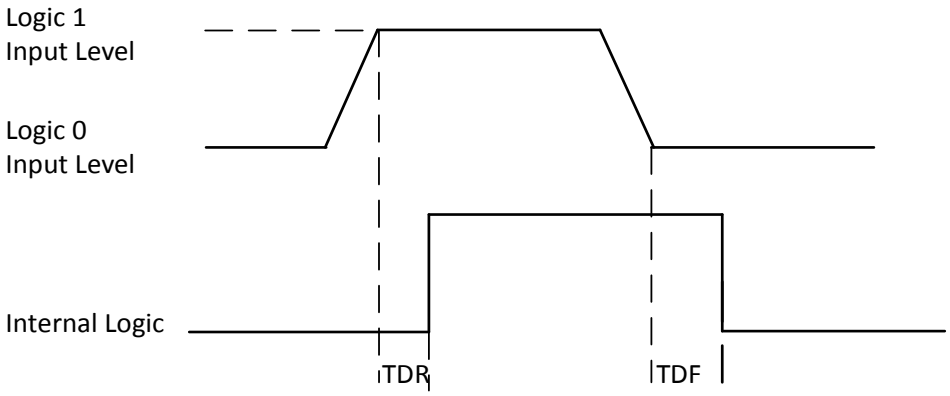

Figure 7-4 Input Logic Level

Table 7-2 Input Electrical Feature

Parameter Name	Parameter Symbol	Value
Input Logic Level Low	VL	0 VDC to 0.2 VDC
Input Logic Level High	VH	3.3 VDC to 24 VDC
Input Falling Delay	TDF	< 1 μs
Input Rising Delay	TDR	< 1 μs

Configured as Output Signal

Note

The maximum current is 25 mA and the output impedance is 40 Ω.

The relation among external voltage, resistance and the output level low is shown below.

Table 7-3 Output Logic Level Low

External Voltage	External Resistor	VL (GPIO2)
3.3 VDC	1 KΩ	138 mV

External Voltage	External Resistor	VL (GPIO2)
5 VDC	1 KΩ	195 mV
12 VDC	1 KΩ	425 mV
24 VDC	1 KΩ	840 mV

When the voltage of external resistance (1 KΩ) is pulled up to 5 VDC, the logic level and electrical feature of configuring Line 2 as output are shown below.

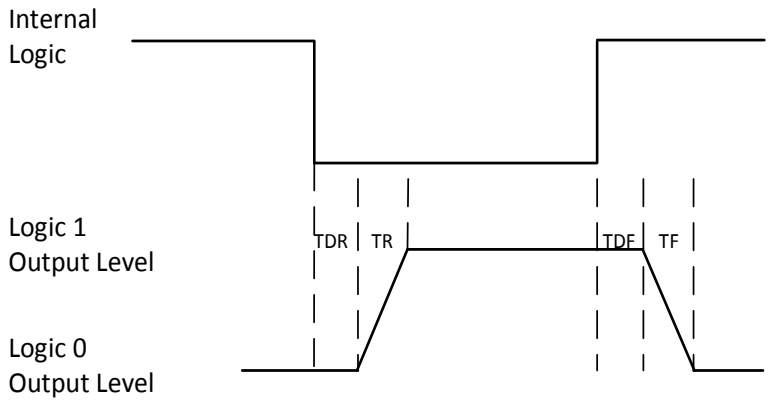

Figure 7-5 Output Logic Level

Table 7-4 Output Electrical Feature

Parameter Name	Parameter Symbol	Value
Output Rising Time	TR	0.35 μs
Output Falling Time	TF	0.03 μs
Output Rising Delay	TDR	0 μs to 4 μs
Output Falling Delay	TDF	< 1 μs

7.2 I/O Wiring

7.2.1 Input Signal Wiring

Note

- The maximum input current of Line 0 is 25 mA, input logic level low is 0 VDC to 0.8 VDC, and input logic level high is 3.3 VDC to 24 VDC.
- Make sure that the input voltage is not from 0.9 VDC to 3.2 VDC because the input level is not stable between this range.
- Input signal wiring may differ with different types of external devices.

PNP Device

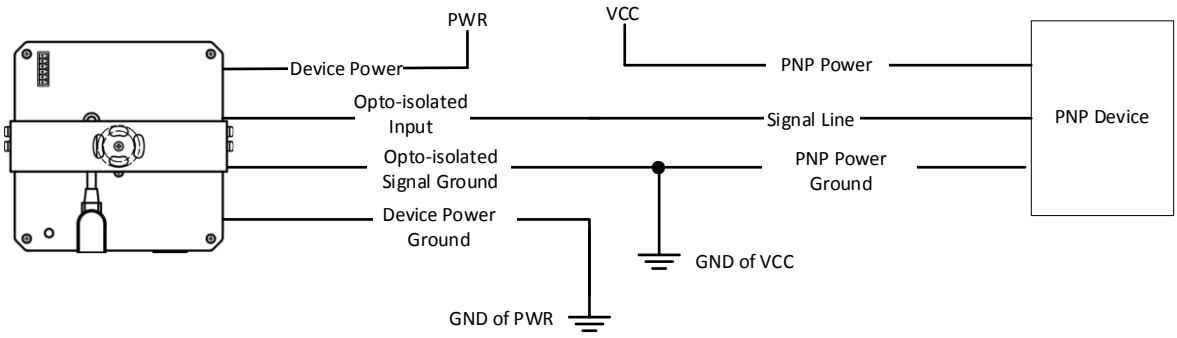

Figure 7-6 Input Signal Connects PNP Device

NPN Device

- If the VCC of the NPN device is 24 VDC, it is recommended to use 4.7 KΩ pull-up resistor.
- If the VCC of the NPN device is 12 VDC, it is recommended to use 1 KΩ pull-up resistor.

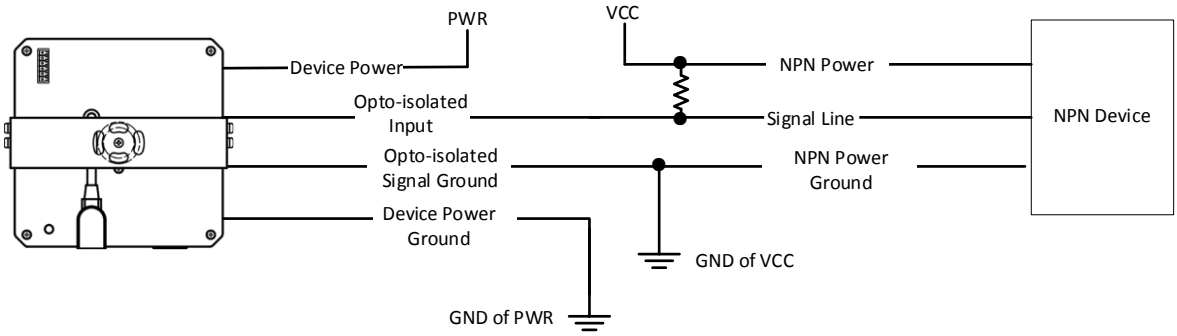

Figure 7-7 Input Signal Connects NPN Device

Switch

It is recommended to use 1 KΩ to 4.7 KΩ resistor to protect the circuit if the VCC of the switch is 24 VDC.

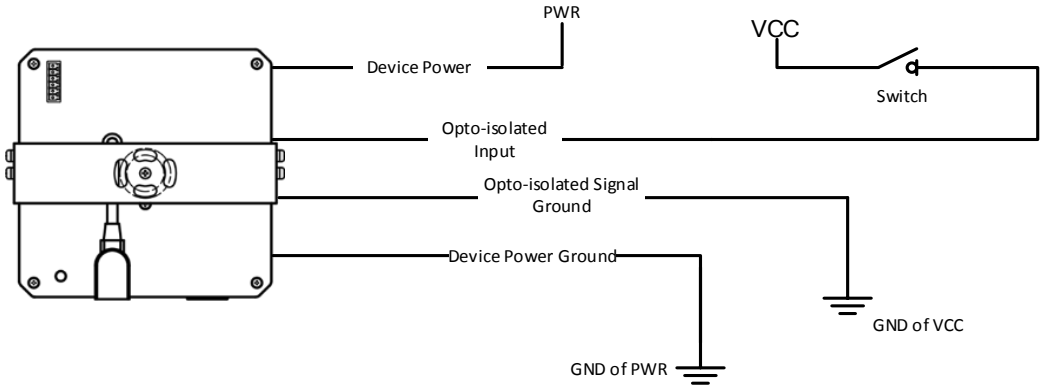

Figure 7-8 Input Signal Connects a Switch

7.2.2 Bi-Directional Signal Wiring

The Line 2 is a bi-directional I/O that can be used as both input signal and output signal.

Configured as Input Signal

Note

- Input logic level low of Line 2 is 0 VDC to 0.2 VDC, and input logic level high is 3.3 VDC to 24 VDC.
- Make sure that the input voltage is not from 0.3 VDC to 3.2 VDC because the input level is not stable between this range.
- Input signal wiring may differ with different types of external devices.

PNP Device

It is recommended to use 330 Ω pull-down resistor.

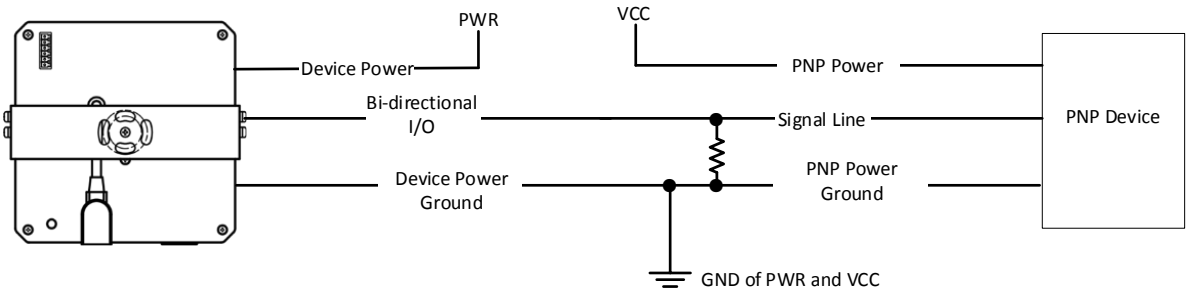

Figure 7-9 Input Signal Connects PNP Device

NPN Device

- If the VCC of the NPN device is 24 VDC, it is recommended to use 4.7 KΩ pull-up resistor.
- If the VCC of the NPN device is 12 VDC, it is recommended to use 1 KΩ pull-up resistor.

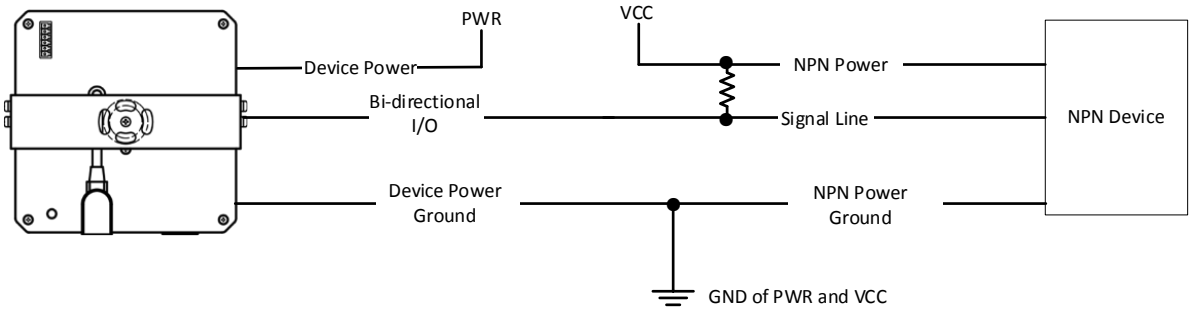

Figure 7-10 Input Signal Connects NPN Device

Switch

The switch value can provide low electrical level to trigger line 2.

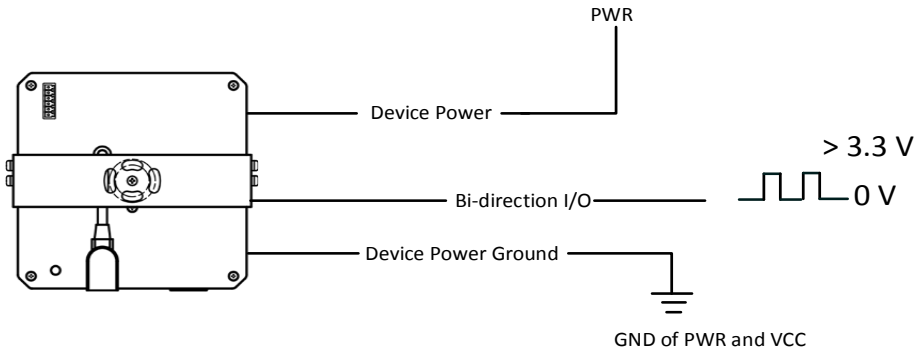

Figure 7-11 Input Signal Connects a Switch

Configured as Output Signal

Note

- The maximum current is 25 mA and output impedance is 40 Ω.
- When the voltage of external resistance (1 KΩ) is pulled up to 5 VDC, the logic level low is 192 mV, and output logic level high is 4.75 VDC.
- Output signal wiring may differ with different types of external devices.

PNP Device

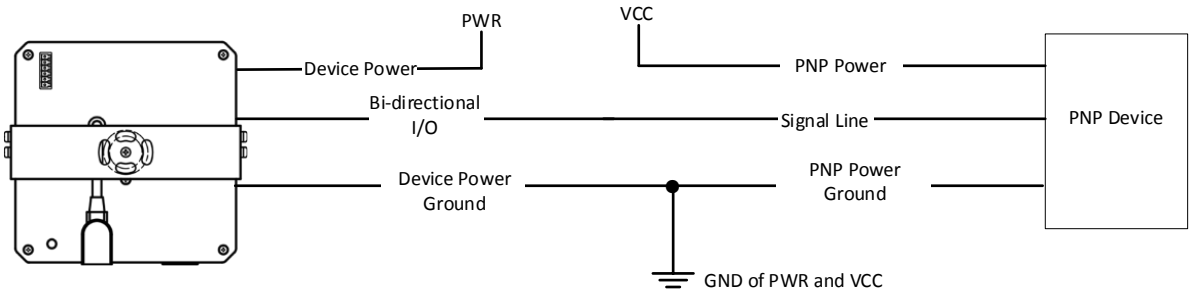

Figure 7-12 Output Signal Connects PNP Device

NPN Device

- If the VCC of the NPN device is 24 VDC, it is recommended to use 4.7 KΩ pull-up resistor.
- If the VCC of the NPN device is 12 VDC, it is recommended to use 1 KΩ pull-up resistor.

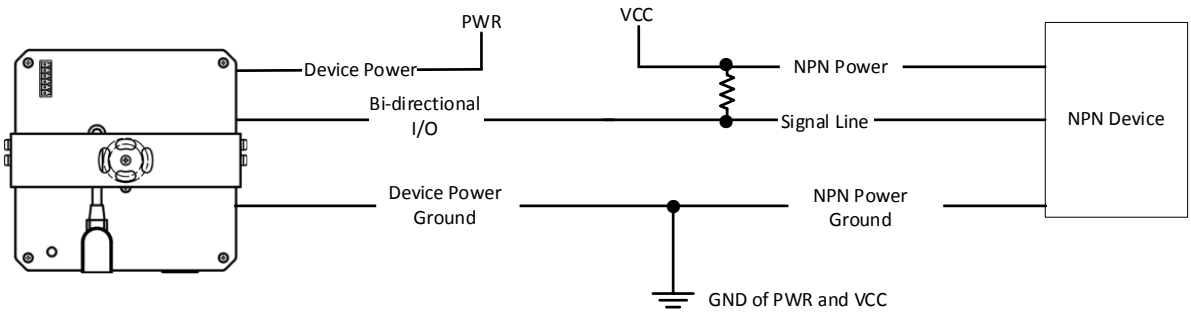

Figure 7-13 Output Signal Connects NPN Device

Chapter 8 Image Debugging

8.1 Image Debugging via MVS Client Software

Follow steps below to debug images via the MVS client software.

Steps

1. Run the client software, and connect the device to it.
2. Go to **Image Format Control** → **Pixel Format** in the feature tree, and set **Pixel Format** according to actual demands.

Table 8-1 Pixel Format and Size

Pixel Format	Pixel Size (Bits/Pixel)
Mono 8	8

Note

Pixel format may differ by device models.

3. Click ▶ to have the live view.
4. Go to **Acquisition Control**, set **Acquisition Frame Rate**, and enable **Acquisition Frame Rate Control Enable**.

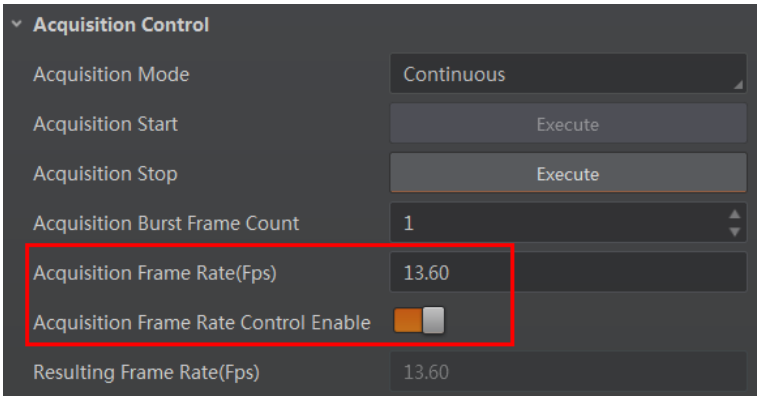

Figure 8-1 Set Acquisition Frame Rate

5. Go to **Acquisition Control** → **Exposure Auto**, select **Off** as **Exposure Auto**, and enter **Exposure Time** according to actual demands.

Note

Exposure auto includes **Off**, **Once** and **Continuous**. It is recommended to use **Off** mode.

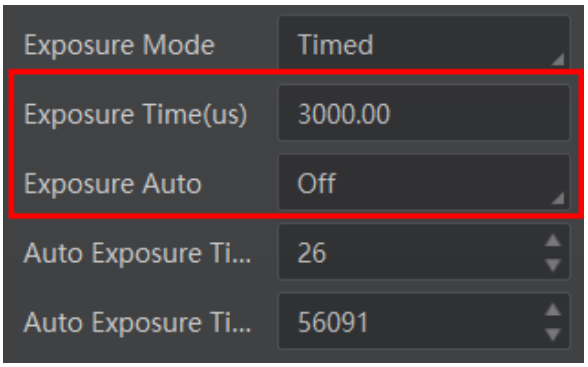

Figure 8-2 Set Exposure Auto

6. Go to **Analog Control** → **Gain Auto**, select **Off** as **Gain Auto**, and enter **Gain** according to actual demands.

Note

Gain auto includes **Off**, **Once** and **Continuous**. It is recommended to use **Off** mode.

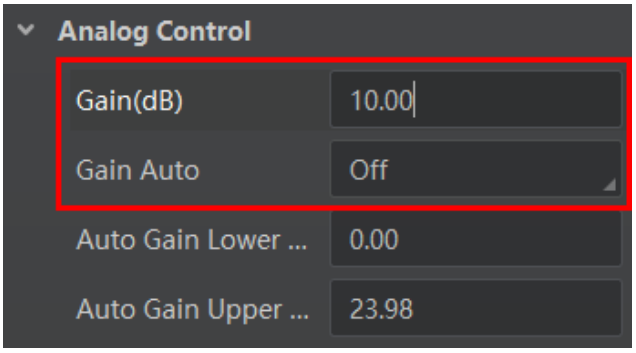

Figure 8-3 Set Gain Auto

7. Go to **Analog Control**, enable **Gamma Enable**, and enter **Gamma** according to actual demands.

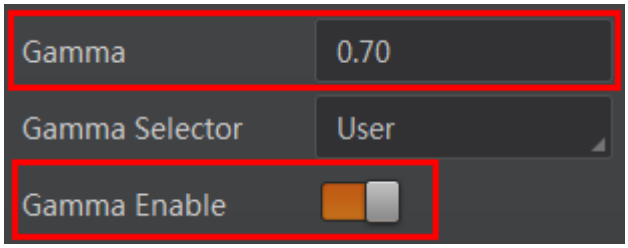

Figure 8-4 Set Gamma

Note

- If the Gamma value is between 0 to 1, the brightness of the image's dark part increases. If the Gamma value is between 1 to 4, the brightness of the image's dark part reduces.
- The default vaule of Gamma is 0.70.

8. Go to **Transport Layer Control**, and set **GEV SCPD** according to actual demands.

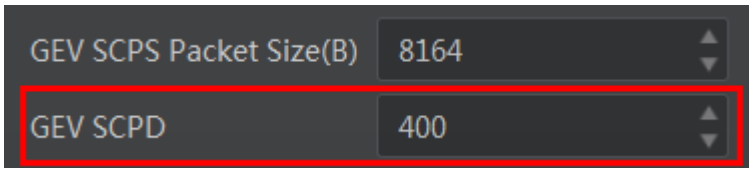

Figure 8-5 Set GEV SCPD

9. Go to **User Set Control** to save configured parameters.
- Save parameters: Select one user set in **User Set Selector**, and click **Execute** in **User Set Save**.
- Set default parameters: Select one user set in **User Set Default**.

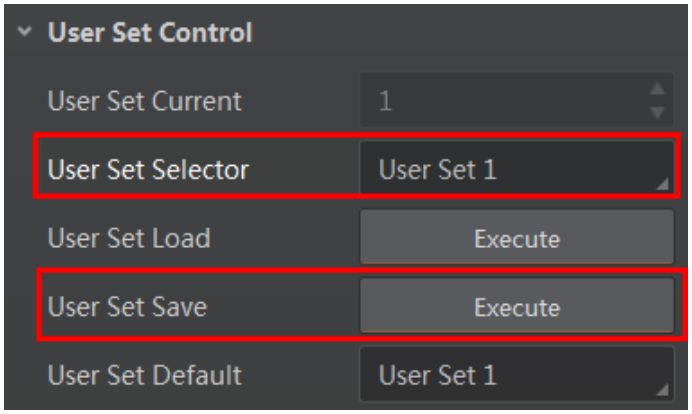

Figure 8-6 User Set Control

10. Import or export the device's features by click or in the MVS client software.

Note

- Importing features can be done only among the same device models.
- The import and export function may differ by the version of the MVS client software. Refer to the user manual of the client software for details.

8.2 Image Debugging via Code Platform Software

Follow steps below to debug images via the code platform software.

Steps

1. Run the code platform software, and select one solution to enter the main window.
2. Go to **Settings** → **System** → **Camera**, click in industrial camera, and add device.
3. Click to set parameters.

Note

The specific parameters may differ by device model.

Table 8-2 Parameter Description

Parameter	Description
Enable Panorama	If it is enabled, the industrial camera can be used as a panorama camera to take panorama.
Delay Time	It sets the delay time of camera capturing images.
Pixel Format	It supports Mono 8 only.
Frame Rate	It sets the camera's acquisition frame rate.
Exposure Mode	It includes **Off**, **Once** and **Continuous**.
Exposure Time	It sets exposure time when **Off** is selected as exposure mode.
Gain Mode	It includes **Off**, **Once** and **Continuous**.
Gain	It sets gain value when **Off** is selected as gain mode.
Enable Gamma	You can enable this parameter according to actual demands.
Gamma	After enabling **Enable Gamma**, you can set this parameter.

4. Click **Save** to save configured parameters.
5. Click , select **Algorithm Parameters**, and set corresponding parameters.

Note

The specific algorithm parameters may differ by device model.

Table 8-3 Algorithm Parameter Description

Parameter	Description
Code Type	You can select one-dimensional code, two-dimensional code or both.
Symbologies	It selects 1D code type like Code 93, Code 128, EAN, etc.
Detect Barcode Quantity	It sets the max. 1D code quantity can be recognized in an image.
Detect Window Quantity	It sets the max. quantity of code area positioning windows that can be recognized in an image.
Quiet Zone Width	It refers to the right and left ends of the code. If the margin is not wide enough, the code reader cannot scan the code data.
Algorithm Operating Mode	It includes reserved mode and dynamic mode. Reserved mode have a better code reading efficiency, but has limited ability to read difficulty codes, while the dynamic mode has good ability to read difficulty codes, but code reading efficiency is low.
Code Reflection	If it is enabled, the software can read reflective codes on packages.

Parameter	Description
Image Morphology Process	It processes the image's morphology.
Code Reading Enhancement	You can enable the parameters if the error rate of code reading is larger. But it may affect the overall code reading efficiency.
Image Scale Ratio	It determines how many pixels camera takes as the sample for parsing the code. For example, If you set the value to 4, the device will take 1 pixel from 4 pixels as the sample for parsing the code. It is recommended to set this parameter as 1 when the pixel of min. 1-dimensional code module lowers than 3. If it is larger than 3, and you can set this parameters according to actual demands.
Timeout	It sets the maximum running time of algorithm, and camera will stop parsing the images and return result if the time is exceeded, and the unit is ms.
Max. Repetition Quantity	After reading a code multiple times, you can set the value to filter and remove duplicates, the max. value is 10000. For example, a code is read 9 times, and the value is set to 10. If there is no other code by default, the code will actually be output only once after reading 10 times. It is applicable to the requirement that the code appears multiple times in the same field of view, but the content of the code only needs to be output once.

6. Click **Save** to save configured parameters.

Chapter 9 FAQ (Frequently Asked Question)

9.1 Why there is no device listed after I run the MVS client software?

Reason

- The device is powered off.
- Network exception occurs.

Solution

- Check the device's power connection to make sure that the device is powered up normally.
- Check the network connection.
- Make sure that the device' IP address is in the same network segment with the PC where you installed the MVS client software before connecting the device to it.

9.2 Why the image quality is very poor during the live view?

Reason

Incorrect jumbo packet setting.

Solution

Turn off firewall and set jumbo packet value as 9 KB, or 9014 bytes.

9.3 Why codes cannot be recognized?

Reason

- Image error occurs.
- Code error occurs.
- Incorrect algorithm parameter settings.

Solution

- Make sure that the image is clear.
- Make sure that codes are within the field of the device.
- Make sure that the printing quality of codes is good.
- Make sure that the settings of algorithm parameters are correct.

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