



# GigE Area Scan Camera

## Quick Start Guide

**V1.0.0**

## Abstract

This manual described GigE Area Scan Camera, including product introduction, Structure, basic parameters and the operation of the MV Viewer.

## Symbol Convention

You may see some symbols in this manual, please read the meaning of the symbols as below:

Symbol	Description
 <b>Danger</b>	High level potential risks, which can lead to serious personal injuries or casualties.
 <b>Warning</b>	Medium level potential risks, which can lead to personal injuries
 <b>Caution</b>	Low level potential risks, which can lead to device damage, data losses, poor device performance etc.
 <b>Electrostatic risk</b>	Electrostatic Discharge Sensitive Device
 <b>Protection against electric shock</b>	High voltage risk
 <b>Laser radiation</b>	Laser radiation risk
 <b>Tips</b>	Some tips for quick problem solving
 <b>Remark</b>	Supplementary or explanation to the corresponding content

# Safety Instruction

Please read the safety instruction carefully before using the product in order to prevent risks and losses etc. Please follow this instruction strictly while using.



## Caution

- Please do not place or install the device to the sunlight directly or near the heating equipment, make sure the cover temperature is controlled below 60°C.
- Please do not place or install the device in humid, dust or soot environment; when the camera was not connected to the lens, please make sure the camera was covered to avoid the dust entering.
- Please install the device in a stable place for preventing from falling.
- Please do not drip or splash water or other liquid on the device and make sure that no object filled of liquid is placed on the device to avoid liquid flowing into the device.
- Please install the device in a good ventilation environment; please keep the ventilator not blocked.
- Please use the device only within the rated input and output range.
- Please do not dismantle the device without permission.
- Please transport, use and store the device within the allowable range of humidity and temperature.
- Please connect the product with I structure to the network power output socket with protective GND.

## Interpretations

- This manual is only for reference
- The manual and the mentioned software will be updated corresponding to the product update without advance notice.
- The losses caused by the operations, which didn't follow this instruction, shall be borne by the user.
- This instruction may include inaccurate technical descriptions, not-as-described functions/operations or misprint. We reserve all the right for the final interpretation.

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# 1

## Product Description

### 1.1 Product Introduction

GigE Area Scan Camera adopts high-performance sensor and transfers image data via GigE interface. The Device is compatible with all the applications, which were developed according GigE Vision and GenICam standard. Theoretical 1Gbps maximum transmission speed will meet the most requirements of industrial applications. Meanwhile, the camera is capable to work in poor environment with high stability, reliability and great cost-efficiency.

### 1.2 Product Features

GigE Area Scan Camera with easy installation, convenient operation, provided:

- Maximum 100 m transmission distance
- 128MB on-board buffer for data transmission or image retransmission in burst mode
- Support for software trigger, external trigger, mixed trigger, free run mode.
- ISP Functions support sharpness, noise reduction, gamma correction, LUT, black level correction, brightness, contrast.
- Interpolation algorithm, white balance algorithm, color conversion matrix, hue, saturation etc. for color camera.
- Support for Multi-formats for image data output, ROI, Binning, mirror etc.
- Compliance with GigE Vision protocol and GenICam standard.
- Support for POE power supply(only type with dimension: 29mm×29mm×42mm); DC 6V-26V wide-range power supply.
- Compliance with CE, FCC, UL, RoHS certifications

### 1.3 Camera and Accessories

Please check whether there is any obvious damage of the device after unpacking and confirm all the accessories are included. Please refer to the table 1-1

Table 1-1 Camera and Accessories

Accessories		
1	GigE Area Scan Camera	1
2	Installation block	1
3	M2×6 Screw	4

4	M3×8 Screw	3
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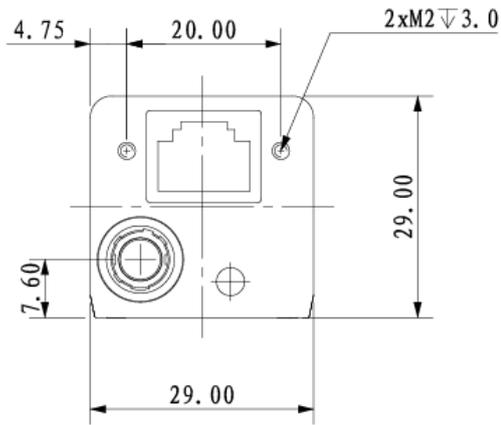
# 1.4 Product Structure

## 1.4.1 Product Dimensions

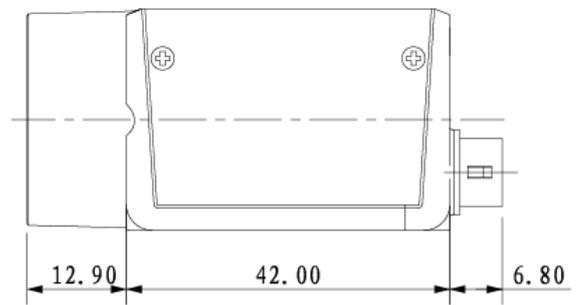
Please see the product dimension as shown in figure 1-1, figure 1-2 below:

(Unit: mm)

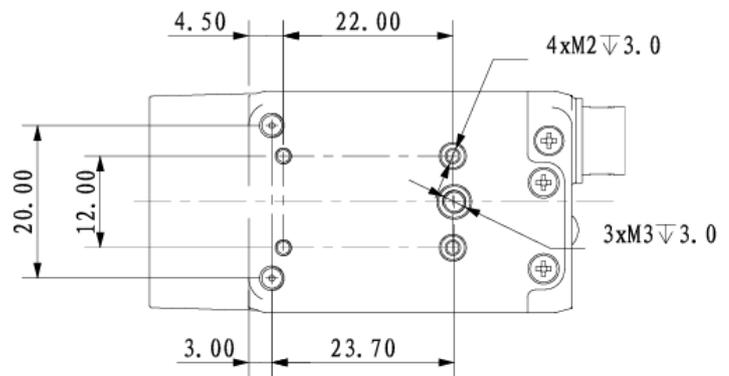
Figure 1-1 Product dimensions (29mm×29mm×42mm)



Back view  
Camera



Front view  
Camera



Upward view  
Camera

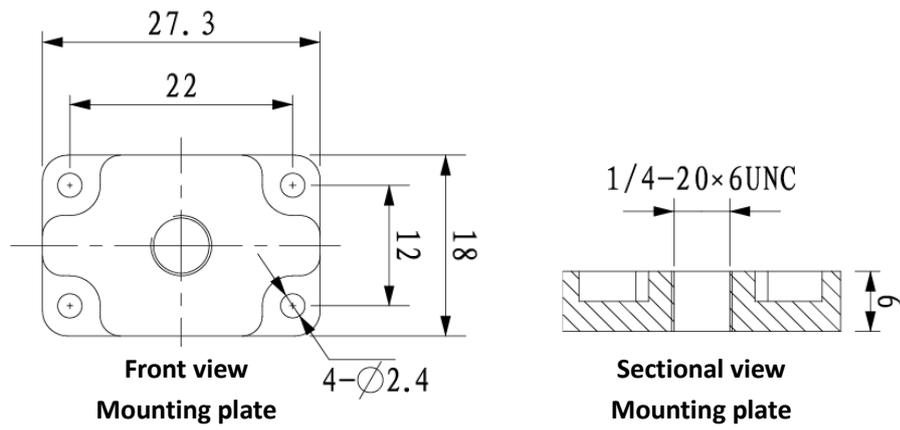
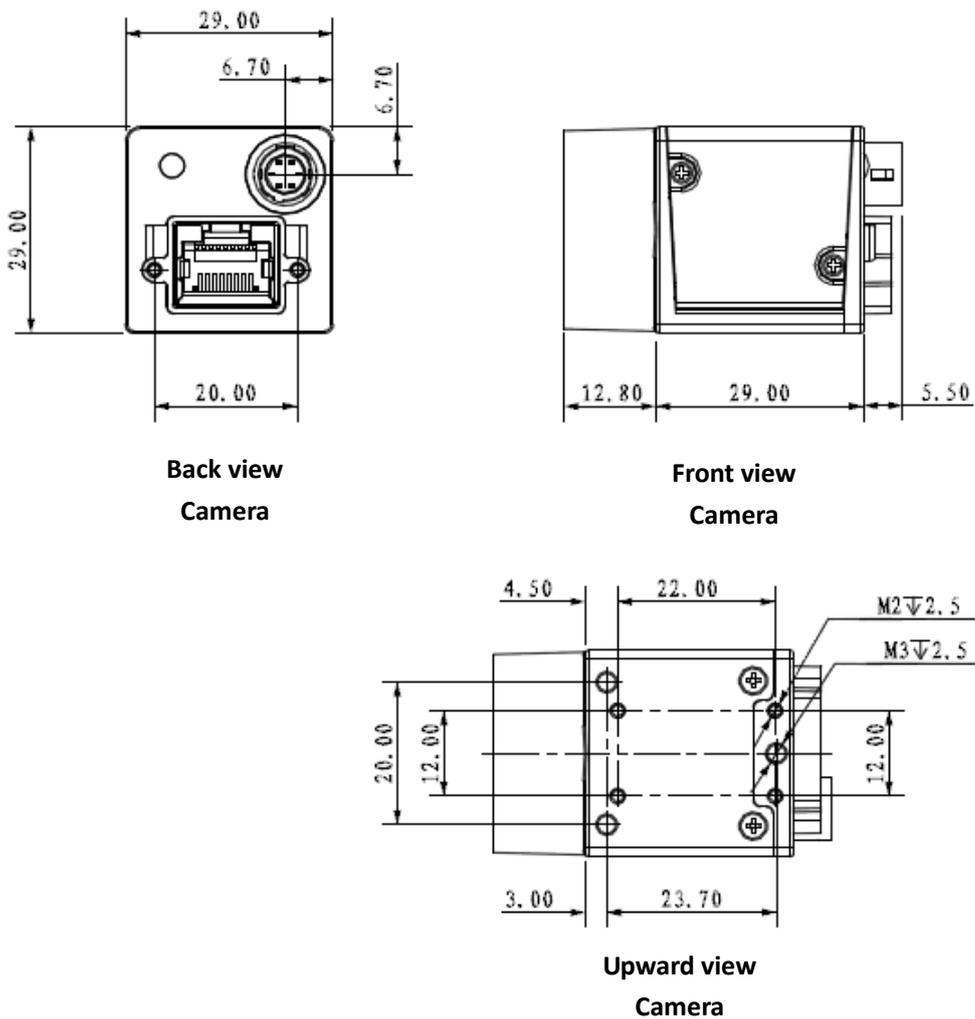
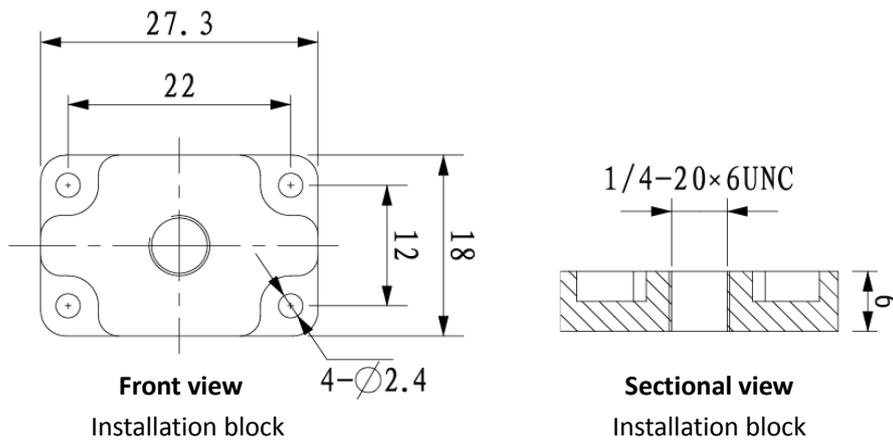


Figure 1-2 Product dimensions (29mm×29mm×29mm)





### 1.4.2 Interfaces and Signal Pins

Please see the interfaces and signal pins for type 29mm×29mm×42mm as shown in figure 1-3; The interfaces and signal pins for type 29mm×29mm×29mm as shown in figure 1-4.

Please find the signal pin definition in table 1-2.

Figure 1-3 Interfaces and Signal Pin(29mm×29mm×42mm)

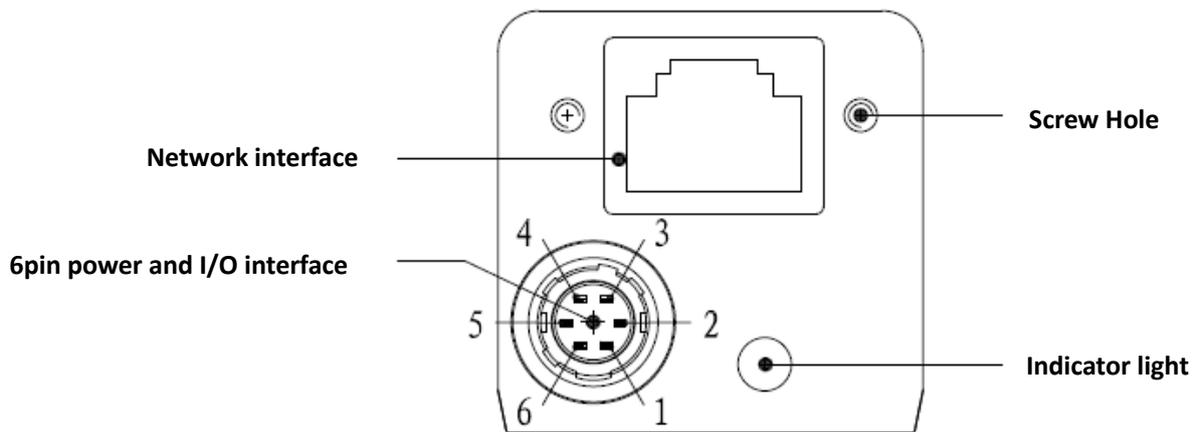


Figure 1-4 Interfaces and Signal Pins(29mm×29mm×29mm)

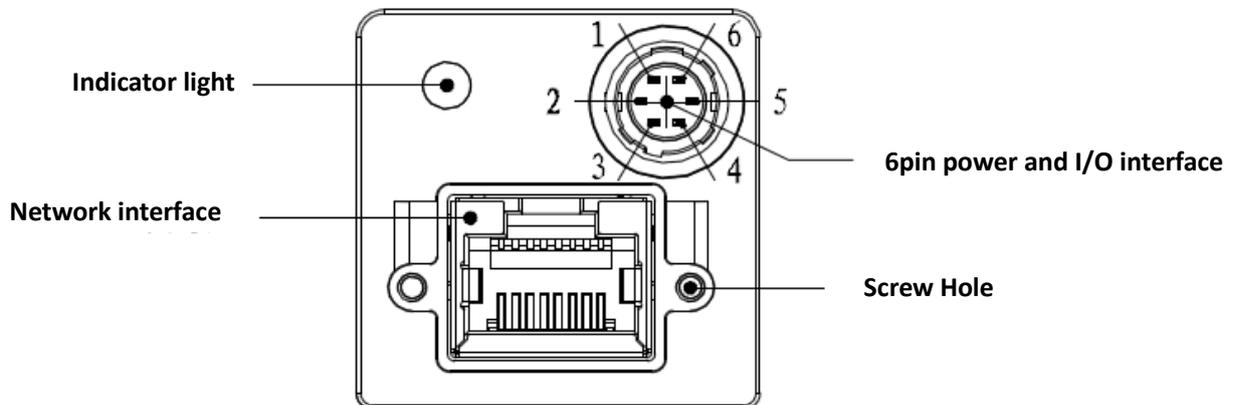


Table 1-2 signal pins definition

Pin	Signal	Function
1	Power	DC 6V—26V power
2	Line1	Opto-coupler isolated input
3	Line2	Configurable Input/Output only for 29mm×29mm×29mm series
4	Line0	Opto-coupler isolated output
5	IO GND	IO GND
6	GND	GND

## 1.5 Indicator Light

Please read the following Table 1-3 for indicator light of GigE Area Scan Camera

Table 1-3 Indicator light

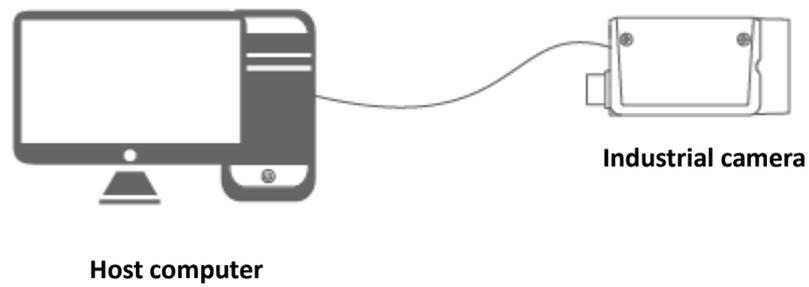
Status	Indicator light status		Remark
Normal	Red	Red light quick flashing	Booting device
	Blue	Dim blue light	IP distributed, Device was not connected to the application API.
		Blue light highlighted	API of the application is connected to device, free mode, no image transmission.
		Blue light quick flashing	API of the application is connected to device, free mode, image is in transmission.
		Blue light slow flashing	Using trigger mode
	Red↔Blue	Red and blue light alternate flashing	Updating the firmware
abnormal	Red	Red light on	Device abnormality: such as no stream, firmware upgrade failure and etc.
		Red light slow flashing	Network disconnected

# 2 Typical Networking

The most typical networking mode of Industrial Camera is point-to-point connection, that means the host computer and the camera shall be connected with cable directly without using other network medium. Please see as shown in figure 2-1

Connect the host computer and camera with cable, install the software and add the camera to the same network segment of the local computer IP ,then detect the online available cameras. Now the camera is ready for operation.

Figure 2-1 Typical Networking



# 3 Quick Operating

## Step 1 Client installation

Double click the installation package and install MV Viewer.

Please see the finish installation as shown in figure 3-1

### Remark

Please install the service pack before installing MV Viewer

Figure 3-1 Finish of installation

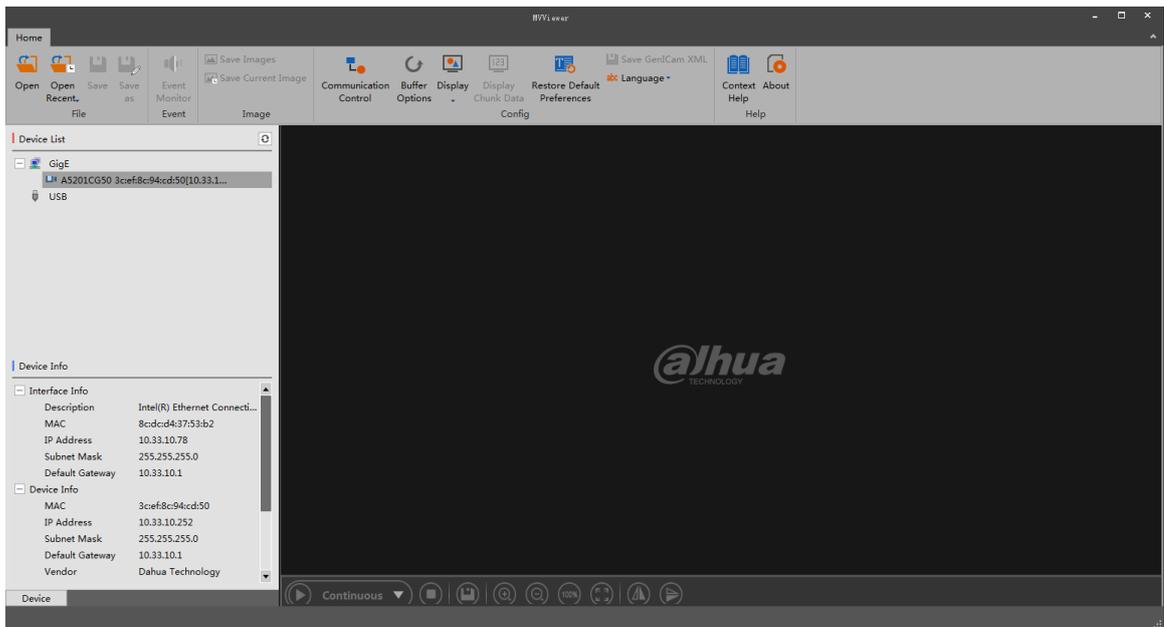


## Step 2 Open the software

Double click the shortcut on desktop. The Software will automatically detect all the online devices.

User Interface as shown in figure 3-2

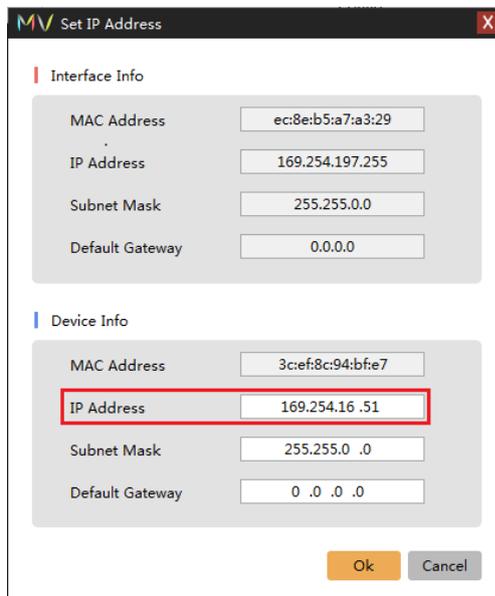
Figure 3-2 User interface



**Step 3** IP configuration

Select the device you need to connect, then click . Configure a valid IP address for the detected device and make sure that the device IP is added to the same network segment of the local computer IP, as is shown in Figure 3-3. Click  to save the settings after accomplishment.

Figure 3-3 User interface



**Step 4** Connect the device

Click  to connect the device. click  after successful connection. Please see the device page and features page as shown in figure 3-4, figure 3-5.

 **Remark**

You can click  to disconnect the device.

Figure 3-4 Device page – successful connection

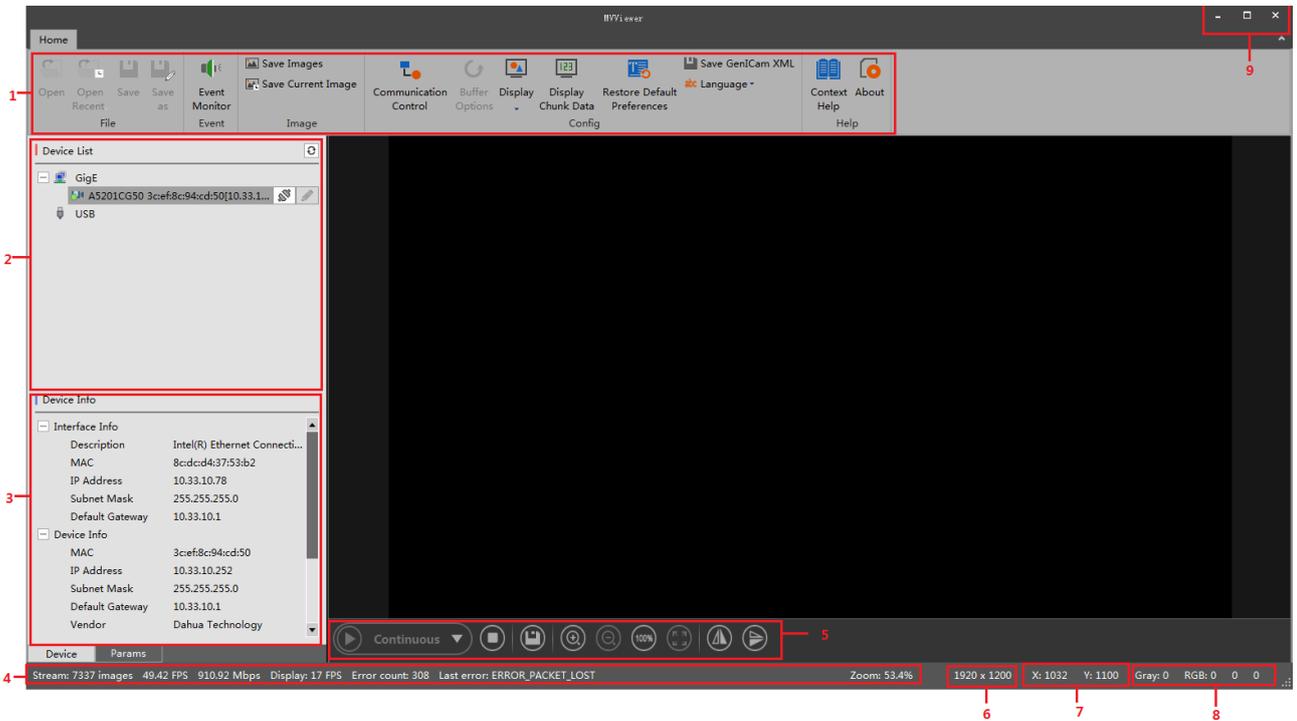


Figure 3-5 Features page – successful connection

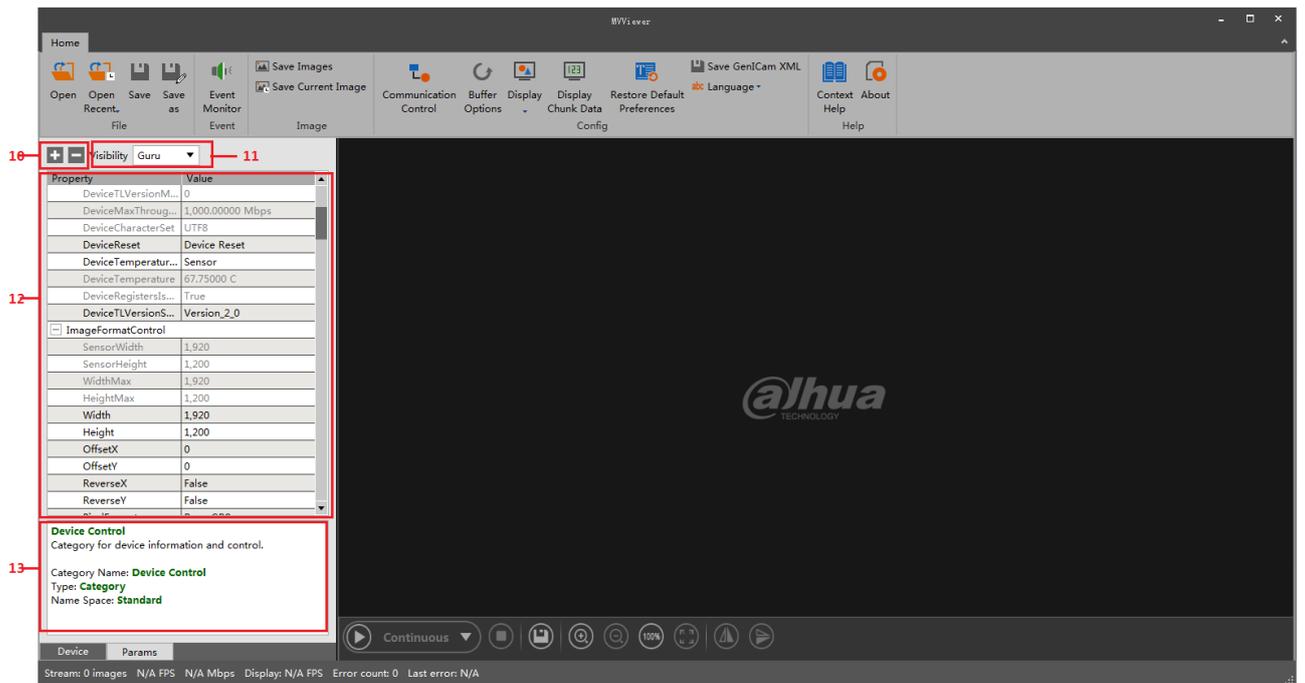


Table 3-1 User interface

No.	Description
1	Menu bar, details see table 3-2
2	Devices list: Detecting all the online devices  : refresh, click this to refresh the online device information manually.   : Device connectable.   : Device not connectable; ensure that the IP address was set successfully.   : The device is connecting. MV Viewer can only connect and manipulate 1 Camera in the meanwhile.
3	Show the interface and device information of the selected device.
4	Current stream information, including total frames, frame rate, band width, display frame rate, error information, image Zoom in/out rate etc.
5	Tool bar for play adjustment. <ul style="list-style-type: none"> <li>● : Play. Click  and choose continuous, single frame or multi frame acquisition mode in the drop-down list accordingly.</li> </ul> <p> <b>Remark</b>            The drop-down button and the acquisition mode selection is available only when the screen is paused.</p> <ul style="list-style-type: none"> <li>● : Pause.</li> <li>● : Save image.</li> <li>● : Zoom in.</li> <li>● : Zoom out.</li> <li>● : 100% display.</li> <li>● : Display fit the screen.</li> </ul> <p> <b>Remark</b>            Click this button to fit the screen when the image was zoomed in/out.</p> <ul style="list-style-type: none"> <li>● : Flip the image horizontally</li> <li>● : Flip the image vertically</li> </ul>
6	● image resolution
7	● coordinates value of mouse position.
8	● grayscale value and RGB value of mouse position.

No.	Description
9	<ul style="list-style-type: none"> <li>●  : Maximize</li> <li>●  : Restore down</li> <li>●  : Minimize</li> <li>●  : Close</li> </ul>
10	<ul style="list-style-type: none"> <li>➕: Expand all the information.</li> <li>➖: Collapse all the information.</li> </ul>
11	Parameter visibility Click  and select Beginner, Expert or Guru in the drop-down menu accordingly. Each role has different visibility of parameters.
12	Parameters for each role. Figure 3-4 showed the parameters for Guru role.
13	Description area for parameters. Click one parameter to see the detail explanation.

Table 3-2 Menu bar

Menu		Description
File	Open files	Use “open > open files” and choose a file to open. If there are too many files to search, you can choose the specific data type by clicking the “files type”  on the right and do selection in the drop-down menu ( E.g.: .mvcfg).  <b>Remark</b> Can operate only when the picture is pause or stopped.
	Open recent files	Click “File > Open the Recent Files” submenu includes 10 files which have been recently used in MV Viewer. Click a file name and you can open it directly.  <b>Remark</b> Can operate only when the picture is pause or stopped.
	Save	Save the modifications of the current file  <b>Remark</b> Can operate only when the picture is pause or stopped.
	Save as	Save the current file into another location with another name, you can use the order of “File > Save As”.  <b>Remark</b> Can operate only when the picture is pause or stopped.
Event	Event notice	includes device parameter refreshing, event message channel and streaming buffer, etc.
Picture	Save picture	Save the video stream data as picture file.
	Save current picture	Save the lastest frame of video stream as picture file.
Config	Connection control	Set the time for connect timeout and detection interval
	Cache option	Set the cache for video stream.  <b>Remark</b> Can operate only when the picture is pause or stopped.
	Display frame rate	Set whether to display the frame rate
	Display block data	Set whether to display ChunkData
	Restore default parameter	Restore the configurations for the menu bar.

Menu		Description
	Save GenICamXML	Save the XML property files.
	Language	Select language, Chinese or English.
Help	User manual	Check the user manual.
	About software	Check the version information.

## 1. Application program fails to discover the device.

### Reason analysis:

- The camera fails to boot up normally.
- Network cable connection is abnormal.
- The camera and client are not in the same network segment.

### Solutions:

Reboot the camera, check if network connection is abnormal and indicator light is normal, which is to make the camera and client in the same LAN.

## 2. Application program can discover the camera but connection failed.

### Reason analysis:

- The camera fails to boot up normally.
- The camera and client are not in the same network segment.
- Other client has connected to the camera.

### Solutions:

Reboot the camera, try to modify the IP to make the device and client in the same network segment; or close the other clients and connect to the local client.

## 3. In the application program, the preview interface is all black.

### Reason analysis:

- Lens iris is off.
- Camera runs abnormally.

### Solutions:

Open lens iris, power off and reboot the camera device.

## 4. It fails to enable external trigger.

### Reason analysis:

- External trigger connection is wrong.
- Trigger mode fails to select external trigger.

### Solutions:

Select correct trigger mode and make sure external connection is correct.

## 5. The image is reverse when the client software checks image.

### Reason analysis:

- The installation direction is wrong during device installation.

### Solutions:

You can correct the image via “condition > Image Format Control > Reverse X (horizontal flip) or Reverse Y (vertical flip)” in the client software.

# Appendix 1 Warranty card

**Thank you for purchasing our product, this card is your free warranty certificate**

Lifetime warranty  
Three years free warranty

**Warranty explanation:**

Warranty card is use for our series product

1. Please contact our warranty service group if there is any quality issue within the warranty period.
2. Please fill in the warranty card after purchasing and send back to us via mail or fax. We provide free reparation and replacement service within the warranty period only after we received the card.
3. We will use the information you provided when warranty service is requested. Please fill in the form below seriously.
4. In following situations, you should pay for the warranty
  - Man-made device fault
  - Device fault caused by inappropriate working environment
  - Product damaged by Force Majeure

Product name: _____	Purchase date: _____
Series number: _____	Customer name: _____
Address: _____	Contact person: _____
Telephone: _____	postcode: _____
Dealer/Agency: _____	Fax: _____
Telephone: _____	Contact person: _____



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