



# Project Design Tool

## User's Manual



# Foreword

## General

This manual introduces the functions and operations of the Project Design Tool (hereinafter referred to as "the tool").

## Safety Instructions

The following signal words might appear in the manual.

Signal Words	Meaning
 <b>DANGER</b>	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
 <b>WARNING</b>	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
 <b>CAUTION</b>	Indicates a potential risk which, if not avoided, could result in property damage, data loss, reductions in performance, or unpredictable results.
 <b>TIPS</b>	Provides methods to help you solve a problem or save time.
 <b>NOTE</b>	Provides additional information as a supplement to the text.

## Revision History

Version	Release Content	Revision Time
V1.1.0	<ul style="list-style-type: none"> <li>Updated selecting country/region function.</li> <li>Updated storage page.</li> </ul>	October 2021
V1.0.4	<ul style="list-style-type: none"> <li>Added camera location setting.</li> <li>Added NVR function.</li> </ul>	June 2021
V1.0.3	<ul style="list-style-type: none"> <li>Changed some screenshots.</li> <li>Added descriptions of top view.</li> <li>Added descriptions of monitoring type.</li> </ul>	September 2020
V1.0.2	Added selecting Country/Region function.	June 2020
V1.0.1	<ul style="list-style-type: none"> <li>Added the supported tool.</li> <li>Changed opening method of the tool.</li> </ul>	April 2020
V1.0.0	First release.	May 2019

## About the Manual

- The manual is for reference only. Slight differences might be found between the manual and the product.
- We are not liable for losses incurred due to operating the product in ways that are not in compliance with the manual.

- The manual will be updated according to the latest laws and regulations of related jurisdictions. For detailed information, see the paper user's manual, use our CD-ROM, scan the QR code or visit our official website. The manual is for reference only. Slight differences might be found between the electronic version and the paper version.
- All designs and software are subject to change without prior written notice. Product updates might result in some differences appearing between the actual product and the manual. Please contact customer service for the latest program and supplementary documentation.
- There might be errors in the print or deviations in the description of the functions, operations and technical data. If there is any doubt or dispute, we reserve the right of final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- All trademarks, registered trademarks and company names in the manual are properties of their respective owners.
- Please visit our website, contact the supplier or customer service if any problems occur while using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

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# Table of Contents

<b>Foreword</b> .....	<b>I</b>
<b>1 Overview</b> .....	<b>1</b>
<b>2 General Settings</b> .....	<b>2</b>
<b>2.1 Switching Language</b> .....	<b>2</b>
<b>2.2 Selecting Country/Region</b> .....	<b>3</b>
<b>3 Camera Page</b> .....	<b>5</b>
<b>3.1 Camera Installation Design</b> .....	<b>5</b>
<b>3.2 Exporting File</b> .....	<b>7</b>
<b>4 Storage Page</b> .....	<b>17</b>
<b>4.1 Adding Camera</b> .....	<b>17</b>
<b>4.2 Adding Storage</b> .....	<b>20</b>
<b>4.3 Adding Switch</b> .....	<b>20</b>
<b>4.4 Exporting Information</b> .....	<b>22</b>
<b>Appendix 1 Cybersecurity Recommendations</b> .....	<b>24</b>

# 1 Overview

Project design tool is used for camera installation design and NVR matching cameras. It supports visual cameras, thermal cameras, cameras with customizable parameters, NVR, XVR and switches. With the tool, you can export device list and layout for device promotion, installation, and construction.



The result calculated by the tool is for reference only, and might differ from the actual installation situation.

## 2 General Settings

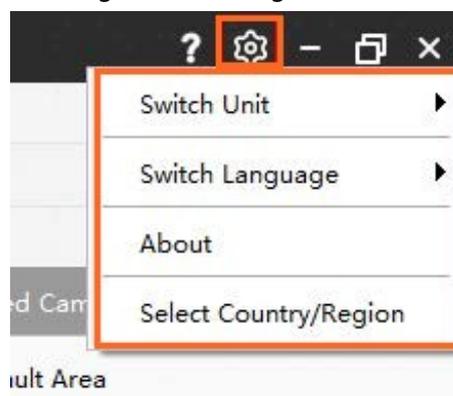
You can do following operations under **Setting** at the upper-right corner.

- Switch unit (metric and imperial).
- Switch language.
- About (view the software version).
- Select country/region.



Get the software package from Toolbox.

Figure 2-1 Setting

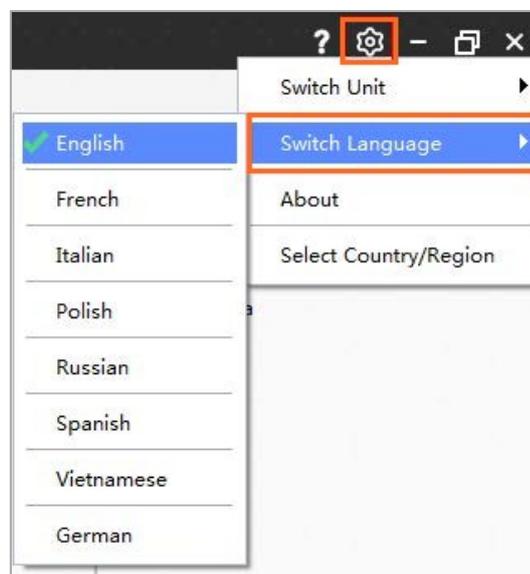


### 2.1 Switching Language

The tool supports 8 languages, including English, French, Italian, Polish, Russian, Spanish, Vietnamese and German.

Click **Setting** at the upper-right corner, and then select a language under **Switch Language**.

Figure 2-2 Switch Language

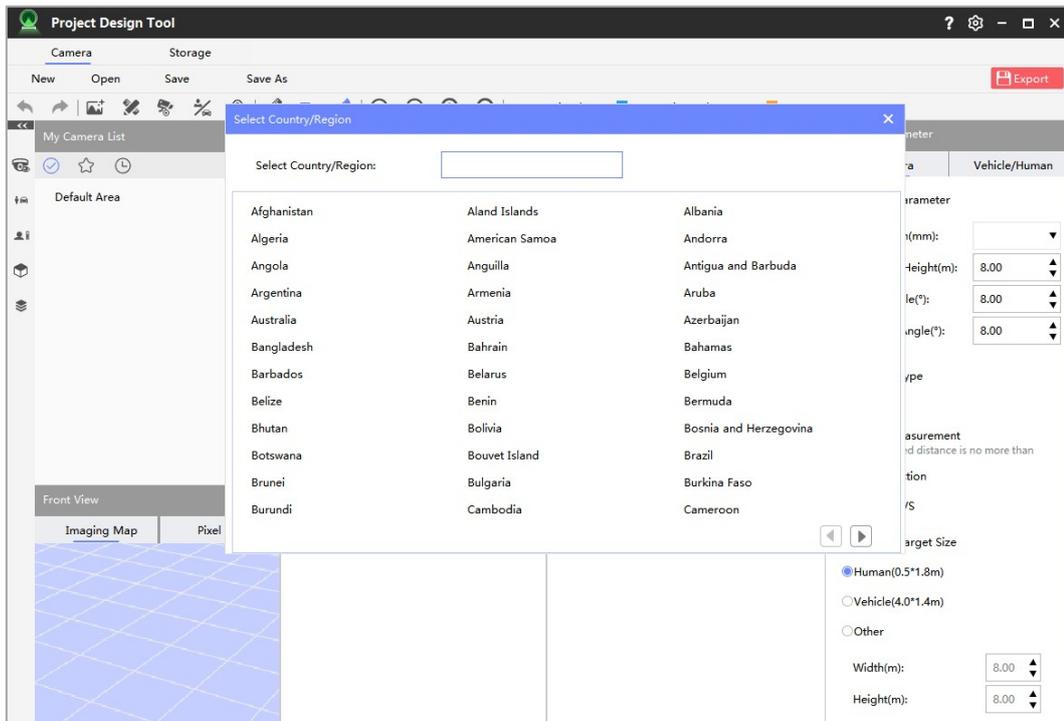


## 2.2 Selecting Country/Region

Before using the tool, the system will require you to select a country/region so that cameras related to the country/region will be displayed.

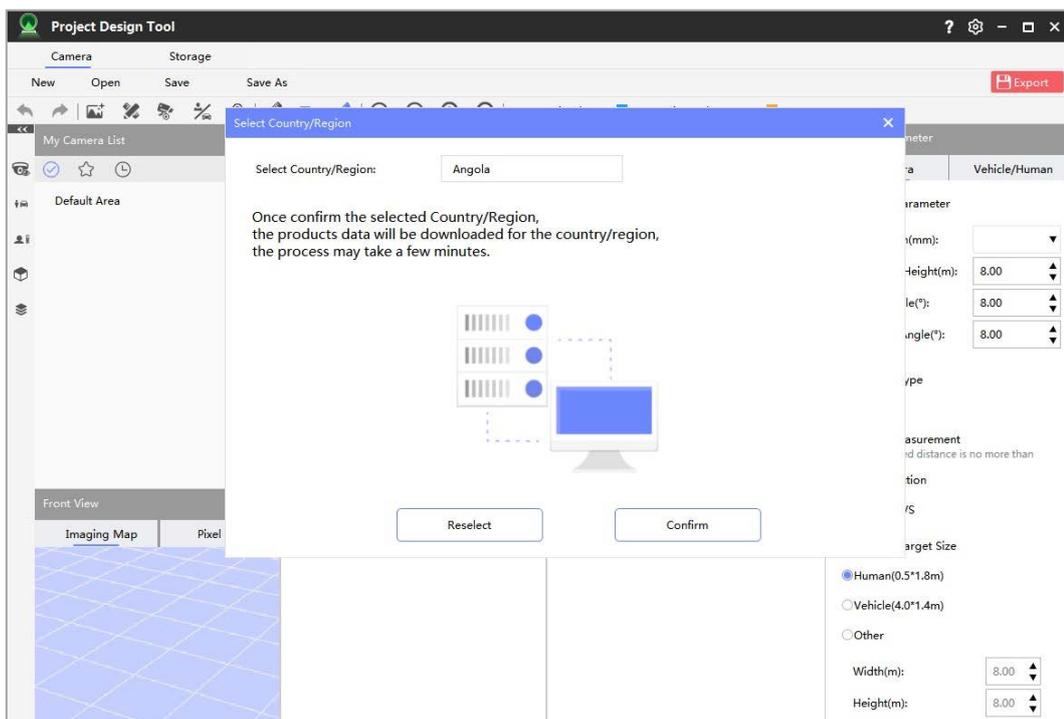
**Step 1** Double-click `ProjectDesignTool.exe` in the software package.

Figure 2-3 Select country/region (1)



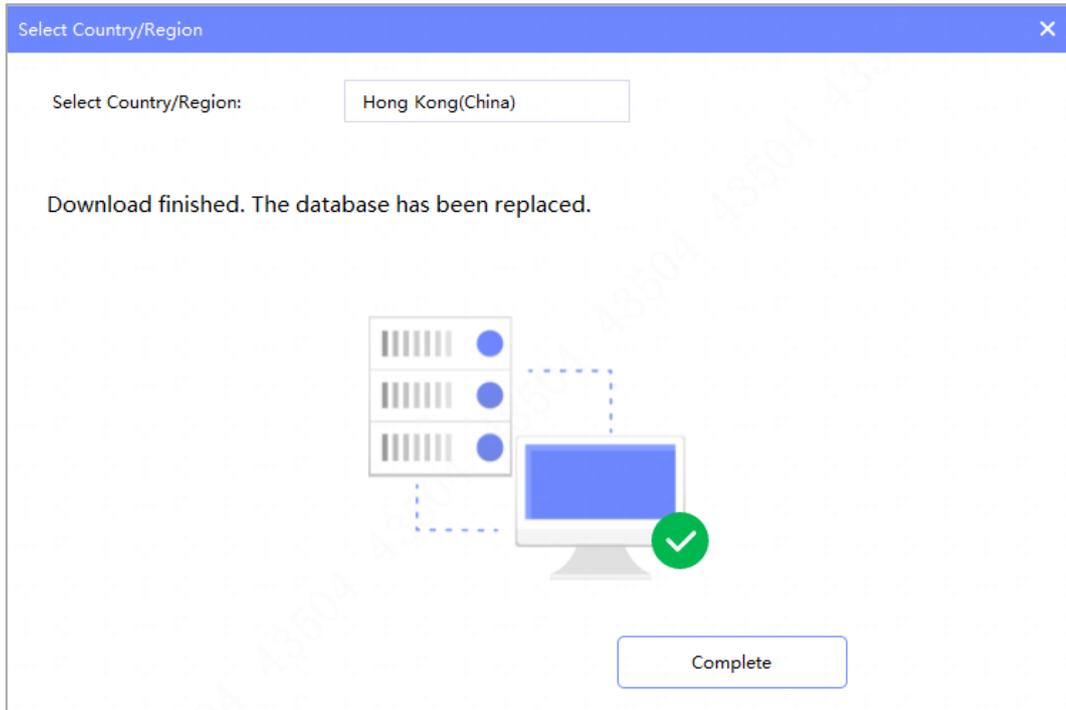
**Step 2** Select a country/region, and then click **Confirm**.

Figure 2-4 Select country/region (2)



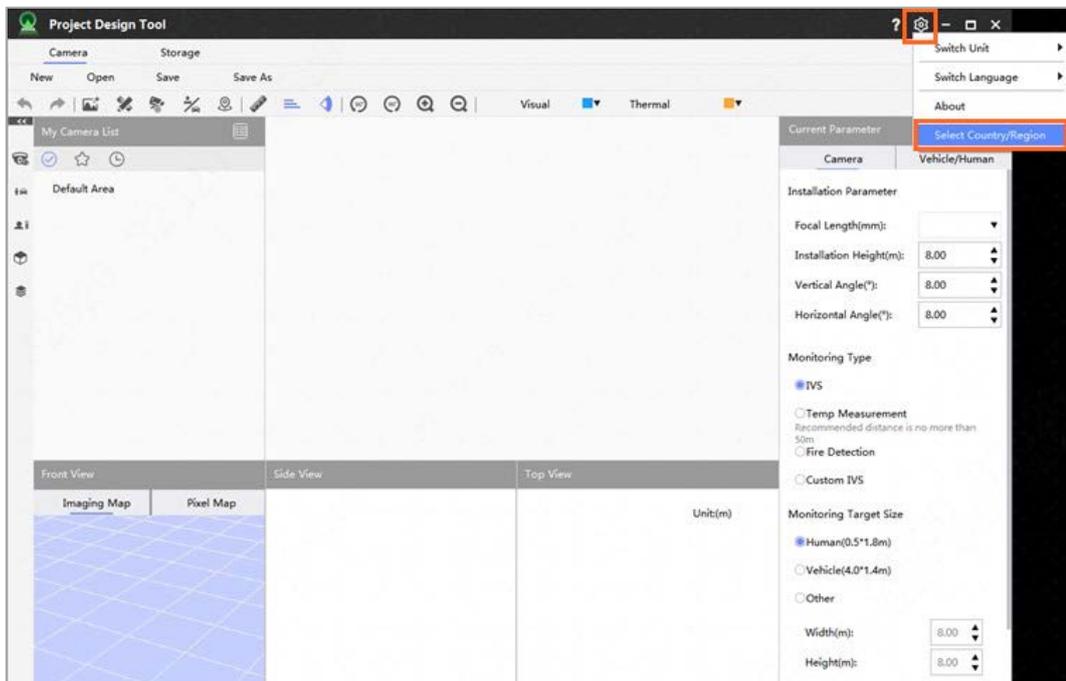
**Step 3** Click **Complete**.

Figure 2-5 Successfully selected a country/region



If you want to select other countries/regions, you can select **Setting > Select Country/Region** to select again.

Figure 2-6 Select country/region (3)



## 3 Camera Page

After you have selected a country/region, the home page will be displayed. The default page is **Camera** page, you can click **Camera** **Storage** to enter **Storage** page.

### 3.1 Camera Installation Design

Figure 3-1 Camera page (1)

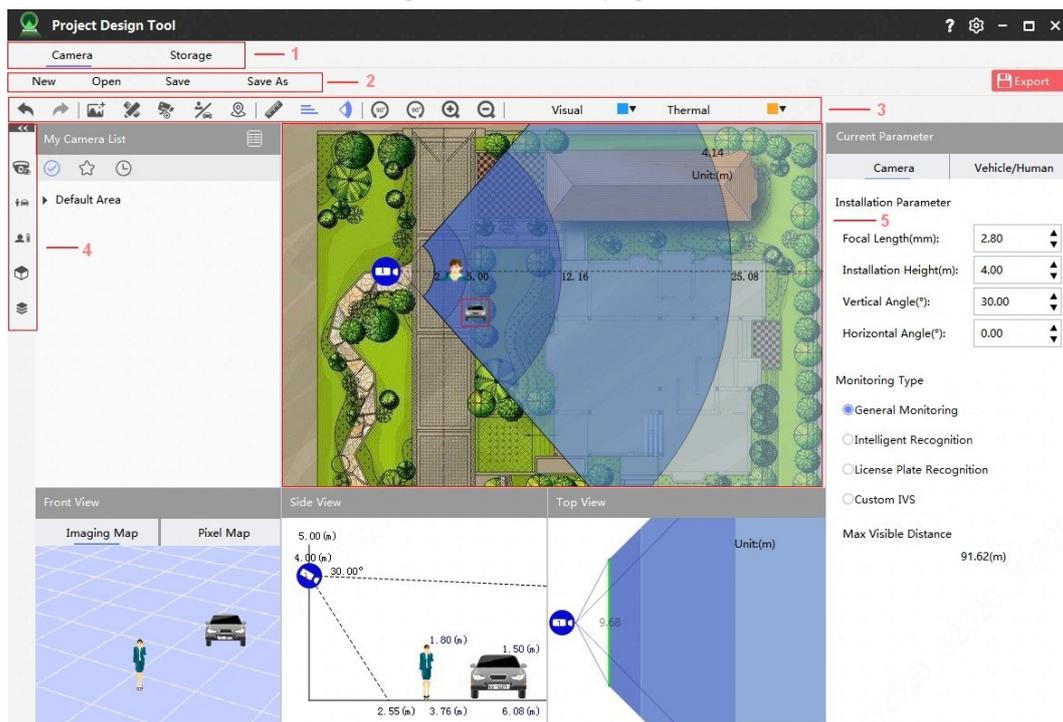


Table 3-1 Camera page parameters

No.	Function	Description
1	Solution	Camera: Camera installation design. Storage: NVR and XVR matching cameras, and switches.
2	Menu	Includes four tabs: <b>New</b> , <b>Open</b> , <b>Save</b> , and <b>Save as</b> . <ul style="list-style-type: none"> <li>• <b>New</b>: Create a project file in .pds format.</li> <li>• <b>Open</b>: Open an existing project file, and the file name is displayed beside .</li> <li>• <b>Save</b>: Save the created/edited project file.</li> <li>• <b>Save as</b>: Save the created/edited project file as another file.</li> </ul>

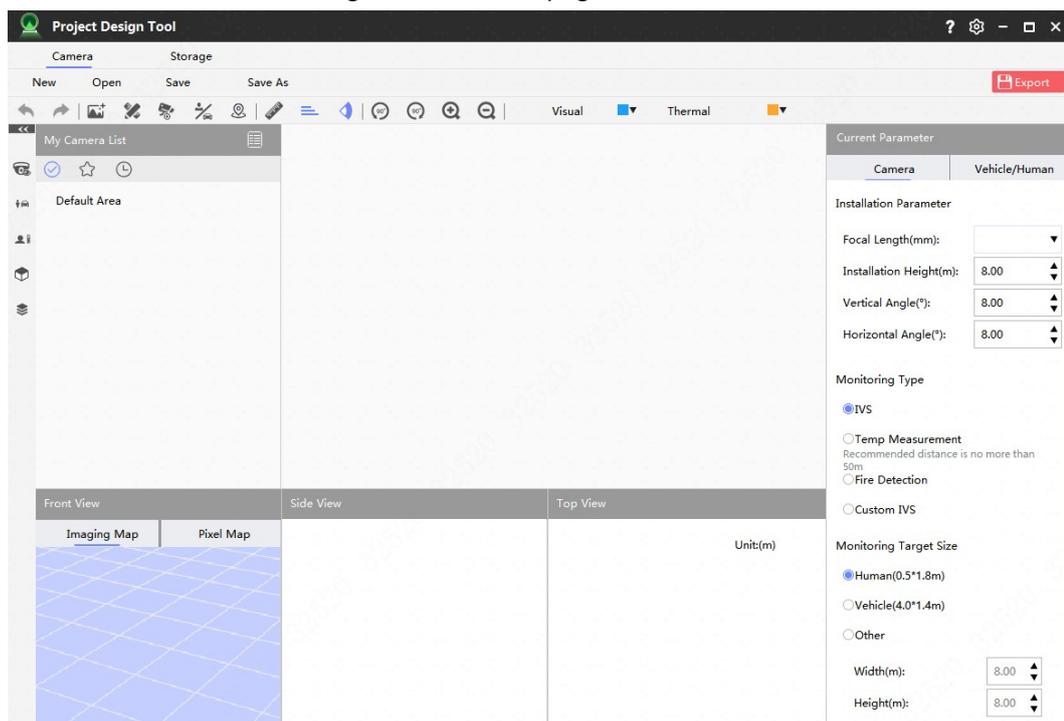
No.	Function	Description
3	Icon	<ul style="list-style-type: none"> <li>●  (Undo): Cancel the previous step.</li> <li>●  (Redo): Cancel undo operation.</li> <li>●  (Import Engineering Map): Import the engineering map to be designed.</li> <li>●  (Set Scale): Set ruler on the map.</li> <li>●  (Add Camera): Select camera from the <b>Select Camera</b> page; click  to add the camera in the <b>Favorites</b> list. Double-click the camera to add it on the map.</li> <li>●  (Add objects): Add human or vehicle.</li> <li>●  (Set Camera Location): Set the position of the camera</li> <li>●  (Distance Measurement): Measure the actual distance.</li> <li>●  (Display line or not): Display/hide the monitoring data of cameras, including the max. monitoring distance and min. monitoring distance.</li> <li>●  (Display area or not): Display/hide the monitoring area of cameras in sector or circle.</li> <li>●  (Rotate 90° leftward): Rotate the engineering map 90° leftward.</li> <li>●  (Rotate 90° rightward): Rotate the engineering map 90° rightward.</li> <li>●  (Zoom in): Zoom in the imported map.</li> <li>●  (Zoom out): Zoom out the imported map.</li> <li>●  Visual  (Visual): Click  to display monitoring types with different colors. The monitoring types include <b>IVS Region, Identify Region, Recognize Region, Observe Region</b> and <b>Detect Region</b>.</li> <li>●  Thermal  (Thermal): Click  to display monitoring types with different colors. The monitoring types include <b>IVS (Human), IVS (Vehicle), IVS (Other Object), Fire Detection(Recommended), Fire Detection(Max), Temp Measurement, and Custom IVS</b>.</li> </ul>

No.	Function	Description
4	Function Bar	<ul style="list-style-type: none"> <li>Includes <b>My Camera List</b>, <b>Front View</b>, <b>Side View</b>, <b>Selected Camera List</b>, and <b>Current Parameter</b>. All function bars are enabled by default.</li> <li> (Hide All): Hide all function areas.</li> <li> (Display All): Display all function areas.</li> <li> (My Camera List): Hide/Display <b>My Camera List</b>.</li> <li> (Front View): Hide/Display front view of camera monitoring range.</li> <li> (Side View): Hide/Display side view of camera monitoring range, including installation height, angle of depression, max. monitoring distance and min. monitoring distance.</li> <li>(Top View): Hide/Display top view of the camera monitoring range.</li> <li> (Selected Camera List): Hide/Display <b>Selected Camera List</b>.</li> <li> (Current Parameter): Hide/Display <b>Current Parameter</b>.</li> </ul>
5	Canvas	You can import map, place cameras, vehicle and person, set scale, and measure distance on the canvas.

## 3.2 Exporting File

Step 1 Install the tool in the tool box, and then open the tool.

Figure 3-2 Camera page (2)



**Step 2** Click to import engineering map.

Figure 3-3 Engineering map

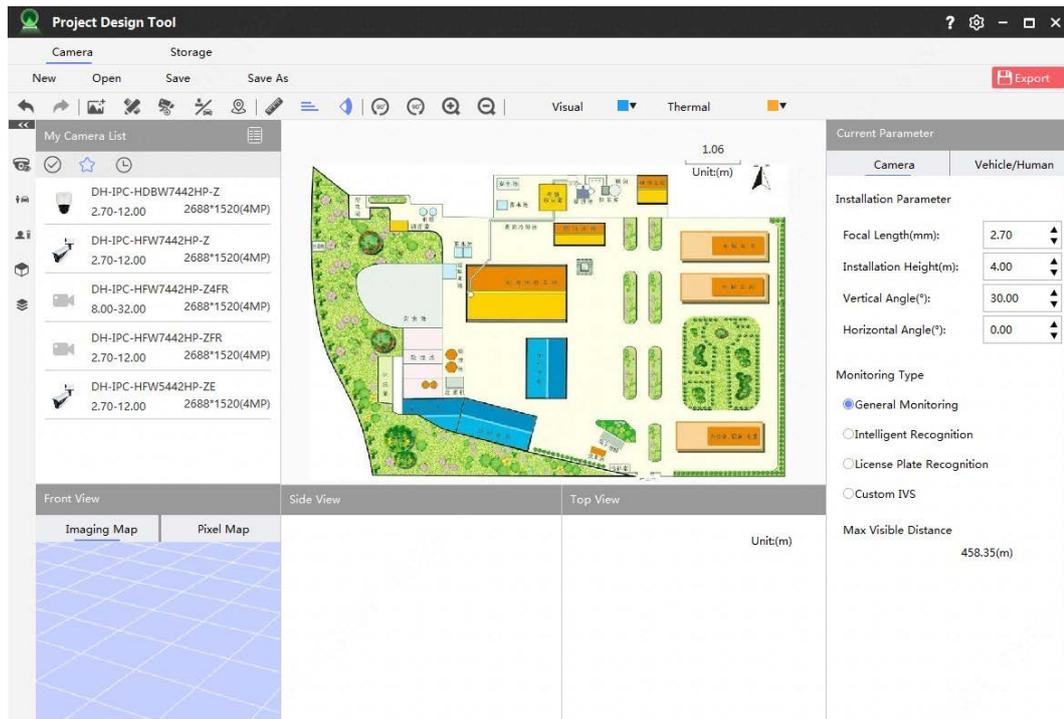
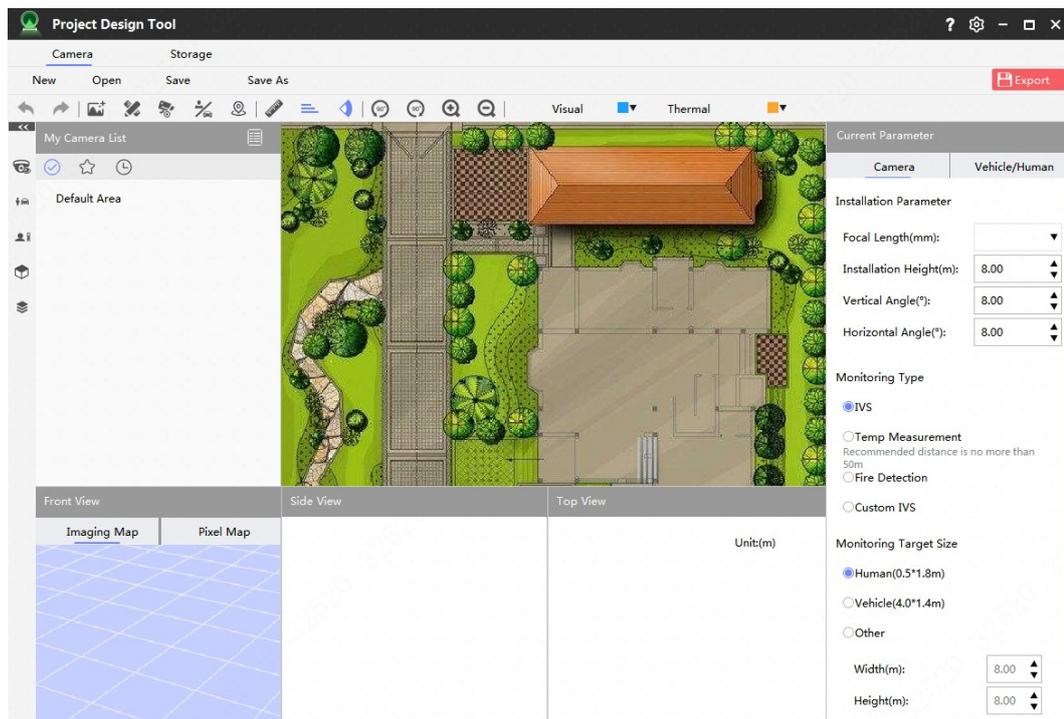


Figure 3-4 Scale setting



- You can also design the project directly through locating camera, vehicle, and human on the canvas, without importing engineering map.
- Engineering maps in .jpg, .png, .bmp, and .jpeg formats are supported.
- After importing the map, the note for scale setting is displayed.

**Step 3** Click , and then set ruler on the map.

The system sets scale automatically.



The camera is displayed on the engineering map.

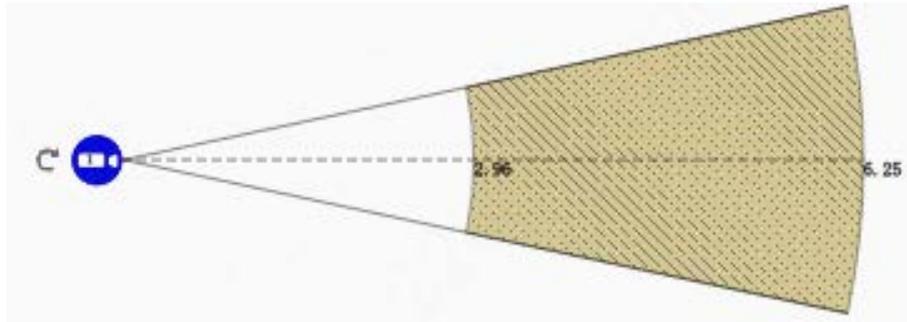


- Click to add the camera in **Favorites**.
- You can also drag cameras from **Favorites** list and **Recently Used** list to the map.

**Step 5** Adjust camera.

Click the camera icon on the map or the camera in **Selected Camera List**, is displayed beside the camera. Press the icon and rotate the camera to adjust the monitoring area.

Figure 3-7 Select camera



When adjusting the icon, the front view is displayed.

**Step 6** Configure camera parameter.

Select a camera on the map, and you can set parameters in **Current Parameter** area on the lower-left corner.

Table 3-2 Camera parameter

Function	Description
Installation parameter	<p>You can set focal length, installation height, installation angle and horizontal angle.</p> <ul style="list-style-type: none"> <li>• <b>Focal Length:</b> Set focal length according to the camera type.</li> <li>• <b>Installation Height:</b> Set installation height according to the actual environment.</li> <li>• <b>Installation Angle:</b> The angle is important to monitoring area and monitoring effect.</li> <li>• <b>Horizontal Angle:</b> The range is 0°–359.99°.</li> </ul>

Function	Description
Monitoring type	<p>The tool supports two camera types: visual camera and thermal camera. Select the monitoring type according to camera type.</p> <ul style="list-style-type: none"> <li>● Visual camera:                             <ul style="list-style-type: none"> <li>◇ <b>General Monitoring.</b></li> <li>◇ <b>Intelligent Recognition.</b></li> <li>◇ <b>License Plate Recognition.</b></li> <li>◇ <b>Custom IVS.</b></li> </ul> </li> <li>● Thermal camera:                             <ul style="list-style-type: none"> <li>◇ <b>IVS.</b></li> <li>◇ <b>Temp Measurement.</b></li> <li>◇ <b>Fire Detection.</b></li> <li>◇ <b>Custom IVS.</b></li> </ul> </li> </ul> <p></p> <ul style="list-style-type: none"> <li>● If you want to change types of cameras of the same type (visual or thermal) in batches, press Ctrl on the keyboard and select cameras, and then select a type for them.</li> <li>● For temp measurement cameras, pay attention to the following tips:                             <ol style="list-style-type: none"> <li>1. The maximum distance between cameras and measured objects allowed is 50 m.</li> <li>2. Temp measurement cameras whose models end with-T are with temperature measuring function and without IVS function; Temp measurement cameras whose models do not end with-T are with IVS function and without temperature measuring function.</li> </ol> </li> </ul>

Function	Description
Monitoring target size	<p>You can set monitoring target size according to the monitoring type.</p> <ul style="list-style-type: none"> <li>● Visual camera:                             <ul style="list-style-type: none"> <li>● <b>General Monitoring:</b> Max visible distance.</li> <li>● <b>Intelligent Recognition:</b> Height and max intelligent distance.</li> <li>● <b>License Plate Recognition:</b> Width and max intelligent distance.</li> <li>● <b>Custom IVS:</b> Width, height, and smart pixel requirement.</li> </ul> </li> <li>● Thermal camera:                             <ul style="list-style-type: none"> <li>● <b>IVS.</b> <ul style="list-style-type: none"> <li>◇ Human (0.5 × 1.8 m).</li> <li>◇ Vehicle (4 × 1.4 m).</li> <li>◇ Other: Set width and height.</li> <li>◇ Max Intelligent Distance: When select human or vehicle, the value is fixed; when select others, the value is calculated according to the set width and height.</li> </ul> </li> <li>● <b>Temp Measurement:</b> Set width and height, and the tool calculate the Max intelligent distance automatically. Recommended distance is no more than 50 m.</li> <li>● <b>Fire Detection:</b> Set width and height, the tool prompts the recommended distance, and calculates the Max intelligent distance automatically.</li> <li>● <b>Custom IVS:</b> <ul style="list-style-type: none"> <li>◇ Human: (0.5 × 1.8 m).</li> <li>◇ Vehicle: (4 × 1.4 m).</li> <li>◇ Smart pixel requirement: It is for smart recognition.</li> <li>◇ Max intelligent distance: It is calculated automatically.</li> </ul> </li> </ul> </li> </ul>



- Custom IVS calculation rule: Custom smart recognition is defined by the custom based on the basic monitoring types provided by the software. It is calculated according to the smallest size pixel point (minimum width and height).
- For example, the customer defines the size and minimum pixel requirements of the monitored object, and then the software calculates the number of pixels of the current monitored object through certain rules, as well as the clarity of the object in the current monitoring range.

**Step 7** Add human/vehicle.

- 1) Click .
- 2) Select human or vehicle.
- 3) Click left mouse button on the map.  
The icon of human or vehicle is displayed.
- 4) Adjust object.  
Drag or to adjust the position.



When dragging the icon, the front view changes synchronously, and the pixel dot displays in the front view.

**Step 8** Set camera location.



If you do not set the camera location, the camera will be added to the Default Area by default.

1) Select the camera and then click , and **Set Camera Location** page is displayed.

Figure 3-8 Set camera location (1)

2) Click  to add new area.

Figure 3-9 Set Camera location (2)

3) Enter node information and the position of camera will be displayed.

Figure 3-10 Set Camera location (3)

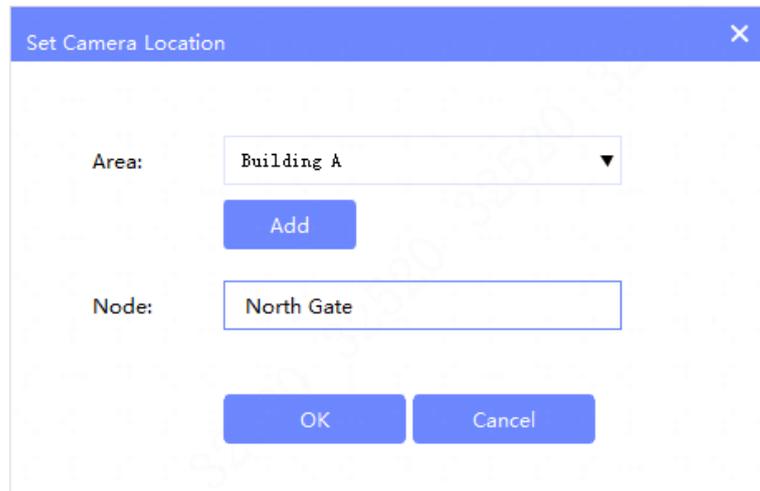
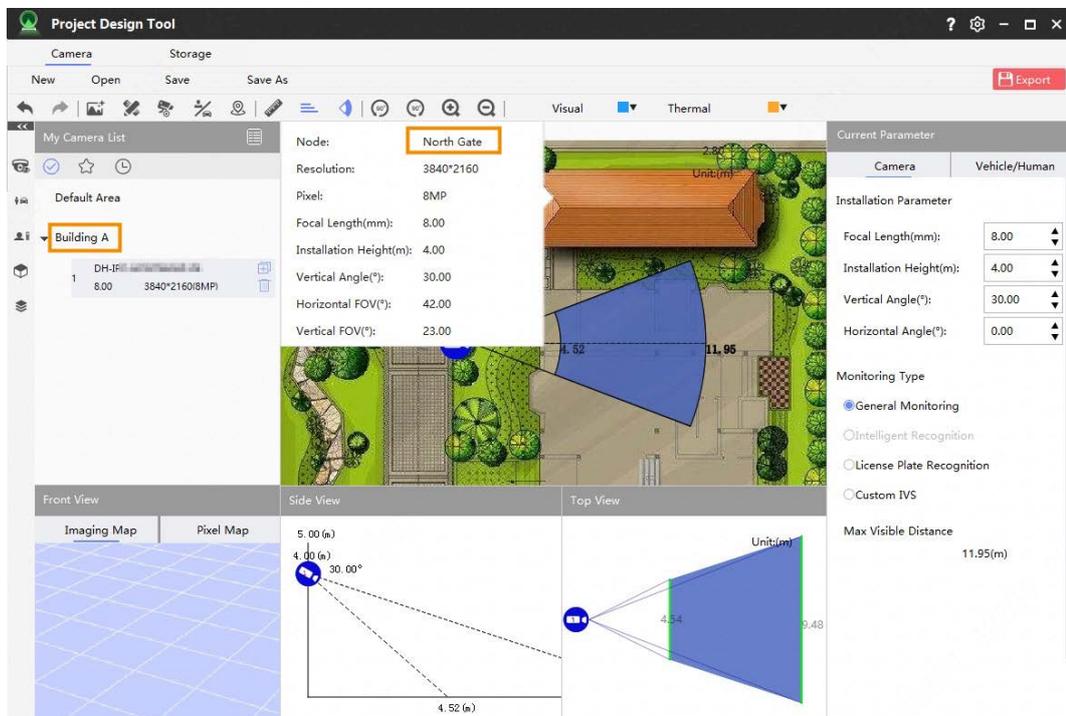


Figure 3-11 Set Camera location (4)



**Step 9** Measure distance.

Click , the icon changes to be , and then draw a line between the two point that you want to measure on the map. The measured distance is displayed on the map.



Click  again, or click the canvas to exit distance measurement.

Figure 3-12 Distance measurement



**Step 10** Click **Save** or **Save as** to save the project design file.

**Step 11** Export the project file.

- 1) Click  **Export** at the upper-right corner.

Figure 3-13 Export

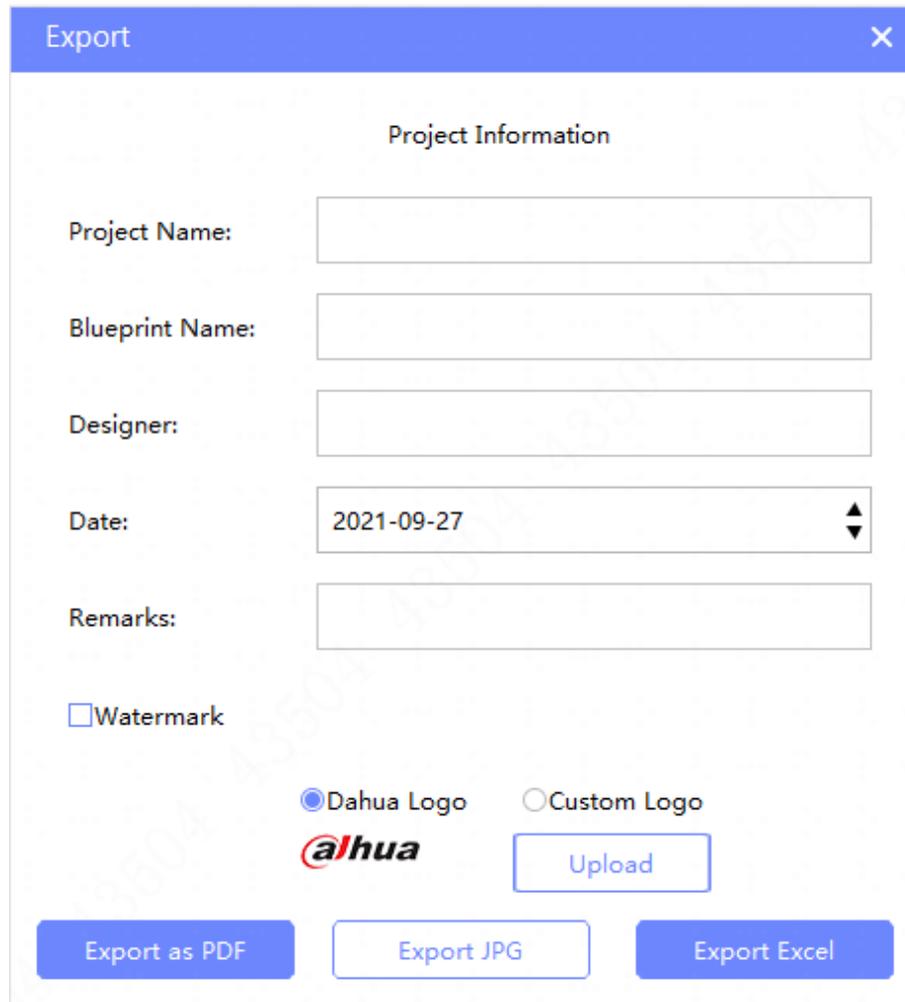


Table 3-3 Export parameters

Parameter	Description
Project Name	The project that the solution belongs to.
Blueprint Name	The name of blueprint, there might be multiple blueprints in one project.
Designer	The name of the designer of the blueprint
Date	The date of designing the blueprint.
Remarks	Add remark information.
Watermark	Select the check box to add watermark.
logo	Including Dahua logo and custom logo. For custom logo, you need to upload picture.

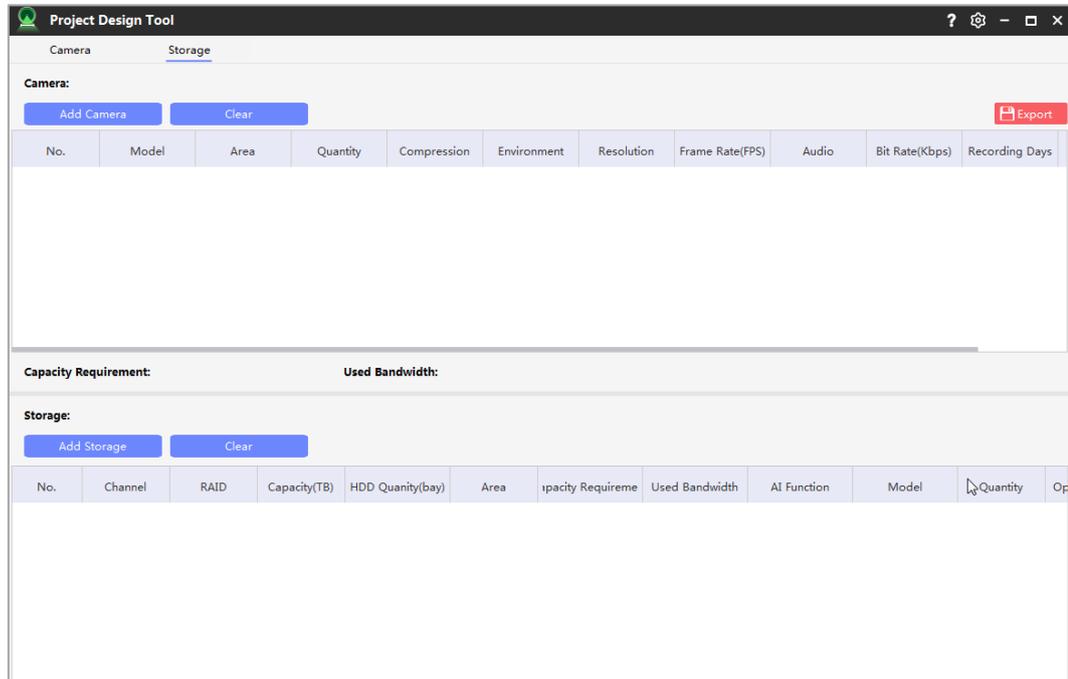
2) Select the export format.

- Click **Export as PDF** to export PDF file.
- Click **Export JPG** to export JPG file.
- Click **Export Excel** to export Excel file.

## 4 Storage Page

If there is no camera on the canvas, the storage page will be displayed for first-time access.

Figure 4-1 Storage page

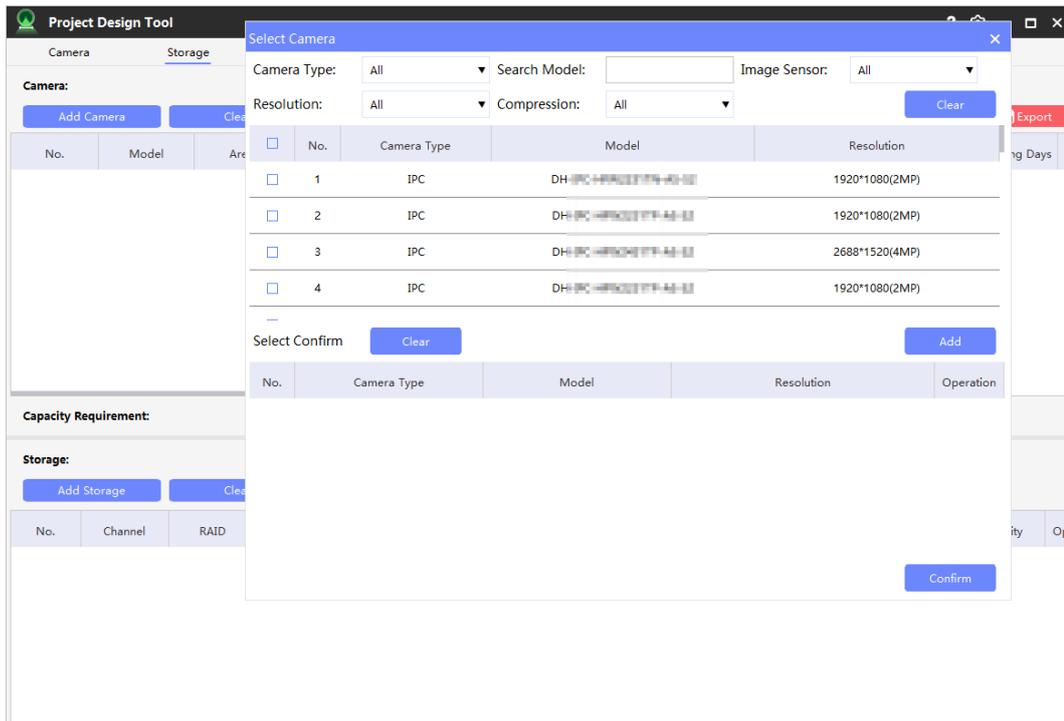


### 4.1 Adding Camera

Cameras on the canvas will be automatically synchronized to the camera list. You can also add cameras manually.

**Step 1** Click **Add Camera** on the storage page.

Figure 4-2 Add camera



Cameras added manually will not be synced to the canvas.

**Step 2** Select the camera type from **IPC**, **PTZ**, **Thermal** and **All**.

**Step 3** Enter the model of the camera.

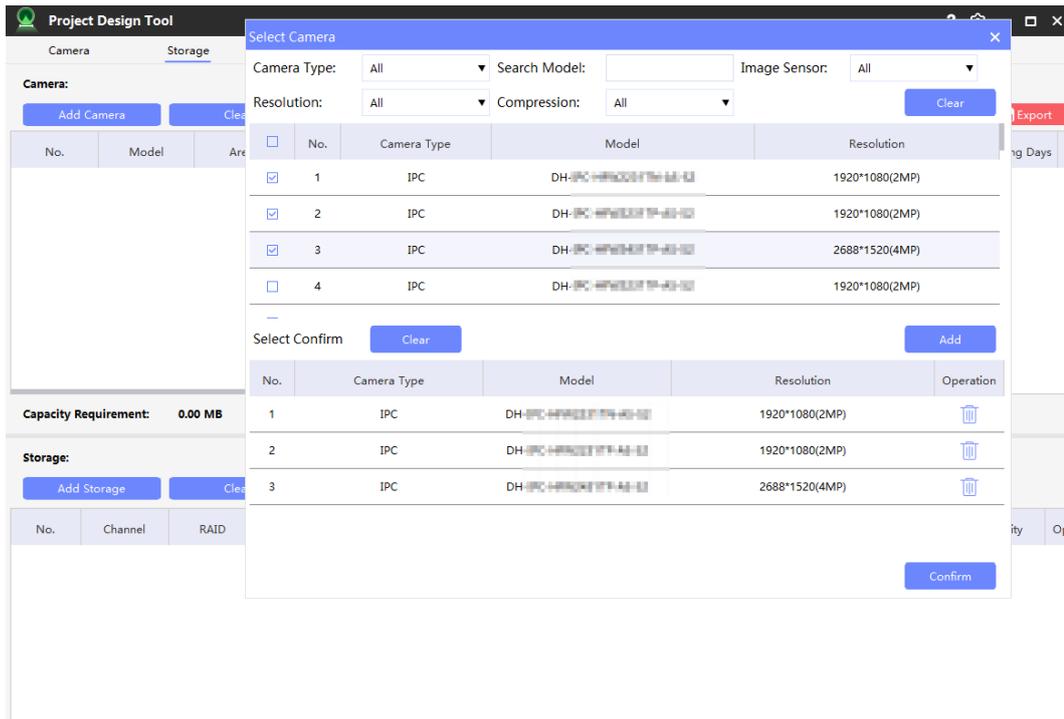
**Step 4** Select **Image Sensor**, **Compression**, and **Resolution**.



Click **Clear** to delete current filter conditions.

**Step 5** Select the camera you want to add, click **Add**, and then the selected camera will be displayed in the following list.

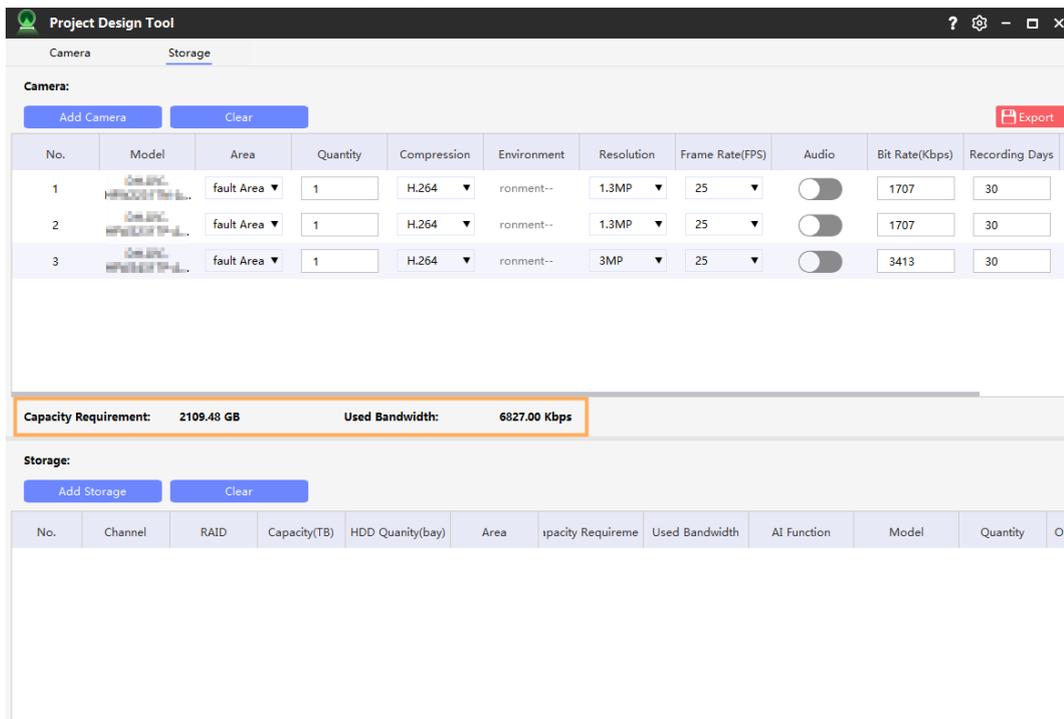
Figure 4-3 Select camera



- Click  to delete the corresponding camera.
- Click **Clear** to clear the selected camera in the list.

**Step 6** Click **Confirm** to add the camera to the storage page. The required capacity and bandwidth will be calculated automatically.

Figure 4-4 Capacity and bandwidth information



## 4.2 Adding Storage

- Step 1** Click **Add Storage** to add a storage device.
- Step 2** Select **Channel, RAID, Capacity (TB), HDD Quantity (bay), Area, Capacity Requirement, Used Bandwidth, AI Function** and **Model**, then the number of selected storage devices will be automatically calculated.

Figure 4-5 Add storage

**Camera:**

No.	Model	Area	Quantity	Compression	Environment	Resolution	Frame Rate(FPS)	Audio	Bit Rate(Kbps)	Recording Days
1	DH-IPC-EB5541P-M12-...	fault Area	1	H.264	ronment--	5MP	25	<input type="checkbox"/>	5120	30
2	DH-IPC-HFW1230S-S5	fault Area	1	H.264	ronment--	1.3MP	25	<input type="checkbox"/>	1707	30
3	DH-IPC-HFW1330SP-S4	fault Area	1	H.264	ronment--	1.3MP	25	<input type="checkbox"/>	1707	30

**Capacity Requirement:** 2636.92 GB      **Used Bandwidth:** 8534.00 Kbps

**Storage:**

No.	Channel	RAID	Capacity(TB)	HDD Quantity(bay)	Area	Capacity Requireme	Used Bandwidth	AI Function	Model	Quantity	Op
1	16	NA	8	1	ult Area	1318.46 GB	4267.00 Kbps	I Function--	JR4116HS-1	1	
2	16	NA	8	1	ult Area	1318.46 GB	4267.00 Kbps	I Function--	NS4B3P2	1	

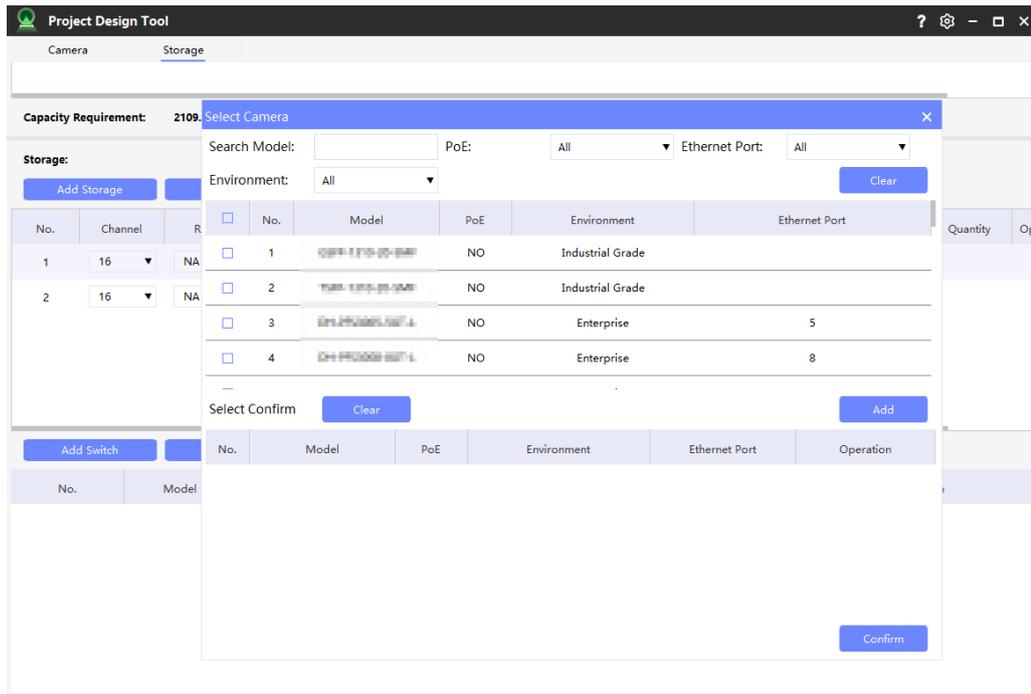


Click **Clear** to clear all added storage devices.

## 4.3 Adding Switch

- Step 1** Click **Add Switch** on the storage page.

Figure 4-6 Add switch



**Step 2** Enter the model of the switch.

**Step 3** Select whether supports **PoE** function.

**Step 4** Select **Ethernet Port** and **Environment**.



Click **Clear** to delete current filter conditions.

**Step 5** Select the switch you want to add, click **Add**, and then the selected switch will be displayed in the following list.

Figure 4-7 Select switch

Select Switch
✕

Search Model:  PoE: All ▼

Ethernet Port: All ▼ Environment: All ▼ Clear

<input type="checkbox"/>	No.	Model	PoE	Environment	Ethernet Port
<input type="checkbox"/>	10	██████████	NO	Enterprise	5
<input type="checkbox"/>	11	██████████	NO	Enterprise	8
<input type="checkbox"/>	12	██████████	NO	Enterprise	5
<input type="checkbox"/>	13	██████████	NO	Enterprise	8

Select Confirm
Clear
Add

No.	Model	PoE	Environment	Ethernet Port	Operation
1	██████████	NO	Enterprise	8	
2	██████████	NO	Enterprise	5	

Confirm



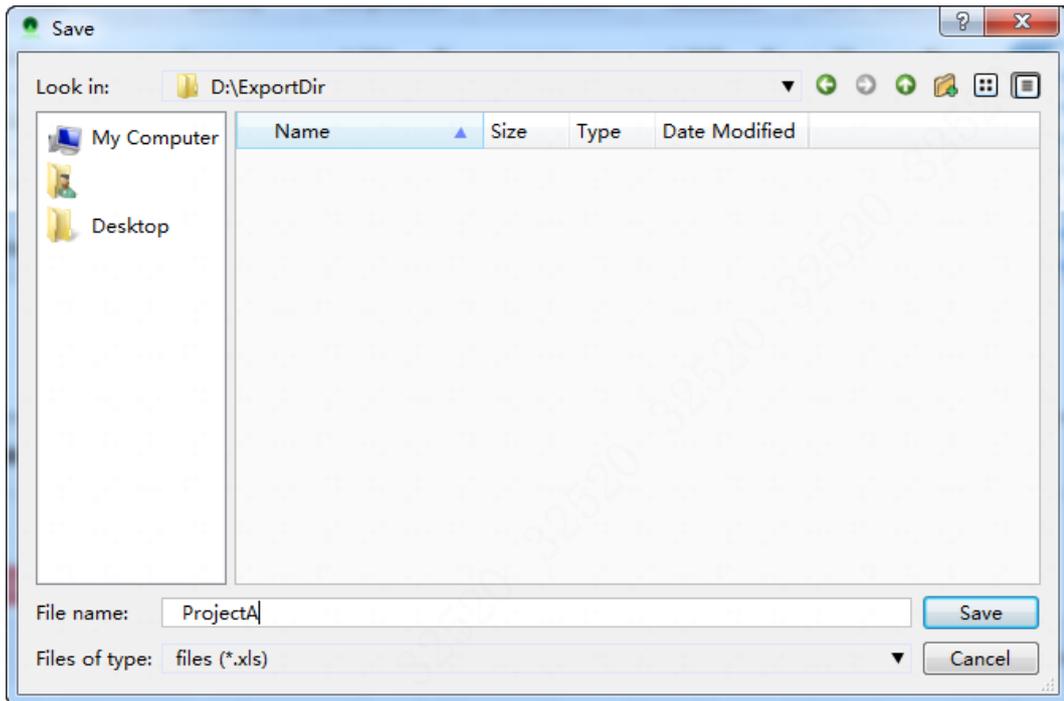
- Click to delete the corresponding switch.
- Click **Clear** to clear the selected switch in the list.

**Step 6** Click **Confirm** to add the switch to the storage page.

## 4.4 Exporting Information

Click **Export**, the tool exports the information of cameras and storage devices to an Excel file, which is the same as the information in the table.

Figure 4-8 Export



# Appendix 1 Cybersecurity Recommendations

## Security Statement

- If you connect the product to the Internet, you need to bear the risks, including but not limited to the possibility of network attacks, hacker attacks, virus infections, etc., please strengthen the protection of the network, platform data and personal information, and take the necessary measures to ensure the cyber security of platform, including but not limited to use complex passwords, regularly change passwords, and timely update platform products to the latest version, etc. Dahua does not assume any responsibility for the product abnormality, information leakage and other problems caused by this, but will provide product-related security maintenance.
- Where applicable laws are not expressly prohibited, for any profit, income, sales loss, data loss caused by the use or inability to use this product or service, or the cost, property damage, personal injury, service interruption, business information loss of purchasing alternative goods or services, or any special, direct, indirect, incidental, economic, covering, punitive, special or ancillary damage, regardless of the theory of liability (contract, tort, negligence, or other), Dahua and its employees, licensors or affiliates are not liable for compensation, even if they have been notified of the possibility of such damage. Some jurisdictions do not allow limitation of liability for personal injury, incidental or consequential damages, etc., so this limitation may not apply to you.
- Dahua's total liability for all your damages (except for the case of personal injury or death due to the company's negligence, subject to applicable laws and regulations) shall not exceed the price you paid for the products.

## Security Recommendations

### **The necessary measures to ensure the basic cyber security of the platform:**

#### **1. Use Strong Passwords**

Please refer to the following suggestions to set passwords:

- The length should not be less than 8 characters.
- Include at least two types of characters; character types include upper and lower case letters, numbers and symbols.
- Do not contain the account name or the account name in reverse order.
- Do not use continuous characters, such as 123, abc, etc.
- Do not use overlapped characters, such as 111, aaa, etc.

#### **2. Customize the Answer to the Security Question**

The security question setting should ensure the difference of answers, choose different questions and customize different answers (all questions are prohibited from being set to the same answer) to reduce the risk of security question being guessed or cracked.

### **Recommendation measures to enhance platform cyber security:**

#### **1. Enable Account Binding IP/MAC**

It is recommended to enable the account binding IP/MAC mechanism, and configure the IP/MAC of the terminal where the commonly used client is located as a whitelist to further improve access security.

## 2. **Change Passwords Regularly**

We suggest that you change passwords regularly to reduce the risk of being guessed or cracked.

## 3. **Turn On Account Lock Mechanism**

The account lock function is enabled by default at the factory, and it is recommended to keep it on to protect the security of your account. After the attacker has failed multiple password attempts, the corresponding account and source IP will be locked.

## 4. **Reasonable Allocation of Accounts and Permissions**

According to business and management needs, reasonably add new users, and reasonably allocate a minimum set of permissions for them.

## 5. **Close Non-essential Services and Restrict the Open Form of Essential Services**

If not needed, it is recommended to turn off NetBIOS (port 137, 138, 139), SMB (port 445), remote desktop (port 3389) and other services under Windows, and Telnet (port 23) and SSH (port 22) under Linux. At the same time, close the database port to the outside or only open to a specific IP address, such as MySQL (port 3306), to reduce the risks faced by the platform.

## 6. **Patch the Operating System/Third Party Components**

It is recommended to regularly detect security vulnerabilities in the operating system and third-party components, and apply official patches in time.

## 7. **Security Audit**

- Check online users: It is recommended to check online users irregularly to identify whether there are illegal users logging in.
- View the platform log: By viewing the log, you can get the IP information of the attempt to log in to the platform and the key operation information of the logged-in user.

## 8. **The Establishment of a secure Network Environment**

In order to better protect the security of the platform and reduce cyber security risks, it is recommended that:

- Follow the principle of minimization, restrict the ports that the platform maps externally by firewalls or routers, and only map ports that are necessary for services.
- Based on actual network requirements, separate networks: if there is no communication requirement between the two subnets, it is recommended to use VLAN, gatekeeper, etc. to divide the network to achieve the effect of network isolation.

## More information

Please visit Dahua official website security emergency response center for security announcements and the latest security recommendations.

ENABLING A SAFER SOCIETY AND SMARTER LIVING

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