Project Design Tool

User’s Manual

V1.0.2

Foreword

General

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

Safety Instructions

The following categorized signal words with defined meaning might appear in the manual.

Signal Words	Meaning
DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or unpredictable result.
NOTE	Provides additional information as the emphasis and supplement to the text.

Revision History

Version	Revision Content	Release Time
V1.0.2	Increased 2.1 Selecting Country/Region	June 2020
V1.0.1	1. Added the supported tool. 2. Changed opening method of the tool.	April 2020
V1.0.0	First release.	May 2019

About the Manual

- The manual is for reference only. If there is inconsistency between the manual and the actual product, the actual product shall prevail.
- We are not liable for any loss caused by the operations that do not comply with the manual.
- The manual would be updated according to the latest laws and regulations of related jurisdictions. For detailed information, refer to the paper manual, CD-ROM, QR code or our official website. If there is inconsistency between paper manual and the electronic version, the electronic version shall prevail.
- All the designs and software are subject to change without prior written notice. The product updates might cause some differences between the actual product and the manual. Please contact the customer service for the latest program and supplementary documentation.

- There still might be deviation in technical data, functions and operations description, or errors in print. 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 the company names in the manual are the properties of their respective owners.
- Please visit our website, contact the supplier or customer service if there is any problem occurring when using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

Table of Contents

Foreword ..... **I**
1 Overview **1**
2 Operation **2**
2.1 Selecting Country/Region 2
2.2 Main Interface 4
2.3 Exporting File 7
Appendix 1 Cybersecurity Recommendations **14**

1 Overview

Project Design Tool is used for camera installation design. It supports visual camera, thermal camera and camera with customizable parameters. With the tool, you can export device list and layout for device purchase, installation, and construction.

The result calculated by the tool is for reference only. The actual installation situation shall prevail.

2 Operation

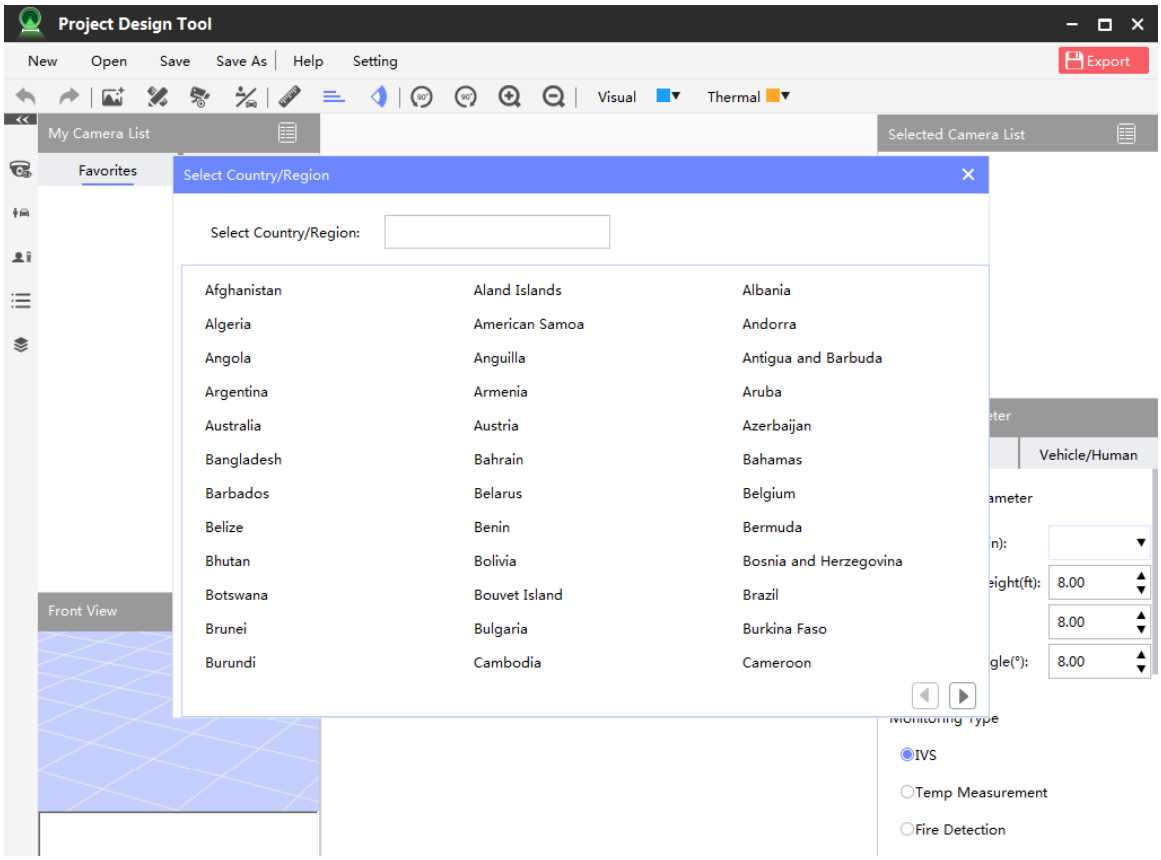
Get the software package from Toolbox.

2.1 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.

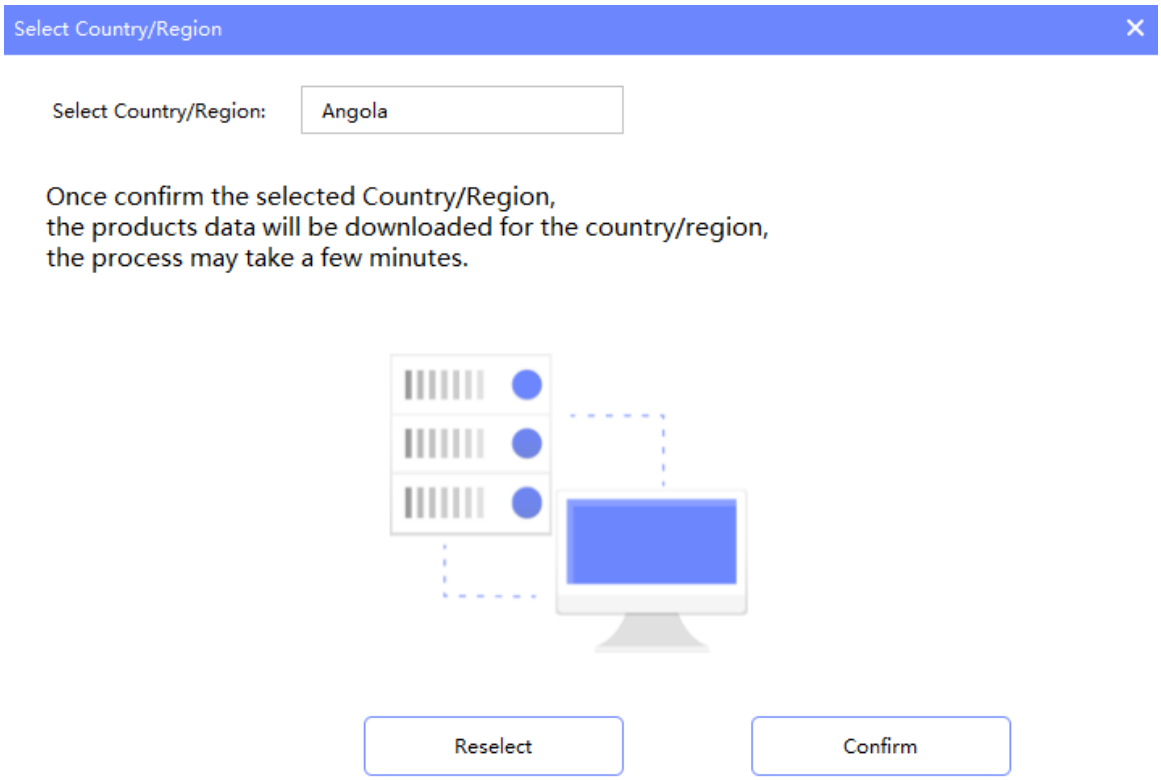
Step 1 Double-click ProjectDesignTool.exe in the software package, and the country/region selection interface is displayed.

Figure 2-1 Select country/region (1)



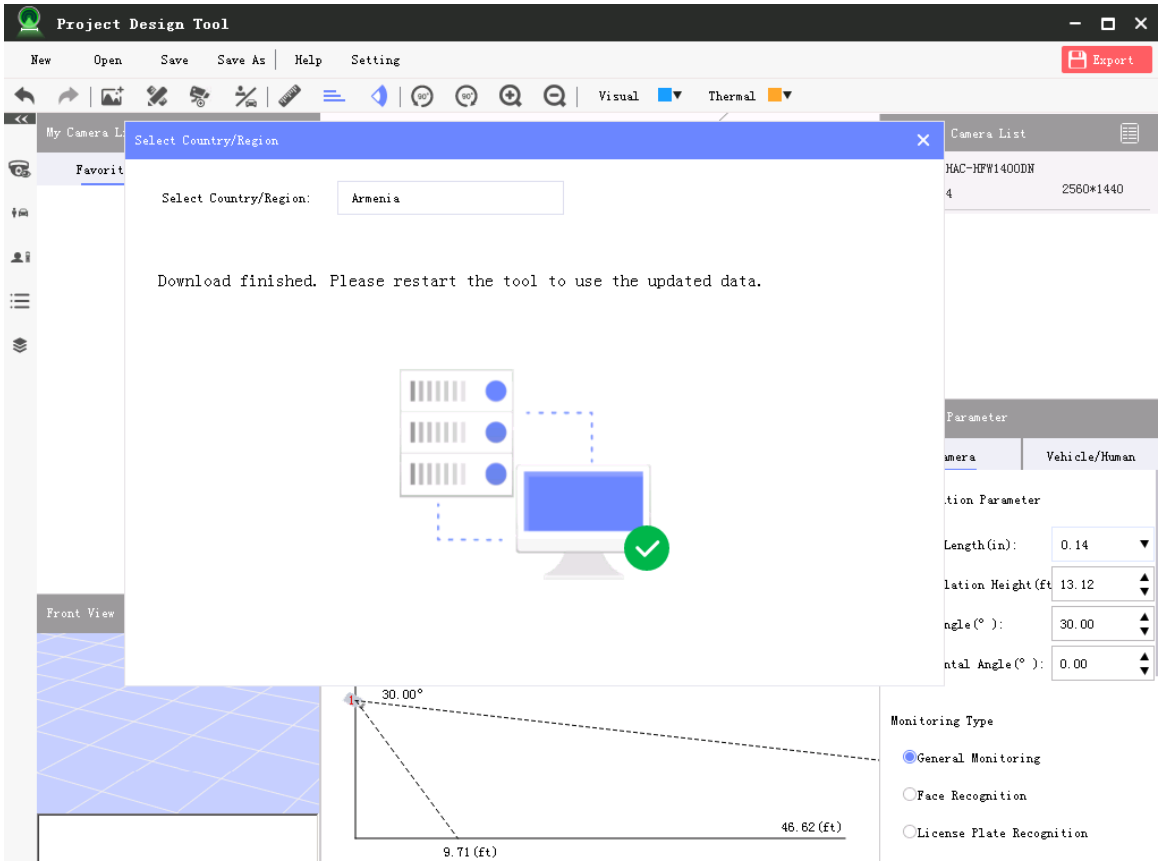
Step 2 Select a country/region.

Figure 2-2 Select country/region (2)



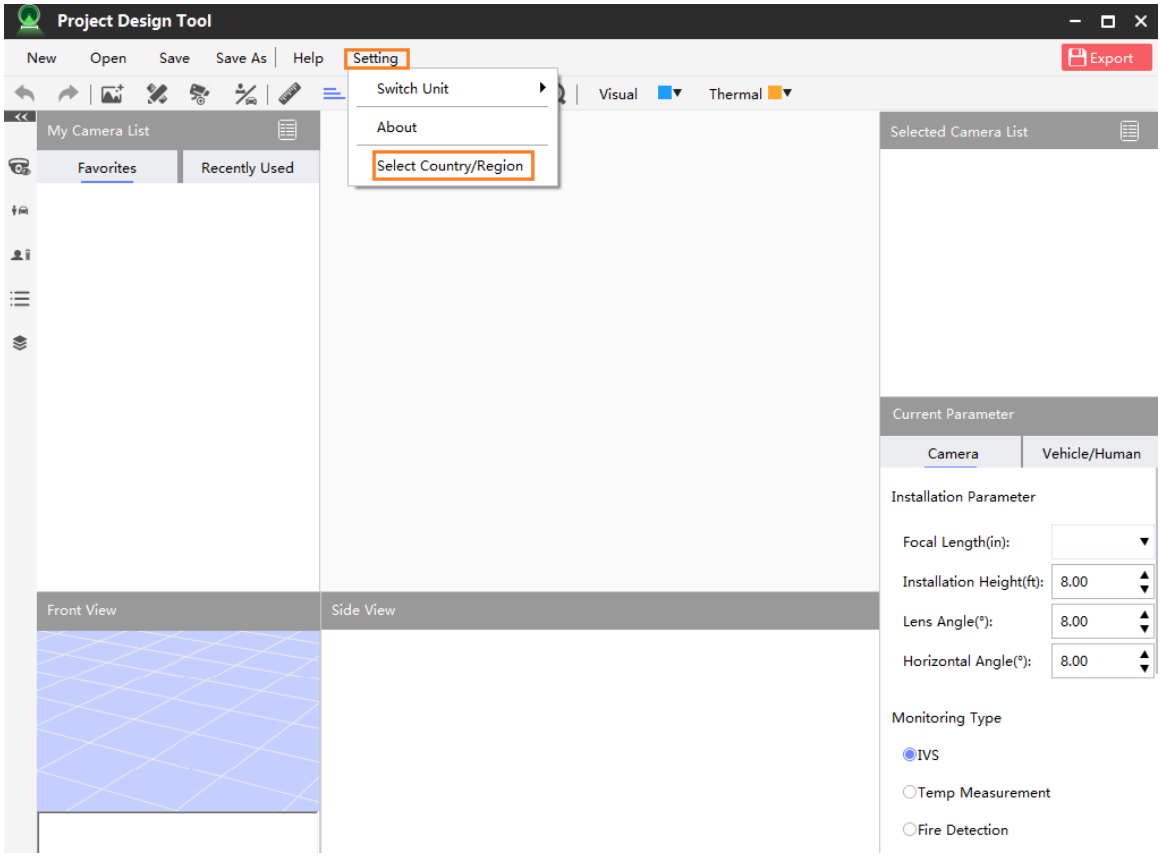
Step 3 Click **Confirm**.

Figure 2-3 Successfully selected a country/region



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

Figure 2-4 Select country/region (3)



2.2 Main Interface

After you have selected a country/region, the main interface will be displayed.

Figure 2-5 Main Interface (1)

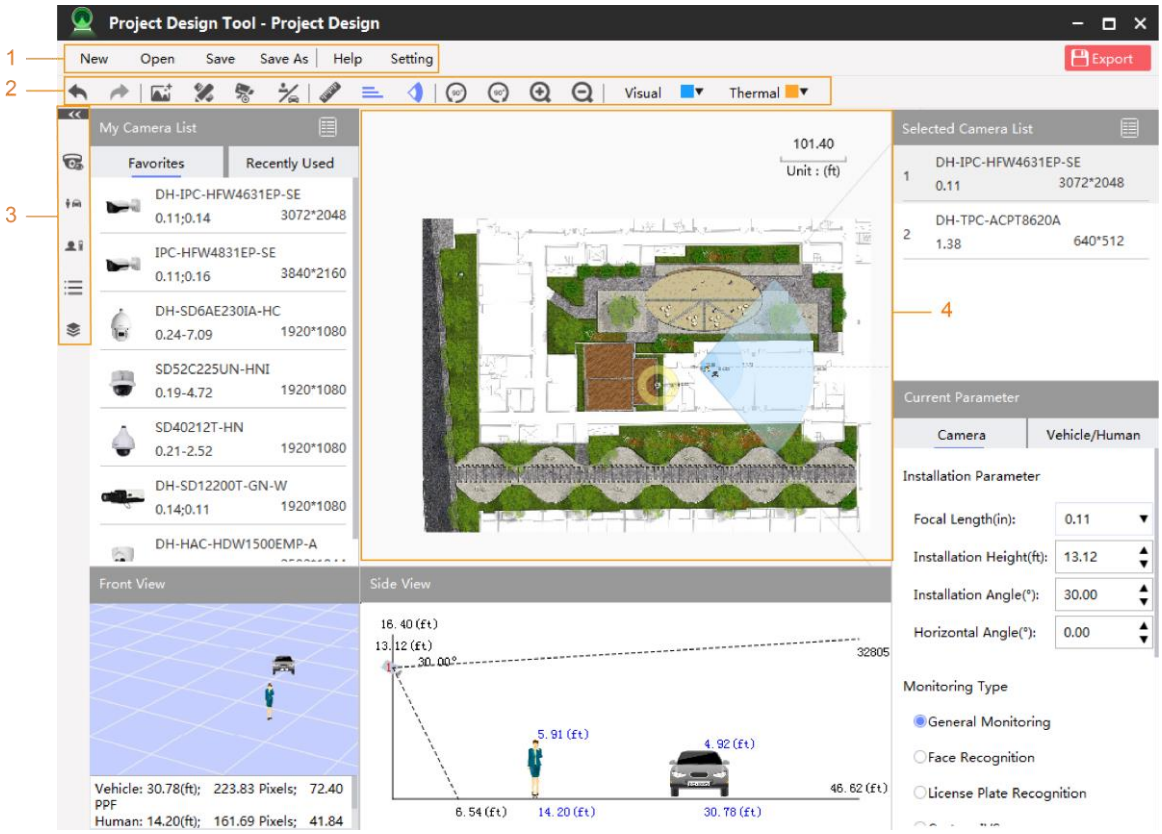


Table 2-1 Main interface parameters

No.	Function	Description
1	Menu	Includes five tabs: **New**, **Open**, **Save**, **Save as**, **Help** and **Setting**. ● **New**: Create a project file in .pds format. ● **Open**: Open an existing project file, and the file name is displayed beside Project Design Tool. ● **Save**: Save the created/edited project file. ● **Save as**: Save the created/edited project file as another file. ● **Help**: Get the help file. ● **Setting**: Switch units (**Metric** and **Imperial**) and view the software version.
2	Icon	● (Undo): Cancel the previous step. ● (Redo): Cancel undo operation. ● (Import Engineering Map): Import the engineering map to be designed. ● (Set Scale): Set ruler on the map. ● (Add Camera): Select camera from the **Select Camera** interface; click to add the camera in the **Favorites** list.

No.	Function	Description
		Double-click the camera to add it on the map. • (Add objects): Add human or vehicle. • (Distance Measurement): Measure the actual distance. • (Display line or not): Display/hide the monitoring data of cameras, including the max. monitoring distance and min. monitoring distance. • (Display area or not): Display/hide the monitoring area of cameras in sector or circle. • (Rotate 90° leftward): Rotate the engineering map 90° leftward. • (Rotate 90°rightward): Rotate the engineering map 90° rightward. • (Zoom in): Zoom in the imported map. • (Zoom in): Zoom out the imported map. • Visual (Visual): Click to display monitoring types with different colors. The monitoring types include **IVS Region**, **Identify Region**, **Recognize Region**, **Observe Region** and **Detect Region**. • Thermal (Thermal): Click to display monitoring types with different colors. The monitoring types include **IVS (Human)**, **IVS (Vehicle)**, **IVS (Other Object)**, **Fire Detection (Recommended)**, **Fire Detection(Max)**, **Temp Measurement**, and **Custom IVS**.
3	Function Bar	• Includes **My Camera List**, **Front View**, **Side View**, **Selected Camera List**, and **Current Parameter**. All function bars are enabled by default. • (Hide All): Hide all function areas. • (Display All): Display all function areas. • (My Camera List): Hide/Display **My Camera List**. • (Front View): Hide/Display front view of human or vehicle. • (Side View): Hide/Display side view of camera, including installation height, angle of depression, max. monitoring distance and min. monitoring distance.

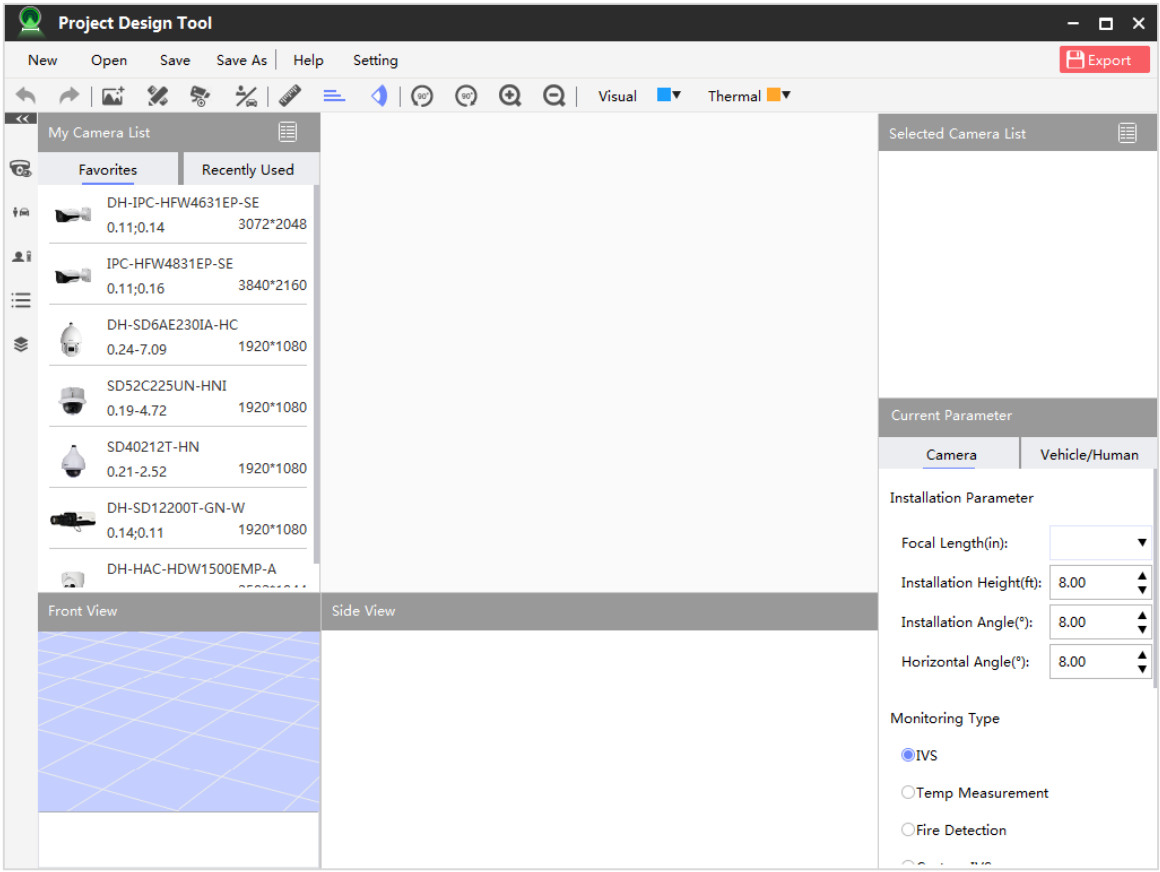
No.	Function	Description
		• (Selected Camera List): Hide/Display **Selected Camera List**. • (Current Parameter): Hide/Display **Current Parameter**.
4	Canvas	You can import map, place cameras, vehicle and person, set scale, and measure distance on the canvas.

2.3 Exporting File

Step 4 Install the tool in the tool box and open the tool.

The man interface is displayed.

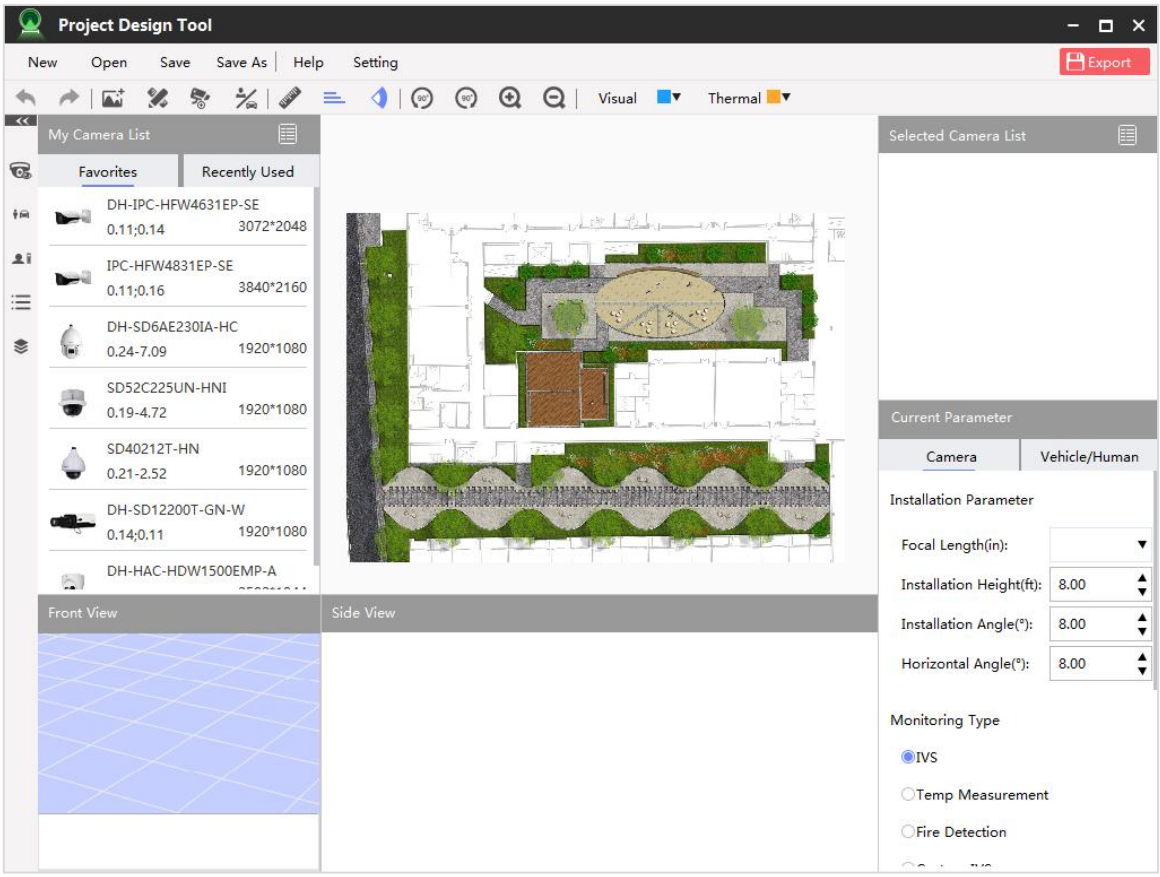
Figure 2-6 Main interface (2)



Step 5 Click to import engineering map.

- 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.

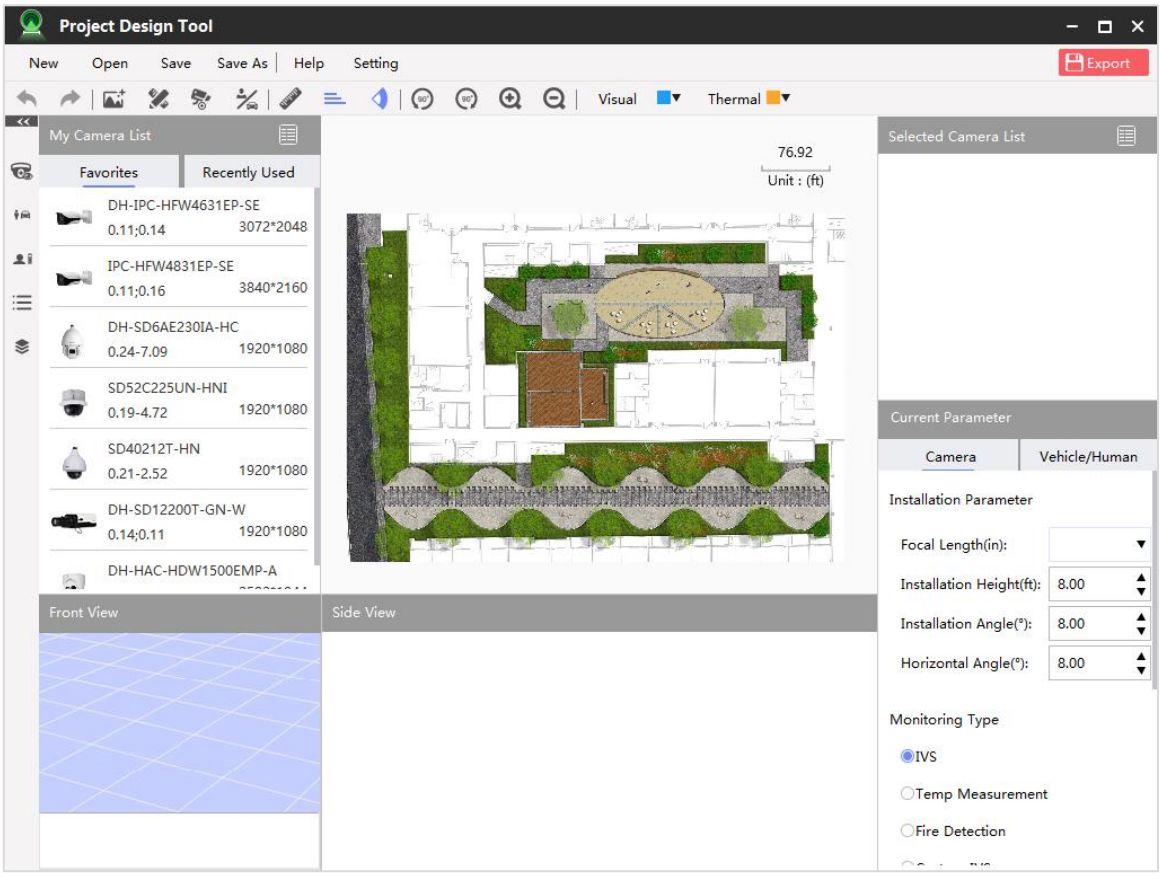
Figure 2-7 Engineering map



Step 6 Click , and set ruler on the map.

The system sets scale automatically.

Figure 2-8 Scale setting



After importing engineering map, set ruler on the map first, otherwise the following operations will fail.

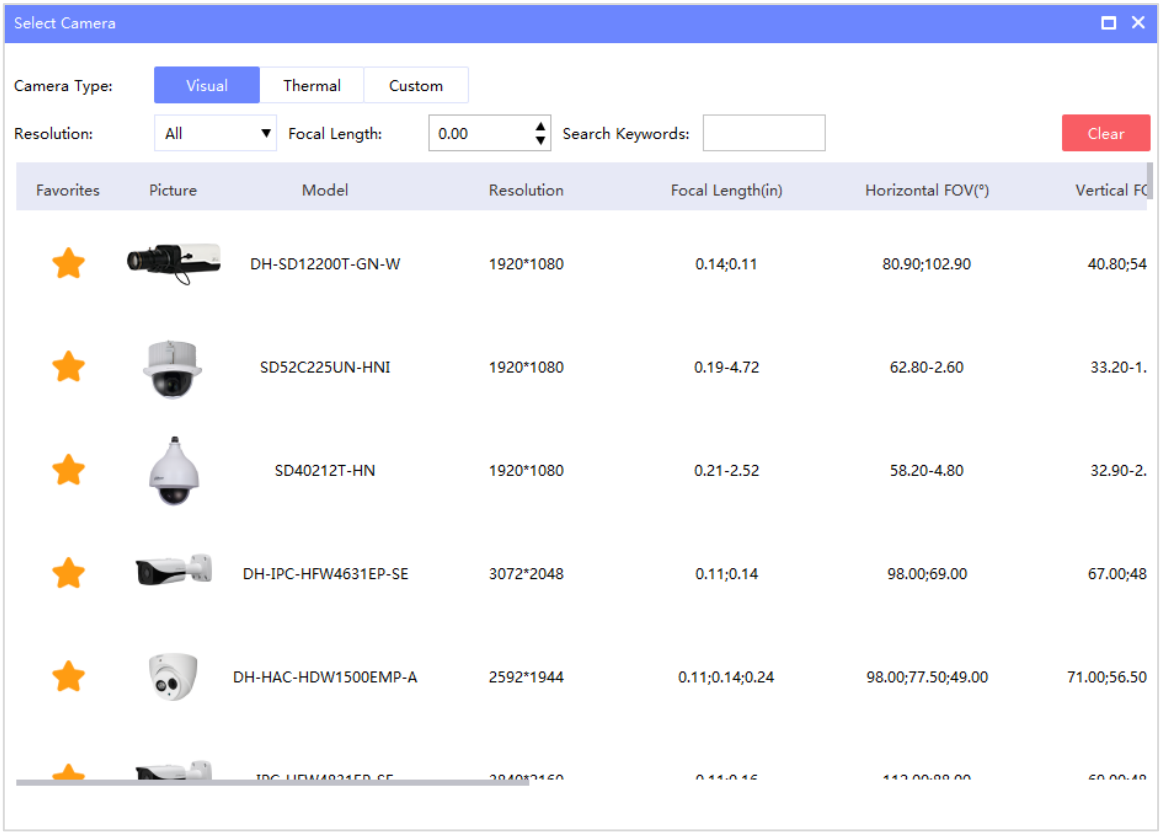
Step 7 Add camera.

You can add three types of cameras on the map: Visual, Thermal, and Custom. This section takes custom camera as an example.

1) Click .

The **Select Camera** interface is displayed.

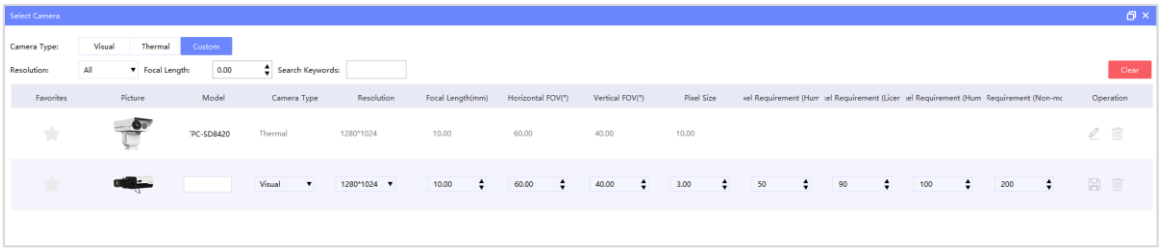
Figure 2-9 Select camera



2) Click **Custom** tab, and configure parameters, including camera type, model, resolution, focal length, horizontal FOV, vertical FOV.

- You can search the camera through resolution, focal length and keywords.
- Keywords supports model search only.
- When you set the camera type as **Visual**, you can also configure the parameters of intelligent detection, including intelligent pixel requirements (face), intelligent pixel requirements (vehicle), intelligent pixel requirements (body), and intelligent pixel requirements (non-motor vehicle).
- Point to the camera in **Selected Camera List**, you can view the configured parameters.

Figure 2-10 Custom



3) Click to save the configuration.

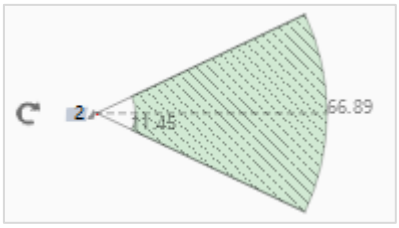
4) Double-click the camera that you want to add on the canvas.
The camera is displayed on the engineering map.

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

Step 8 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 2-11 Select a camera



When adjusting the icon, the front view is displayed.

Step 9 Configuring camera parameter.

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

Table 2-2 Camera parameter

Function	Description
Installation Parameter	You can set focal length, installation height, installation angle and horizontal angle. ● **Focal Length**: Set focal length according to the camera type. ● **Installation Height**: Set installation height according to the actual environment. ● **Installation Angle**: The angle is important to monitoring area and monitoring effect. ● **Horizontal Angle**: The range is 0°–359.99°.
Monitoring Type	The tool supports two camera types: visual camera and thermal camera. Select the monitoring type according to camera type. ● Visual camera: ◇ **General Monitoring**. ◇ **Face Recognition**. ◇ **License Plate Recognition**. ◇ **Custom IVS**. ● Thermal camera: ◇ **IVS**. ◇ **Temp Measurement**. ◇ **Fire Detection**. ◇ **Custom IVS**.
Monitoring Target Size	You can set monitoring target size according to the monitoring type. Visual camera: ● **General Monitoring**: Max visible distance. ● **Face Recognition**: Height and max intelligent distance. ● **License Plate Recognition**: Width and max intelligent distance. ● **Custom IVS**: Width, height, and smart pixel requirement. Thermal camera: ● **IVS**. ◇ Human (1.6 (ft) ×5.9 (ft)). ◇ Vehicle (6.2 (ft) ×4.9 (ft)). ◇ Other: Set width and height. ◇ 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. ● **Temp Measurement**: Set width and height, and the tool calculate the Max intelligent distance automatically. ● **Fire Detection**: Set width and height, the tool prompts the recommended distance, and calculates the Max intelligent distance automatically. ● **Custom IVS**. ◇ Human (1.6 (ft) ×5.9 (ft)). ◇ Vehicle (6.2 (ft) ×4.9 (ft)). ◇ Min Size Pixel: It is for smart recognition. ◇ Max intelligent distance: It is calculated automatically.

Step 10 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 as needed.

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

Step 11 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.

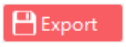
The measured distance is displayed on the map.

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

Figure 2-12 Distance measurement

Step 12 Click **Save** or **Save as** to save the project design file.

Step 13 Export the project file.

1) Click  on the upper right corner.

   The **Export** interface is displayed.

Figure 2-13 Export

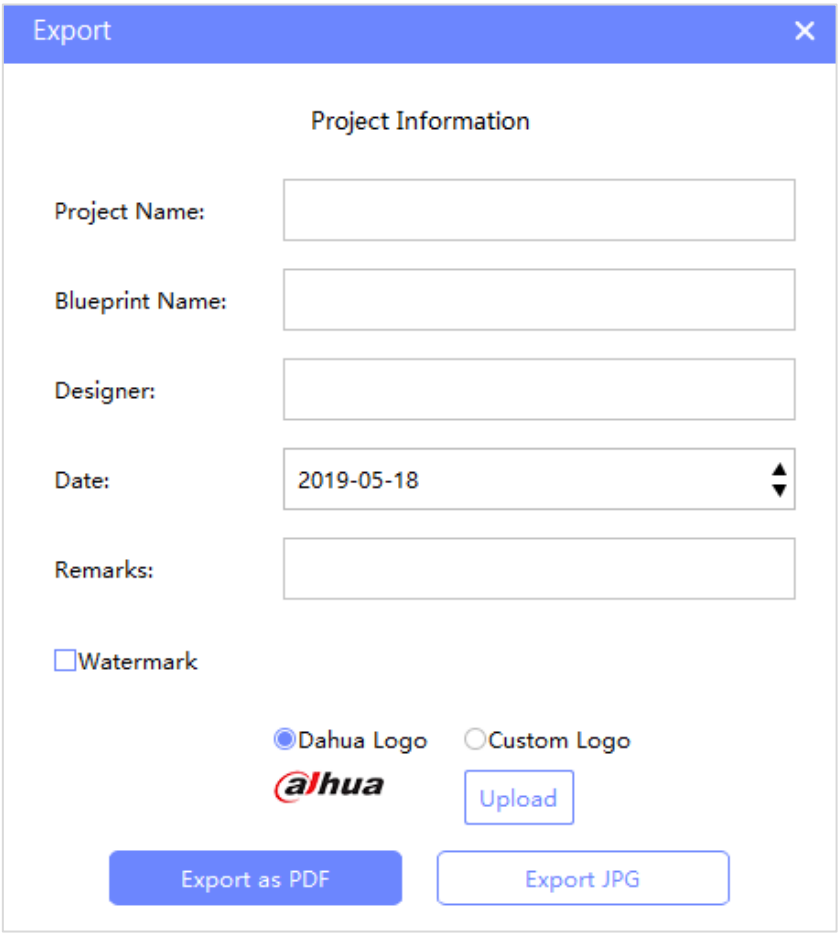


Table 2-3 Export parameters

Parameter	Description
Project Name	The project that the solution belong 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) Click **Export as PDF** to export PDF file; click **Export JPG** to export JPG file.

Appendix 1 Cybersecurity Recommendations

Cybersecurity is more than just a buzzword: it's something that pertains to every device that is connected to the internet. IP video surveillance is not immune to cyber risks, but taking basic steps toward protecting and strengthening networks and networked appliances will make them less susceptible to attacks. Below are some tips and recommendations on how to create a more secured security system.

Mandatory actions to be taken for basic equipment network security:

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. **Update Firmware and Client Software in Time**

   - According to the standard procedure in Tech-industry, we recommend to keep your equipment (such as NVR, DVR, IP camera, etc.) firmware up-to-date to ensure the system is equipped with the latest security patches and fixes. When the equipment is connected to the public network, it is recommended to enable the "auto-check for updates" function to obtain timely information of firmware updates released by the manufacturer.
   - We suggest that you download and use the latest version of client software.

"Nice to have" recommendations to improve your equipment network security:

1. **Physical Protection**

   We suggest that you perform physical protection to equipment, especially storage devices. For example, place the equipment in a special computer room and cabinet, and implement well-done access control permission and key management to prevent unauthorized personnel from carrying out physical contacts such as damaging hardware, unauthorized connection of removable equipment (such as USB flash disk, serial port), etc.

2. **Change Passwords Regularly**

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

3. **Set and Update Passwords Reset Information Timely**

   The equipment supports password reset function. Please set up related information for password reset in time, including the end user's mailbox and password protection questions. If the information changes, please modify it in time. When setting password protection questions, it is suggested not to use those that can be easily guessed.

4. **Enable Account Lock**

   The account lock feature is enabled by default, and we recommend you to keep it on to guarantee the account security. If an attacker attempts to log in with the wrong password several times, the corresponding account and the source IP address will be locked.

5. **Change Default HTTP and Other Service Ports**

We suggest you to change default HTTP and other service ports into any set of numbers between 1024~65535, reducing the risk of outsiders being able to guess which ports you are using.

6. **Enable HTTPS**

   We suggest you to enable HTTPS, so that you visit Web service through a secure communication channel.

7. **Enable Whitelist**

   We suggest you to enable whitelist function to prevent everyone, except those with specified IP addresses, from accessing the system. Therefore, please be sure to add your computer's IP address and the accompanying equipment's IP address to the whitelist.

8. **MAC Address Binding**

   We recommend you to bind the IP and MAC address of the gateway to the equipment, thus reducing the risk of ARP spoofing.

9. **Assign Accounts and Privileges Reasonably**

   According to business and management requirements, reasonably add users and assign a minimum set of permissions to them.

10. **Disable Unnecessary Services and Choose Secure Modes**

    If not needed, it is recommended to turn off some services such as SNMP, SMTP, UPnP, etc., to reduce risks.

    If necessary, it is highly recommended that you use safe modes, including but not limited to the following services:

    - SNMP: Choose SNMP v3, and set up strong encryption passwords and authentication passwords.
    - SMTP: Choose TLS to access mailbox server.
    - FTP: Choose SFTP, and set up strong passwords.
    - AP hotspot: Choose WPA2-PSK encryption mode, and set up strong passwords.

11. **Audio and Video Encrypted Transmission**

    If your audio and video data contents are very important or sensitive, we recommend that you use encrypted transmission function, to reduce the risk of audio and video data being stolen during transmission.

    Reminder: encrypted transmission will cause some loss in transmission efficiency.

12. **Secure Auditing**

    - Check online users: we suggest that you check online users regularly to see if the device is logged in without authorization.
    - Check equipment log: By viewing the logs, you can know the IP addresses that were used to log in to your devices and their key operations.

13. **Network Log**

    Due to the limited storage capacity of the equipment, the stored log is limited. If you need to save the log for a long time, it is recommended that you enable the network log function to ensure that the critical logs are synchronized to the network log server for tracing.

14. **Construct a Safe Network Environment**

    In order to better ensure the safety of equipment and reduce potential cyber risks, we recommend:

    - Disable the port mapping function of the router to avoid direct access to the intranet devices from external network.
    - The network should be partitioned and isolated according to the actual network needs. If there are no communication requirements between two sub networks, it is

suggested to use VLAN, network GAP and other technologies to partition the network, so as to achieve the network isolation effect.

- Establish the 802.1x access authentication system to reduce the risk of unauthorized access to private networks.
- It is recommended that you enable your device's firewall or blacklist and whitelist feature to reduce the risk that your device might be attacked.