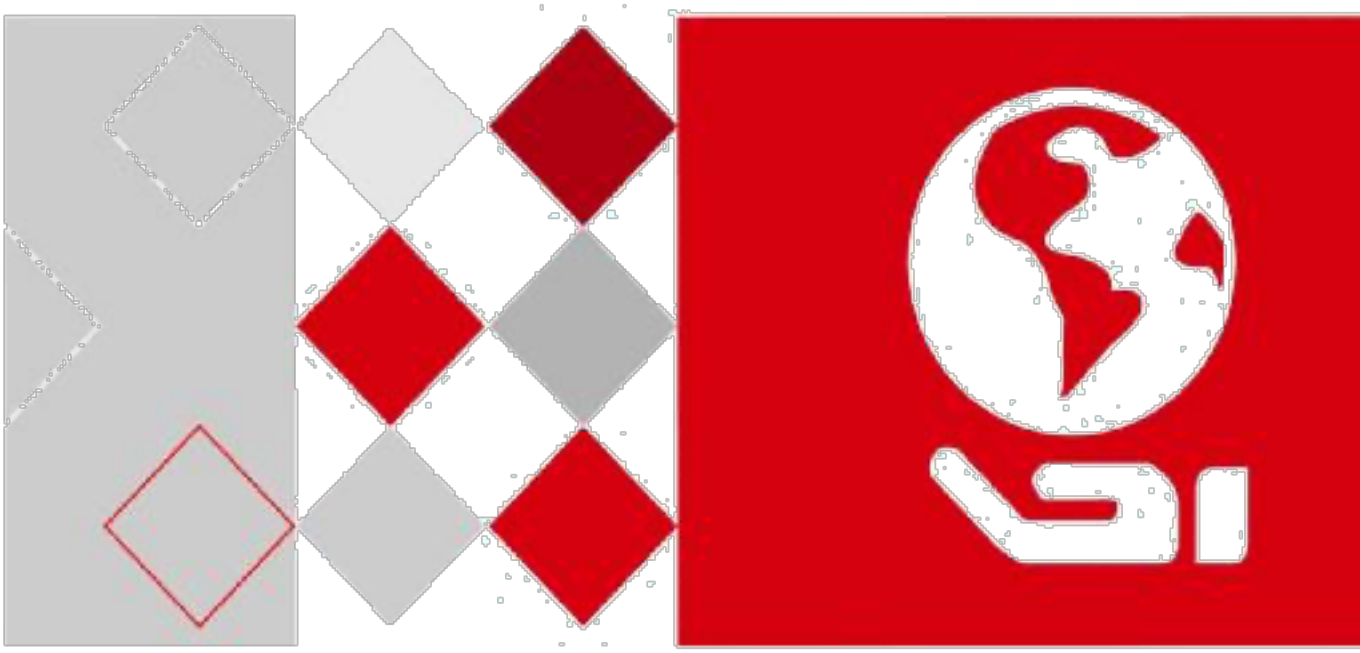


Security Radar (TDS-B0G-FK/X/C)

V5.1.4

Configuration Manual

Chapter 1 Installation

1.1 System Overview

The radar alarm system is mainly composed of two parts, the front-end radar detector and the PTZ linkage, to achieve accurate movement trajectory detection of various front-end environments, and the detected movement trajectory and real-time video is pushed to the central management platform, to achieve the alarm and video interactive display of the alarm function.

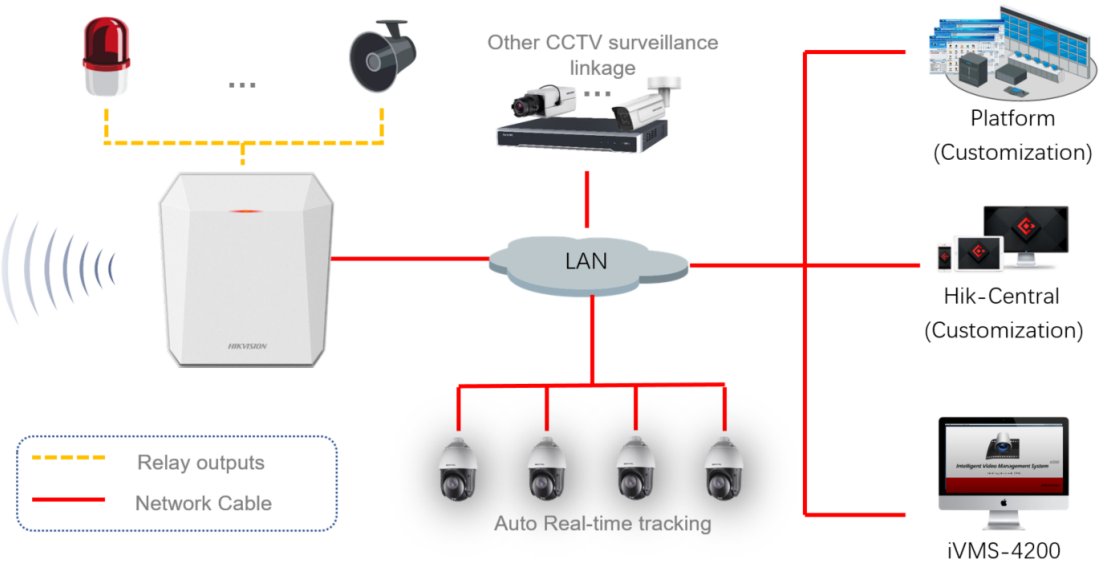


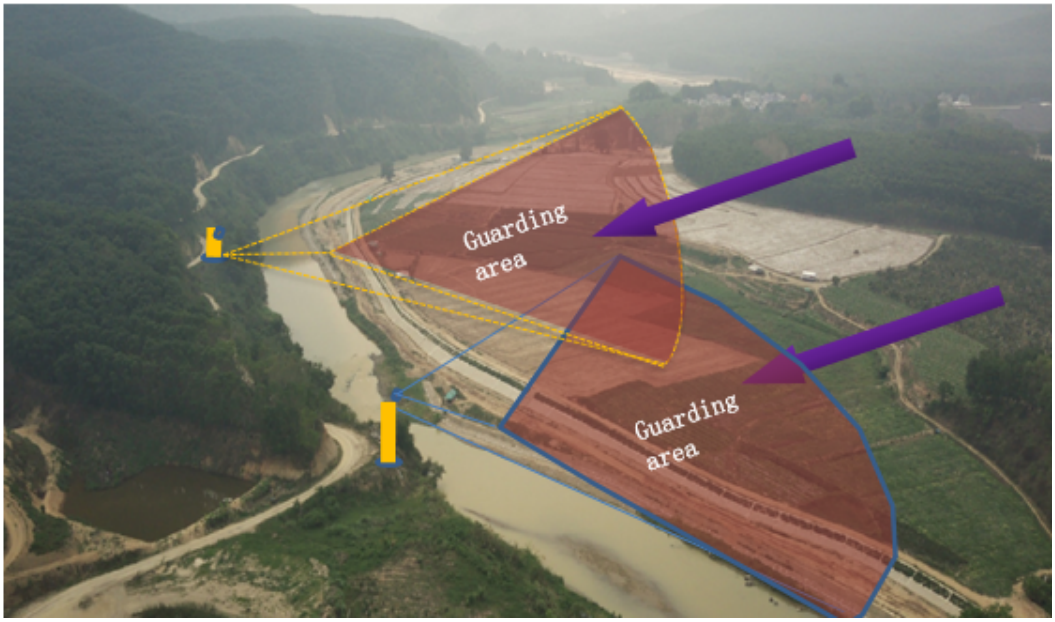
Figure 1-1 System design and deployment

1.2 Sites Conditions

1.2.1 Typical Installation Scenario

1.Outdoor Open Area

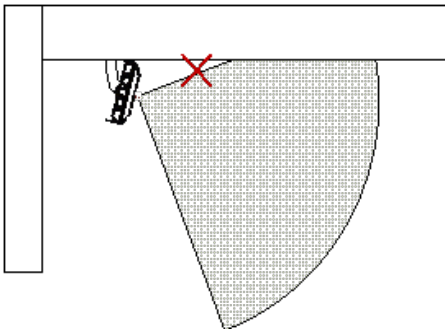
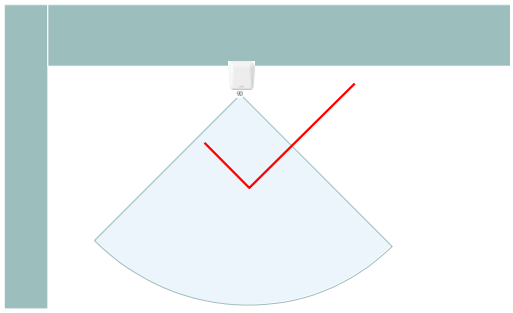
2.By The River



1.2.2 Sites Survey Notes

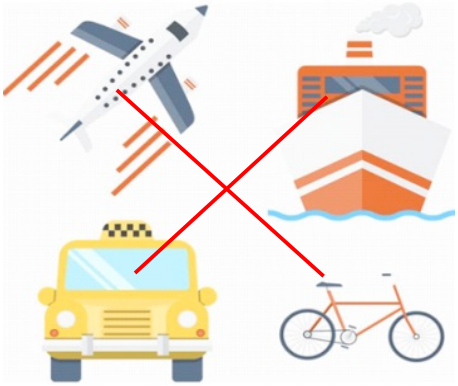
1. In order to ensure the basic work of the radar, it is necessary to ensure that there are no large metal objects and no obstruction objects above and below within 10 m directly in front of the radar; There is no electromagnetic interference near the radar, such as high-voltage poles, communication base stations, metal minerals, etc.


2. The radar detection range does not allow to cover the radar mounting surface

3. In order to ensure the effect of the radar, the detection area of the radar should be as flat as possible, with a wide field of view and no obstruction; No false target interference, such as fans, trees, etc

4. Radar can’t installed on moving objects.

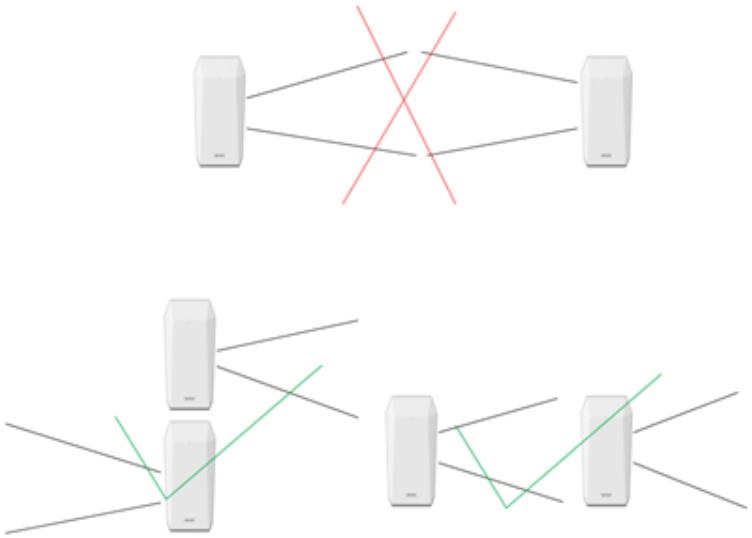


5. Comprehensively consider the feasibility of construction, such as power intake problems, excavation and network problems.

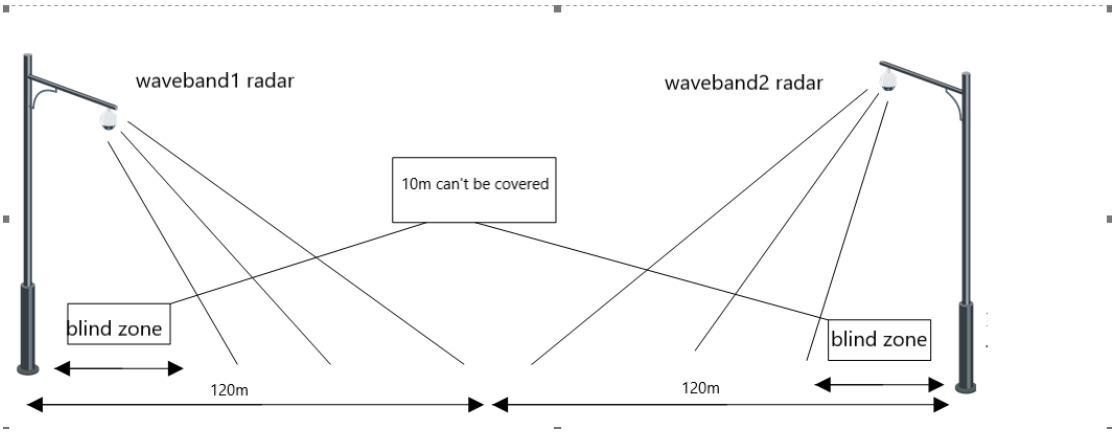
1.3 Installation

1.3.1 Installation Notes

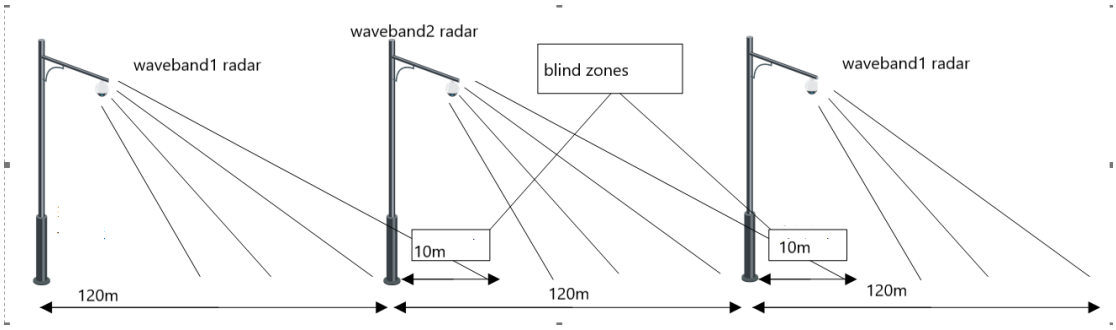
1.Avoid the transmission of other equipment in the same frequency band within the radar detection range, and do not allow installation in the opposite direction; It can be installed back to back up and down or in the same orientation.



2.Select different frequency bands if have to install in a opposite directions, with an interval of 2 times larger than the detection range.

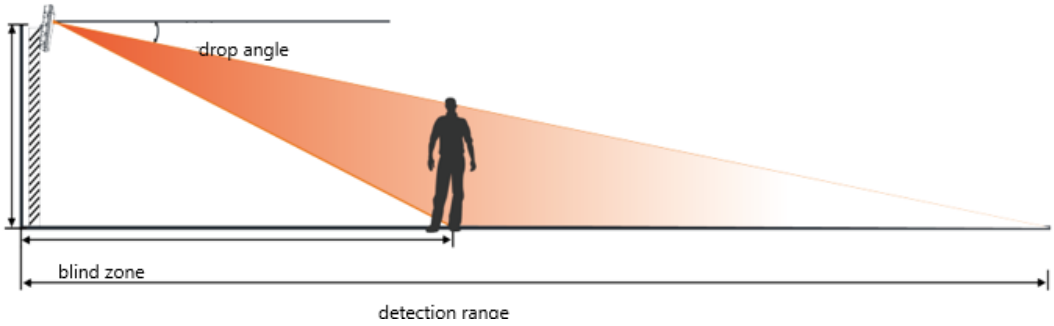


3.If install in the same direction, Select different frequency bands for devices, with an interval larger than the detection range



1.3.2 Schematic Diagram Of Radar Installation

Schematic diagram of radar installation：



1. The recommended installation height is 2.5m (60&120m radar), 3m (500m radar), 5m (1km radar), 10m (2km radar).

Device type	Frequency band	Installation height	Detection angle	Detection range&Target numbers	Defend	Installation angle
DS-TDSB0G-FC/2km	C-band 5.4~5.6GHz	8-10m best 10m	Horizontal: 90° Vertical: 18°	human: 1.8Km vehicle: 3Km Up to 32	IP67、IK10 NEMA4X	Elevation 4
DS-TDSB0G-FX/1km	X-band 9.6~9.9GHz	3-6m best 5m	Horizontal: 90° Vertical: 30°	human: 1Km vehicle: 2Km Up to 32	IP67、IK10 NEMA4X	0
DS-TDSB0G-FK/500m	K-band 24~24.25GHz	3-6m best 3m	Horizontal: 100° Vertical: 30°	human: 500m vehicle: 1Km Up to 32	IP67、IK10 NEMA4X	0
DS-TDSB0G-FK/120m	K-band 24~24.25GHz	2-4m best 2.5m	Horizontal: 120° Vertical: 30°	human: 120m vehicle: 200m Up to 32	IP67、IK10 NEMA4X	0
DS-TDSB0G-FK/60m	K-band 24~24.25GHz	2-4m best 2.5m	Horizontal: 120° Vertical: 30°	human: 60m vehicle: 120m Up to 32	IP67、IK10 NEMA4X	0

2.Make sure that the mounting surface can withstand more than 4 times the weight of the device (include bracket).

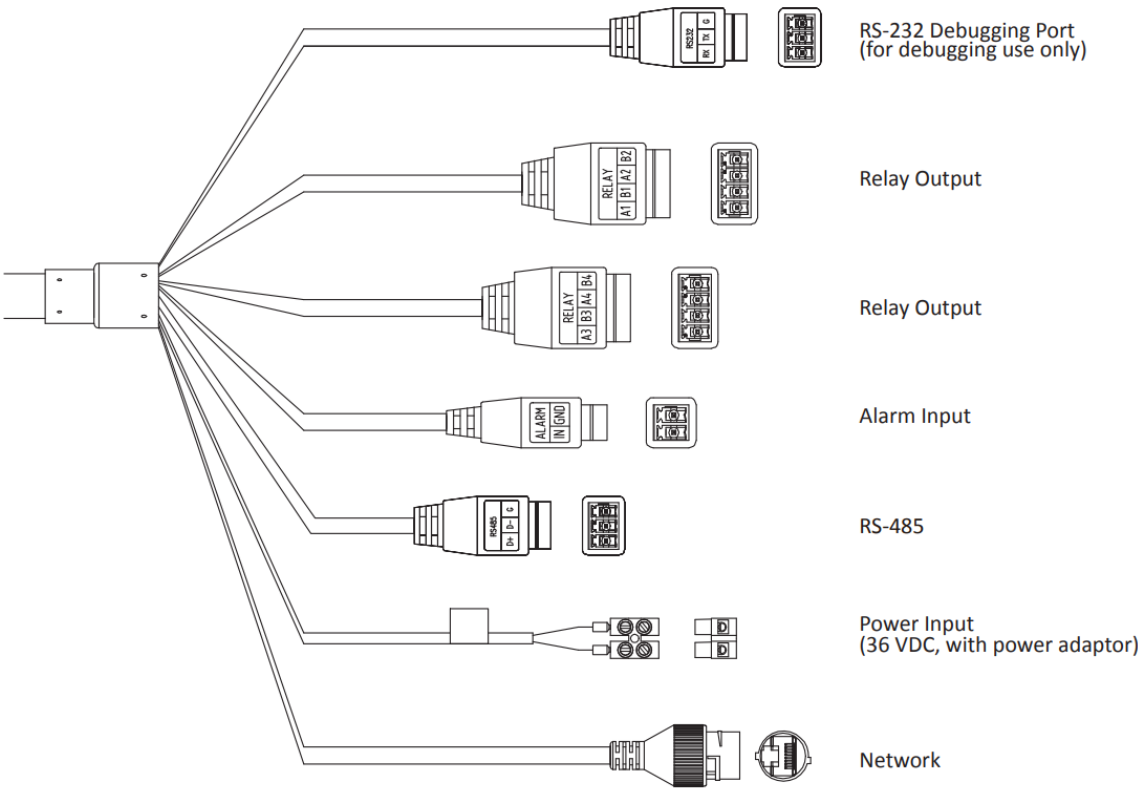
3. Radar installation forward and reverse inspection, radar can not be installed in reverse, check whether the log is correct;

4. Radar installation orientation inspection to check whether the radar detection range covers the detected area;

5. Check the installation height and pitch angle, check whether the installation height and pitch angle meet the recommended installation form in the user manual;

1.4 Radar Interfaces

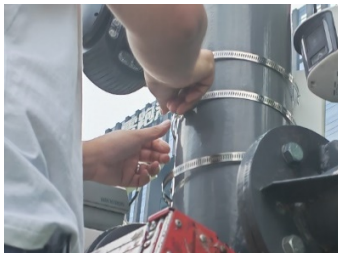
Below is a description of each interface of the Radar:



1.5 Installation Diagram

1.5.1 Rotation Adjustment

You can refer to the following illustration for adjusting the installation mode:

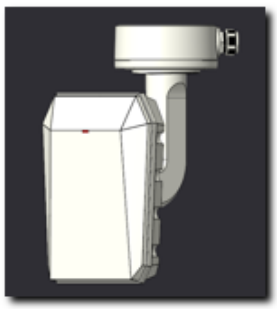


1.5.2 Other Installation

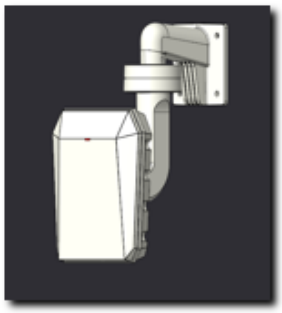
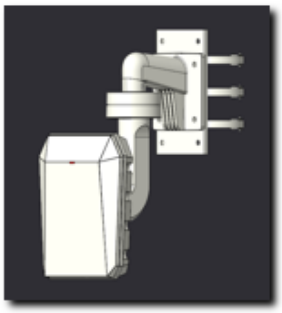
You can refer to the following illustration for actual installation:

1. Ceiling Mounting

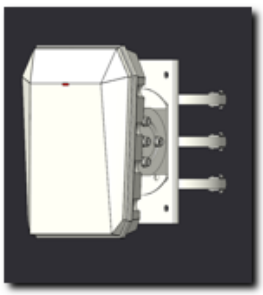


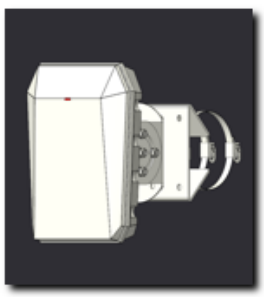


2. Hoop Installation

3. Wall-mounted





Chapter 2 Configuration

2.1 Device Activation

Steps:

1. Install the SADP software in the attached CD or downloaded from the official website.
2. Run the software.

   SADP will automatically search all online devices in LAN. The results are displayed in sheet, with device type, IP address, security status, device serial No. and many other information.

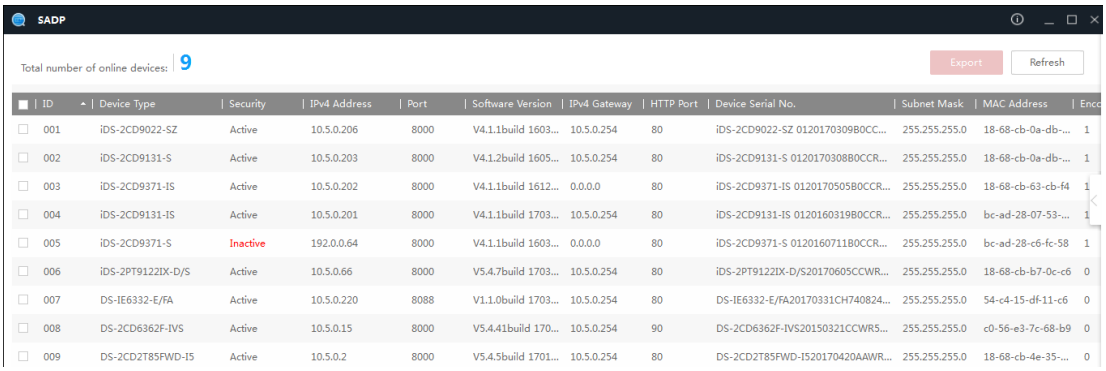


Figure 2-1 SADP Search Interface

3. Check the capture radar to be activated to pop up the **Activate the Device** window on the right.
4. Set capture radar password in the popup window.
5. Click **Activate** to complete activation

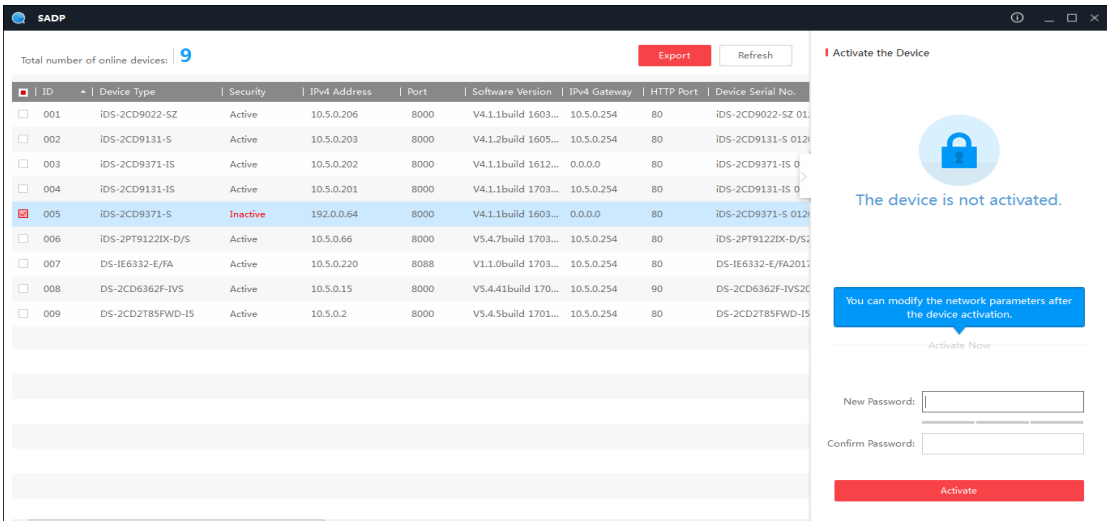


Figure 2-2 Activate the Radar

6. Check the activated radar to pop up the **Modify Network Parameters** window on the right.
7. Enter radar IP address, subnet mask and admin password.
8. Click **Modify** to finish IP settings.

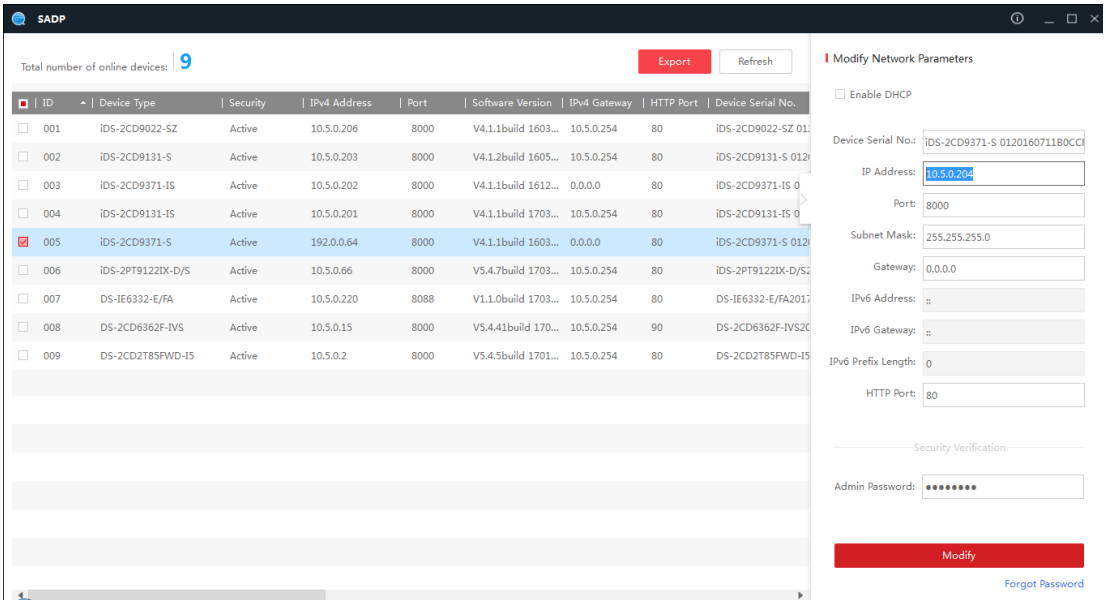


Figure 2-3Modify Camera IP Address

9. Modify the computer IP address to be in the same network segment as the radar.

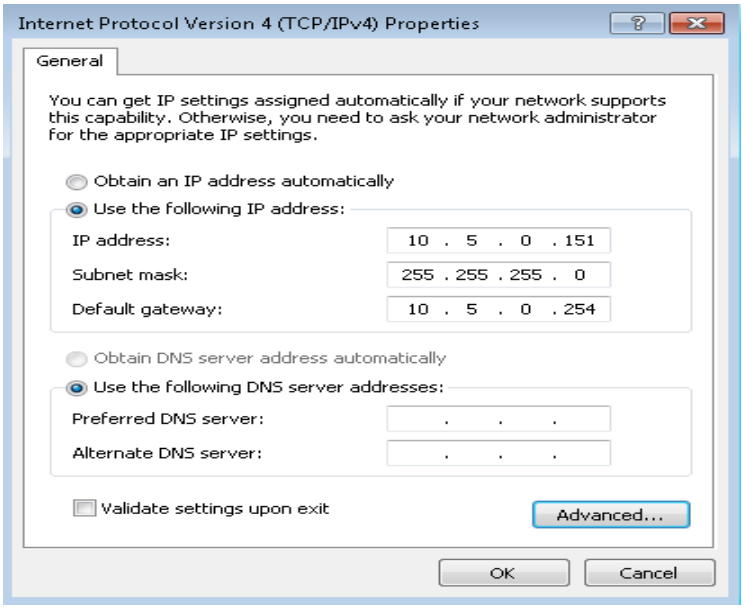


Figure 2-4Modify Computer IP Address

10. Open Chrome or IE browser to connect the radar and enter password to login.

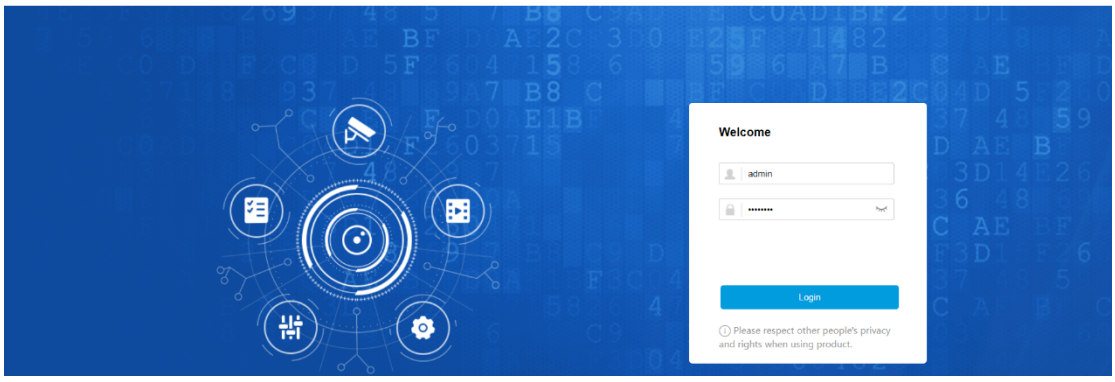


Figure 2-5 Log In

2.2 Checking Firmware Version

Steps:

1. Go to **Configuration > System > System settings > Basic information**
2. Check the information in **Firmware Version**.

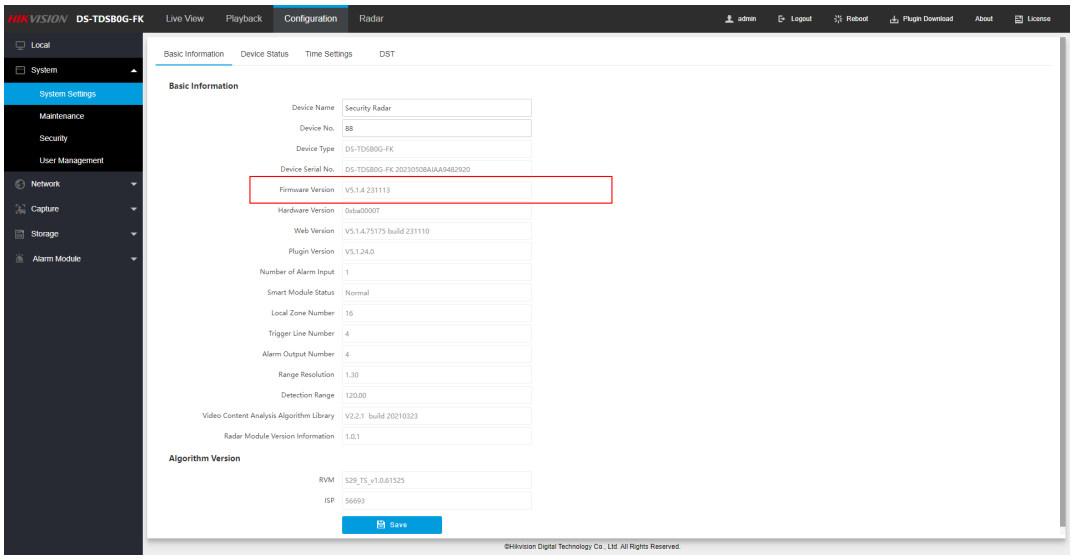


Figure 2-6 Check Firmware

2.3 Upgrading Program and Restoring Default Settings

.***Steps:***

Go to **Configuration > Maintenance.**

1. Choose Firmware.
2. Click Upgrade.
3. Reboot the radar.

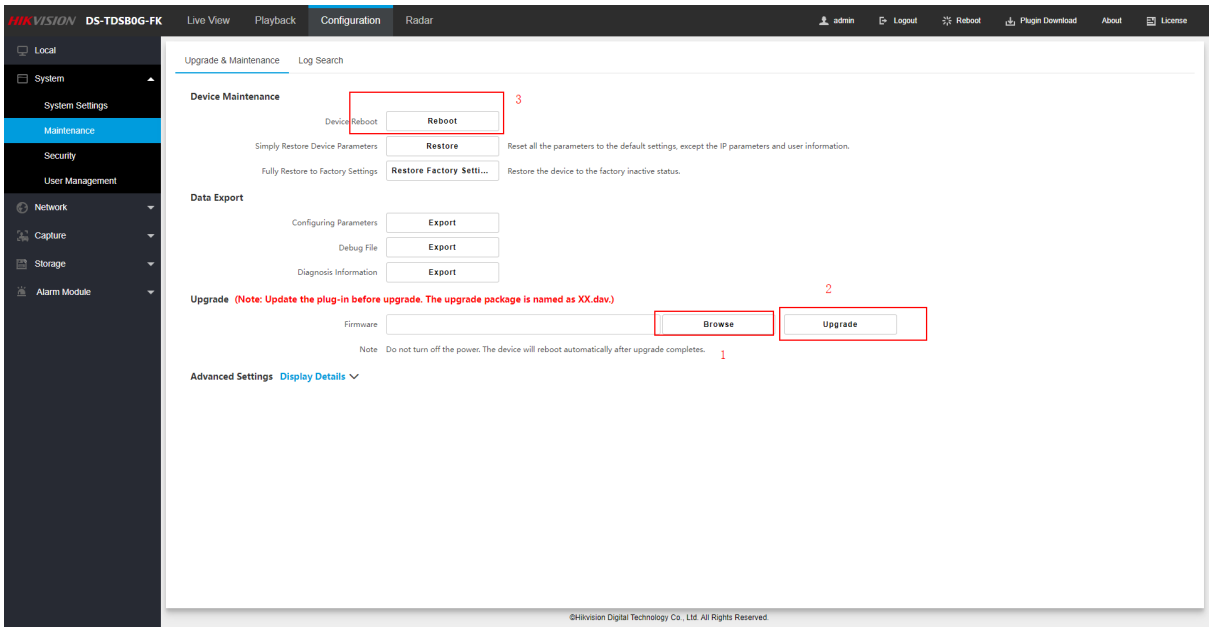


Figure 2-7 Upgrade

2.4 Modifying Time Zone

Steps:

1. Go to **Configuration > System Settings > Time Settings.**
2. Select **Time Zone**.
3. Click **Save**.

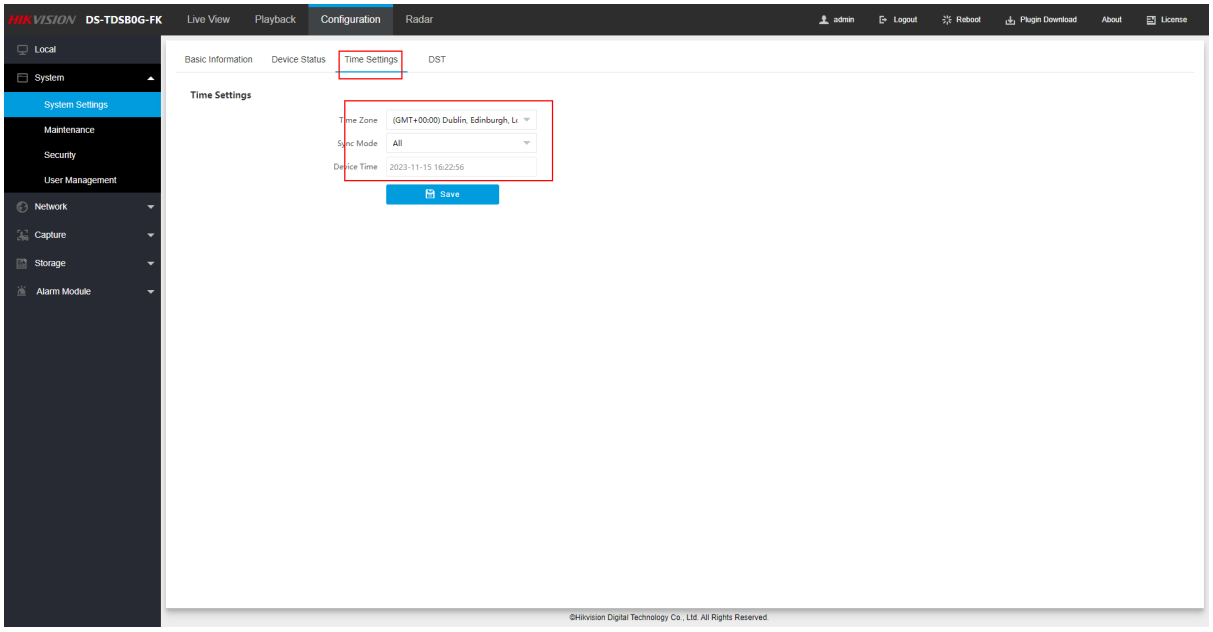
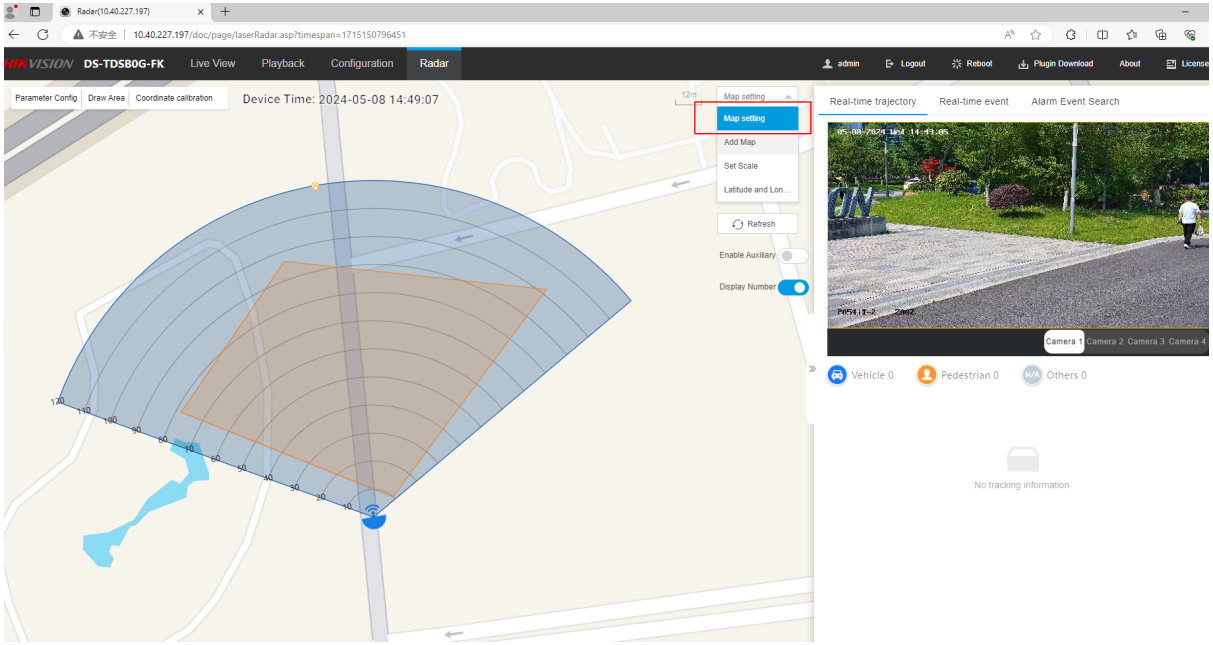


Figure 2-8 Set Time

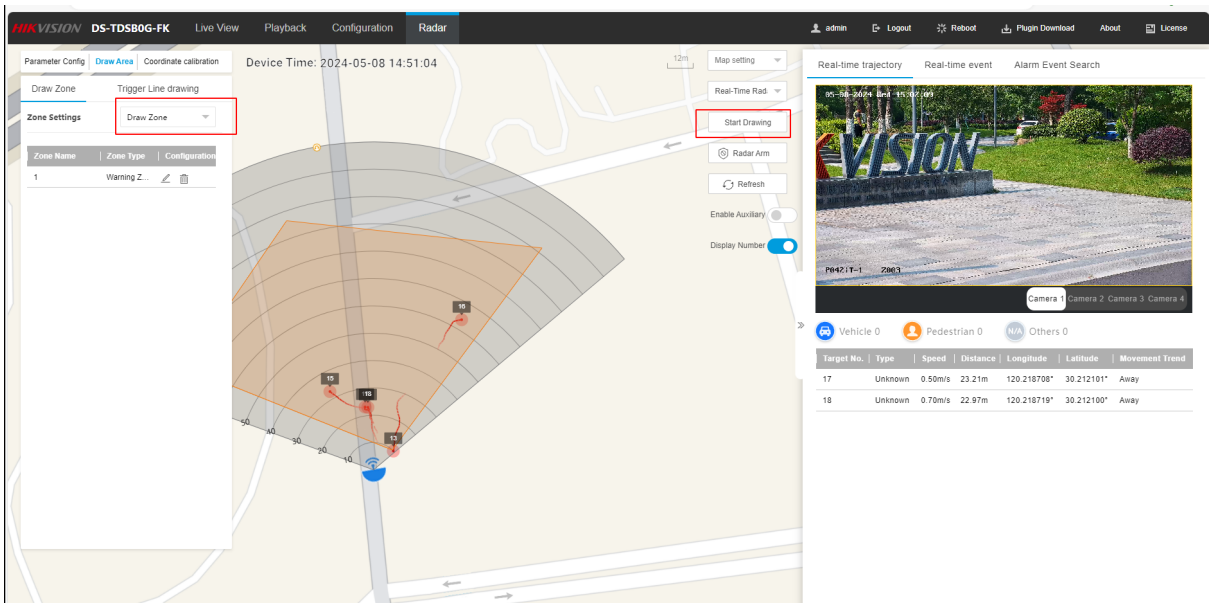
2.5 Set Map

1. Go to Radar > Map Setting
2. Select Add Map to add map
3. Select Edit Scale to calibrate map
4. Click Save



2.6 Draw Detection Area

1. Go to Radar > Start Drawing
2. Select Draw Area > Draw Zone/Trigger Line Drawing > Draw zone.
3. Click Save



2.7 Select Detection Mode

Open area (such as field、plain、playground) :

1. Go to **Radar > Parameter Config >Radar Settings**
2. Select **open Mode**.
3. Click **Save**

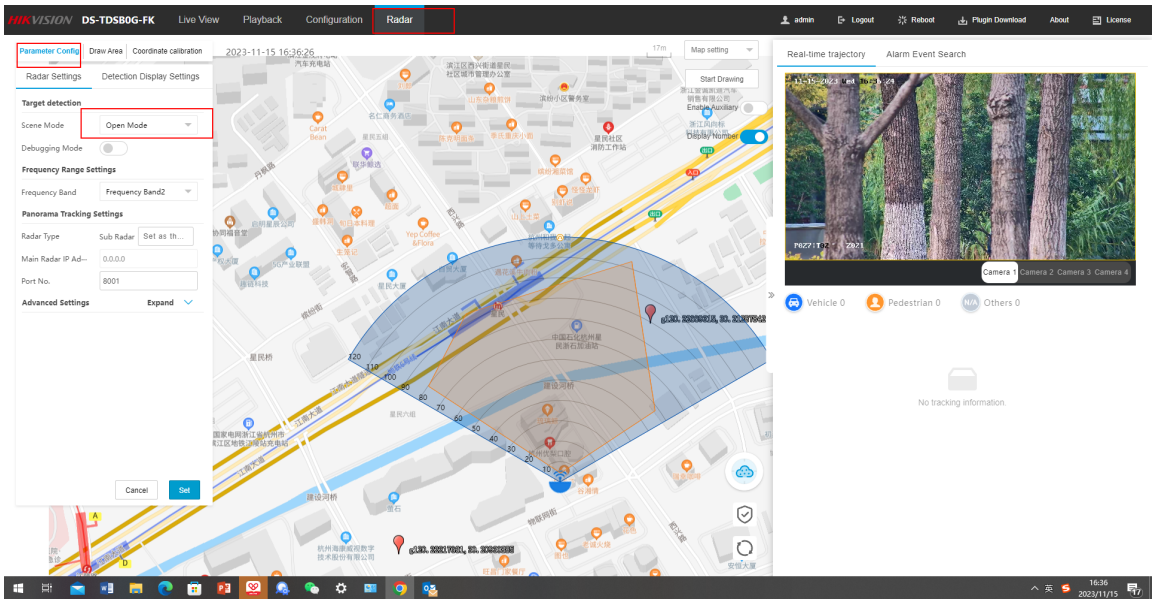


Figure 2-9 Set Open Mode

Shrub area (the shrub height can't be over 0.5m):

Steps:

1. Go to **Radar > Parameter Config >Radar Settings**
2. Select **shurb Mode**.
3. Click **Save**

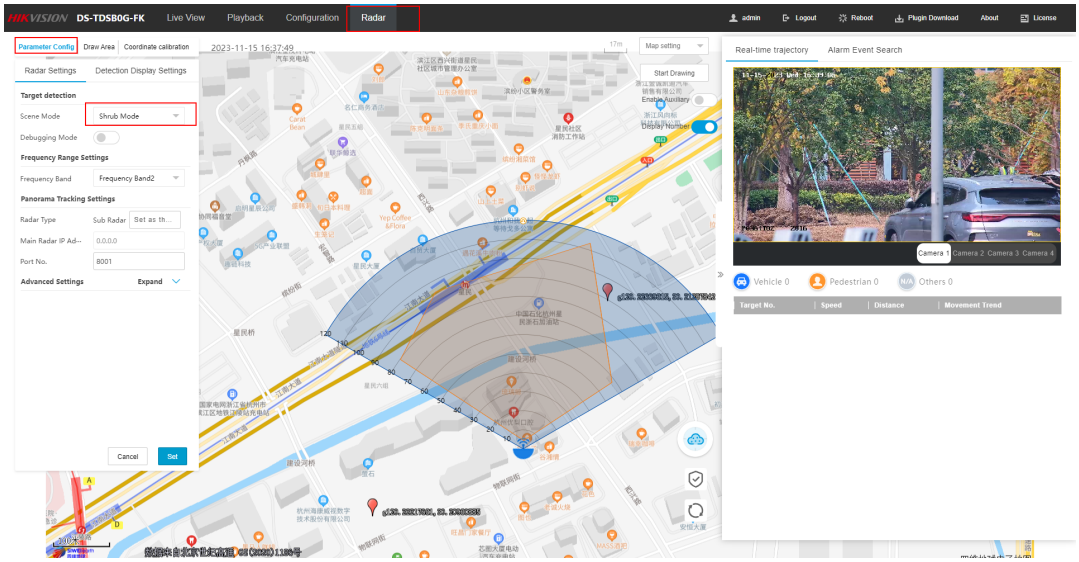


Figure 2-10 Set Shrub mode

Other areas:

1. Go to **Radar > Parameter Config >Radar Settings**
2. Select **expert Mode**.
3. Set **sensitivity** according to the need
4. Click **save**

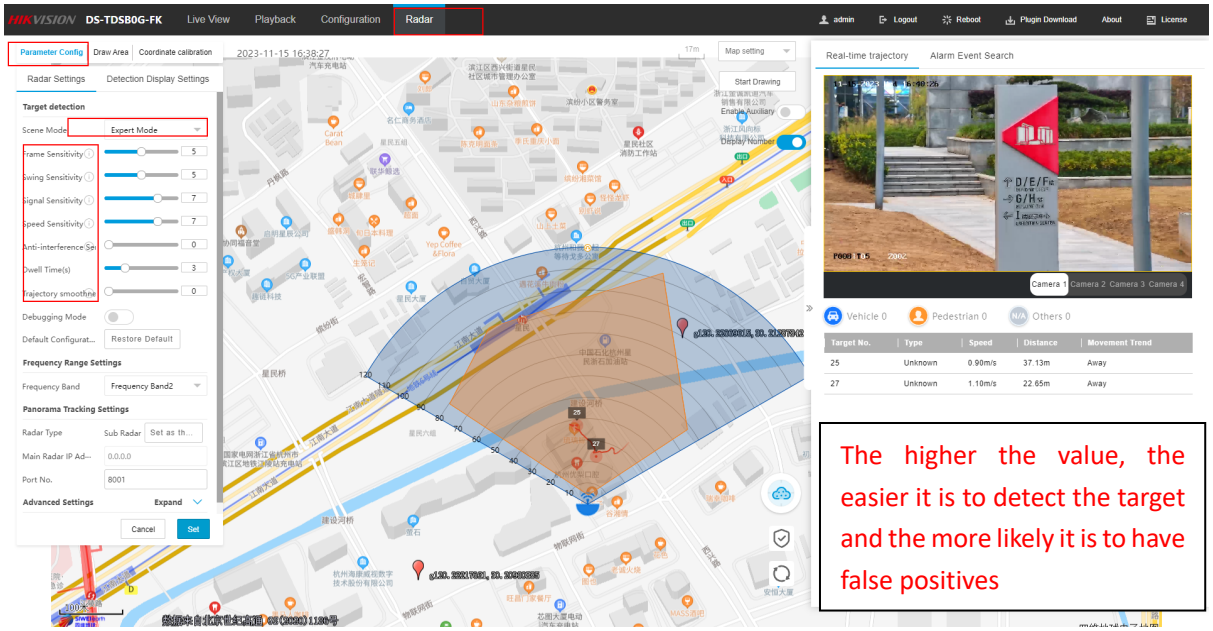


Figure 2-11 Set Expert mode

2.8 Set Direction Angle and Range

Steps:

1. Go to - **Radar→ Direction Display Settings → Direction Angle and Range.**
2. Slide the bar to set the radar angle, radar rotation angle and set the detection range.
3. Click **Save**.

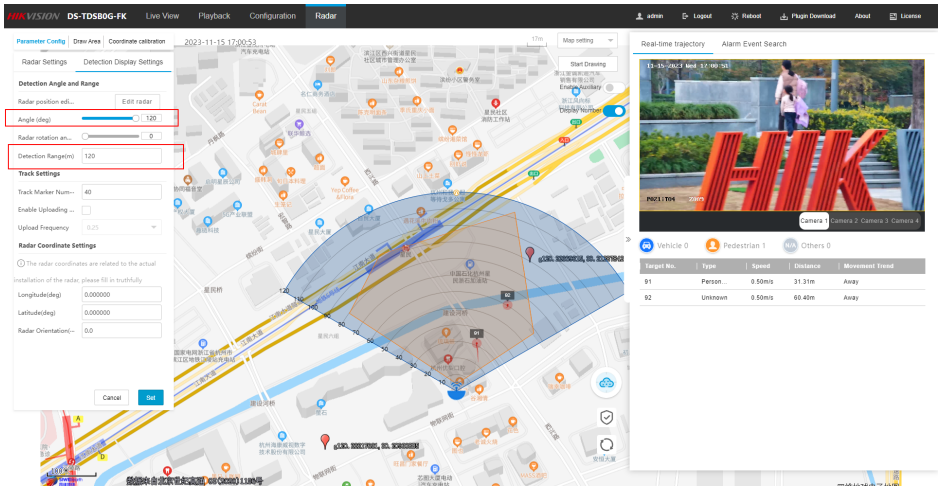


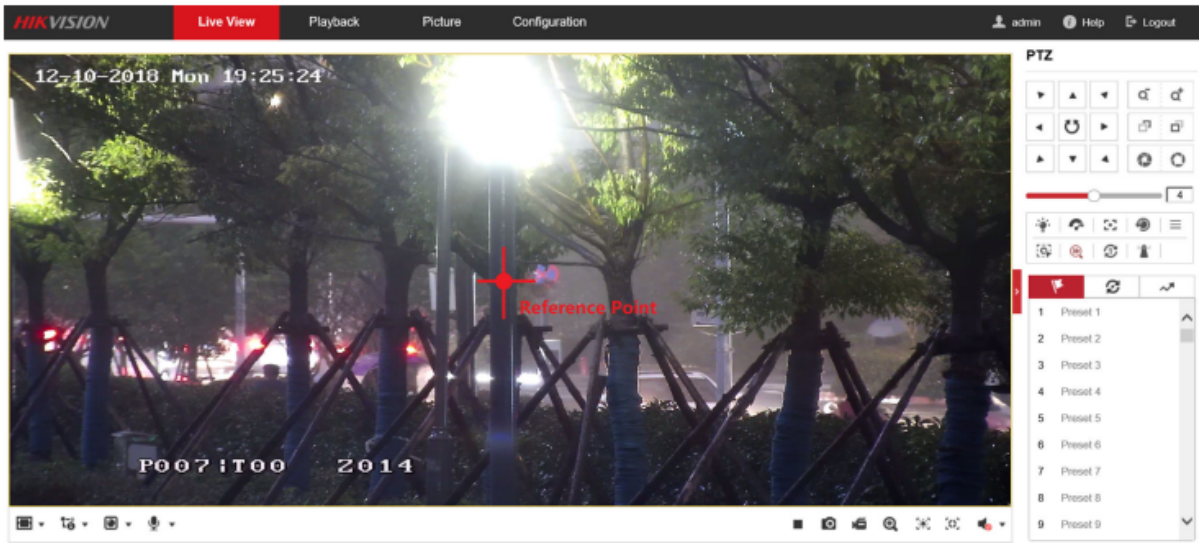
Figure 2-12 Set Angel and Distance

2.9 Calibration

2.9.1 Set PTZ Initial(home) Position

Steps:

1. Select a reference object about 50 m away from PTZ camera. On the reference object, select a reference point whose height is the same as the PTZ.



2. In the camera's web configuration page, click **Configuration → PTZ → Initial Position**. Click **Set** to set the the initial position.

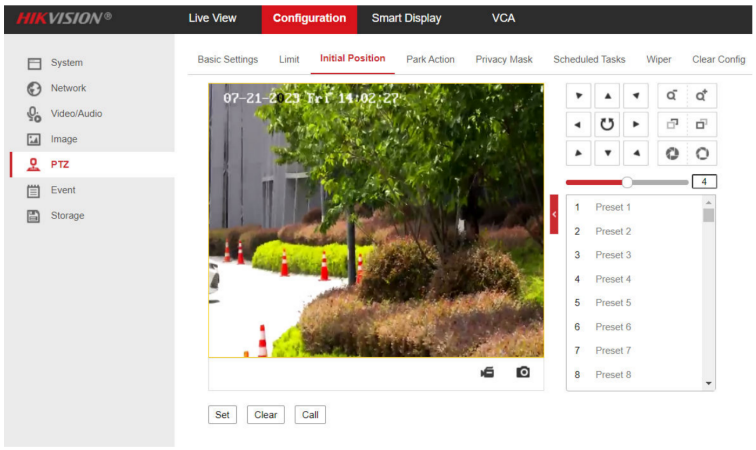


Figure 2-13 Set Initial Position

2.9.2 Link the Camera to the Radar

1. Disarm the radar before link a camera.
2. In the radar's web configuration page, click **Radar → Coordinate Calibration → Link camera→ +Add camera.**
3. Enter the IP address, port 8000, user name, password of the camera, and select whether to link to NVR. To use the NVR for video storage, you can choose to link the NVR and configure the NVR parameters.

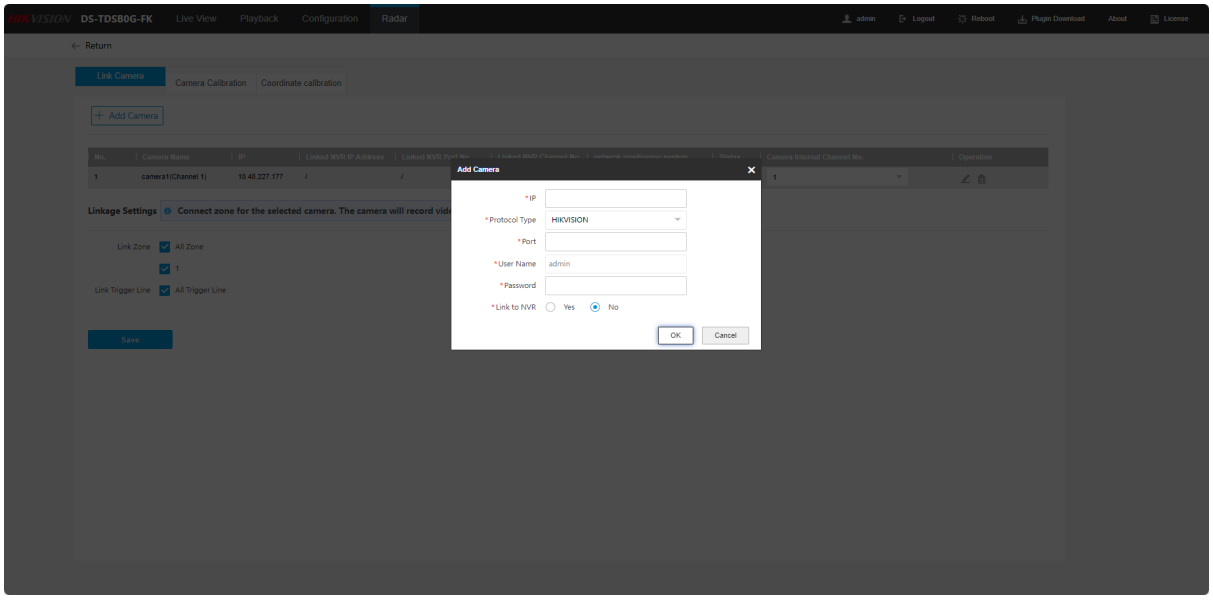


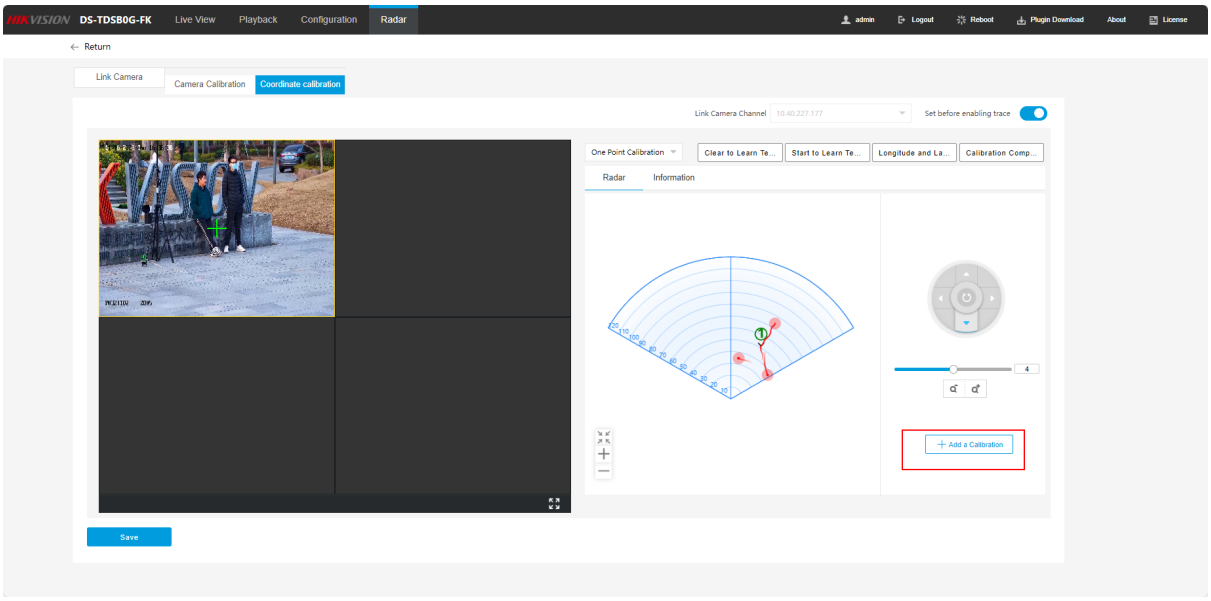
Figure 2-14 Link the camera

2.9.3 Calibrate in Radar

Steps:

1. Go to - **Radar→ Coordinate Calibrate → Coordinate Calibration**
2. Select the target.

3. Move the camera to the target
4. Click **Add calibration point**
5. Click **Save**.



2.9.4 Calibrate in Ivms4200

1. Open the iVMS-4200, add the camera (port 8000) and radar (port 80).

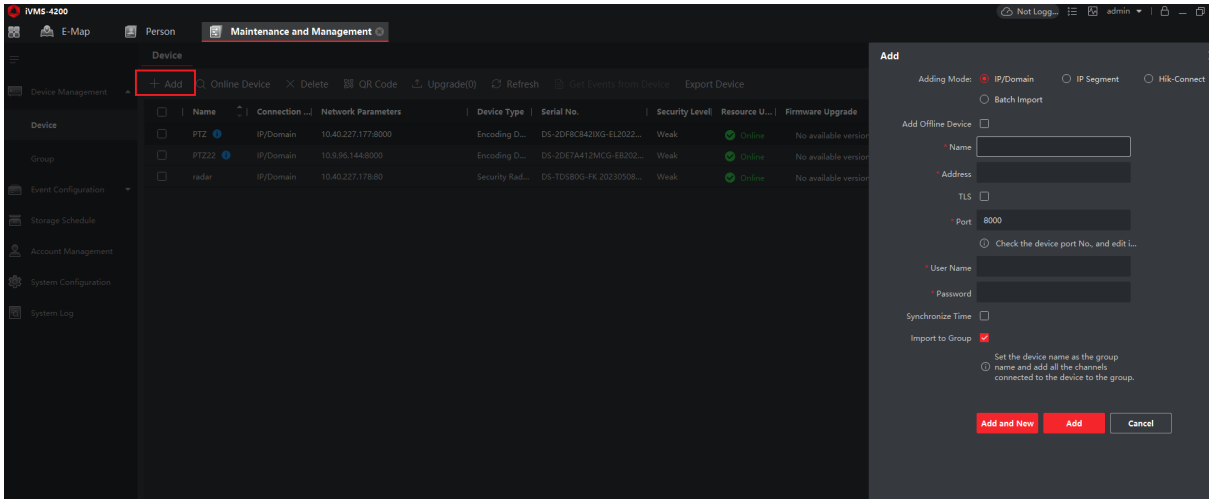


Figure 2-15 Add Device

2. Click **Device Management → Group**. Expand the radar group and select Encoding Channels. Click **Import** to import the camera to the radar group.

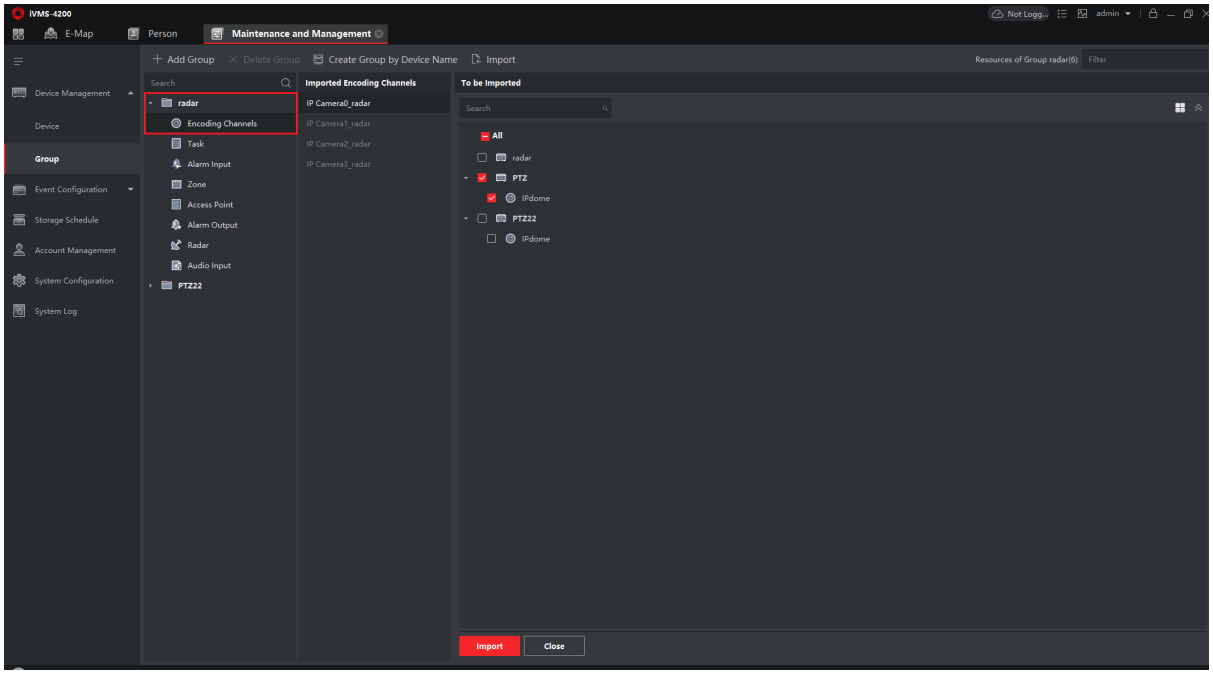


Figure 2-16 Import PTZ

3. Click **E-map** to enter the page, and click **Edit** to enter the Edit mode. Click **Radar Settings → Smart Linkage Settings** to enter the calibration page.

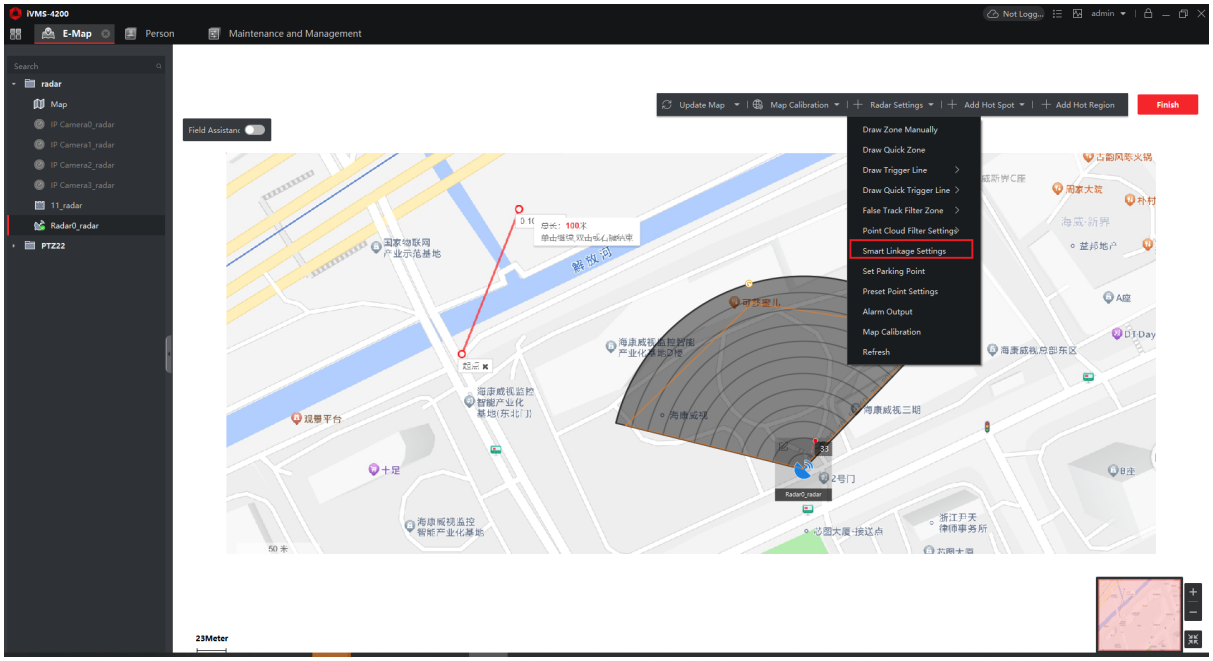


Figure 2-17 Add Map

4. In calibration page, select **One-Point Calibration** as the calibration mode.

5. Select the track of calibration staff: Ask the calibration staff to move into the radar detection area. Compare the moving object in the live view window of the camera and the track in the radar field diagram, the operation staff needs to select the track of the calibration staff and click it. The color of the selected track will change from red to white.

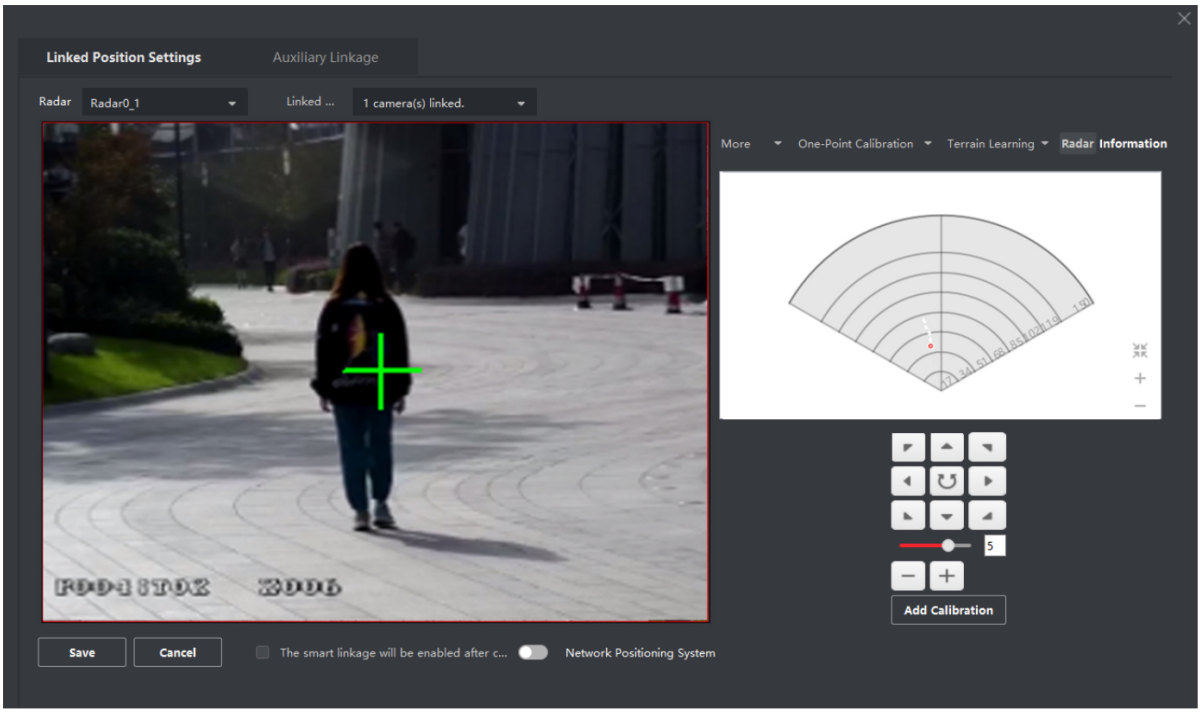


Figure 2-18 Calibration

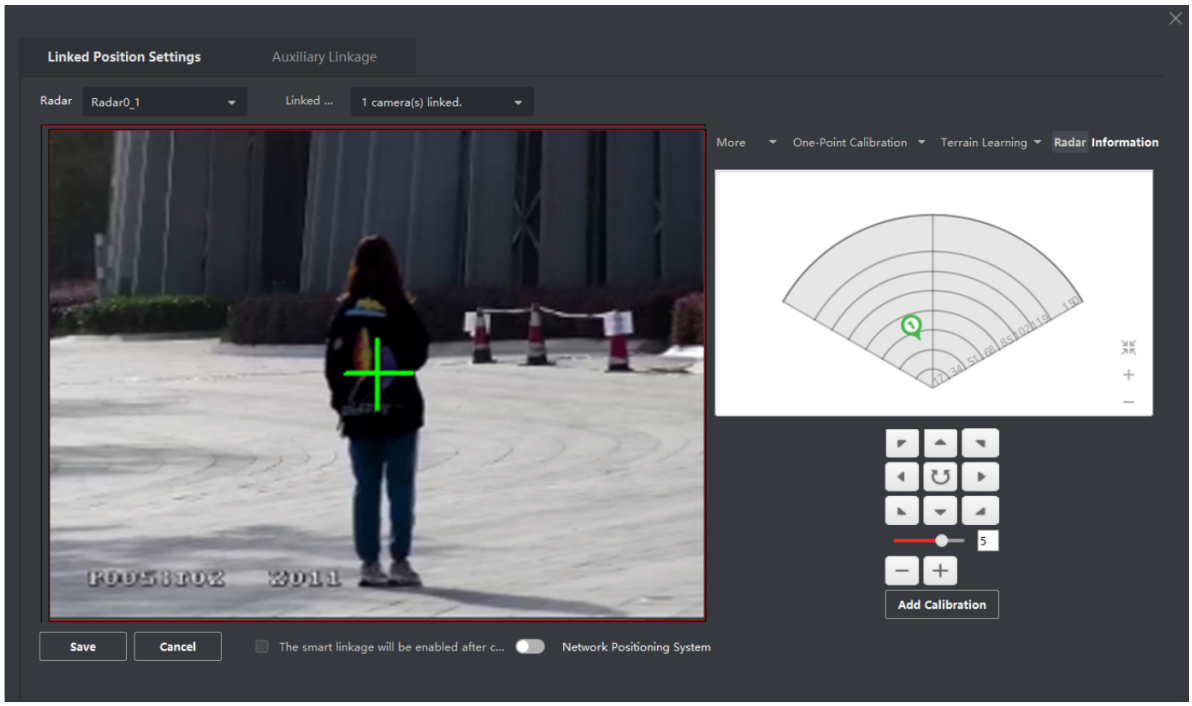
6. Ask the calibration staff to move to the calibration point within 20 to 40 m directly in front of the radar, and then stand at the calibration point.

7. Adjust the PTZ buttons in the live view window to get the PTZ position: Click **+** and **-** to adjust thealtitude of the calibration staff to two-thirds of the altitude the window, and click the direction buttons to align the central sign + with the calibration staff. For precise alignment, click on the center of the object and the screen will adjust automatically.

8. Ask the calibration staff to move to the calibration point within 20 to 40 m directly in front of the radar, and then stand at the calibration point.

9. Click **Add Calibration** to add a calibration point. The PTZ position and the radar calibration of the calibration staff will be shown in the information list. The option **The tracking will be enabled after completing the settings** will be checked automatically.

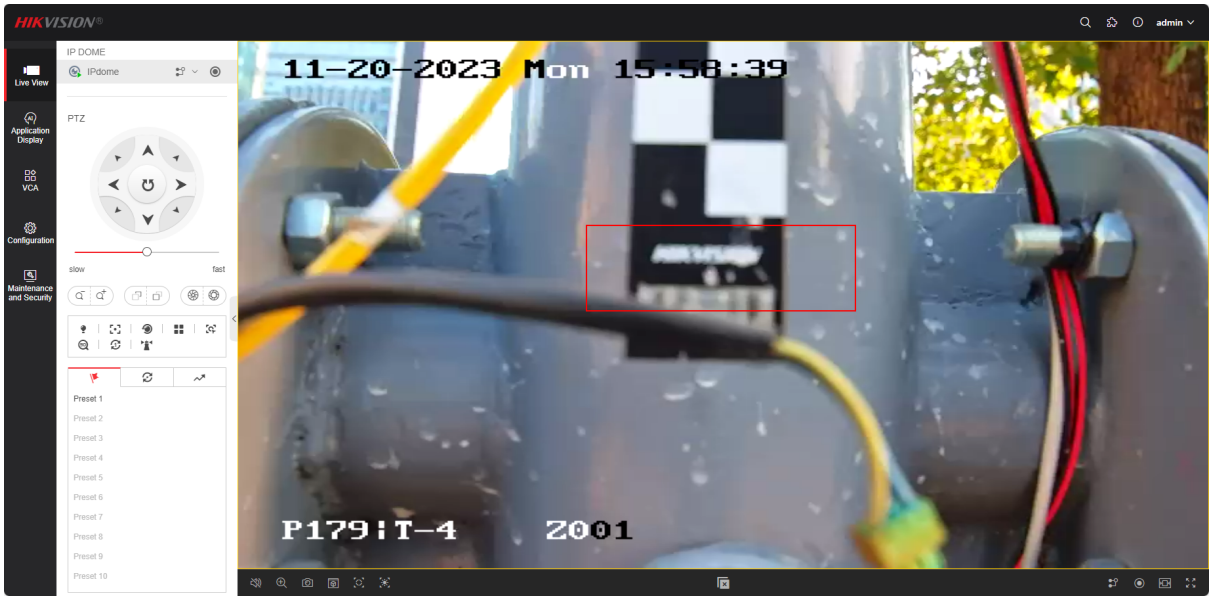
10. Click **Save**.



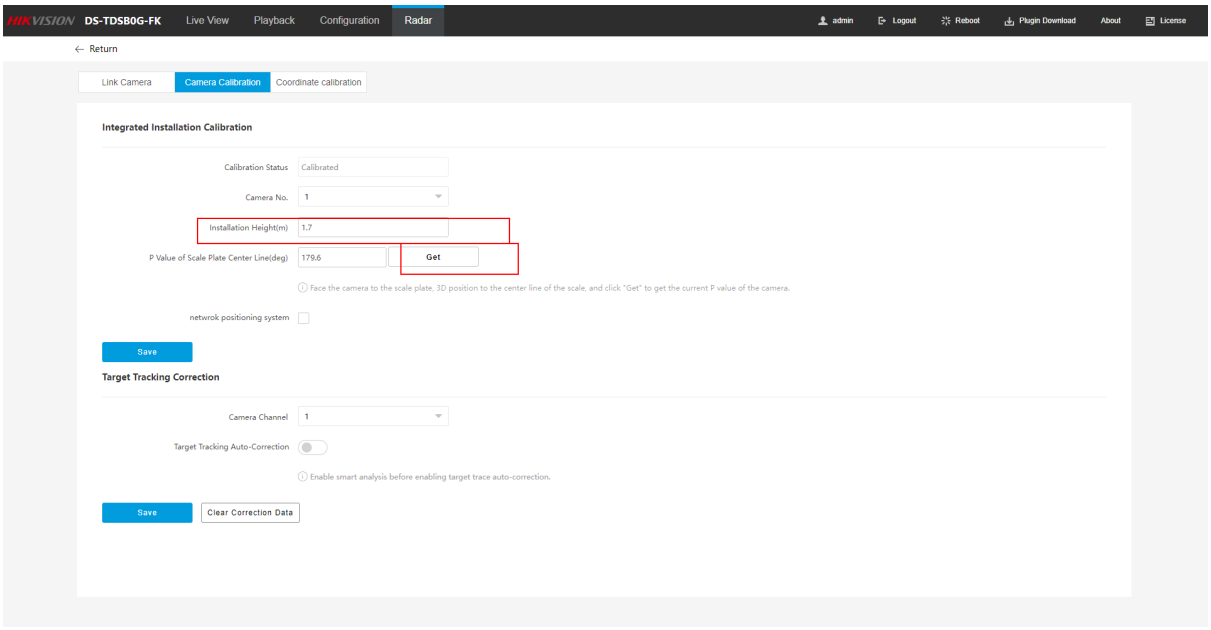
2.9.5 All in one Bracket Calibration

Steps:

1. Go to PTZ,move the PTZ to the yardstick



2. Zoom out and adjust focus to see the “Hikvision” clear enough
3. Go to - **Radar→ Coordinate Calibrate →Camera Calibratio**n
4. Enter the installation height and click **get**



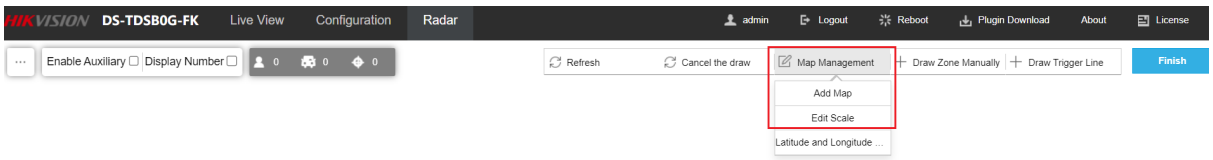
5. Click **Save**

2.10 Arming and Live View

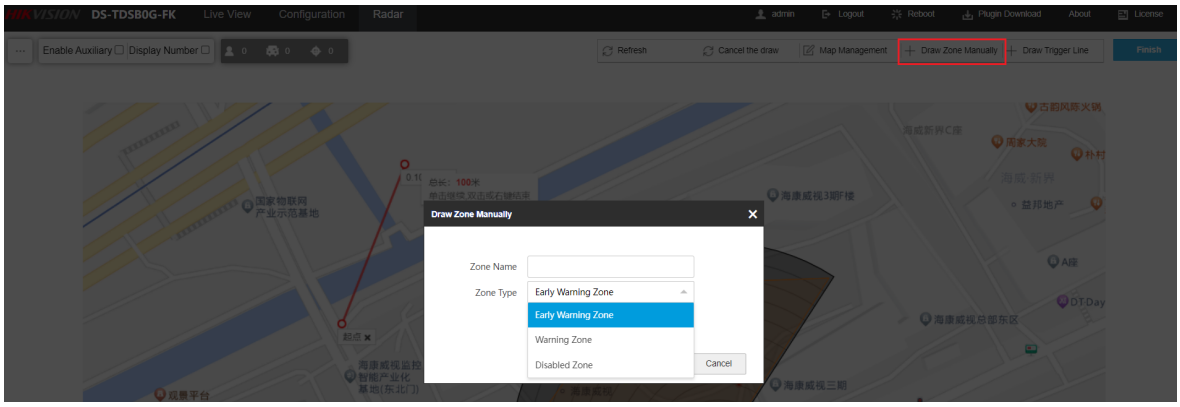
Steps:

1. Go to **Radar → Edit .**

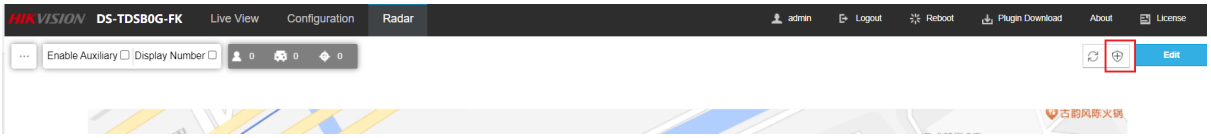
2. Click **Map Management**, **Add Map** and **Edit Scale**.



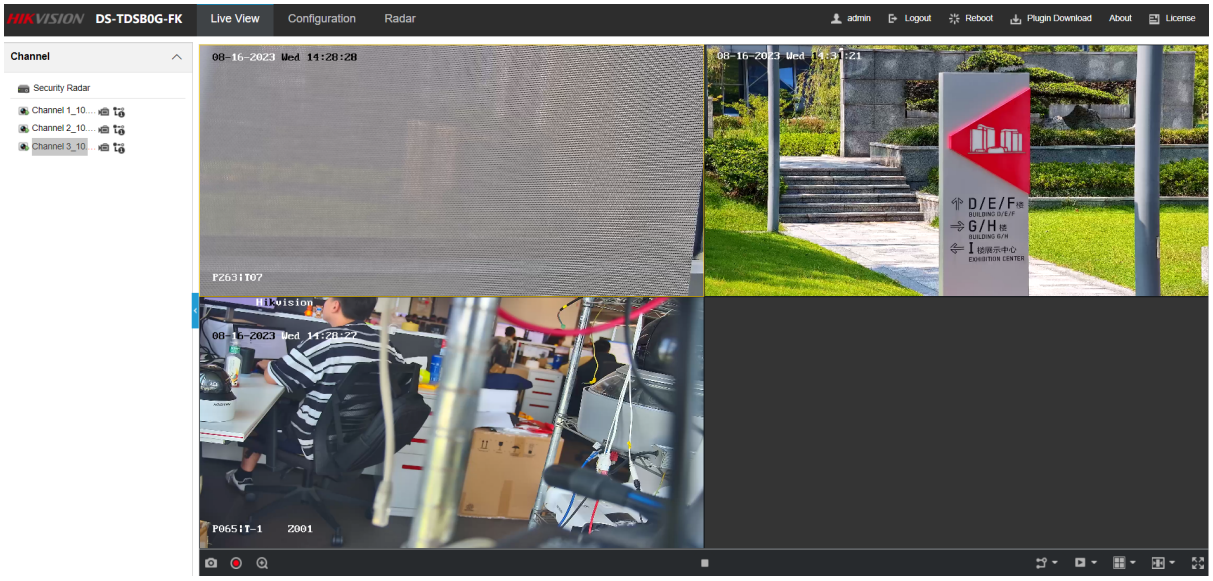
3. Click **Draw Zone Manually,** draw zone and select Zone Type**.** (Generally choose **Warming Zone**)



4. Click **Arm.**



5. Go **Live View**, download the plugin.



FAQ

1. The installation angle of the radar, the corresponding detection distance, is this distance the farthest distance ahead, or the farthest distance on the left and right sides?

The recommended installation height is 2.5m (60&120m radar), 3m (500m radar), 5m (1km radar), 10m (2km radar). The radar detection range is a sector, and the detection distance is the radius of the sector

Device type	Frequency band	Installation height	Detection angle	Detection range&Target numbers	Defend	Installation angle
DS-TDSB0G-FC/2km	C-band 5.4~5.6GHz	8-10m best 10m	Horizontal: 90° Vertical: 18°	human: 1.8Km vehicle: 3Km Up to 32	IP67、IK10 NEMA4X	Elevation 4
DS-TDSB0G-FX/1km	X-band 9.6~9.9GHz	3-6m best 5m	Horizontal: 90° Vertical: 30°	human: 1Km vehicle: 2Km Up to 32	IP67、IK10 NEMA4X	0
DS-TDSB0G-FK/500m	K-band 24~24.25GHz	3-6m best 3m	Horizontal: 100° Vertical: 30°	human: 500m vehicle: 1Km Up to 32	IP67、IK10 NEMA4X	0
DS-TDSB0G-FK/120m	K-band 24~24.25GHz	2-4m best 2.5m	Horizontal: 120° Vertical: 30°	human: 120m vehicle: 200m Up to 32	IP67、IK10 NEMA4X	0
DS-TDSB0G-FK/60m	K-band 24~24.25GHz	2-4m best 2.5m	Horizontal: 120° Vertical: 30°	human: 60m vehicle: 120m Up to 32	IP67、IK10 NEMA4X	0

2. A specific area detected by radar, what is the range of detection, horizontal, vertical. What kind of three-dimensional shape is it.

The E-map is displayed as a sector with a radius of the radar detection distance

3. If the detected area has hillsides and downhills, how will this affect the environment.

The radar has terrain learning, but the slope should not be so large that it completely obscures the target

4. Requirements for the site environment, if there are trees ahead, how will the poles have an impact. What does the filtering of animals ？

Tree poles cannot obscure the target, otherwise the target will not be detected and cannot be too close to the radar.

5. Internal Compatibility Explained: HCP? 4200? Web?

Ivms4200,HCP2.5

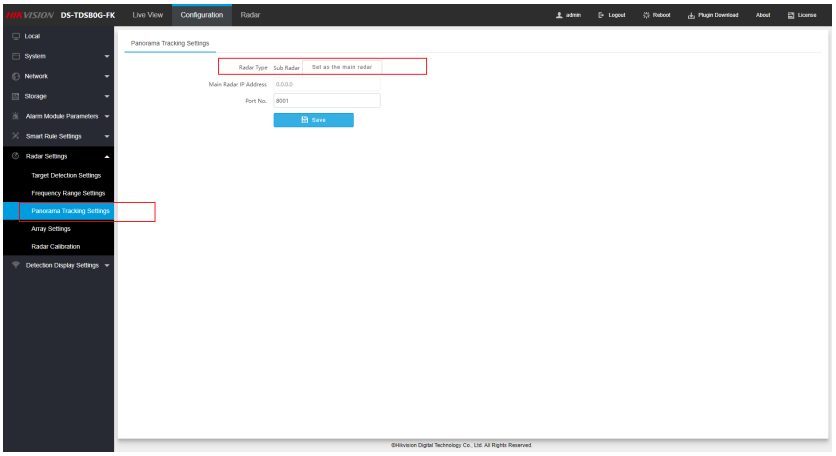
6. If there are several radars the detection range of several radars should have a place to cross, will it affect

The radar detection range cannot be crossed, which will cause interference,if can't avoid,need to select different band for radars.

7.What if 1 radars connect to several cameras or 1 camera connect to several radar？

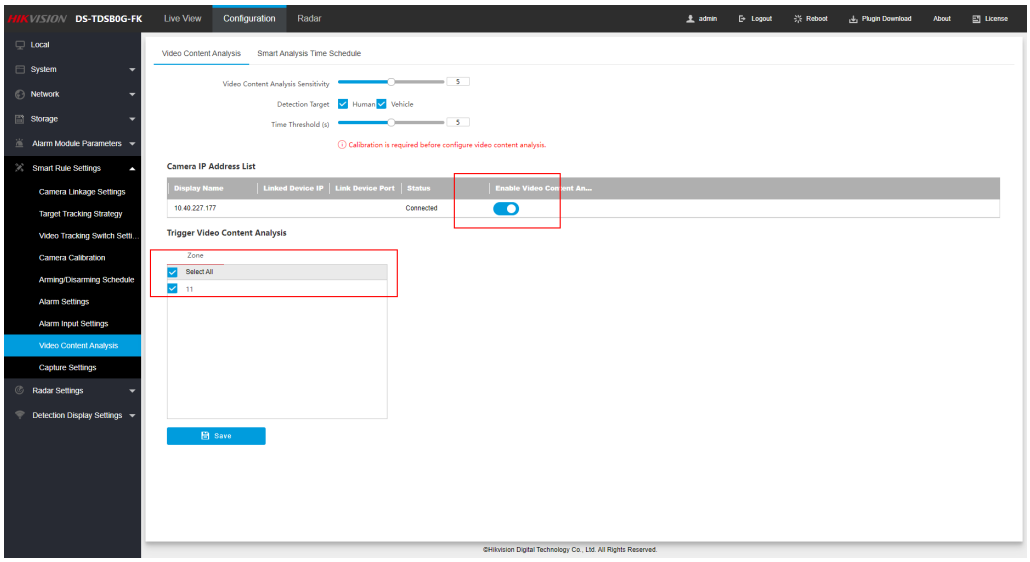
If 1 radar connect to several cameras you need to add all cameras in radar and in ivms4200,then calibrate them all with the radar.

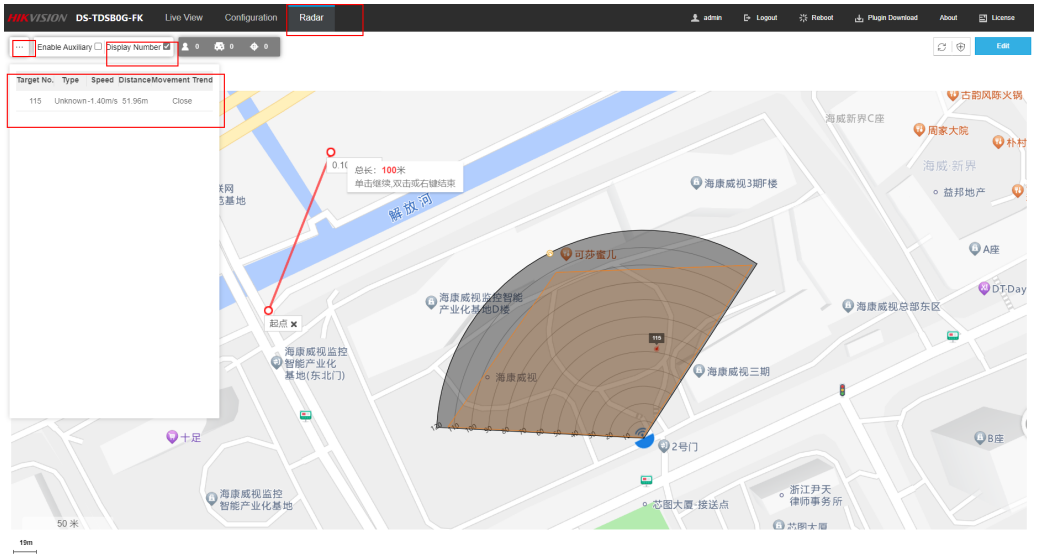
If 1 camera connect with several radars you need to configure 1 main radar and others select as servant radar,then calibrate all the radars with the camera.



8. What is the function of the smart video analyse? Does it accurate?

Intelligent video analysis only supports human-vehicle differentiation, and only the first video stream supports this function, The accuracy rate is about 70%-80%, and unrecognized targets are displayed as unknown.



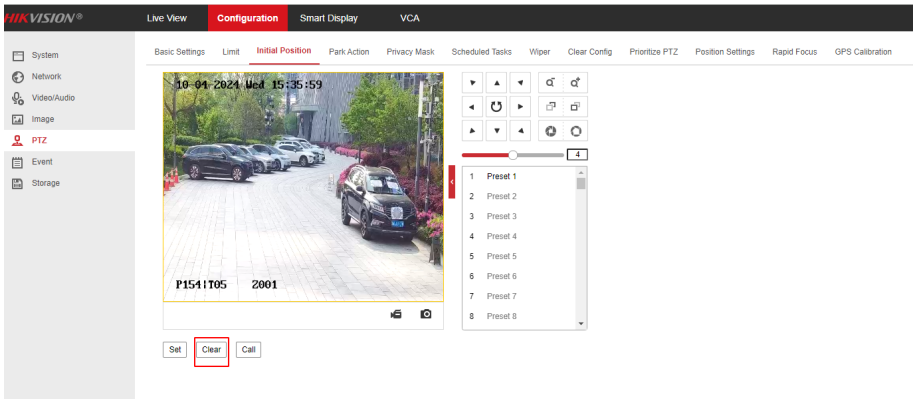


8. PTZ camera compatibility list

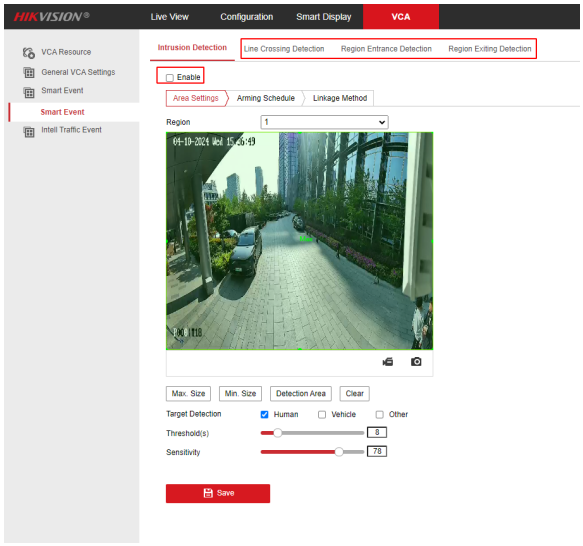
Radar Type	PTZ Device	Thermal device
DS-TDSB0G-FK/60m	DS-2DY5225IX-AE DS-2DE7AxxxIW-AEB (xxx:225/232/425/432/825) DS-2SE7CxxxMWG-EB/24(26) (xxx:425/432) DS-2DF8xxxIXG (xxx:225/242/442) DS-2DF8AxxxIXG (xxx:442/842)	DS-2TD4137-25/W(Y)(B) DS-2TD4167-25/W(Y)(B)
DS-TDSB0G-FK/120m	DS-2DE7AxxxIW-AEB(xxx:225/232/425/432/825) DS-2SE7CxxxMWG-EB/24(26) (xxx:425/432) DS-2DF8xxxIXG (xxx:242/442) DS-2DF8AxxxIXG (xxx:442/842) DS-2DF8CxxxIXG (xxx:442/842) DS-2SF8CxxxMXG-EL(W)/XXX DS-2DY7236IX-A	DS-2TD4137-25/W(Y)(B) DS-2TD4167-25/W(Y)(B)
DS-TDSB0G-FK/500m	DS-2DF8xxxIXG (xxx:242/442) DS-2DF8242I5XG-ELW DS-2DF8AxxxIXG (xxx:442/842) DS-2DF8CxxxIXG (xxx:442/842) DS-2SF8CxxxMXG-EL(W)/XXX DS-2DF8C260I5XG-ELW DS-2DF9CxxxLXG-LW (xxx:453/848) DS-2DY9240IXS-A	DS-2TD6267-75C4L/W(Y) DS-2TD6267-100C4L/W(Y)
DS-TDSB0G-FX/1km	DS-2DY9250IAX-A	DS-2TD8167-150ZE2F/W DS-2TD8167-150ZC4F/W
DS-TDSB0G-FX/2km	DS-2DYH2A0IXS-D	DS-2TD95C8-300ZK2FL/W

9.When calibrate with DS-2SF8C442MXG-ELW/26 or similar model,first upgrade Radar to this firmware https://drive.ticklink.com/hcs/controller/hik-manage/fileDownload?link=MHa5zVXy& exact code:usf4， then follow the steps below:

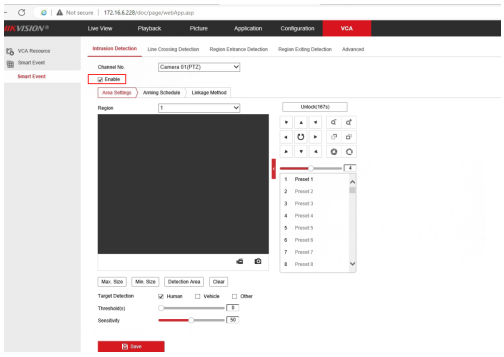
Step 1:Clear the initial point of camera



Step 2： Disable all smart event



Step 3： Enable instruction Detection：



Step 4： Calibration

10.Relationship between installation height、drop angle and blind zone.

TDS-B0G-FK(120m/60m) :

Installation Height / Drop Angle	2m	3m	4m
-3	Blind zone:12m Detection Range:118m	Blind zone:19m Detection Range:114m	Blind zone:25m Detection Range:109m
0	Blind zone:9m Detection Range:120m	Blind zone:14m Detection Range:120m	Blind zone:19m Detection Range:120m
3	Blind zone:7m Detection Range:120m	Blind zone:11m Detection Range:120m	Blind zone:15m Detection Range:120m
6	Blind zone:6m Detection Range:108m	Blind zone:9m Detection Range:112m	Blind zone:12m Detection Range:117m

TDS-B0G-FK(500m) :

Installation Height / Drop Angle	3m	4m	5m
-3	Blind zone:20m Detection Range:500m	Blind zone:27m Detection Range:492m	Blind zone:34m Detection Range:489m
0	Blind zone:15m Detection Range:500m	Blind zone:20m Detection Range:500m	Blind zone:25m Detection Range:500m
3	Blind zone:11m Detection Range:500m	Blind zone:15m Detection Range:500m	Blind zone:19m Detection Range:500m
6	Blind zone:9m Detection Range:393m	Blind zone:12m Detection Range:403m	Blind zone:15m Detection Range:409m

TDS-B0G-FX(1Km)：

Installation Height / Drop Angle	5m	6m	7m
-3	Blind zone:34m Detection Range:1000m	Blind zone:41m Detection Range:1000m	Blind zone:48m Detection Range:993m
0	Blind zone:25m Detection Range:1000m	Blind zone:31m Detection Range:1000m	Blind zone:36m Detection Range:1000m
3	Blind zone:19m Detection Range:1000m	Blind zone:23m Detection Range:1000m	Blind zone:27m Detection Range:1000m
6	Blind zone:15m Detection Range:486m	Blind zone:18m Detection Range:486m	Blind zone:21m Detection Range:797m

TDS-B0G-FC(2Km)：

Installation Height / Drop Angle	5m	10m	20m
-4	Blind zone:100m	Blind zone:100m	Blind zone:100m