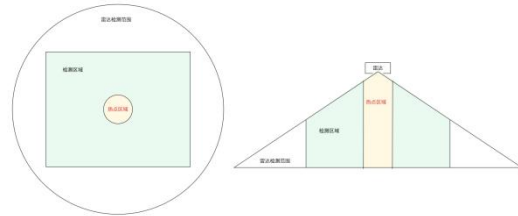
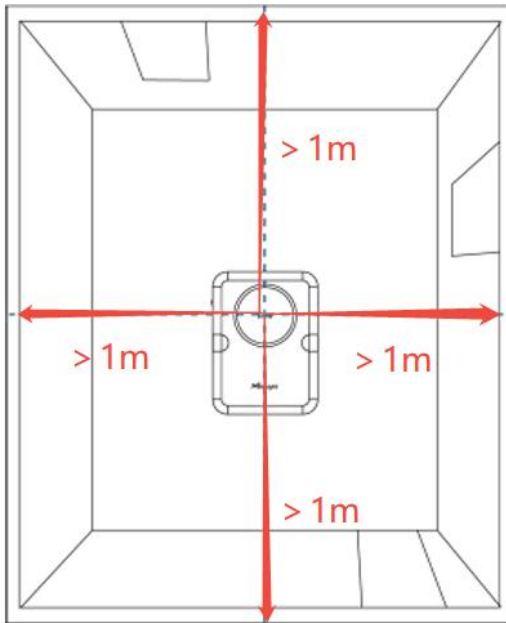


VS373 Installation and Setup Recommendations

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1. Installation Location Selection



Installation Height	2.3–3 m
Space Requirements	It is recommended to use the device in a space larger than 2 m × 2 m. If either the length or width is less than 2 meters, detection performance may be affected.
Location Selection:	- Install the device as close to the center of the detection area as possible, and keep it more than 1 meter away from any wall. - The radar should be installed horizontally. Use a level tool to ensure the device is not tilted. - Avoid any obstacles within a 50 cm radius around and directly below the radar. Examples of obstacles include: • Metal structures (such as floor lamps, scaffolding, etc.) • Large wardrobes • Chandeliers, ceiling fans

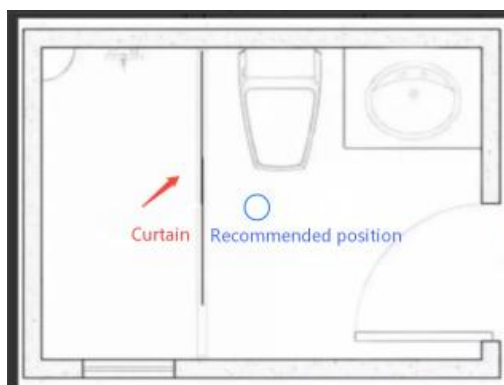
	• Toilets, bathtubs, buckets/basins filled with water Prohibited Installation Locations: - Near air conditioner outlets - On sloped ceilings - On ceilings that are subject to vibration (e.g., with built-in air conditioning fans or exhaust fans) - Next to high-temperature sources (such as heaters, incandescent lamps, or bathroom heaters)
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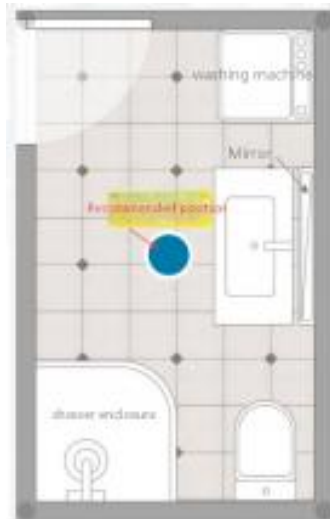
Special Scene Precautions:

- All zones configured for the radar (**bed, ignore, door, custom**) are **fixed areas** with a permanent layout once set. If the scene layout is adjusted later, parameters must be manually updated again to guarantee accurate radar detection.
- If the scene contains movable furniture **for lying down** such as beds, sofas and recliners, mark these areas as bed zones. Before detection, **move such movable furniture back to their fixed positions to avoid false or missing alarms**. Position stickers may be used to mark positions for easy resetting.

Bathroom Example:

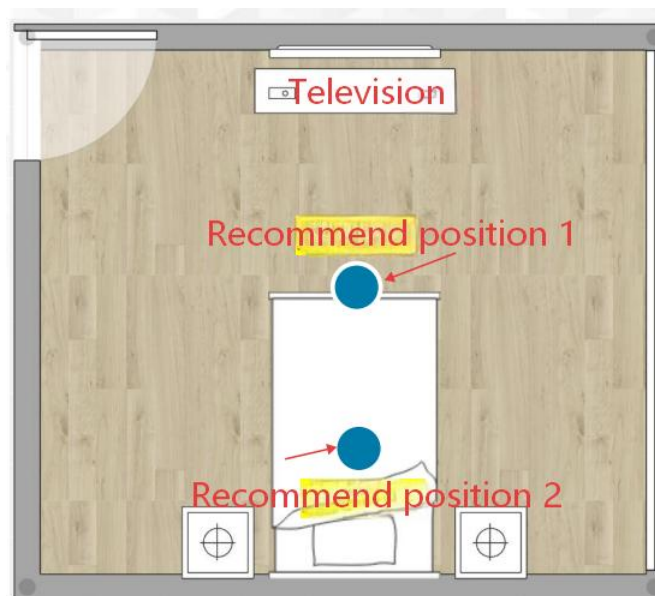
- Install the device as close to the center of the room as possible. If there is a glass door for wet/dry separation, ensure the device is at least 50 cm away from the door and does not cover the area inside the glass door.
- Avoid installing the device above exhaust fans, bathroom heaters, ceiling lights, and directly above toilets.





Bedroom Example:

- It is recommended to install the device in the center of the room or directly above the bed, ensuring that it is at least 1 meter away from all walls.
- Avoid installing the device above chandeliers or ceiling fans, and try to ensure that standing fans are not positioned directly below the radar.



2. Install VS373

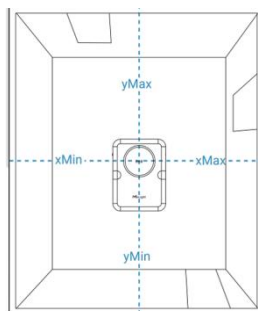
After choosing the installation location, please refer to the quick installation manual to install and connect the power to the equipment.

Quick installation link: <https://www.milesight.com/docs/en/vs373/quick-start-guide.html>

3. Check the Suitability of the Installation Location and Environment

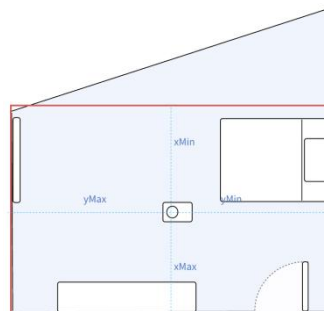
➤ Set the Room Length, Width, and Height

Use a distance meter or a measuring tape to measure the distance from the radar to each of the four walls. Ensure the measurements are accurate and do not rely on visual estimation.



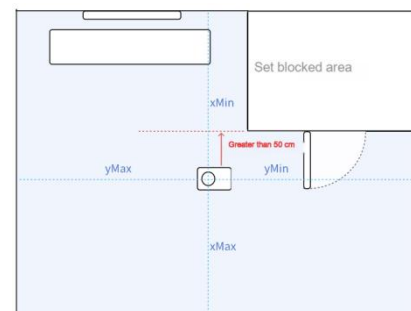
Regular Area

Fill in the parameters according to the device orientation.



Irregular Area

Identify the largest rectangle and enter its relevant parameters based on the device orientation.

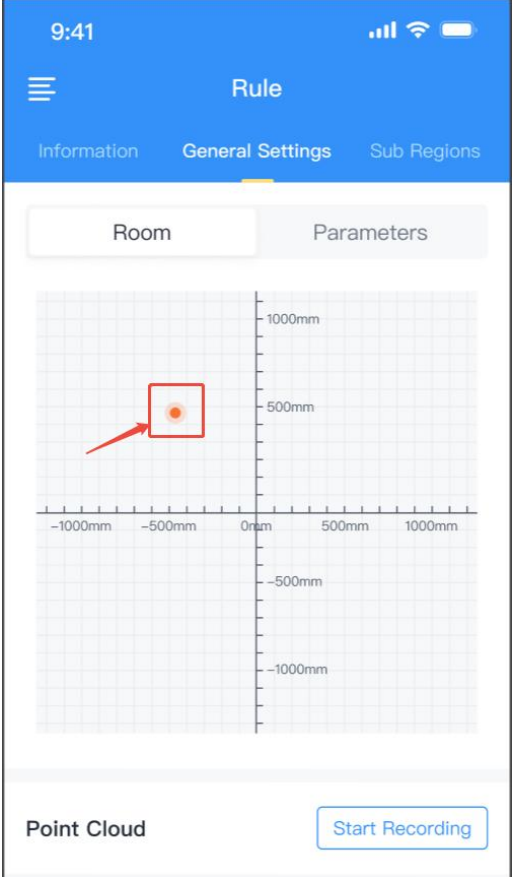


Special Scenario Reference

Identify the outermost rectangle and enter its relevant parameters according to the device orientation. Set a shielded area for regions outside the room to prevent data interference.

➤ Confirm environmental impact

Leave the radar detection area so that the room is unoccupied. Check the radar canvas interface. As shown below:

 Normal situation When there is no one in the room area, the canvas is clear with no target points. The room status is "Vacant."	 Abnormal situation When there is no one in the room area, but one or more target points appear on the canvas, it indicates that the vacant room is being abnormally occupied. The room status will display as "Normal," indicating that the room is considered occupied.
---	---

You can also utilize the Point Cloud function to continuously record for 3 to 5 minutes without anyone inside. And download this file and import it into the radar-point-cloud tool. The radar point cloud tool will indicate whether the environment has passed the test. The tool link is as follows:

[https://resource.milesight-
iot.com/Support/Van/%E8%BD%AF%E4%BB%B6/radar-point-cloud-2.1.exe](https://resource.milesight-iot.com/Support/Van/%E8%BD%AF%E4%BB%B6/radar-point-cloud-2.1.exe)

Normal point cloud	In a normal environment, when the room is unoccupied: the point cloud has few points, with only occasional flickering points, and no clustering occurs.	https://ursalink-resource-center.oss-us-west-1.aliyuncs.com/Support/Lami/VS373video/normal-point-cloud.mp4
Abnormal small clustered point clouds	(using a 1.8m × 2.3m single-sided narrow space as an example) Abnormal analysis example: Multiple small clusters of point clouds appear, with a low number of points and energy below 100. The positions are fixed, and these clusters appear consistently and regularly. No targets are shown on the canvas. Troubleshooting conclusion: This basically does not affect any detection functions. Since the detection space is smaller than 2m × 2m and cannot be further adjusted, occasional false detections may occur, but the probability is low.	https://ursalink-resource-center.oss-us-west-1.aliyuncs.com/Support/Lami/VS373video/Abnormally%20small%20point%20cloud%20clusters.mp4

**Abnormal
large clustered
point clouds**



(example: distance to mirror less than 50cm)

Abnormal analysis example:

A large number of clustered point clouds appear, with high density and significant energy. Targets are displayed on the canvas.

Troubleshooting conclusion:

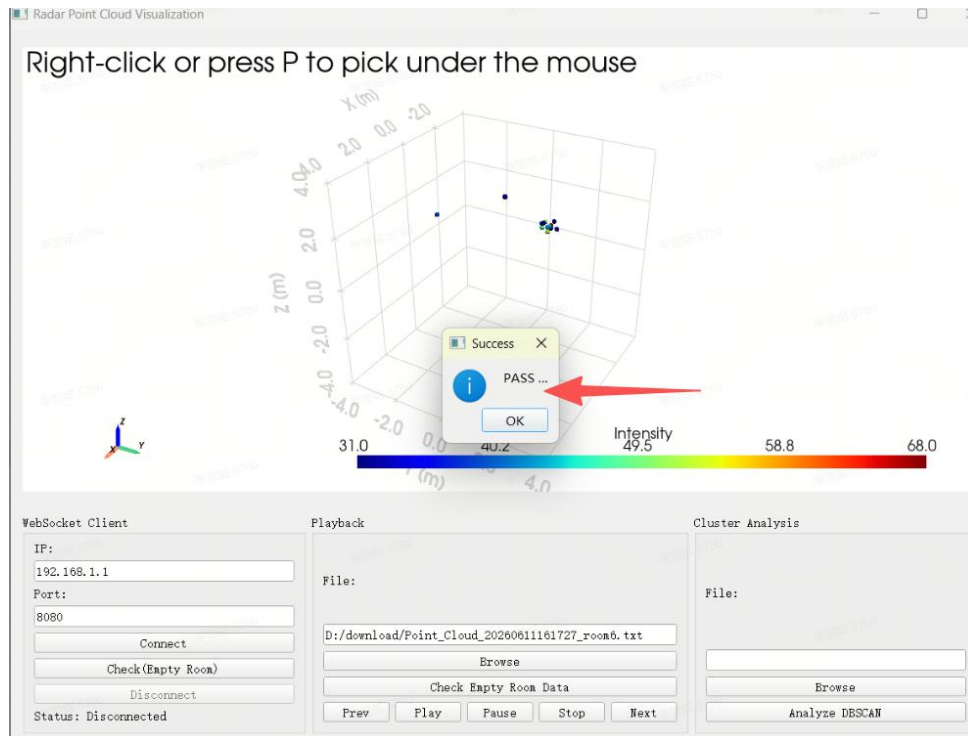
All detection functions will be affected. After comparing the installation environment, it is confirmed that the radar is positioned too close to the mirror and wall. It is recommended to reinstall the device further away from the mirror and then check the point cloud.

<https://ursalink-resource-center.oss-us-west-1.aliyuncs.com/Support/Lami/VS373video/Abnormaly%20large%20cluster%20of%20point%20clouds.mp4>

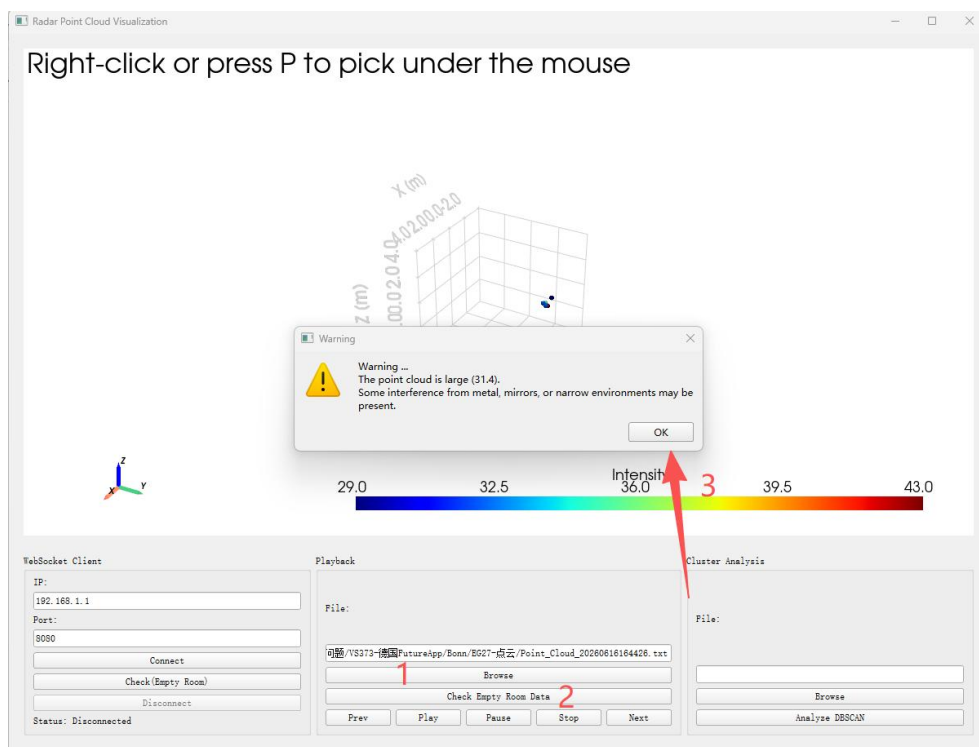
The tool also provides a quick environment verification feature.

You can use the "Check" function to rapidly verify the point cloud. If an alarm is triggered, it indicates an environmental issue.

Environment normal:



The position of the interference source of the indicated coordinates needs to be checked:



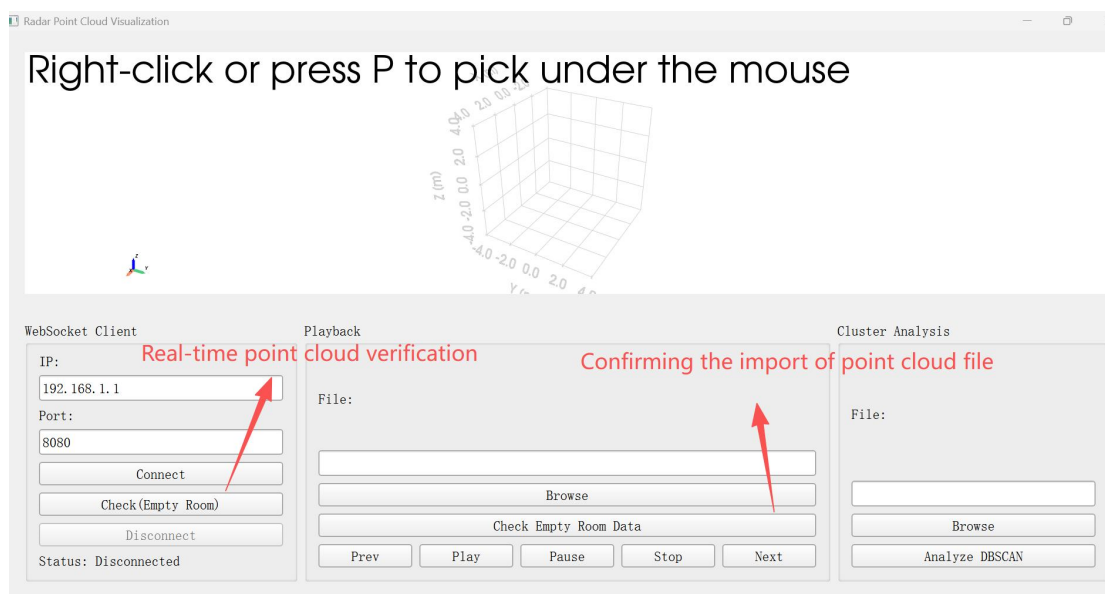
➤ Example Situation and Actions

Quick Environment Verification Tool Download Link:

<https://resource.milesight-iot.com/Support/Van/%E8%BD%AF%E4%BB%B6/radar-point-cloud-2.1.exe>

The tool's **Check** function can be used for rapid point cloud verification. If an alarm is triggered, it indicates an abnormal environmental condition.

Please note: The current version of the tool can only perform environment verification for approximately 5 seconds and cannot accurately determine the specific impact.



Optimal Situation:

No abnormal points appear on the canvas, and the tool shows no point clouds or only a few occasional points. The number of point clouds is low, not clustered, and the energy is low.

Abnormal Situation 1:

No abnormal points appear on the canvas, but the tool shows small clusters of abnormal point clouds, with most point cloud intensities below 100.

This generally does not affect any detection functions, but it is still recommended to adjust the environment to eliminate all potential influencing factors.

Abnormal Situation 2:

Abnormal points appear on the canvas, and the tool shows small clusters of abnormal point clouds, with most point cloud intensities below 100.

This does not affect fall or long-term lying detection, but it may impact occupancy, dwelling, immobility, and bed-leaving detection.

Abnormal Situation 3:

Abnormal points appear on the canvas, and the tool shows small clusters of abnormal point clouds with relatively high intensity, possibly reaching several hundred or even several thousand.

- ① If the point cloud appears at a fixed position and persists, it does not affect fall detection, but it will impact occupancy, dwelling, immobility, bed-leaving, and long-term lying detection.
- ② If the point cloud appears at random positions or only occasionally, it affects all detection functions, but some functions may operate normally after parameter adjustments.

Abnormal Situation 4:

Abnormal points appear on the canvas, and the tool shows large areas of point clouds, with most point cloud intensities below 100.

This does not affect fall detection, but it will impact occupancy, dwelling, immobility, bed-leaving, and long-term lying detection.

Unusable Situation 5:

Abnormal points appear on the canvas, and the tool shows large areas of point clouds with high intensity, possibly reaching several hundred or even several thousand.

This affects all detection functions, and the environment must be adjusted.

Recommended Actions:

It is recommended to adjust the environment to reach the optimal or Situation 1 state before use.

Position Check:

Confirm whether the radar installation location is subject to vibration, and whether there are other radar devices operating on the same frequency nearby (VS373 devices of the same model will not interfere with each other).

Space Check:

Confirm whether the installation space is narrow (less than 2m × 2m). In narrow spaces, based on the location of noise points, reduce both the x and y dimensions of the monitored area by 5–15 cm and check if abnormal points still appear on the canvas.

Obstacle Check:

Check if there are barriers, glass, mirrors, chandeliers, ceiling fans, walls, etc., near the radar installation location, or if there are items such as buckets or basins directly underneath the radar. If so, remove the obstacles or change the installation location, then recheck the point cloud status.

Power Supply Check:

If all environmental conditions are ideal, check the power supply. Ensure the standard adapter and power cable are used, and confirm there is no unstable voltage or poor power connection (such issues usually cause large areas of point clouds).

Parameter Adjustment

For detailed adjustment of other parameters, please refer to the subsequent device configuration section.

In Situations 2, 3, and 4, if the environment cannot be optimized but detection is still required, parameter adjustments can be made. However, accuracy cannot be guaranteed after adjustment. (Situation 5 indicates a harsh environment, and parameter adjustment cannot resolve the issues.)

Set Shielded Areas:

Check if the target location on the canvas corresponds to devices such as washing machines, air conditioner vents, standing fans, humidifiers, etc., which may generate point clouds when operating. Also, check if obstacles in the area are movable, or if people might fall in those locations. If the area is fixed and people will not be present there, set a shielded area at that location and observe if the abnormal points on the canvas disappear.

Extend Fall Confirmation Duration:

Increase the fall confirmation time as much as acceptable for your application. A longer confirmation time increases the reliability of fall detection and reduces false alarms.

Enable AI Fall Alarm Filtering:

This uses a built-in AI model to filter out false fall alarms, which can eliminate 30%–50% of false positives. However, some falls with unusual imaging characteristics may go undetected.

Target Detection Parameters:

Increase the required duration for a target to appear and decrease the required time for a target to be considered as having left. This is effective only for non-persistent or non-fixed position point clouds. Extending the target confirmation time increases the reliability of occupancy detection, reduces false alarms, and improves the detection rate of dwelling and bed-leaving events. Adjust based on the appearance of points on the canvas—if false target points disappear quickly or do not appear after adjustment, the adjustment is considered successful.

Sensitivity Switching:

If false alarms occur when sitting on a chair or bending down to clean, sensitivity can be reduced to decrease false alarms triggered by low-level movements.

Dynamic Sensitivity Adjustment(Not yet implemented in the current version):

Once available, this feature will automatically lower local sensitivity in response to false alarms, reducing false fall detections. However, lowering sensitivity in certain areas may increase the risk of missed detections.

Replace with Custom Sensitivity File:

Increase the fall detection confidence threshold. This method is not currently disclosed to customers and will be optimized into dynamic sensitivity in future iterations. Its effect is similar to extending the fall confirmation duration. There are three default sensitivity files (for 70cm, 120cm, and 140cm). Choose the file that matches the desired fall detection height threshold, import it to increase confidence. The more complex the environment, the higher the confidence should be set, up to a maximum of 90%.

Note:

Long-term lying detection is not recommended in Situations 3 and 4. If it must be used, please combine it with AI Fall Alarm Filtering to reduce false alarms.

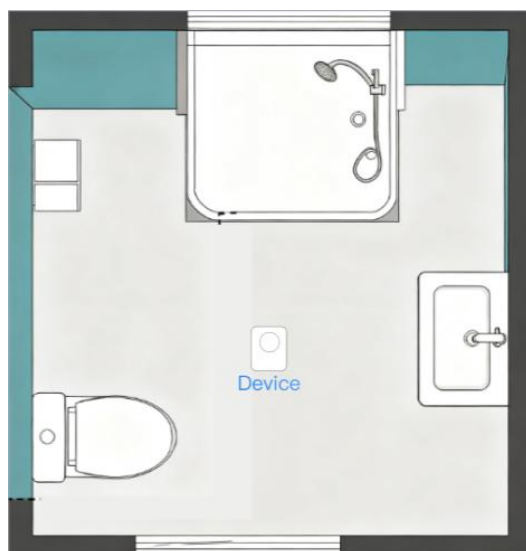
4. Device Configuration

Please set the parameters according to the user manual.

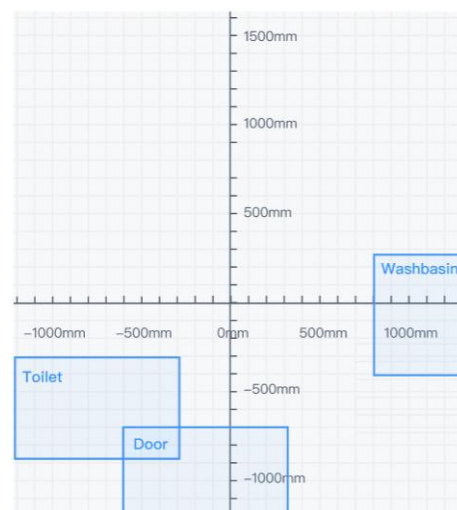
User manual link: [VS373 User Guide](#) (Configure General Settings section)

Recommended Settings

Restroom



Layout



Radar Canvas

Common parameters

Room Settings

* xMin(mm)

-1305

* xMax(mm)

1310

* yMin(mm)

-1200

* yMax(mm)

1610

* zMax(mm)

1800

* Installation Height(mm)

2400

Basic Settings

Fall Alarm

Fall Confirmation Time

50

Fall Delay Reporting Time(s)

40

Fall Alarm Duration(s)

30

Lying Alarm

Dwell Alarm

Dwell Time Threshold(min)

30

Motionless Alarm

Sleep Detection

Hardware Settings

LED

Buzzer

Digital Output

Fall Alarm

Lying Alarm

Out of Bed Alarm

Dwell Alarm

Motionless Alarm

Advanced Settings

Fall Detection

Sensitivity

Medium

AI Fall Alarm Filtering

Targets Detection

Presence Confirmation Time (s)

3

Absence Confirmation Time (s)

5

Sub-region parameters

No.1 Region

Region Type

Door

* Region Name

Door

* Width_X(mm)

902

* Length_Y(mm)

500

* Location(X,Y)

-600

-700

Delete

Apply

No.2 Region

Region Type

Ignore Region

* Region Name

Washbasin

* Width_X(mm)

510

* Length_Y(mm)

692

* Height(mm)

1800

* Location(X,Y)

800

292

Delete

Apply

No.3 Region

Region Type

Ignore Region

* Region Name

Toilet

* Width_X(mm)

905

* Length_Y(mm)

695

* Height(mm)

1800

* Location(X,Y)

-1305

-300

Delete

Apply

Recommended parameter settings

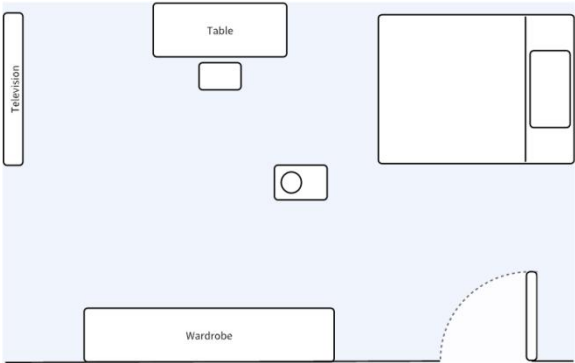
Fall Sensitivity:
It is recommended to use **Low** or **Medium** sensitivity by default. If detection of low-posture falls (such as sitting falls) is required, switch to High sensitivity.

Common Fall Exclusion Zones:
Toilets, bathtubs, washbasins, washing machines, windows, curtains, and shower curtains.

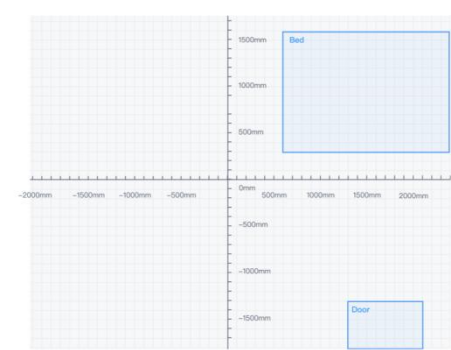
Door Area Setting:
It is recommended to set a door area, with a passage width of no less than 500 mm. The door area should be placed at the edge of the room.

Note:
If you need to set up dwell or no-movement alarms in areas such as toilets or bathtubs, please set the area type to "Custom" and disable fall alarm for these zones

Bedroom / Living Room



Layout



Radar Canvas

Common parameters

Room Settings

* xMin(mm)

-2003

* xMax(mm)

2400

* yMin(mm)

-1800

* yMax(mm)

1750

* zMax(mm)

1800

* Installation Height(mm)

2700

Basic Settings

Fall Alarm

☒

* Fall Confirmation Time

50

* Fall Delay Reporting Time(s)

40

* Fall Alarm Duration(s)

30

Lying Alarm

☐

Dwell Alarm

☐

Motionless Alarm

☐

Sleep Detection

☒

* Sleep Detection Period

21:00 - 05:00

Out of Bed Alarm

☒

* Out Of Bed Time Threshold (min)

15

Hardware Settings

LED

☒

Buzzer

☒

Digital Output

☒

☒ Fall Alarm

☐ Lying Alarm

☐ Out of Bed Alarm

☐ Dwell Alarm

☐ Motionless Alarm

Advanced Settings

Fall Detection

Sensitivity

High

AI Fall Alarm Filtering

☐

Targets Detection

* Presence Confirmation Time (s)

3

* Absence Confirmation Time (s)

5

Sub-region parameters

No.1 Region

Region Type

Door

* Region Name

Door

* Width_X(mm)

800

* Length_Y(mm)

500

* Location(X,Y)

1300 -1300

Delete

Apply

No.2 Region

Region Type

Bed

* Region Name

Region 2

* Width_X(mm)

1800

* Length_Y(mm)

1300

* Bed Height(mm)

500

* Location(X,Y)

600 1600

Delete

Apply

Common Fall Exclusion Zones: Standing fans, humidifiers, curtains, and indoor plants.

If there is a bed, it is recommended to set a bed area. For sofas or other areas where people may lie down and rest, it is recommended to set a custom area and disable fall alarms.

5.Test Guide

Test Recommendations

Install and configure the device according to the installation recommendations and requirements as much as possible, ensuring that the testing environment is free from interference.

- During testing, do not use reflective mats that would not appear in the actual scenario, such as plastic films or reflective materials with metallic coatings.
- The detection performance of radar products can be affected by the environment. Please conduct testing and evaluation in real scenarios as much as possible to avoid inconsistencies between test results and actual application environments.
- To ensure detection accuracy across the entire area, select multiple locations within the required coverage area for testing and evaluation.
- It is recommended to invite people of different heights and weights to participate in the tests.
- It is recommended to record the entire testing process to facilitate subsequent analysis and troubleshooting.

Examples of objects that radar cannot penetrate

Material Type	Thin/Lightweight (Penetrable, Slight Signal Attenuation)	Thick/Modified (Non-penetrable, Complete Signal Attenuation)
Glass	Ordinary thin glass ($\leq 3\text{mm}$, no film)	Thick glass ($\geq 10\text{mm}$), metal-coated glass
Plastic	Thin plastic shell ($\leq 2\text{mm}$, PP/PE/regular ABS)	Thick plastic board ($\geq 10\text{mm}$), conductive plastic
Wood / Board	Thin wood board ($\leq 5\text{mm}$), gypsum board	Solid wood ($\geq 20\text{mm}$), wet wood
Wall / Partition	Gypsum board partition, light steel keel hollow partition	Solid brick/concrete wall, stone partition
Fabric	Lightweight curtain, non-woven fabric (dry)	Thick curtain, water-soaked fabric, thick cotton-padded fabric