

QLanradar

AI Care Sensor (HC2)

Installation Manual



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1. About

1.1 Scope

This manual is specific to the Tsinglan Technology AI Care Sensor (HC2). It does not apply to other products from our company. It describes the product's installation, commissioning, use, maintenance, and troubleshooting. Please read it carefully before the operation.

1.2 Intended Audience

This manual is intended for competent adult users. The tasks described in this manual should only be carried out by competent adults.

1.3 Conventions

 **WARNING!** "Warning" indicates a dangerous situation that could result in death or serious injury if not avoided.

 **CAUTION!** "Caution" indicates a dangerous situation that could result in minor or moderate injury if not avoided.

 **NOTE!** "Note" provides valuable tips for the best operation of our product.

Product and Packaging Description

The HC2 is a millimeter-wave device designed to offer users a range of detection capabilities, including human presence detection, human position detection, human fall detection, human respiration rate detection, human heart rate detection, and sleep quality detection.

The product's packaging box contains one HC2 millimeter-wave device, 1 top-mounted slot with 3M adhesive, 1 side-mounted slot with 3M adhesive, 1 power adapter (can be adapted to 100V~240V power supply), 1 6m USB/type C power cable, 10 power cable adhesive wall fixings (cable clips), 10 power cable nail-type wall fixings (cable clips), 6 non-marking nails, as illustrated below:



QLanradar

👉 NOTE! Store the product at -20 °C to 85°C to avoid exposure to extreme temperatures.

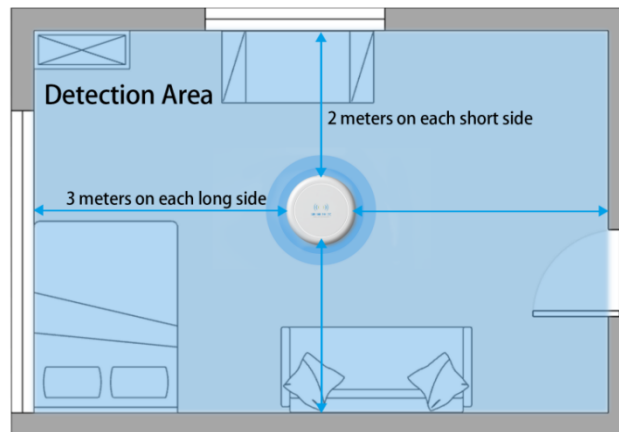
👉 NOTE! Use the product at room temperatures of -10 °C to 45°C. The performance will degrade outside this range.

👉 NOTE! The product is intended for indoor use only (bedroom, living room, kitchen, bathroom, etc.) Do not use outdoors.

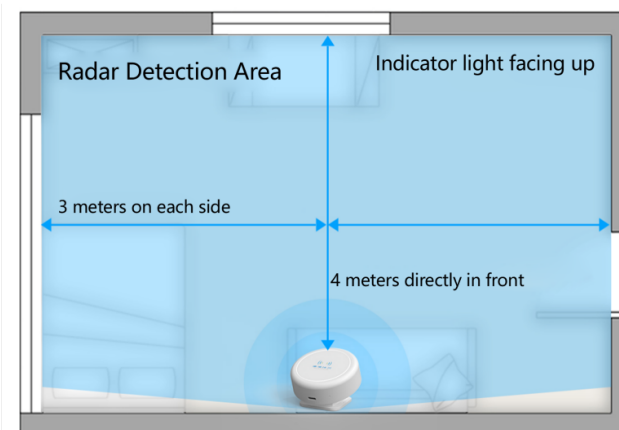
2. Installation

2.1 Installation Location Requirements

The product is ceiling-mounted indoors at a height of 2.0-3.0m. The maximum coverage area is 4m x 6m wide.

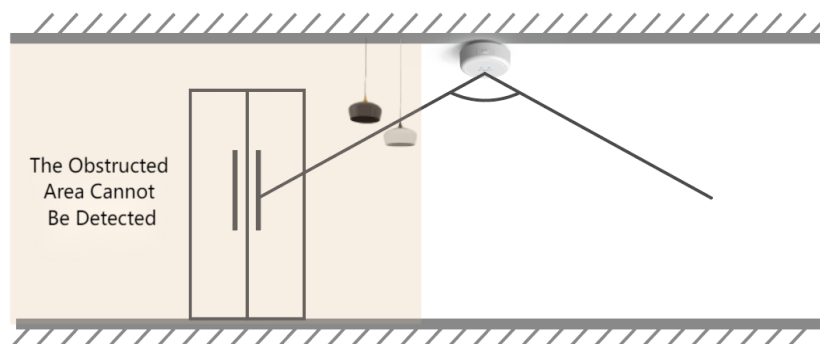


The product is wall-mounted indoors at a height of 1.5-1.6m with 4 meters directly in front, 3 meters on each side (6m total).



⚠️ NOTE! Do not install near heat sources or incandescent lights.

⚠️ NOTE! Avoid installation directly above ceiling fans or large obstructions that block the radar field of view. Detection will fail in blocked areas.



2.2 Communication Requirements

The product requires Wi-Fi connectivity. Ensure 2.4GHz coverage at the installation area.

👉 NOTE! The device only supports 2.4GHz Wi-Fi signals. 5GHz, dual-band routers, or other types of signals are not supported. If you have a dual-band router, the 2.4GHz band must be separated for the device to work properly.

👉 NOTE! Ensure good signal strength at the radar installation area. Weak signals can cause disconnections or high latency.

2.3 Tools Required

In addition to the radar device and accessories in the package, the following tools are required for installation:

1. A ladder (over 1m tall) for ceiling access
2. Tape measure (over 3m) or laser distance meter for height measurement
3. Pencil for marking mounting hole positions
4. Hammer for fixing wall/ceiling by nailing wall studs into the base



2.4 Mounting Location

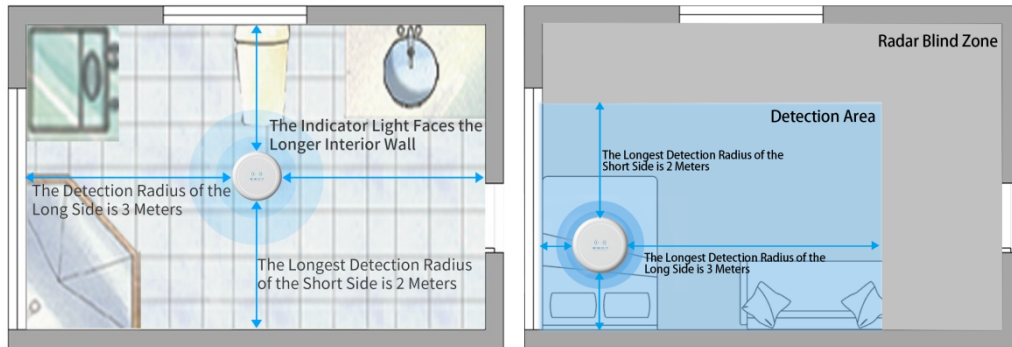
The product should be ceiling-mounted as follows:

1. In the bathroom - in the center of the ceiling over 0.5m from walls at 2-3m height.
2. In bedrooms - over the chest area of the bed (or within 0.5m left/right if not feasible) at a height of 2-3m.

3. The short side faces the card slot. The detection range is 2m forward/back (4m in total). The long side faces the power cable. The detection range is 3m left/right (6m in total).



Diagram of Top mounting height



[Diagrams showing position in bathroom and bedroom]

The product should be wall-mounted as follows:

1. Wall-mounted is not recommended for bathroom deployment.
2. If used in the bedroom, it should be installed in the position directly above the head of the bed (if the position is not suitable, it can be moved to the left or right by no more than 50 cm, but it must not leave the head of the bed area), at a height of 1.5-1.6 meters above the floor.
3. Wall-mounted: the detection distance is 4 meters in front of the equipment and 3 meters on each side of the equipment (6 meters in total).

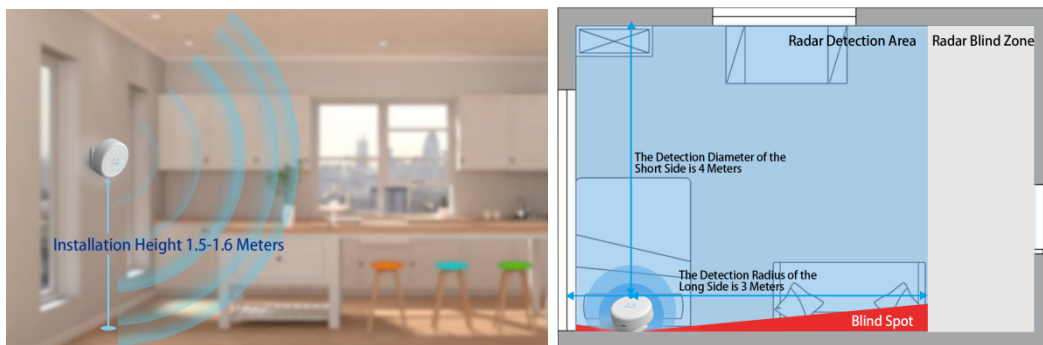
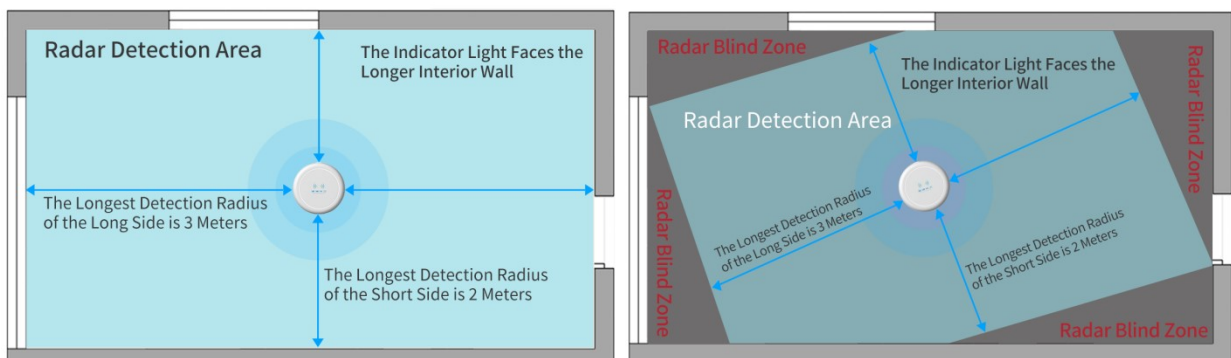


Diagram of wall-mounted height and position in bedroom

NOTE! The angle must be adjusted according to the diagram when installing the radar. Otherwise, there will be detection blind spots.



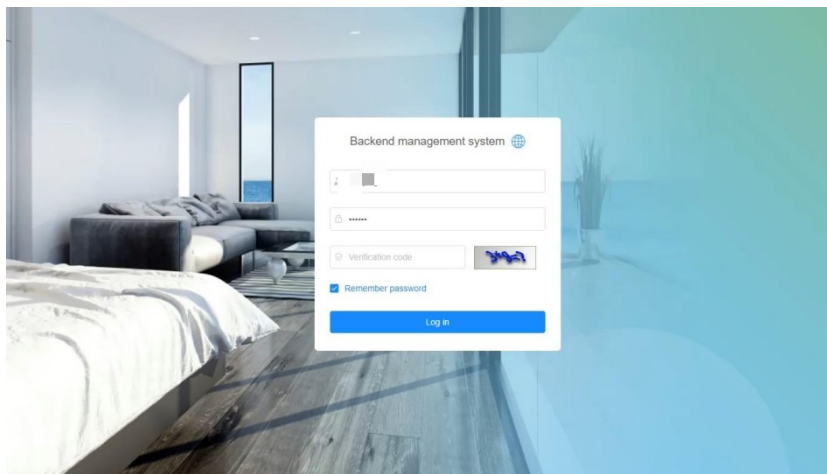
👉 NOTE! No data will be detected outside the coverage range.

👉 NOTE! The radar should be installed with the power cord socket facing the wall where the outlet is located.

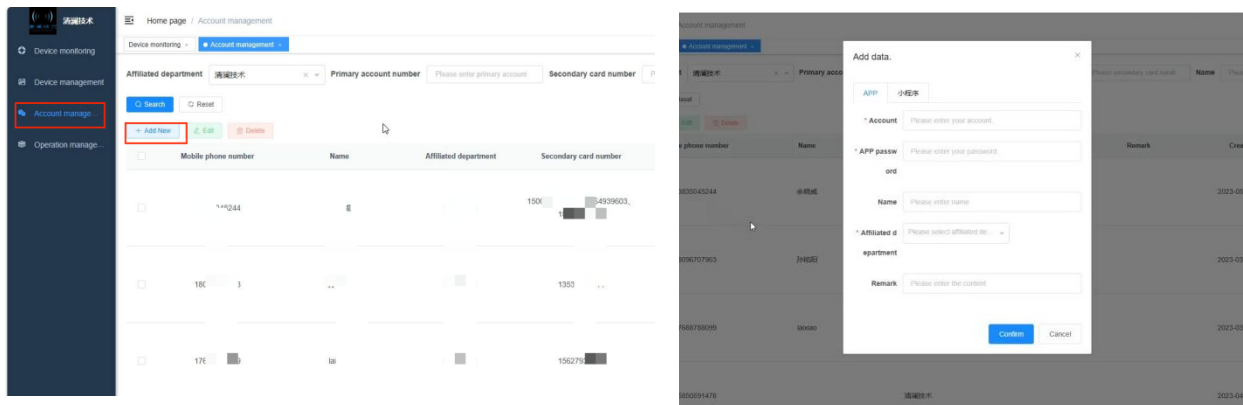
2.5 Connecting to Wi-Fi

Step 1: Obtain login credentials for the management platform from Tsinglan Technology sales. This will give your account login details and a company ID.

Step 2: Go to <https://qinglanst.com/> and login with your account.



Step 3: Under Management->User Center, click Add to create user profiles for anyone needing device acc



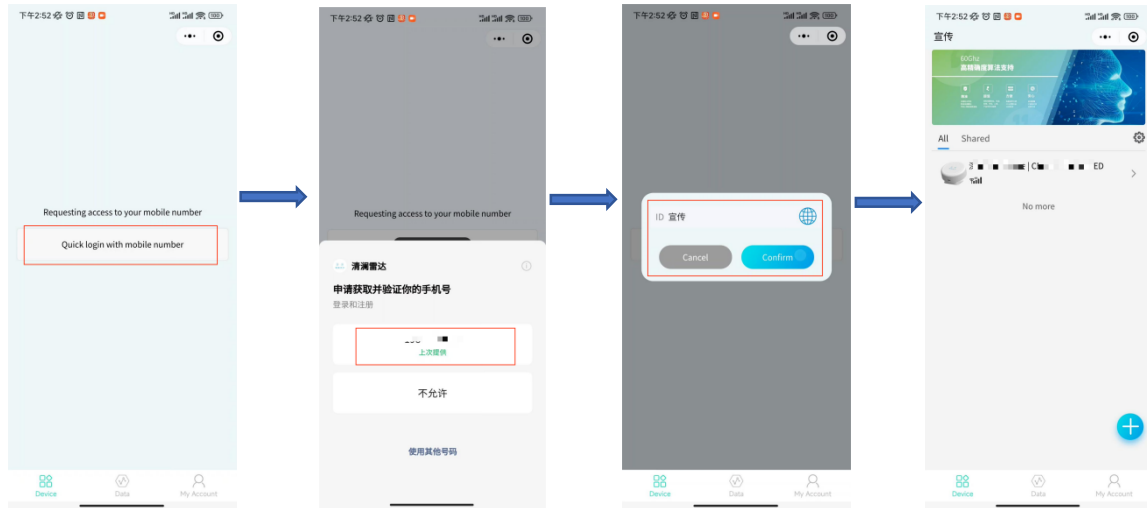
👉 NOTE! All personnel needing access must have profiles created. Those without profiles cannot link or view devices.

👉 NOTE! The following will have profiles auto-created:

1. Company owner's mobile number (can directly login to the app)
2. Vice card mobile numbers
3. Transferred device mobile numbers

Step 4: Launch the WeChat app on your mobile device and login:

1. Agree to privacy policy
2. Click mobile number login
3. Select your registered mobile number and organization

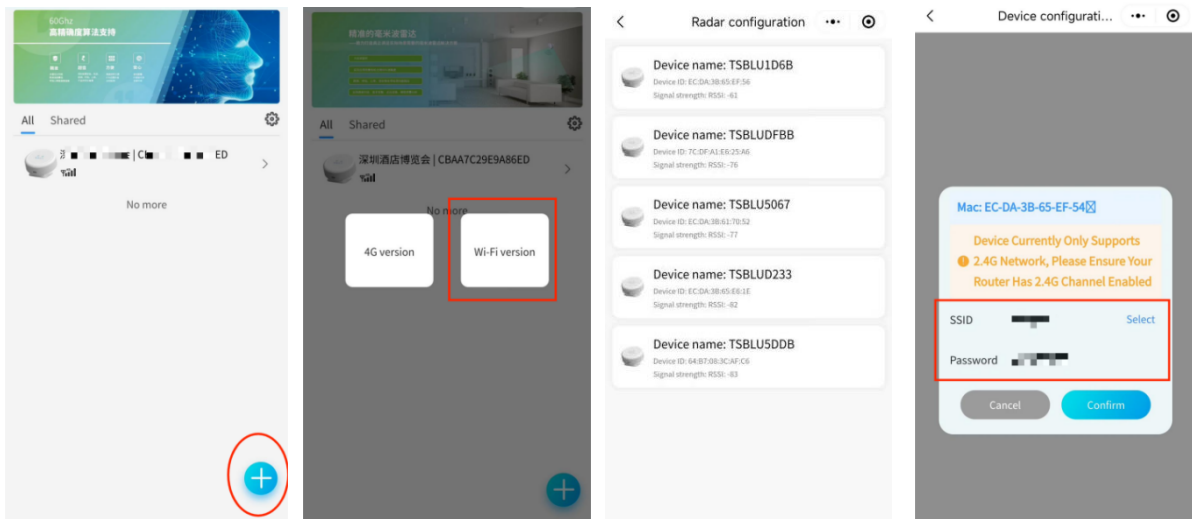


Step 5: Power up the device and note the UID on the label for pairing in the next step.



NOTE! Record the UID before the ceiling mount.

Step 6: To connect the device



Wi-Fi version device connection

1. Click the "+" icon in bottom right of app
2. Enable Bluetooth and select "Wi-Fi Version."
3. Select your device by UID
4. Input Wi-Fi credentials to connect

👉 NOTE! Only 2.4GHz networks are supported. 5GHz and mixed-mode networks are incompatible.

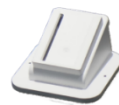
👉 NOTE! If the connection fails after multiple attempts, please troubleshoot with Tsinglan Technology support.

Step7:Mounting Base

- ① Select the installation position according to "Installation Position" above and mark it with a pencil.
- ② Place the staircase directly under the planned installation location.
- ③ Use the top-mounted base, peel off the film on the back of the base, attach the base to the wall/ceiling and press firmly.



Top-mounted base



Wall-mounted base

👉 NOTE! If the wrong base is selected, it will result in a serious failure of radar judgement

👉 NOTE! 3M adhesive will not stick, you should remove the non-marking nails, use the nail hammer to nail the non-marking nails into the small holes in the base to complete the fixing.

⚠ CAUTION! When the installer ascends the stairs, it is necessary for someone to hold the stairs to avoid shaking and causing the installer on the stairs to fall and be injured.

Step8: Fixing the device and power cord

- ① Snap the powered device into the slot, when you hear a "click" sound indicates a solid connection.
- ② Select the installation position of the cable card and mark it with a pencil.
- ③ Place the power cord into the card and tear off the double-sided adhesive tape on the card, place the card on the wall/ceiling and press the card for more than 10 seconds.

NOTE ! The power cables should be arranged according to the aesthetic needs of the room and the distance between the cable cards is 50cm/each. At least 2 clips should be placed at the corners of the wall to ensure a solid installation.

3. Commissioning

After successful Wi-Fi connection and installation, radar commissioning can begin. This involves Installation Mode, Scenario Mode, Height Setting, Detection Zone, Zoning, and Function Tests.

3.1 Installation Mode

Choosing the correct installation mode is critical for proper functionality. This can be set in the web or app interface. The web interface is under Device Monitoring->Functional Attributes->Installation Mode. In the app, it is under Data->Installation Mode.

The screenshot shows the Qlanradar web interface for configuring the radar. The main area displays a room layout with a 'Monitoring Bed' and an 'Interference Area'. The 'Settings' panel on the right shows the 'Installation method' set to 'Side mounting'. A diagram on the right illustrates the 'Side mounting' setup with 'Left boundary', 'Right boundary', and 'Back boundary' labels.

Settings

Scene binding: Bed monitoring

Installation method: Side mounting

Installation Height (m): Top mounting, Side mounting

Left boundary (m): 0 1 2 3 4

Right boundary (m): 0 1 2 3 4

Back boundary (m): 0 1 2 3 4 5 6

Fall Phone Alert: ☐

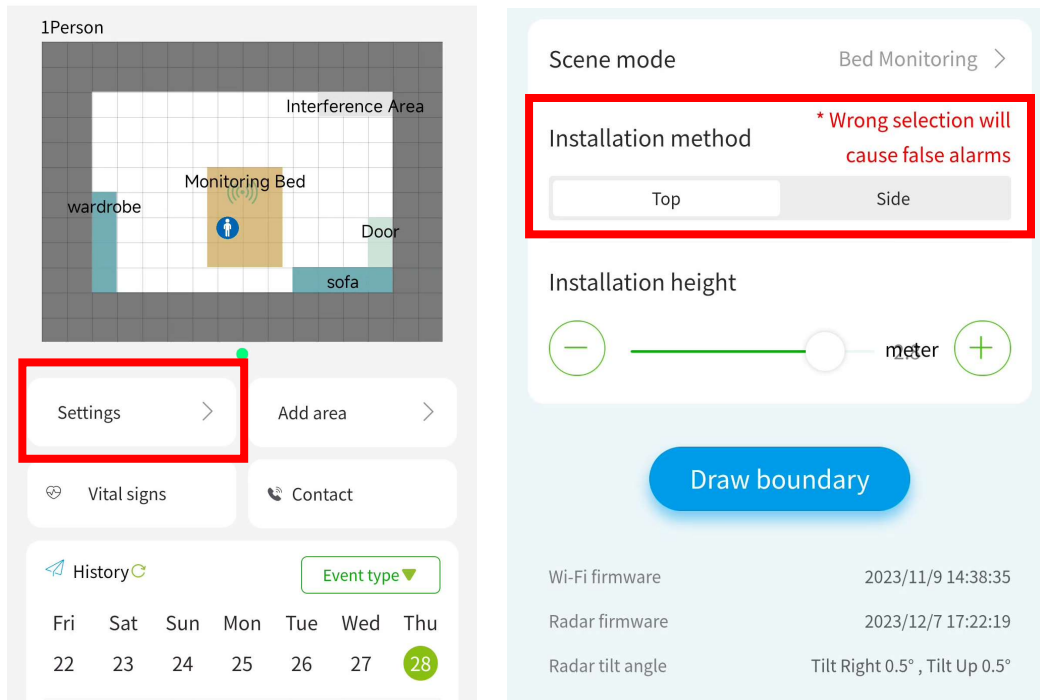
Fall alarm time (seconds): 10

Out of bed phone alarm: ☐

Long periods of inactivity prompt: ☐

*Note: If you do not enter or leave the house for 24 hours, an alarm is generated in the alarm center, but no phone alarm is generated.

Save the configuration Cancel



⚠️ NOTE! Installation should be carefully selected. Incorrect modes will lead to false alarms or missed events.

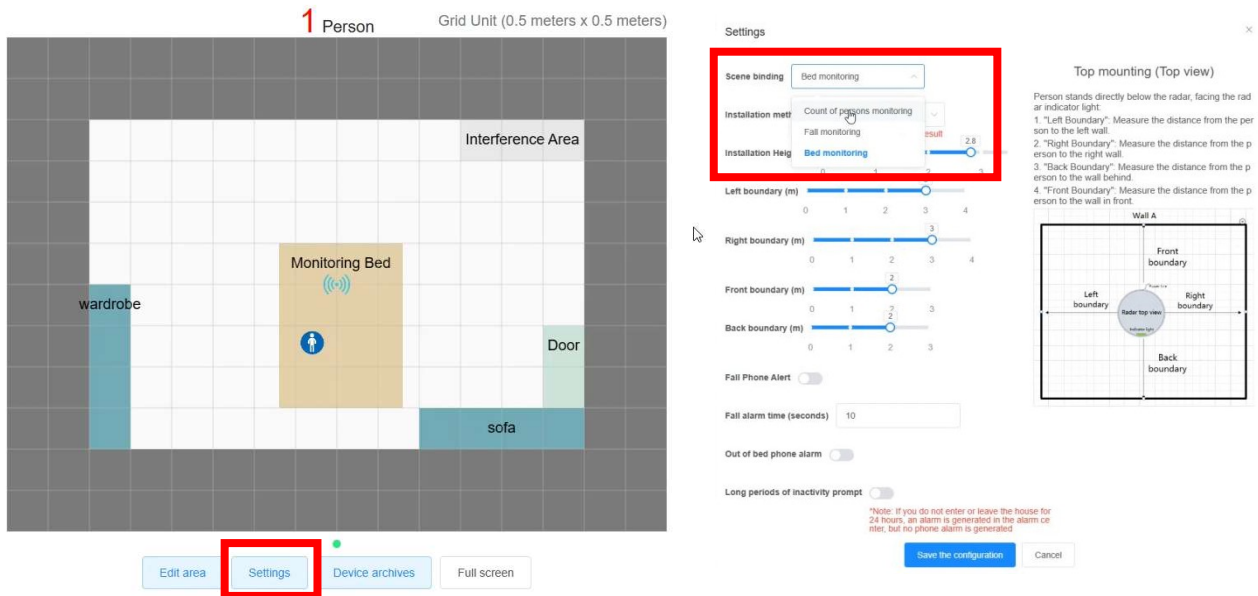
⚠️ NOTE! After changing modes - redraw the detection zone and recreate zones.

3.2 Scenario Mode

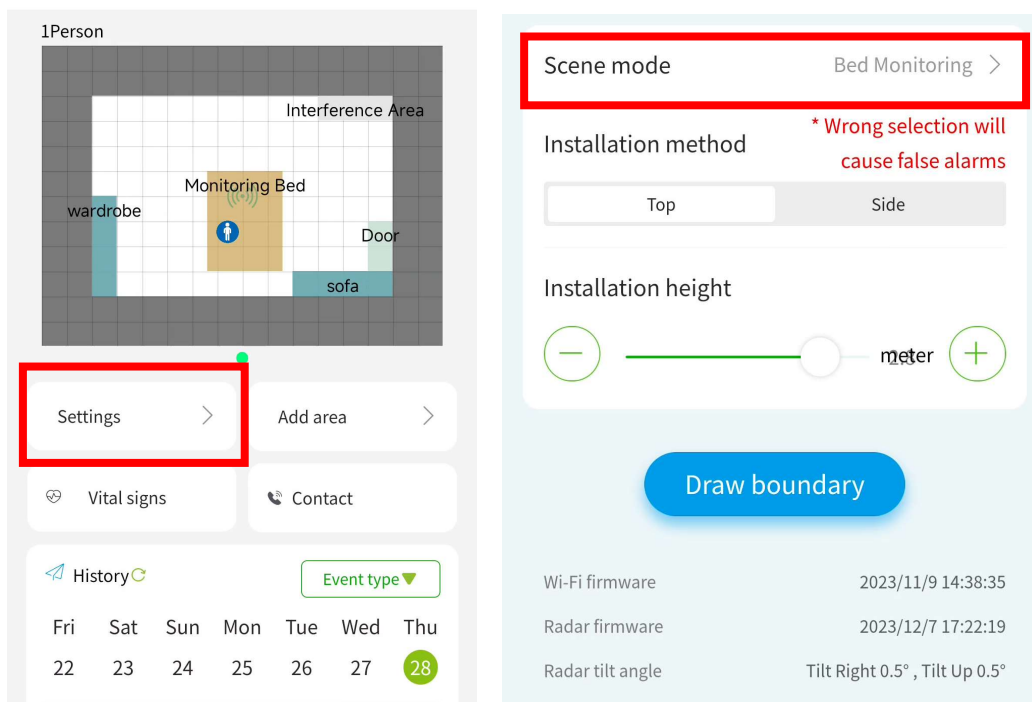
The scenario mode determines functionality:

1. In "Number Tracking," the radar only tracks the number of people and locations.
2. In "Fall Detection," it can detect falls and trigger phone alerts.
3. In "Bed Monitoring" it can also detect breathing, heart rate, getting in/out of bed, and sleep quality for a designated bed.

In the web interface, set under Device Monitoring->Functional Attributes->Scenario Mode.



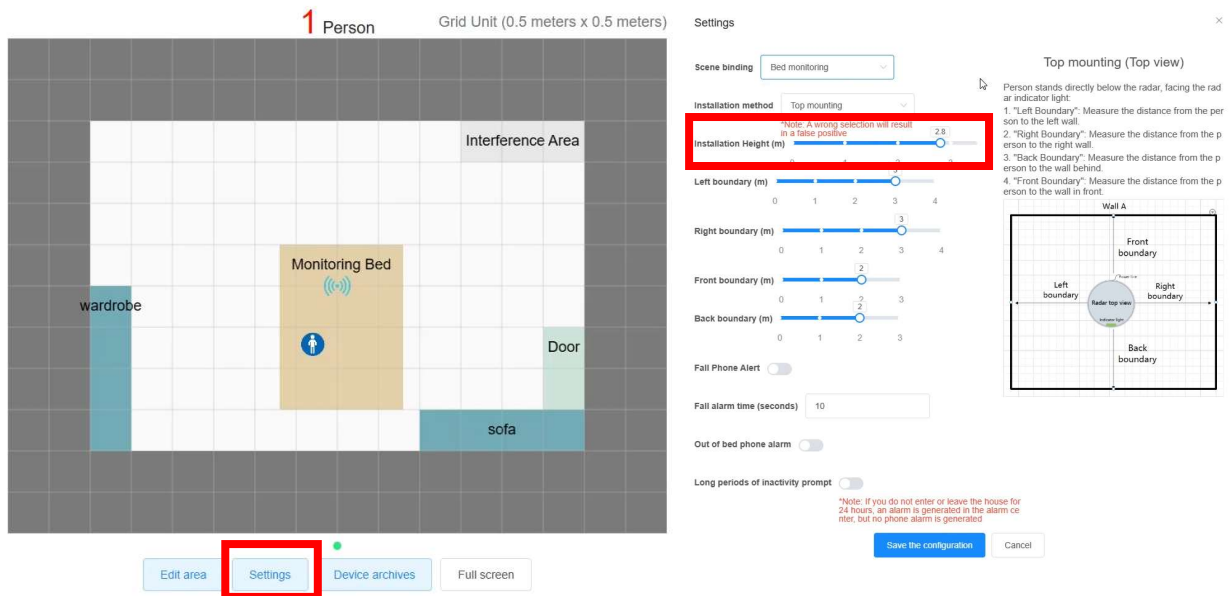
In the app, set under Data->Functional Attributes->Scenario Mode.



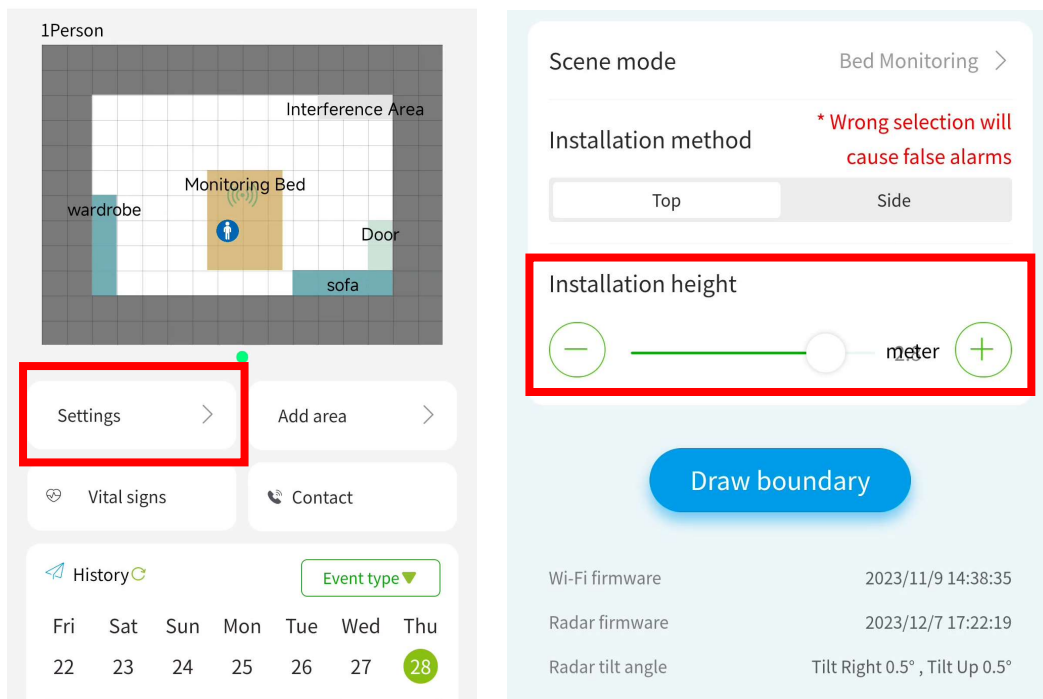
3.3 Mounting Height

Accurate mounting height is critical. Incorrect values lead to false/missed alerts.

In the web interface, set under Device Monitoring->Functional Attributes->Installation Height.



In the app, set under Data->Functional Attributes->Installation Height.



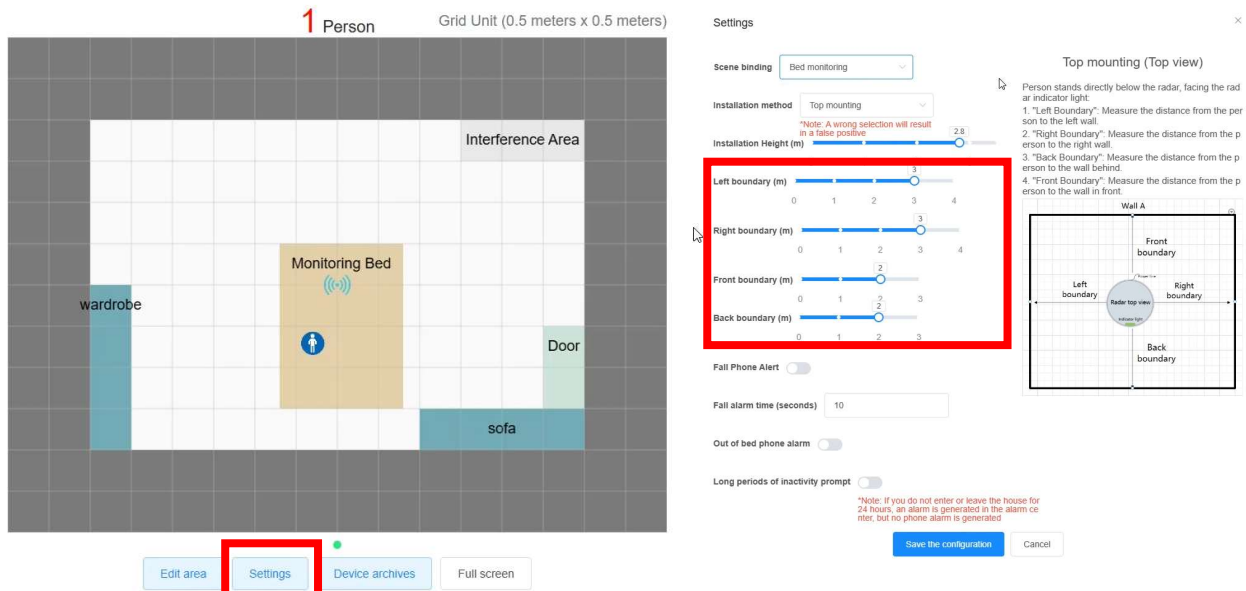
👉 NOTE! Physically measure and set the height from the device to floor level to cm precision. Round off to the nearest 0.1m.

👉 NOTE! If experiencing high fall detection misses, try reducing the configured height by 10cm.

3.4 Detection Zone

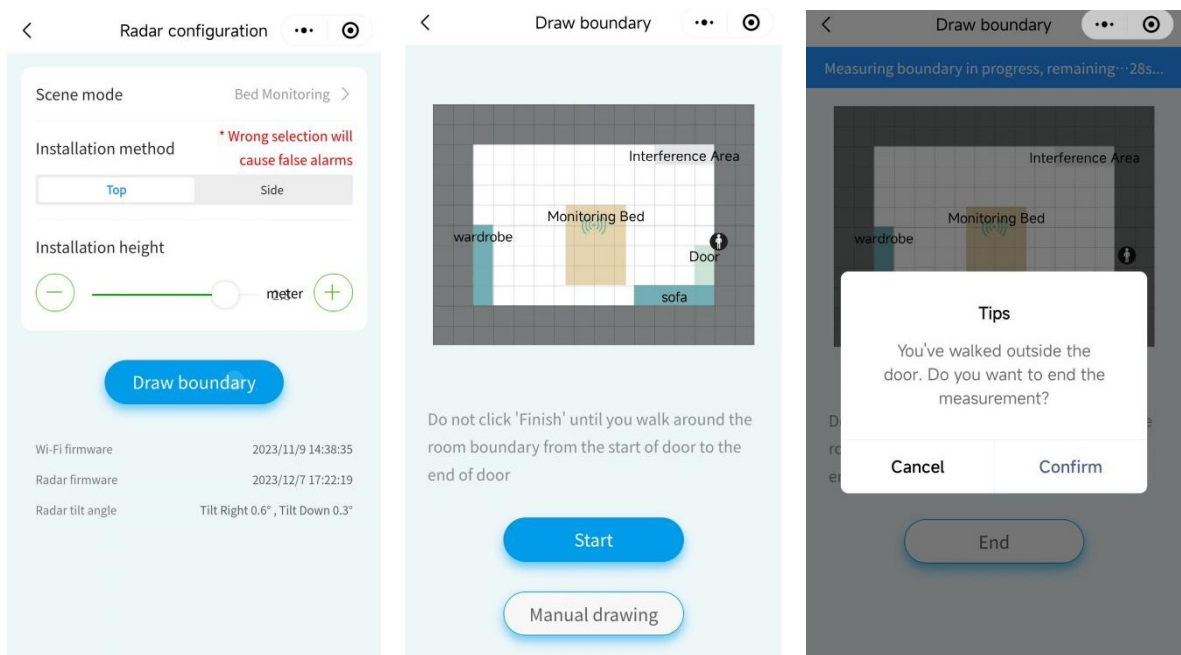
The detection zone is critical. Exceeding walls by over 0.5m can increase false alerts. An overly small zone will reduce the covered area.

In the web interface, set under Device Monitoring->Functional Attributes and define left, right, front, and back boundary distances measured from the device center.



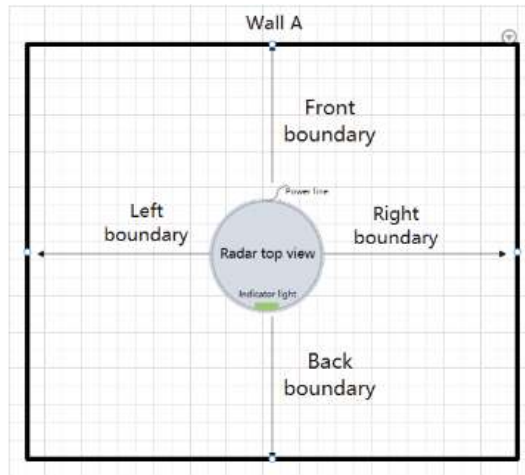
In the app, set under Data->Functional Attributes->Draw Boundary:

1. Tap Draw Boundary
2. Go to door location
3. Tap Start
4. Walk the perimeter with the phone, keeping radar detection active
5. Tap End when back at the door to set the zone and create "Door" zone entry/exit events



👉 NOTE! Physically measure boundary dimensions for web configuration. Incorrect values lead to false/missed alerts.

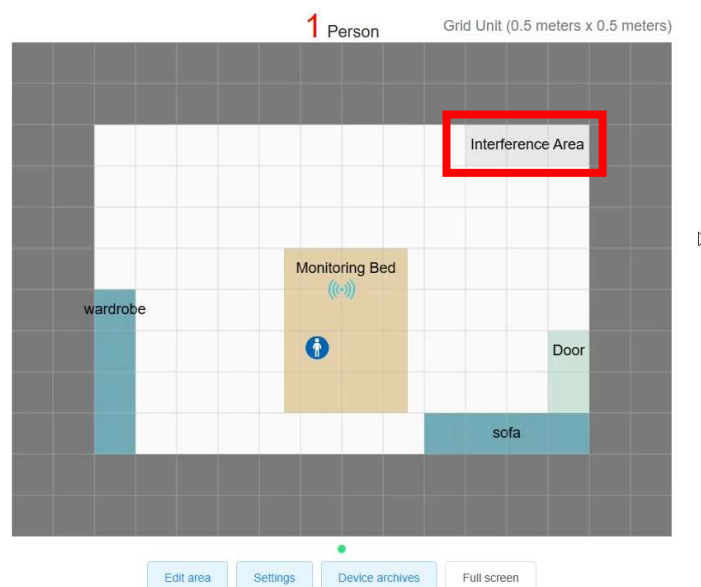
👉 NOTE! Follow web interface prompts for correct forward/back/left/right orientations when setting zone dimensions.



3.5 Zoning

Zone types:

1. User-named zones (bed, couch, cabinet, etc.) Showroom layout and where people are.
2. Normal Bed: Track getting in and out of bed. Can auto-alert on exiting.
3. Interference Area: Select a ceiling fan or other interference to turn off detection/fall alerts.

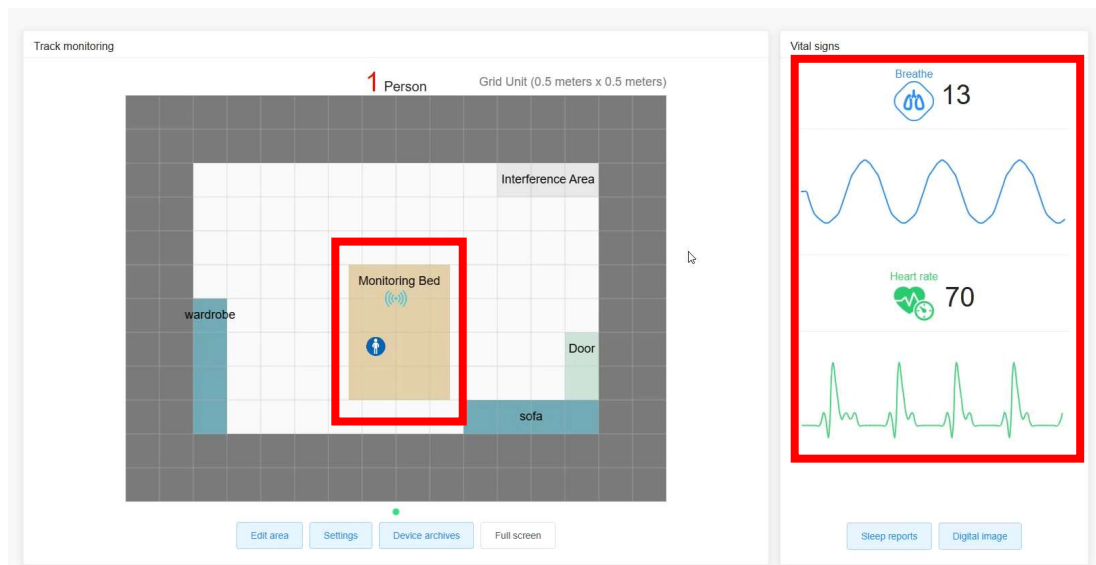


👉 Do not classify non-interference areas as "interference areas" as it may lead to anomaly detection.

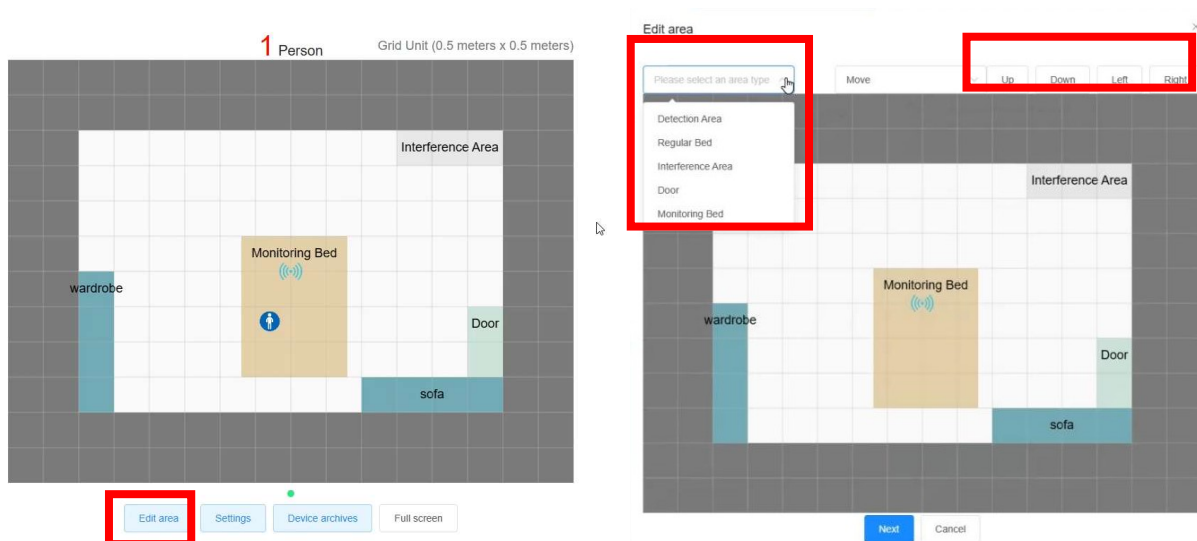
Door: Track room entry/exit.

Fail and sudden death events			
In and out events			
Guardian events			
Device logs			
2023-12-28			
Event name	Time		
User4 left the room	2023/12/28 15:41:52		
User1 left the room	2023/12/28 15:41:26		
User1 left the monitoring bed	2023/12/28 15:41:19		
User1 entered room	2023/12/28 15:34:39		
User2 left the room	2023/12/28 15:34:23		
User2 entered room	2023/12/28 15:34:00		
User4 entered monitoring bed	2023/12/28 15:30:55		

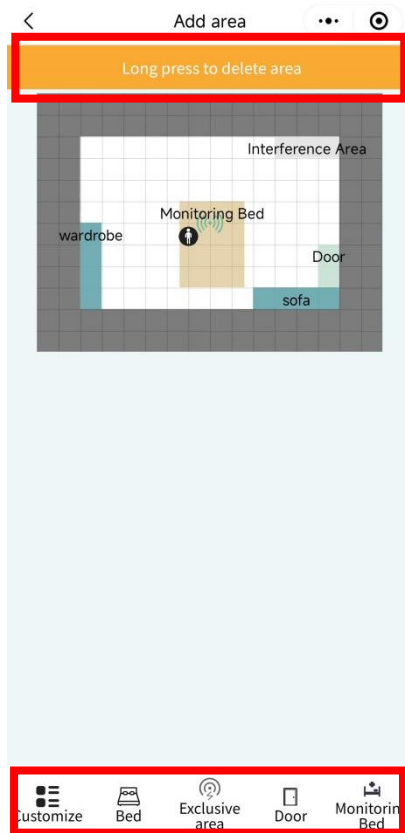
Monitor Bed: Detect this bed's breathing, heart rate, and sleep quality.



Web interface: Under Edit Regions->Partitions, drag the mouse to draw zones representing 50x50cm tiles. Use arrow keys to adjust position. Click Next when done.



App: Under Add Regions, finger drag partitions. Red-rag to adjust shape. Tap Save when accurate.

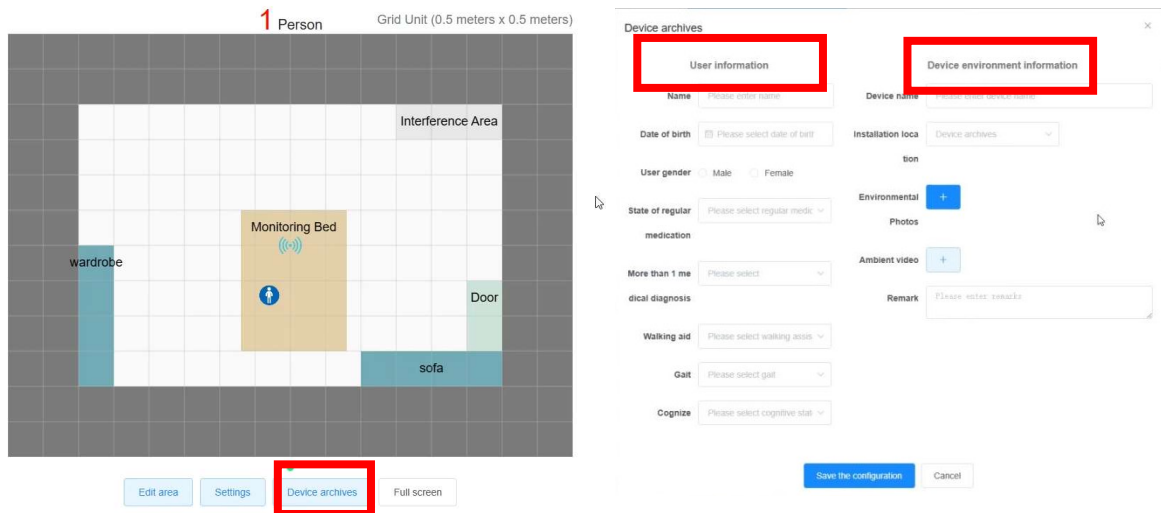


To delete zones:

1. Double click zone in the web interface
2. Long press zone in the app

6、Device Profile

In the web interface, the Device Profile section allows the user info and environment images to be entered for reference. It helps relate users to devices and allows technical troubleshooting.



User can view and edit the Device Profile in the app by long-pressing the device name in the device list and selecting Archive.

