Qlanradar
AI Care Sensor (TK2)
Installation Manual

Date of Revision：2023.12.12

QLanradar

Catalogs

QLanradar

1. About

1.1 Scope

This manual is specific to the Tsinglan Technology AI Care Sensor (TK2). 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 TK2 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 package for this product includes one TK2 millimeter-wave device and one wiring terminal, as shown in the illustration below:

☞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.

http://www.tsinglanst.com/

QLanradar

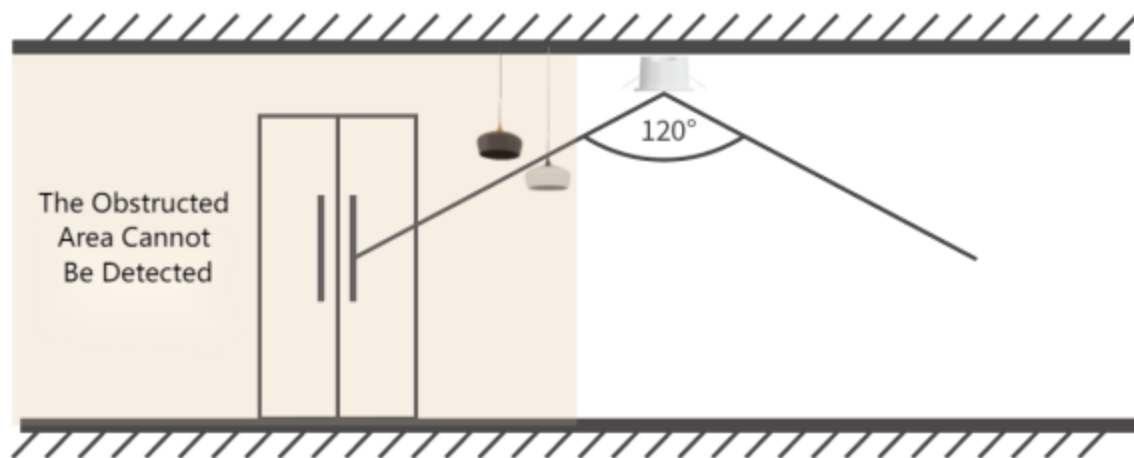## 2. Installation

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.
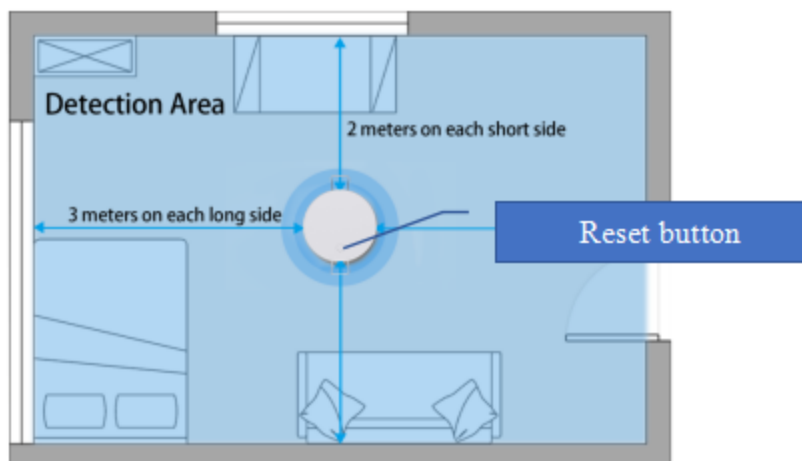
☞NOTE! The product must be powered off for installation. A professional electrician should carry out the installation.

☞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. Power drill for making mounting holes
3. Tape measure (over 3m) or laser distance meter for height measurement
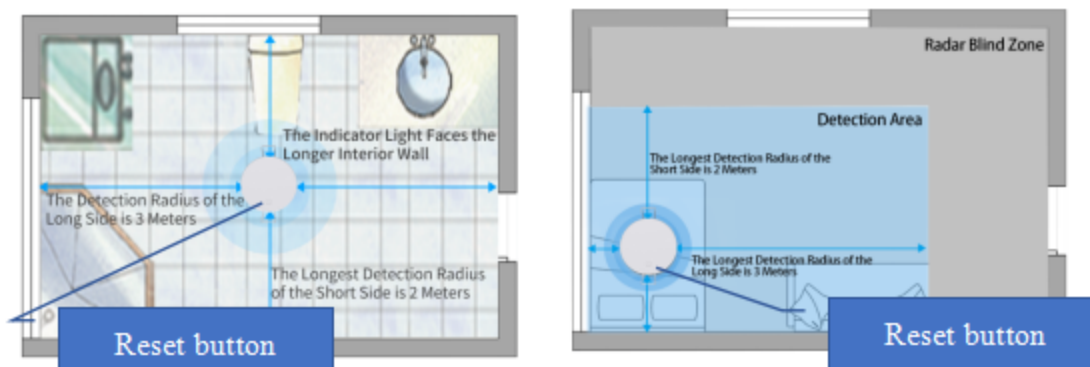4. Pencil for marking mounting hole positions

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.

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


Installation Height 2-3 Meters

Diagram of Top mounting height

The Indicator Light Faces the Longer Interior Wall

The Detection Radius of the Long Side is 3 Meters

The Longest Detection Radius of the Short Side is 2 Meters

Reset button

Radar Blind Zone

Detection Area

The Longest Detection Radius of the Short Side is 2 Meters

The Longest Detection Radius of the Long Side is 3 Meters

Reset button

[Diagrams showing position in bathroom and bedroom]

http://www.tsinglanst.com/

☞NOTE! The angle must be adjusted according to the diagram when installing the radar. Otherwise, there will be detection blind spots.
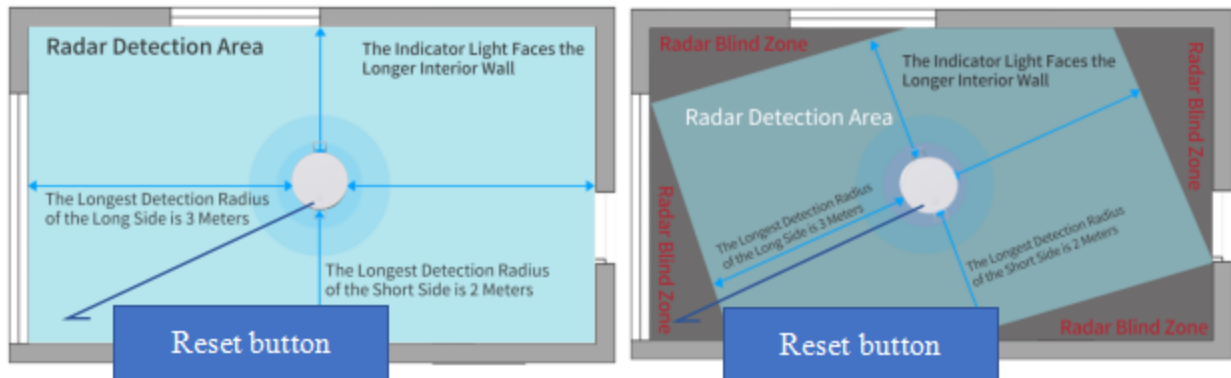
[Correct and incorrect orientation diagrams]

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

2.5 Wiring the Device

☞CAUTION! Ensure power is switched off before wiring. Have an electrician install the device.
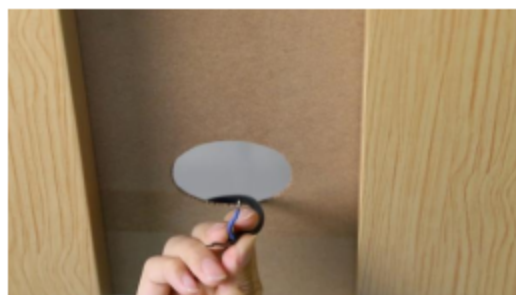
☞NOTE! Check if ceiling wires can reach the mounting hole before drilling.

Step 1: Drill a 70mm diameter hole at the selected mounting point.

[Image of drilling]

Step 2: Feed the power cable from the ceiling cavity down through the hole.
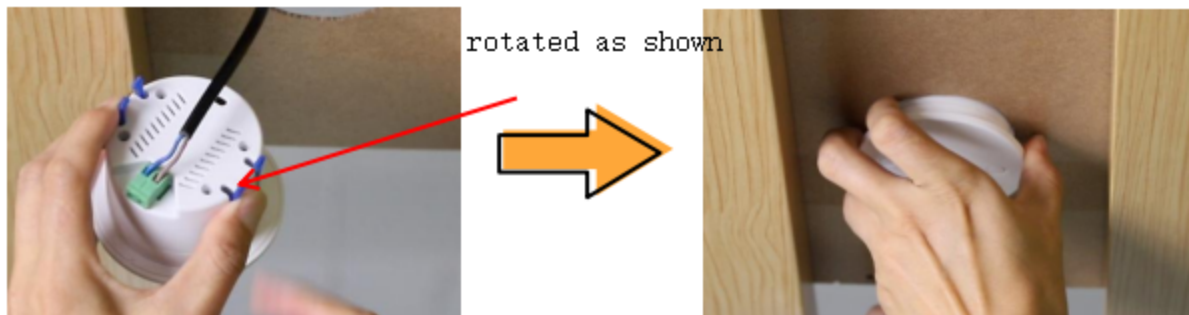

[Image of wiring]

6

QLanradar

Step 3: Strip the wire ends and terminal block connectors and tightly screw them into place on the device.

[Images of wiring connections]

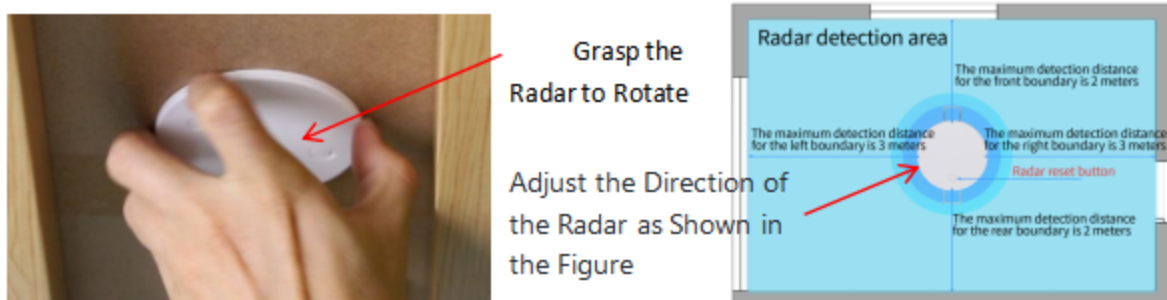☞ NOTE! The terminals are not polarity-sensitive.

Step 4: Fold the mounting tabs and insert the device into the hole. It will clamp itself in place.

rotated as shown

[Images showing device mounting]

☞ NOTE! Record the device UID on the label BEFORE the ceiling mount.

Step 5: Adjust orientation according to the diagram.

Grasp the Radar to Rotate

Adjust the Direction of the Radar as Shown in the Figure

Radar detection area

The maximum detection distance for the front boundary is 2 meters

The maximum detection distance for the left boundary is 3 meters

The maximum detection distance for the right boundary is 3 meters

Radar reset button

The maximum detection distance for the rear boundary is 2 meters

[Image showing orientation]

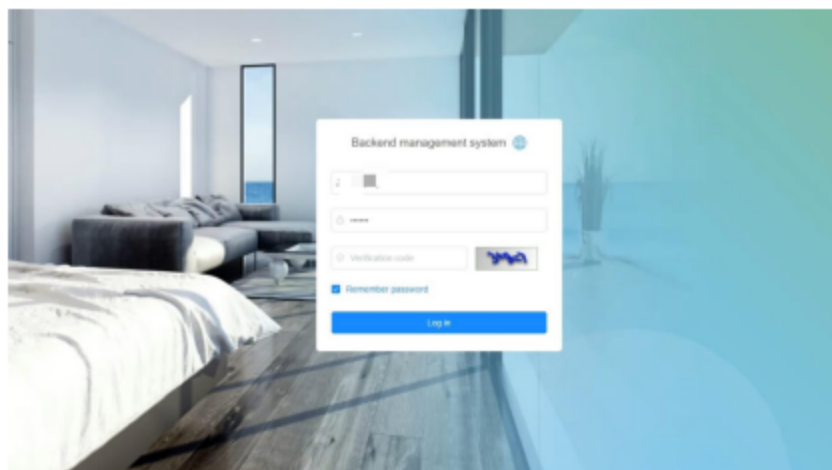Step 6: Power up the device for Wi-Fi configuration.

2.6 Connecting to Wi-Fi

Step 1: Obtain login credentials for the management platform from Tsinglan
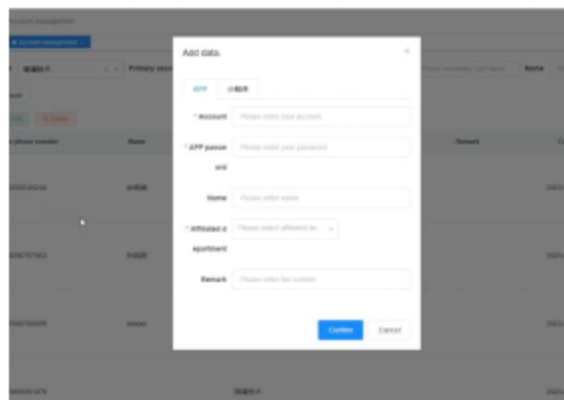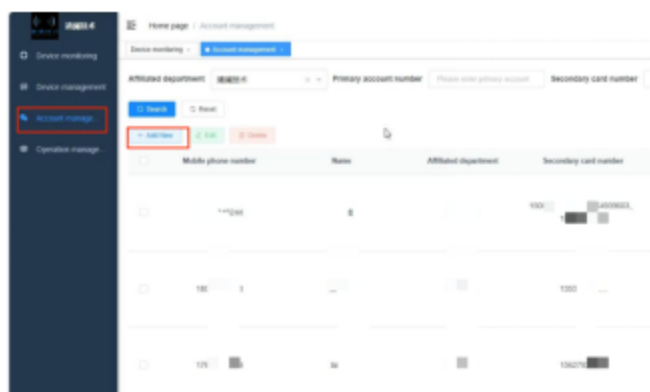
7

QLanradar

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 access.

☞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

QLanradar

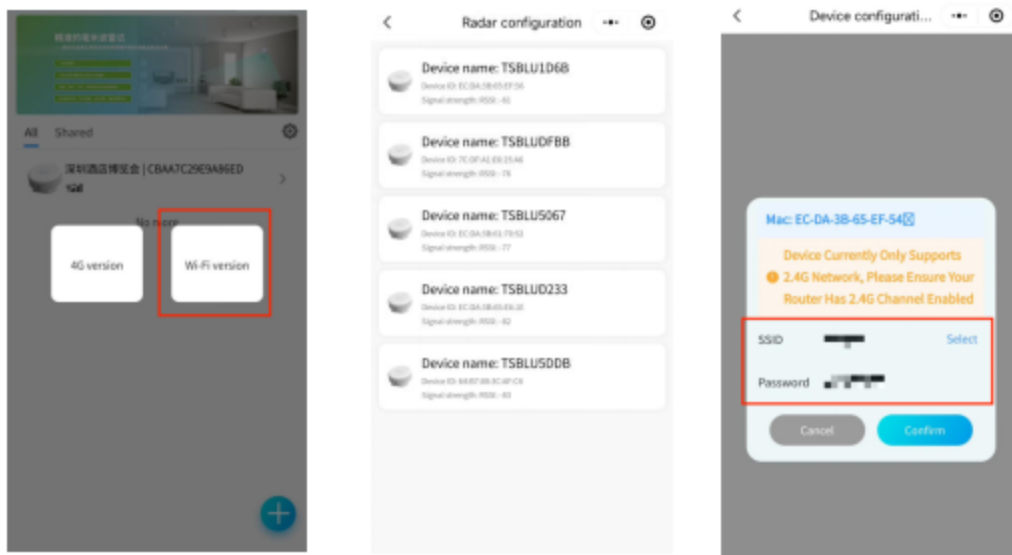Step 5: Power up the device and note the UID on the label for pairing in the next step.

☞ NOTE! Record the UID before the ceiling mount.

Step 6: To connect the device
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

http://www.tsinglanst.com/

QLanradar

☞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.

⚠ CAUTION! Have someone steady ladders at all times to prevent accidents while climbing.

⚠ CAUTION! Installation requires working with AC 100-240V. Ensure power is OFF, and an authorized electrician does the installation.
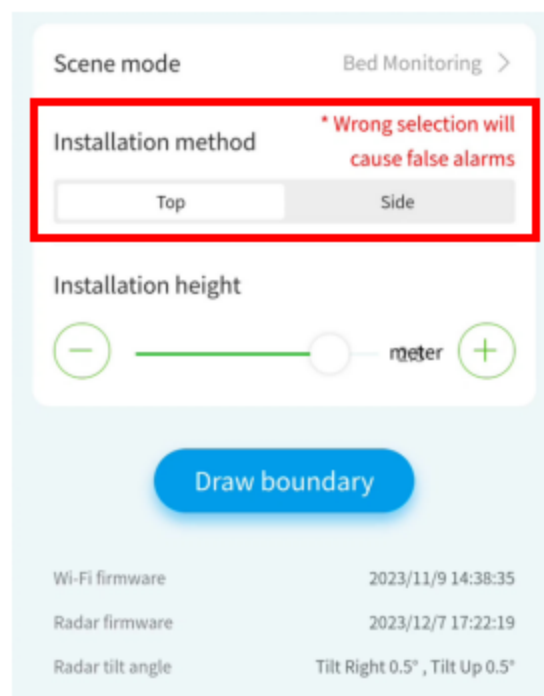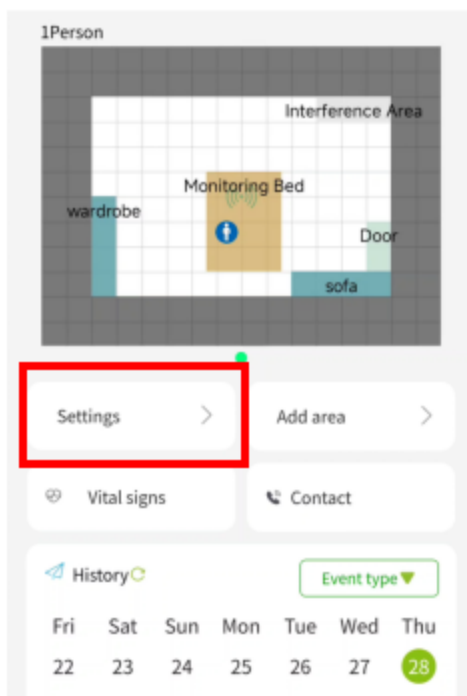
QLanradar

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.

http://www.tsinglanst.com/

QLanradar

☞ NOTE! This device only supports ceiling mount installation. 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.
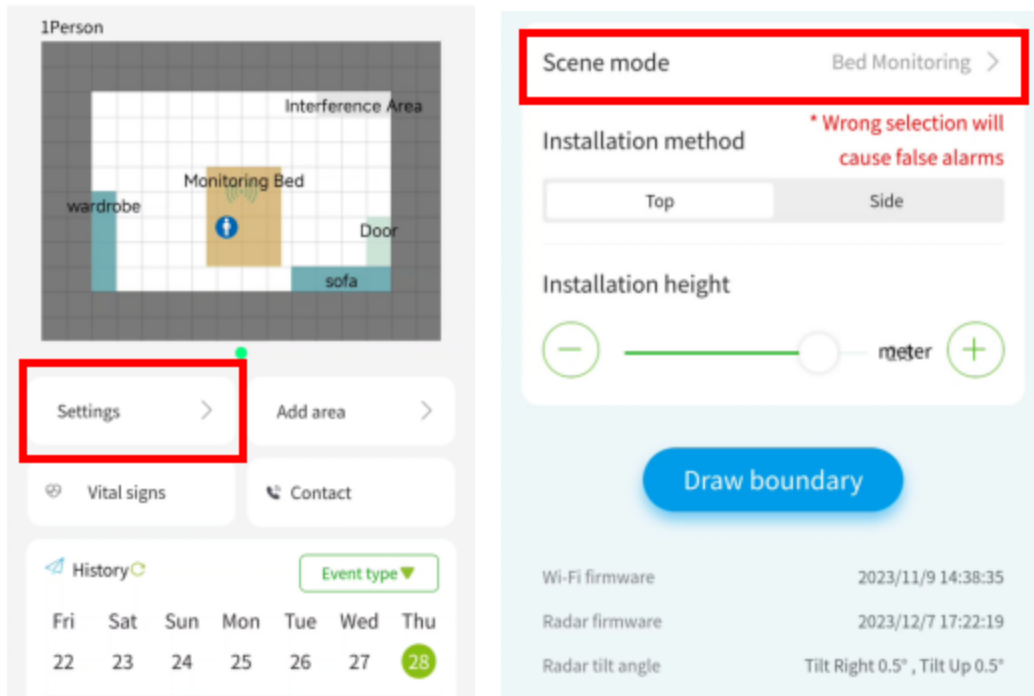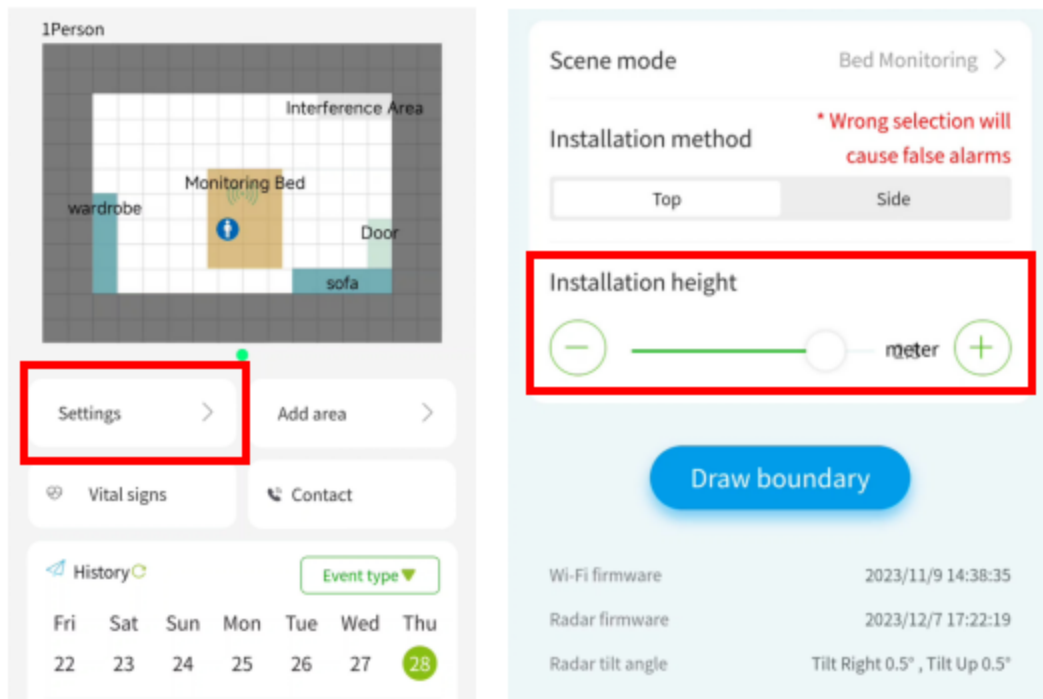
3.3 Mounting Height

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

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

QLanradar

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.

http://www.tsmglanst.com/

QLɑnrɑdɑr

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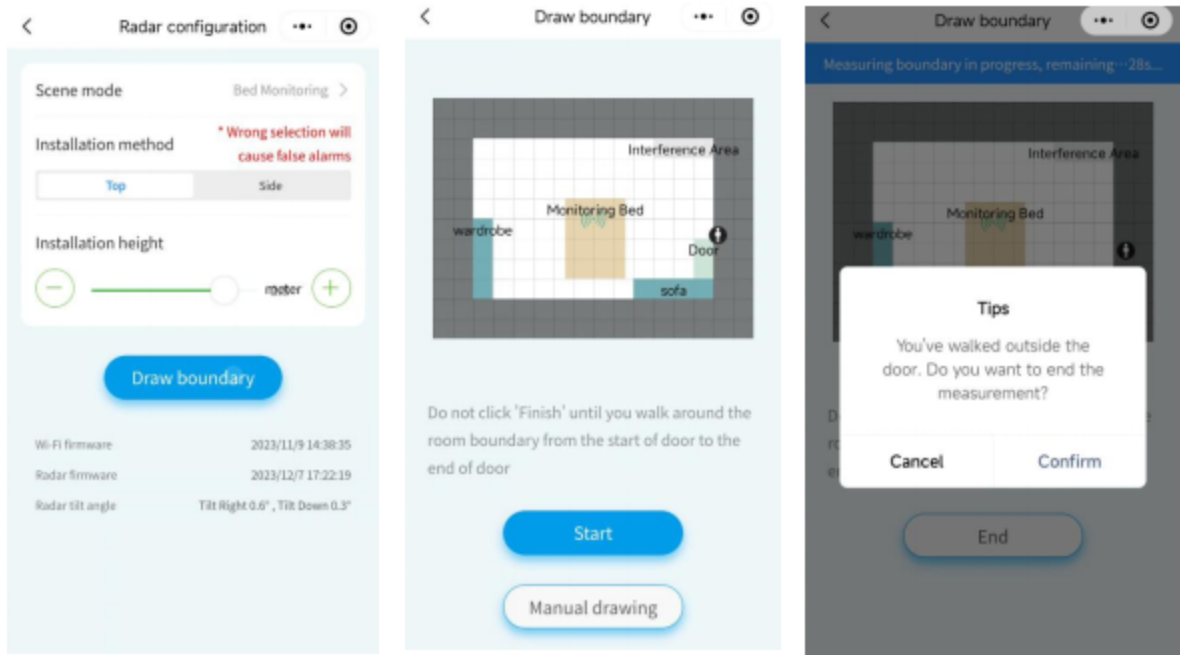
☞ NOTE! Physically measure boundary dimensions for web configuration. Incorrect values lead to false/missed alerts.

☞ NOTE! Follow web interface prompts for correct forward/back/left/right orientations when setting zone dimensions.
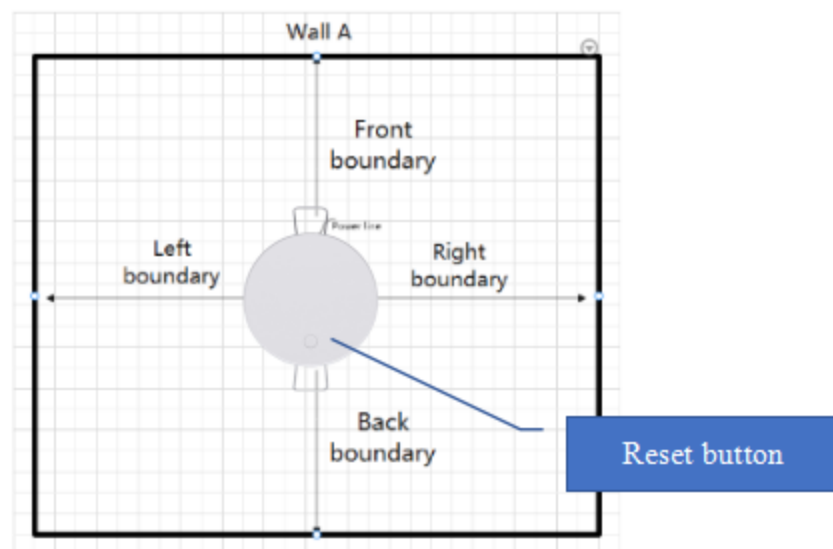
3.5 **Zoning**

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.
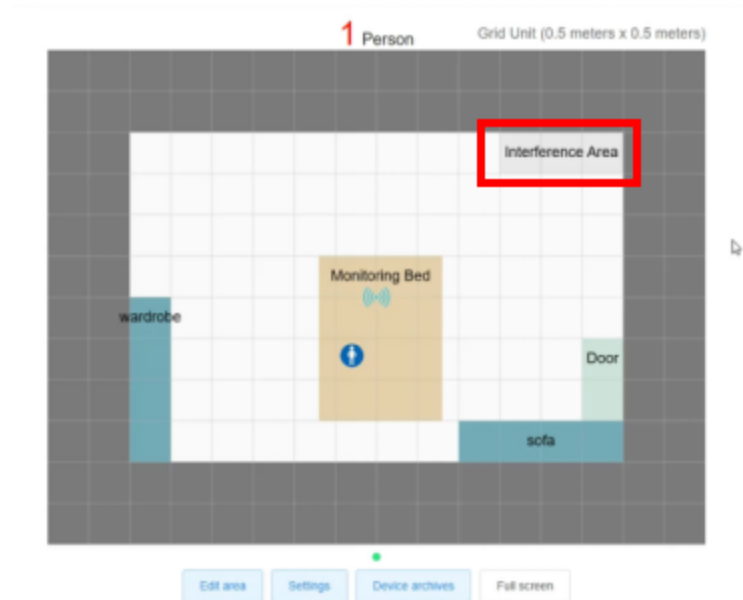
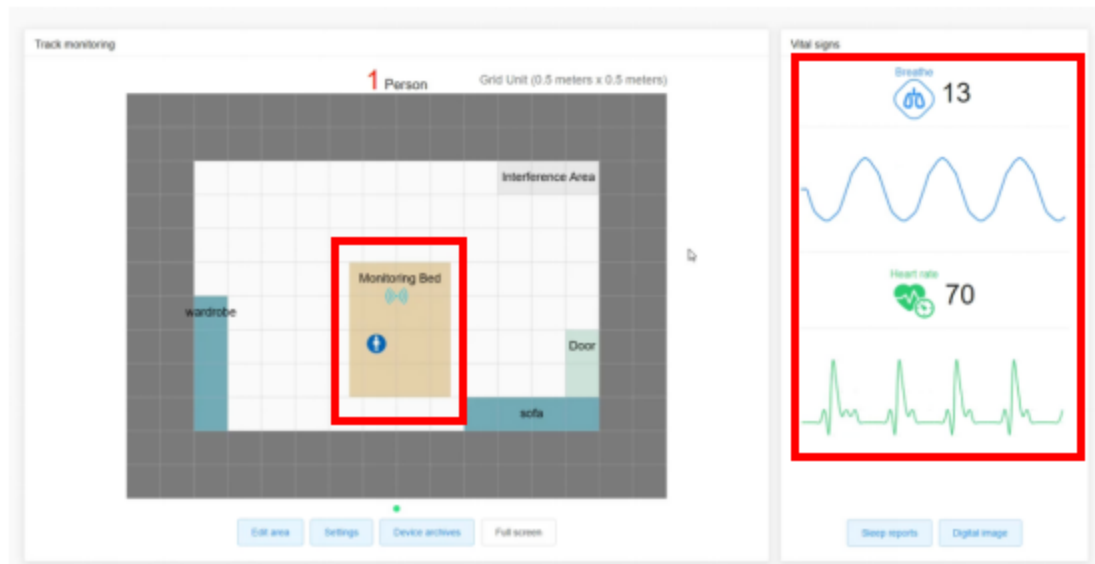☞Do not classify non-interference areas as "interference areas" as it may lead to anomaly detection.
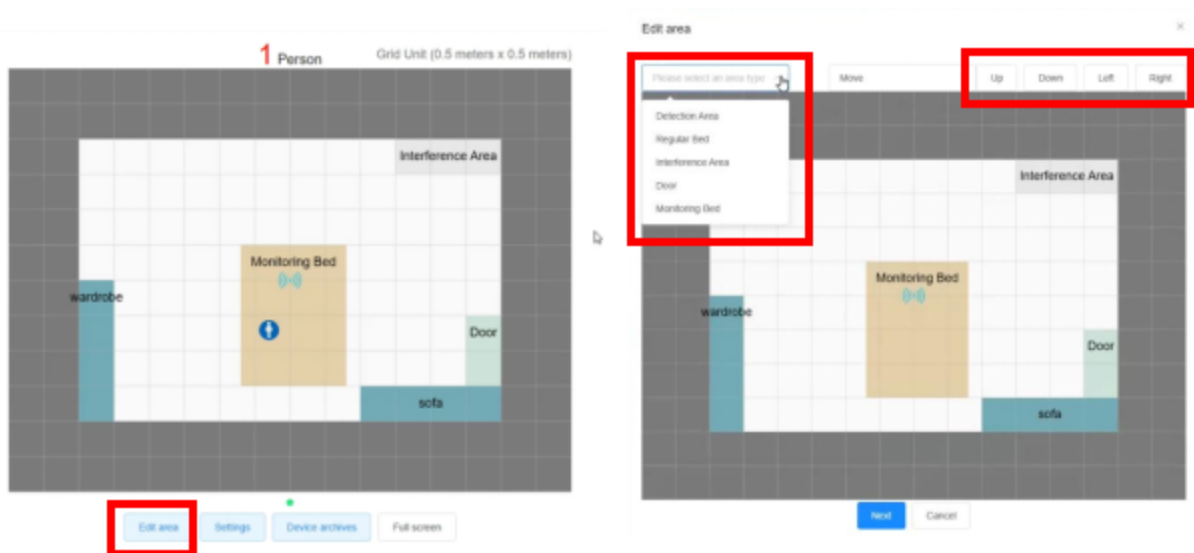
Door: Track room entry/exit.

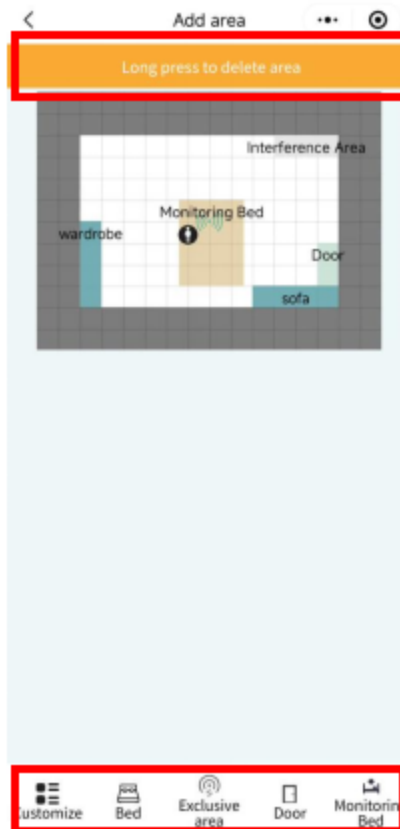Monitor Bed: Detect this bed's breathing, heart rate, and sleep quality.

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.

http://www.tsinglanst.com/

To delete zones:

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

QLanradar

4. 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.

http://www.tsinglanst.com/