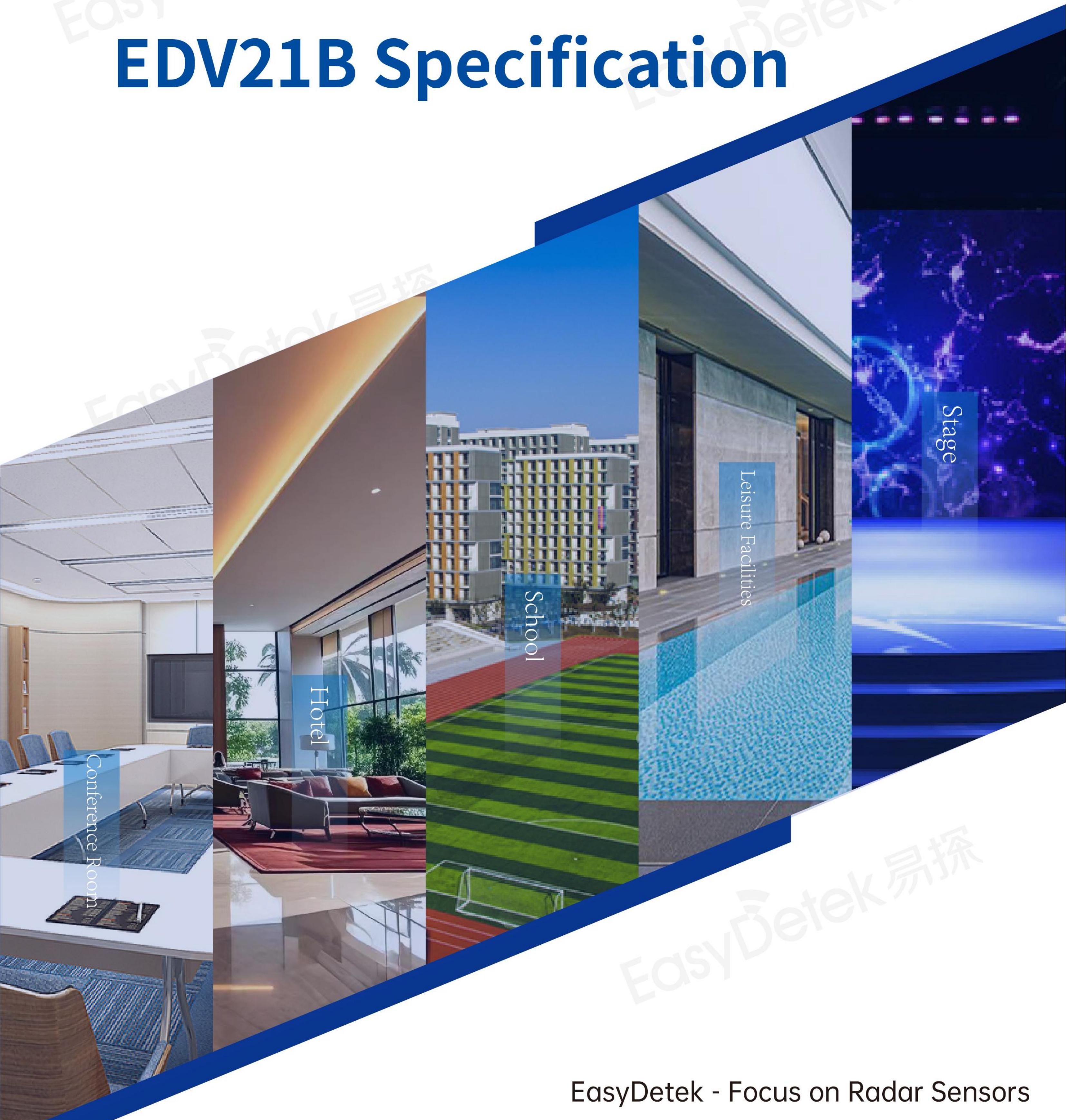


Personnel tracking statistical sensors

EDV21B Specification



EDV21B



Product Features

- Maximum detection range is 7m*7m
- Real-time monitoring of target status
- Real-time statistics on the number of targets, up to 20 human targets detected
- Supports target trajectory detection
- Uses sensorless monitoring technology and encrypted data processing to protect user information
- Configurable three-dimensional areas and flexible adjustment of recognition modes

Monitoring Performance

| | |
|----------------------------|---|
| Detection distance | Detection of an area of 7 m long * 7 m wide (Note 1) |
| Detection area | Supports 4 types of areas, 16 partition settings, with a minimum cell area of a rectangle measuring 0.5 meters in length and 0.5 meters in width (see "Detection Area Settings" for details) |
| Detection mode | Supports 3 mode settings and switching (see "Detection Mode Settings" for details). |
| Presence detection time | General movement into the detection zone is detected for 2-5 seconds, the active zone is left for 5-30 seconds, and the rest zone is left for 15 seconds-3 minutes (see "Detection Zone Settings" for details). |
| Target number | 1-20 people in the range of 2-4 m. The higher the mounting height, the more people are detected. |
| Measurement accuracy | Active target detection accuracy of 90% or more (Note 2) |
| Update time | Data is updated at intervals of no more than 10 seconds, 0.1 to 15 seconds, with the current setting of 1 report at 0.25 seconds. |
| Resolution | Millimeter human motion detection |
| Data acquisition frequency | 8 times per second |

Operating conditions/Environmental parameters

| | |
|--|---|
| Working voltage of the whole machine | 12V DC |
| Operating current of the whole machine | 150mA running average 250mA running maximum |
| Standby power consumption | Less than 1.8W average, ≤3W maximum @12 DC |
| Radar emission frequency | Radar 60-64 GHz |
| Radar transmitting power | Maximum value ≤15dBm |
| Radar beam angle | 128° (XZ plane) 128° (YZ plane) |
| WIFI transmitting frequency | 2.4 GHz Wi-Fi (IEEE 802.11b/g/n) |
| WIFI transmitter power | Maximum value ≤20dBm |
| Operating temperature of the whole machine | -20 to 70°C |
| Storage temperature of the whole machine | -40°C to 105°C |
| Communication method | WebSocket, UART serial port (Note 3) |

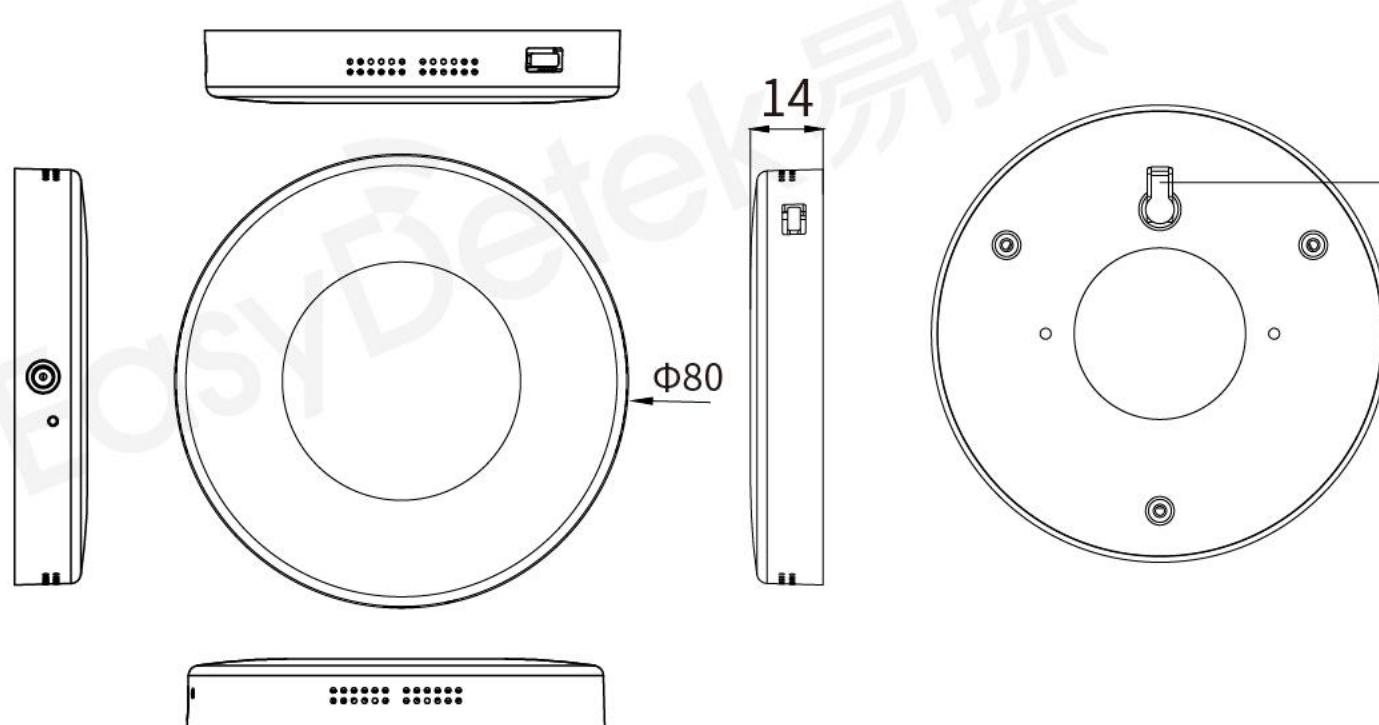
Note 1, the detection distance is generally different according to the height, can detect a different range of distances, it is recommended that the installation height of 2.5 meters to 4 meters, such as the installation of 3.5 meters high, the monitoring area can be close to the length of 7 * width of 7 (no wall) area, the specific detection of the different settings according to the actual scene and the region, the parameters will be a different detection effect. vv

Note 2, normal more open places, people enter the area at normal speed and have movement, target detection rate of 90% or more. Real target generally corresponds to a credible level of 1.

Note 3, can be customized output UDP, MQTT, HTTP

Product Size

Size unit:mm



keystrokes

The finished product has a DC power interface bit, and a key for network distribution, and a reserved UART serial port (TTL signal). Press and hold the button for more than 5 seconds, then release it to enter the network mode. Serial port holder pin counterclockwise order are 5V, Tx, Rx, GND (if you use the reserved serial port, please open the block first).

size 80*80*13

Functional Specifications

1. Real-time personnel statistics: up to 20 at the same time
2. Real-time target tracking: up to 20 simultaneous
3. Target presence judgment: output presence markers
4. Detection area setting: support the setting of detection area to limit the detection range, in the detection area, the following four types of areas can be set, and can set up to 16 areas:
 - Active area: an area of frequent personnel activity, usually used to detect the movement trajectory of personnel as well as intermittent movements, where the target may be stationary or moving rapidly for a short period of time.
 - Rest area: an area where personnel are resting or relaxing, used to detect the presence status of personnel, where the target may be stationary for long periods of time.
 - Passing area: An area where people pass through, used for the movement trajectory of the target, which the target will generally pass through without staying for a longer period of time. Usually located around passages, corridors or entrances.
 - Shielded area: A shielded area is an area that needs to be isolated, including areas of no interest and areas where interfering objects are present.

Note: Areas outside the detection zone will not be detected by the radar, the factory default is set to one detection zone and is active.

★5. Detection mode setting: the following 3 modes can be set and switched

■ Slow detection mode: strict judgment of target entry and exit, false alarms are generally low.

| | Formation of targets from outside the monitoring area to within the monitoring area | Removal of targets from within the monitoring area to outside the monitoring area | Hold while target is stationary |
|-----------------------|---|---|---------------------------------|
| Fast-track model: | 1-2 | 3-10 | 12-30 |
| Standard model: | 1.5-2.5 | 5-15 | 20-50 |
| Slow inspection mode: | 2-2.5 | 5-15 | 26-66 |

休息区目标形成和目标移除及目标静止保持的时间范围如下:

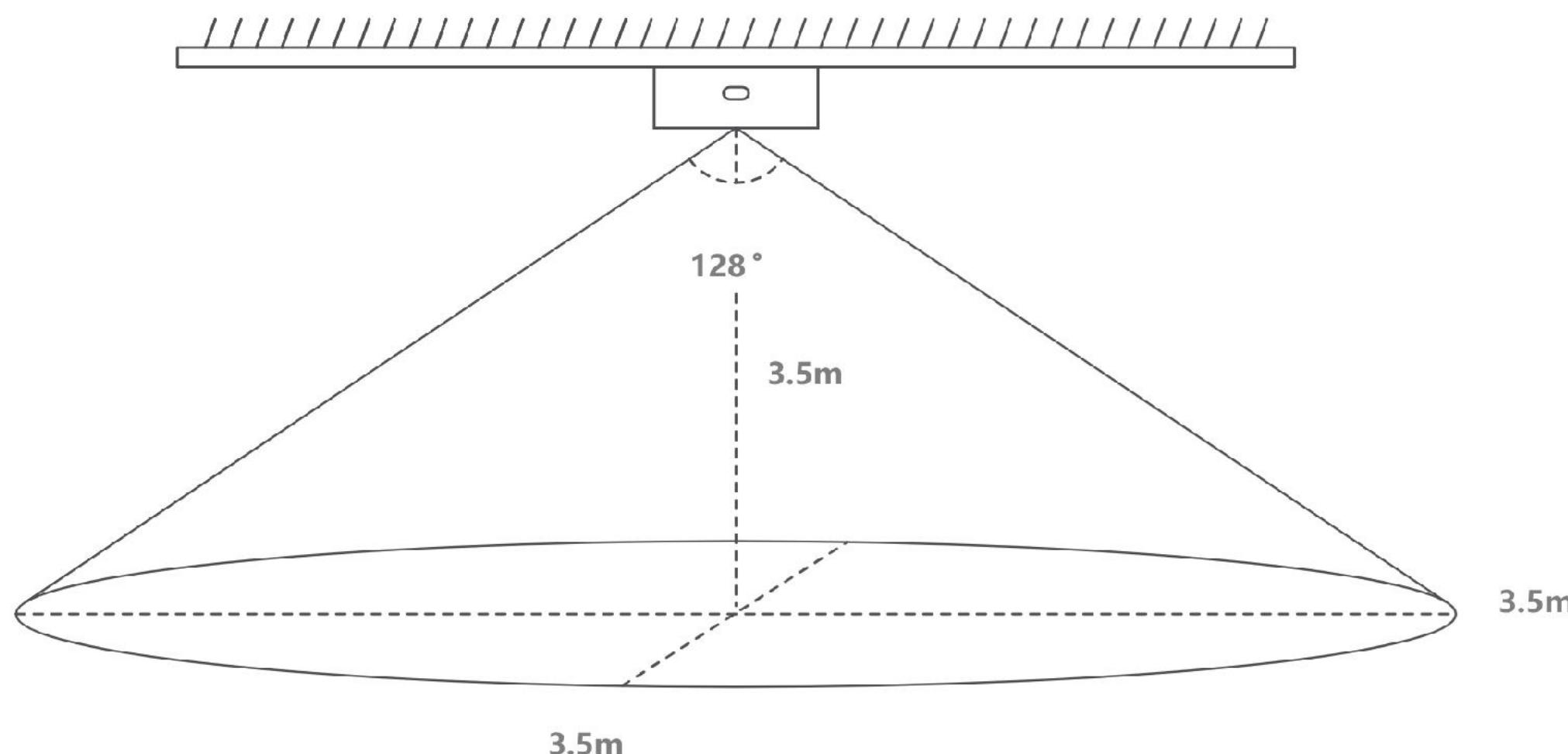
| | Formation of targets from outside the monitoring area to within the monitoring area | Removal of targets from within the monitoring area to outside the monitoring area | Hold while target is stationary |
|-----------------------|---|---|---------------------------------|
| Fast-track model: | 1-2 | 3-10 | 90-360 |
| Standard model: | 1.5-2.5 | 5-15 | 150-600 |
| Slow inspection mode: | 2-3 | 5-15 | 200-800 |

通行区目标形成和目标移除及目标静止保持的时间范围如下:

| | Formation of targets from outside the monitoring area to within the monitoring area | Removal of targets from within the monitoring area to outside the monitoring area | Hold while target is stationary |
|-----------------------|---|---|---------------------------------|
| Fast-track model: | 1-2 | 2-10 | 3-12 |
| Standard model: | 1.5-2.5 | 5-15 | 5-15 |
| Slow inspection mode: | 1.5-2.5 | 5-15 | 5-15 |

6. Installation height setting: the setting range supports 2 meters to 4 meters

A schematic of the detection range is shown below:



7. Design features:

Compact design: minimalist appearance, easy to integrate into the style of the space.

Silent operation: no mechanical parts, no noise interference during operation.

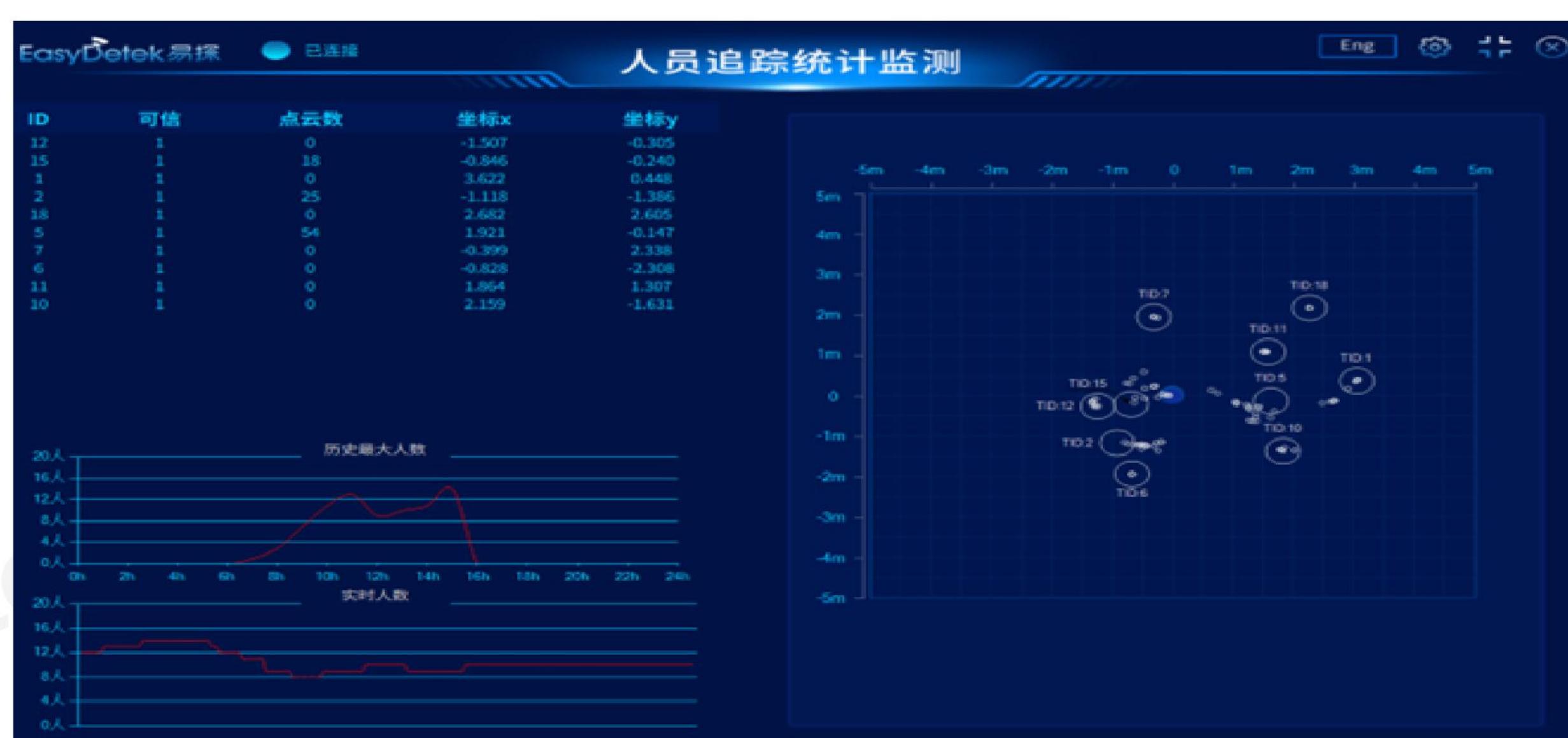
8. Installation and use:

Hardware mounting: ceiling mounted.

User Interface: Provides standard host computer software access for use.

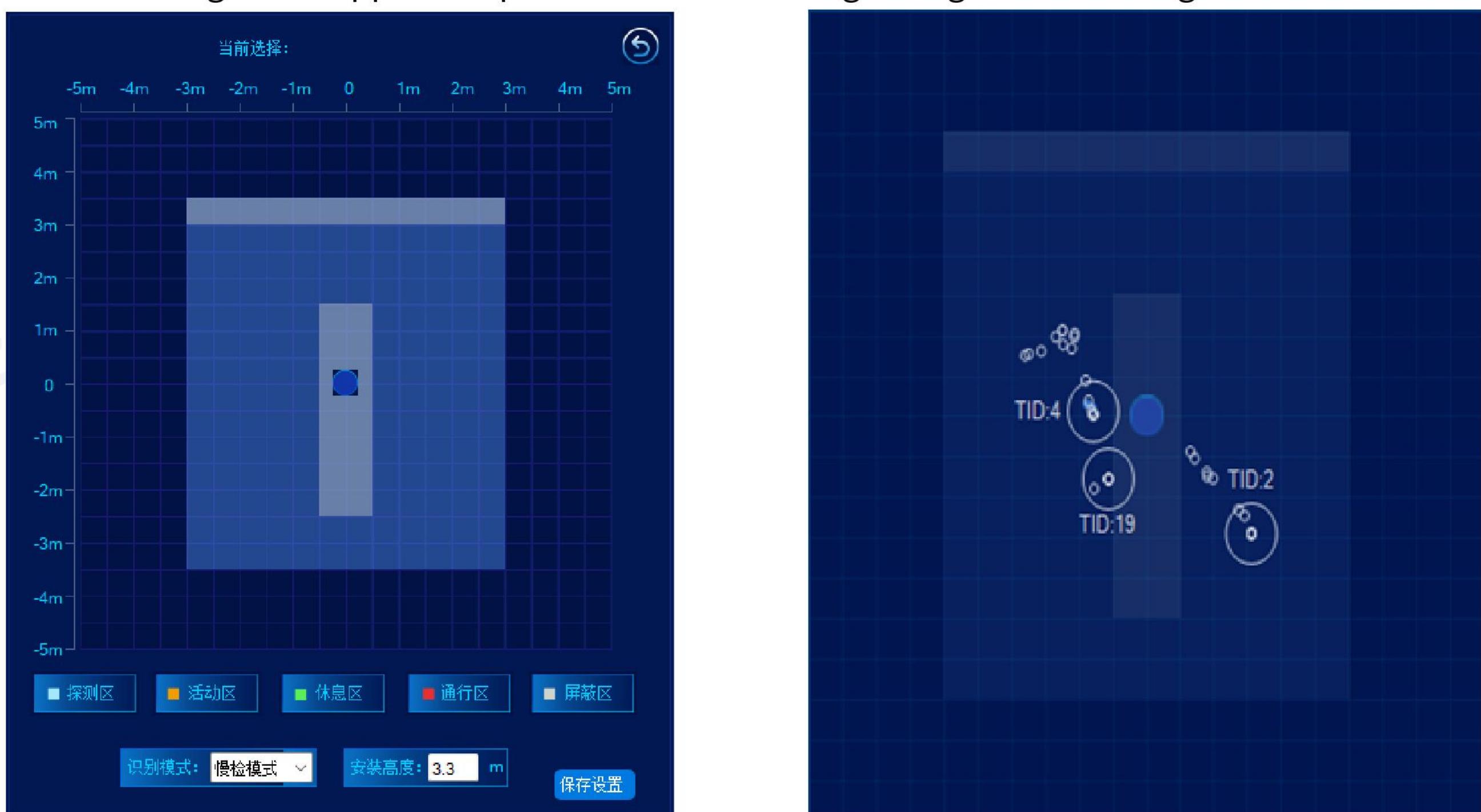
Server Installation: Provides local database server installation support.

9. The upper computer software interface runs as follows:



(Main screen)

As shown in the picture, a conference room has been set up,
The rendering of the upper computer interface running configuration settings is as follows:



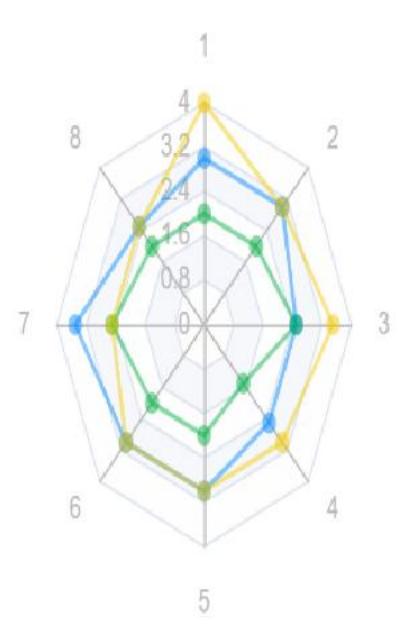
(Set up screen)

Note: In order to achieve the best results, it is recommended to set the area according to the actual area to avoid walls and interference reflections.

Distance Characterization Test

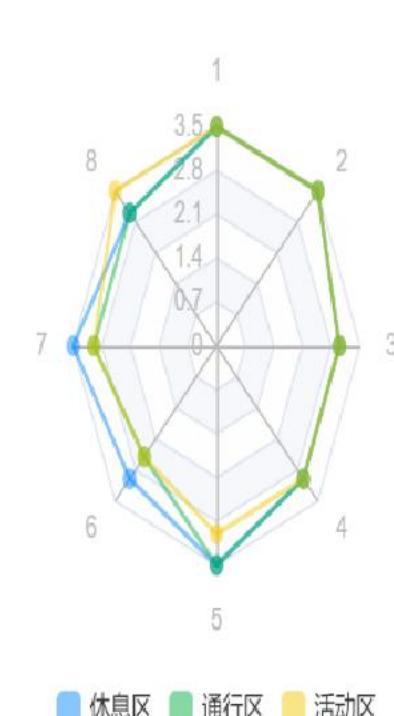
| 感应范围测试 (单位: 米) | | | | | | | | | | 备注 | | | |
|-------------------|------|------|------|------|---------|-----|-----|------|------|------|------|------|--|
| 测试场地 | 安装方式 | 安装高度 | 测试类型 | 设置区域 | 0°(指示灯) | 45° | 90° | 135° | 180° | 225° | 270° | 315° | |
| 大测试房 | 顶装 | 3.2m | 存在 | 休息区 | 3 | 3 | 2.5 | 2.5 | 3 | 3 | 3.5 | 2.5 | |
| 大测试房 | 顶装 | 3.2m | 存在 | 通行区 | 2 | 2 | 2.5 | 1.5 | 2 | 2 | 2.5 | 2 | |
| 大测试房 | 顶装 | 3.2m | 存在 | 活动区 | 4 | 3 | 3.5 | 3 | 3 | 3 | 2.5 | 2.5 | |
| 大测试房 | 顶装 | 3.2m | 移动 | 休息区 | 3.5 | 3.5 | 3 | 3 | 3.5 | 3 | 3.5 | 3 | |
| 大测试房 | 顶装 | 3.2m | 移动 | 通行区 | 3.5 | 3.5 | 3 | 3 | 3.5 | 2.5 | 3 | 3 | |
| 大测试房 | 顶装 | 3.2m | 移动 | 活动区 | 3.5 | 3.5 | 3 | 3 | 3 | 2.5 | 3 | 3.5 | |

existence graph



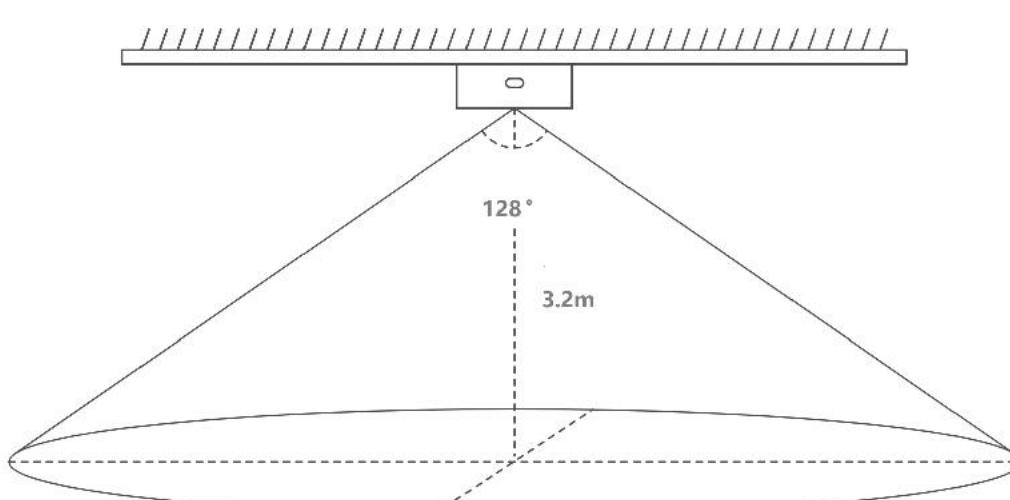
■ 休息区 ■ 通行区 ■ 活动区

moving picture



■ 休息区 ■ 通行区 ■ 活动区

Installation Diagram



Interface Description

The finished product has a DC power interface and a distribution network button, with reserved UART serial port (TTL signal). Press and hold for more than 5 seconds during distribution network, then release to enter distribution network mode. The counterclockwise sequence of the serial port socket pins is 5V, Tx, Rx, GND (please open the baffle first when using the serial port).

Access Description

The current product can be directly connected to the standard host computer via wireless WIFI network or wired serial port respectively. Please set the radar switch to on when using the serial port.

If you need to use the data through WIFI network or serial port for secondary application, please refer to the corresponding interface documents.

Indicate Status

1. power-on initialization: radar light blinks once, when WIFI module is not networked, networked blinks once in 3 seconds, networked device enters working mode and blinks once in 10 seconds;
2. in the process of network allocation: WIFI light flashes once in 3 seconds;
3. working mode: radar light flashes once every 10s, WIFI light flashes fast once per second;

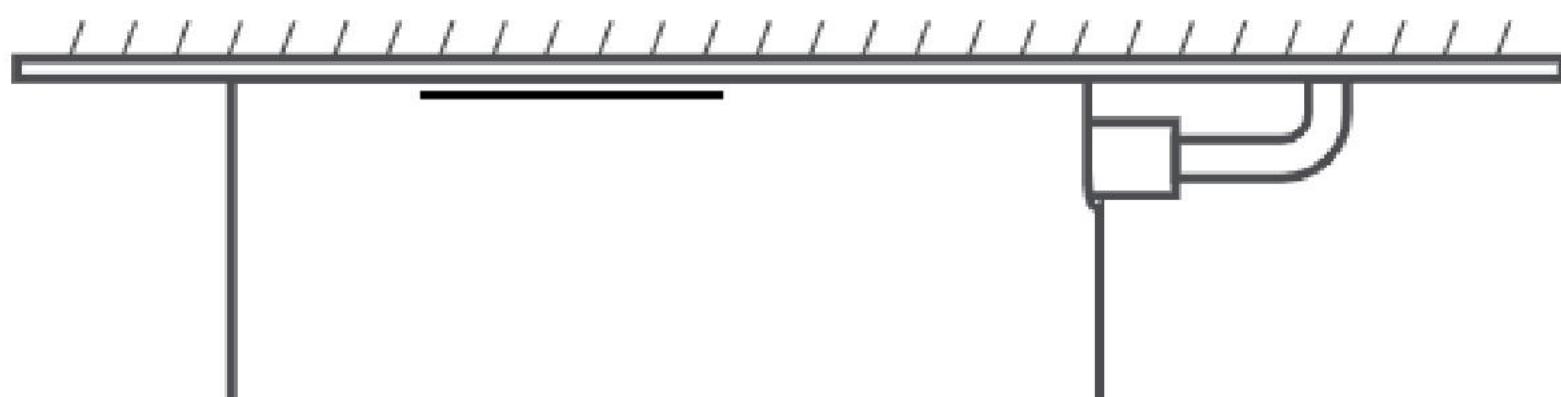
Compatibility and Expansion

- Provides a standard host computer to send and receive radar data and configure it for access to a higher-level master control. The device supports WIFI and serial communication
- Provide WIFI module, through the distribution network can realize the peer-to-peer mode or access to the local LAN server use (off-cloud state).
- The upper computer is compatible with Win10 and Win11.
- Connecting to cloud platforms, you can access public or private clouds by adding adapter boards or replacing WIFI modules.
- Customizable mobile app/applet or web big screen.

Installation Instructions

The top mounting schematic is shown below:

Method 1: Adhesive Installation Clean the wall and dry the surface, apply the adhesive and press firmly for 15 seconds to fix it.



Method 2: Bracket Mounting Attach the long fittings to the unit with screws and secure the unit to the ceiling with screws.



For easy understanding and visual configuration of the area, it is recommended that the power connector be oriented to the right when installed.

Please refer to the "EDV21B Customer Configuration Operation Guidance Notes" document for specific installation and configuration.

.Security and Privacy

■ Privacy Policy: Strictly comply with the GDPR and related privacy regulations, while not generating or leaking private data.

Product Naming Law

| ED | Frequency Band | Product Categories | Product Subdivision | Product Number | Delay Time | Serial number |
|-----------|----------------|---------------------------|---------------------------|----------------|--------------------|---------------|
| ED | V | 2 | 1 | B | | |
| EasyDetek | C 5.8GHz | 1 Microwave sensor module | 0 Ultra-low-power series | 0-9, A-Z | Y Has light sensor | |
| | X 10.5GHz | 2. Microwave radar switch | 1 Flagship series | | N no light sensor | |
| | Q 24GHz | 3 Radar antenna | 2 Short-distance series | | P programmable | |
| | V 60GHz | 4 MCU | 3 Adjustable series | | | |
| | W 77GHz | 5 Microwave power supply | 4 External antenna series | | | |
| | | 6 IC | 5 General Series | | | |
| | | 7 Other | 6 To be defined | | | |
| | | 8 Networking | 7 To be defined | | | |
| | | | 8 Basic series | | | |
| | | | 9 High altitude series | | | |

Configuration Version Description

【material number】: EDV21B-N-01

【hardware】:

【software】:

Historical Revision Record

| Version | Time | Description | Note |
|---------|------------|---------------|------|
| V1.0 | 2025-04-28 | first edition | - |
| | | | |

Precautions

1. After installation of this product, continuous vibration interference should be avoided in the area, otherwise it may cause self excitation false triggering of sensor detection, and it may be impossible to enter unmanned areas for a long time. At the same time, large areas of metal in front of the sensor should be avoided to prevent self excitation caused by metal reflection;
2. It usually takes 30 seconds to 1 minute for initialization data calibration to start up and power on;
3. When a person maintains silence to the point where the radar detects very little activity, it will not be tracked as an active target after a period of time, and the target can be detected after resuming movement;
4. The speed of detecting targets may vary in different environments, such as areas with more metal and electromagnetic wave reflections that may cause target detection errors;
5. The radar module has strict requirements for power and grounding quality, requiring a stable and interference free power supply, and avoiding voltage fluctuations and external noise (especially power noise from peripheral equipment). Grounding is crucial because ground noise may affect its performance, reducing detection distance or increasing false alarms.
6. This product is currently used for ceiling installation. If a metal tripod is used to simulate ceiling installation facing downwards during testing, there may be occasional false targets on the side near the metal tripod. This can be eliminated through time or shielding zones, and can be eliminated in actual scenarios. If there are more than 7 people in the conference room scene and the middle aisle is narrow, and multiple people leave at the same time, the trajectory may not be updated in real time.
7. EasyDetek Technology is committed to providing customers with high-quality and better experience radar sensors. Product version updates and iterations will not be notified separately. If needed, please contact our sales team to obtain the latest product information.