DS-TDSB00-EKT/4m Fall Detection Radar

User Manual

Legal Information

About this Manual

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Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
 **Note**	Provides additional information to emphasize or supplement important points of the main text.
 **Caution**	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
 **Danger**	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

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Chapter 1 Product Introduction

1.1 Introduction

Based on the 60 GHz frequency band, fall detection radar (hereinafter referred to as “device”) adopts FMCW, MIMO, beamforming, deep learning, and other technologies. It can obtain target information, including person location, speed, posture, etc., and can provide non-contact and non-privacy fall detection.

1.2 Key Feature

- No privacy disclosure.
- High detection accuracy and low false alarm rate.
- Target tracking.
- Remote and non-contact posture detection.
- Small size, light, and easy installation.

1.3 Specification

Refer to the table below for the device specification.

Table 1-1 DS-TDSB00-EKT/4m Fall Detection Radar Specification

Parameters	Values
Working Frequency	60 to 64 GHz
Modulation Wave	FMCW
Frequency Span	2 GHz
Horizontal FoV	-45° to +45°
Vertical FoV	-45° to +45°
Range Resolution	0.08 m
Detection Range	0.1 to 6 m
Speed Resolution	0.10 m/s
Data Cycle	70 ms
Communication Interface	RS-485/Wi-Fi
Working Voltage	9 to 12 VDC
Working Electric Current	≤ 200 mA @ 12 VDC

Consumption	< 2.4 W
Working Temperature	-40 °C to +50 °C (-40 °F to +122 °F)

1.4 Dimension and Appearance Overview

Refer to the figures below for the device dimension and appearance overview.

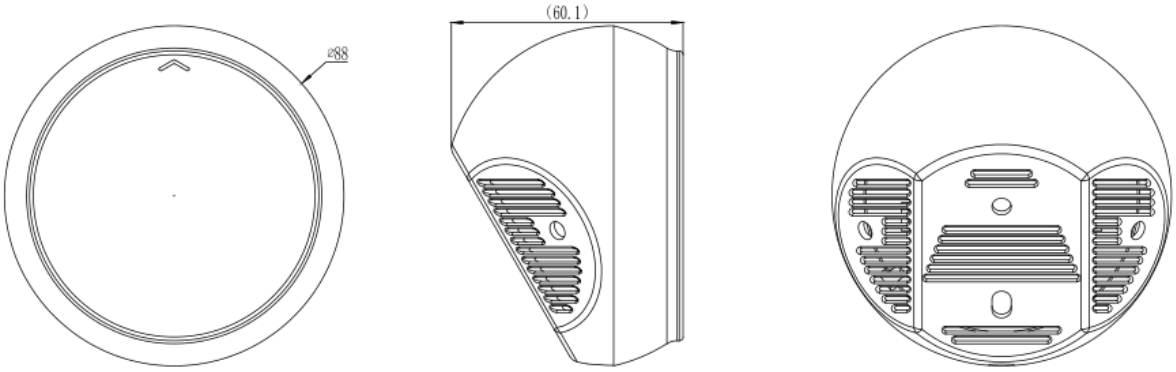

Figure 1-1 Dimension (unit: mm)

Figure 1-2 Appearance

1.5 Cables Description

Refer to the table below for the cables description.

Table 1-2 DS-TDSB00-EKT/4m Fall Detection Radar Cables Description

No.	Color	Name	Function
1	Red	+12 V	12 VDC
2	Black	GND	Power ground
3	Green	RS-485A	RS-485 communication port
4	Blue	RS-485B	
5	Yellow	OC controlled signal	VOH/VOL controller

6	Brown	GND	Power ground

1.6 Installation Requirements

Install the device on the wall at a height of 2 m. Make sure that the device is centered horizontally in the detection area and there is no obstruction in front of it. Refer to the figures below for the device installation overview.

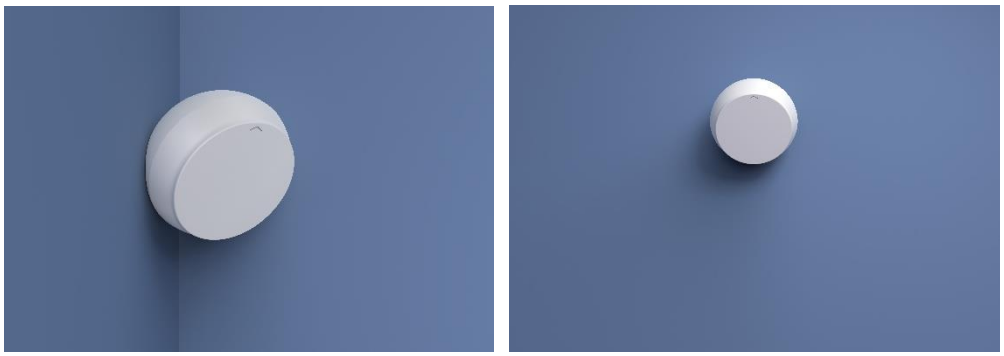

Figure 1-3 DS-TDSB00-EKT/4m Radar Installation Overview

Chapter 2 Software Instruction

2.1 Device Connection

You can connect the device via Wi-Fi or RS-485. Enter the corresponding information according to the different connection modes.

2.1.1 Connection via Wi-Fi

You can connect the radar via Wi-Fi.

Before You Start

Power on the radar (12 V).

Step 1 Connect your computer to the radar AP hotspot.

Note

- SSID format: IRS60_xxxx.
- Default password: abcd1234.

Step 2 Use “ping” command to test if the computer is connected to the radar Wi-Fi.

1) Press the Win button and R button at the same time.
2) Enter “cmd” and click **OK**.
3) Enter “ping 192.168.4.1” in the command line.

Step 3 Open the IRS60-3 Radar PC tool and click **On/OFF**.

Step 4 Set the network port parameters.

Note

- IP address: 192.168.4.1.
- Port No. : 20000.

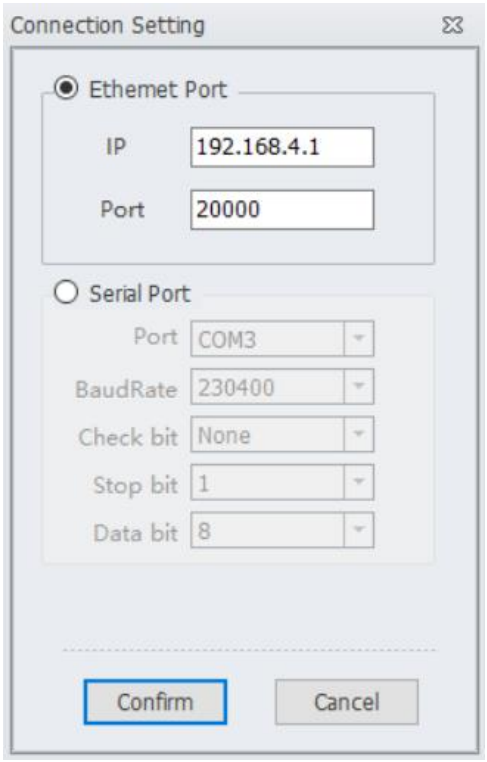

Figure 2-1 Connection Setting

Step 5 Click **Confirm**.

2.1.2 Connection via RS-485

You can connect the radar via the serial port.

Step 1 Open the IRS60-3 Radar PC tool.

Step 2 Click **Connection Settings**.

Step 3 Select **Serial Port**.

Step 4 Select **Port**.

Step 5 Set **BaudRate** as 115200, **Stop bit** as 1, and **Data bit** as 8. No parity.

Step 6 Click **Confirm**.

2.2 Parameter Settings

Click **Parameter Settings** to view the radar firmware version and set the delay time and the radar detection area.

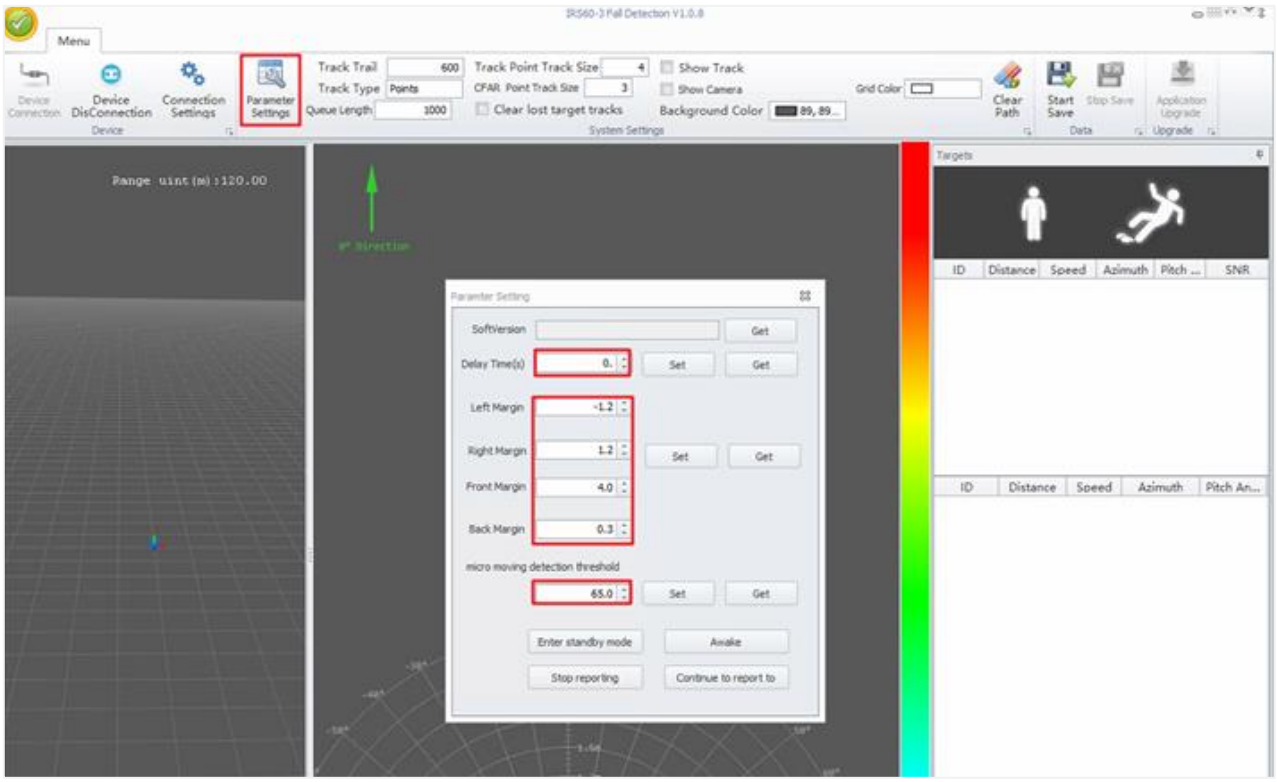

Figure 2-2 Parameter Settings

2.2.2 Read Software Version

Click **Parameter Settings** and click **Get** after **SoftVersion** to view the software version.

2.2.3 Set Delay Time

Go to **Parameter Settings** → **Delay Time** to set the delay time. If the radar detects the target person fell and stood up within the set delay time, it will not alarm. Otherwise, it will report a falling alarm signal.

2.2.4 Detection Boundary

The radar only detects falling within the range of detection boundary.

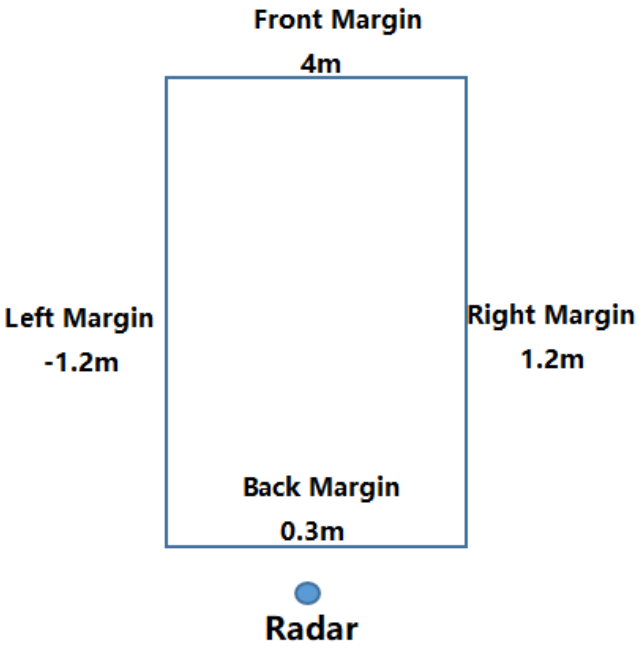

Figure 2-3 Detection Boundary

2.2.5 Set Radar Status

Click **Parameter Settings** to set the radar status.

Enter standby mode

The radar will be standby and stop emitting electromagnetic waves. If the radar is powered off and does not receive wakeup command after powered on again, then it will still be standby mode.

Awake

If the radar is powered off, the awake mode will be kept after it is powered on again.

2.3 Falling Indication

When the radar detects a person, the left icon will be highlighted. When the radar detects the target falls, the right icon will be highlighted.

Figure 2-4 Falling Indication

2.4 Upgrade

You can upgrade the firmware version.

Step 1 Open the IRS60-3 Radar PC tool.

Step 2 Press F1 button on the keyboard.

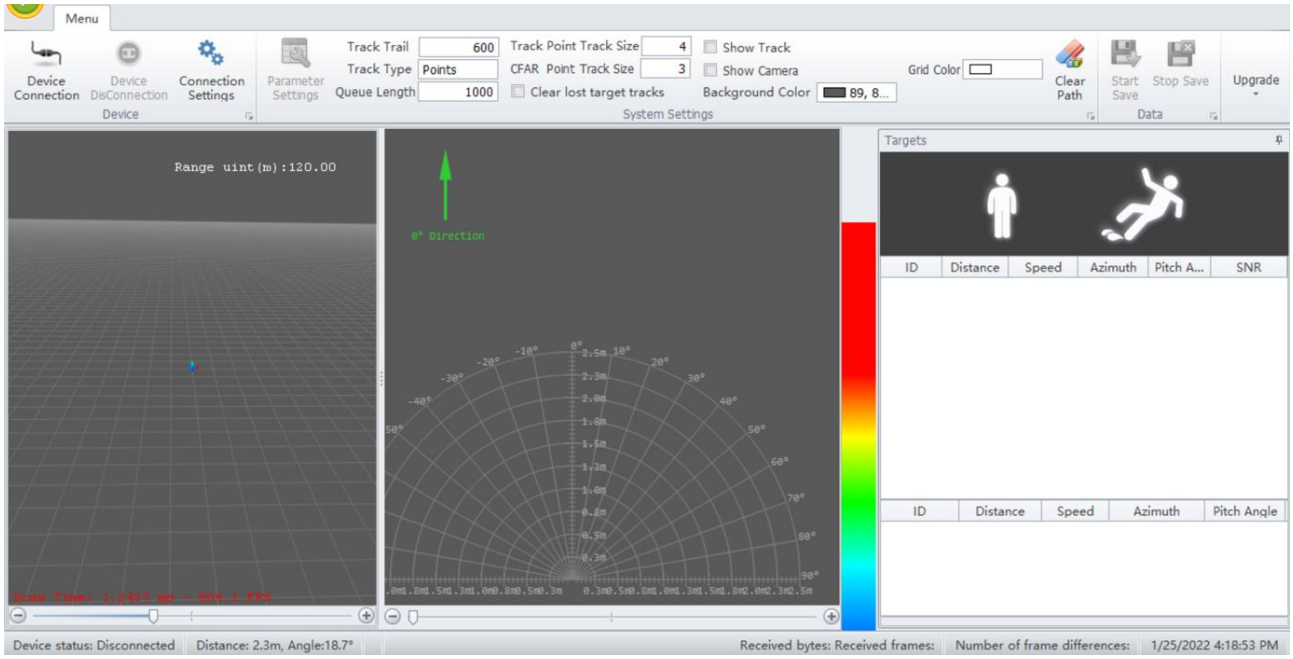

Figure 2-5 Menu Page

Step 3 Enter **IP Address** and **Radar Port** (IP address: 192.168.4.1; radar port: 6666).

Step 4 Click **Connect**.

Step 5 Click **Browse** to select the firmware to be upgraded.

Step 6 Select Network Segment as the same network segment with radar and **Mode** as **Auto**.

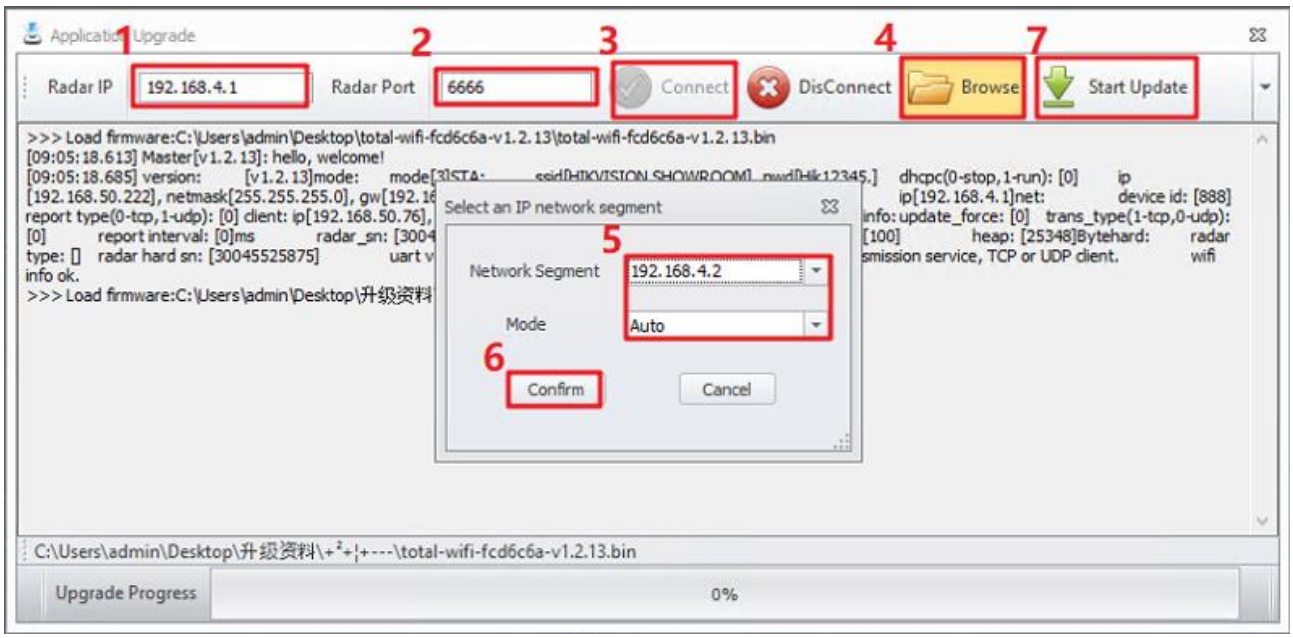

Figure 2-6 Application Upgrade

Step 7 Click **Confirm.**

Step 8 Click **Start Update**.

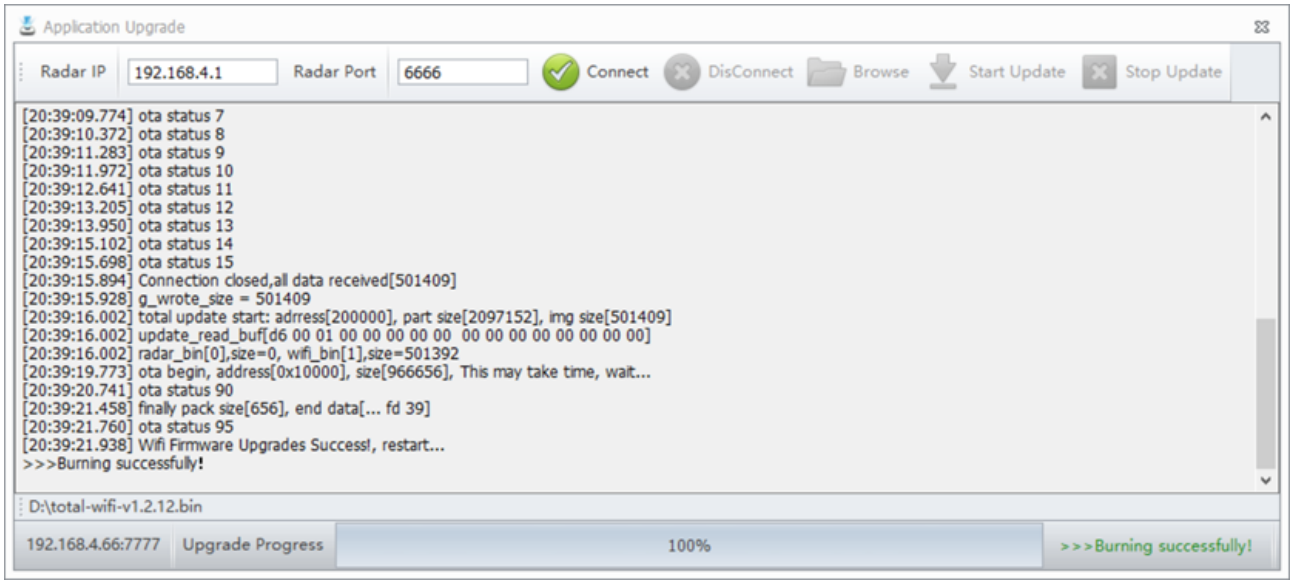

Figure 2-7 Upgrade

2.5 Radar Network Configuration

You can set the radar network.

Step 1 Open IRS60-3 Radar PC tool.

Step 2 Press F2 button on the keyboard.

Step 3 Enter **IP Address** and **Port** (IP address: 192.168.4.1; port: 6666).

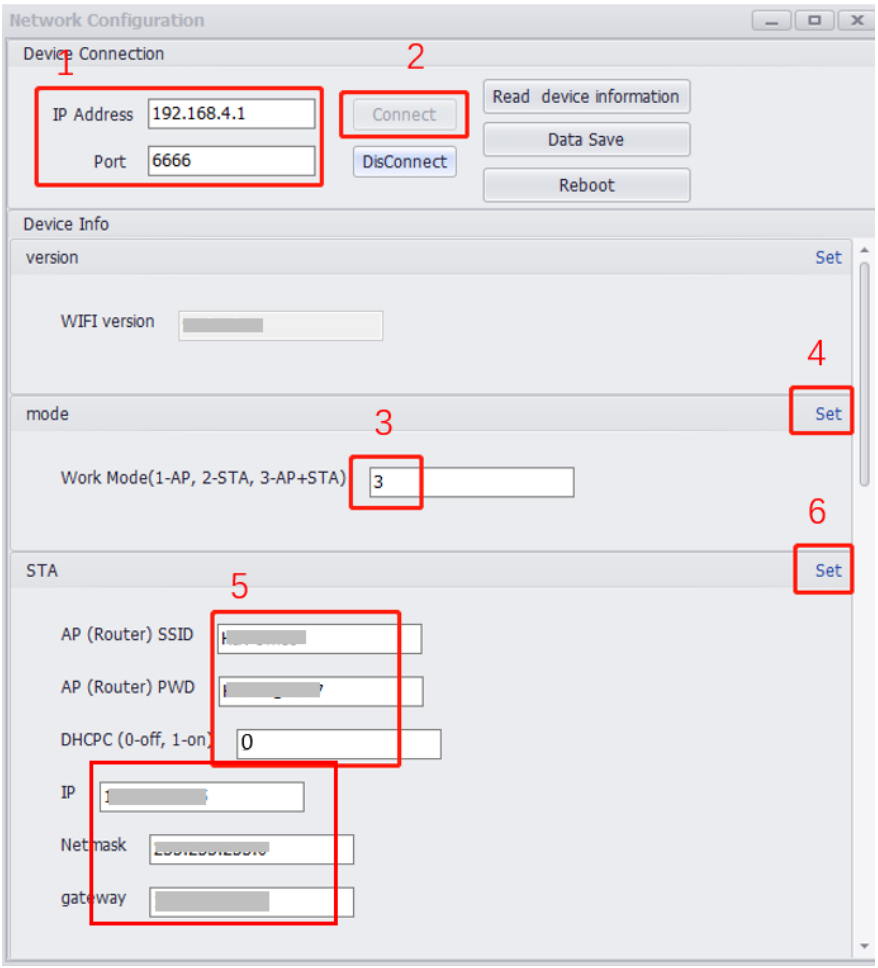

Figure 2-8 Network Configuration

Step 4 Click **Connect**.

Step 5 Set **Work Mode** as **3**.

Step 6 Click **Set**.

Step 7 Set **AP (Router) SSID** and **AP (Router) PWD**.

Note

AP (Router) SSID means the router name. **AP (Router) PWD** means the router password.

Step 8 Set **DHCPC** as **0**.

Step 9 Set **IP**, **Netmask**, and **gateway**.

Step 10 Click **Set**.

Step 11 Set **AP SSID** and **AP PWD**.

Note

AP SSID means the Wi-Fi name. **AP PWD** means the Wi-Fi password.

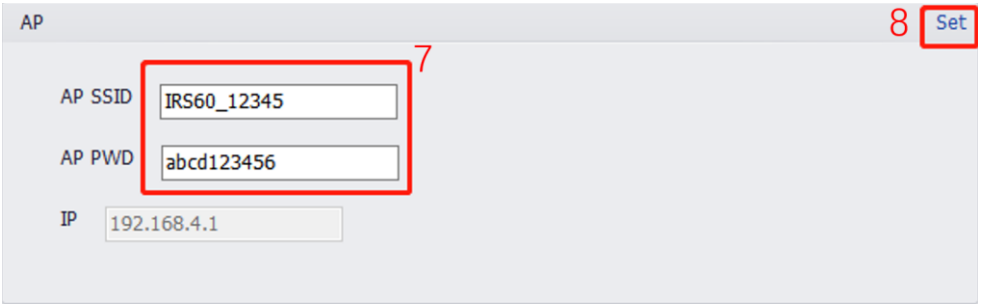

Figure 2-9 Set AP

Step 12 Click **Set**.

Step 13 Set **Device ID** as an integer (range: 1 to 999999999).

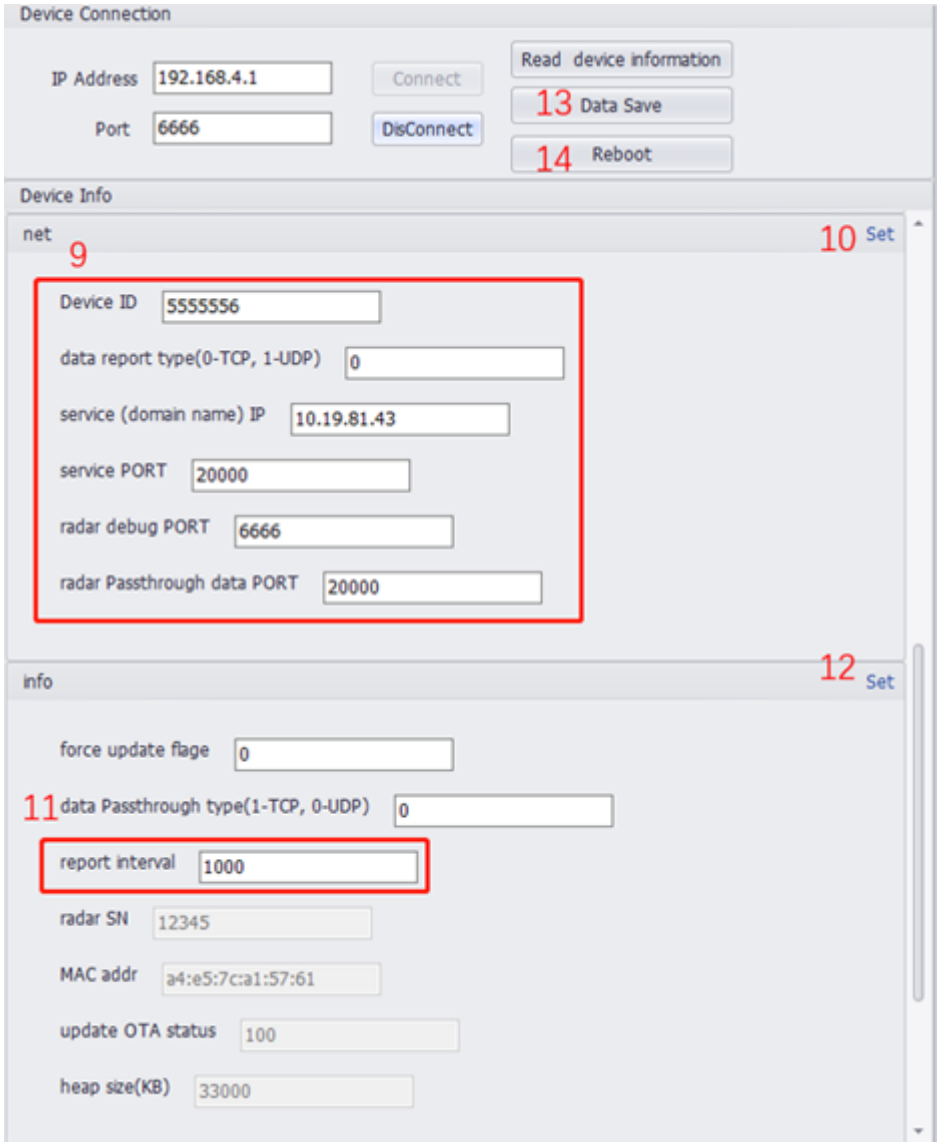

Figure 2-10 Set Device Information

Step 14 Set **data report type** as **0**.

Step 15 Set **service IP** as Hikcentral Pro service IP.

Step 16 Set **service PORT** as **20000**.

Step 17 Set **radar debug PORT** as **6666**.

Step 18 Set **radar Passthrough data PORT** as **20000**.

Step 19 Set **report interval** as **1000**.

Step 20 Click **Data Save**.

Step 21 Click **Reboot**.


See Far, Go Further