60G Sleep Monitoring Radar

Model: BD60S1-TUY

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User Manual

I. Product introduction

The sleep monitoring radar realizes bio-presence and motion detection based on the millimeter-wave radar system. It keeps records of human presence, and performs real-time judgment on the sleep state and breath & heartbeat frequency of the target according to the change in body movement amplitude and breath & heartbeat rate in the course of sleep. When the sleep ends, it outputs a score for the sleep, which will be used by health apps along with outputs of sleep parameters. This product should be wall-mounted. The sleep breath detection is free from the influences of temperature, humidity, noise, air flow, dust, lighting, etc.

II. Functions

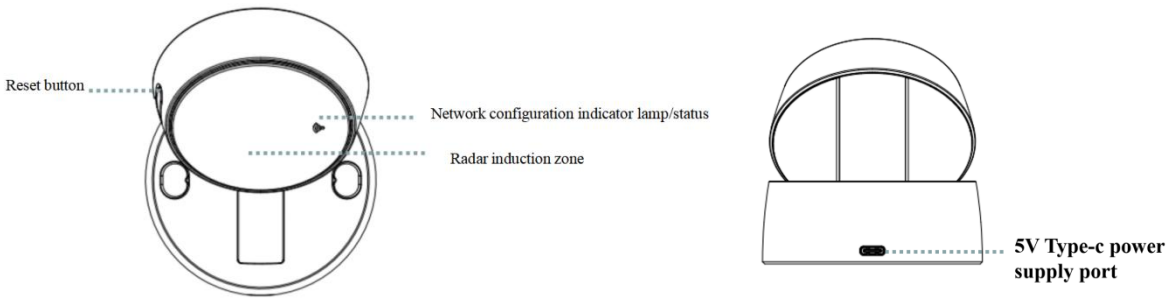
- **Sleep quality assessment**

  Records the sleep states of people, assesses their sleep quality, and records sleep time history.
- **Respiratory rate statistics**

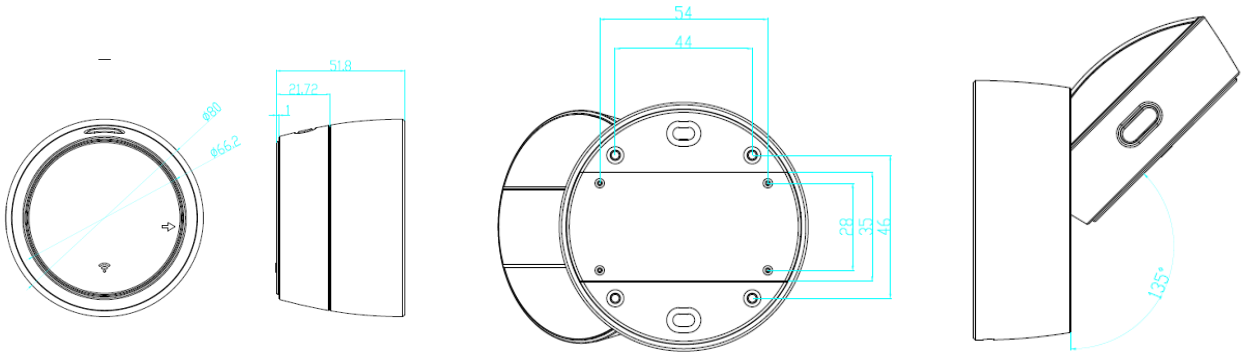
  Detects breath and records respiratory rate.
- **Heartbeat rate and frequency statistics**

  Detects heartbeat rate and records heartbeat frequency.

III. Appearance



Overall size (in mm)



IV. Instructions and considerations on installation



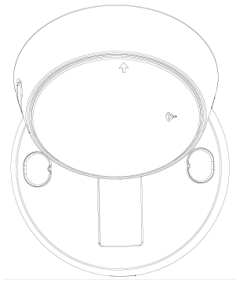
(1) Slide upwards the front end of the radar to expose mounting base;

(2) Drill the wall with the mounting base, and push in plastic expansion tubes;

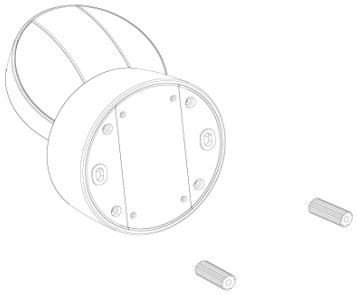
(3) Push in expansion bolts, fix the radar, and cover the bolts;

(4) Power on the device, configure the network, and connect the back end.

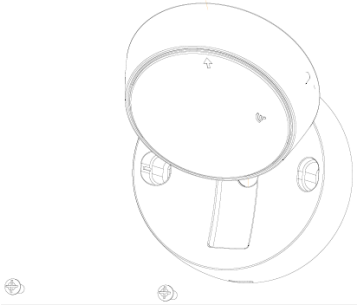
Installation steps



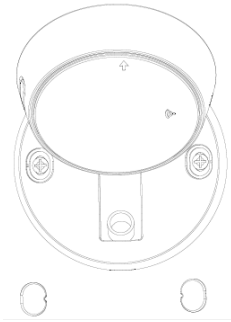
Step 1: Confirm installation position



Step 2: Install the plastic expansion bolts



Step 3: Install the screws

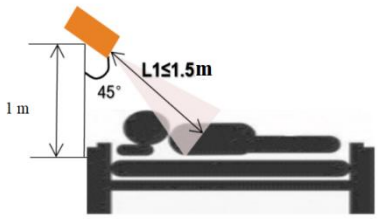


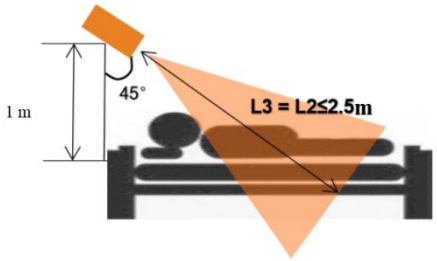
Step 4: Install the fixing caps

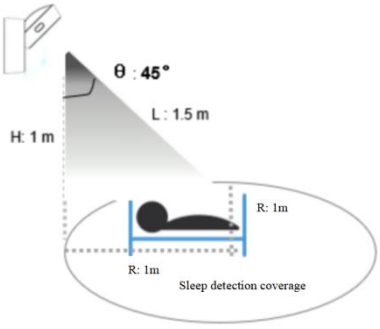
*** Please mount the radar inclined with corresponding bracket to ensure detection accuracy!**

- **Sleep detection**

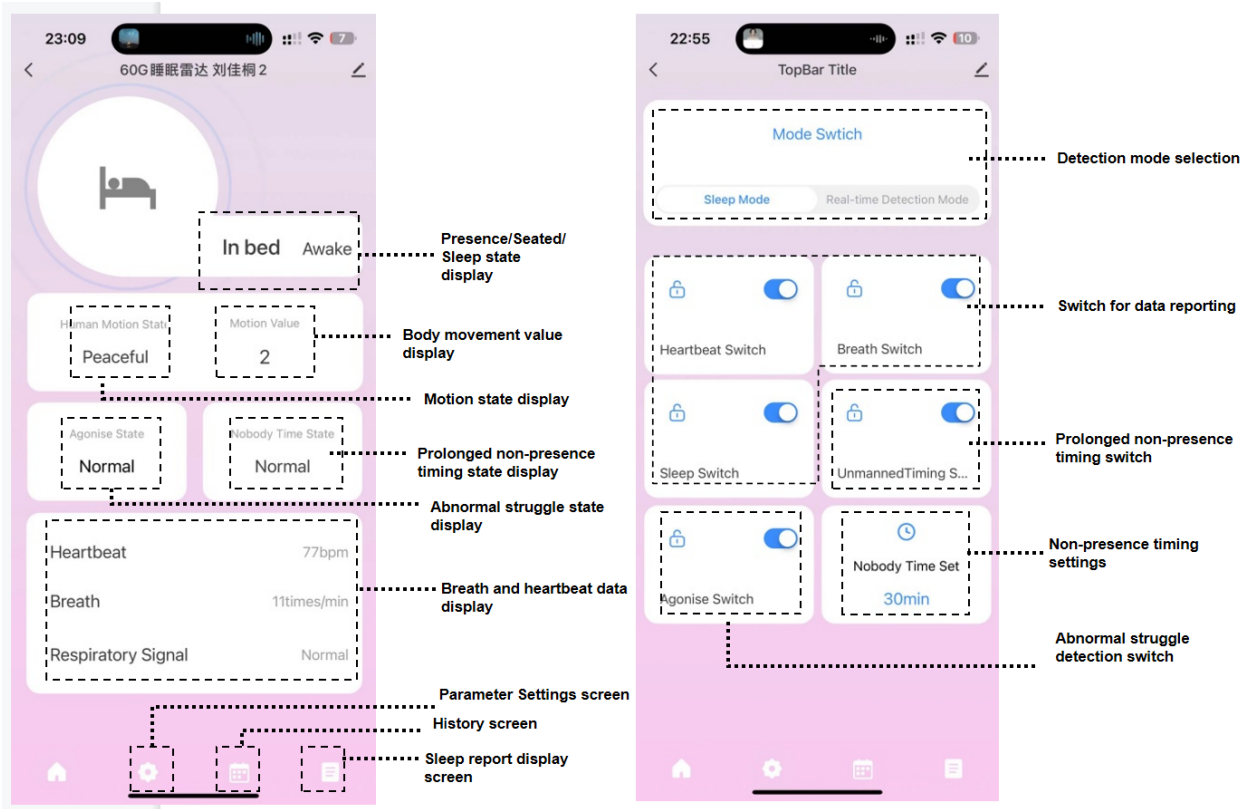
Install the radar inclined with a tilt angle of 45° above the head of the bed. The recommended height of installation is 1 m above the bed surface. Make sure the main beam of the radar covers the detection zone without noticeable blocks and coverings in front. Depending on the height of installation and the coverage of radar beams, under this mode, the max. distance of human presence detection is L3 ~2.5 m, sleep L2 ~2.5 m, and respiratory rate L1 ~1.5 m.

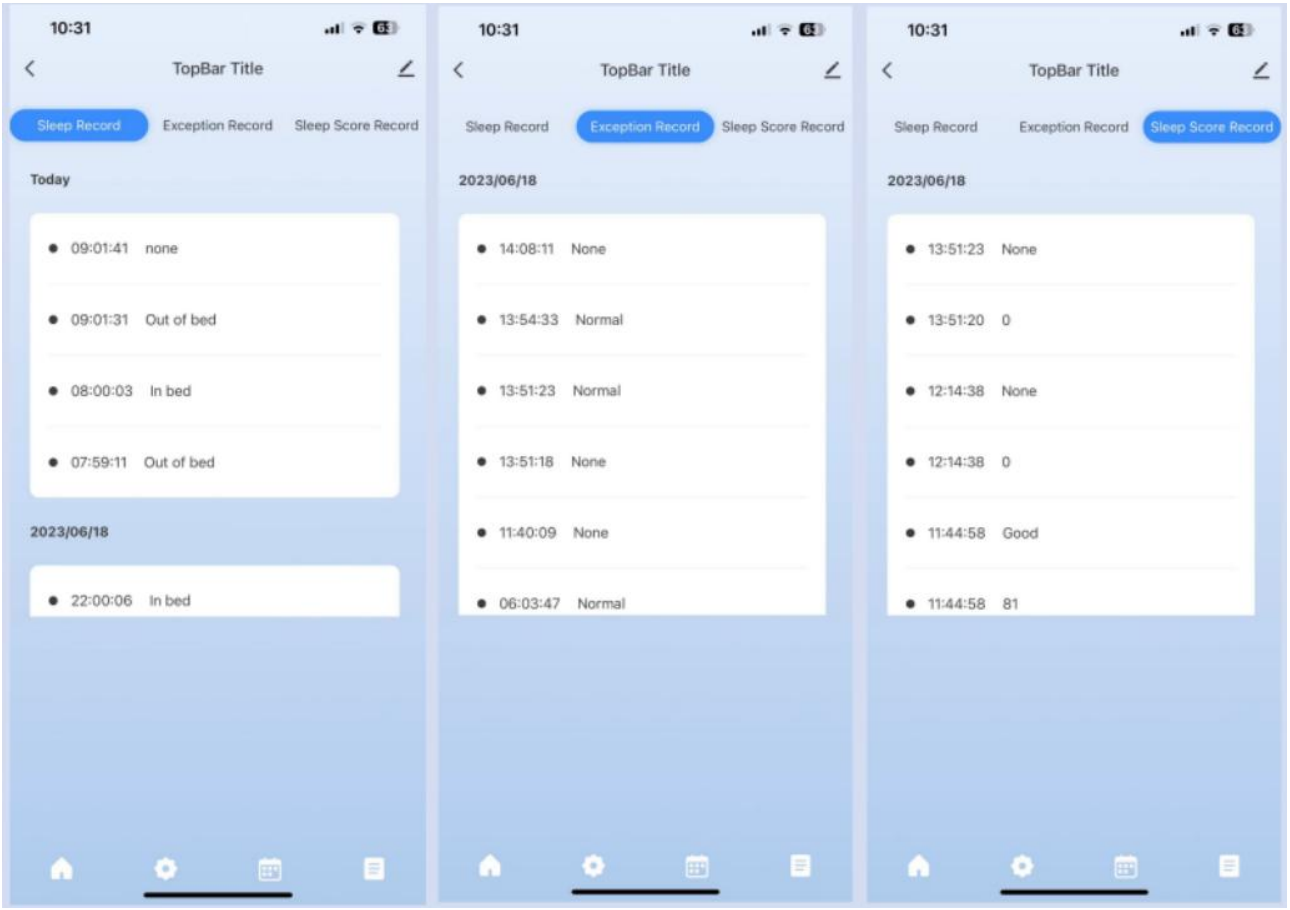






V. App interface





In or out of bed

Presence or non-presence

Abnormal non-presence timing

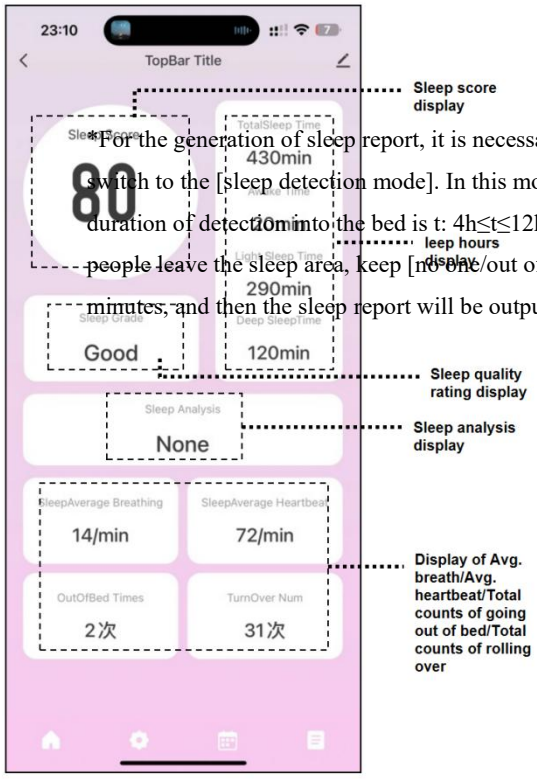
Records screen

Breath signal/abnormal struggle state

Records screen

Sleep score/sleep rating

Records screen



*For the generation of sleep report, it is necessary to switch to the [sleep detection mode]. In this mode, the duration of detection into the bed is t: 4h≤t≤12h. Later people leave the sleep area, keep [no one/out of bed] for 5 minutes, and then the sleep report will be output.

Device distribution network description

*** Download via APP Store: Doodle Smart App**

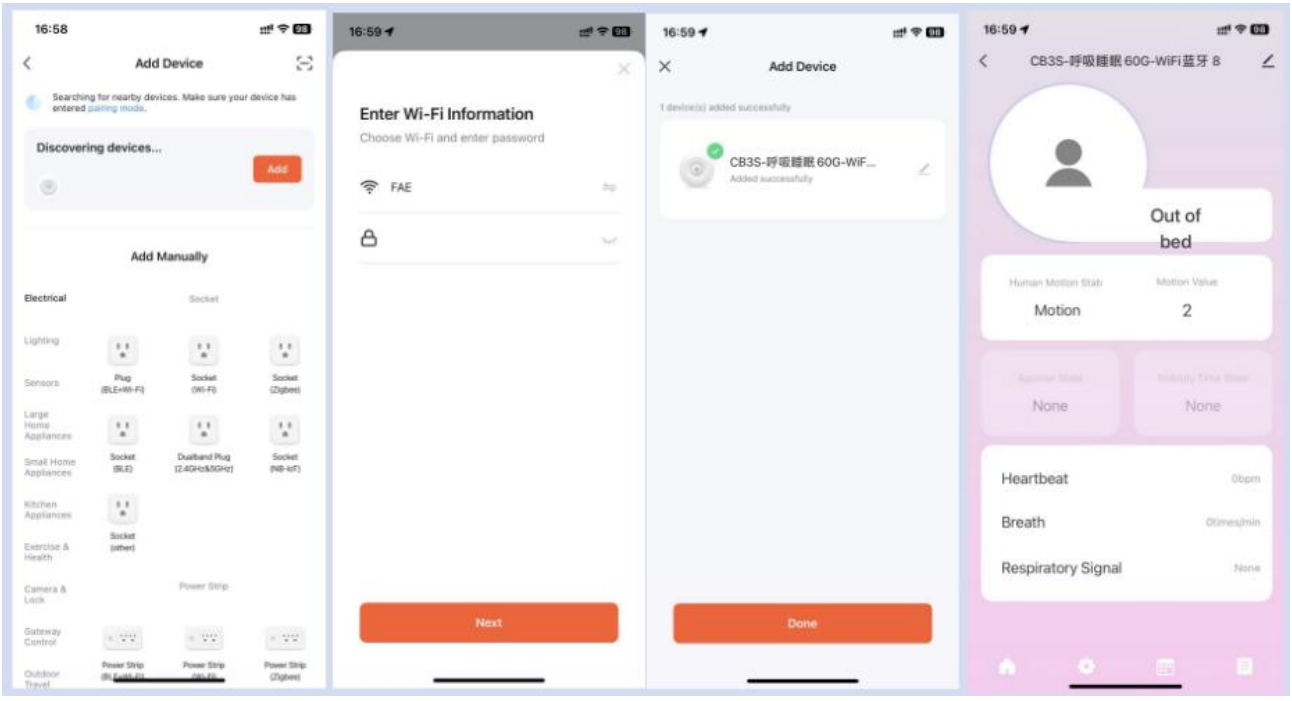
Long press the button on the product until it is released when the LED light flashes after it is off. At this time, the radar is reset into the distribution mode. The distribution operation can be performed in two ways: (Note: The device needs to be connected to 2.4G WiFi, not 5.8G WiFi)

Mode 1 (Bluetooth automatic discovery mode) :

"Discover Devices to be Added: 1" will be displayed on the APP interface. After you click Add, the APP will automatically add the device distribution network connection.

Method 2 (Wi-Fi Fast connection) :

1. On the APP interface, tap the red plus sign in the upper right corner to enter the product category selection page, and tap Automatic Discovery in the upper right corner to enter the Settings
Search for the device and click Next.
2. Fill in the relevant information Fill in the relevant wifi information, click "Next" to enter the device distribution network.
3. Wait for the APP to perform wifi distribution until the distribution network is successful, and then the graffiti wifi radar device can be equipped.



VI. Indicator lamp states & performance breakdowns

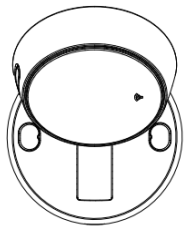
Indicator lamp states

Red lamp flashes	Matching network for the device
Red lamp off	Normal state/No-button state
Red lamp on	Button triggering
Red lamp constantly on	The device has connected to a Wi-Fi service, but not to the server

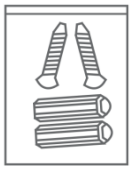
Performance breakdowns

Name	Performance breakdowns
60G sleep monitoring radar	1. Surface damage due to structure or material factors 2. Indicator lamp is not working 3. Reset button is not working 4. Wi-Fi connection failed 5. Human presence detection failed

VII. Packing list



Radar × 1



Screw fixings package × 1



User Manual × 1



Power cord × 1

* The appearances and lists in this manual are for reference only.
* In case of any changes in the app functions, the latest version should prevail.

VIII. Product parameters

Functions	**Specification**
Product name	60G sleep monitoring radar
Model	BD60S1-TUY
Product measurements	80×80×51.8 mm
Working Frequency of radar	61GHz~61.5GHz

Installation method	Inclined installation
Distance of detection	1.5 - 2.5m
Angle of detection	40° horizontally & 40° vertically
USB power supply	5V/1A, Type-C
Wi-Fi protocol	Wi-Fi
Working temperature	-10℃~+60℃
Working humidity	20%~85% (Non-condensing)

IX. Others

Requirements on label use for limitation of hazardous substances in electrical and electronic products

Names and content of hazardous substances in product

	Hazardous substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr(VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
PCB components	○	○	○	○	○	○
Plastic parts	○	○	○	○	○	○
Metal parts	○	○	○	○	○	○
Loudspeaker	○	○	○	○	○	○
AC adapter	○	○	○	○	○	○

This sheet is prepared pursuant to SJ/T11364.

○ indicates that the content of the hazardous substance in all homogeneous materials of the component complies with the limits set forth in GB/T26572.

× indicates that the content of the hazardous substance in at least one of the homogeneous materials of the component is beyond the limit set forth in GB/T26572.

Note: The Product is designed with the philosophy of environmental protection, for which effective measures have been taken to control the hazardous substances. As for hazardous substances indicated with “x”, they can’t be substituted for due to the limits of technology development.

EFUP:

The label indicates that within the period (10 years), no hazardous substances contained in the electric and electronic products will leak or mutate under normal conditions of use, and no severe pollution to the environment and no major damage to health and property will occur during use.

Recycling hints:

In an effort to take better care of earth, when the product is no longer needed or has reached the end of its service life, please deliver it to an organization accredited in the field of recycling for disposal as per the applicable laws and regulations of the country in respect of recycling and disposal of waste electrical and electronic products. Improper use or disposal might have a bad influence on the environment and people’s health.

X.Modify history

Revision	Release Data	Summary
V1.0_0316	2023/03/16	first edition
V1.1_0504	2023/5/4	Added a description of the length of time required for sleep report output
V1.2_0619	2023/6/19	Added a description of the distribution network