RateMon Health Guardian System Product Introduction

I. Product Name

RateMon Health Guardian System

- Product Name: Heart Rate/Respiratory/Human Body Posture Detection Remote Sensor
- Main device: remote non-contact monitoring of static heart rate, respiration rate, sleep, gait, falls
- Auxiliary device (optional): remote non-contact monitoring of respiration rate, sleep, gait, falls

This product is an intelligent monitoring device based on AI edge computing. It enables real-time detection of heart rate, respiration rate, and body posture without the need for wearing or physical contact, making it suitable for long-term and dynamic vital sign monitoring.

II. Product Applications

- It is suitable for long-term medical, health and safety monitoring of the elderly at home
- It is used for daily monitoring of patients with chronic diseases such as cardiovascular diseases, diabetic complications, and geriatric cognitive impairment
- Long-term dynamic tracking and abnormal monitoring of patients after cardiac stenting
- Adjunctive monitoring of critical and postoperative graded care in hospitals

III. Alert Reporting System

- **Instant Safety Alerts:** Fall detection, abnormal resting heart rate, abnormal static respiration rate, prolonged bed stay, prolonged absence from home, etc.
- **Trend Event Notifications:** Continuous decline in sleep quality, persistent gait abnormalities, consistently high heart rate, abnormal nighttime respiration rate, etc.

- **AI Analytical Reports:** In-depth analysis of abnormalities based on a medical knowledge base, providing guidance on next steps.

IV. Device Usage Guide

- The **main device** should be placed in frequently used areas such as the living room or study. The optimal monitoring distance is **2.5-3.5 meters**, with automatic daily monitoring.

- The **auxiliary device** is recommended for placement in the bedroom or bathroom to assist in monitoring falls and sleep. Detection range can reach **7-8 meters**.

- **No need for users to wear the device**—simply plug it in and enjoy 24/7 automated monitoring.

V. Product Features

- **Non-contact and wearable-free for user convenience.**

- **Privacy protection**—no video or image transmission.

- **Intelligent identification of family members** for personalized health data recording.

- **Adaptive learning** of home layout changes to maintain long-term monitoring accuracy.

- **Instant abnormality notifications** for timely intervention and enhanced health safety.

VI. Hardware Specifications

Main Device:

- **CPU:** Hexa-core (Dual-core ARM Cortex-A72 + Quad-core ARM Cortex-A53)

- **Memory:** 4G Flash

- **Sensors:** 500M Optical Sensor + 60GHz Millimeter-Wave Radar

- **Network:** Wi-Fi, Ethernet, BLE 5.1, 4G/5G CAT1

- **Dimensions:** 152 x 88 x 55 mm

Auxiliary Device:

- **CPU:** ARC CUP 300MHz

- **Memory:** 576K

- **Sensors:** 60GHz Millimeter-Wave Radar

- **Network:** BLE 5.1

- **Dimensions:** 10 x 76 x 29 mm
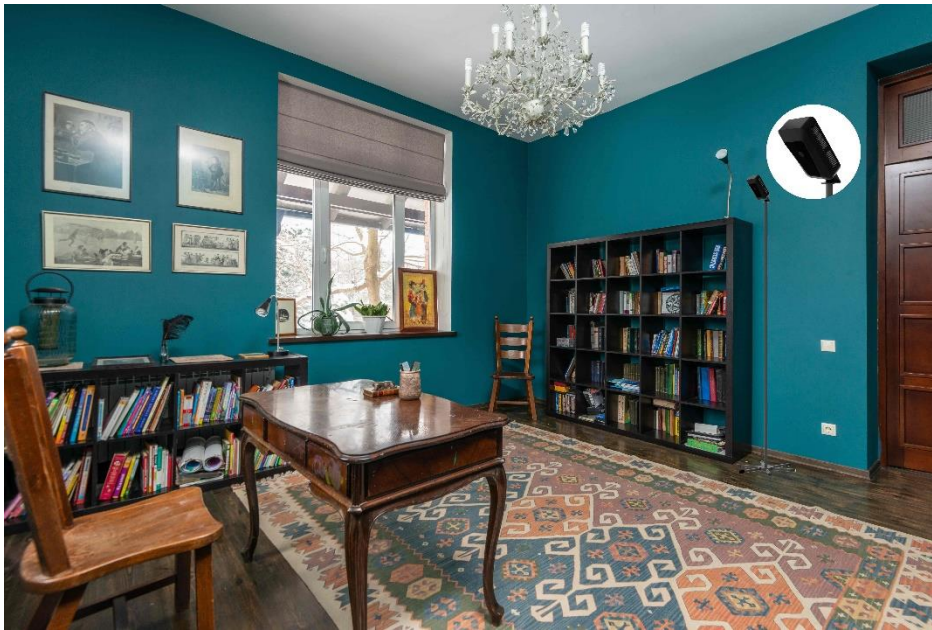
VII. Technical Solution

- **Real-time data processing and user identification** using edge computing and AI models.

- **Precise remote monitoring** of respiration rate and fall detection using millimeter-wave radar technology.

- **Support for 4G/5G and wired internet connections**, ensuring real-time abnormality alerts.

User choice between cloud storage for data analysis or local Bluetooth access for reports.

VIII. Usage Scenario Gallery

Main device, radar auxiliary device, and stand

Main device placement in study

Main device placement in living room

Radar auxiliary device placement in bedroom

Radar auxiliaries are located in bathroom

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