

Product Overview

Internal Model: EV-W211X-A (US Version)Product Category: Smart Screenless WatchProject Category: In-House R&D Project

Prototype Product Features

Main Functions: Two-way calling, fall detection, step counting, GPS positioning, WiFi-assisted positioning, Beacon-assisted positioning, etc.

Product Dimensions: 47.0538.1513.5mm

Charging Method: Magnetic charging cable

Product Form: Supports wristband and pendant modes

Target Market

United States

Sales Model

Hybrid B2B/B2C sales model integrated with healthcare channels

DTC: Sold via platforms or independent websites; provides devices and data services, monetized through monthly subscriptions.

B2B: Partners with health insurance companies, medical institutions, and senior living communities for bulk distribution and data integration services.

Distribution: Provides complete devices, cloud platform services, and consumer portals.

Customer Demand Characteristics

Security First: 24/7 connection to customer monitoring center, prioritized over 911.

Smart Interaction: AI voice interaction for alarm communication at the monitoring center, with emphasis on audio performance.

Data Integration: Devices connect to Azure IoT Platform for data management and user data analysis.

Multi-Brand Operation: Differentiated high-end and entry-level product lines with distinct appearances and functions.

User Experience: Large user base; focuses heavily on user experience impact.

Target Users

Core Group

Seniors aged 65+ (80% of users), with a history of falls, chronic conditions (e.g., heart disease, diabetes), or medication management needs.

Risk Classification

Low Risk: Active seniors seeking daily health monitoring and GPS positioning.

Medium/High Risk: Users with limited mobility requiring automatic fall detection and emergency calling.

Secondary Group

Chronic disease patients (needing heart rate/blood oxygen monitoring) and caregivers (remote data viewing via app).

User Persona & Senior Living Types

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Type	Age Range	Funding Source	Applicable Users	Service Types
Independent Living	55+	Personal funds	1. Seniors who can care for themselves but want to relieve housing burdens 2. Independent living community rental apartments/houses	1. Daily care: housekeeping, laundry, daily meals 2. Amenities: fitness center, game room, activity lounge, beauty/barber shop 3. Social activities: group trips and outings
Assisted Living / Personal Care	55-65	Personal funds, social security supplementary, long-term care	1. Users with own homes 2. Seniors with difficulties in daily activities	1. All services of Independent Living 2. Assistance with daily activities:

Type	Age Range	Funding Source	Applicable Users	Service Types
		insurance, Medicaid in some states		bathing, transportation, etc.3. Primary medical care: medication management, physical therapy
Nursing Homes / Skilled Nursing	65+	Personal funds, Medicaid, long-term care insurance, Medicare	1. Users in poor health2. Post-surgery rehabilitation patients3. Dementia patients4. Users with incontinence, limited mobility, etc.	1. All services of the above two types2. Professional medical care
Continuing Care Retirement Communities (CCRC)	-	Personal funds, Medicaid, long-term care insurance, Medicare	Seniors who enter while relatively healthy and independent, signing contracts for lifelong care	1. High-end senior community + professional care2. Fee structure: high entrance fee (monthly payment) + maintenance fee (housing)

Product Appearance & CMF

W211_CMF_Black

Front Shell Decorative Part: Color: Black; Material: PC + 10%GF; Process: Spray black paint, 20% gloss; Molding: Injection molding

Charging Pins: Color: Silver; Material: Stainless steel; Process: Palladium plating, matte sandblasted finish

Speaker Grille: Lined with black dust-proof mesh fabric

Front Shell: Color: Dark gray; Material: PC + 10%GF; Process: LDS laser engraving and plating antenna, spray dark gray pearl paint (3 coats, 20% gloss on non-plated areas); Molding: Injection molding

Air Pressure Vent / Pressure Relief Hole / Mic Hole: Standard design

Side Button: Color: Dark gray (matching front shell); Material: PC; Process: Spray dark gray pearl paint (3 coats, 20% gloss); Molding: Injection molding

Rear Shell: Color: Black; Material: PC + 10%GF; Process: Raw material, surface 24#VDI, silk-screen Cool Gray 10C; Molding: Injection molding

Main Button: Color: Dark gray (matching front shell); Material: PC; Process: Raw material, surface 24#VDI; Molding: Injection molding

Charging Light Guide Column: Color: Translucent black; Material: 70° solid silicone; Process: Molded

W211_CMF_White

Front Shell Decorative Part: Color: White; Material: PC + 10%GF; Process: Spray white paint, 20% gloss; Molding: Injection molding

Charging Pins: Color: Silver; Material: Stainless steel; Process: Palladium plating, matte sandblasted finish

Speaker Grille: Lined with black dust-proof mesh fabric

Front Shell: Color: Bright silver; Material: PC + 10%GF; Process: LDS laser engraving and plating antenna, spray bright silver pearl paint (3 coats, 20% gloss on non-plated areas); Molding: Injection molding

Air Pressure Vent / Pressure Relief Hole / Mic Hole: Standard design

Side Button: Color: Bright silver (matching front shell); Material: PC; Process: Spray bright silver pearl paint (3 coats, 20% gloss); Molding: Injection molding

Rear Shell: Color: White; Material: PC + 10%GF; Process: Raw material, surface 24#VDI, silk-screen Cool Gray 6C; Molding: Injection molding

Main Button: Color: Bright silver (matching front shell); Material: PC; Process: Raw material, surface 24#VDI; Molding: Injection molding

Charging Light Guide Column: Color: Translucent gray-white; Material: 70° solid silicone; Process: Molded

Product Specifications

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Specification	Description (Red text indicates revisions vs. 205)
Dimensions	47.0538.1513.5mm
Battery	310mAh
Expected Battery Life	3~5 daysStandard usage conditions:• 1 alarm call per 5 days• 1 fall detection event (fall alarm 流程) per 5 days• 1 heartbeat packet report per hour (GPS, battery, signal strength, etc.)• Server MQTT persistent connection: every 20 minutes
Module	SIMCOM 7500A+
Band	AT&T 4G LTE-FDD: B2/4/12• B2/4: TRP +12 dBm; TIS -84.5 dBm• B12: TRP +10 dBm; TIS -84.5 dBm
SIM	MFF2 5×6mm package, supports SGP.02
MCU	Nordic NRF52840
System	Self-developed system
Internet Access	TCP, IP, MQTT, HTTPS
GPS	AT6558R-5N32 (GPS, GLONASS, Galileo)
Bluetooth	BLE 5.0 (NRF52840)
Wi-Fi	ESP8684 (802.11 b/g/n)
Speaker	1609
MIC	Silicon microphone
Motor	Eccentric rotating motor, GS-2706
Motor Driver	VKD VMD501A-G

Specification	Description (Red text indicates revisions vs. 205)
IC	
Codec	NAU88C10
G-Sensor	6-axis, LSM6DSOWTR (ST)
Barometer	Detects height changes within 0.5m, Luqin LQWP005TA
Button	1× Emergency button; 1× Side button
LED	SOS status light: tri-color (red, white, orange)
Waterproof	IP68• Static cold water: Daily wear, 1.2m static water for 30 minutes• Running cold water: IPX6, direct cold water flushing for 10 minutes (no internal water/moisture)
Charging Method	4-PIN contacts, magnetic charging dock
Charging Voltage	Standard 5V/1A; electronic protection & short-circuit proof, withstands up to 24V high voltage (fast chargers)
Charging Base	Magnetic charging dock, dual 4-PIN contacts (supports reversible charging); D+/D- data pins optional for mass production. No BLE/LoRa support.
Operating Temperature	Hardware: Thermal design requiredAfter 10 minutes continuous calling: rear shell (skin contact) $\leq 43^{\circ}\text{C}$; front case $\leq 50^{\circ}\text{C}$ Software: Module operating range $-20^{\circ}\text{C}\sim 55^{\circ}\text{C}$ (module supports $-35^{\circ}\text{C}\sim +75^{\circ}\text{C}$) Device: Ambient temperature $-20^{\circ}\text{C}\sim +45^{\circ}\text{C}$
Features	Two-way callingSOS emergency callFall detectionAGPS positioningPedometerReal-time location trackingFOTA & OTA firmware updateLow battery reminderVoice prompt & TTS



FCC Warning

15.19 Labeling requirements.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

15.21 Information to user.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.105 Information to the user.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Absorption Rate (SAR) information:

This device meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health.

FCC RF Exposure Information and Statement

The SAR body limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. The SAR limb limit of USA (FCC) is 4.0 W/kg averaged over ten gram of tissue. This device was tested for typical body-worn operations with the back of the device kept 10mm from the body and 0mm from the Limbs. To maintain compliance with FCC RF exposure requirements, use accessories that maintain an appropriate separation distance between the user's body and the back of the device. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided. Use only the supplied or an approved antenna.