

# Abby



## MOBILE SOCIAL ALARM

### User guide

### English



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## **1 Safety information**

- Users should pay particular attention to the potential for interference from other systems operating in the same or adjacent frequency bands.
- The Abby cannot and shall not be dismantled.
- Danger of explosion if battery is incorrectly replaced. To reduce risk of fire or burns, do not disassemble, crush, puncture, short external contacts, expose to temperature above 60° C (140° F), expose to extremely low air pressure or dispose in fire or water. Recycle or dispose of used batteries according to the local regulations or reference guide supplied with your product.
- Only use the recommended power supply as stated in the section Power supply.
- The wall socket should be installed near the Careium charger equipment and should be easily accessible.
- Follow the rules and laws that apply wherever you are, and always turn off the unit whenever its use is prohibited or can cause interference or hazards. Only use the unit in its normal user position. The unit should never be used in an operating temperature exceeding 40 °C or below -10 °C.

## **2 Important information**

All systems using radio and telecommunications are subject to interference beyond the user's control.

Products from Careium are designed to minimize the impact of such interference. Nevertheless, the user must be aware that system components can be subjected to interference or other influences that may cause malfunction.

It is therefore important to regularly check that every part of the system works in all areas, especially radio communications. Contact your supplier immediately in case of any suspected malfunction.

Keep the product away from interfering devices such as radio transmitters, mobile phones, DECT-telephones or wireless headphones.

Users should pay particular attention to the risk of disruption from products which communicate using the same or adjacent frequencies.

For further information, please contact your supplier.

### **2.1 Medical units**

The use of equipment that transmits radio signals, for example, mobile phones, can interfere with insufficiently protected medical equipment. Consult a doctor or the manufacturer of the equipment to determine if it has adequate protection against external radio signals, or if you have any questions. If notices have been put up at health care facilities instructing you to turn off the unit while you are there, you should comply. Hospitals and other health care facilities sometimes use equipment that can be sensitive to external radio signals.

### **2.1.1 Implanted medical devices.**

To avoid potential interference, manufacturers of implanted medical devices recommend a minimum separation of 15 cm between a wireless device and the medical device. Persons who have such devices should:

- Always keep the wireless device more than 15 cm from the medical device.
- Should not carry the phone in your breast pocket.
- Hold the wireless device to the ear opposite the medical device.

If you have any reason to suspect that interference is taking place, turn the phone off immediately. If you have any questions about using your wireless device with an implanted medical device, consult your health care provider.

## **2.2 Specific Absorption Rate (SAR)**

This device meets applicable international safety requirements for exposure to radio waves. Your mobile device is a radio transmitter and receiver. It is designed not to exceed the limits for exposure to radio waves (radio frequency electromagnetic fields) recommended by international guidelines from the independent scientific organization ICNIRP (International Commission of Non-Ionizing Radiation Protection). The radio wave exposure guidelines use a unit of measurement known as the Specific Absorption Rate, or SAR.

The SAR limit for mobile devices is 2 W/kg averaged over 10 grams of tissue and includes a substantial safety margin designed to assure the safety of all persons, regardless of age and health. Tests for SAR are conducted using standard operating positions with the device transmitting at its highest certified power level in all tested frequency bands. The highest SAR values under the ICNIRP guidelines for this device model are:

Body SAR: 1.605 W/kg

During normal use, the SAR values for this device are usually well below the values stated above. This is because, for purposes of system efficiency and to minimize interference on the network, the output power of your mobile device.

is automatically decreased when full power is not needed for the call. The lower the power output of the device, the lower its SAR value.

### **3 Package content**

- Abby
- Charging cradle/Beacon
- Power supply
- Lanyard
- Quick start guide

### **4 Description**

Abby is a small and comfortable GPS mobile social alarm that improves security not only in the home, but everywhere the user goes. It is easy to always carry around, either in a pocket or as a pendant around the neck, and it is waterproof (IP67). When the emergency assistance button is pressed, an alarm is sent to the monitoring centre and a built-in speakerphone enables voice communication with the centre's trained staff. Abby supports several Careium accessories using 869MHz protocol. As example an Enzo alarm trigger can be used to trigger an alarm at some distance from the main product. GPS, Wi-Fi, and beacon positioning all cooperate to provide not only the user's location, but also advanced tracking and geofencing functionality that incorporates energy-saving technology for achieving long battery time. A mobile social alarm makes it easier for the senior to maintain an active lifestyle. The alarm should be directed to an alarm receiving centre, a relative or care staff. The service can be set up as a social alarm or a GPS-tracking alarm. A mobile social alarm encourages and helps the senior to stay active and move around freely outside their home, while still feeling safe.

### **5 Alarms**

#### **5.1 Emergency alarm**

This alarm is triggered via the SOS button on the front of the device or a remote alarm trigger. Three short presses in a row, or a long 3s press will activate the alarm on Abby. A single press activates the remote alarm trigger.

#### **5.2 Fall alarm**

The fall algorithm built into the device can have two levels of sensitivity, high or normal.

In the event of the device registering a fall, then it will check for motion or steps for a period of 30s after the fall occurred. If motion or steps are recorded within this period,

then the device will cancel the fall alarm. This sequence is silent, and the user will not know that the device has registered a fall, and thereafter canceled it.

In the event of the device registering a fall, the user will be alerted with a beep every second for the coming 30s. During these 30s the fall alarm can be canceled by the user with a press on the side button.

Note! A false alarm is cancelled if there is movement detected after the fall. If the device is placed on a hard surface, such as a table, and then not moved, it may generate a false alarm.

### **5.3 Geo-Fence alarm**

Two types of Geo-fence alarms can be set in the Abby. The fence shall be defined so that the target, such as a house, lake etc., is in the middle of the fence. The radius of the fence shall not be less than 100m.

- Geo-Fence alarm IN.
  - If the device enters inside this fence the alarm will be triggered
  - Up to three Geo-fences IN zones can be set up.
- Geo-Fence Out
  - If the device goes outside of this fence the alarm will be sent
  - The Beacon needs to be inside this fence.
  - One Geo-Fence OUT zone can be set up.

### **5.4 Home / Away alarm**

The unit can be set up to send alarm when the user leaves or enter the beacon range. Make sure that the beacon/cradle is positioned in the centre of the building and have proper coverage to avoid false alerts.

### **5.5 Technical alarms**

- Power on
- Power off alarm
- Low battery alarm
- Critical low battery alarm (EOL alarm)
- Battery full alarm
- Test transmission alarms
- Accessory battery low alarm

## **6 Positioning**

The device position can be determined in 4 separate ways. GPS, Wi-Fi, LBS and via Beacon.

When in movement the unit will determine position every 80 seconds or 3 minutes depending on movement speed.

If static or in range of a registered beacon the unit will not determine position

Definition of static is 7 minutes without movement. Movement is determined by the accelerometer in the device.

Satellite positioning has the highest priority. Accuracy is often about 10-100m.

Wi-Fi position is determined by 2 or more mac addresses obtained from surrounding Wi-Fi networks. Accuracy is often about 10-100m.

LBS station position is determined by connected base station. The accuracy is low and should more be considered an indication of location.

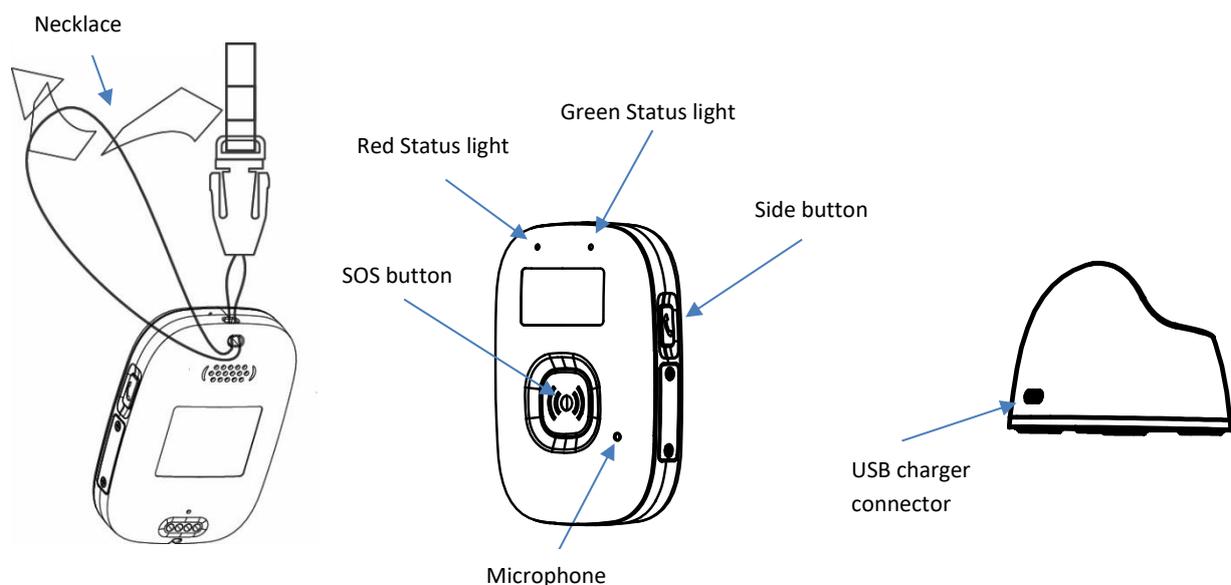
Beacon. If there is a registered beacon within range, the system will use the registered position as location.

**Important:** Do not move the beacon/cradle to a new location without having the address adjusted in the administration system. If so, the position information displayed in case of an alarm may be wrong.

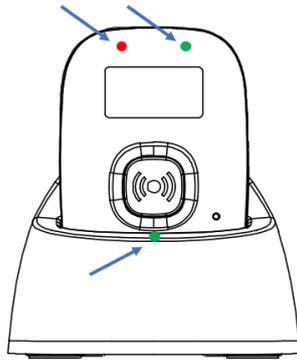
## 7 Sending a contact message

The device can send a request for contact to users connected through the i-care plus application. The message is sent by pressing the side button on the device. A sound and a vibration are played to confirm that the message will be sent.

## 8 Abby and docking station, back, front and side view



Each indicator can light only have one color, but it can have different blinking patterns depending on status. Example with all three indicators activated.



## 9 Button, display, LED, sound, and vibration chart

### 9.1 Display

- Network type
- Network signal strength
- Bluetooth active
- Home beacon in range
- Battery status
- Time
- Step counter



Alarm in progress



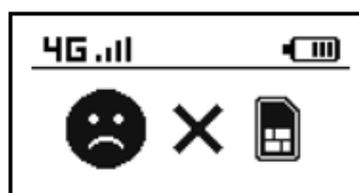
Message sent



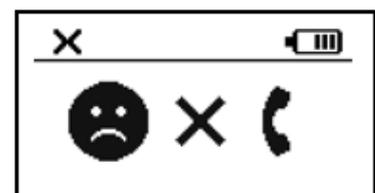
Fully charged battery



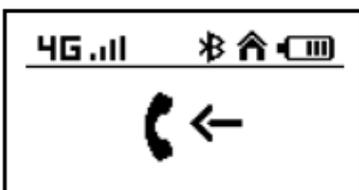
Battery low



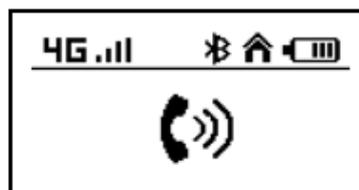
SIM error



No network connection



Incoming call



Outgoing call

## 9.2 Menu system

The menu system enables the following functions.

- Pairing of social alarm accessories
- QR code for pairing to i-care plus application (not yet supported in I-care plus)
- Power on/off
- Pairing of Bluetooth accessory (not yet supported)

To enter the menu system, press side & SOS buttons simultaneously for 3 seconds.

When in the menu system

- Use the side button to scroll down.
- Use SOS button to confirm/enter.

The unit will exit the menu system automatically after 10 seconds if there is no activity.

## 9.3 Abby, the body worn device.

Status/Function	Input	Green led	Red led	Sound	Vibration
Turn on	Press side button 3s or put the Device in the charger.	N/A	N/A	N/A	Long vibration
Idle mode	N/A	Short flash every 3s	N/A	N/A	N/A
Charging	N/A	Long flash every 3s	N/A	N/A	N/A
Fully charged	N/A	Lit up	N/A	N/A	N/A
Alarm (no delay)	SOS button, press 3s, or 3 short presses	Short flash until call connected	Short flash until call connected	Alarm tone until receive instruction from server	Vibration until receive instruction from server
Alarm (delay period)	SOS button, press 3s, or 3 short presses Long press side key to cancel	Short flash until call connected	Short flash until call connected	Alarm tone for 30s until cancelled or until receive instruction from server	Vibration for 30s until cancelled or until receive instruction from server
Alarm ongoing	N/A	Blink Green and Red Flash same time for every 1 second		N/A	N/A
Fall Alarm	Cancel: Side button	Short flash until call connected	Short flash until call connected	During cancel period, 30s: Beep 1/s. Then Alarm tone	During cancel period, 30s: Short vibration 0.2s,0.6s OFF,1.2s alternatively.

					Then vibration for 3s
Cellular network not available / Invalid SIM	N/A	N/A	Red Short flash 0.8s in 3s	N/A	N/A
Data Connection Failed	N/A	N/A	Red Short flash 1.2s in 3s	N/A	N/A
Low battery (<20%)	N/A	Not lit	Red Short flash 0.3s in 3s	Beep + Vibration at the same time	
Incoming call	Answer: SOS button	N/A	N/A	Ring signal	Vibration
Contact Message to App (Side button alarm)	Long Side button in Normal state	N/A	N/A	Short Tone When server response OK	Short Vibration once
Turn on display	Short press Side button OR SOS button	N/A	N/A	N/A	N/A
Out of battery	Battery <2%	N/A	Lit up until power off completely	N/A	Long vibration 2s
No SIM	SIM not recognized	N/A	Red Short flash 0.8s in 3s	N/A	N/A

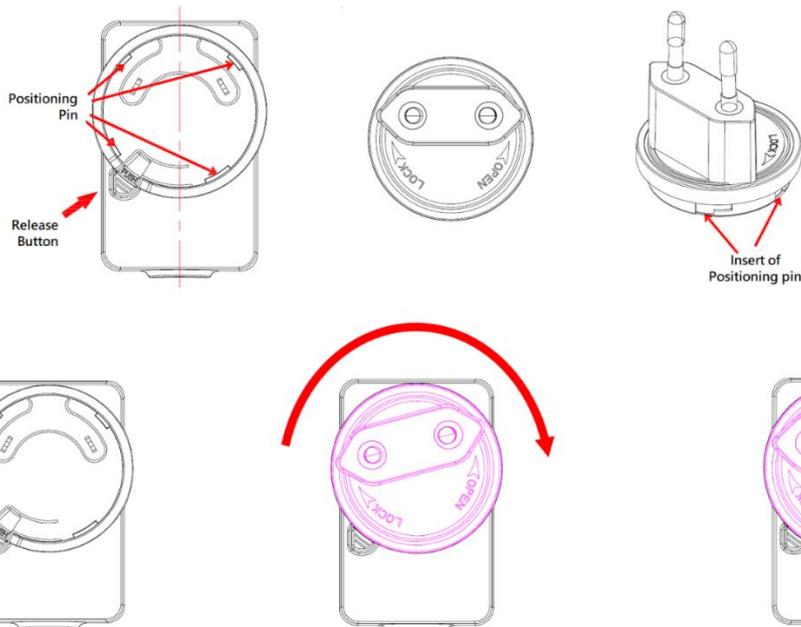
## 9.4 Abby, docking station.

Status/Function	Green Led
Power connected	Flashing
No power	Off

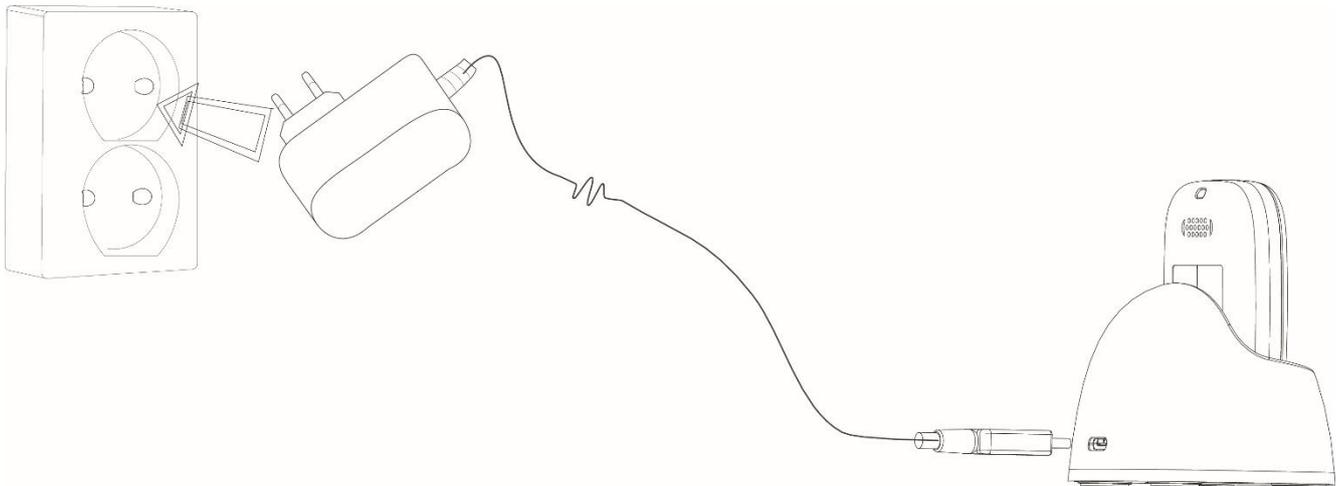
## 10 Installation.

When first plugged in or after storage you should let the Abby charge for up to 3 hours to reach full battery capacity.

Assembly the power adapter with correct plug



Connect the power supply to the wall socket and the USB connector to the Abby Docking station. The green Led on the docking station will be lit up and the display will show a charging symbol.



- Install the Abby into the Docking station.
- Note! The Abby will start up automatically when put into the docking station. If Abby is totally discharged this may take some minutes
- The LED will flash twice in red every few seconds until it is connected to the network. After approx. 30-60s it will start blinking green, and it is now ready to be configured in i-care-online. (Note! When fully charged the green light is lit up)

## 11 Radio trigger (Accessory)

The radio trigger uses two-way communication, so when Abby receives an alarm from a radio trigger, it will send a confirmation of receipt to the radio trigger. This is confirmed on the radio trigger by indicator light change from red to green. If the radio trigger does

not get any confirmation, the alarm is repeated. The radio trigger can be worn using a wristband or neckband. The radio trigger is waterproof according to IP67 by an integrated gasket and can be carried in the shower and in wet environment.

## **12 Pairing a radio trigger**

1. Press side button and SOS button simultaneous for 3 seconds
2. Press SOS button twice
3. Press the button of the social alarm trigger.
4. Abby will beep and confirm pairing in the display.
5. Press SOS button to confirm.
6. Wait 10 seconds for the unit to go back to stand-by

Always make a test call using the radio trigger after it has been paired to confirm functionality.

## **13 Supported Careium radio accessories.**

- Enzo
- Elliot
- Vibby
- I10 Smoke
- I10 Heat
- I10 CO

## **14 Maintenance**

### **14.1 Cleaning**

When cleaning the Abby including accessories and cables, use only a slightly damp cloth. Do not use strong detergents or solvents when cleaning.

## **15 Reinstatement**

If the Abby is reinstated at a new user, it shall be reset to default settings and re-programmed according to the data and requirements of the new user.

## 16 Technical data

### 16.1 Abby, the body worn device.

Dimensions : 63 x 44 x 17 mm (L x W x H)

Weight: 45 g

IP-Class: IP67

Temperature: Operating temperature -10°C to +40°C

Power consumption (typical):

- Off mode: 0,8 mW

- Call mode: 2 W

- Networked standby: 16 mW

Battery: Li-ION, 3.7 V, 950 mAh, 3.5 Wh

Standby time: Depending on use case, network situation and settings. Up to 5 days

Talk time: GSM900: 253mA, 4hours  
WCDMA: 495mA, 2hours  
LTE VoLTE: 120mA, 7hours

Alarm Protocol: SCAIP, TS 50134-9 and voice call

Radio receiver category: 1

SIM card interface: Nano SIM

#### Cellular bands

Technology	Band
GSM (2G)	<b>GSM-900/1800</b>
WCDMA	<b>B1, B8</b>
FDD	<b>B1/B3/B7/B8/B20/B28A</b>
TDD	<b>38/40/41</b>

Wi-Fi: The Wi-Fi function is only used to obtain location information and does not transmit signals.

## 16.2 Charging Cradle/Beacon

Dimensions :	58 x 68 x 50 mm (L x W x H)
Weight:	38 g
Color:	Blue
RFID, transmitter:	866 MHz
USB:	Micro USB-C (intended for Careium certified adapters)

## 16.3 Power supply

Model (EU/UK):	TPQ-236A050100VW01
Input voltage:	100-240V
Input AC frequency:	50-60 Hz
Output voltage:	5,0 VDC
Output current:	1,0 A
Output power:	5,0 W
Cable length:	1,5m fixed cable
Interface:	USB-C male

## 16.4 Environment

The device has IP class 67 and will withstand dust particles as well as water for up to 30 minutes.

The Charger cradle/beacon has no IP rating, and shall be kept indoors, and in a dry environment.

## 17 Environmental information

This product complies to the environmental regulations stated in the EU and UK declaration of conformity as well as the Battery Directive 2006/66/EC and Waste Electrical and Electronic Equipment 2012/19/EU (WEEE). Further ECO-design information is available at:

[www.careium.com/ecodesign](http://www.careium.com/ecodesign). Careium has certifications in the international standards for environment, ISO 14001. Careium also supports UN's global goals for sustainable development. You can read more about the sustainability work at: [www.careium.com/en-gb/about-careium/about-us/sustainability/](http://www.careium.com/en-gb/about-careium/about-us/sustainability/). The Abby is marked with the "crossed out wheeled bin" logo, which indicates that it should be handed in for recycling.



The product can be returned free of charge to a recycling station that is connected, directly or via a recycling system, to CAREIUM or to your distributor. For detailed instructions, please check with your distributor or visit our website, [www.Careium.com/care/](http://www.Careium.com/care/)

Note! The WEEE information and recycling instructions apply to European Union member states only. For other countries please check local legislation or contact your distributor.

The materials used in the neckband meet the textile safety requirements of Oeko-Tex standard 100.

## 17.1 Proper disposable of products



(Electrical and electronic waste)

(Applicable in countries with special collection systems)

This symbol on the product itself, its accessories or instructions for use means that the product and its electronic accessories (e.g. chargers, headsets, USB cables) must not be disposed of with ordinary household waste. In order to avoid damaging the environment and human health, these parts should be sorted separately and recycled in order to promote the sustainable reuse of materials. For questions about how and where these products should be recycled, private individuals should contact the place of purchase or municipality. Companies should contact their supplier and read the terms of the purchase documentation. This product and its electronic accessories must not be mixed with other commercial wastes. This product complies with the RoHS directive. Proper disposal of batteries in this product (applicable in countries with special collection systems) This symbol on the battery, in the manual or in the packaging indicates that the battery in the product must not be disposed of in the ordinary household waste. Where they occur, the chemical designations Hg, Cd or Pb mean that the battery contains mercury, cadmium or lead exceeding the reference levels of the EU battery Directive 2006/66. If the batteries are not disposed of properly, these substances may harm human health or the environment. To protect natural resources and promote reuse, dispose of the batteries separately and recycle them by placing them in the municipal battery collection container.

## 17.2 Proper disposal of batteries in this product



(Applicable in countries with special collection systems)

This symbol on the battery, in the manual or in the packaging indicates that the battery in the product must not be disposed of in normal household waste. If the

batteries are not disposed of properly, these substances may harm human health or the environment.

## **18 Simplified EU declaration of conformity**

Hereby Careium Sweden AB declares that this radio equipment is in compliance with RE Directive 2014/53/EU, RoHS Directive 2011/65/EU, Packaging Directive 94/62/EC, REACH Regulation (EC) No 1907/2006, Regulation (EC) No 2019/1782 and 1275/2008 pursuant to ECO-design Directive 2009/125/EC. The full text of the EU declaration of conformity is available at: [www.careium.com/dofc](http://www.careium.com/dofc).

## **19 UK Declaration of Conformity**

Hereby, Careium declares that the radio equipment type Abby is in compliance with the relevant UK legislation.



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