GEOSATIS

Bracelet V6.*X*
User guide

BRC V6.X | Version 1.2 | 13.10.2022

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1　GENERALITIES

1.1　Documentation scope

This document provides detailed information regarding the product to ensure the accurate and efficient execution of installation, operation and maintenance by users.

The content of this document is based on the information available at the time of publication. The original version of the document was written in English.

For safety and environmental protection reasons, the safety instructions given in this documentation must be strictly followed.

1.2　Manufacturer Information

Manufacturer

GEOSATIS SA

Rue Saint-Hubert 7

CH-2340 Le Noirmont

Switzerland

Technical support

GEOSATIS Helpdesk - International:

https://support.geo-satis.com

Contact:

support@geo-satis.com

+41 32 552 04 80

1.3　Copyright

1.4 Warranty and limitation of liability

GEOSATIS SA products benefit, under specific conditions, from a manufacturer warranty that may be invoked by GEOSATIS SA's direct customers. Users should contact GEOSATIS SA for applicable conditions and in case of a potential warranty claim.

To the full extent allowed by law, the GEOSATIS SA manufacturer warranty is exclusive and is in lieu of all other warranties, terms, or conditions, express or implied, either in fact or by operation of law, statutory or otherwise, including warranties, terms, or conditions of merchantability, fitness for particular purpose, satisfactory quality, correspondence with description, and non-infringement, all of which are expressly disclaimed.

Any warranty provided by GEOSATIS SA regarding the product will become invalid in case of:

–   improper installation, improper programming, improper use, improper operation and/or maintenance leading to any kind of product damages;

–   improper or unauthorized intervention on the controller or components;

–   incorrect, improper or wrong connection/assembly of systems or products with its products and vice versa.

To the full extent allowed by law, GEOSATIS SA excludes any liability, whether based in contract or tort (including negligence), for incidental, consequential, indirect and special damages of any kind, or for loss of revenue, use, production, information, data or contracts, or other financial loss arising out of or in connection with the sale, installation, maintenance, use, performance, failure, or interruption of its products, even if GEOSATIS SA has been advised of the possibility of such damages.

1.5 Correct disposal of this product

The device must be scrapped in accordance with directive 2012/19/EU or the environmental standards in force in the country of installation. The components included in the system must be separated and recycled in a waste recycling center that conforms with the legislation in force in the country of installation. This will help to reduce the impact on the environment, health, safety and help to promote recycling. GEOSATIS SA do not collect used product for recycling. Contact your local recycling center for more information.

2 SAFETY INFORMATION

2.1 All devices

Prohibition

Do not expose to:

Solvents or alcohol (see Section 7 [} 31] for cleaning instructions).

Corrosive gases or liquids.

Prohibition

Do not use tools.

Do not disassemble, open or remove any pieces of the equipment.

Do not attempt to repair the equipment. Any equipment deemed inoperable should be returned to GEOSATIS SA following set RMA processes.

Do not try to change the appearance of the device.

Do not attempt to open the device with any tools. In the unlikely event that a Bracelet cannot be opened via GMS or with the Key, immediately contact your GEOSATIS SA representative.

Using tools on the device can damage it, generate an alarm and potentially present some risk of injuries.

Prohibition

Do Not Store/Place Equipment Near Heat Source

Direct sun

Heater, lights or any other heat source

Fire

Prohibition

Additional restrictions

Not respecting the following can damage the device, generate an alarm and presents some risk of injuries.

Do not store or use near flammable gases, mists or vapors or any kind of explosive environment.

Do not transport equipment by plane unless they are shut down (bracelets are open).

Do not place anything heavy on the equipment.

Caution - material

Risk of Malfunction, Discharge or Damage.

Always disconnect equipment from power source after charging is complete.

Do not expose to magnetic fields.

Magnetic strip cards, including credit cards, phone cards, passbooks, and boarding passes, may be damaged by magnetic fields.

Use manufacturer-provided charging cables and power adapters. GEOSATIS SA cannot be responsible for the user's safety when using supplies that are not approved by GEOSATIS SA.

Mandatory

Read this important safety information before using the devices.

Follow the warning and caution information to prevent injury to yourself or others and to prevent damage to your devices.

The term "device" refers to the product and its battery, charger and any items used with the product.

2.2   Bracelet

⚠ DANGER

Risk of battery explosion due to ambient

Ambient temperature in use:

continuous (worn): -15 to +55 °C / 5 to 131 °F

short term (<30 min): -20 to +60 °C / -4 to 140 °F

charging: 0 to +35 °C / 32 to 95 °F

Ambient temperature for storage:

Short term (<1 week): -20 to 65 °C / -4 to 149 °F

Storage: -10 to +30 °C / 14 to 86 °F

⚠ WARNING

Potential risk of serious injuries due to leg, ankle or foot swelling

Not installing bracelet on people with medical conditions, including but not limited to: diabetes, leg/foot/ankle injuries, infection or any condition that can cause the leg, ankle or foot to swell.

Seeking medical assistance should swelling occur and contacting supervision officer/agency for emergency removal of Bracelet.

⚠ WARNING

Potential risk of severe injuries due to electromagnetic interference

Clients using any personal medical devices (pacemaker, hearing aid, etc.) must consult the manufacturer of the personal medical device to determine if its adequately shielded from RF energy.

Clients needing medical exams such as CT, MRI or radiograph must have the Bracelet removed prior to the exam.

2.3   Mobile Charger and Key

⚠ DANGER

Risk of electrocution

Only utilize the GEOSATIS SA -supplied power cables

Do not use damaged power cables.

Do not cut or splice the power cable.

Avoid contact between the Mobile Charger/Key and any liquid.

Do not handle the Mobile Charger/Key with wet hands.

⚠ DANGER

Risk of battery explosion due to ambient

Ambient temperature in use:

continuous: -15 to +55 °C / 5 to 131 °F

short term (<30 min): -20 to +55 °C / -4 to 140 °F

charging: 0 to +35 °C / 32 to 95 °F

Ambient temperature for storage:

Short term (<1 week): -20 to 65 °C / -4 to 149 °F

Storage: -10 to +30 °C / 14 to 86 °F

3 INTRODUCTION: MONITORING MODULES

3.1 Outdoor GPS mode

The location is provided primarily via GPS; however, when GPS is unavailable (for instance indoor or in regions with poor GPS coverage) a secondary location information is provided via cellular location (LBS).
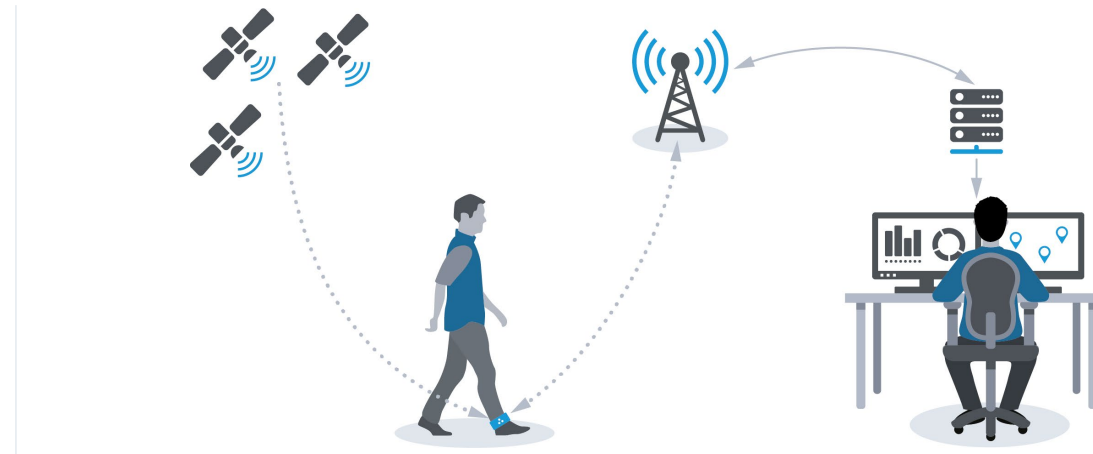
3.2 Zones alarms

Alarms

Buffer zone violation (BZV) / Medium

2 short vibrations repeated 4 times.

**Zone violation (ZV) / High**

3 short vibrations repeated 3 times.

Grace time

For every zone, a grace time can be defined (option activated in the Monitoring Software). The grace time is a period of time during which the offender can enter the zone without triggering an alarm. If the offender is still in violation at the end of the grace time, the alarm is triggered.

Zones

Exclusion zone

1. The offender is outside of all zones.
2. The offender **enters the buffer zone.** The **BZV alarm** is triggered.
3. The offender **enters in the exclusion zone**. The **ZV alarm** is triggered.
4. The offender **gets out of the exclusion zone.** The ZV alarm becomes inactive.
5. The offender **gets out of the buffer zone.** The BZV alarm becomes inactive.

Buffer zone
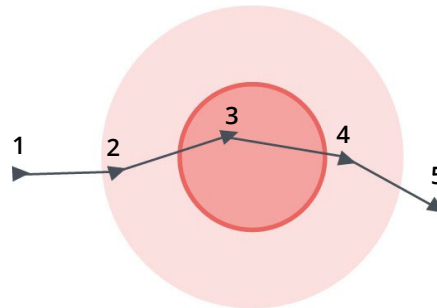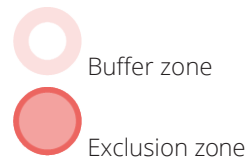
Exclusion zone

Inclusion zone

1. The offender is within the inclusion zone.
2. The offender **enters in the buffer zone.** The **BZV alarm** is triggered.
3. The offender **quits the inclusion zone**. The **ZV alarm** is triggered.
4. The offender **comes back in the inclusion zone.** The ZV alarm becomes inactive.
5. The offender **quits the buffer zone.** The BZV alarm becomes inactive.

Buffer zone

Inclusion zone
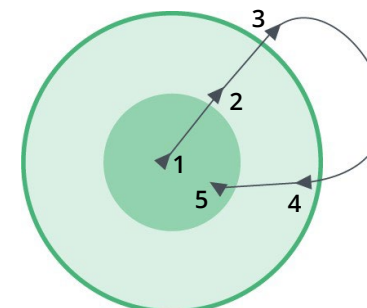
4 DEVICES

4.1 Comfort element

The comfort element is provided with each Bracelet and should be worn on the ankle as shown in the illustration. It is strapped around the ankle to support the Bracelet and prevent irritation around the ankle joint. The comfort element is currently provided in five (5) sizes: Extra Small, Small, Medium, Large and Extra Large.
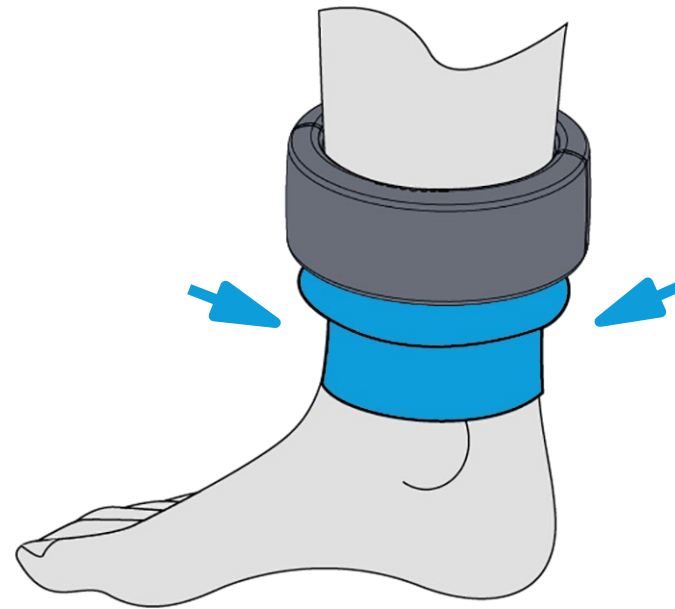
4.2   Bracelet
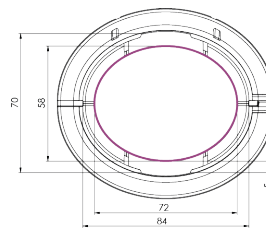
The device is made of two components:

– BRM : processing component;
– BRX : battery component.

BRM

BRX

The Bracelet is currently available in five sizes:

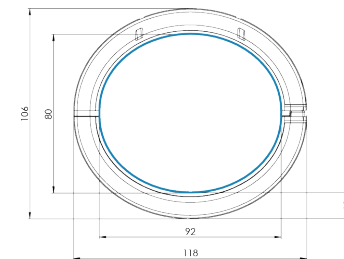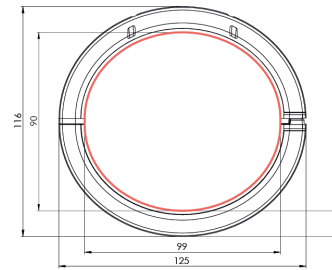| **Extra Small**	**Small**	**Medium**
Inner perimeter (purple) 204 mm / 8.03"	Inner perimeter (yellow) 244 mm / 9.61"	Inner perimeter (blue) 272 mm / 10.71"
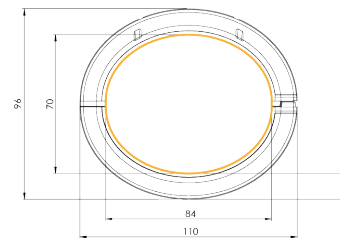
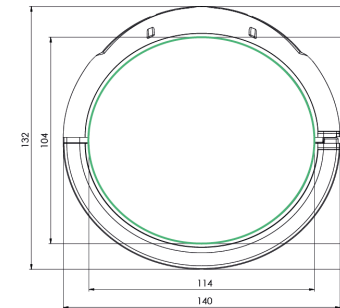Bracelet's height is the same for all sizes: 44 mm.

Large

Inner perimeter (red)
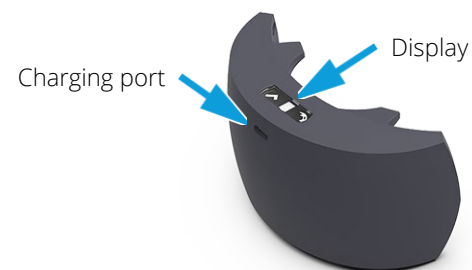299 mm / 11.77"

Extra Large

Inner perimeter (green)
342 mm / 13.46"

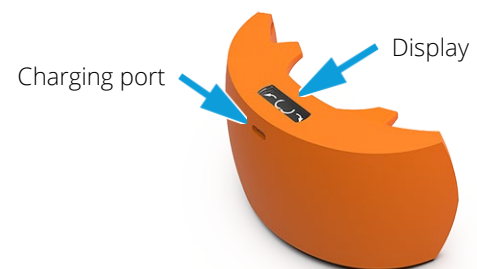Bracelet's height is the same for all sizes: 44 mm.

4.3   Mobile Charger

A standard micro-USB cable is provided to charge the Mobile Charger.

Charging port

Display

4.4 Key

When attached to the device, the Key sends a secure command to the device to open it.

Charging port

Display

5   INSTALLATION

5.1   Select comfort element and bracelet size

Strap the comfort element around the ankle.

Choose the right size (see the information in the chapter Bracelet [4.2).

These values are purely indicative.

The best way to know if the Bracelet is not too tight, is to ask the wearer to place his little finger between the leg and the Bracelet. If the finger does not fit, the Bracelet is too tight. The wearer is the only one to know if the Bracelet fits or not. If he does not feel comfortable, another size should be used.
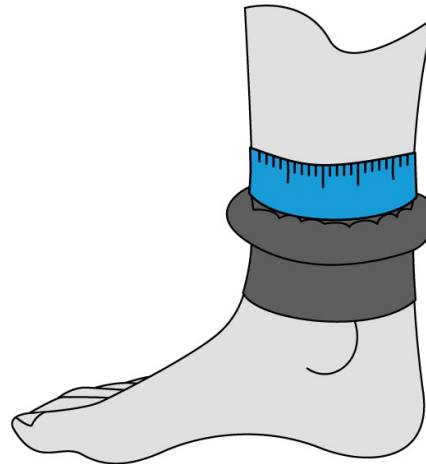
Of course, the Bracelet needs to be tight enough to be unremovable as long as it is closed.

XS = 240 mm / 9,45 " | S = 270 mm / 10,63 " | M = 300 mm / 11,81 " | L = 320 mm / 12,6 " | XL = 360 mm / 14,17 "
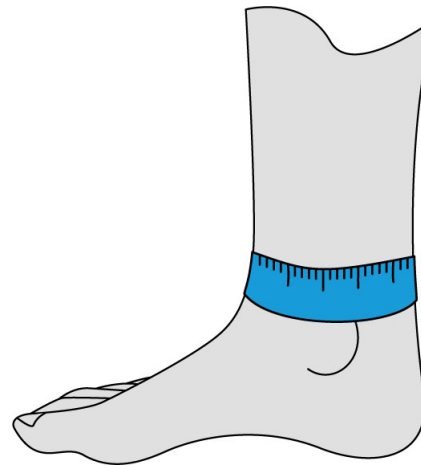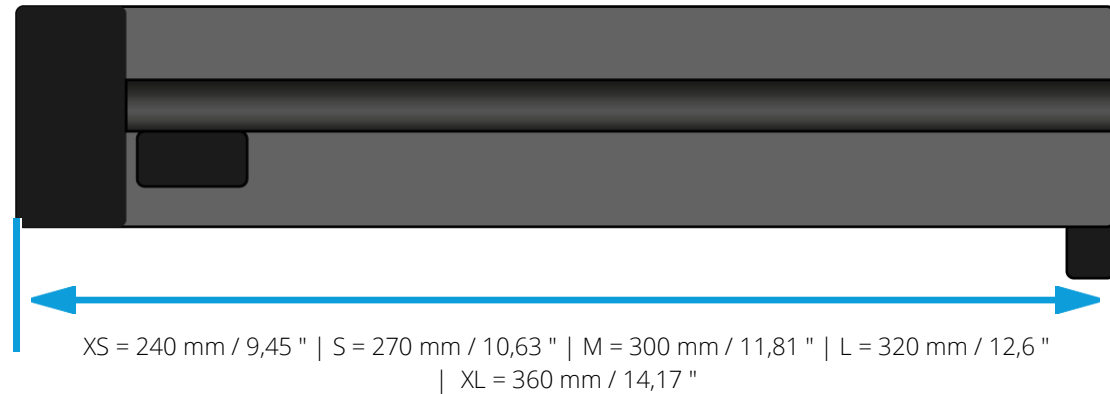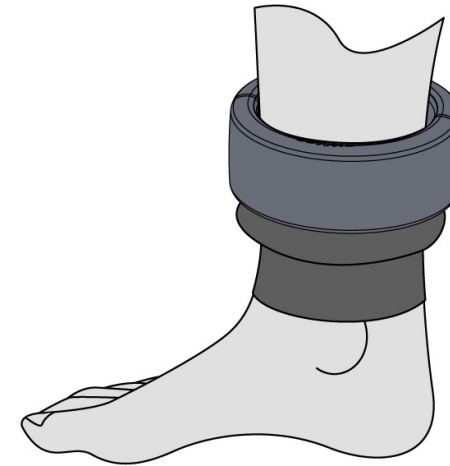

1. Measure the ankle above the malleolus in order to determine the size of the comfort element
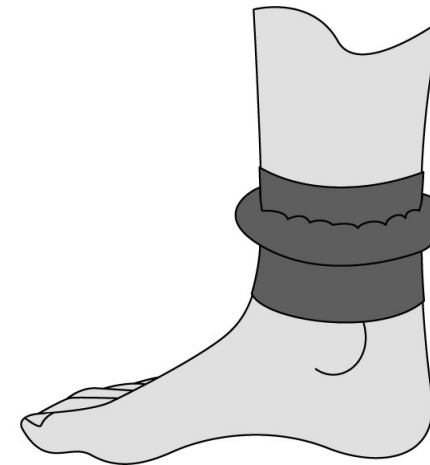
2. Attach the comfort element around the ankle. The bottom of the elastic band must partially cover the malleolus.
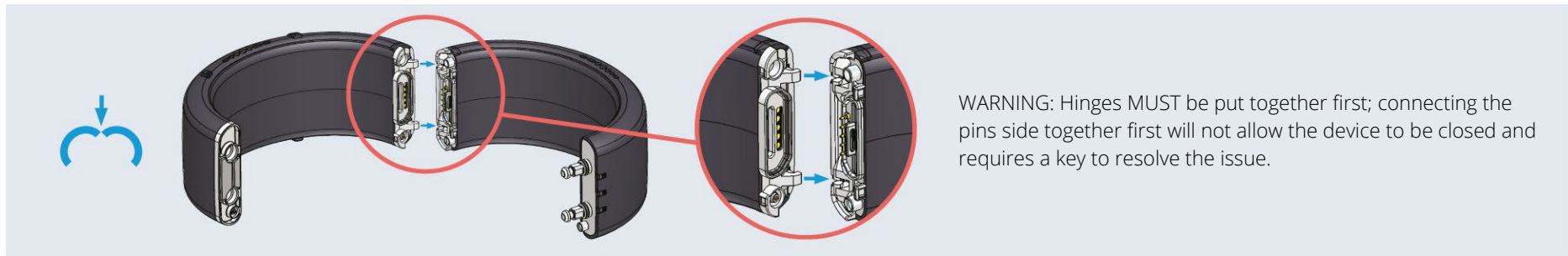
3. Measure the ankle above the padded part of the comfort element in order to determine the size of the bracelet.

4. Close the bracelet around the ankle, resting on the padded part of the comfort element. The Bracelet should be tight enough so that it cannot be removed, but not so tight that it causes discomfort at rest or when walking or running.
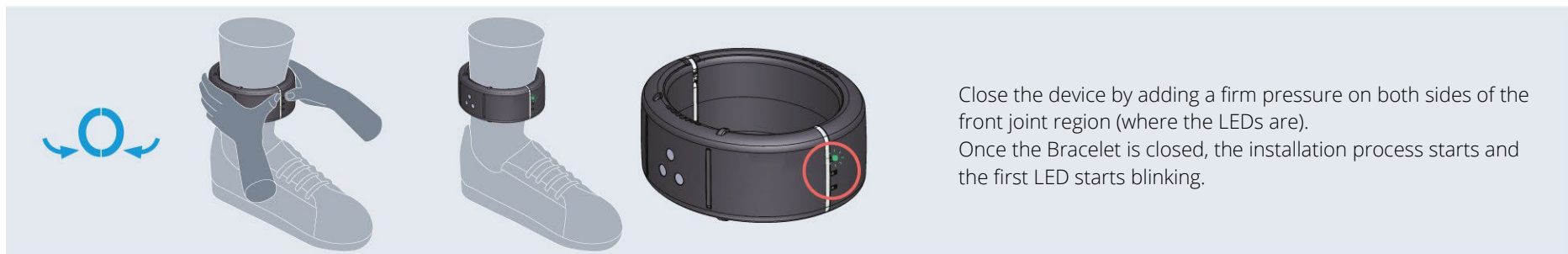
1. Connect hinges

WARNING: Hinges MUST be put together first; connecting the pins side together first will not allow the device to be closed and requires a key to resolve the issue.

2. Place the bracelet around the ankle.

With triangle facing up, place the Bracelet around the ankle.

3. Press the two halves firmly.

Close the device by adding a firm pressure on both sides of the front joint region (where the LEDs are).
Once the Bracelet is closed, the installation process starts and the first LED starts blinking.

4. Internal tests

Success | Troubleshooting

LED 1 blinks green

Hardware failure detected: 3 LEDs blinking red until the device is unlocked;
Open the devices, check the contacts:
- if they are dirty, clean them (use a clean and dry cloth);
- if it does not work, return the device to GEOSATIS facilities

5. Lock tests

LED 2 blinks green + 1 short vibration every 3 seconds as long as the lock test fails.
Need to push both parts together to ensure that the bracelet is properly closed.

If the Mobile Charger is placed on the Bracelet, it will display this screen (push the two parts together):

The same failure as described above may occurs at any stage of the installation.

6. Installation finalization

During 3 seconds, third LED blinks green.

The same failure as described above may occurs at any stage of the installation.

7. Successful installation

Installation OK, all LEDs are green and the Bracelet emits 1 BEEP.

5.3 Inform the offender

Give the "User guide for offender" and check it with the offender.

GEOSATIS SA highly recommends to inform the offender about:

– officer's emergency phone number(s);
– all safety messages (danger, warning, info, prohibition, mandatory, etc...) listed in the manual;
– offender's exclusion/inclusion zone(s), buffer zone(s) and schedules;
– zone violation and uncharging the Bracelet consequences;
– Bracelet's alarm signals;
– not to try to open the Bracelet in any case;
– how to charge and clean the devices.

5.4 Open the Bracelet

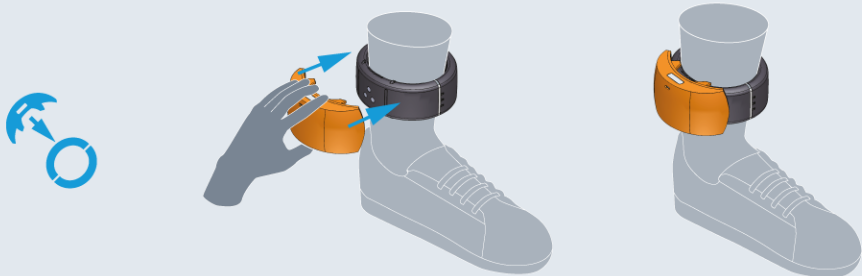The Bracelet can be opened in two distinct ways:

– by using the monitoring platform GMS: (see **Open the Bracelet using the GMS platform [5.5**).

– by using a Key: (see **Open the Bracelet with the Key [5.6**).

5.5   Open the Bracelet using the GMS platform

1. Place the Key on the Bracelet

They Key emits 2 BEEPs and displays:

If the Key emits no sound and its screen displays nothing when placed on the Bracelet, it may need to be charged. Connect the provided USB charger to the Key and wait for the Key to charge for a while before trying again and open the Bracelet.

2. Connection

Success | Troubleshooting

LED 3 blinks green: connection is being established (in progress): the Bracelet emits 1 BEEP

The Key displays:

LED 3 is red: connection not established.

The key displays:

Remove the key and put it back; If the error appears again, return the Key to GEOSATIS facilities and use another Key.

Configuration error: in some rare cases, this message may be displayed at this stage. It this occurs, return the Key to GEOSATIS facilities and use another Key.

3. Check of factors

As long as the check is not finished, LED 2 blinks green.

The Key displays:

LED 2 is red: The Key displays:

This is an unauthorized Key. Use an authorized key.

4. Release the locks

Success

LED 1 blinks green and the Bracelet emits a continuous serie of short BEEPs: need to push both halves together (not systematically).

The Key displays:

Troubleshooting

After at least 10 seconds, the 3 LEDs blink in red if the Bracelet has not been opened.
The bracelet restarts the installation.

At this stage, the Key can be removed in order to apply a firm pressure both sides of the front joint region (where the LEDs are).

5. Ready to open

As soon as the Bracelet emits a continuous BEEP, it can be opened.

If it is still on the Bracelet, The Key displays: ; it can now be removed from the Bracelet.

After at least 10 seconds, the 3 LEDs blink in red if the Bracelet has not been opened.
The bracelet restarts the installation.

6. Successful opening

The Bracelet can be open safely.

5.6 Open the Bracelet with the Key

1. Send the opening command from GMS

If nothing happens, this means that the Bracelet's battery is empty or it has no communication.
Charge the Bracelet for a while and make sure that there is GMS signal around.

2. Connection

Success

Troubleshooting

LED 3 blinks green: connection is being established.

LED 3 is red: connection not established. Resend the command. If the error appears again, contact GEOSATIS.

3. Check of factors

As long as the check is not finished, LED 2 blinks green.

4. Lock release

LED 1 blinks green and the Bracelet emits a serie of BEEPs: need to push both sides together (not systematically required).

After at least 10 seconds, the 3 LEDs blink in red if the Bracelet has not been opened. The bracelet restarts the installation.

5. Ready to open

As soon as the Bracelet emits a continuous BEEP and the 3 LEDs are green, it can be opened

After at least 10 seconds, the 3 LEDs blink in red if the Bracelet has not been opened. The bracelet restarts the installation.

6. Successful opening

The Bracelet can be removed safely.

6 RECHARGE

6.1 Mobile Charger and Key

Sleep mode

The Mobile Charger enters "sleep mode" if it is not connected to a Bracelet nor a power supply for 30 hours. This mode prevents the Mobile Charger batteries from discharging when not in use; ensuring that when needed, it will have enough power to charge a bracelet.

To "wake up" a Mobile Charger from sleep mode, plug it into power for 5-10 seconds (using the micro-USB cable) until the LCD display switches on. The Mobile Charger can now charge a bracelet.

Charging the Mobile Charger or Key

1. Connect the micro-USB cable.
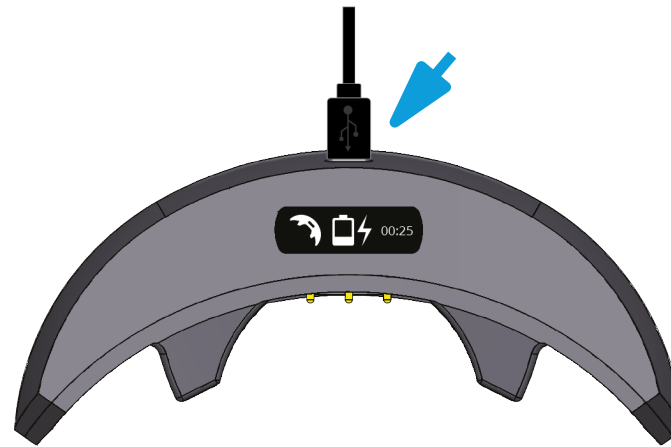
2. Charge started:

– Mobile Charger / Key calculates the remaining charging time.

3. Charge in progress:

– here, 34 minutes left.

4. Charging completed:

– the micro-USB cable can be disconnected.

Mobile Charger activation

When pressing the button to open the Mobile Charger's jaw, the screen should switch on and display the following screens for 10 seconds:

– from 80% to 100%, we consider that the battery level of the Mobile Charger is ok.

– from 40% to 80%, we indicate a warning, the Mobile Charger will not charge the battery of the Bracelet at 100%.

– from 1% to 39%, it will be necessary to plug the Mobile Charger to a power supply anyway to be able to charge the Bracelet.

– the screen does not switch on: the Mobile Charger is maybe in sleep mode or the battery is empty; it will be necessary to plug the Mobile Charger to a power supply anyway.

.

The Mobile Charger is waterproof, but only when not charging. To protect the Mobile Charger pins from corrosion if they are exposed to water, the 12 V output is deactivated.

Before placing the Mobile Charger on the Bracelet, the Mobile Charger's button must be pressed to activate the 12 V output so that the Mobile Charger will start charging - otherwise, nothing happens.

After the button is pressed, the Mobile Charger will try to communicate with the Bracelet for 30 seconds. If communication fails, the 12 V output will be deactivated.
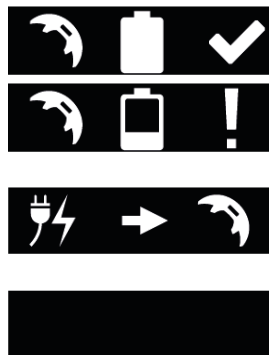
This allows the user to know if the Mobile Charger is ready to recharge the Bracelet. If the Mobile Charger is placed on the Bracelet within the 30 seconds, the Mobile Charger starts charging the Bracelet. If not, the Mobile Charger 12 V output is deactivated again, and the user has to press the button again to activate it. Each time the button to open the Mobile Charger's jaw is pressed, the 10 seconds counter (screen display) is reset and the 12 V remains activated for 30 seconds in total

Key 12V output activation

The screen should switch on and display the following screens for 10 seconds:

- above 20%, can still do a bunch of unlocks.

- from 10% to 20% we indicate a warning, the ULK will not be able to do a lot of unlocks. It is better to recharge it for a while.
- below 10% it is necessary to plug the ULK power supply to guarantee that it can unlock a Bracelet.
- the screen doesn't switch on, the ULK is maybe in the sleep mode or the battery is empty, it will be necessary to plug the power supply anyway.

When pressing the button to open the Key's jaw, the behavior should be consistent with the Mobile Charger's.
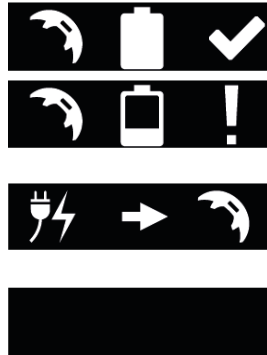
6.2   Bracelet

When there is a "Battery low alarm, (battery level < 20%) the Bracelet emits one short vibration 5 times at 40 seconds interval.

Charging the Bracelet

Press the button of the Mobile charger in order to open the jaw. The Mobile Charger is ready to be placed on the Bracelet.

The Mobile Charger emits 2 BEEPs when it is installed.

If nothing happens, remove the Mobile Charger and put it back on the Bracelet; if still nothing happens, charge the Mobile Charger before trying again; if the Mobile Charger does not charge (neither itself nor the Bracelet), return the Mobile Charger to GEOSATIS SA facilities and use another one.
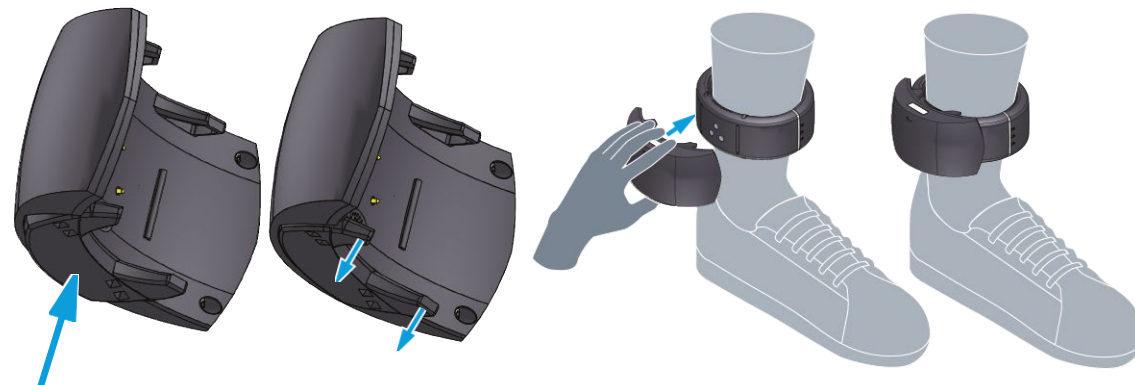
Press here with the thumb to open jaw.

When the Mobile Charger starts charging, it displays the hourglass for a while, (calculating the remaining charging time), then displays the remaining charging time until the Bracelet is full; then it displays the "check" symbol.

If the Mobile Charger has not enough power to charge the Bracelet fully, it emits 2 BEEPs and displays the screen that mean that it will be necessary to plug the Mobile Charger to a power supply to complete the charging.

In case of a generic error during the process the Mobile charger display this screen.

Try to remove the Mobile charger and put it back on the Bracelet. If the error persists, return the Mobile Charger to GEOSATIS SA facilities and use another one.

Charging the Mobile Charger while charging the Bracelet

When the Mobile Charger is charging while also charging the Bracelet, the LCD screen displays information on the Bracelet:

– charge started
  Mobile charger calculates bracelet charge time (charge is in progress).

– charge in progress
  Here, 25 minutes remaining.

– charge complete
  Charger can be removed from bracelet.

7 CLEANING

7.1 Bracelet, Key and Mobile Charger

Electronic Bracelet

Offenders must use a soft cloth or disinfectant wipe every two days to clean the device properly. The supervising agency must clean and disinfect the Bracelet between offender installations. Do not use alcohol.

Key

Clean the key regularly with a soft cloth or disinfectant wipe. Do not use alcohol.

Mobile Charger

Offenders must use a soft cloth or disinfectant wipe regularly to clean the Mobile Charger. The supervising agency must clean and disinfect the Mobile Charger between offender installations. Do not use alcohol.

Soft cloth.

Disinfectant wipe and soft cloth.

8 TECHNICAL DESCRIPTION

8.1 Bracelet and Mobile Charger

	Bracelet	Mobile Charger
Power		
Operation time:	> 24 hours from full charge	Charges one Bracelet fully.
Charging time:	Empty-to-full: 90 minutes.	Micro USB: 5 hours (provided power supply only).
Battery overall lifetime:	3 years (typical usage: 1100 charging cycles).	3 years (typical usage: 1100 charging cycles).
Security		
Tamper detection:	Bracelet or casing opening.	Casing opening.
Other features		
Buzzer / Vibration:	Buzzer and vibrations.	Buzzer.
Environment - Operating		
T° (air):	Continuous (worn) : -15 to +55 °C / 5 to 131 °F.	Continuous: -15 to +55 °C / 5 to 131 °F.
	Short term (<30min): -20 to +60 °C / -4 to 140 °F.	Short term (<30min): -20 to +60 °C / -4 to 140 °F.
	Charging* : 0 to +35 °C / 32 to 95 °F.	Charging*: 0 to +35 °C / 32 to 95 °F.
	*If the ambient temperature exceeds 45° C / 113 °F while charging, the devices continue to operate but the charging process is temporarily stopped.	
Humidity:	Waterproof	Splash proof
IP Rating:	IP 68 (5 m / 16.40 ft for 60 minutes).	IP 68 (2 m / 6.56 ft for 30 minutes; not charging)
Environment – Non-operating		
T° (air):	Short term (<1 week): -20 to 65 °C / -4 to 149 °F.	Short term (<1 week): -20 to 65 °C / -4 to 149 °F.
	Storage : -10 to +30 °C / 14 to 86 °F.	Storage : -10 to +30 °C / 14 to 86 °F.
Humidity:	5-95% relative humidity, non-condensing.	5-95% relative humidity, non-condensing.
IP Rating:	IP 57.	IP 67.

GEOSATIS

9   LEGAL NOTICE AND CERTIFICATIONS

Info

FCC Part 15.

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.

CAUTION: The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

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.

This equipment has been tested and meets applicable limits for radio frequency (RF) exposure. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Info

SAR Compliance

This product has been tested and found to comply with the following standards:

For the used worst-case positions, the portable device BRC V6.0 from Geosatis is in compliance with the IC RSS 102 Issue 4 [RSS 102] and Federal Communications Commission (FCC) Guidelines [OET 65] for uncontrolled exposure. SAR assessment in body worn was conducted with a distance of 0 mm between the housing of the handheld and the flat phantom.
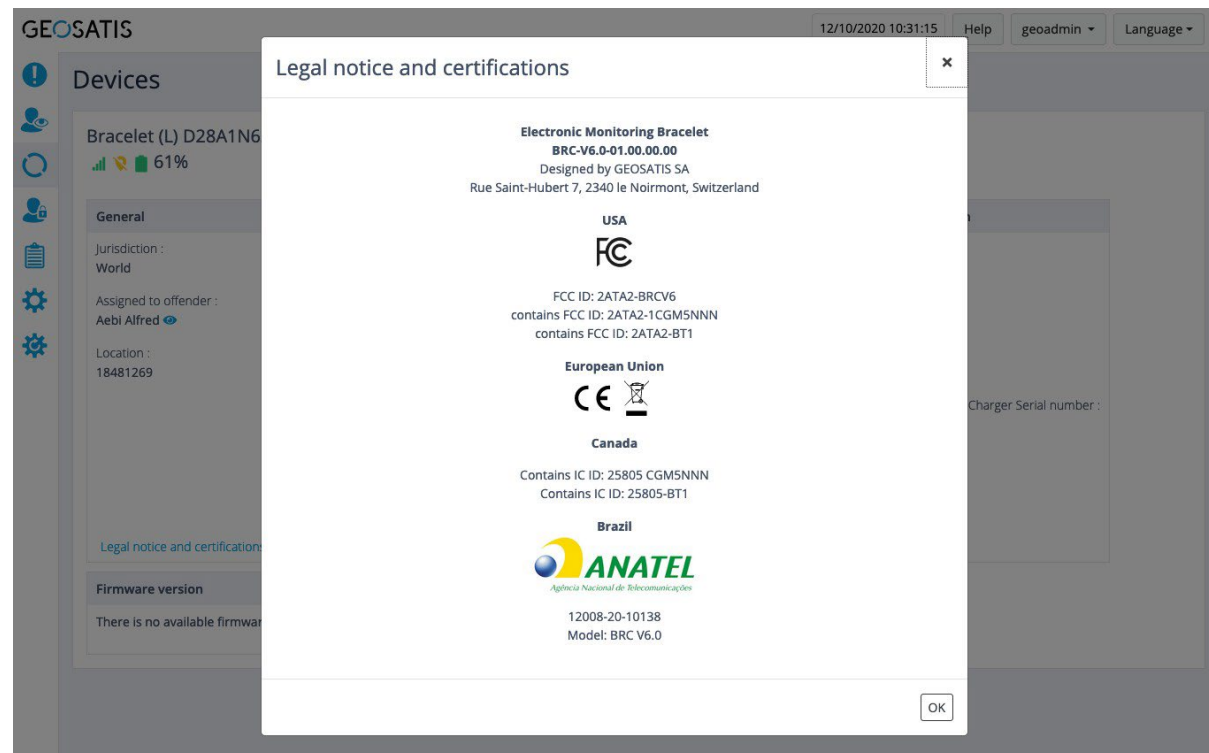
Devices certifications

First alternative

1. Log in on GMS.

2. Click on "Devices" in the main menu.

3. In the device list, select the right device; click on it.

4. In the device's details page, click on the link "Legal notice and certifications".

5. A pop-up appears, containing the device legal notice and certifications.

Second alternative

1. Login on GMS.

2. In the offender list, select the tab "Active offenders".

3. Select an offender in the list; click on it.

4. Click on "device" tab.

5. In the offender's device details page, click on the link "Legal notice and certifications".

6. A pop-up appears, containing the device legal notice and certifications.

There are two ways to reach device's details through the Geopolis platform.

Example of certifications and legal notices

Please note that certifications may vary depending on the country.

**Electronic Monitoring Bracelet
BRC V6.0
01.00.00.00**

Designed by GEOSATIS SA
Rue Saint-Hubert 7, 2340 le Noirmont, Switzerland

USA

FCC ID: 2ATA2-BRCV6
contains FCC ID: 2ATA2-1CGM5NNN
contains FCC ID: 2ATA2-BT1

European Union

Canada

Contains IC ID: 25805-1 CGM5NNN
Contains IC ID: 25805-BT1

Brazil

ANATEL
Agência Nacional de Telecomunicações

HHHHH-AA-FFFFF
Modelo : R X.X XX

**Electronic Monitoring Bracelet
BRM V6.1**

Designed by GEOSATIS SA
Rue Saint-Hubert 7, 2340 le Noirmont, Switzerland

USA

FCC ID: 2ATA2-BRMV61
contains FCC ID: XPYUBX19KM01
contains FCC ID: 2ATA2-BT1

European Union

Batteries

The batteries are certified IEC-62133 and UN38.3 (transport of batteries).

Adaptors

Manufacturer: CUI Inc.

Manufacturer reference: SMI5-5-V-I38.

Specification: Output 5VDC 5W / Input 90-264 Vac.

NOTES