SafeCase User Guide

For use with iPhone® 7 and 8.

Section 1: About SafeCase

SafeCase is a first-of-its-kind mobile security device. Designed as a convenient smartphone case, SafeCase provides intelligent mobile protections rooted in high-security hardware. The case offers secure processing and communication capabilities that are independent of the mobile device.

Integrated within the SafeCase are counter-surveillance capabilities that actively defend against the surreptitious hijacking of the smartphone's cameras and microphones. A physical barrier prevents image capture by blocking the cameras, while intelligent audio masking prevents audio capture by jamming each of the microphones with true random noise.

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PRIVORO®

SAFECASE PARTS AND ACCESSORIES

The SafeCase ships with a lock panel (which prevents the case from opening) and a charging cable (which charges both the SafeCase and iPhone). In addition to these accessories, the Privoro app on your iPhone pairs with the SafeCase over Bluetooth, allowing you to verify the case's audio masking, check the battery level and receive administrative notifications.

The parts of the SafeCase (and their main functions) are displayed in Figure 1.

Privoro SafeCase

Model - M0002

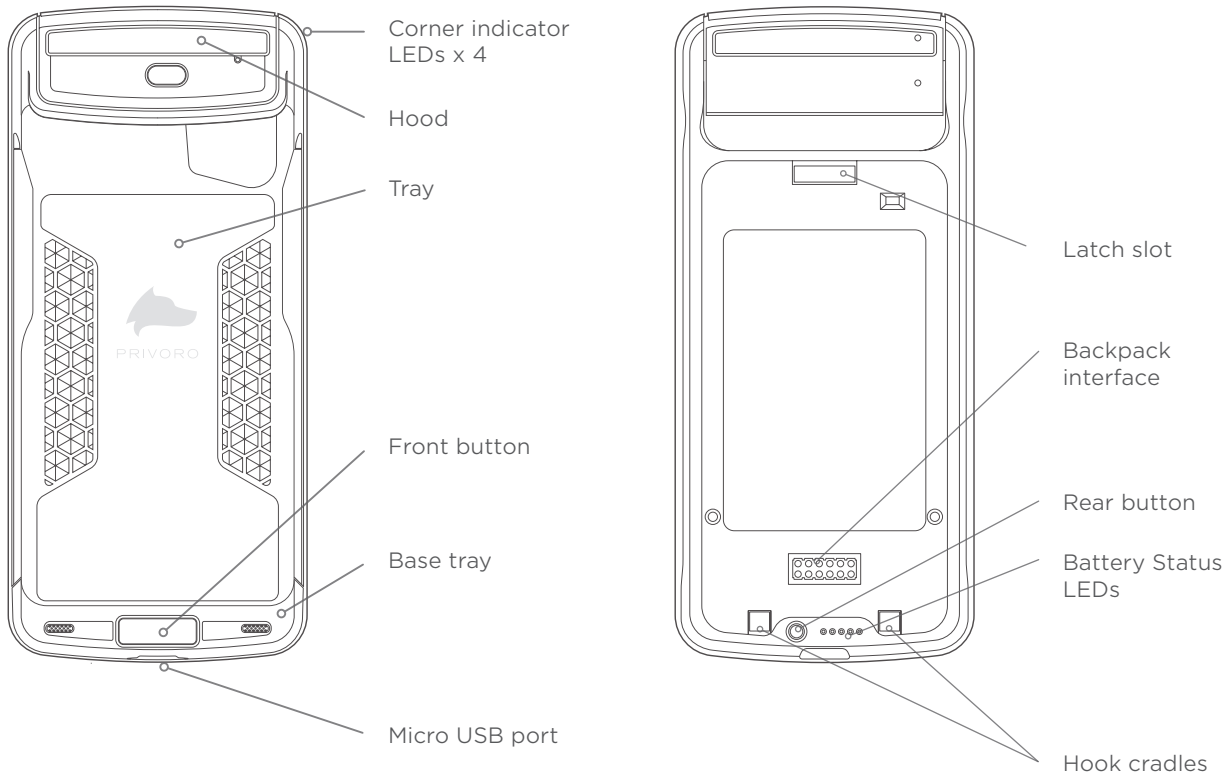


Figure 1: SafeCase parts

Corner indicator LEDs
Indicate counter-surveillance protections

Hood
Controls counter-surveillance protections

Tray
Holds rear of iPhone in place

Front button
Enables audio passthrough for using Siri

Base tray
Enables iPhone insertion/removal

Micro USB port
For charging SafeCase via charging cable

Latch slot
Holds top of lock panel in place

Backpack interface
Accommodates hardware attachments

Rear button
Controls power on/off and battery status

Battery status LEDs
Indicate battery charge level

Hook cradles
Hold bottom of lock panel in place

Section 2: Setting up the SafeCase

STEP 1: POWERING ON THE SAFECASE

The SafeCase is in shipping mode when it arrives. To power it on for the first time, connect the SafeCase to a power source (charge-capable USB port or wall charger) using the charging cable provided, with the micro USB split connecting to the SafeCase and the USB-A side connecting to the power source (Figure 2). Once powered on, both the corner indicator LEDs and battery status LEDs will blink green five times.

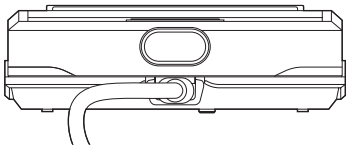


Figure 2: Connect the SafeCase to a power source

STEP 2: PAIRING THE SAFECASE AND PRIVORO APP

To enable audio masking verifications and firmware updates, you'll need to pair your SafeCase to the Privoro app.

DOWNLOADING/INSTALLING AND OPENING THE PRIVORO APP

Download the Privoro app from the App Store on your iPhone using the following steps:

1. Open the App Store app on your iPhone (by tapping the App Store icon on your home screen or searching for the app).
2. In the App Store app, tap the Search option, enter Privoro in the search field and then tap the Search key.
3. Once the Privoro app is displayed, tap the Get option to download and install (Figure 3). You may need to authenticate to the App Store before downloading.

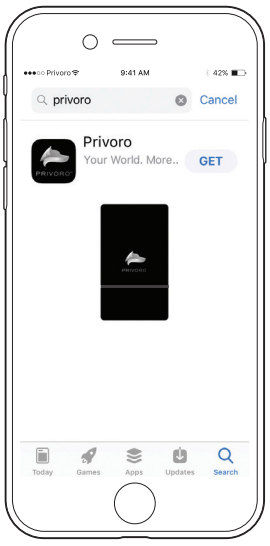


Figure 3: Tap the Get option

4. Once installed, open the Privoro app (by tapping the Open option in the App Store, tapping the Privoro icon on your home screen or searching for the app).

Once the app has been opened for the first time, a setup assistant will display. Tap the Next option to proceed (Figure 4).

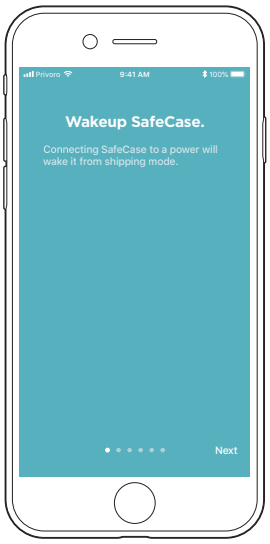


Figure 4: Tap the Next option

CHOOSING APP SETTINGS

You will then be guided through choosing your app settings:

- **Notification settings:** When prompted to allow the app to send you notifications, tap the I want that button (Figure 5), unless directed otherwise by your system administrator; this setting is necessary for receiving administrative notifications. When prompted to confirm this setting, tap the Allow option.

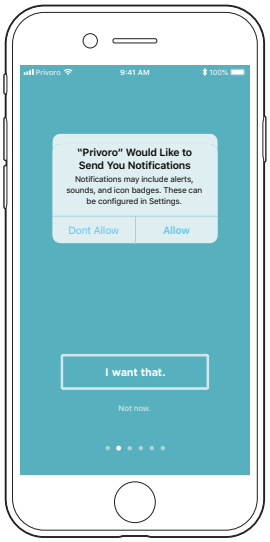


Figure 5: Tap the, “I want that” button and then the Allow option

- **Location settings:** When prompted to allow the app to access your location, tap the, “I want that” button (Figure 6), unless directed otherwise by your system administrator; this setting is necessary for administrative oversight. When prompted to confirm this setting, tap the Always Allow option.

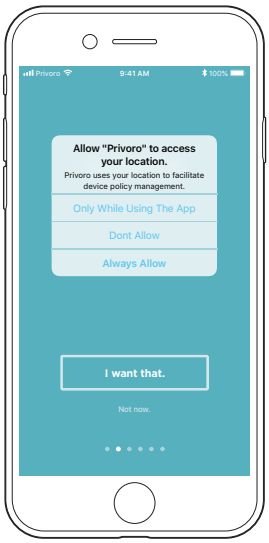


Figure 6: Tap the, “I want that” button and then the Always Allow option

- **Microphone settings:** When prompted to allow the app to access your microphones, tap the, “I want that” button (Figure 7), unless directed otherwise by your system administrator; this setting is necessary for verifying the case’s audio masking. When prompted to confirm this setting, tap the Allow option.

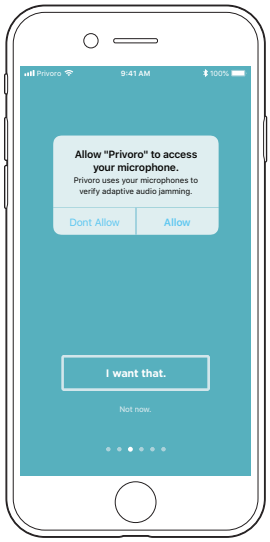


Figure 7: Tap the, “I want that” button and then the Always Allow option

- **Camera settings:** When prompted to allow the app to access your camera, tap the, “I want that” button (Figure 8), unless directed otherwise by your system administrator; this setting is solely necessary for scanning the case’s QR code as part of the SafeCase/ app pairing process. When prompted to confirm this setting, tap the Allow option.

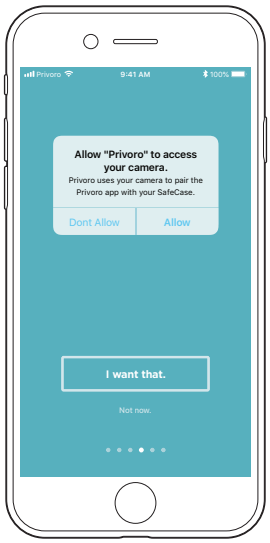


Figure 8: Tap the, “I want that” button and then the Always Allow option

You may change these settings at any time from the Settings app on your iPhone.

SCANNING THE SAFECASE QR CODE

After choosing your app settings, a QR code scanner will open within the app. Hold your iPhone's rear-facing camera over the QR code on the rear of the SafeCase until the code is centered within the guidelines on the screen (Figure 9). Upon successful scanning, you will receive a confirmation message that you have successfully paired your SafeCase and app (Figure 10).

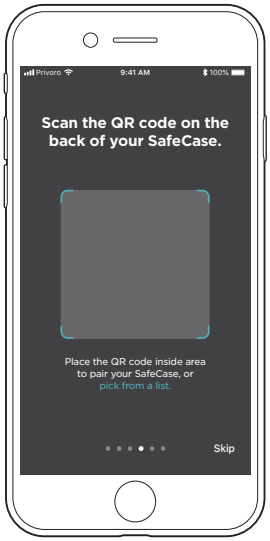


Figure 9: Scan the QR code on the rear of the SafeCase

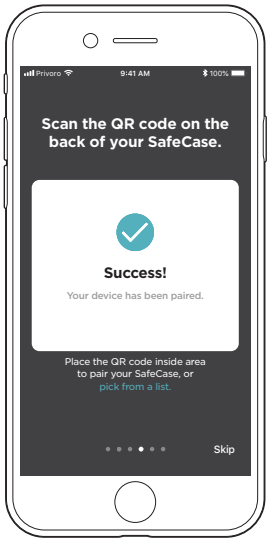


Figure 10: Confirmation message

The final screen of the setup assistant will show an animation of the steps for inserting your iPhone into the SafeCase (see: Inserting the iPhone into the SafeCase). Tap the Done option to close the setup assistant (Figure 11), opening the app's home screen.

Figure 11: Tap the Done option

STEP 3: INSERTING THE IPHONE INTO THE SAFECASE

While inserting your iPhone into the SafeCase, the lock panel must not be attached to the back of your SafeCase. If the lock panel is attached, inserting your iPhone may damage both the SafeCase and phone. Follow the instructions for removing the lock panel (see: Removing the lock panel).

If applicable, remove any protective cases or screen protectors from your iPhone before setup.

NOTE: Protective cases and screen protectors may prevent your iPhone from fitting into the case and may disrupt audio protections.

Insert your iPhone into the SafeCase using the following steps:

1. **Slide the base tray open:** Place your finger(s) on the inside center of the base tray and slide the base tray open (Figure 12).

NOTE: Inserting your iPhone without lowering the base tray may damage the SafeCase and iPhone.

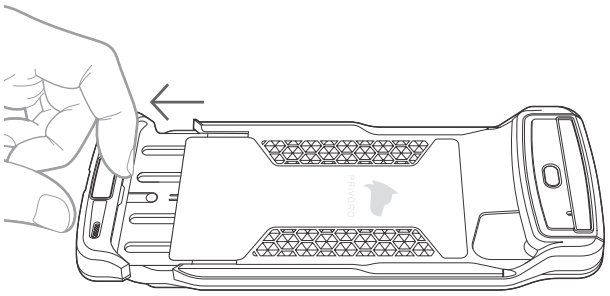


Figure 12: Slide the base tray open

2. **Insert the iPhone into the tray:** Place the iPhone head-first into the tray and then rest the phone into the case (Figure 13).

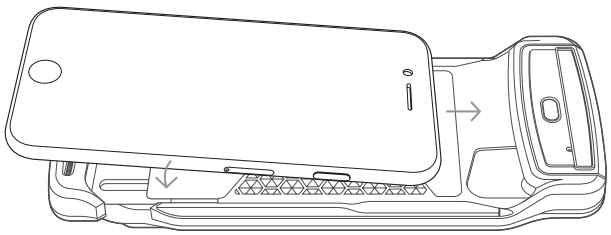


Figure 13: Insert the iPhone into the tray

3. **Slide the base tray closed:** Push up from the bottom of the base tray until it fits tightly around the bottom of your iPhone (Figure 14).

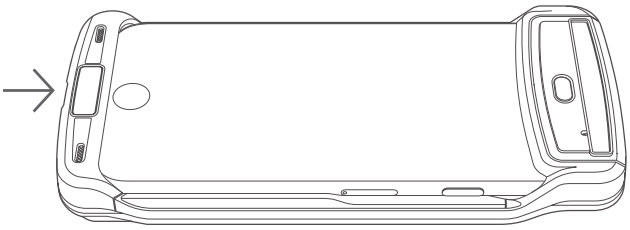


Figure 14: Slide the base tray closed

STEP 4: ATTACHING THE LOCK PANEL TO THE SAFECASE

The lock panel is an integral part of the SafeCase and is required to ensure audio protections. To complete the setup, attach the lock panel to the rear of the SafeCase. To do so, first place the hooks at the bottom of the lock panel into the hood cradles on the rear of the SafeCase, and then press the lock panel to the SafeCase until the latch snaps the panel into place (Figure 15).

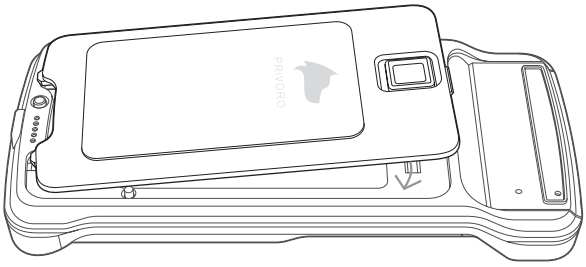


Figure 15: Attach the lock panel

Section 3: Managing counter-surveillance protections

SafeCase has three counter-surveillance modes: protected mode (the default mode), unprotected mode (for capturing images/audio and placing/receiving phone calls) and audio passthrough mode (for using Siri).

PROTECTED MODE: FOR FULL PROTECTION

Protected mode is the default counter-surveillance mode. In this state:

- The intelligent audio masking and camera blocking features are engaged.
- The case's hood is down.
- The corner indicator LEDs pulse green every 10 seconds.

It is normal to hear a soft white noise coming from the SafeCase when in protected mode, a result of the audio masking adapting to the noise level in the environment surrounding the SafeCase/iPhone. While in protected mode, most phone features – including apps, videos, emails, music and text messages – can still be accessed (Figure 16).

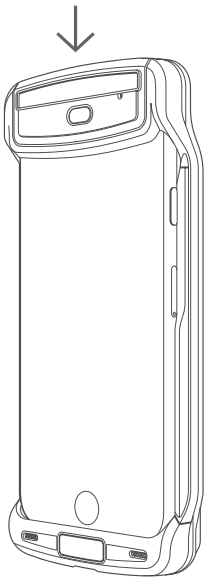


Figure 16: Hood down in protected mode

UNPROTECTED MODE: FOR PHONE CALLS AND AUDIO/IMAGE CAPTURE

Temporarily changing to unprotected mode is necessary for capturing images/audio and placing/receiving phone calls (as permitted by your system administrator). In this state (Figure 17):

- The intelligent audio masking and camera blocking features are disengaged.
- The case's hood is up.
- The corner indicator LEDs pulse red every 10 seconds.

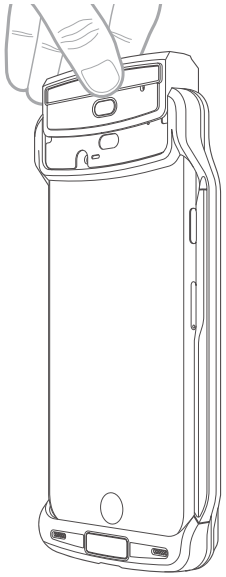


Figure 17: Hood up in unprotected mode

AUDIO PASSTHROUGH MODE: FOR USING SIRI

Temporarily changing to audio passthrough mode is necessary for using Siri (as permitted by your system administrator). In this state (Figure 18):

- The intelligent audio masking feature is disengaged (while the camera blocking feature remains engaged).
- The case's front button is pressed.
- The corner indicator LEDs blink red.

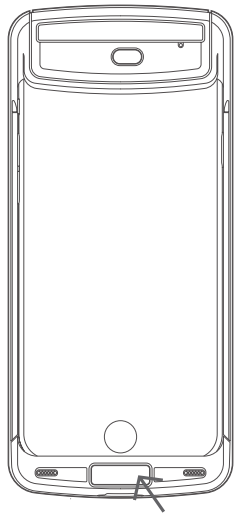


Figure 18: Front button pressed in audio passthrough mode

USING THE FRONT BUTTON

Using the front button must take place before talking to Siri; otherwise, Siri will not be able to understand your wake words ("Hey Siri"), questions, commands or responses.

To change to audio passthrough mode, press the front button (Figure 19). When finished, release the button (and change back to protected mode).

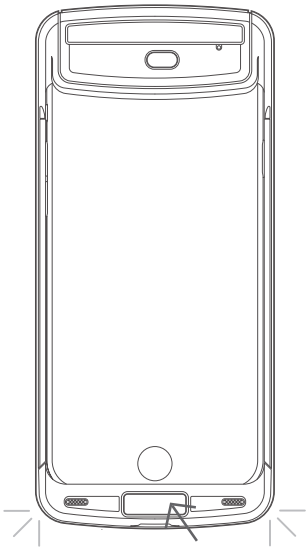


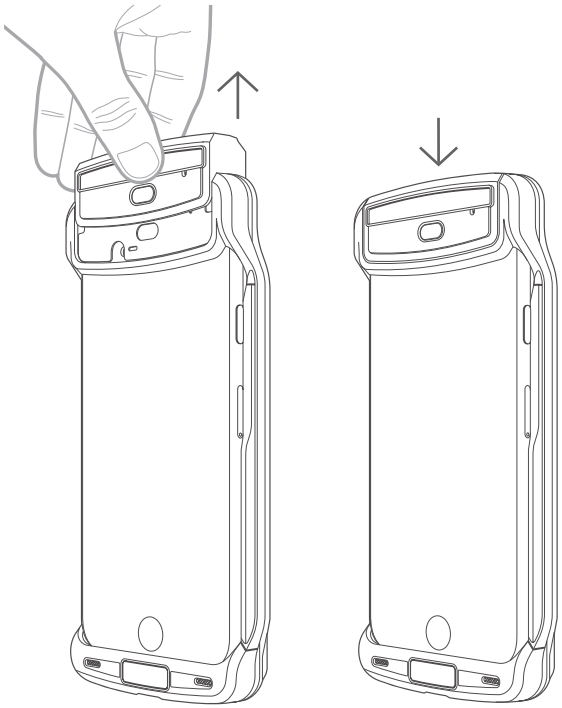
Figure 19: Press the front button

RAISING/LOWERING THE HOOD

Raising the hood must take place before capturing images/audio; otherwise, the recorded photos, videos and audio will be indecipherable. Similarly, raising the hood must take place before placing/receiving a phone call; otherwise, the other participant(s) in the call will not be able to understand what you're saying.

To raise the case's hood (and change to unprotected mode), gently pinch and pull the top of the hood in an upward motion (Figure 20).

To lower the hood (and change back to protected mode) after the call/capture, gently press the top of the hood down (Figure 21).



(Left) Figure 20: Pinch and pull the hood to raise
(Right) Figure 21: Press down on the hood to lower

VERIFYING AUDIO MASKING

From the Privoro app, you can verify that audio masking is functioning for each of your iPhone's microphones while in protected mode. In the app, tap the checkbox icon to open the Verifications screen (Figure 22).

Figure 22: Tap the checkbox icon

In the Verifications screen:

1. If not already selected, tap the option for the microphone you'd like to test (Rear Mic, Front Mic or Bottom Mic), and then tap the Start Recording button (Figure 23).

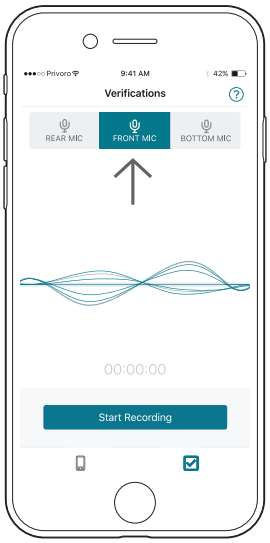


Figure 23; Select the microphone to test and tap the Start Recording button

2. Look at the audio waveform captured on the screen to confirm that it does not react to the surrounding noise (Figure 24). If necessary, introduce noise into your environment by speaking or producing other sounds. If the waveform doesn't react to noise, the audio masking is functioning correctly.

   a. If desired, you may raise the hood (see: Raising/lowering the hood) – disengaging audio masking – to confirm that the audio waveform reacts to the surrounding noise while in unprotected mode. When finished, lower the hood.

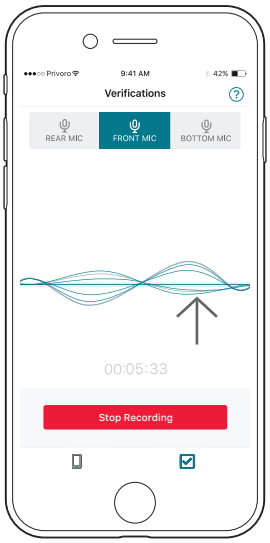


Figure 24: Look at the audio waveform

3. When finished recording, tap the Stop Recording button (Figure 25).

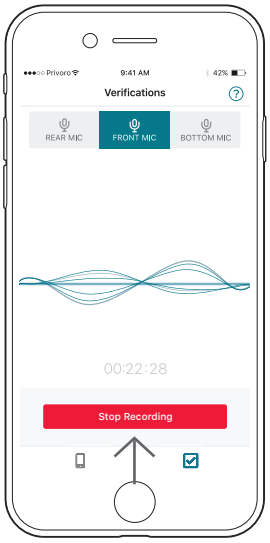
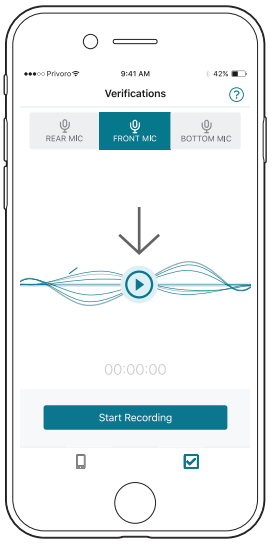


Figure 25: Tap the Stop Recording button

To listen to the recording, tap the playback icon (Figure 26). Audio captured when the hood is down should be masked by randomized noise.



You may repeat the above steps for your iPhone's other microphones.

Figure 26: Tap the playback icon

Section 4: Managing power

POWERING ON/OFF

To power off the SafeCase, press and hold the rear button for three seconds, until the LEDs start blinking (Figure 27). During the power-down cycle, both the corner indicator LEDs and battery status LEDs will blink green five times.

Similarly, to power on the SafeCase, press and hold the rear button for three seconds, until the LEDs start blinking. During the power-on cycle, both the corner indicator LEDs and battery status LEDs will blink green five times. Once powered on, the corner indicator LEDs will pulse green (to indicate protected mode) or red (to indicate unprotected mode).

CHECKING BATTERY STATUS

Checking the current charge level of the SafeCase battery can be done via the device or via the app.

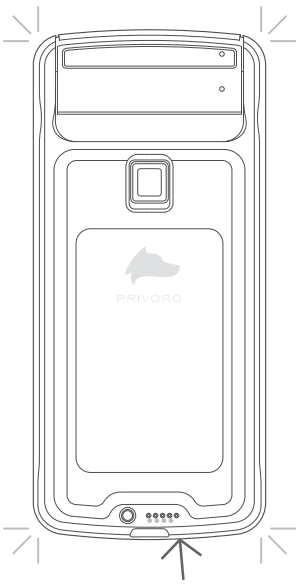


Figure 27: Press and hold the rear button for three seconds

VIA THE SAFECASE

To check the current charge level via the SafeCase, press the rear button for one second, until the battery status LEDs illuminate (Figure 28). The battery status LEDs will illuminate to show the current charge level, with the number of LEDs illuminated corresponding to the charge level (Figure 29).

Figure 28: Press the rear button for one second

Behavior of battery status LEDs	Approx. Charge Level
5 Solid Green LEDs	100%
4 Solid Green LEDs	75%
3 Solid Green LEDs	50%
2 Solid Green LEDs	25%
1 Solid Green LED	10%
1 Blinking Green LED	Less than 10%

Figure 29: Understanding the battery status LEDs

VIA THE PRIVORO APP

You can also check the current charge level via the Privoro app. In the app, tap the device icon to open the Devices (home) screen, if not already displayed (Figure 30). The SafeCase battery indicator will be displayed at the top of the Devices screen (Figure 31); if the app is unable to connect to the SafeCase via Bluetooth, an N/A message will be displayed instead.

Figure 30: Tap the device icon

Figure 31: SafeCase battery indicator

CHARGING

Included with the SafeCase is a two-in-one charging cable, which is USB-A split to Lightning and micro USB, allowing you to simultaneously charge your SafeCase and iPhone. To charge the SafeCase, connect it to a power source (charge-capable USB port or wall charger) using the charging cable provided, with the micro USB split connecting to the SafeCase and the USB-A side connecting to the power source (Figure 32).

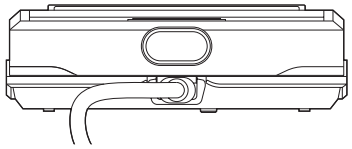


Figure 32: Connect the SafeCase to a power source

When first connected to power, the battery status LEDs will illuminate to indicate the current charge level (see: Figure 29) for one minute before going dark. While charging, you can check the charging status by pressing the rear button for one second (see: Checking battery status).

Section 5: Adjusting settings

ADJUSTING LED BRIGHTNESS

If the corner indicator LEDs or battery status LEDs are too bright or too dim, you can adjust them or turn them off. To do so, press the rear button two or more times to cycle through the three brightness levels: bright, dim and off (Figure 32). With each press of the rear button, both the corner indicator LEDs and battery status LEDs will illuminate to the current brightness level.

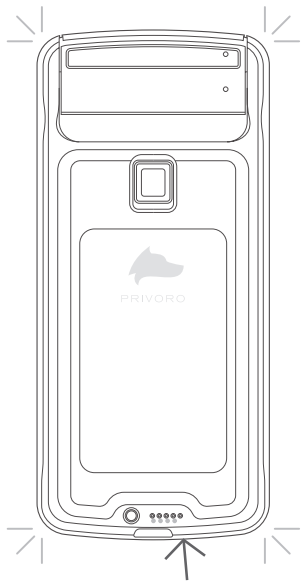


Figure 33: Press the rear button two or more times

TURNING WIRELESS FEATURES ON/OFF

The SafeCase has wireless communication features, including Bluetooth, WiFi and near-field communication (NFC); these can be turned off in situations where radio frequency (RF) emissions are prohibited. To do so, press and hold both the front and rear buttons simultaneously for three seconds (Figure 34), until the corner indicator LEDs start blinking. The corner indicator LEDs will blink yellow five times. Once turned off, the corner indicator LEDs will pulse yellow (to indicate protected mode) or red (to indicate unprotected mode).

Similarly, to turn the wireless features back on, press and hold both the front and rear buttons simultaneously for three seconds, until the corner indicator LEDs start blinking. The corner indicator LEDs will blink green five times. Once turned on, the corner indicator LEDs will resume pulsing green (to indicate protected mode) or red (to indicate unprotected mode).

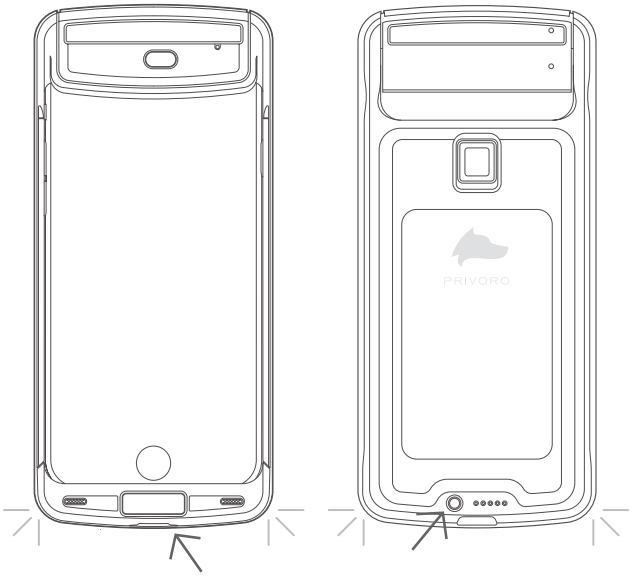


Figure 34: Press and hold the front and rear buttons for three seconds

Section 6: Removing the iPhone from the SafeCase

If you need to remove your iPhone from the SafeCase, use the following steps:

1. **Remove the lock panel**: Press the latch at the top of the lock panel while simultaneously moving it in a downward motion (Figure 35).

NOTE: Removing your iPhone without first removing the lock panel may damage the SafeCase and iPhone.

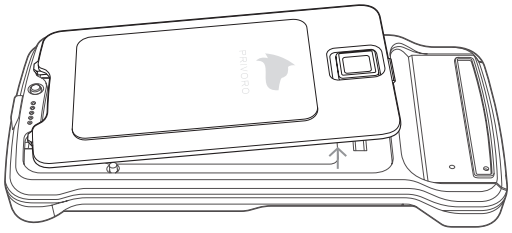


Figure 35: Remove the lock panel

2. **Slide the base tray open:** Place your finger(s) on the inside center of the base tray and slide the base tray open (Figure 36).

NOTE: Removing your iPhone without lowering the base tray may damage the SafeCase and iPhone.

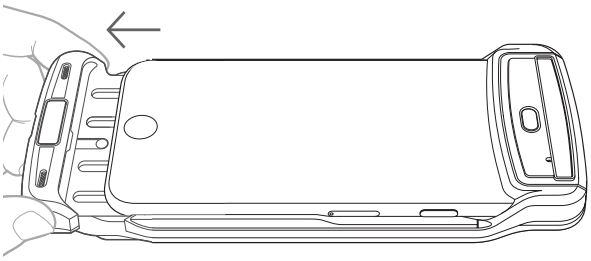


Figure 36: Slide the base tray open

3. **Remove the iPhone from the tray:** Slowly pull the iPhone out of the SafeCase using a downward motion (Figure 37).

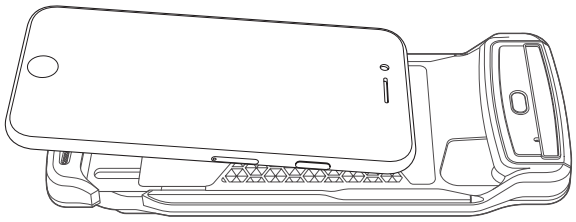


Figure 37: Remove the iPhone from the tray

To insert your iPhone back into the SafeCase, use the same steps taken during setup (see: Inserting the iPhone into the SafeCase).

Appendix A: User interface summary

Goal	Action	Notification
Changing to protected mode (from unprotected mode)	Lower the hood	Corner indicator LEDs pulse green (or yellow, if wireless is turned off) every 10 seconds
Changing to unprotected mode (from protected mode)	Raise the hood	Corner indicator LEDs pulse red every 10 seconds
Changing to audio passthrough mode (from protected mode)	Press the front button	Corner indicator LEDs blink red
Powering on/off	Press and hold the rear button for three seconds	Corner indicator LEDs and battery status LEDs blink green five times
Checking battery status	Press the rear button for one second	Battery status LEDs illuminate to indicate the current charge level
Charging	Press the rear button for one second	Battery status LEDs illuminate to indicate the current charge level
Adjusting LED brightness	Press the rear button two or more times to cycle through the three brightness levels: bright, dim and off	Corner indicator LEDs and battery status LEDs illuminate to the current brightness level
Turning wireless on/off	Press and hold the front and rear buttons simultaneously for three seconds	Corner indicator LEDs blink green (if on) or yellow (if off) five times

Appendix B: Technical specifications

SIZE AND WEIGHT

- Height: 160.5 mm
- Width: 72.8 mm
- Depth: 22.5 mm
- Weight: 0.139 kg (with lock panel), 0.110 kg (without lock panel)

CONNECTIVITY

- Bluetooth
- WiFi
- NFC with reader mode

AUDIO

Digital signal processor for optimum audio quality and secure voice masking

- Masks speech intelligibility up to voice level of 90 dBA[1]
- Masks speech presence up to voice level of 80 dBA[1]

BATTERY AND BATTERY LIFE

- Protected mode: up to 18 hours
- Charge time: up to 50% power level in 30 minutes[2]

ELECTRICAL RATINGS

- 3.7V, 900 mAh Li-Ion battery
- Max input current: 1.85 A
- Rated Voltage: 5VDC

ENVIRONMENTAL REQUIREMENTS

- Operating ambient temperature: -4° and 122° F (-20° and 50° C)
- Relative humidity: Up to 95%
- Operating Altitude: up to 30,000 Feet (9144 m)

[1] Tested one meter from audio source.
[2] Tested with 1-Amp charging supply (DCP) on the battery at 3% of its full capacity.

Appendix C: Safety and handling

⚠**WARNING:** Follow these safety instructions to avoid fire, electric shock, injury, damage to SafeCase or other property.

HANDLING

Handle the SafeCase with care. The SafeCase contains a lithium-ion battery, metal, plastic and electronic components. To avoid damage to the SafeCase and the battery, take care not to puncture, drop, burn or crush the SafeCase. The SafeCase is not water-resistant or waterproof. Avoid exposing the SafeCase to excessive moisture or liquid. Should the SafeCase become damaged, discontinue use.

REPAIR

Do not attempt to open or repair the SafeCase. Opening the SafeCase will invalidate any and all warranties. ties.

BATTERY

Do not attempt to change the SafeCase battery. Improper replacement of the battery could result in fire, overheating and injury. Attempting to replace the battery will invalidate any and all warranties. The lithium-ion battery in your device should be serviced or recycled by Privoro or an authorized service provider and must be recycled or disposed of separately from household/municipal waste.

CHARGING

The SafeCase comes with a 2-in-1 charging cable: USB-A split to Lightning (charge and sync) and micro USB (charge only). For optimal charging it is recommended you use a Privoro SafeCase charging cable. SafeCase has a maximum input current of 1.85 A.

Using damaged cables or charging when moisture is present can cause fire, electric shock, injury or damage to SafeCase or other property.

Figure 38: 2-in-1 charging cable

OPERATING TEMPERATURE

The SafeCase is designed to work in ambient temperatures between -4° and 122° F (-20° and 50° C). The SafeCase may be damaged and battery life shortened if stored or operated outside of these temperature ranges. SafeCase may be used in tropical climate regions.

SafeCase battery charging may be limited if the interior temperature of the SafeCase exceeds normal operating temperatures (for example, in a hot car or in direct sunlight for extended periods of time).

RADIO FREQUENCY INTERFERENCE

Observe signs and notices that prohibit or restrict the use of electronic devices (for example, in healthcare facilities or blasting areas). Although SafeCase is designed, tested and manufactured to comply with regulations governing radio frequency emissions, such emissions from SafeCase can negatively affect the operation of other electronic equipment, causing them to malfunction. When use is prohibited, or when asked to do so by authorities, turn off SafeCase or use wireless off mode to turn off SafeCase wireless transmitters.

USING THE IPHONE

The SafeCase works with the iPhone 7 and iPhone 8. While using SafeCase, follow all of the iPhone safety and handling instructions, which can be found at https://support.apple.com/manuals/iphone.

CARE AND CLEANING

Avoid exposing the SafeCase to dirt, debris and acidic substances that might disrupt the ability to raise and lower the hood and base tray. Avoid exposing the SafeCase to moisture or liquid that may impact the SafeCase performance and functionality. If the SafeCase comes in contact with any debris or liquid, immediately clean and dry the SafeCase with a lint-free cloth on exterior surfaces. Use a compressed air product to clean the raised hood and lowered base tray. Do not use compressed air on the phone's Lightning port or SafeCase micro USB port.

USING CONNECTORS, PORTS AND BUTTONS

The charging cable that comes with SafeCase has two connectors. Always confirm the connector and port match. Do not force a connector into a port or apply excessive pressure to a button. This may cause damage that is not covered under the warranty.

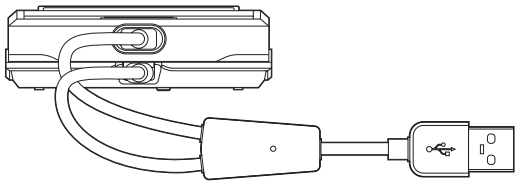


Figure 39: Charging cable attached

Appendix D: Recycling

Privoro has partnered with Call2Recycle for your device and battery recycling needs (within the United States and Canada). To find a recycling location near you, go to call2recycle.org/locator and enter your zip code.

Appendix E: Regulatory information

FCC COMPLIANCE STATEMENT

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 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.

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

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.

CANADIAN REGULATORY STATEMENT

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

In order to comply with FCC/ISED RF Exposure requirements, this device must be installed to provide at least 20 cm separation from the human body at all times.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1) l'appareil ne doit pas produire de brouillage; 2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Afin de se conformer aux exigences d'exposition RF FCC / ISED, cet appareil doit être installé pour fournir au moins 20 cm de séparation du corps humain en tout temps.

EU COMPLIANCE STATEMENT CE

Privoro hereby declares that this wireless device is in compliance with the essential requirements and other relevant provisions of the Radio Equipment Directive 2014/53/EU, as applicable. A copy of the EU Declaration of Conformity is available at privoro.com/support. Legal, regulatory and compliance documentation is also available review at the same link.

European Union—Disposal Information

The Wheeled Bin symbol means that according to local laws and regulations your product and/or its battery shall be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of your product and/or its battery at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

CLASS 1 LASER INFORMATION

This device is classified as a Class 1 Laser product per IEC60825-1:2007 and IEC60825-1:2014. This device complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice 50, dated June 24, 2007. This device contains a laser that could be damaged during repair or disassembly, which could result in hazardous exposure to infrared laser emissions that are not visible. This equipment should be serviced by Privoro or an authorized service provider.

CLASS 1 LASER PRODUCT

SPECIFIC ABSORPTION RATE (SAR) CERTIFICATION INFORMATION

This device is a radio transmitter and receiver. It is designed and manufactured not to exceed the exposure limits for Radio Frequency (RF) energy set by the Federal Communications Commission (FCC) of the U.S. Government.

These FCC RF exposure limits are derived from the recommendations of two expert organizations: the National Council on Radiation Protection and Measurement (NCRP) and the Institute of Electrical and Electronics Engineers (IEEE). In both cases, the recommendations were developed by scientific and engineering experts drawn from industry, government, and academia after extensive reviews of the scientific literature related to the biological effects of RF energy.

The RF exposure limit set by the FCC for wireless mobile devices employs a unit of measurement known as the Specific Absorption Rate (SAR). The SAR is a measure of the rate of absorption of RF energy by the human body expressed in units of watts per kilogram (W/kg). The FCC SAR limit incorporates a substantial margin of safety to give additional protection to the public and to account for any variations in measurements.

For more information about SAR, visit:

- fcc.gov./general/radio-frequency-safety-0
- fcc.gov/encyclopedia/specific-absorption-rate-sar-cellular-telephones

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