Vault™ User Manual

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PRIVORO®

Vault User Manual

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Section 1: About Vault

Vault is the first-of-its-kind integrated, two-in-one portable Faraday enclosure and audio masking chamber for smartphones. Vault eliminates smartphone signals more effectively than fabric-based Faraday products, delivering a minimum of 100 dB of radio frequency (RF) attenuation/10 billion times signal reduction. When placed in the Vault case, a smartphone can no longer be reached via cellular, WiFi, Bluetooth, near-field communication (NFC) or radio-frequency identification (RFID). User-controlled audio masking prevents extraction of intelligible speech up to voice levels of 90 dBA through independent noise signals. The associated smartphone's cameras are also unusable when sealed in the enclosure to prevent spying.

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VAULT COMPONENTS

At a basic level, Vault includes a lid, a base and a latch that joins the two together to create a radio frequency (RF) seal. Vault also ships with a three-foot, USB-A to USB-C charging cable.

The components of Vault (and their main functions) are displayed in Figure 1.

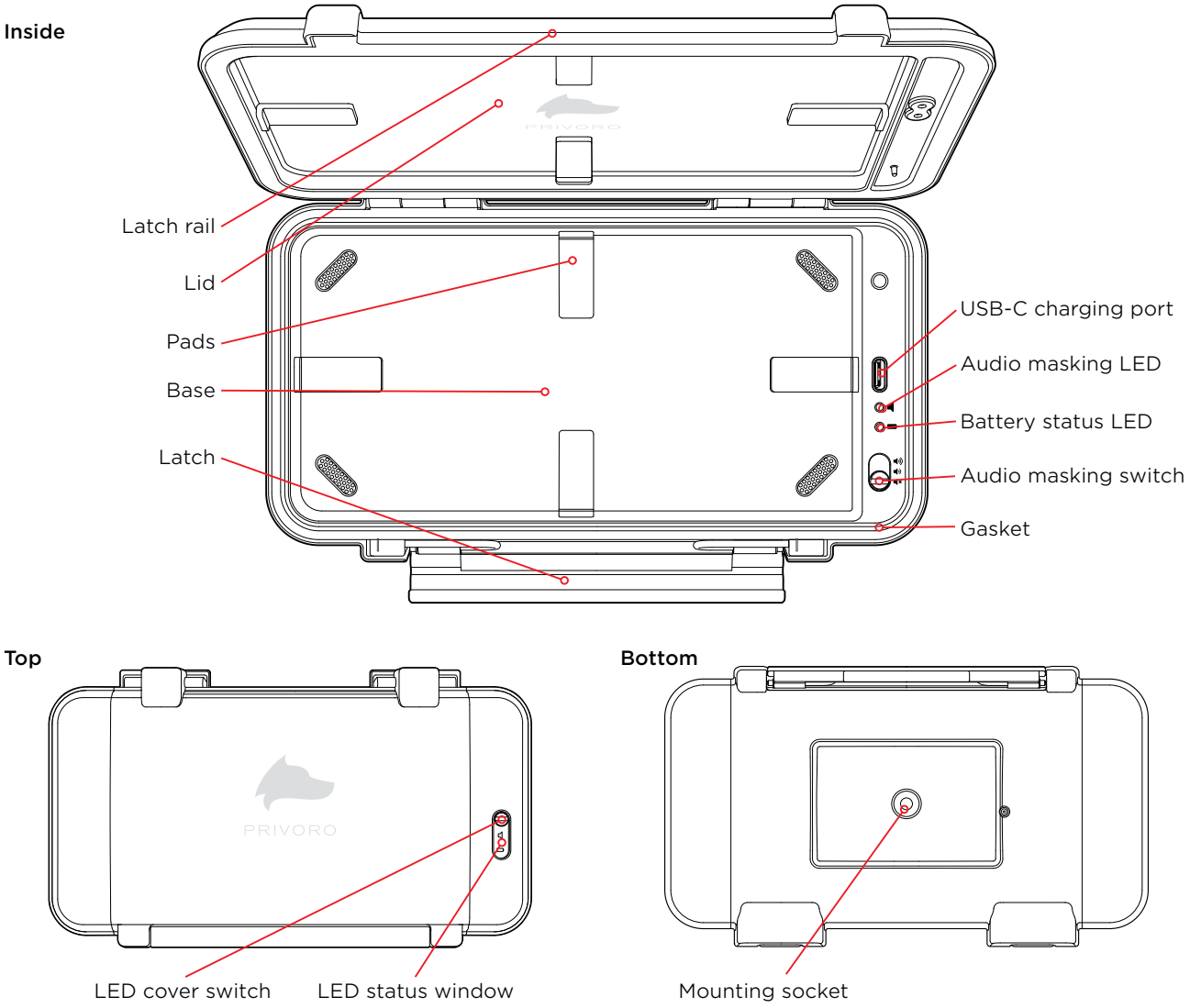

Figure 1: Vault components

Latch rail
Holds the top of the latch in place.

Lid
The top portion of the Vault, hinged to the base.

Pads
Cushion the smartphone and lift it to facilitate audio masking.

Base
The bottom portion of the Vault, where your smartphone is placed.

Latch
Joins the lid and base together to create an RF seal.

USB-C charging port
For charging Vault via charging cable.

Audio masking LED
Indicates audio masking level.

Battery status LED
Indicates battery charge level.

Audio masking switch
Controls audio masking setting.

Gasket
Creates the seal that provides high-level RF shielding. **NOTE:** The gasket must be free of dirt and debris to maintain the highest level of shielding. See Section 8 of this manual for Care, Maintenance and Storage recommendations.

LED cover switch
Covers up the interior LEDs.

LED status window
Creates visibility to the interior LEDs.

Mounting socket
Enables placement of Vault on a standard tripod mount.

Section 2: Getting started with Vault

Before using Vault for the first time, it's important to complete the following steps:

POWERING ON VAULT

Vault is in shipping mode when it arrives. To power it on for the first time, **connect Vault to a power source (charge-capable USB port or wall charger) using the charging cable provided**. The USB-C side connects to Vault and the USB-A side connects to the power source (Figure 2). Once powered on, the battery status LED will illuminate.

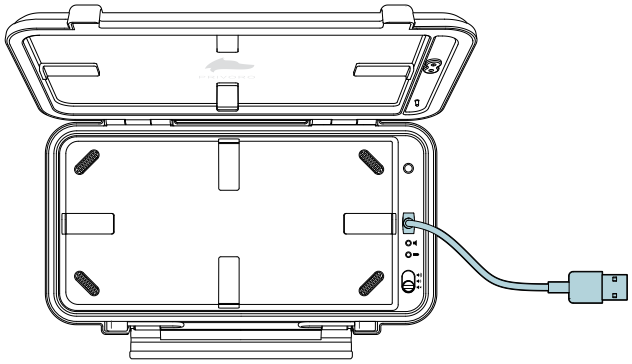

Figure 2: Connect Vault to a power source

REMOVING SMARTPHONE ACCESSORIES

Before inserting your smartphone into Vault, **remove any protective cases and any other accessories from your smartphone** (Figure 3). Protective cases may prevent your smartphone from fitting into the device and may disrupt both RF shielding and audio masking.

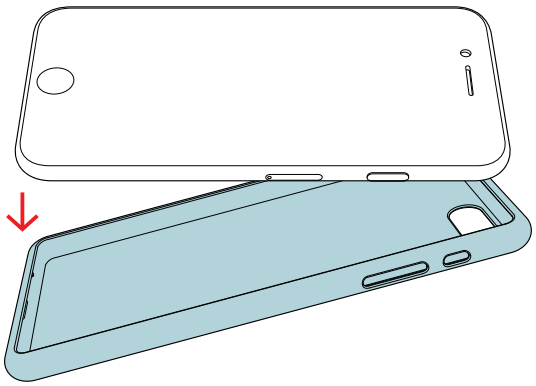

Figure 3: Remove protective case, if applicable

Section 3: Inserting a smartphone into Vault

Insert your smartphone into Vault using the following steps:

1. **Open the lid** (Figure 4). It may help to place the base on a flat surface.

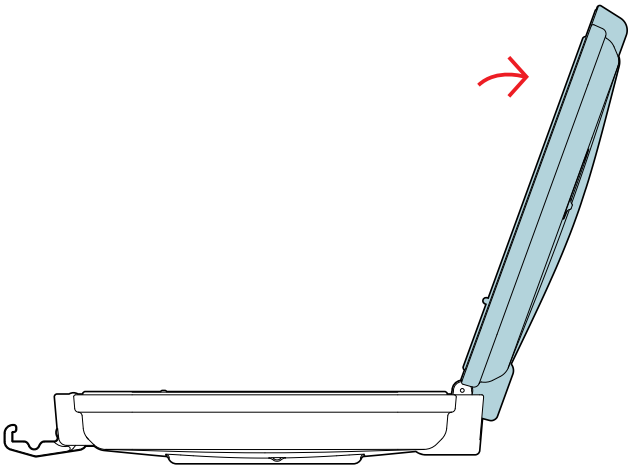

Figure 4: Open the lid

2. **Place your smartphone in the center of the interior** (Figure 5). Your smartphone should rest evenly on the four pads.

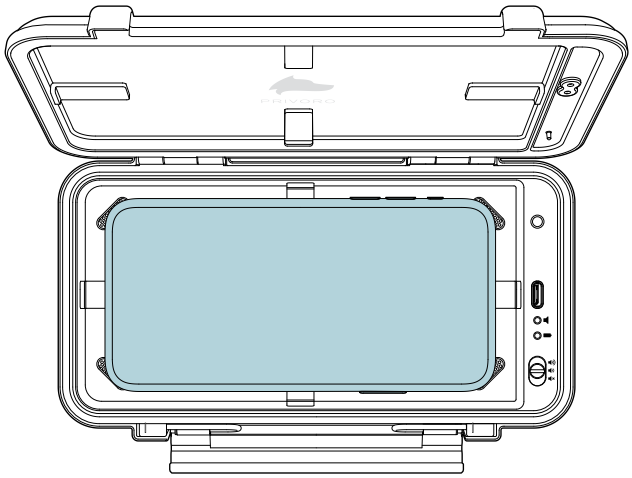

Figure 5: Place your smartphone

With your smartphone in place, you can now turn on audio masking (see: *Managing audio masking*).

3. **Close the lid** (Figure 6).

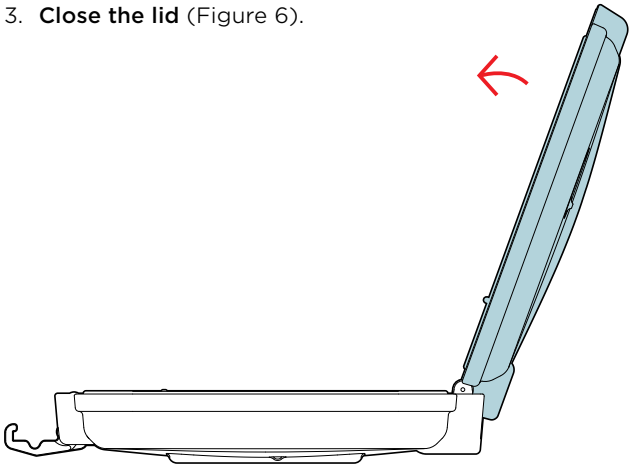

Figure 6: Close the lid

4. **Lift from the bottom of the latch and place the top of the latch onto the latch rail** (Figure 7).

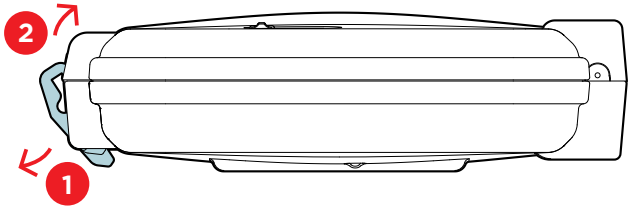

Figure 7: Place the latch

5. **Firmly push the bottom of the latch inward to snap into place** (Figure 8).

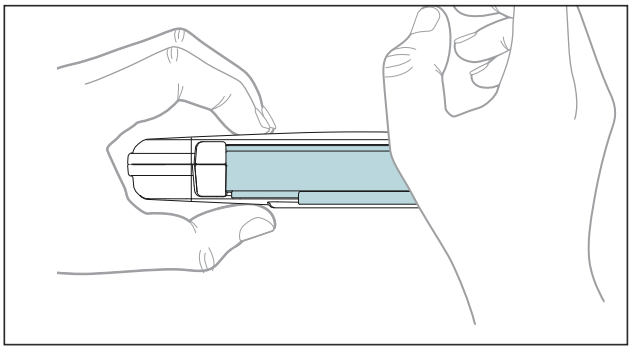

Figure 8: Shut the latch

With Vault securely latched, a tight seal is created around the device to shield out any RF signals.

OPENING VAULT

When you would like to remove your smartphone from Vault, adjust audio masking or charge the device, you will first need to open Vault.

Open Vault using the following steps:

1. **Pull the bottom of the latch outward** (Figure 9).

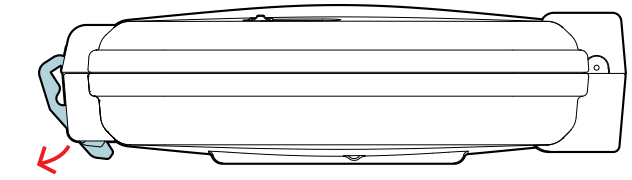

Figure 9: Open the latch

2. **Move the top of the latch off the latch rail** (Figure 10).

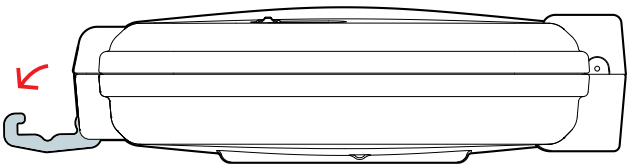

Figure 10: Move the latch

Section 4: Managing audio masking

Vault provides two levels of audio masking – **Maximum** (for high noise levels) and **Standard** (for low-to-moderate noise levels) – as well a **Standby** setting for when masking is not required (Figure 11).

Audio masking setting	When to use	Audio masking LED behavior	Notes
Maximum masking	For use in the presence of high noise levels. Examples: noisy restaurant, city street	Pulses blue every 10 seconds (when latched closed)	Masks speech intelligibility at a constant level of 90 dBA
Standard masking	For use in the presence of low-to-moderate noise levels. Examples: quiet office, residential area	Pulses white every 10 seconds (when latched closed)	Adaptively masks speech intelligibility up to voice levels of 90 dBA and speech presence up to voice levels of 80 dBA
Standby	In instances when audio masking is not required or when needing to conserve battery	Off	With masking off, RF shielding is maintained when Vault is latched closed

Figure 11: Audio masking settings

To change the audio masking setting, with the lid open **toggle the audio masking switch to the desired setting** (Figure 12). The audio masking LED reflects the current masking setting.

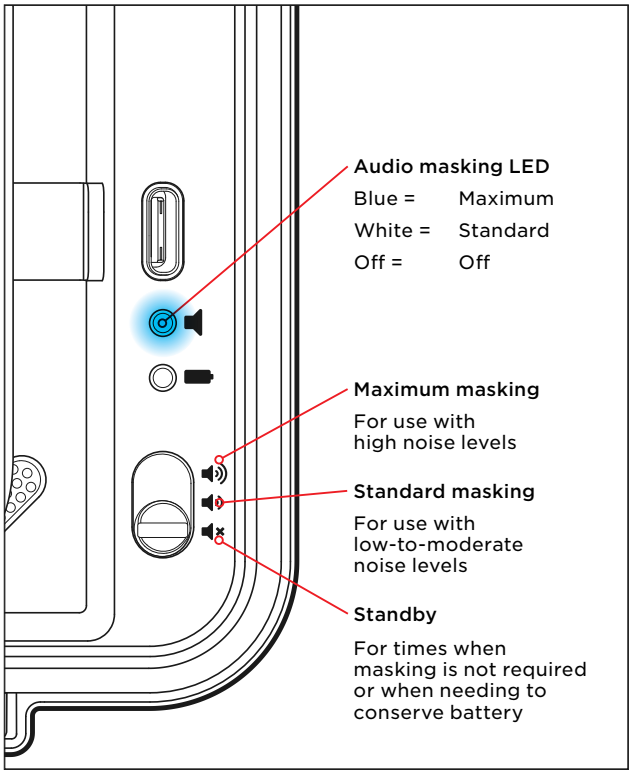

Figure 12: Toggle the audio masking switch

Section 5: Charging

To charge Vault with the lid open, **insert the USB-C side of the charging cable into the USB-C port and then insert the USB-A side into a power source (charge-capable USB port or wall charger)** (Figure 13).

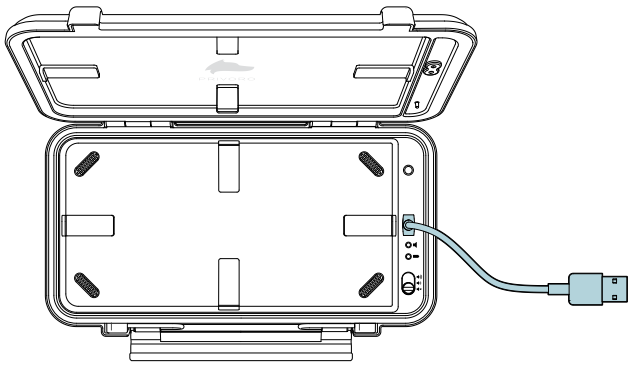

Figure 13: Connect Vault to a power source

CHECKING BATTERY STATUS

Battery level will be indicated by the battery status LED, with the color of the LED corresponding to the charge level (Figure 14).

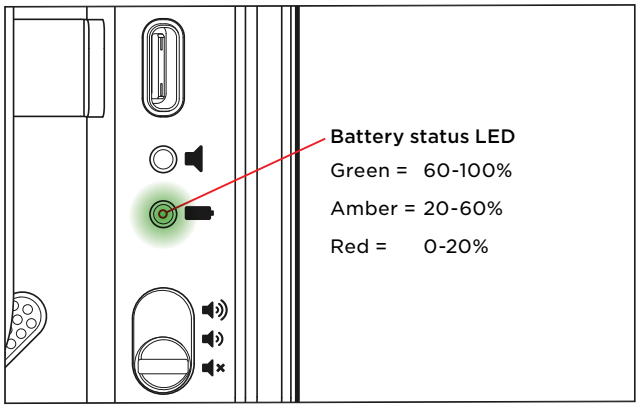

Figure 14: Charge levels associated with battery status LED

BATTERY LIFE

2+ days in Standard masking mode (in quiet environments), ~6 hours in Maximum masking mode

- Standard audio masking mode: Utilizes adaptive masking to automatically adjust masking signal power levels based on ambient sound level. Quieter environments consume less power while noisier environments consume more. This mode maximizes product battery life and minimizes masking signal obtrusiveness.
- Maximum audio masking mode: Masking signals play continuously at peak power. This mode enables users to choose maximum protection, at a cost of shorter battery life. Note, masking signals will be more noticeable in this mode.
- Standby mode: No masking signal; battery status LED pulses to indicate remaining battery life.

Section 6: Covering the LEDs

Both the audio masking LED and the battery status LED are visible through the LED status window when Vault is latched closed. However, you can block these LEDs if you're trying to be covert or want to eliminate light fatigue.

To cover the LEDs, **toggle the LED cover switch** so that the LED status window is closed (Figure 15).

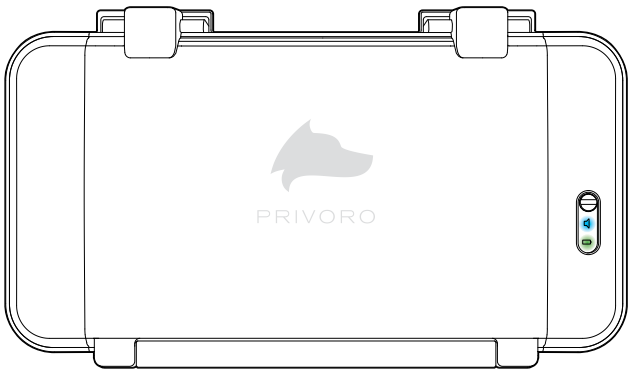

Figure 15: Toggle the LED cover switch

Section 7: Testing Vault functionality

While both the RF shielding and audio masking capabilities of Vault have been rigorously tested to ensure the highest levels of protection, you may decide to perform informal tests to verify a baseline level of protection.

TESTING RF SHIELDING

With your smartphone inside Vault, you can try pinging your phone in a number of different ways (Figure 16).

Signal to test	Smartphone settings	Action	Expected result
Cellular	Cellular is turned on, WiFi is turned off and the ringer is set to maximum.	Call the smartphone.	Your smartphone will not ring.
GPS	Location services are turned on and WiFi and Bluetooth are turned off.	Use a locator service (Like iPhone's Find My or Android's Find My Device) to locate the smartphone.	Your smartphone's location will be unavailable.
WiFi	WiFi is turned on, cellular is turned off and the ringer is set to maximum.	Call the smartphone.	Your smartphone will not ring.
Bluetooth	Bluetooth and Bluetooth sharing are turned on.	From a compatible device, use the Bluetooth sharing feature (like iPhone's AirDrop or Android's Nearby Share) to send the smartphone a photo.	Your smartphone will not be discoverable.

Figure 16: Sample RF shielding tests

TESTING AUDIO MASKING

You can test audio masking using the following sequence:

1. Place your smartphone inside Vault.
2. Set the masking level to Standard or Maximum.
3. On your smartphone, start recording audio or video.
4. Latch Vault closed.
5. Introduce noise into your environment corresponding to the masking level. For Standard masking, you can speak at a conversational volume; for Maximum masking, you can play music at a loud volume.
6. Open Vault.
7. On your smartphone, stop the recording and then play back the recorded audio.

Audio captured when Vault is latched closed should be masked by randomized noise.

Section 8: Vault Care, Maintenance and Storage

To maintain the highest level of RF shielding, Vault's gasket must be free of dirt and debris. To ensure that the gasket remains clean, it's important to follow the following recommendations:

- **Cleaning:** We recommend cleaning the gasket as required, but no less than every 500 open/close cycles (or every three months). To do so, apply gentle pressure while wiping the surface of the gasket with an alcohol wipe or a cotton ball/swab dampened with isopropyl alcohol (Figure 17).
- **Storage:** We recommend turning masking to Standby, and closing and latching the lid before storing Vault. This helps keep dust/dirt from building up on the gasket.

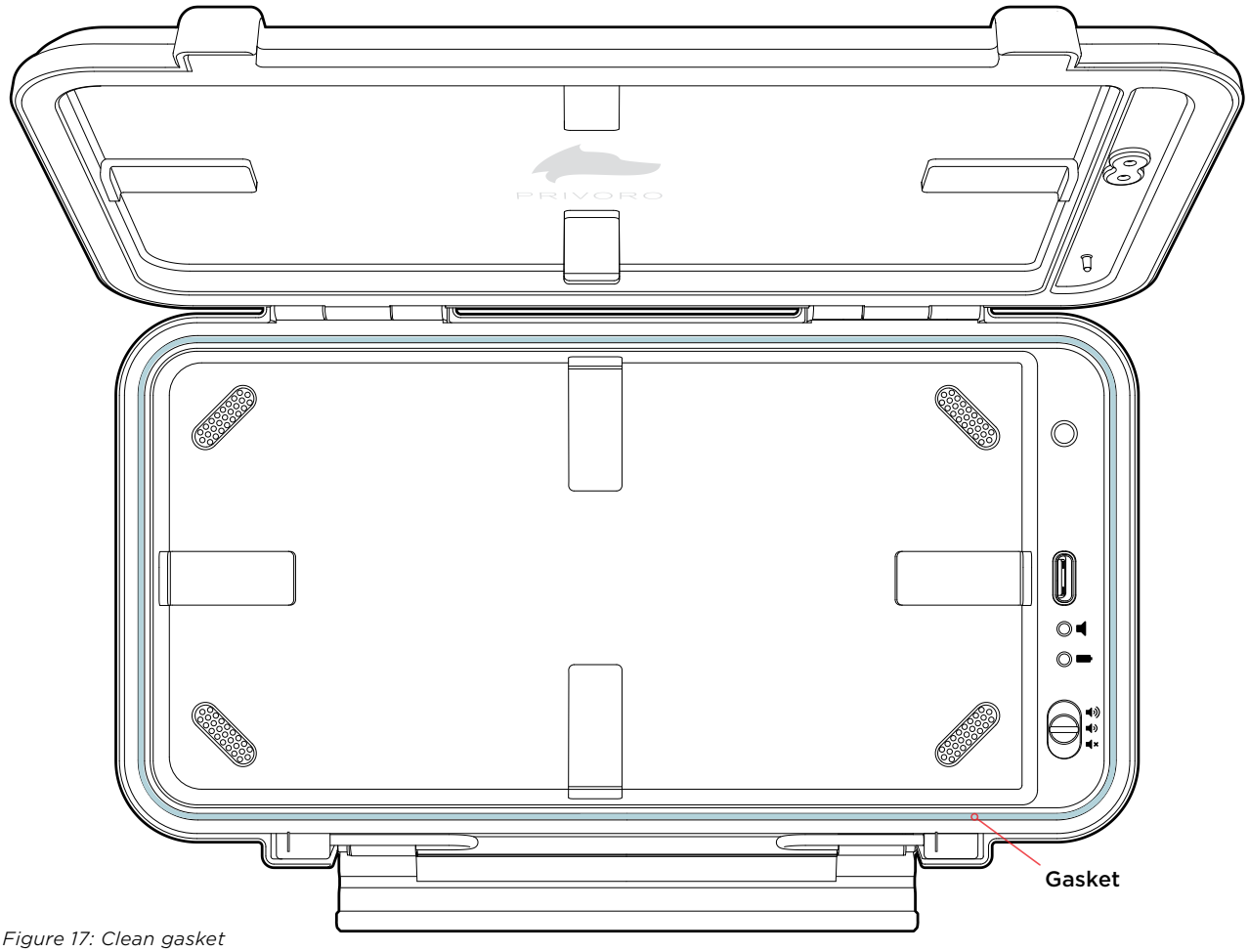

Figure 17: Clean gasket

Appendix A: Technical specifications

SIZE AND WEIGHT

- **Total dimensions**: 189.91 mm (7.47 inches) x 30.58 mm (1.20 inches) x 109.95 mm (4.32 inches)
- **Interior dimensions**: 162.32 mm (6.39 inches) x 10.54 mm (0.41 inches) x 82.14 mm (3.23 inches)
- **Maximum dimensions of enclosed device:** 158.5 mm (6.24 inches) x 8.5 mm (.33 inches) x 78.5 mm (3.09 inches)
- **Weight**: 0.47 kg (1.05 lbs)

RADIO FREQUENCY (RF) ATTENUATION

- A minimum of 100 dB of RF attenuation from 500 MHz to 6 GHz

AUDIO MASKING

- Digital signal processor for optimum audio quality and secure voice masking
- Masks speech intelligibility up to voice level of 90 dBA (tested one meter from audio source)
- Masks speech presence up to voice level of 80 dBA (tested one meter from audio source)

BATTERY AND BATTERY LIFE

- Standard mode: 2+ days
- Maximum mode: ~6 hours
- Charge time: ~3 hours with a 2A charger

ELECTRICAL RATINGS

- 3.8V, 4000mAh lithium-ion polymer (LiPo) battery
- Maximum input current: 2.0A
- Rated voltage: 5VDC

ENVIRONMENTAL REQUIREMENTS

- Operating temperature: -4° and 122° F (-20° and 50° C)
- Relative humidity: Up to 95%
- Operating altitude: Up to 30,000 feet (9,144 m)

CERTIFICATIONS AND MANUFACTURING

- IP54 certification for water and dust ingress
- Drop certified up to 6 feet onto plywood over concrete
- Manufactured in a U.S.-based ITAR facility
- Vault surpasses the U.S. military's MIL-STD-188-125 standard for compliance

Appendix B: Safety and handling

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

HANDLING

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

REPAIR

Do not attempt to open or repair Vault. Opening Vault will invalidate any and all warranties.

BATTERY

Do not attempt to change the Vault 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 polymer (LiPo) 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

Vault comes with a USB-A 3.0 to USB-C high-speed charging cable. For optimal charging it is recommended you use a Privoro Vault charging cable. Vault has a maximum input current of 2.0A.

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

OPERATING TEMPERATURE

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

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

Appendix C: 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 D: Regulatory information

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 Class B digital apparatus complies with Canadian ICES-003.

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