



VR19H VR Controller User Guide



Model: VR19H

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IMPORTANT SAFETY INSTRUCTIONS: Read all warnings and instructions, including the [Health and safety warnings](#) on page 1. Save these instructions. The most up-to-date warnings and instructions are available at www.axon.com.

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Introduction

The Handgun VR Controller (VR19H) is a firmware-updatable LED controller used in conjunction with a virtual reality (VR) headset. Manufactured by Axon Enterprise, Inc., this VR Controller is a dedicated training device that replicates a typical field use handgun.

Using a proprietary 2.4 GHz protocol, advanced IR LED Constellation tracking technology provides accurate three-dimensional physiology of the VR Controller for inside-out tracking of objects within a virtual reality environment. It provides continuous VR Controller-to-headset data exchange, letting you interact in a virtual world with the device mimicking the standard actions of drawing and firing a field weapon. This creates a true-to-life training experience without the use of live weapons and ammunition.

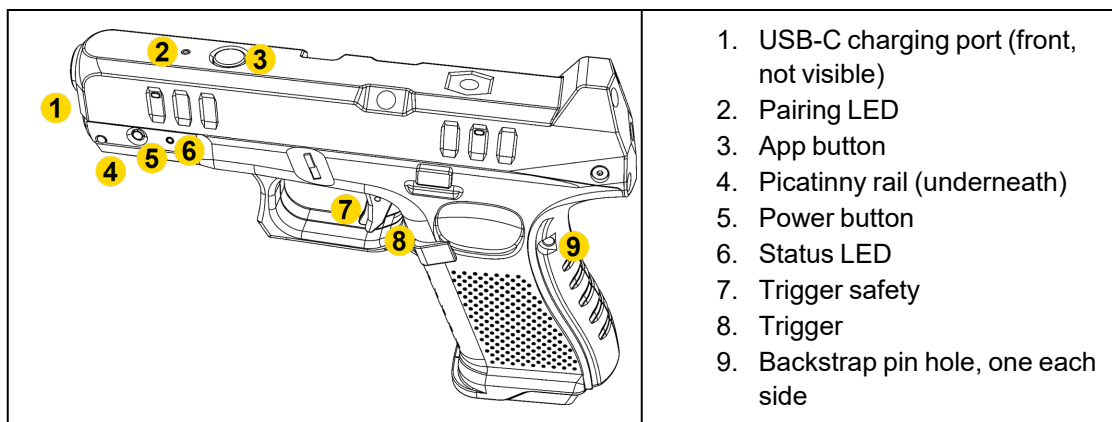
Health and safety warnings

This Handgun VR Controller is only for use in virtual reality (VR) training environments. It will neither accept nor fire live ammunition like a duty weapon.

The most current safety and health warnings are available in a PDF located on our [Legal page](https://axon-2.cdn.prismic.io/axon-2/5bac101c-6f81-4c02-b737-b1be5eac6fce_Axon+VR+Warnings.pdf) at https://axon-2.cdn.prismic.io/axon-2/5bac101c-6f81-4c02-b737-b1be5eac6fce_Axon+VR+Warnings.pdf.

The safety and health warnings are to reduce the risk of any personal injury or property damage. **Read this manual and that document fully before using a VR headset.**

Overview



Picatinny rail

The controller contains a Picatinny rail beneath the barrel for modular VR accessories such as a tactical flashlight or laser.

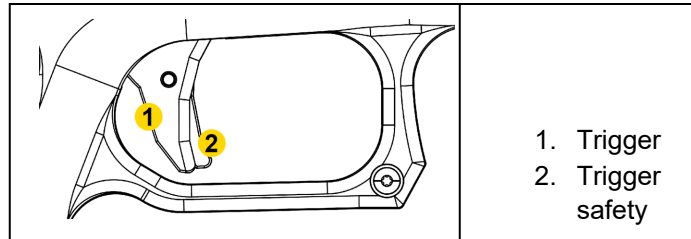
Backstrap grips

The controller supports addition of backstrap grips to the rear of the grip via pin to support various sizes.

Trigger safety switch

The Status LED indicates trigger safety and trigger engagement.

- Pull the trigger safety: Status LED is blue ■.
- Pull the trigger safety and the trigger: Status LED is purple ■.



If the controller enters sleep mode to conserve battery, all LEDs turn off. If this occurs, press **Power** to reactivate it.

Keep the VR Controller (VR19H) in a holster when not in use.

Charging information

The controller's charging port is located at the front beside the barrel opening. Charge with any powered USB port. The Status LED blinks white ▬▬▬▬ while charging and turns solid white ▬ at full charge. The controller cannot be used during charging.

Whenever powered on, the Status LED flashes to indicate battery level. When the trigger safety and trigger are pulled, the LED changes to blue ■ or purple ■, respectively.

State/Message	Sidelight LED Color
Battery >50%	■ Green
Battery 15–50%	■ Yellow
Battery 5–14%	■ Orange
Battery 0–5%	■ Red
Critical error (return VR Controller to Axon)	▬▬▬▬ Red (rapid pulse)
Trigger safety pull	■ Blue
Trigger safety and trigger pull	■ Purple

Do not add stickers or markings to the top of the VR Controller (VR19H) as these will affect internal sensors.

Magazine

This VR Controller (VR19H) does not have a removable magazine. The magazine reloads automatically in VR.

Timeout/sleep mode

If the controller enters sleep mode to conserve battery, all LEDs turn off. If this occurs, press **Power** to reactivate it.

Holster tracking

The Handgun VR Controller (VR19H) can track when it is holstered and unholstered and should work in the majority of duty holsters*.




*Compatible with most GLOCK 19 and GLOCK 17 duty holsters.

App button

Use the round App button on top of the VR Controller (VR19H) for pairing and accessing the headset menu.

Pairing

Press firmly (so it clicks) for about three seconds and release to enter pairing mode. The Pairing LED behind the front sight will illuminate to indicate status:

-  Blue – not paired
-  Blinking blue – trying to pair
-  Green – paired

For details on pairing, see the [VR page](#) at my.Axon.

When pairing, don't hold the App button after the Pairing LED starts blinking; at ten seconds this will put the VR Controller (VR19H) into [Sleep mode](#) (see page 7).

Headset menu

Use the App button to open the headset VR menu while using the HTC VIVE headset, allowing access to features such as pairing, Wi-Fi settings, starting a screen recording, exiting the application, or putting the controller in Sleep mode.

- Press the App button **once** to open the headset VR menu.
- Press the App button **twice** to enter or exit passthrough mode, which lets you see your surroundings in low-resolution black-and-white.

Sleep mode

There are multiple ways to put the VR Controller (VR19H) in Sleep mode:

- Press the App button for ten seconds.
- Move the VR Controller (VR19H) out of range of the headset for more than 30 seconds.
- The controller loses connection and goes to sleep 30 seconds after the headset:
 - goes to sleep
 - powers off
 - is out of range of the VR Controller (VR19H)

Long-press the headset power button to turn the headset off, which will put the VR Controller (VR19H) into sleep mode.

Technical specifications

The Handgun VR Controller (VR19H) is a virtual reality controller and can only be used with virtual reality applications. No components can be used as a weapon or converted into a weapon. Buttons are used for powering on and off, communicating trigger action, and short-range wireless pairing to a compatible virtual reality headset.

Physical specs

Parameter	Result
Length	7.2 in. (184.0 mm)
Height	5.2 in. (132.5 mm)
Width	1.14 in. (29.0 mm)
Weight	1.43 lb (650 g)
Trigger type	Electric hall sensor (binary non-adjustable)
Construction	White polymer
LEDs	<p>Pairing LED – Single LED behind the front sight for pairing status indications</p> <p>Status LED – Single LED at the front left to indicate battery status and trigger actions</p> <p>Tracking LED – Eight Infrared LEDs on the controller allow the separate headset's camera to track the location of the controller within 3D space</p>
Comms	2.4 GHz proprietary Bluetooth channel
Power type	Integrated single cell lithium battery pack
Battery voltage	3.7 V nominal
Operating range	32–104 °F (0–40 °C)
Battery charging method	USB-C on front of the handle, max 200 mA

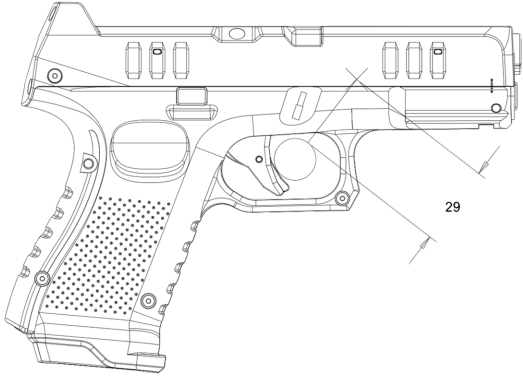
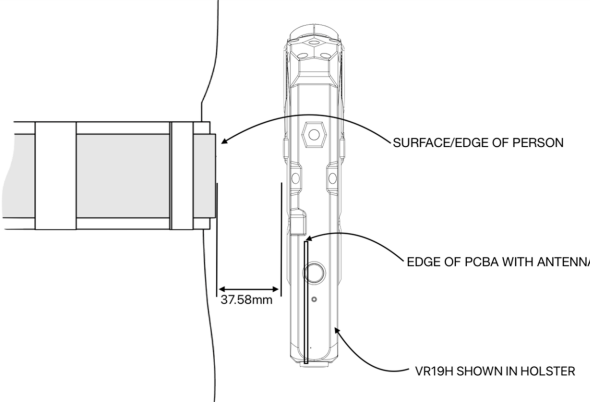
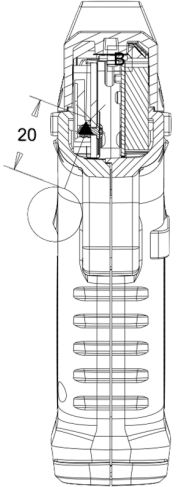
Actual measurements on products may vary due to items outside Axon's control. Product specifications may change without notice. The actual product may vary from picture, image, or graphic. Refer to current Axon published product specifications for specified limits and test conditions. Read the manual and all product literature.

For more information, see current Handgun VR Controller (VR19H) device/product specification sheets, training materials, product manuals, and website at www.axon.com. Axon Enterprise, Inc. reserves the right to change or modify this document without notice.

Bluetooth Low Energy (BLE) specs

Parameter	Result
Frequency range	2402–2480 MHz
Modulation type	GFSK
Channel BW	2 MHz
Data rate	1 Mbps
Maximum Average Conducted Power (FCC/ISED)	7 dBm
Maximum Average Conducted Power (EU)	3.5 dBm

Distance to body (in mm)

<p>In use, finger on trigger</p>  <p>29</p>	<p>Not in use, holstered</p>  <p>SURFACE/EDGE OF PERSON</p> <p>EDGE OF PCBA WITH ANTENNA</p> <p>37.58mm</p> <p>VR19H SHOWN IN HOLSTER</p>
<p>In use, finger resting against side</p>  <p>20</p>	

Pair VR Controller with headset

VR Controllers

Axon offers VR Controllers to use with the headset.

Warning

Do not use a real TASER 7, TASER 10, or handgun in the Axon VR training. Only use the VR Controllers.

Use your hands as controllers

Use your hand as the controller in some areas in Axon VR, like the headset library.





- To make a selection, pinch
- To scroll up or down, pinch and move up or down

If you are wearing long sleeves and don't see your hand as a controller, roll up your sleeve. If you still can't use your hand as a controller, use a HTC wand to go to **Settings > Inputs**, and select **Hand tracking**.

Pairing LED states

When you turn on your VR Controller, a pairing LED appears on top of the device. For details on the location of the pairing LED, see the "Overview" section in the user guide for your specific VR Controller model.

The pairing LED color indicates the current pairing mode:

State/Message	Pairing LED Color
Pairing	 Blue, flashing
Paired	 Green
Connecting or pairing lost	 Blue
Updating firmware (do not turn off)	 Blue and red, flashing

Approaches to pairing VR Controllers

There are different approaches to pairing VR Controllers:

- Pair a VR Controller for the first time (see ["Pair new VR Controllers" on the next page](#) on page 11)

- Remove and replace an existing VR Controller (see ["Pair a different VR Controller" on the next page](#) on page 12)

Note

When using the latest headset firmware, only one Handgun VR Controller and one TASER can be paired to the headset at a time. This means that both the TASER 7 and TASER 10 VR Controllers cannot be paired to the headset. If you have a TASER 7 paired then pair a TASER 10, the TASER 7 will automatically unpair.

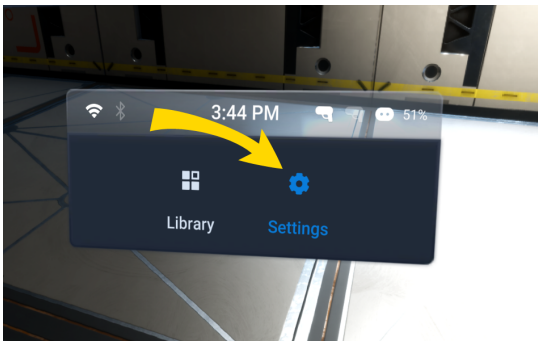
Pair new VR Controllers

To pair a VR Controller for the first time:

1. Turn on your headset by pressing the **Power** button for five to seven seconds.

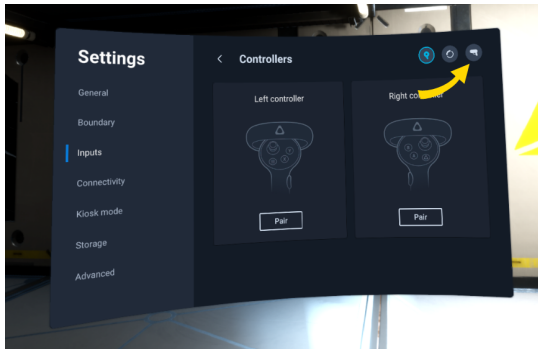


2. Put on the headset.
3. Accept the boundary messages.
4. In the headset library, use your hand to pinch to select **Settings**.



5. Select **Inputs**.
6. Select **Controllers**.

7. Select the **VR Controller** icon if it's not already selected. If the third icon is already selected, see [step 8](#).



- a. Before you can pair a Handgun VR Controller or TASER VR Controller, you need to unpair any paired controllers. Select **Continue**.
 - b. The headset will automatically activate passthrough mode, allowing you to see your real surroundings. Resume the process from [step 9](#).
8. If the **VR Controller** icon is already selected, select **Pair**.
 - The headset will automatically activate passthrough mode, allowing you to see your real surroundings. Resume the process from [step 9](#).
 9. Turn on your VR Controller.
 10. Press the button on the top until the pairing LED blinks blue ■■■■.
 11. After pairing completes, the pairing LED will turn solid green ■ and a message confirms the pairing was successful.
 12. After the message closes, the inputs screen now shows the paired VR Controller.
 13. Select **Library** to exit the pairing screen.

Pair a different VR Controller

Replacing VR Controllers is useful in these scenarios:

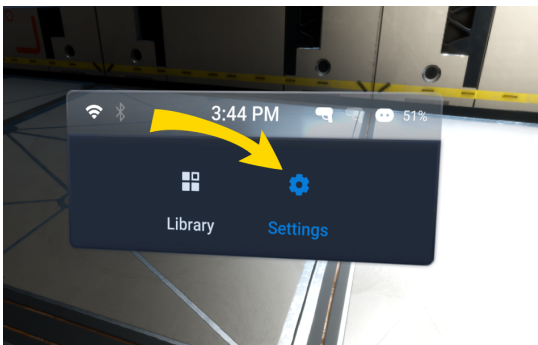
- You want to replace one VR Controller with another.
- You want to replace a VR Controller that is low on batteries with a fully charged VR Controller.

To replace a VR Controller:

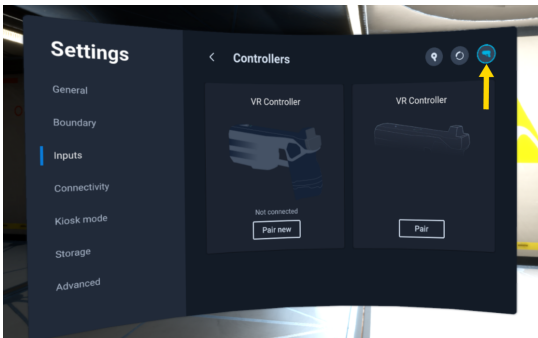
1. Turn on your headset by pressing the power button for five to seven seconds.




2. Put on the headset.
3. Accept the boundary messages.
4. In the headset library, use your hand to pinch to select **Settings**.



5. Select **Inputs**.
6. Select **Controllers**.
7. Select the **VR Controller** icon if it's not already selected.



8. Select **Pair New** under the VR Controller you want to replace.
9. The headset will activate passthrough mode, allowing you to see your real surroundings.
10. Turn on your VR Controller.
11. Press the button on the top until the pairing LED blinks blue ■■■■.

12. After pairing completes, the pairing LED will turn solid green  and a message confirms the pairing was successful.
13. After the message closes, the inputs screen now shows the paired VR Controller.
14. Select **Library** to exit the pairing screen.

Pairing troubleshooting

Controller is paired and turned off or out of range

Headsets remember paired VR Controllers for quicker access to your virtual reality experiences. If you have already paired a controller but don't see it, turn on the controller. The VR Controller will automatically pair.

VR Controller previously paired but now unable to connect to headset

If your VR Controller was previously paired to the headset and is now unable to connect to the headset, try turning off and turning back on the headset. This may resolve an issue with the Bluetooth®.

If that doesn't work, try the following:



1. Go to **Settings > Inputs > Controllers**.
2. Select the **HTC wand VR controller** icon.
3. Select **Continue** in the dialog box to unpair your current VR Controllers.
4. Select the **TASER VR Controller** icon.
5. Select **Continue** in the dialog box to unpair your current VR Controllers.
6. Try re-pairing the TASER VR Controllers again.

Paired controller has a firmware update available

If you see a firmware update available after pairing your controller, see [Update controller firmware](#).

Firmware updates

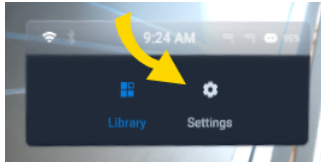
The Handgun VR Controller (VR19H) internal firmware provides functionality for all aspects of the VR Controller.

Available firmware updates are applied wirelessly to the VR Controller through the VR headset after a prompt and approval from the user. The controller will be unavailable until the Pairing LED is no longer flashing blue  and red , indicating the update is complete.

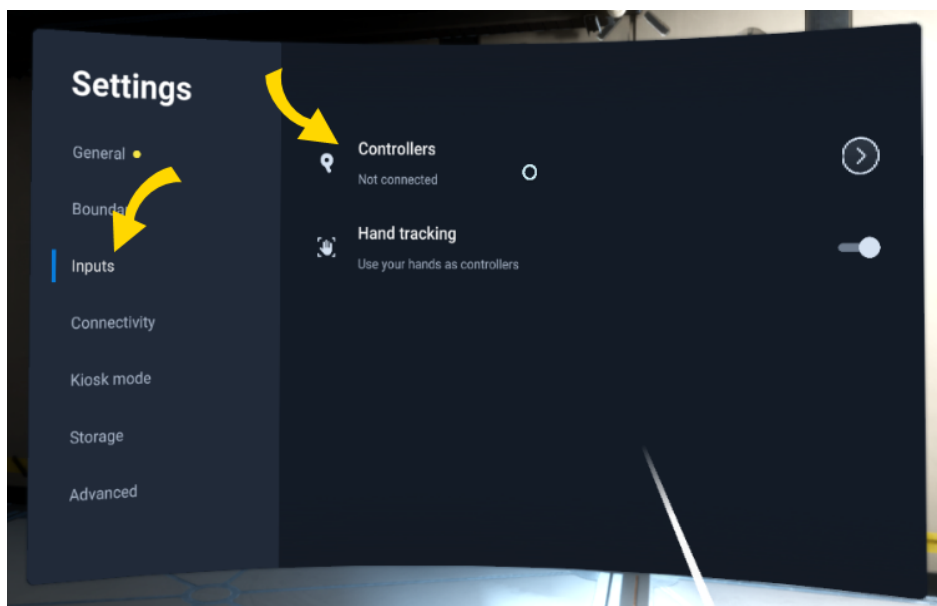
Check firmware manually

After you've paired a Handgun VR Controller (VR19H) to the headset, you can use the headset to check its firmware manually:

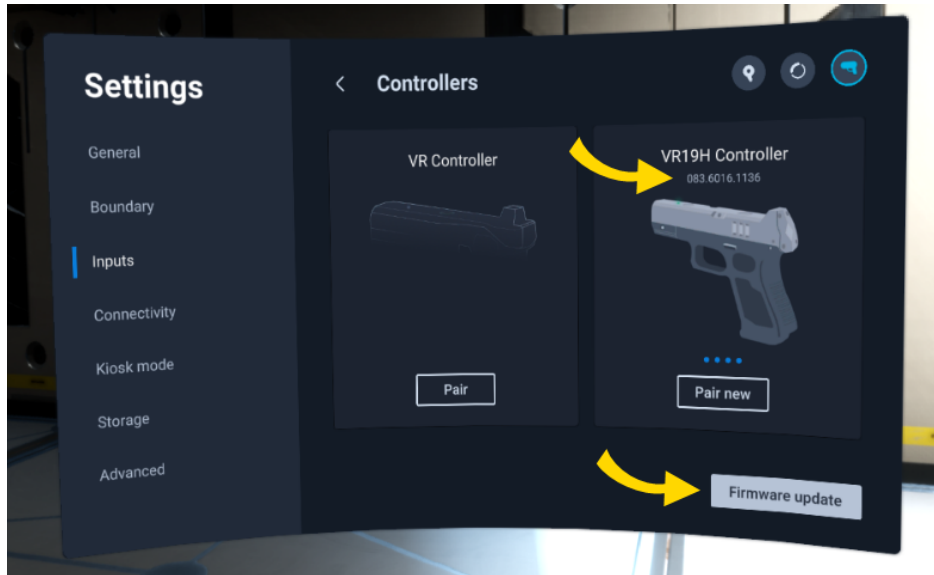
1. From the library, select **Settings**.



2. Select **Inputs**, then **Controllers**.



- Firmware version is visible under the title of your controller.



- If a firmware update is available, select **Firmware update** (shown above) and keep the headset and VR Controller powered on.

Care

The VR Controller is a sensitive piece of electronic equipment and should be handled with care. Avoid dropping the VR Controller and cease use if it becomes cracked.

Each agency should establish a maintenance and handling program that includes:

- Secure the VR Controller in a protective holster when not in use.
- Update the VR Controller's firmware when it is available.

Controller and water

Caution Do not immerse the VR Controller in any liquids. Avoid exposing the VR Controller to excessive moisture.

The VR Controller is not a weatherproof device. Do not immerse the VR Controller in water or any other liquid. If a VR Controller has been submerged in liquid or exposed to a significant amount of moisture, immediately remove the battery pack, remove the controller from service, and contact Axon.

Why is the status LED of my Handgun VR Controller (VR19H) blinking red?

When updating the firmware of your Handgun VR Controller (VR19H), the status LED will flash red ■ ■ ■ ■ and blue ■ ■ ■ ■ until the update completes. However, if the LED is blinking only red ■ ■ ■ ■, it indicates a critical error. In this case, you should return the Handgun VR Controller

(VR19H) to Axon.

How do I return my Handgun VR Controller (VR19H)?

See the article [How do I create a return \(RMA\)?](#).

Customer Service

Axon customer support

Find additional guides and troubleshooting at my.axon.com/s/axon-vr-training or contact customer support at:

- US and Canada – 800-978-2737
- UK – +44 01327 709 666
- AU – 1-800-512-069
- NZ – 1-800-005-161

Visit www.axon.com/support for other international telephone numbers.

Product returns

To return a Handgun VR Controller (VR19H) for service, follow the procedures at www.axon.com.

Compliance

A Handgun VR Controller (VR19H) system transmission is in the frequency ranges of 2402–2480 MHz.

Changes or modifications to the equipment not expressly approved by the manufacturer could void the product warranty and the user's authority to operate the equipment.

FCC compliance statement

Your wireless device is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission (FCC) of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health. Before a device model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure. 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 Axon Technical Support for help.

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.

ISED Canada compliance statement

This device complies with Industry Canada licence-exempt RSS standard(s). 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.

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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ANATEL Brazil compliance statement

This equipment has no right to protection against harmful interference and cannot cause interference in duly authorized systems.

Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados.

RF exposure

The equipment complies with FCC/ISED radiation exposure limits set forth for an uncontrolled environment. The metal is assembled and has a minimum distance of 20 mm between the device, the antennas, and the user's body.

L'équipement est conforme aux limites d'exposition aux rayonnements FCC/ISED établies pour un environnement non contrôlé. Le métal est assemblé et présente une distance minimale de 20 mm entre l'appareil, les antennes, et le corps de l'utilisateur.

FCC responsible party

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Telephone number: 1-800-978-2737

www.axon.com