VR19H VR Controller User Guide

Model: VR1001

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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 VR19H VR Controller (VRC) is a firmware-updatable LED controller used in conjunction with a virtual reality (VR) headset. Manufactured by Axon Enterprise, Inc., this VRC 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 VRC for inside-out tracking of objects within a virtual reality environment. It provides continuous VRC-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.

Note This controller is not used in CET or Arena training.

Health and safety warnings

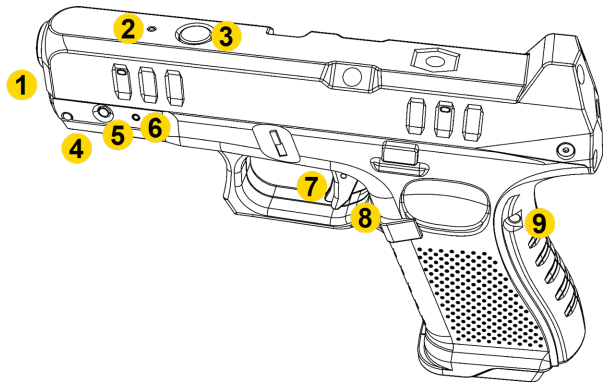
This VRC controller is only for use in virtual reality (VR) training environments. It will neither accept nor fire live ammunition like a duty weapon.

The most current safety and health warnings are available in a PDF located on our Legal page 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.**

Controller features

Overview



1. USB-C charging port (front, not visible)
2. Pairing LED
3. App button
4. Picatinny rail (underneath)
5. Power button
6. Status LED
7. Trigger safety
8. Trigger
9. Backstrap pin hole, one each side

Picatinny rail

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

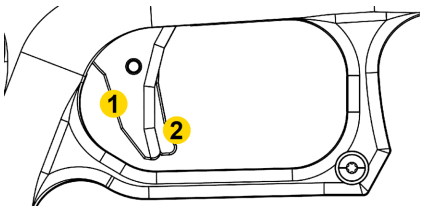
Backstrap grips

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.



1. Trigger
2. Trigger safety

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

Keep the VRC 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 (rapid pulse)
Trigger safety pull	Blue
Trigger safety and trigger pull	Purple

Do not add stickers or markings to the top of the VRC as these will affect internal sensors.

Magazine

This VRC 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

This VRC can track when it is holstered and unholstered.

App button

Use the round App button on top of the VRC 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 VRC into Sleep mode (see page 4).

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 VRC in Sleep mode:

- Press the App button for ten seconds.
- Move the VRC 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 VRC

Long-press the Focus 3 headset power button to turn the headset off, which will put the VRC into sleep mode.

Maintenance

Firmware updates

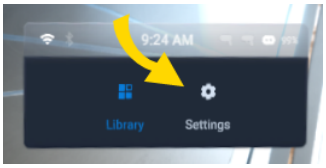
The VR19H internal firmware provides functionality for all aspects of the VRC.

Available firmware updates are applied wirelessly to the VRC 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.

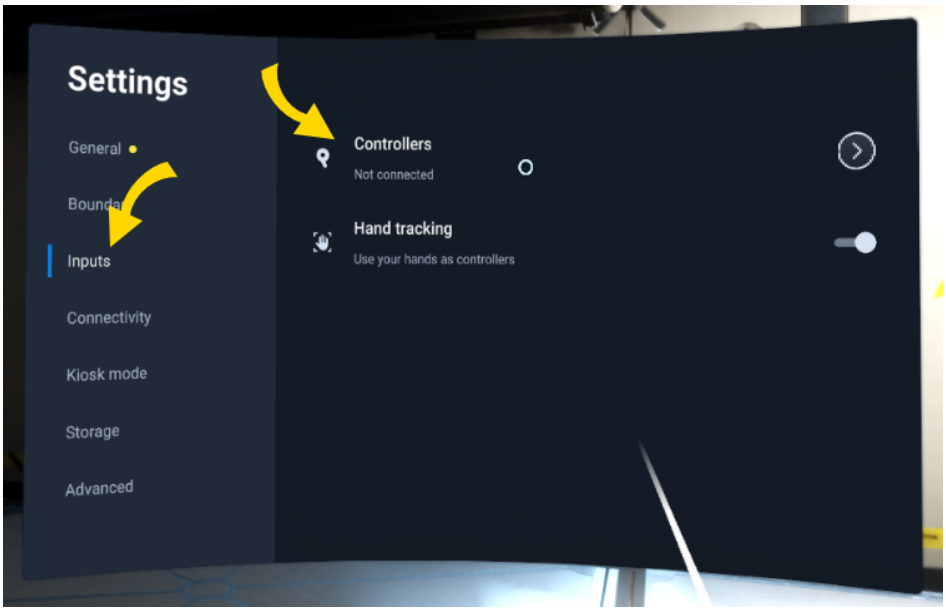
Check firmware manually

After you've paired a VRC to the headset, you can use the headset to check its firmware manually:

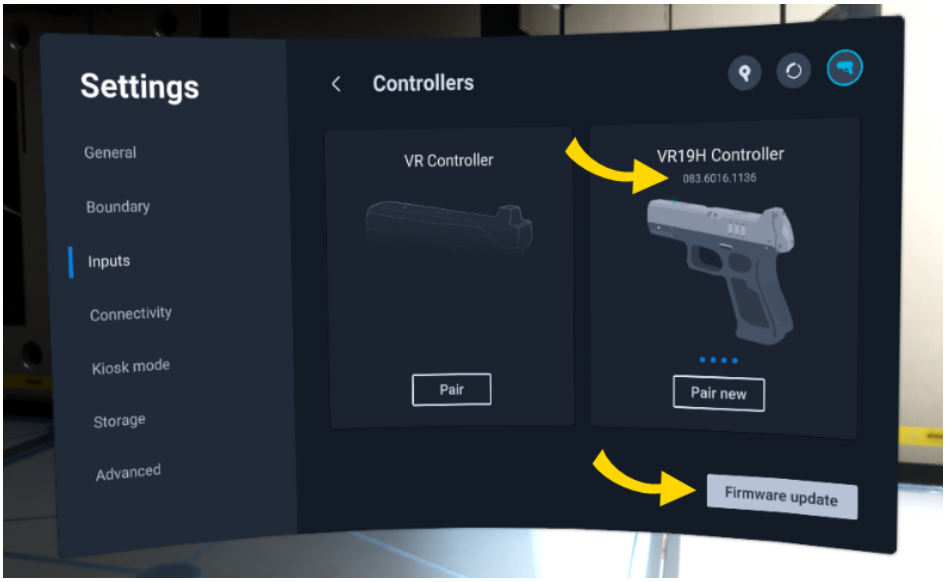
1. From the library, select **Settings**.



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



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



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

Care

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

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

1. Secure the VRC in a protective holster when not in use.
2. Update the VRC's firmware when it is available.

Controller and water

⚠ CAUTION
Do not immerse the VRC in any liquids. Avoid exposing theVRC to excessive moisture.

The VRC is not a weatherproof device. Do not immerse the VRC in water or any other liquid. If a VRC 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.

Technical specifications

The VRC 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 Bluetooth Low Energy (BLE) 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	**Pairing LED** – Single LED behind the front sight for pairing status indications **Status LED** – Single LED at the front left to indicate battery status and trigger actions **Tracking LED** – Eight Infrared LEDs on the controller allow the separate headset's camera to track the location of the controller within 3D space
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 ºF (0–40 ºC)
Battery charging method	USB-C on front of the handle, max 200 mA

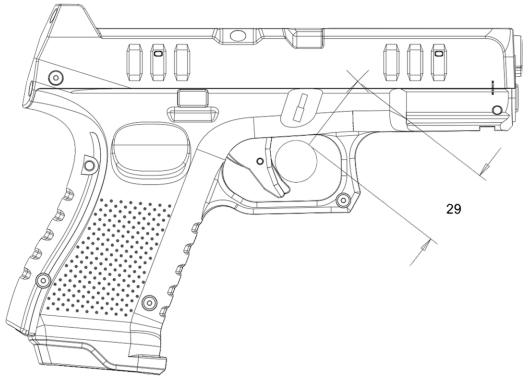
Actual measurements on products may vary due to items outside Axon's control. Product specifications may change without notice. The actual product may vary from picture, image, or graphic. Refer to current Axon published product specifications for specified limits and test conditions. Read the manual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

For more information, see current 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.

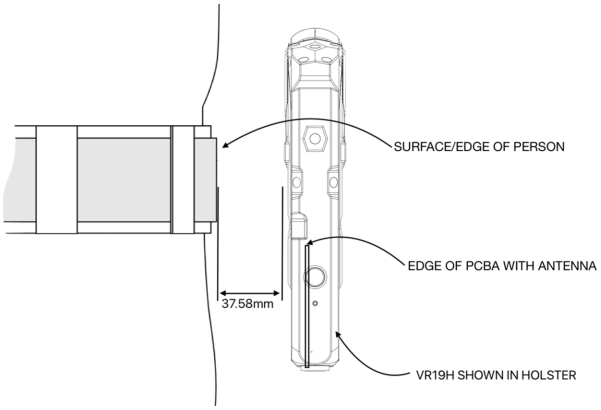
Bluetooth Low Energy (BLE) specs

Distance to body (in mm)

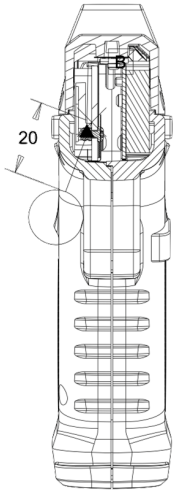
In use, finger on trigger



Not in use, holstered



In use, finger resting against side



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

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 VRC for service, follow the procedures at www.axon.com.

Compliance

A VRC 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.

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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