

# HARITORA X 1.1

## User Manual

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[Return to product page](#)

## 1. Setup Guide

We have prepared an instructional video to help you get started with HaritoraX 1.1 right away. Once you have followed the instructions, you can start using HaritoraX 1.1 immediately.

### ● STEP 1

Download the "Haritora Configurator" software from the Shopify store page.

Follow the steps up to 1 minute and 14 seconds into the video to set up the "Haritora Configurator".

Video:

The Haritora Configurator is the same as HaritoraX. If you are already using HaritoraX, STEP 1 is not necessary.

**The "Product Code" on the back of the Main unit is required to set up the Haritora Configurator.**

**We recommend that you take a picture or make a note of the "product code" and keep it in a safe place.**

### ● STEP 2

Assemble the HaritoraX suit. Please refer to the assembly video.

HaritoraX suit assembly instructions

Video: [https://youtu.be/gMQDx\\_DQ-DY](https://youtu.be/gMQDx_DQ-DY)

### ● STEP 3

Put on HaritoraX 1.1.

How to put on the HaritoraX suit

Video: <https://youtu.be/zEuZM0nenY4>

### ● STEP 4

Please follow the procedure from 1 minute 15 seconds onward in the video to set up "Haritora Configurator" and various parts of the system.

Video:

It is highly recommended to calibrate the magnetometer in it where it is used for stable operation.  
[HaritoraX1.1 User Manual](#)

### 1.1. Calibrate the magnetometer

Turn on the power of the main unit and lift all the units together so that they don't move individually.

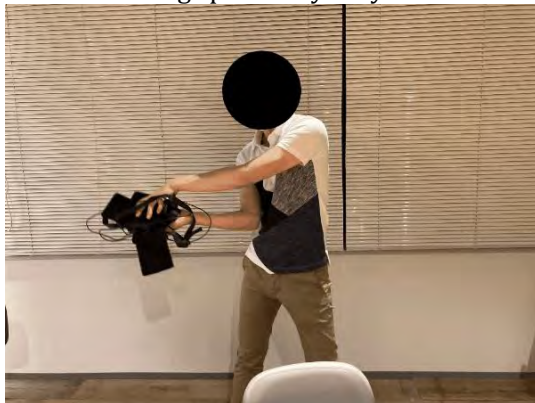
Then draw a large figure of eight in the air, just like calibrating your smartphone's electronic compass. Do this for about 3 minutes.

This operation can reduce the unintentional rotation (the drift).

This operation does not have to be repeated in the same environment because the calibration data is stored in the non-volatile memory.

If the magnetic environment is changed, repeat this operation to reduce the drift.

\* It is impossible to completely remove the drift due to the characteristics of the magnetometer, and the drifting speed may vary.



## 2. Before You Begin

### 2.1. Introduction

Thank you for your purchase of the HaritoraX.

Please read this manual carefully and observe the precautions to ensure safe use as you enjoy your FBT experience.

Please read "[Important Safety Information](#)" before use.

### 2.2. Requirements

To use HaritoraX 1.1, you will need:

- PC running SteamVR with Windows 10.  
Windows 10 21 H1 or later, SteamVR 1.17 or later.
- VR headset that connects to SteamVR.  
Oculus Quest, Quest2, Rift S, VIVE (1st), VIVE Pro, VIVE Cosmos, Fujitsu FMVHDS1, Valve index, HP ReverbG2
- Bluetooth adapter for pc

\*This is required if your computer does not have Bluetooth.

Unbranded Bluetooth adapters for pc that are sold on sites such as Amazon and claim to support Bluetooth 5.0 (often printed with BT 5.0) cannot connect to HaritoraX 1.1 as they do not support SPP. Please use a Bluetooth USB adapter that has already been tested.

Verified working Bluetooth adapter for pc.

Brand	Model name
TP-Link	UB400
TP-Link	UB4A
ASUS	USB-BT400
ZEXMTE	0054
Avantree	BTDG-40S-BLK
Plugable	USB-BT4LE

● USB wall charger

Please have on hand a USB wall charger, output: 5V/1A or higher.

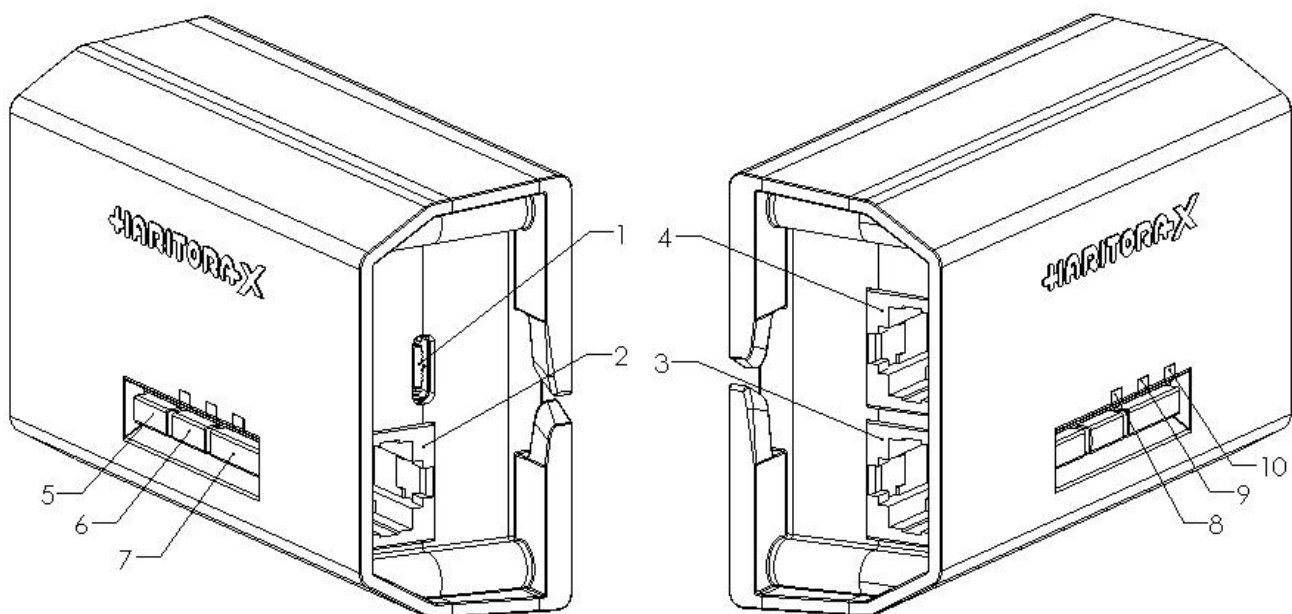
## 2.3. Included Items

Name	quantity
Main unit	1
Sub unit A	2
Sub unit B	2
Connection cable	4
USB cable (Type C)	1
HaritoraX suit	1
Safety Precautions / Warranty	1

## 2.4. Overview

### 2.4.1. Main unit

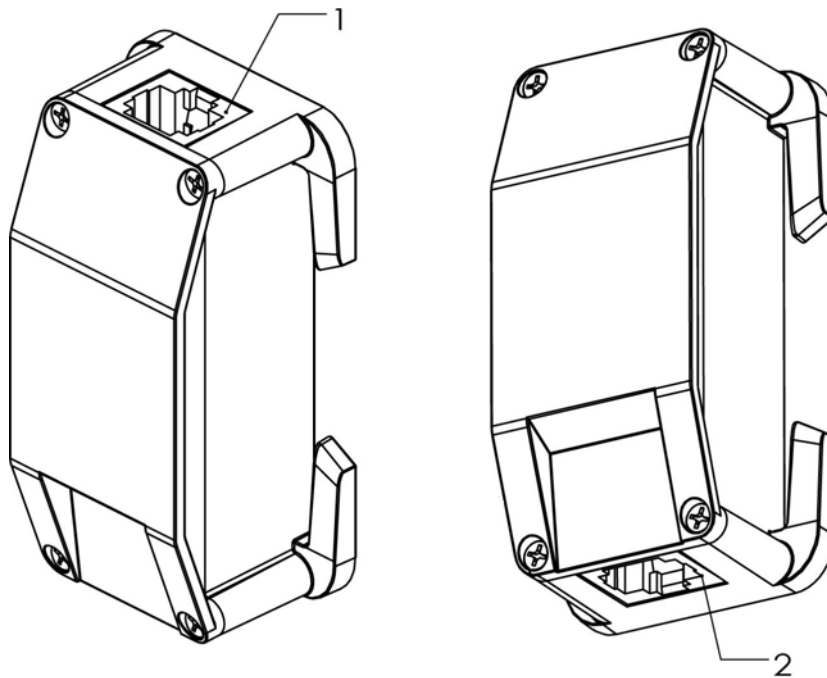
This unit attaches to the chest. The main unit also contains a sensor.



1. USB port for charging
2. Subunit connector port for left foot
3. Subunit connector port for right foot
4. Subunit extension connector port
5. Button 1
6. Button 2
7. Power button
8. Blue LED
9. Green LED
10. Red LED

#### 2.4.2. Sub unit A

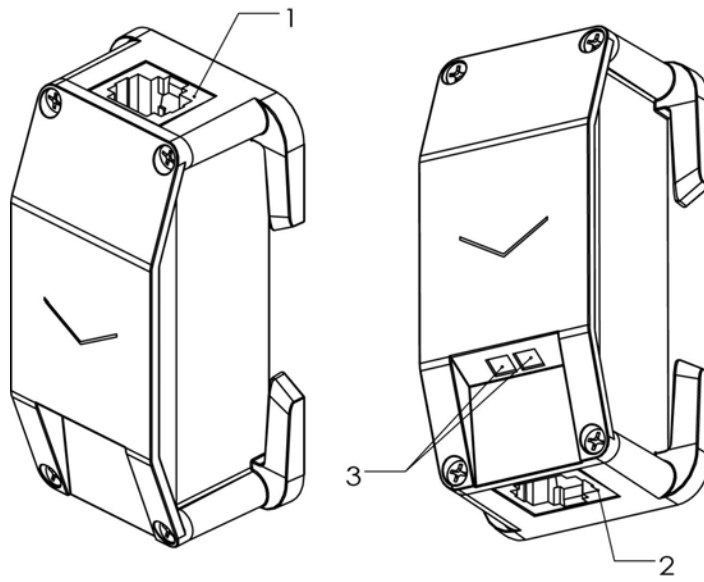
Sensor to be mounted above the knee.



1. Top side connector port
2. Bottom side connector port

#### 2.4.3. Sub unit B

Sensor to be attached below the knee. It is marked with a "V".



1. Topside connector port
2. Extension connector port
3. Distance sensor

## 2.5. Important Safety Information

### **Safety Precautions (To reduce the risk of injury and harm, please be sure carefully read and follow all these instructions .)**

#### **⚠ Danger: High risk of death or serious injury**

- Use the supplied USB cable to charge the product as specified in the online manual to avoid battery leakage, overheating, or rupture. This could result in fire or explosions and death or serious injury.
- Only use the product for its original purpose. Doing otherwise may result in damage to the equipment, accidents, or injury.
- When using the product be sure to provide sufficient play space. Using the product with clutter around may result in damage to the equipment, accidents, or injury.
- Exposing the product to water may result in electric shock. Do not use it in a kitchen, laundry room, bathroom, outside in the rain, etc. Electric shock can result in serious injury or death.
- The product contains a rechargeable battery. Do not expose it to fire. Do not charge, use, or leave it at high temperatures. Do not heat in a microwave, oven, or dryer. Overheating may cause the battery to catch fire or explode.

#### **⚠ Warning: Risk of death or serious injury**

- In the event of the following abnormalities or malfunctions immediately unplug the USB cable and discontinue use. If you continue to use the product it may cause a fire or electric shock. If there are any problems with the product contact the Shiftall support desk.  
Beware of:
  - Smoke or unusual smells or sounds.
  - Water or foreign matter inside the product.
  - Damage to the main unit or USB cable.
- Do not damage or modify the USB cable or charging connector. Do not forcibly bend, twist, pull, or place heavy objects on cables. Do not allow cables to overheat. Using cables in a damaged condition may cause a fire due to short-circuiting.
- Do not use the product near automatic control devices such as automatic doors or fire alarms. Radio waves from the product may affect the automatic control devices causing accidents due to malfunction.
- Do not disassemble or modify HaritoraX. Modifications, including placing metal objects inside the product, may result in malfunction, burns, or fire.
- Do not use it in hospitals or places where electrical medical equipment is located. Radio waves from the product may affect electrical equipment causing accidents due to malfunction.
- Do not allow foreign objects, including water and other liquids, to enter the unit. A short circuit or overheating may cause a fire, electric shock, or malfunction. Be especially careful with children.
- The radio waves from the product may affect the operation of cardiac pacemakers. Please keep the product at least 6 inches away from any pacemaker.

#### **⚠ Caution: May result in minor injury or property damage**

- Do not use the product in any place with high humidity, steam, oil smoke, or dust. Doing so may cause fire or electric shock.
  - Do not place heavy objects on top of the product or the USB cable. It may fall and cause injury. Also, it may deform the outer case or the plug of the cable and damage the internal parts and cause a fire or malfunction.
  - Do not use the product while sleeping. Doing so may result in damage to the equipment, accidents, or injury.
  - Do not leave the product in a place where the temperature is abnormally high. Do not leave it inside of a car or the trunk of a car, especially in hot weather. Doing so may result in a fire. Undue heat may cause deterioration of the outer case and internal parts.
  - If you feel any abnormality on your skin touching the product directly, stop using the product. If you continue to use the product it may cause irritation or rash.
  - Do not place the product where infants or children can reach it. It may cause unexpected accidents or injury.
  - Be sure to adjust the protective strap to a length shorter than the connecting cable. Never let excess strap hang below the ankles. Be sure to secure the excess with the supplied cable clip before use. Failure to do so may result in damage to the equipment, accidents, or injury.
  - Over-tightening the belt may cause blood congestion. Be careful not to tighten the belt too much when wearing the product for a long time.
- (Notice)  
Be careful not to let the hook-and-loop fastener (nylon tape) touch your clothing. If the hook-and-loop fastener touches clothing such as knitwear, it may damage the fabric.

### 3. Put on the HaritoraX 1.1

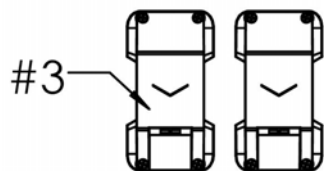
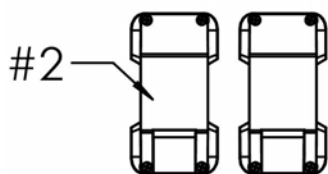
Be sure to attach the HaritoraX 1.1 to your suit before wearing it. This chapter describes how to assemble and attach a HaritoraX suit to your body.

\*Video explanations are also available.

#### 3.1. Assemble the HaritoraX suit

Video: [https://youtu.be/gMQDx\\_DQ-DY](https://youtu.be/gMQDx_DQ-DY)

##### 3.1.1. List of the parts required to assemble the suit



No.	Name	Qty
1	Main unit	1
2	Sub unit A	2
3	Sub unit B	2
4	Chest strap	1
5	Straps for above the knee	2
6	Straps for below the knee	2
7	Connection cable protection strap (short)	2
8	Connection cable protection strap (long)	2
9	Main unit fixing pad	1
10	Sub unit fixing pad	4
11	Cable clip A	6
12	Cable clip B	2
13	Cable fixing tape	6
14	Connection cables	4
15	USB cable (Type C)	1
16	Safety Precautions/Warranty	1

#4



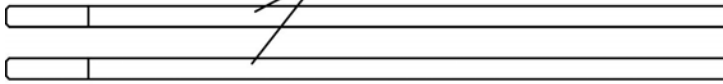
#5



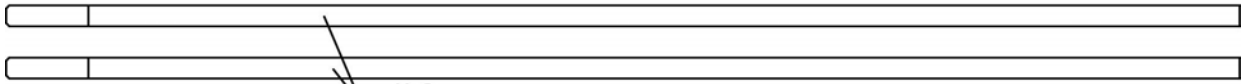
#6



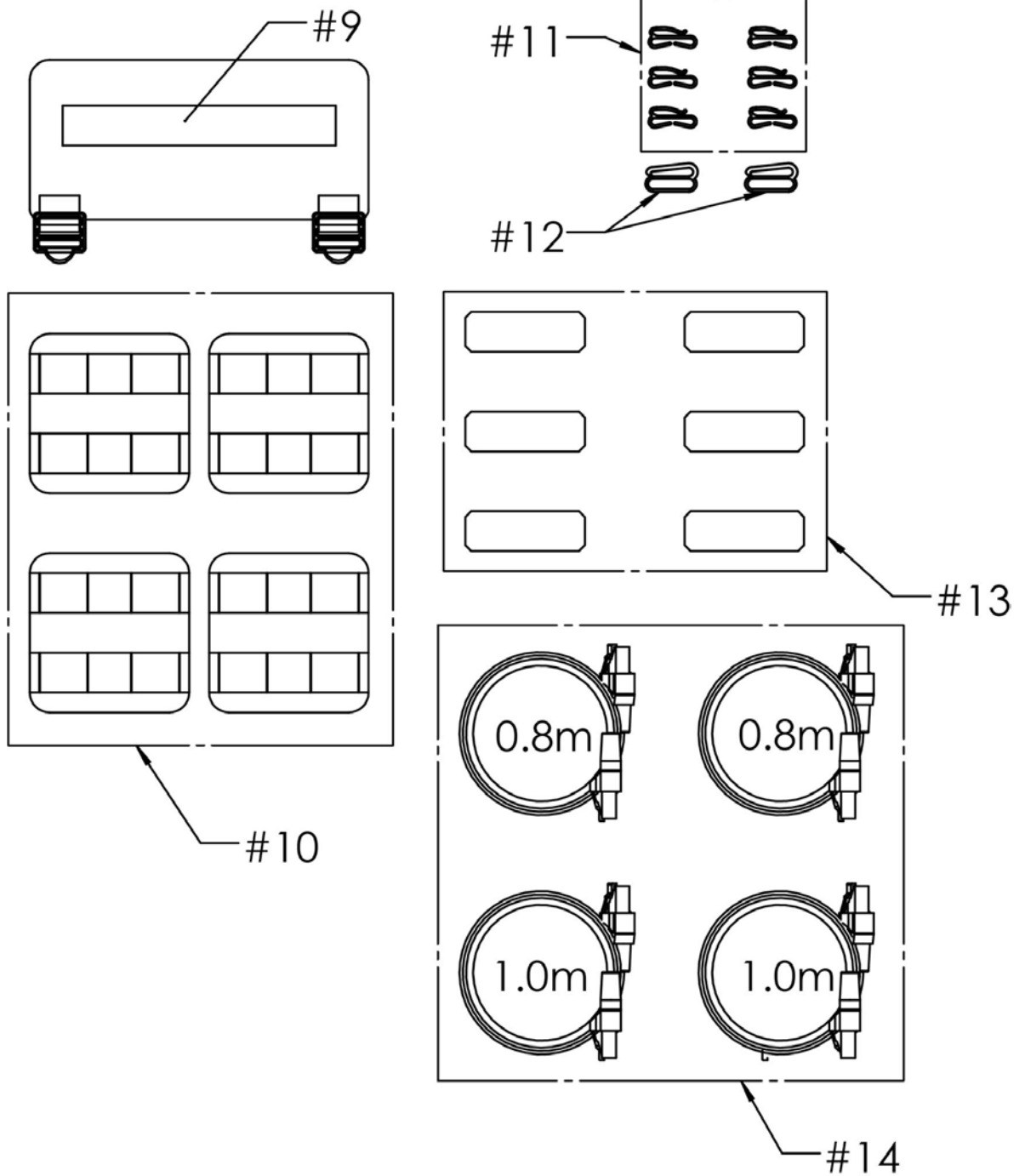
#7



#8



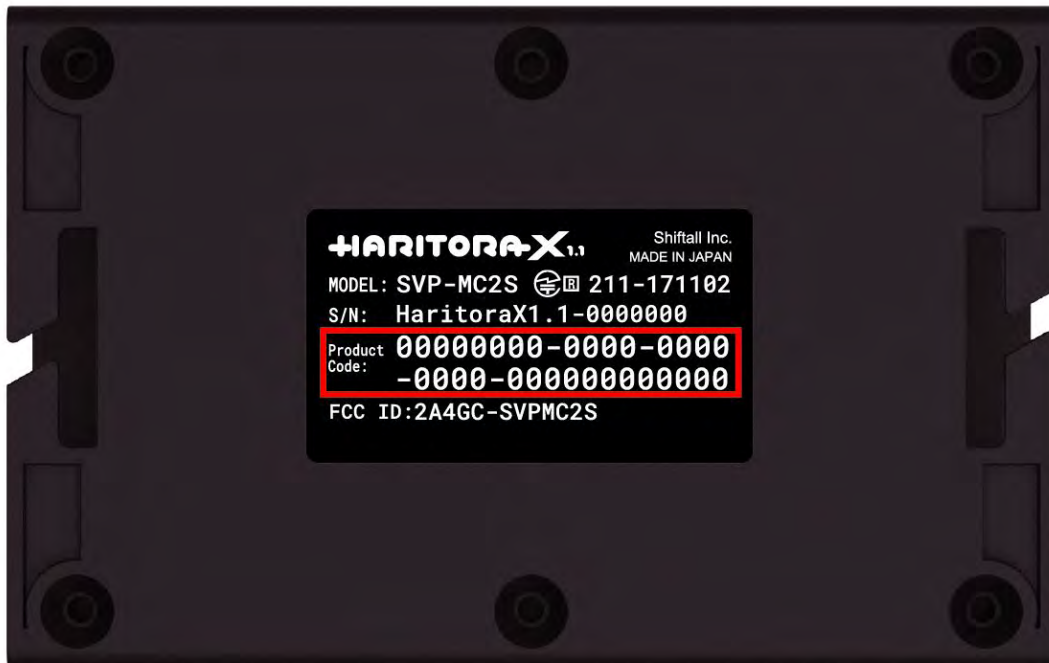




### 3.1.2. Assemble

Video: <https://youtu.be/A8FXZzJq7-M>

**Copy the "Product Code" printed on the sticker on the rear of the main unit by hand or take a picture to use for setup later.**



1. Install # 1 into # 9. First, insert the long claw of # 1 into the # 9 fixing cloth, and pull up the short claw with claws or tweezers. Do this in two places on the left and right to fix it. (The one assembled by mounting is called # A)

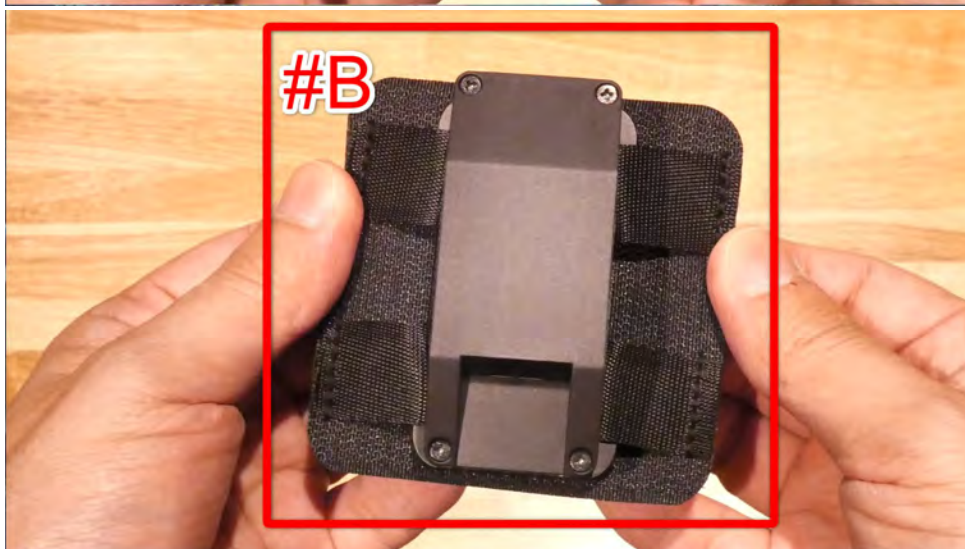
\*It will be easier to insert if you move # 1 so that the nail slides into the hole from the side.





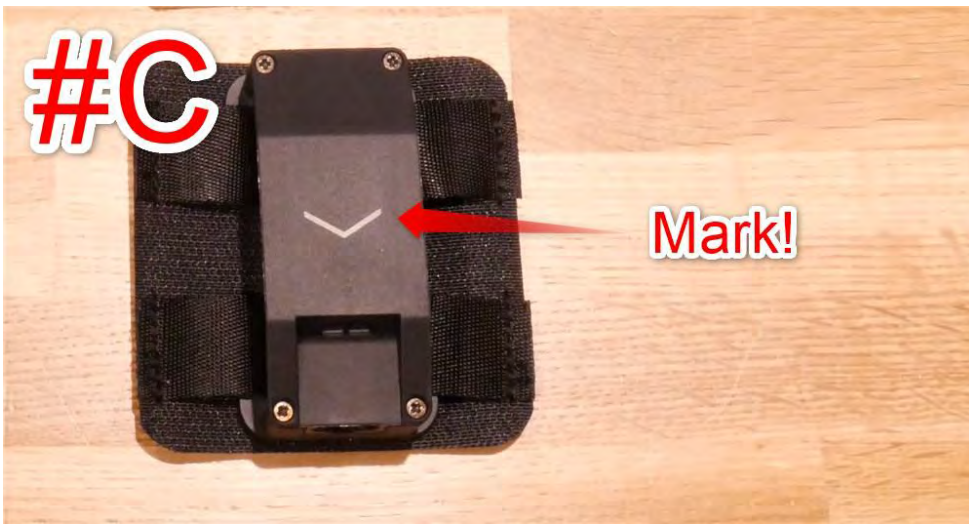
2. Install # 2 into # 10. Insert the # 2 claws one at a time into the # 10 fixing fabric in 4 places at the top and bottom. The point is to insert # 10 into the fixed cloth while folding it. (The one attached together is called # B)





3. Install # 3 into # 10. Just like above, insert the # 3 claws into the # 10 fixing cloth at 4 places above and below to fix. (The one attached together is called # C)





#A, #B, #C is complete!



4. Install # A in # 4. Attached to the end as shown in the picture below.





5. Pass # 8 through # 12. As shown in the photo, please pass through the part without a hook and surface fastener and stretch the tip longer.



**#8**

Connection cable protection straps (long)







6. Insert # 8 through # A belt adjuster. **Please pass through the one without a surface fastener.**







Install the other one as well.

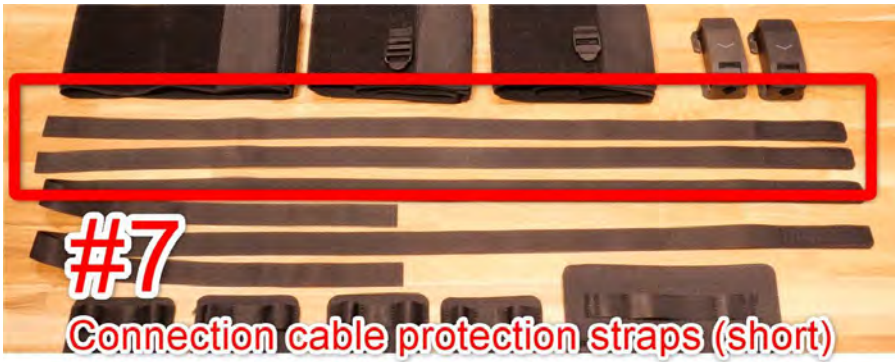


7. Install # B on # 5 and # C on # 6. # B and # C has mounting directions. Confirm the mounting position and orientation in the photo before mounting.

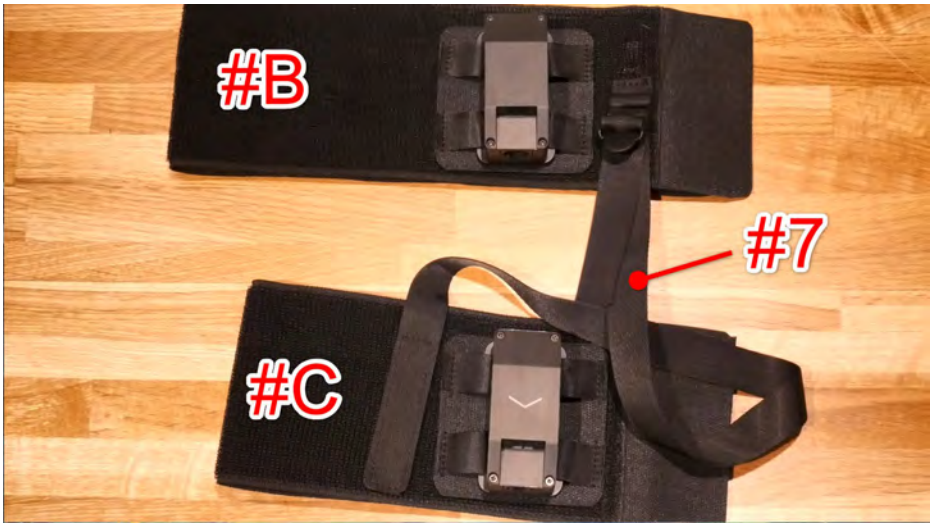




8. # 7 connects # 5 to # 6. Attach the printer while checking the position in the photo.



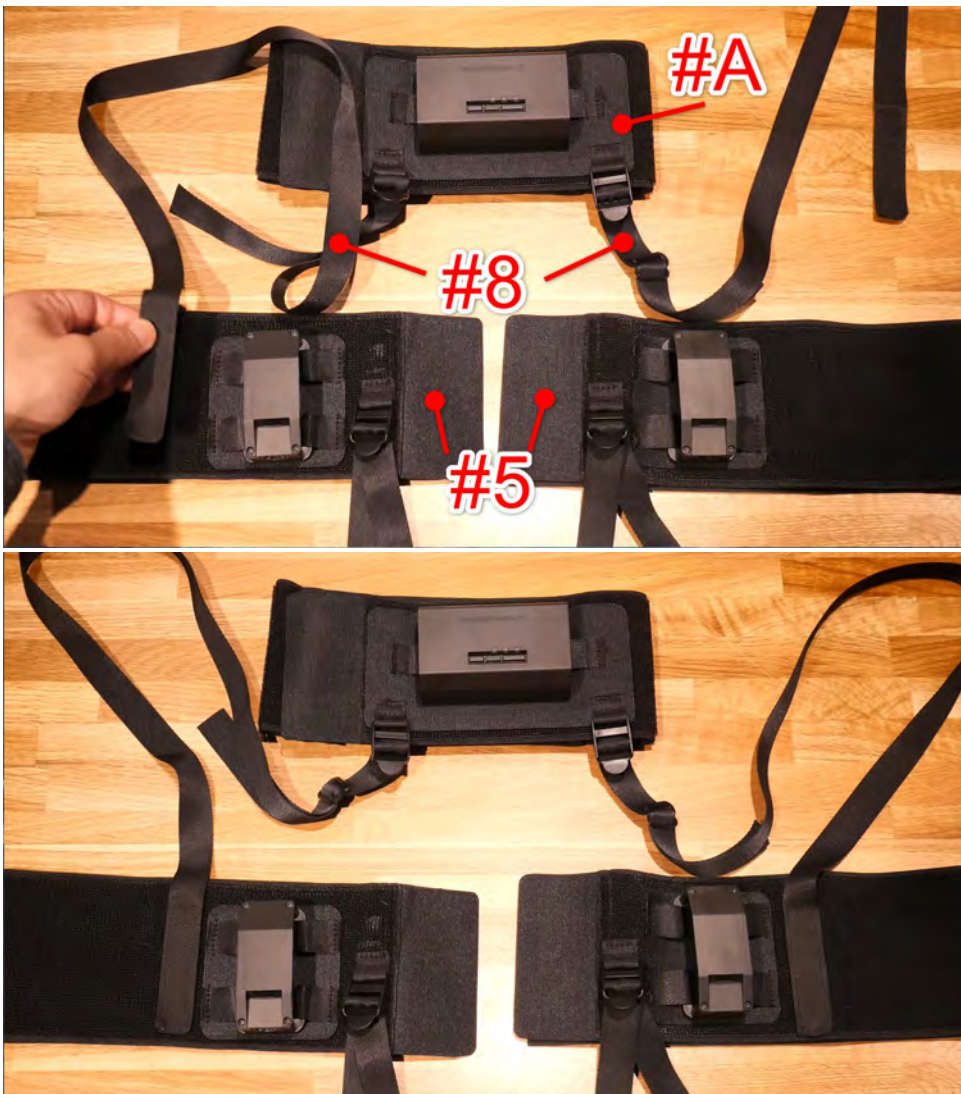




Install the other one as well.



9. Connect # A and # 5 with # 8.



10. Connect # 1, # 2, and # 3 with # 14.

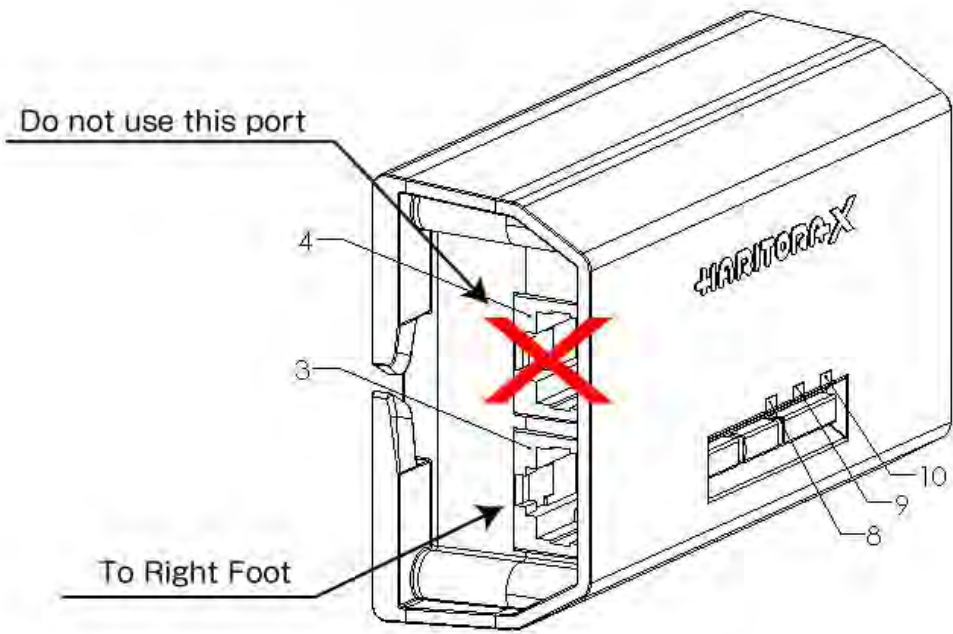
\*When connecting the main unit (# 1) and the Sub unit above the knee (# 2) , use the lower port when connecting from the side where there are two ports (see image for details).

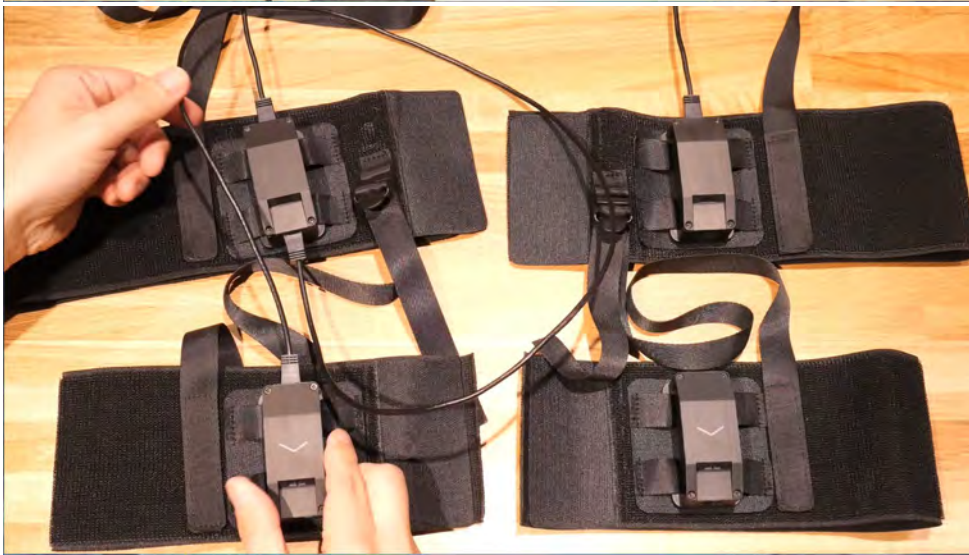
Connection cables come in two lengths. Please use the one that fits your body.

(We recommend using a 1.0 m cable to connect #A and #B, and a 0.8 m cable to connect #B and #C.)

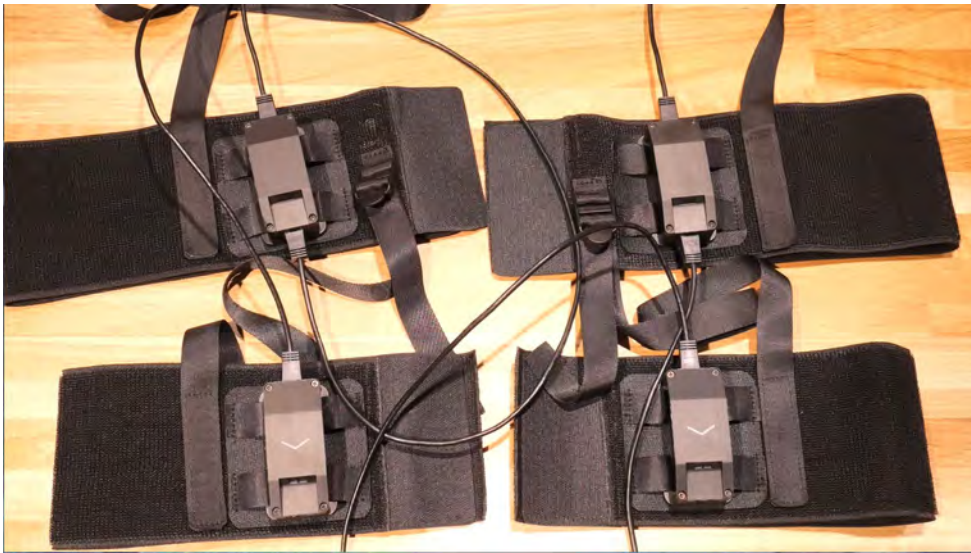






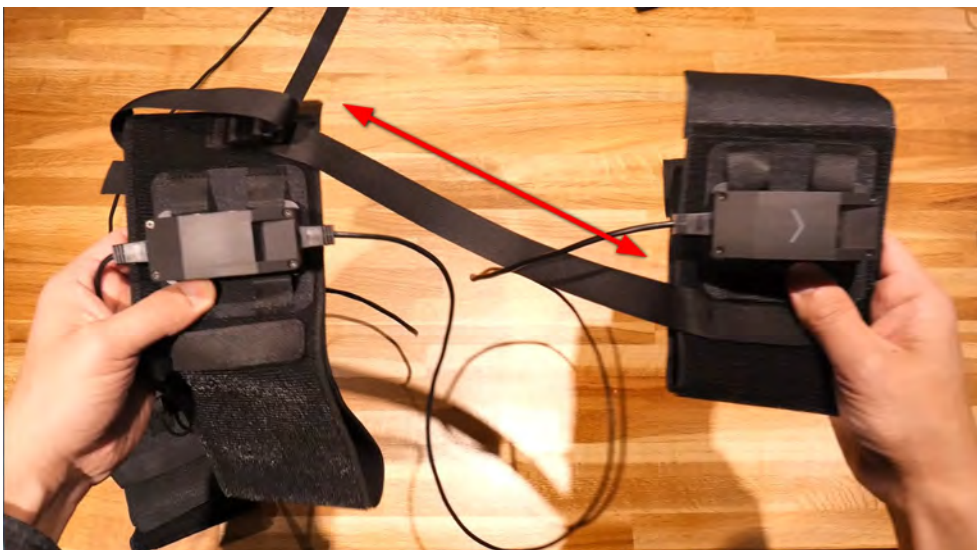
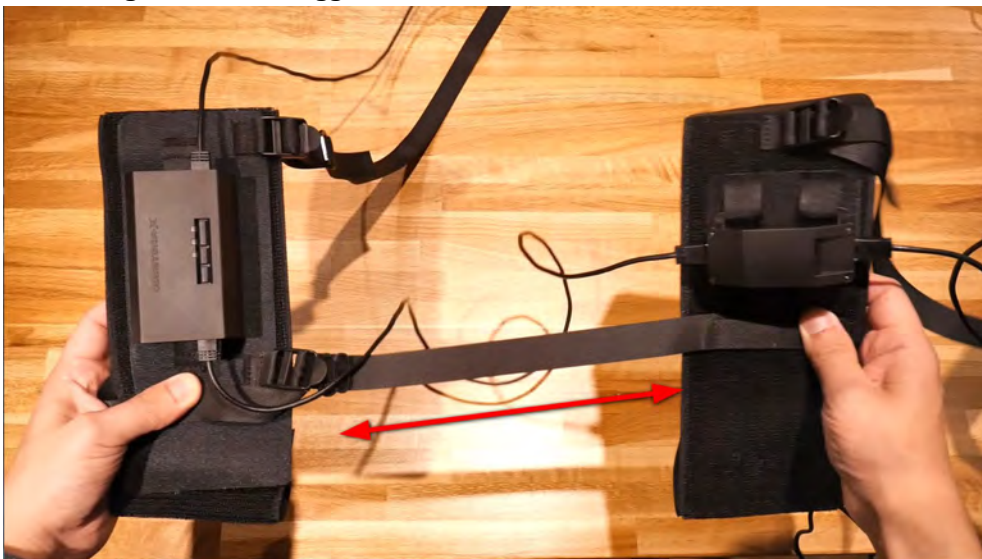






11. Adjust the length of # 7 and # 8. Adjust the length of # 7 and # 8 so that they are not shorter than the connecting cable (# 14).

\* The image is a little exaggerated.



12. Use # 12 to bundle the remaining cable protection straps and cable connections.



Secure the connecting cable with #12 "Cable clips B".



13. Use # 11 to bundle the remaining cables. If the connection cable is loose, use # 13 to secure it to the belt.

Secure the connecting cable with #11 "Cable clips A".





14. Do the same for both sides.

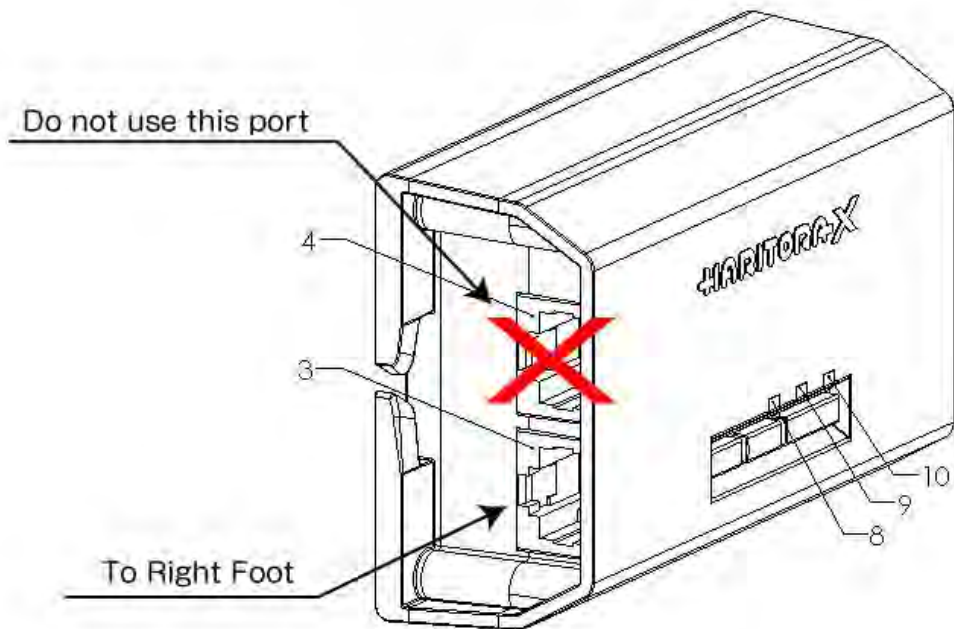
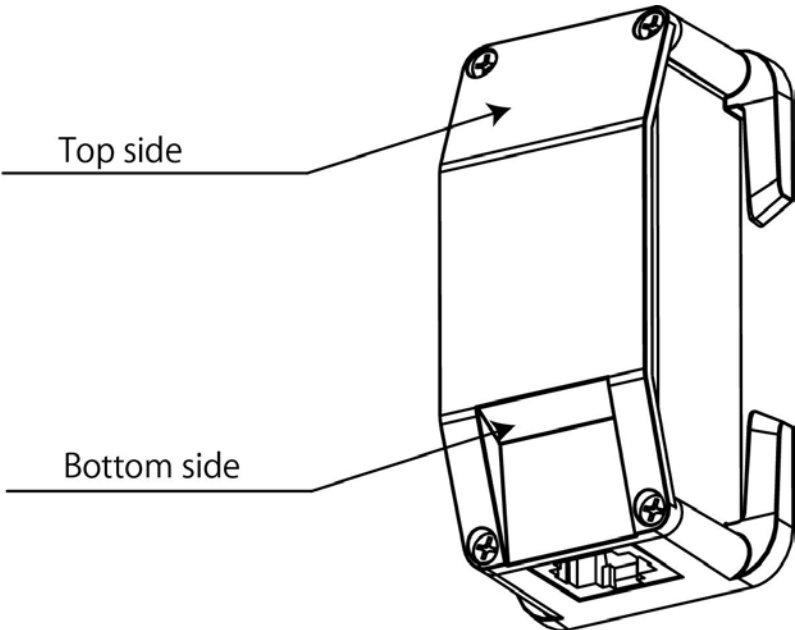
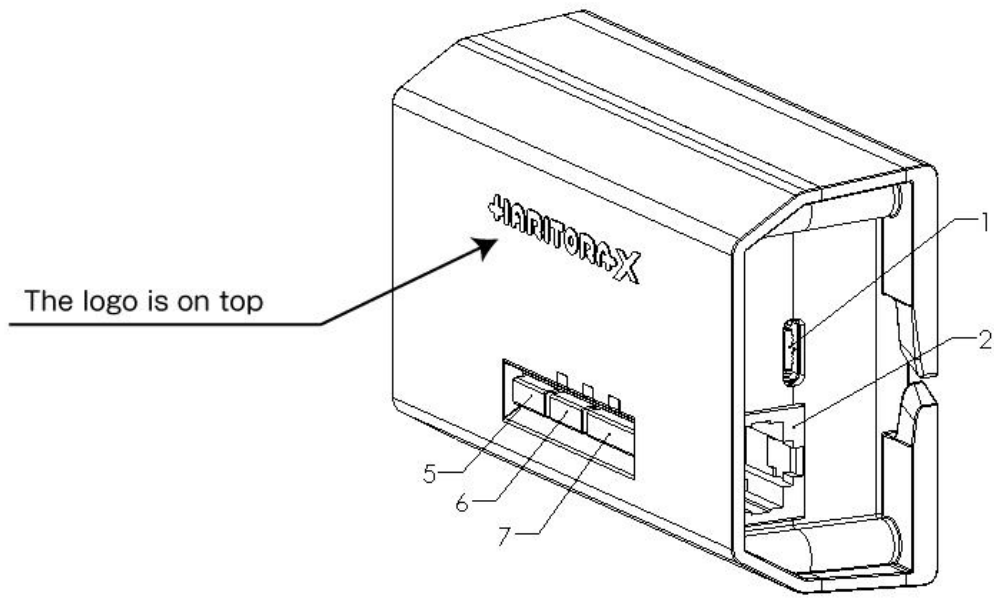
**[Complete drawing of Special suits]**

\*Above the knee belts(# 5) and Below the knee belts (# 6) are **symmetrical**.

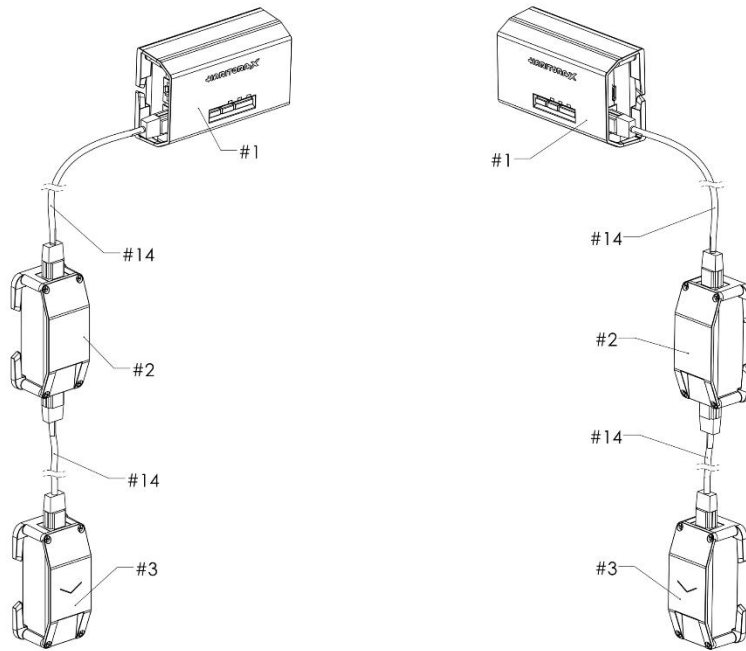


### 3.2. How to connect the units.

Each unit has a vertical orientation. If you install the unit in the wrong direction, it will not work. If you turn on the main unit's power and it is connected incorrectly, three colored LEDs will start to blink simultaneously.



### Connection diagram between the two units



### 3.3. Put on the HaritoraX suit

Video: <https://youtu.be/m8ntin-f08Q>

Lift up the suit completed in "[Assemble the Suit](#)", being careful not to tangle the connecting cable or the connecting cable protection strap (strap).



1. Wrap around at chest height. The main unit will not operate properly if it is lower than your midriff. Also, wrap around the unit so that it is in the front.



The key is to pull hard and tighten tightly.



2. Attach the "Straps for above the knee" to your body.  
Wrap it around your knee just above the knee. If you wrap it around your thighs, it will easily slip down. If the sensor is misaligned, the tracking will also be misaligned, so make sure you wrap it tightly and firmly.



3. Attach the "Straps for below the knee" to your body. Wrap it around the area between your knees and ankles. As with the above the knee, if the sensor is misaligned, the tracking will also be misaligned, so make sure you wrap it tightly and firmly.



4. Adjust the length of the straps between the chest belt and the belt above the knees, and between the belt above the knees and the belt below the knees. Adjust the length of the straps so that they are slightly taut when you move your body, turn your back, or bend your body sideways. The length between the belt above and below the knee should be adjusted so that it is slightly taut when you squat.



This position also tends to put a load on the cable, so please check that it is not strained.



5. Make sure again that the straps are longer than the connecting cable.

\* It is dangerous to use the connection cable or straps while it is drooping down, so be sure to adjust it to an appropriate length and secure it with a cable clip before use.

Done!



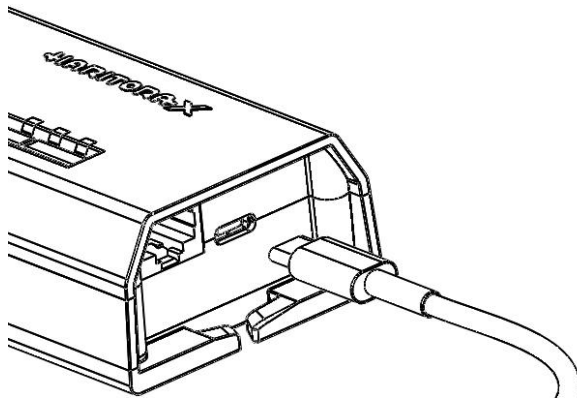
## 4. How to use

**This section explains how to charge and operate the main unit and how to connect to Bluetooth.**

### 4.1. Charging

Please charge the battery before using the product.

Connect the main unit to a computer or USB wall charger with the supplied USB cable.



- Red LED will light up while charging
- It takes about 4 hours and 30 minutes from empty to fully charged (with power off).
- When charging is complete, the red LED will turn off

\* Please hold the USB plug straight while inserting or removing (inserting it at an angle may damage the USB port and cause malfunction).

\* Please use a USB AC adapter with a power supply capacity of 5V/1A or more.

### [ Charging Notice ]

- Charge the battery at an appropriate ambient temperature (10 °C to 35 °C).
- When using your computer's USB port, be aware that the battery may not charge if the computer is in standby or sleep mode.
- Please also read "Safety Information".

## 4.2. How to Operate the Main Unit

### 4.2.1. Power ON

Press and hold the power button on the main unit for 3 seconds or longer to turn it on. The green LED will turn on for 2 seconds and go off. The blue LED will then blink slowly. It is now in Connected Standby mode.

Video: <https://youtu.be/8APt1Tr3m3c>

If the connection between the two units is not correct, the blue, red, and green LEDs will flash simultaneously. In this case, turn off the power, check the connection, referring to "How to connect the units", and turn on the power again. If booted successfully, the blue LED will blink slowly (Connected Standby mode).

When connected to the "Haritora Configurator" application for HaritoraX, it will then be connected. If it is connected to the computer via Bluetooth but not connected to the Haritora Configurator, the lighting pattern will not change from the Connected Standby mode.

Video: This video shows what it looks like when the Blue LED blinks twice signaling that it's in Connected Standby mode. It can be seen at the 12-second mark.

[https://youtu.be/\\_mUAW5\\_1Po?t=12](https://youtu.be/_mUAW5_1Po?t=12)

### 4.2.2. Checking the remaining battery level

You can check the battery life by briefly pressing the power button once during startup.

**Battery level Turn on LED**



100 – 80 %	Green LED blinks 5 times
80 – 60 %	Green LED blinks 4 times > Red LED blinks 1 times
60 – 40 %	Green LED blinks 3 times > Red LED blinks 2 times
40 – 20 %	Green LED blinks 2 times > Red LED blinks 3 times
Under 20%	Green LED blinks 1 time > Red LED blinks 4 times

The red LED flashes when the battery level decreases during use.

If the power is turned on when the remaining battery power is less than 10%, the red LED will blink continuously and the power will turn off without entering the Connected Standby mode.

#### 4.2.3. Power OFF

Press and hold the power button for 3 seconds or more during startup to turn off the power.

Video: This video shows when all LEDs turn on and back off.

[https://youtu.be/JNEMLWsAY\\_o](https://youtu.be/JNEMLWsAY_o)

#### 4.2.4. Power OFF(Forced shutdown)

During startup, press and hold the power button for 10 seconds or longer to force the power off.

The blue LED will then turn off.

\*If you perform a forced shutdown while the USB is charging, disconnect the USB cable and turn the power on again.

## 5. Windows PC Settings

**Prepare to use HaritoraX1.1.**

**Please refer to the assembly video.**

Video: <https://youtu.be/IRs8pcdSHFk>

**HaritoraX and HaritoraX 1.1 use the same Haritora Configurator. If you are already using HaritoraX, please read from **5.2.3, Set up Bluetooth (Windows)**.**

### 5.1. Steam and SteamVR

**This software is required to connect the HaritoraX and VR headset to a PC.**

**The software is provided by Valve. Contact Valve for Steam/SteamVR operation.**

#### 5.1.1. Install Steam

- i. Access the website and create an account.
- ii. Download the Steam installer.
- iii. Run the downloaded file and install Steam.

## 5.1.2. Install SteamVR

i. To start Steam, search for "SteamVR" in the App Store and install it. Windows MR users should install Windows Mixed Reality for SteamVR.

\*Oculus Quest users should configure the Quest Link and Air Link settings.

ii. Start SteamVR and make sure your VR headset and controller icons are visible and recognized in the SteamVR window as shown.



## 5.2. Haritora Configurator

**This software is required to use HaritoraX.**

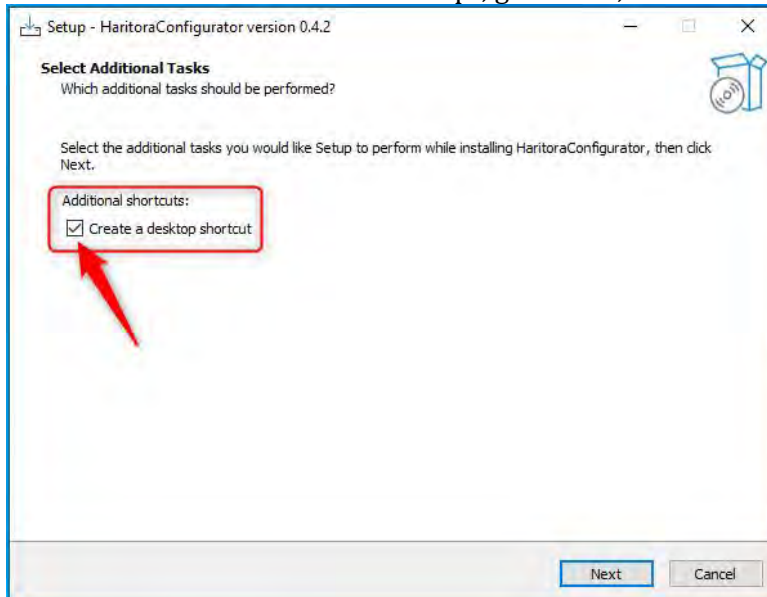
### 5.2.1. Install Haritora Configurator

i. Download "Haritora Configurator" from the Shopify store page. It will say "purchased", but you won't be charged.

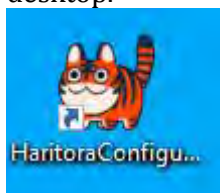
ii. Launch the downloaded "Haritora Configurator.exe".

\*If Windows Defender gives a warning, select More Information > Run.

iii. Check "Create an icon on the desktop", go to next, and click "Install".

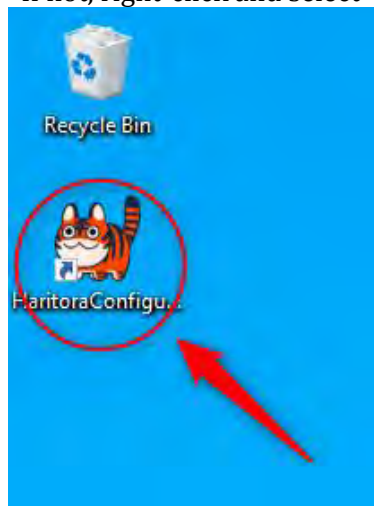


iv. When the installation is complete, check that the "Haritora Configurator" icon is on your desktop.

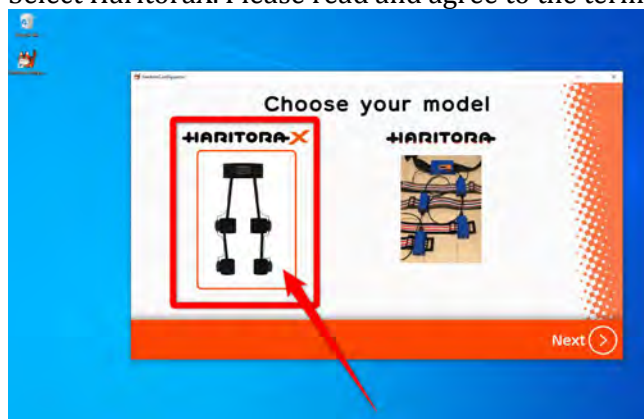


## 5.2.2. Starting and Initializing the Haritora Configurator

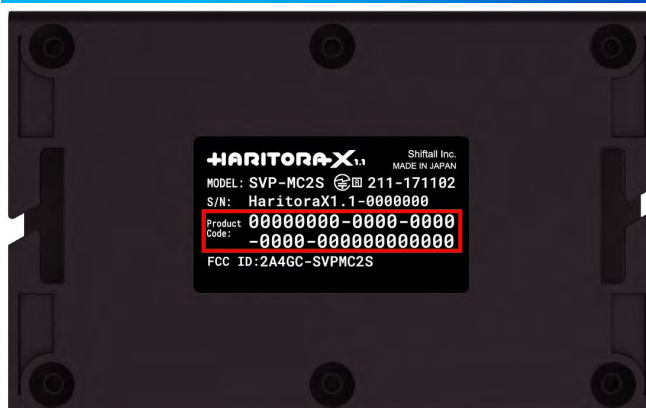
- i. Double-click the Haritora Configurator shortcut to launch it.  
\*If Windows Defender gives a warning, select More Information > Run.  
\*If not, right-click and select "Run as administrator" from the menu to start.



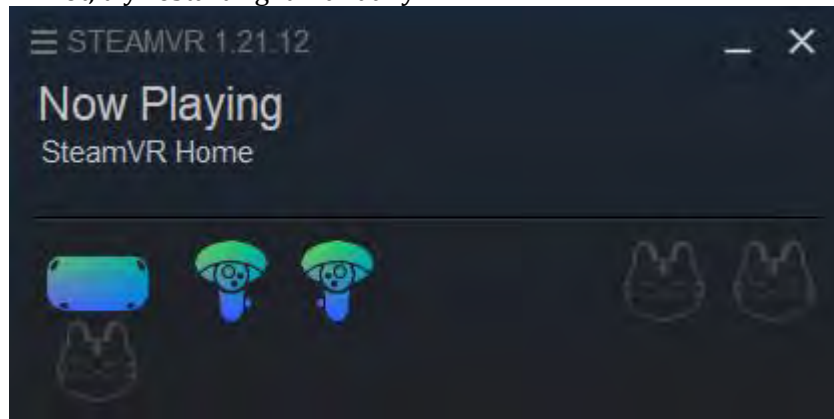
- ii. Select HaritoraX. Please read and agree to the terms of use.



- iii. Register the product code. The code is located on the back of the main unit.

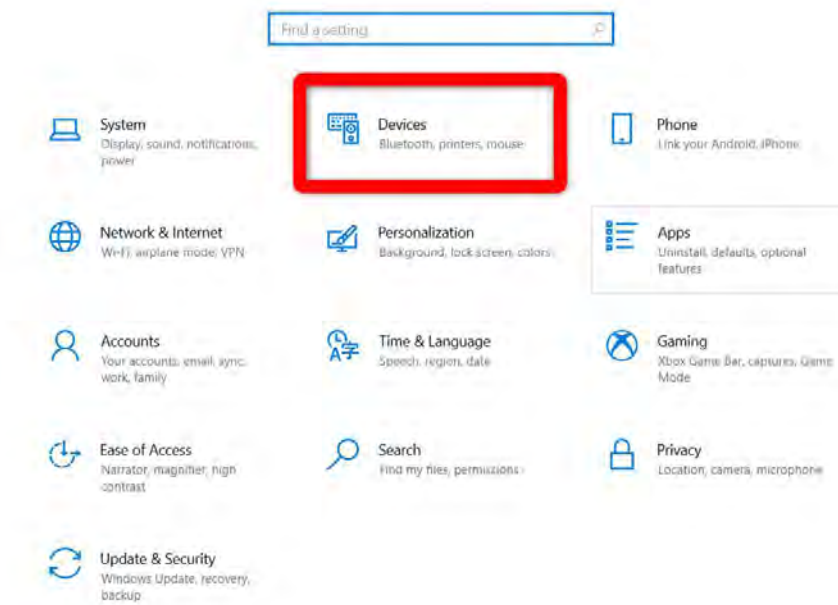


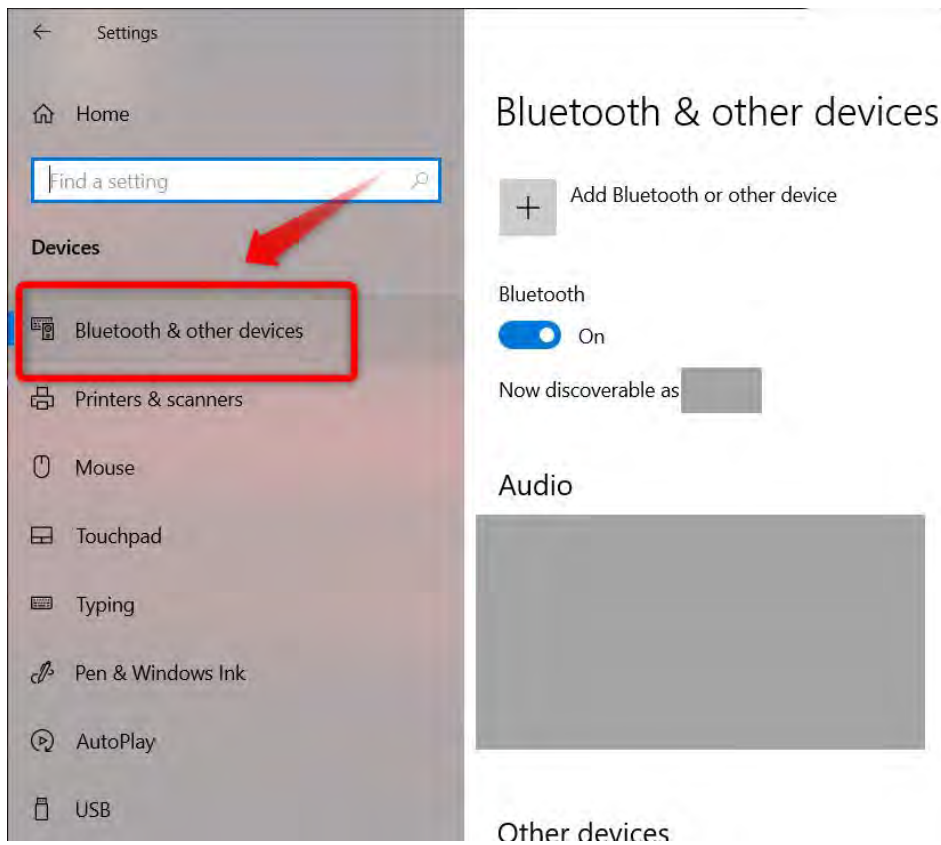
- iv. When the installation screen for the Haritora driver appears, select "Install" to install the driver.
- v. Once the driver installation is complete, SteamVR reboots. After the reboot, make sure the HaritoraX icon (gray) is visible on the SteamVR window.  
\*If not, try restarting it manually.



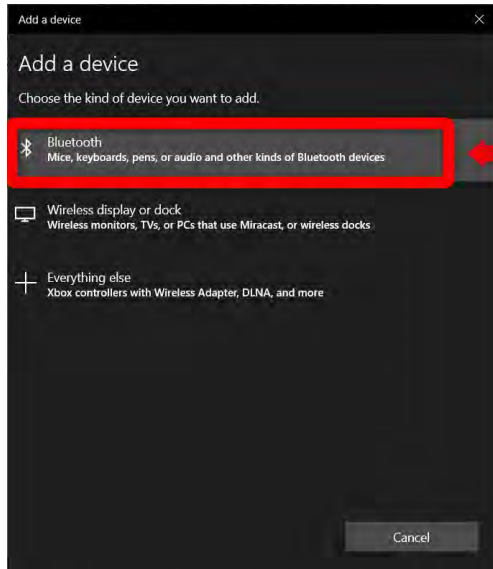
### 5.2.3. Set up Bluetooth (Windows)

- i. Go to the Windows menu - Settings - Devices and open Bluetooth or Other Devices.

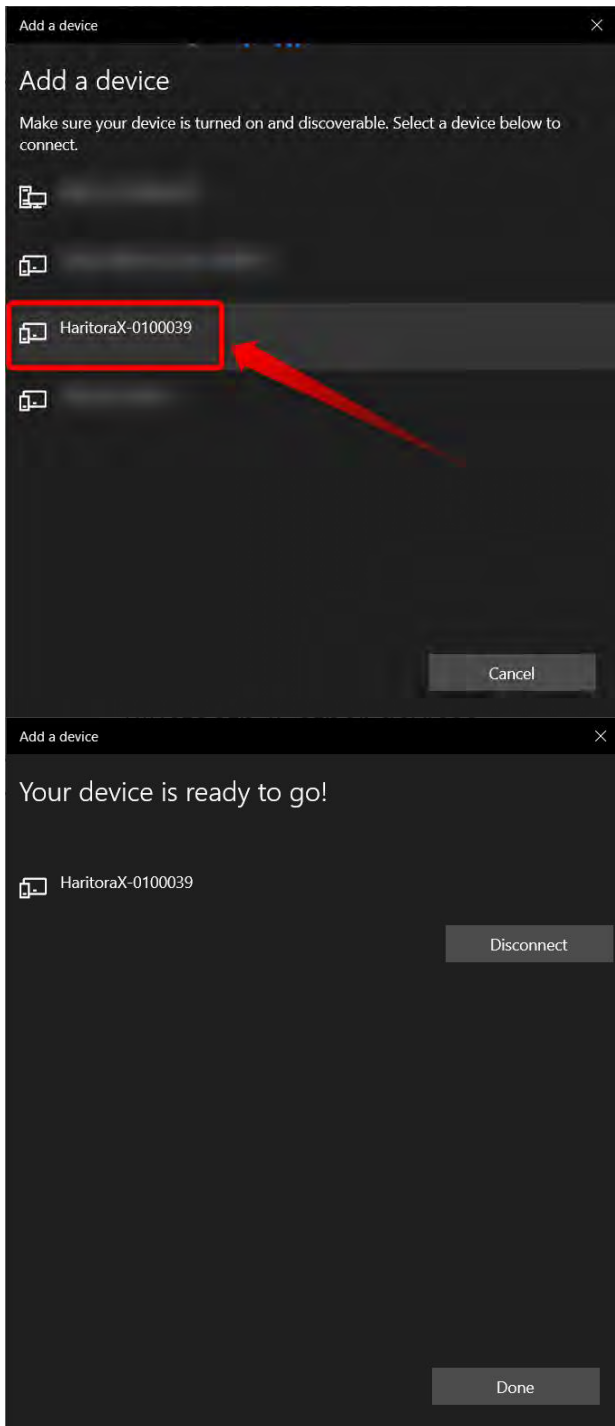




- ii. Select "Add Bluetooth or other devices" to open a separate window, then select "Bluetooth".



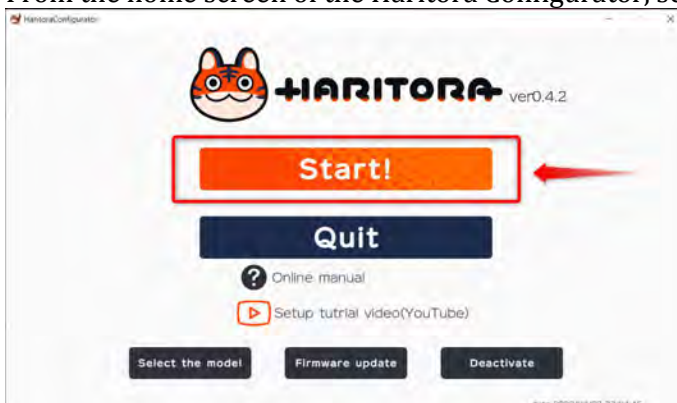
- iii. Powering the Main Unit.  
\*Refer to "[Power ON](#)" for how to turn on the power.
- iv. When the product is recognized by the computer, "HaritoraX- \* \* \* \* \*" will be displayed in the window. Please confirm that the serial number on the back of the main unit is the same. If so, select them to begin pairing.  
\*If not, make sure the main unit is powered on. If you are using a Bluetooth USB adapter, make sure it is plugged in properly.  
\*If the main unit is connected to another Bluetooth device, it may not be connected properly.



- v. Make sure it's "paired" in "Add Bluetooth or Other Devices."

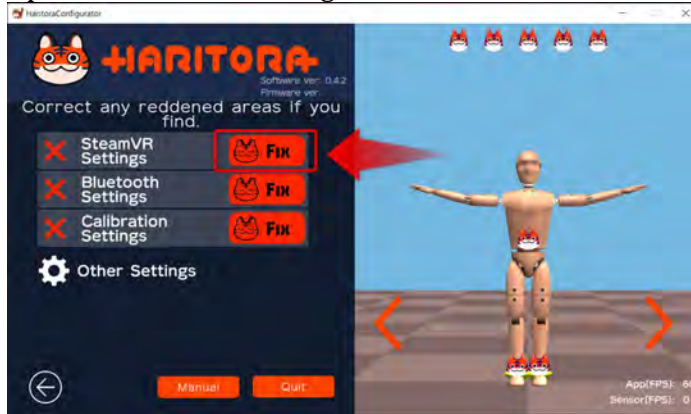
#### 5.2.4. Install drivers

- i. From the home screen of the Haritora Configurator, select Start.

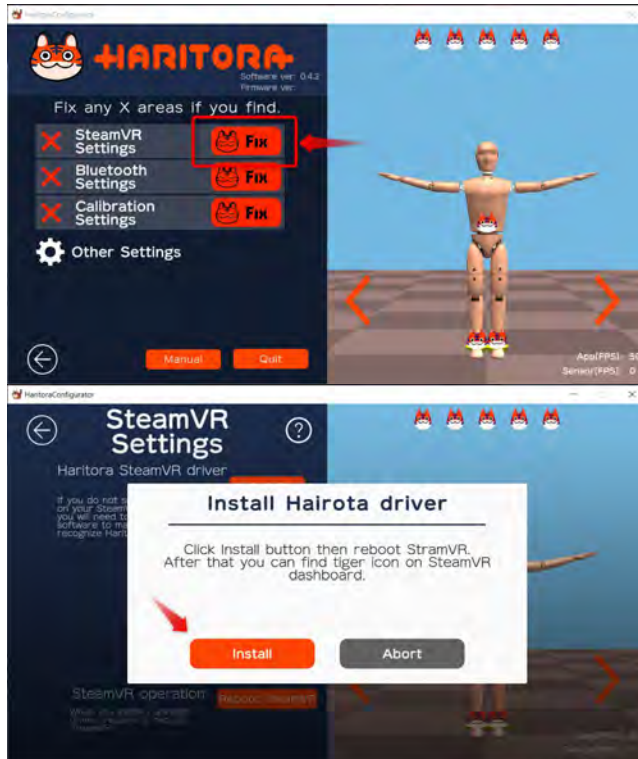




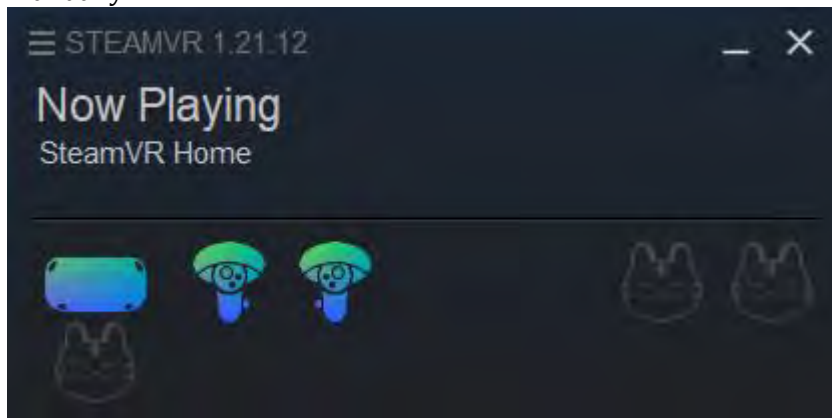
- ii. Open the SteamVR Settings screen.



- iii. Select Install Driver to install the driver.



- iv. SteamVR automatically restarts after the driver installation is complete. If the installation is successful, the HaritoraX logo (gray) will appear on SteamVR. If it does not appear, restart it manually.



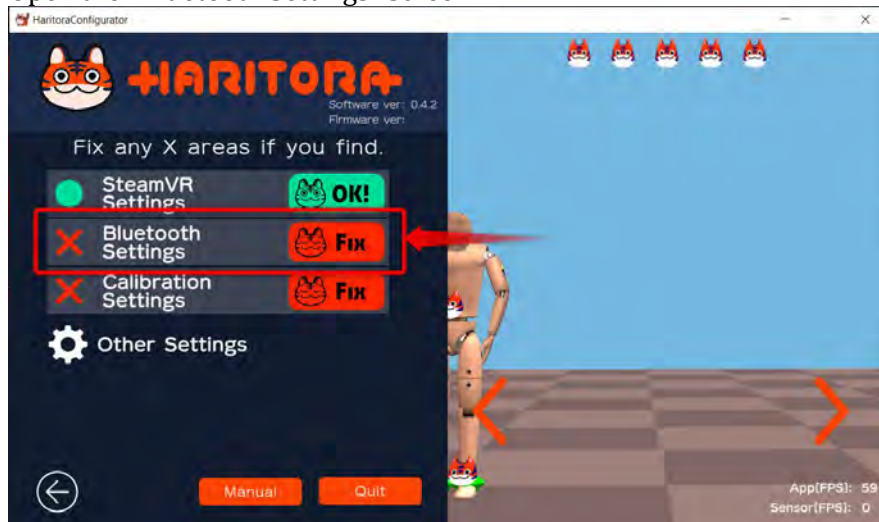
### [ If the logo does not appear ]

If the logo does not appear, the VR headset may not be connected to SteamVR or the driver is blocked by SteamVR. Check out the SteamVR drivers below.

\*If "haritora" is not listed, the installation is not complete. Please install again

## 5.2.5. Bluetooth settings(Haritora Configurator)

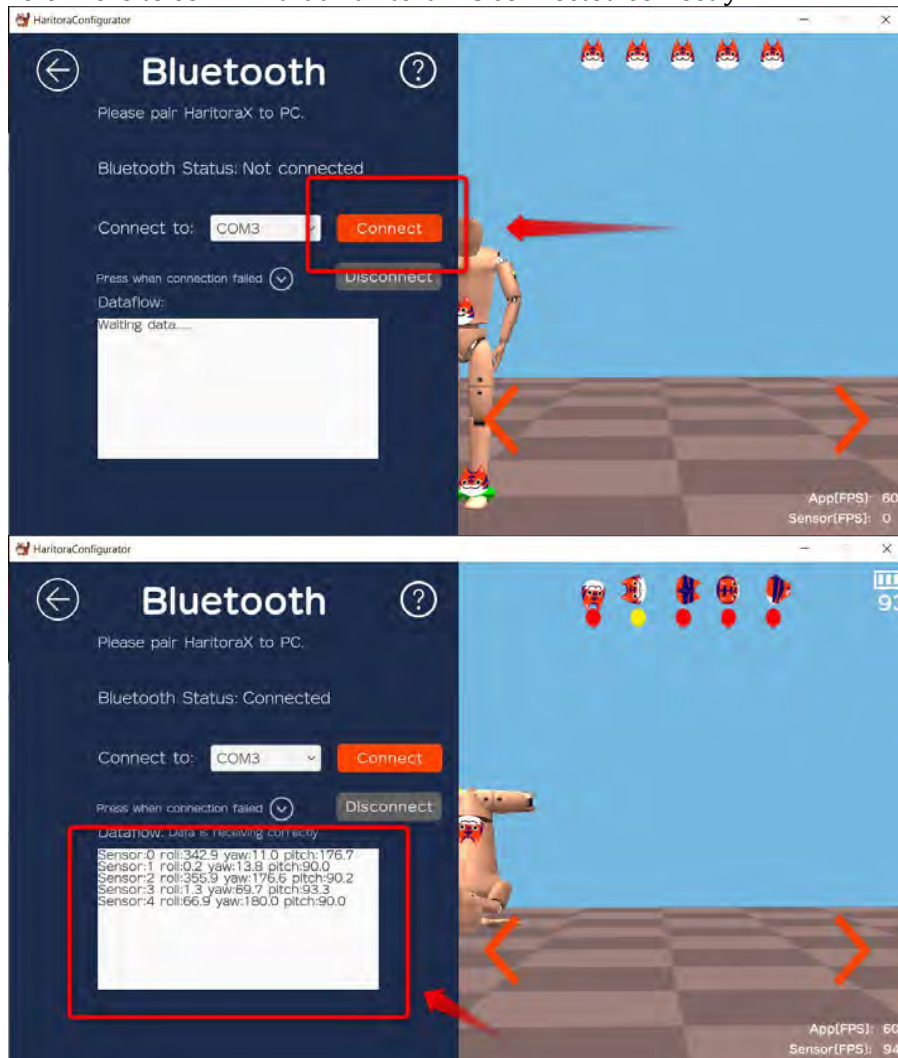
- i. Open the "Bluetooth Settings" screen.



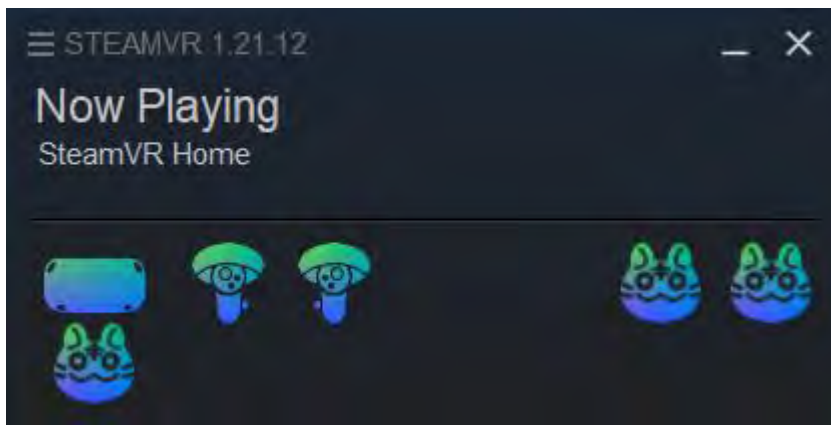
- ii. Select "Connect" and connect the Bluetooth. If the sensor information is displayed in the box at the bottom of "Receive Dataflow" and the HaritoraX Truck icon is blue in the SteamVR window, the connection was successful.

\*There may be multiple COM ports to connect to.

\*If the sensor information is not displayed even after connecting to all the connected devices, refer here to confirm that HaritoraX is connected correctly.







### [ When Windows and HaritoraX cannot be paired ]

If Windows and HaritoraX cannot be paired via Bluetooth, or if the HaritoraX is not recognized by Windows, refer to the following page to check the Bluetooth connection.

[What to do if you can't get a Bluetooth connection?](#)

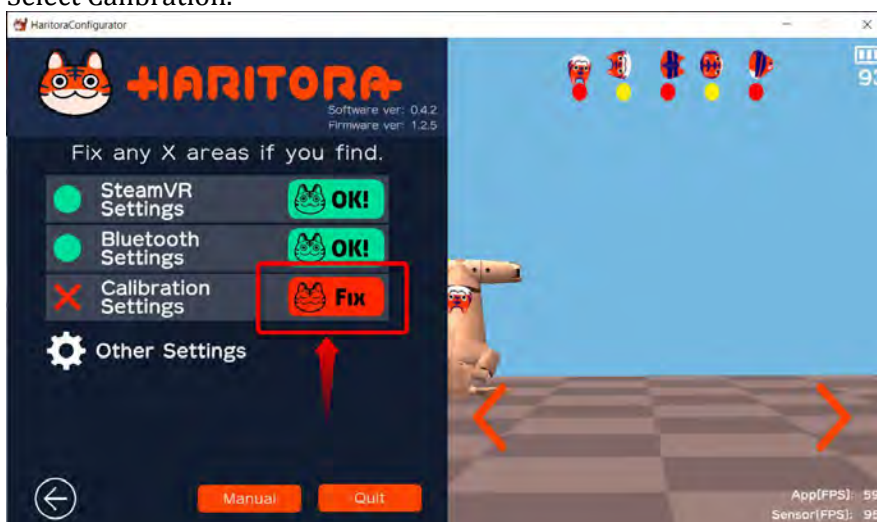
### [ When sensor information is not displayed, even if connected to all displayed COM ports ]

When connecting via Bluetooth, the corresponding COM port may not appear in the list, and the connection to HaritoraX may not be established even if all the ports are tried. In this case, refer to the page below and connect manually.

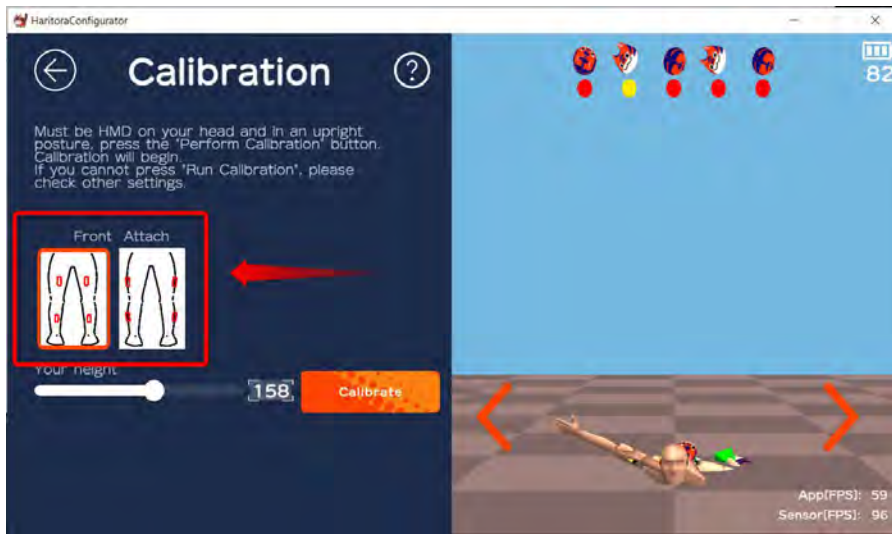
[What to do if the COM port does not appear in the list.](#)

## 5.2.6. Setting of subunit mounting position and height

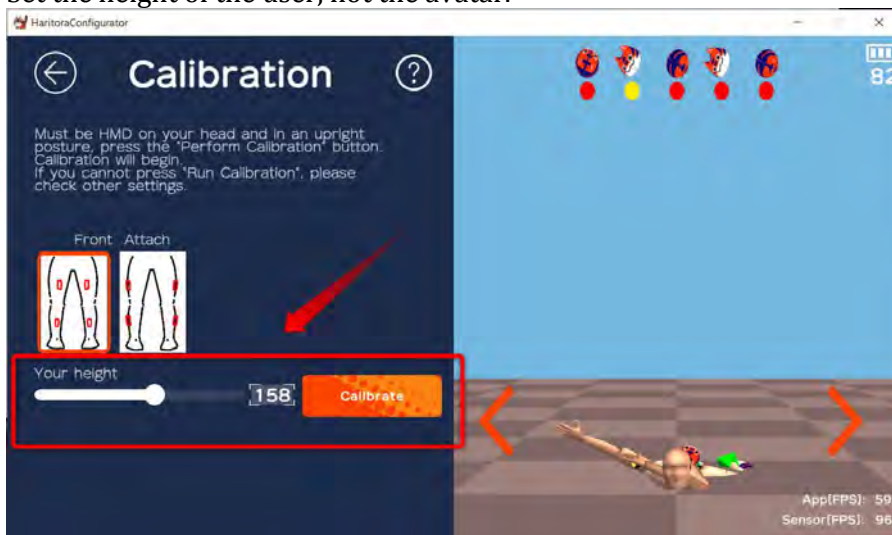
- i. Select Calibration.



- ii. Select the mounting location for the subunit. Be sure to select the same position as you are installing it, as it will not work correctly if it is wrong.



- iii. **Setting the height.**  
Set the height of the user, not the avatar.



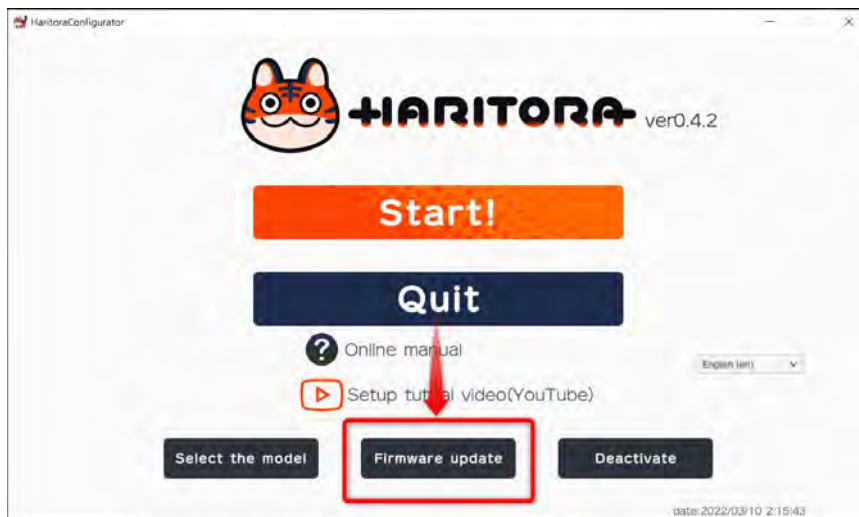
Refer to "[Calibration](#)" and later for the calibration procedure.

### 5.2.7. Updating the firmware for the main unit.

Firmware is software that is built into the main unit. It should be updated at the same time that the Haritora Configurator is updated.

Always use the latest firmware version. The operation may become unstable if the Haritora Configurator versions do not match.

- i. Turn on HaritoraX, make sure it is paired with Windows via Bluetooth, then select "Firmware update" on the Start screen.



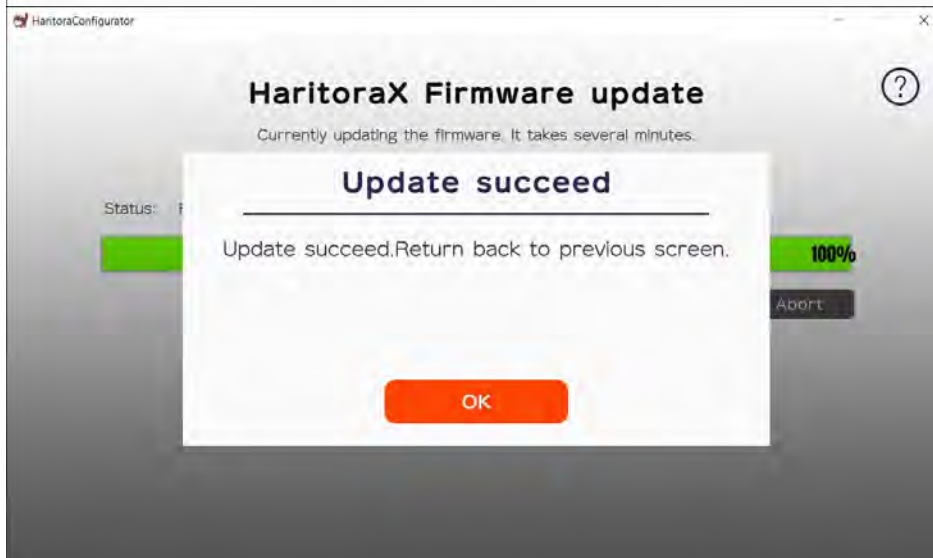
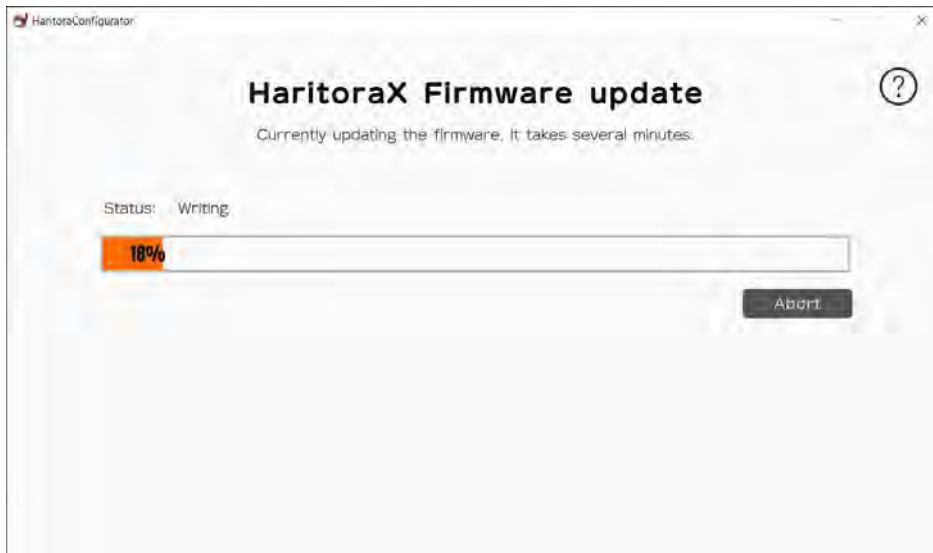
- ii. The screen below will then appear. If there are multiple connected COM ports, a box for selecting the COM port will be displayed. Select the correct port to start.  
\*Please refer to the following page for how to determine the COM port.

### [How to check COM port](#)

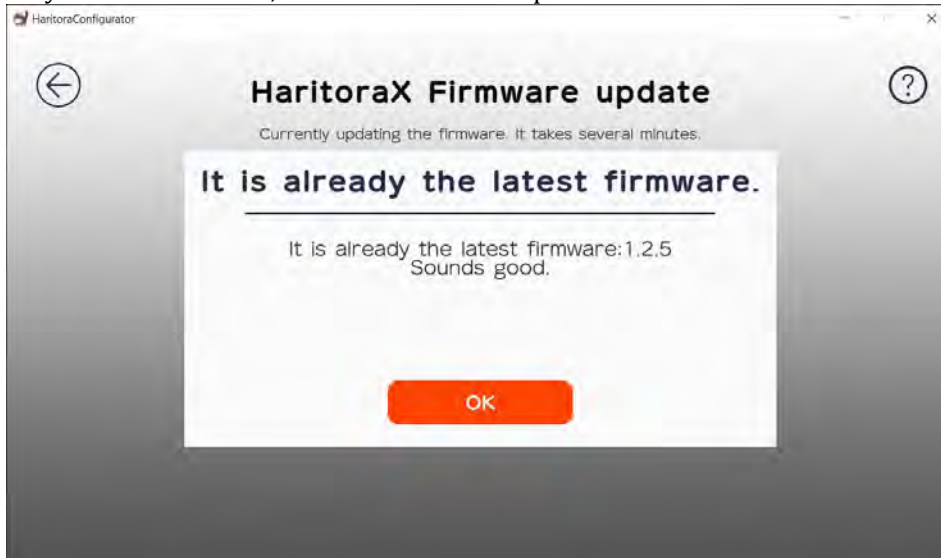
Select "Update" to update the firmware. After selecting, the 3 LEDs on the main unit will light up, the gauge will be displayed and the update will start. When the gauge reaches 100%, the update is complete.

**\*Do not force close the Haritora Configurator or turn off the power to the main unit and PC while updating the firmware.**





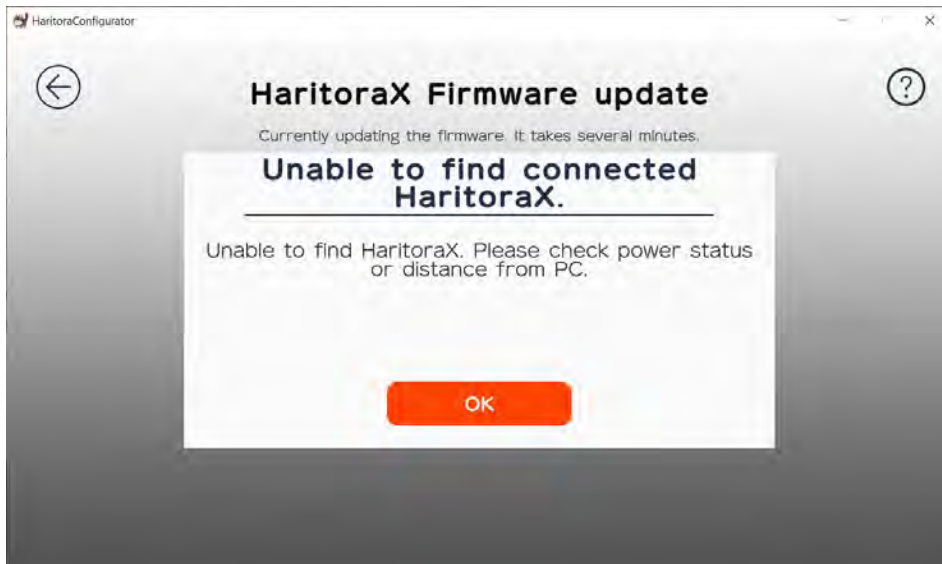
- If you see this screen, the firmware is not up to date.



- If you see this screen,the Bluetooth connection is not working properly or the COM port may be incorrect.

Check the Bluetooth connection, restart the Haritora Configurator and pair them again.

\*If you do not receive a message, the connection may be incorrect.



## 6. Calibration

Calibration is an action to reset the correct azimuth with the direction of the device, that is required for IMU full body tracking devices. Calibrations using the Haritora Configurator should be done frequently (once every ten minutes or so) while using a VR application.

\*Frequency varies by connection.

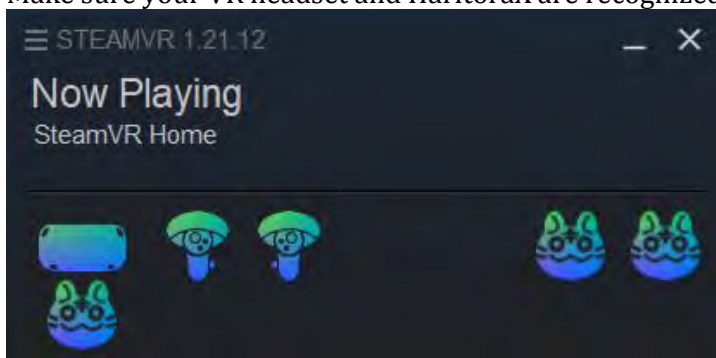
Video: <https://youtu.be/SnGAhequad8>

### 6.1. Preparing for Calibration

- i. Launch SteamVR from the top right of the Steam window or from the library.

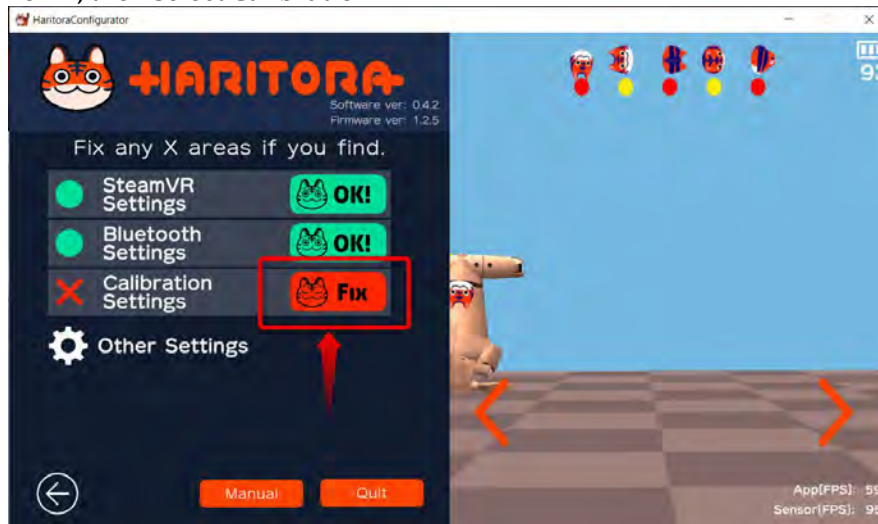


- ii. Make sure your VR headset and HaritoraX are recognized in the SteamVR window.





- iii. Start the Haritora Configurator and select Start. Make sure all items except Calibration are set to "OK!", then select Calibration.



## 6.2. Calibrate

**\*Attach a HaritoraX and a VR headset and perform within a VR application such as VRChat. Note that it does not work when the Steam menu or Oculus menu is displayed in the VR view.**

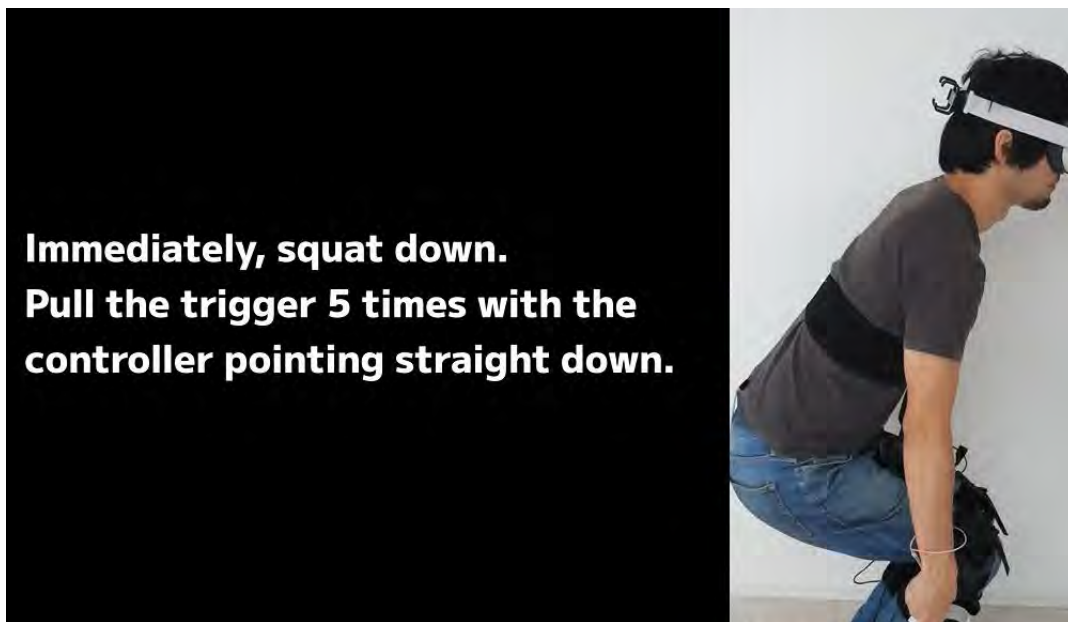
Calibration is done by performing the following two operations consecutively.

- i. With feet together and legs straight, hold the left and right controls straight down and press the trigger with the index finger on one control 5 ~ 7 times in a row. If successful, you will hear a sound effect.
- \* If it does not respond when you press both triggers at the same time, try pressing one side first, and then the other side in quick succession.
  - \* If you don't hear a sound, adjust the speed by which you press the trigger.

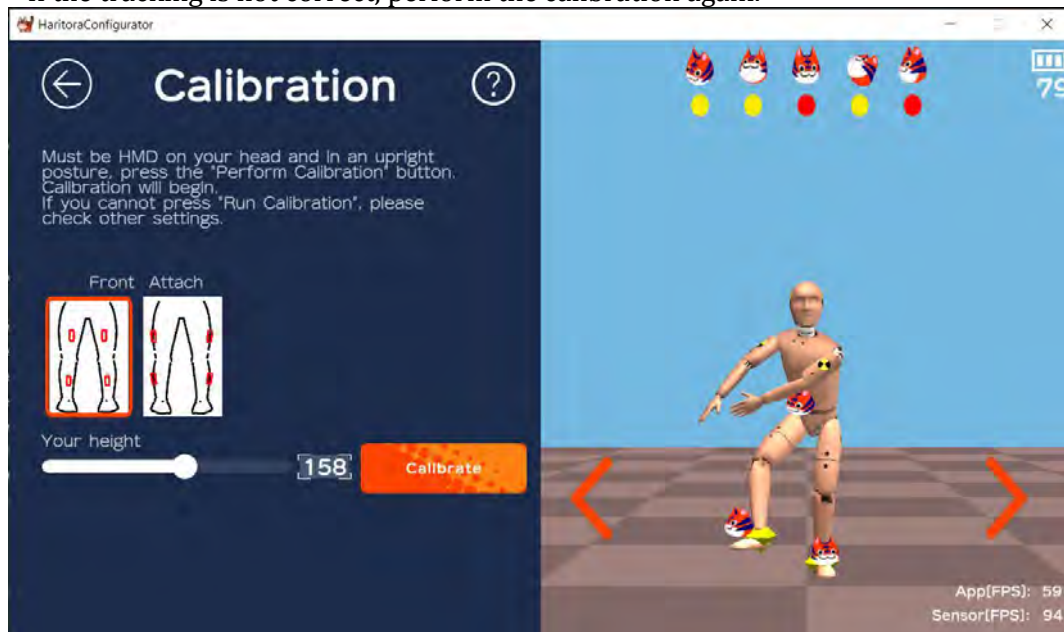


- ii. Immediately bend your upper body and keep your knees together, then press the trigger with the index finger on one of the controls 5 ~ 7 times in a row. Bending your body by about 30 ~ 40 cm is sufficient. If successful, you will hear a different sound than the previous one.
- \* Calibration in an upright position can cause you to become bow legged or cause your knees to become crossed when doing such things as sitting in a chair. Make sure that you perform two calibrations.





- iii. In the Haritora Configurator, check that the dummy model reflects your actual movement.  
\* If the tracking is not correct, perform the calibration again.



### 6.3. Calibrate on the desktop screen in VR space

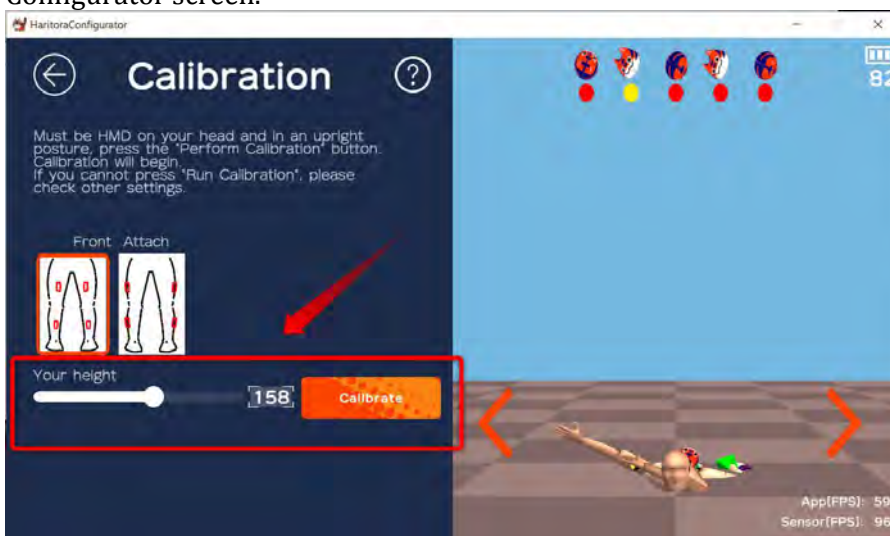
In some situations, calibration with the controller (pressing the trigger 5 times continually) may not be possible. In that case, use the method below to display the desktop in the VR space and perform the calibration by tapping the button on the screen.

\*Here's how to use the Oculus Quest 2 controller. If you are using a different controller, check the location of the menu button in the controller's operation manual.

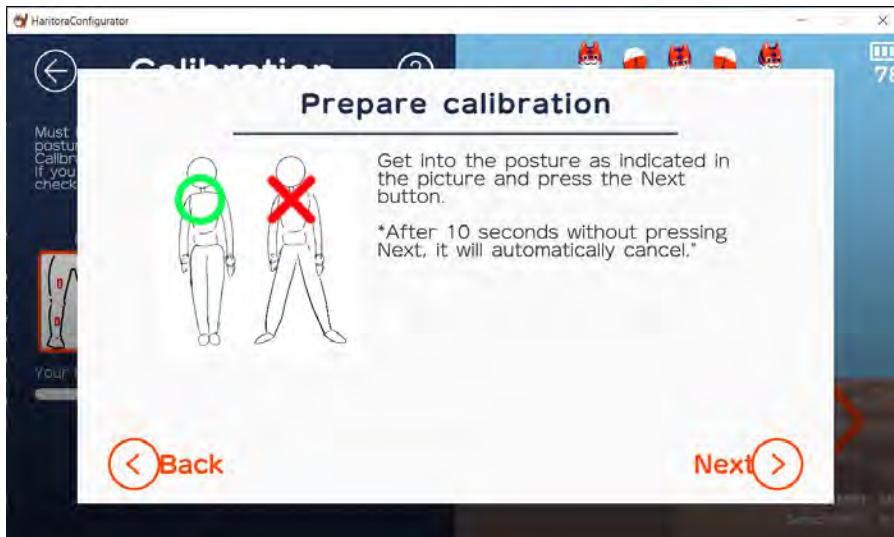
- i. Press the "Menu button" or "Oculus button" on the controller.
- ii. If you press the "Menu button", select "Desktop" from the Steam menu. If you press the "Oculus button", select "Desktop" from the Oculus menu.



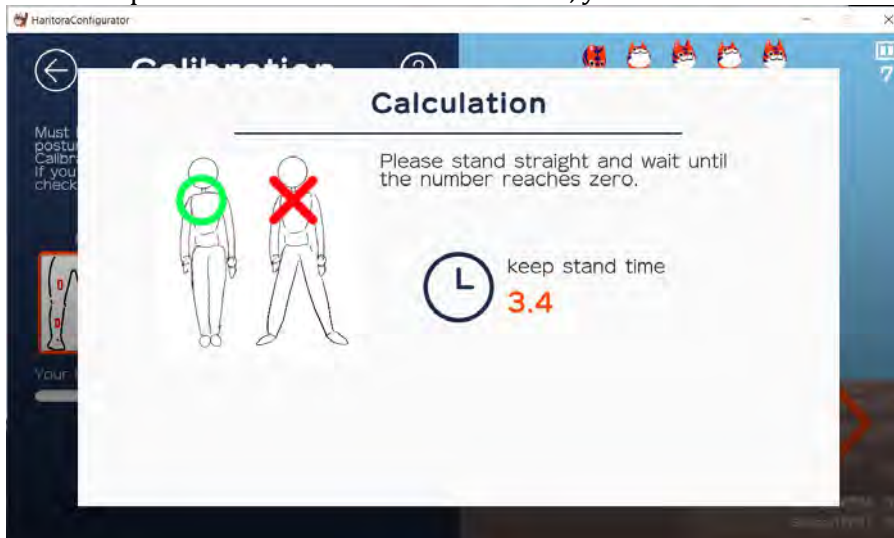
- iii. When the desktop screen is displayed in the VR, select "Perform calibration" on the Haritora Configurator screen.



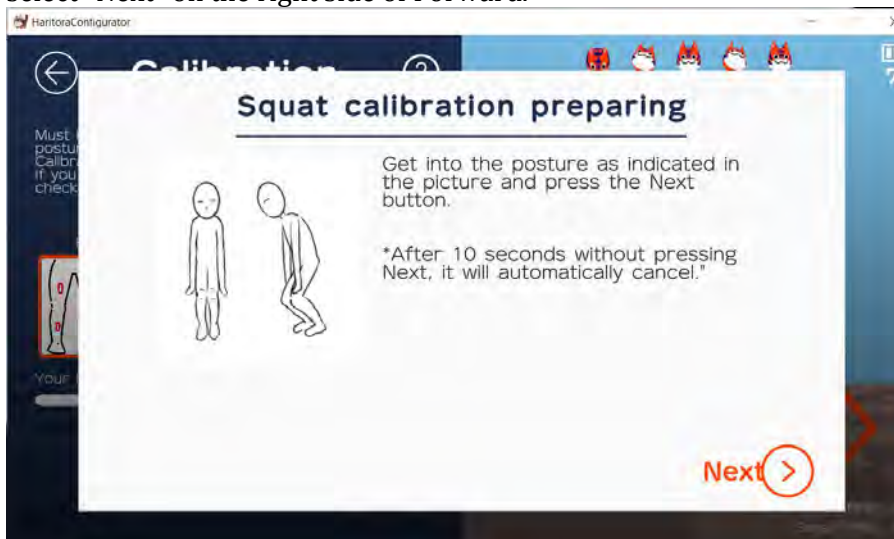
- iv. Select "OK" to start calibration. With your feet together and your arms straight, select "Next".



- v. Hold that position for 5 seconds. If successful, you will hear a sound.

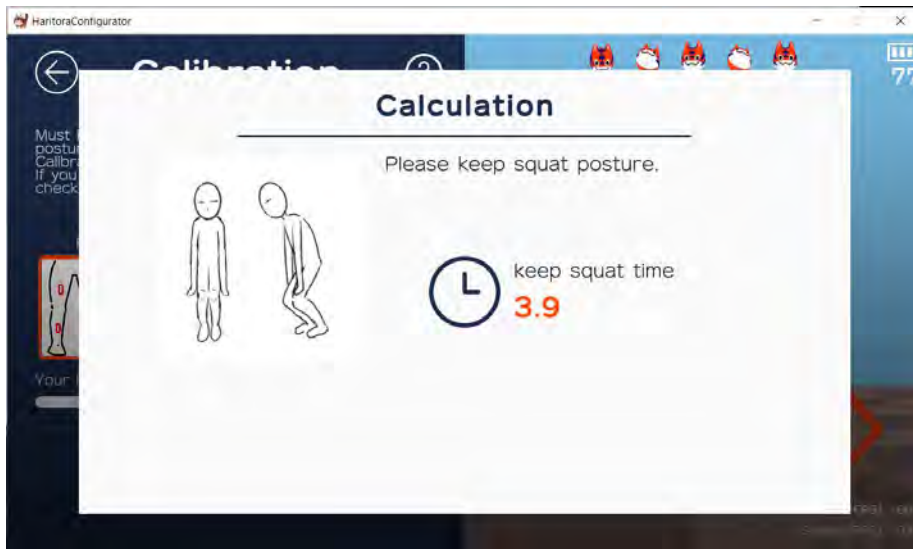


- vi. Curl your upper body, keep your knees together and bend your hips down about 30 ~ 40 cm, then select "Next" on the right side of Forward.



- vii. Hold the position for 5 seconds. If the calibration is successful, a second sound will play and the calibration is complete.





## 7. Use in a VR application

### 7.1. VRChat

#### 7.1.1. Launch VRChat.

1. Download and install "VRChat" from the Steam "Store".

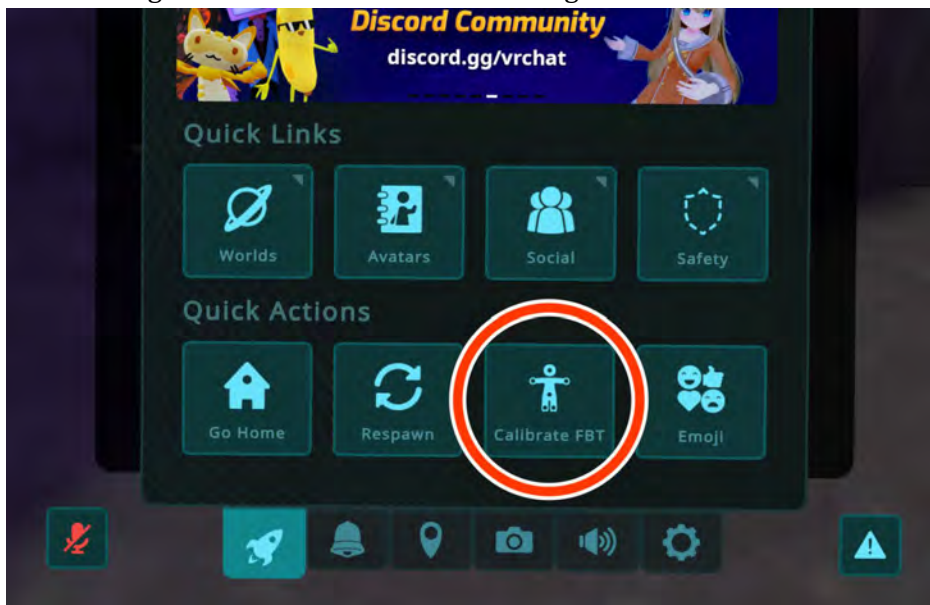


2. With the HaritoraX attached and the connection to the Haritora Configurator completed, start "VRChat".

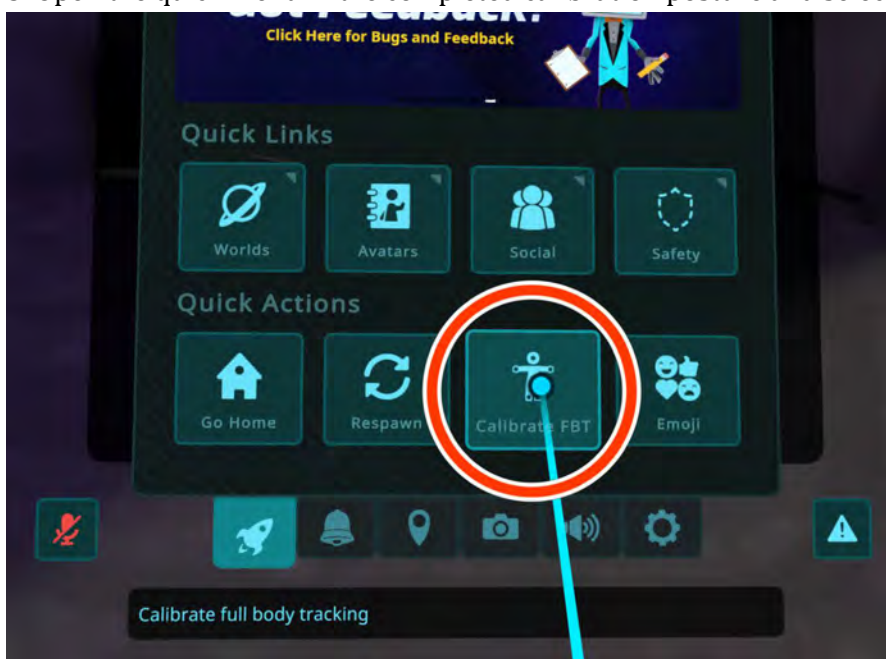


## 1.1. Calibrate within VRChat

1. Open the Quick Menu and make sure that "Calibrate FBT" is displayed in the image position.  
\* If "Sit / Stand" is displayed, HaritoraX may not be properly recognized by SteamVR, please check if the settings in SteamVR and Haritora Configurator are correct and restart VRChat.



2. Move to the front of the mirror to [calibrate](#) it.  
\* VRChat allows you to use quick calibration (set of 5 triggers standing up and 5 triggers squatting down)
3. Open the quick menu in the completed calibration posture and select "Calibrate FBT".



4. Calibrate the avatar. Position the white ball so that it is around the avatar's waist and the instep of the left and right foot, open the legs slightly, and press the index finger triggers on the left and right controllers simultaneously.  
If you close your legs tightly, the avatar's legs may stick together.



### [ Experimental function ]

- Ankle movement detection function

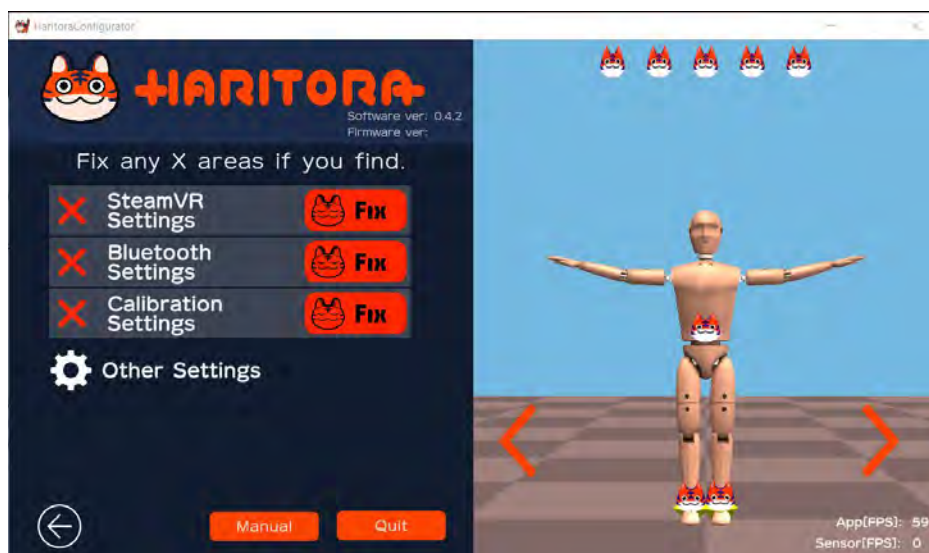
This is an experimental feature that uses a distance sensor to reflect the movement of the ankle.

[How to set the ankle motion detection function.](#)

## 8. Haritora Configurator Screen Descriptions

### 8.1. Haritora Configurator Main Screen

From the Haritora Configurator start screen, press Start to change to the following screen. This is called the main screen. The main screen provides links to various settings and numerical values for each status.



On the right is a dummy representing the whole body motion calculated by Haritora Configurator. This dummy's posture moves the avatar on the VR application.

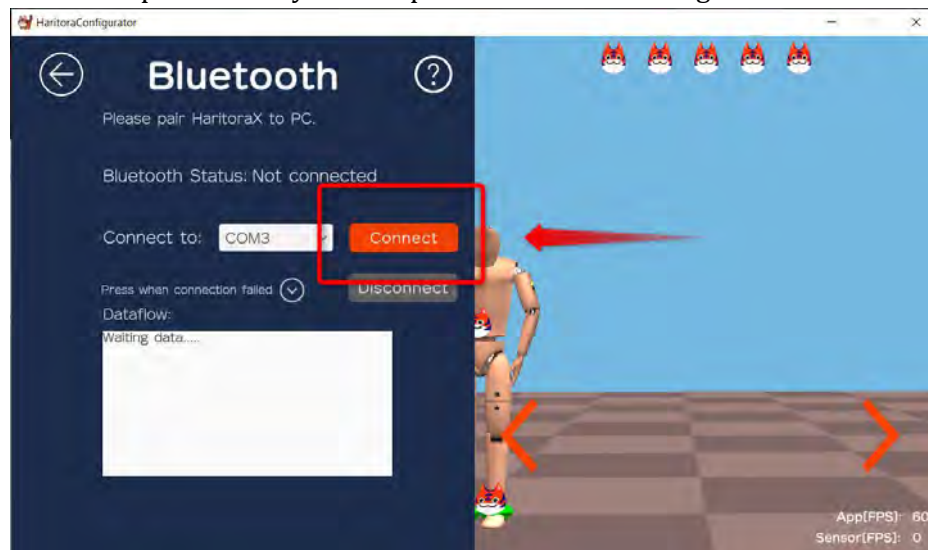


When all the buttons on the main screen are green "OK" or when only the calibration is orange, all the settings are done without any problem. Calibration can also be performed from within the VR application by referring to the "[Calibration](#)".

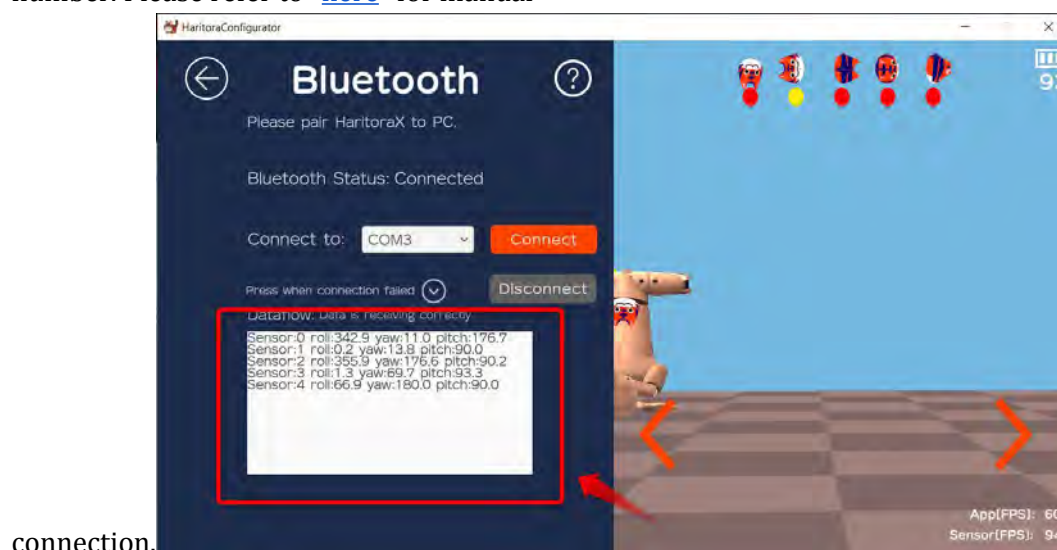
If there are other items that are orange "Fix", the settings are not working properly. Press the Fix button of the corresponding item to complete the setting of each part.

## 8.2. Bluetooth setting screen

The Bluetooth screen is for Bluetooth connection with HaritoraX. Be sure to verify that HaritoraX is Bluetooth paired with your computer before connecting to Bluetooth.

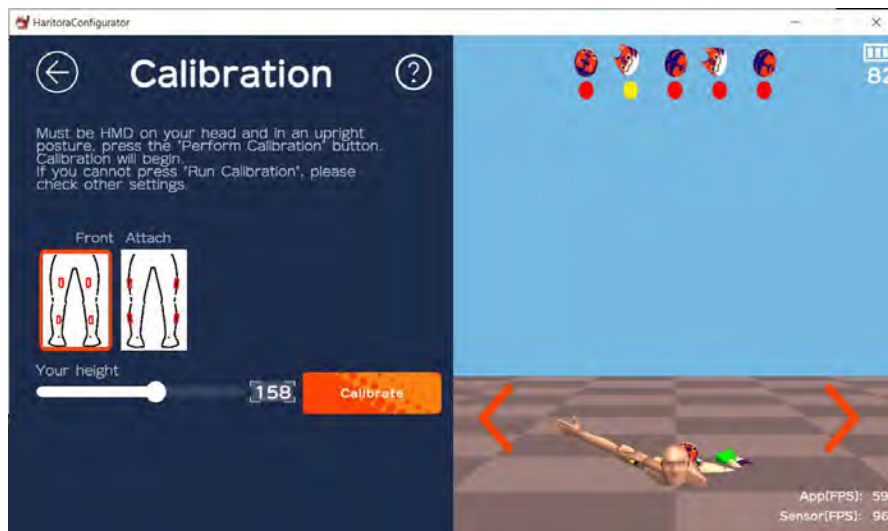


Basically, you do not need to select or change the port number. Just press the "Connect" button and it will connect in a normal environment. If you cannot connect successfully, try changing the COM port number. Please refer to "[here](#)" for manual



connection.

## 8.3. Calibration screen



### 8.3.1. Height setting

This menu is used to set the height of the player. Set the height of the player, not the avatar. It is located from the ground to the head, so if you are wearing high shoes (platform shoes, etc.), please set the actual height and the thickness of the shoes.

### 8.3.2. Installation position setting

Sub unit of this product can be attached to either side or front of the foot. When it is attached to the side, it is easier to sit on your legs or cross-legged, and when it is attached to the front side, it is easier to sit sideways.

Note that it is not possible to attach only a part of the sub unit sensor horizontally or partially in front.

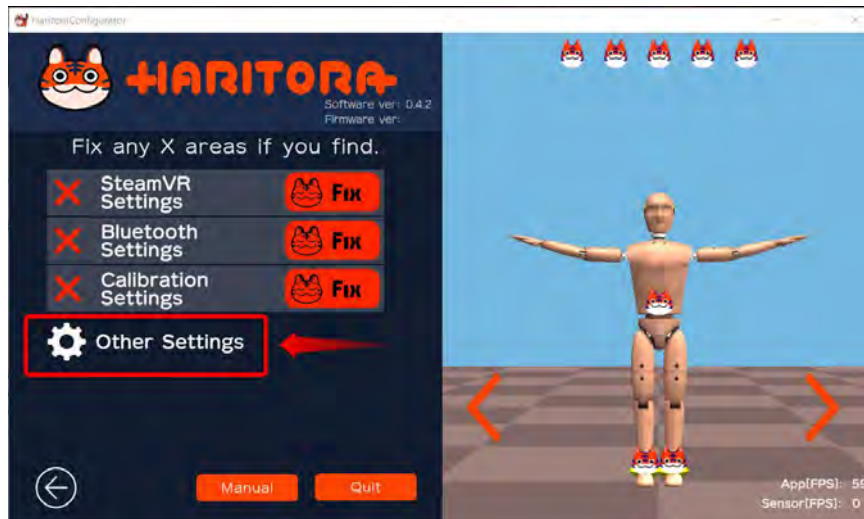
For this mounting position setting, this menu selects the correct mounting position. Be sure to specify the actual mounting location. If the wrong mounting position is used, it will not operate properly.

### 8.3.3. Calibration button

Typically, you use the controller's trigger five-times-continuous input calibration (Following is Quick Calibration), but some non-VR applications may not support quick calibration. In this case, use this button to perform calibration. For details, see "Calibrating from the Display".

For calibration in VR applications such as VRChat, we recommend quick calibration (see "Calibrate"), which is easy and quick. There is no difference in performance between these calibrations.

## 8.4. Other settings screen



### 8.4.1. Change Mode

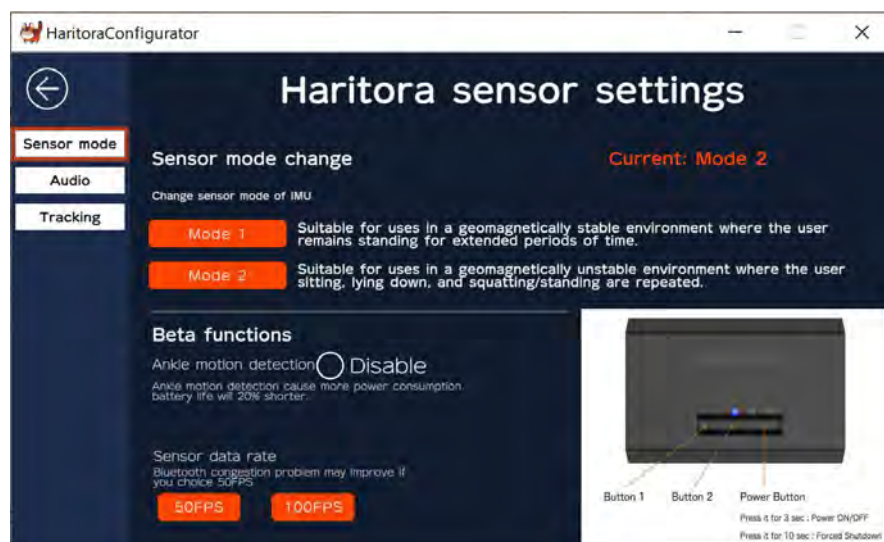
You can select the operating mode of the sensor. There are two modes to choose from, depending on your environment. After changing the mode, perform calibration again. It cannot be changed without Bluetooth connection with HaritoraX.

- Mode 1

This mode is suitable for use while standing in an environment with a stable geomagnetic field.

- Mode 2

Factory settings. This mode is suitable for use in environments where geomagnetism is unstable, or in situations where movements such as sitting, lying down, or squatting and standing are repeated.



### 8.4.2. SE volume

You can adjust the volume of sound effects that sound when calibration is completed.



### 8.4.3. Foot filling correction

It is a function to correct the ankle not to be buried in the ground when squatting. It is recommended to use it in the ON state to prevent the foot from being buried in the ground, but the Space Drag function (formerly called Play space mover) of OVR Advanced Settings restricts the Space Drag operation in the direction of equal height to be buried in the ground.

\*They don't get buried, they crawl to the ground.



Choose according to your Space Drag usage.

## 9. Sensor reset ( Only when there is a problem )

HaritoraX constantly corrects the sensor during use. However, depending on the operation environment, there may be a large discrepancy in direction, and it may take about 20 minutes for the direction to stabilize after turning on the power. Only in this situation, you can perform the sensor reset operation as follows.

**This function is not to be done daily. This will twist your hips and feet in an unintended direction for 30 minutes to 1 hour. The situation may also become worse than before performing the reset. After implementing the reset, the Avatar may continue to twist for up to an hour. Only perform the reset if there are unavoidable problems.**

- i. Place all the units on the floor with the cables connected to stabilize them.
- ii. With the main unit (From now on, the AIT library) powered off, press button 2 and the power button (for the location of the button, refer to "[Main Unit](#)") at the same time to enter the sensor reset mode. When the blue and green LEDs both light up, immediately release the buttons and do not move the main unit.
- iii. The angular velocity sensor will take a few seconds to reset, and the blue and green LEDs will start flashing alternately as shown in the video.  
Video: <https://youtu.be/xD-jOP3zeTM>

\*Since the angular velocity sensor cannot be reset when there is even a small amount of shaking, such as when it is being worn, be sure to take it off and be sure to operate it without shaking it.

- iv. Next, pick up all the units and cables with both hands and move them in a horizontal figure-eight motion in the air, making sure to twist your wrists to point the unit at each angle as you do so.



## 10. Disclaimer and Regulatory Information

### 10.1 Regarding Bluetooth®

The radio wave range of this product is about 11 yards in a horizontal line of sight with no obstacles. The actual operating distance may be shorter than this depending on obstacles, installation environment, computer performance, etc.

#### 10.1.1 Environmental disturbances

- A) Product performance may be affected by:
  - i. Bluetooth® devices such as cell phones, PHS phones, smartphones, or tablets.
  - ii. DC powered bells or motors.
  - iii. Home appliances such as microwave ovens, computers, office automation equipment, wireless LAN-compatible devices, or other devices that use radio waves in the 2.4 GHz band.
  - iv. Microwave medical treatment devices.
- B) A partition or other barrier blocking reception to the computer connected to this product.
- C) Surrounding metal furniture or cabinets.
- D) High magnetic noise.

The product will be particularly affected if large metal objects such as metal bunk beds, large refrigerators, safes, or large noise-producing equipment such as desktop computers, audio equipment, or large TVs are located within 1 yard of the edge of the VR play space.

#### 10.1.2 Disclaimers

- i. For use in Japan and North America only.
- ii. It is not guaranteed that all Bluetooth devices can communicate with HaritoraX.
- iii. Bluetooth® compatible devices for wireless communication must be certified by Bluetooth SIG, Inc. Even if the device conforms to the standard it may not be able to connect depending on the specifications and settings of the device, including the operation method. Connection and operation are not guaranteed.
- iv. Although the product supports security functions in compliance with the Bluetooth standard, the security may not be sufficient depending on the usage environment and settings. Be careful when using wireless communication.
- v. Please note that we cannot be held responsible for any data or information leaks that occur during wireless communication.

## 10.2 Usage

### 10.2.1 Use and storage location

- i. Do not leave the product in direct sunlight or a high-temperature place such as in front of a heater.

- ii. Do not place the product in a dusty area.
- iii. Do not place the product in a place subject to high vibration.
- iv. Do not use or place in a humid area such as a bathroom.

### 10.2.2 Regarding handling

- i. Do not drop, step on, or hit the product, as it may cause malfunction.
- ii. Do not wash with detergent or a cleaning agent.

### 10.3 About put on

- i. When putting on this product, do not hold or swing the cable while it is connected.
- ii. Do not apply any external force when putting on this product.

### 10.4 Care and Maintenance

- i. Do not machine wash. Wipe the unit with a soft, dry cloth. The special suit should be hand-washed, shaped immediately, and dried in the shade. Do not soak, bleach, or scrub.
- ii. If the unit is very dirty, first wipe off the dirt with a slightly damp cloth, then wipe with a dry cloth.
- iii. Do not allow contact with solvents such as paint thinner, alcohol, benzene, kitchen or cloth detergent. Exposure to chemicals may change the quality of the unit or cause the paint to peel off.
- iv. When washing by hand with other clothes, fasten the hook-and-loop fastener and place it in a delicate laundry bag. The hook-and-loop fastener may stick to other clothes and damage them.
- v. The distance sensor in the below-knee subunit will not operate properly if dust has accumulated on its window. Use a soft brush to clean it periodically.

### 10.5 Disposal

The main unit contains a lithium-ion battery. Dispose of this product according to local environmental regulations. Do not dispose of it along with normal household waste.

### 10.6 Copyright, etc.

- i. The Bluetooth® wordmark and logo are registered trademarks owned by Bluetooth SIG, Inc. Shiftall Co., Ltd. uses these marks under license.
- ii. Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries.
- iii. Other names, company names and product names mentioned in the text are trademarks or registered trademarks of their respective owners.
- iv. Authentication information can be found on the sticker located on the back of the main unit.

### 10.7 Specifications

Bluetooth	v4.2 BR/EDR/LE
Battery	Built-in Lithium-ion battery
Socket	USB Type-C
Charging Time	4 hours 30mins. (Power OFF)
Power	About 10 hours.
Size	Main unit 93(W) × 59(H) × 32(D)mm Subunit 40(W) × 74(H) × 30(D)mm
Weight	Main unit About 131g(Excluding cables) Subunit About 39g(Excluding cables)
In the Box	Suit USB cable (Type C) Connection cable
Exterior material	PA66
OS	Windows 10 21H1 or later / SteamVR 1.17 or later



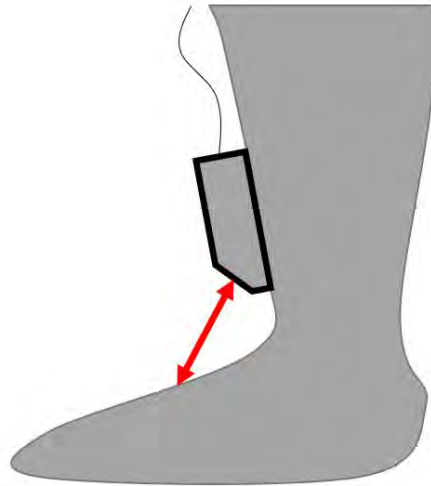
## 11. FAQ

Question	Answer								
How long is the product under warranty?	The warranty period of this product is 1 year from the date of purchase. If you make a reservation purchase, it will be one year from the shipping date of the product.								
I don't know the order of starting each application.	<p><b>For VRChat</b>            SteamVR → Haritora Configurator → VRChat</p> <p>* If you are using Oculus Quest, launch the Oculus app before SteamVR.</p>								
I use a combination of Quest/Quest2 and Vive/Index controllers, can I coexist with HaritoraX?	<p>Cannot coexist.            If you enable OpenVR-SpaceCalibrator and change the coordinate system, HaritoraX will not work properly.</p> <p>* From Haritora Configurator Ver.0.4.1 / Firmware Ver.1.2.5, coexistence is possible by the adjustment button (experimental function).</p>								
There is no description such as the store name on the warranty card. Is it okay?	<p>If you bought it on Shiftall's website, our company will know the date of purchase, so you don't need to fill out the warranty.</p> <p>If you purchase at a store, etc., you can receive a warranty within the warranty period without entering the store name and date of purchase by showing a document that proves the date of purchase.</p>								
When I take a posture with my legs thrown forward in VRChat, my legs bend.	<p>The player's height setting is fundamental, but in this situation, the height setting within VRChat and the height setting within the Haritora Configurator (located in the Calibration section) can be adjusted so that the legs are fully extended nicely.</p> <p>However, this Hack will not work properly if the 'ankle motion detection' function is turned on.</p> <p>[ The page is in preparation ]            Please refer to this dedicated manual when using this function.</p> <p>Because the length of the avatar's feet (technically, the head and body) is affected, you must readjust the numbers when using avatars with different heads and bodies.</p> <p>[ Reference values ]</p> <table border="1" data-bbox="427 1559 1522 1839"> <tbody> <tr> <td data-bbox="427 1559 999 1646">Avatar</td> <td data-bbox="1000 1559 1522 1646">MERINO chan <a href="https://booth.pm/ja/items/2351859">https://booth.pm/ja/items/2351859</a></td> </tr> <tr> <td data-bbox="427 1648 999 1711">Player's height</td> <td data-bbox="1000 1648 1522 1711">174 cm</td> </tr> <tr> <td data-bbox="427 1713 999 1776">VRChat height setting</td> <td data-bbox="1000 1713 1522 1776">162</td> </tr> <tr> <td data-bbox="427 1778 999 1839">Configurator Height Setting</td> <td data-bbox="1000 1778 1522 1839">150</td> </tr> </tbody> </table> <p>If you sit with your feet thrown out in the above setting, your legs will stretch out neatly like this.</p>	Avatar	MERINO chan <a href="https://booth.pm/ja/items/2351859">https://booth.pm/ja/items/2351859</a>	Player's height	174 cm	VRChat height setting	162	Configurator Height Setting	150
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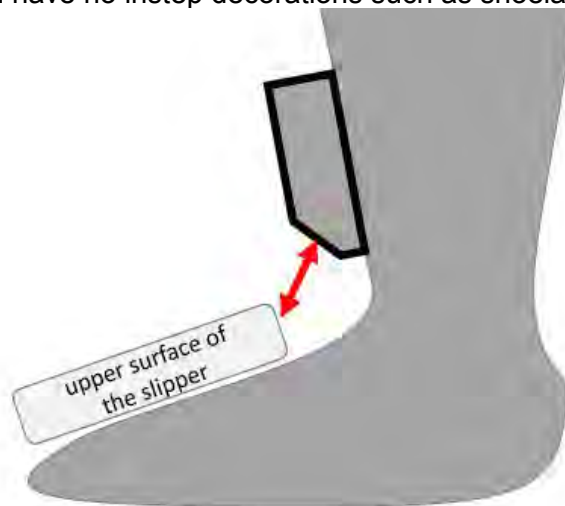


Ankle motion detection function is unstable.

The ankle motion function measures the movement of the ankle by sending a laser beam from the lower part of the below-knee unit to the instep and measuring the distance to the instep.

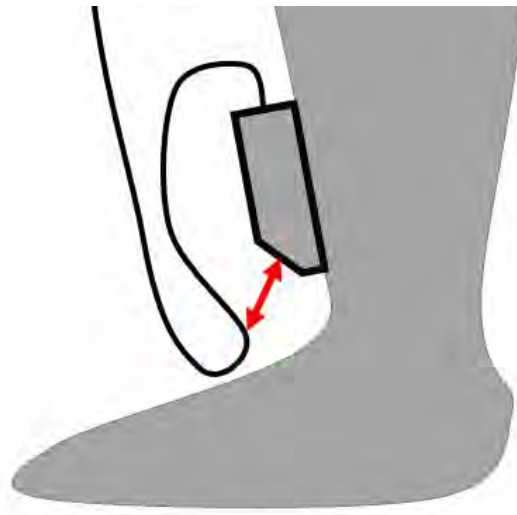


If moving objects such as shoelaces and slippers are attached to the instep, it will malfunction. If you want to wear shoes, please use shoes that fit your feet perfectly and have no instep decorations such as shoelaces.



Interference of slippers

Also, as shown in the figure, there are many cases where the connection cable hangs down and blocks the distance sensor. Use the short fastener provided with the product to adjust the length of the cable so that it does not interfere with the product.



Connection Cable Interference

## 11.1. Troubleshooting

Status	Causes and Responses
Red LED does not light during charging	<ul style="list-style-type: none"> <li>• Is the USB charging cable firmly connected? (→ See "<a href="#">Charging</a>")</li> <li>• Charge the battery at room temperature between 10 °C and 35 °C.</li> <li>• If the battery is fully charged, the red LED turns off.</li> </ul>
Take time to charge	<ul style="list-style-type: none"> <li>• Is the USB charging cable firmly connected? (→ See "<a href="#">Charging</a>")</li> <li>• Charge the battery at room temperature between 10 °C and 35 °C.</li> <li>• Use a USB AC adapter with a power supply capacity of 5 V/1A or more.</li> </ul>
The operating time has become shorter	<ul style="list-style-type: none"> <li>• The internal battery may be worn out.</li> </ul>
The power does not turn on.	<ul style="list-style-type: none"> <li>• The battery may be empty. Connect the USB charging cable, and with the red LED lit and charging started, press the power button for about 3 seconds.</li> </ul>
No Bluetooth connection	<ul style="list-style-type: none"> <li>• Delete the machine registration information from the computer and register again.</li> <li>• Go to the Windows menu - Settings - Devices, select the registered HaritoraX from Bluetooth and other devices, and delete the device. Then try the Bluetooth connection again. (→ <a href="#">Set up Bluetooth (Windows)</a>)</li> </ul>



	<ul style="list-style-type: none"> <li>If this does not solve the problem, refer to "<a href="#">What to do if you can't get a Bluetooth connection?</a>" for troubleshooting.</li> </ul>
All three LEDs blink simultaneously	This error occurs when the connection between the units is incorrect. Check the connection again referring to "Check the connection direction of each unit " <a href="#">HaritoraX official online manual</a> ". Subunits are often misoriented up or down, or the below-knee unit is misaligned with the above-knee unit.
Bluetooth connection is choppy	If the Bluetooth USB dongle is too close to the computer, the Bluetooth connection may be easily broken depending on the environment. Use the following USB 2.0 extension cable to keep the Bluetooth USB dongle a certain distance from the computer.
Bluetooth pairing with Windows works, but Bluetooth connection with Haritora Configurator doesn't.	<p>Please try the Bluetooth USB dongle that has been confirmed to work.</p> <p>There have been several reports of problems with HaritoraX connection of unbranded USB Bluetooth adapters (often marked BT 5.0) that claim Bluetooth 5.0 support sold by Amazon and others.</p> <p>On rare occasions, Haritora Configurator may not connect because another application has a COM port. Please stop the resident application and try to connect immediately after restarting Windows.</p> <p><a href="#">Our company Recommended Dongles</a></p>
Multiple COM ports are displayed, and I do not know which one to connect to.	<p>When making a Bluetooth connection with Haritora Configurator, an unnecessary COM port (an empty COM port without a connection) may appear on the COM port to which you are connecting.</p> <p>If more than one COM port appears in the access point list, check and delete the COM port. (→ "<a href="#">Actions to take when multiple COM ports are displayed.</a>")</p>
Power does not turn on after forced shutdown.	Disconnect the USB cable and turn on the power.
The controller trigger does not allow calibration.	<ul style="list-style-type: none"> <li>You can calibrate HaritoraX only within VR applications such as VRChat. Note that calibration cannot be performed when the SteamVR menu or Oculus menu is displayed.</li> <li>Within the VR application: Hold the controller with both hands pointing vertically downward and press the controller trigger 5 ~ 7 times in a row (calibrate).</li> </ul>
Even though I've only used it for a few minutes, my legs and hips rotate more and more in a specific direction.	<p>It is likely to occur when the learning of geomagnetism is insufficient. Please let HaritoraX learn the geomagnetic information by the following operation.</p> <p>Calibrate the magnetometer Put all the units together so that no unit moves independently, turn the main unit on, and lift them up.</p> <p>Then draw a large figure of eight in the air, just like calibrating your smartphone's electronic compass. Do this for about 3 minutes.</p>

This operation can reduce the unintentional rotation (the drift).

This operation does not have to be repeated in the same environment because the calibration data is stored in the non-volatile memory.

If the magnetic environment is changed, repeat this operation to reduce the drift.



\* It is impossible to completely remove the drift due to the characteristics of the magnetometer. And the drifting speed may vary by the environment.

## 12. Contact Information

For other inquiries, please contact the Shiftall Support Desk.

### Shiftall Support Contact Email Address

<https://en.shiftall.net/support>

## 13. FCC CAUTION:

Any Changes or modifications not expressly approved by the party responsible for compliance 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 distance between the equipment and receiver.
- Connect the equipment to 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.

The device has been evaluated to meet general RF exposure requirements. The device can be used in portable exposure

conditions without restriction.

All other devices shall bear the following statement in a conspicuous location on the device:

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.

When the device is so small or for such use that it is impracticable to label it with the statement specified under [paragraph \(a\)](#) of this section in a font that is four-point or larger, and the device does not have a display that can show electronic labeling, then the information required by this paragraph shall be placed in the user manual and must also either be placed on the device packaging or on a removable label attached to the device.

## 14. Haritora Configurator Release Notes

- 2022-10-14 Version 0.5.0
  - Elbow tracking is supported (The elbow tracking extension set required.)
  - Virtual tracker of the knee added.
  - Sound effect volume can be changeable.
  - The "Coexistence correction" function, which corrects the coordinates so that the HaritoraX tracker does not appear in an unintended position when using the "OpenVR Space Calibrator" and HaritoraX together, can now be reset.
  - Added the ability to reset the sensor connection by pressing and holding button 1.  
\*It is possible to reinsert cables that were accidentally connected while in the activated state.
  - Other minor changes.

## 15. HaritoraX Firmware Release Notes

- 2022-10-14 Version 1.4.2
  - Support for the elbow tracking expansion set.
  - Improved operation when misconnected between sensors.
  - Improved ankle motion detection sensor operation to conserve power.
  - Other minor modifications.

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All company names, system names, and product names mentioned in this manual, with the exception of Shiftall and HaritoraX, are registered trademarks or trademarks of their respective companies, and are not the property of our company.

In principle, "TM" and "®" are omitted in the text and figures.