# OSVR | HACKER DEV KIT

## TABLE OF CONTENTS

# 1. PACKAGE CONTENTS / SYSTEM REQUIREMENTS

*PACKAGE CONTENTS*
- Head-Mounted Display (HMD) module with removable IR sensor box for 360° positional tracking
- Belt box module
- HDMI & USB Combo Cable
- IR Positional Tracking Camera
- Camera Stand
- USB Camera Cable
- Split cable for power and IR camera synchronization signal
- Air puffer with removable brush
- Power supply kit
- Important product information guide

*\* May include adapter plugs or power cords for specific regions.*

*MINIMUM SYSTEM REQUIREMENTS*
- 2Ghz Quad Core CPU
- At least 2GB system memory
- 1 x USB 2.0 port
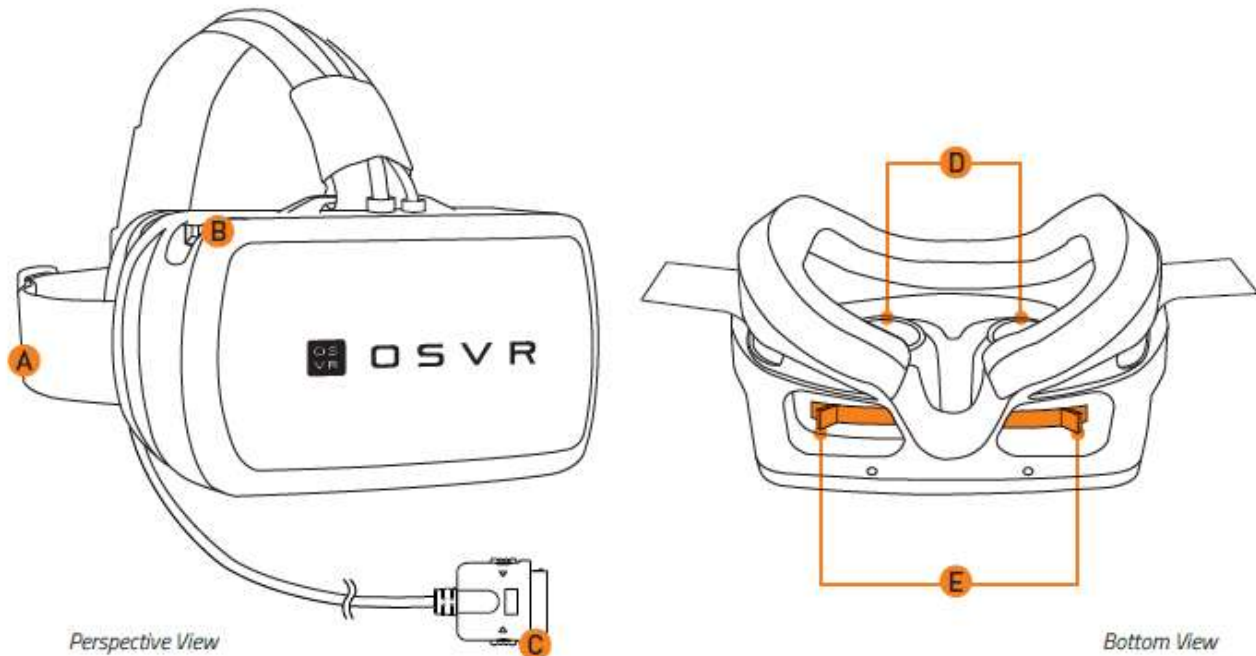- HDMI 1.3 compatible port

*MINIMUM SYSTEM REQUIREMENTS*
Windows® 10 / Windows® 8 / Windows® 7
Internet connection
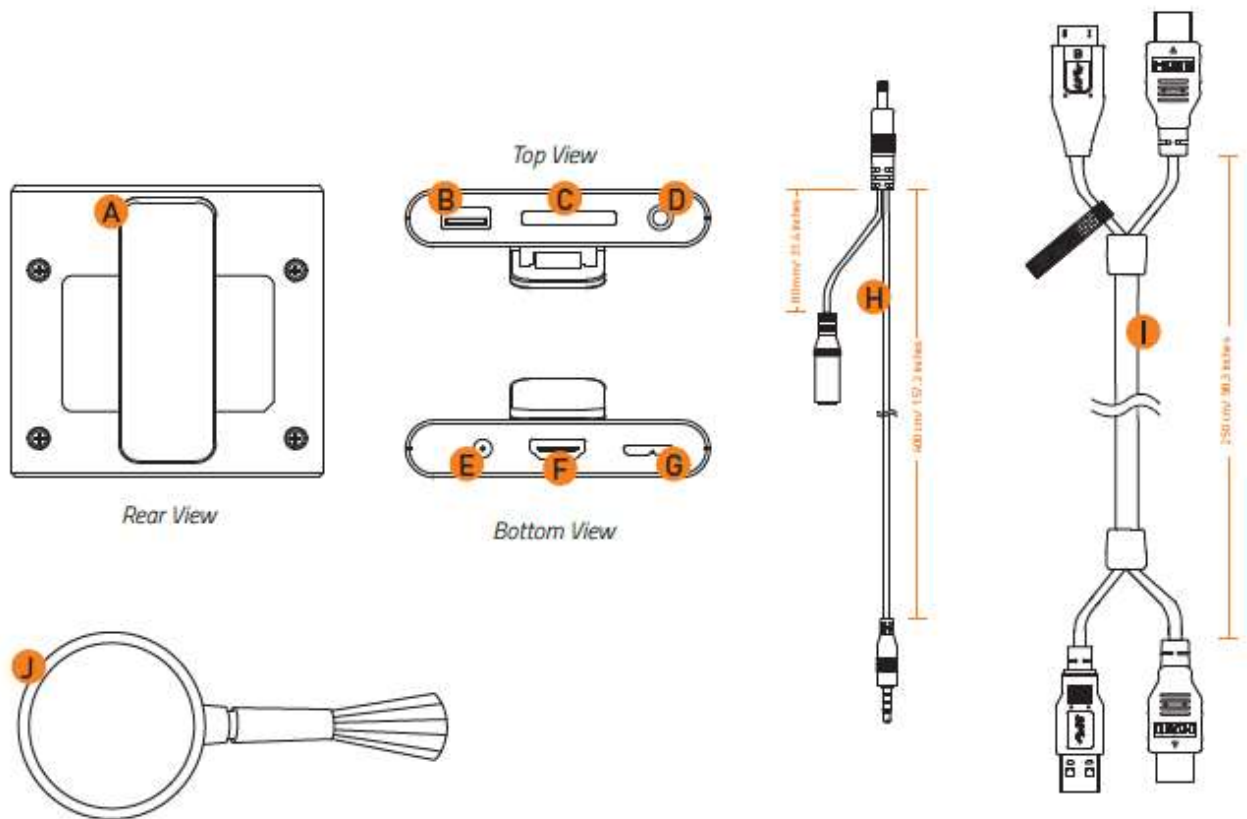100MB of free hard disk space

## 2. DEVICE LAYOUT

### HEAD-MOUNTED DISPLAY MODULE



Perspective View

Bottom View

A. Adjustable head straps
B. External USB 3.0 expansion port
C. Dedicated HMD connector
D. Adjustable optic lenses
E. Independent adjustment levers per each eye

## BELT BOX MODULE



A.  Belt Clip
B.  External USB 3.0 expansion port
C.  Dedicated HMD port
D.  3.5mm audio jack with microphone input
E.  Power Jack
F.  HDMI connector
G.  USB 3.0 connector
H.  Split cable for power and IR camera synchronization signal
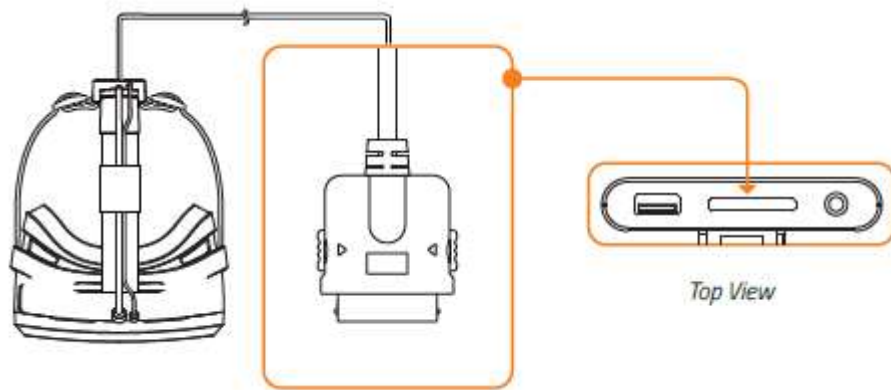I.  HDMI & USB combo cable
J.  Air puffer with removable brush

## IR POSITIONAL TRACKING KIT

Front View

Side View

Bottom View
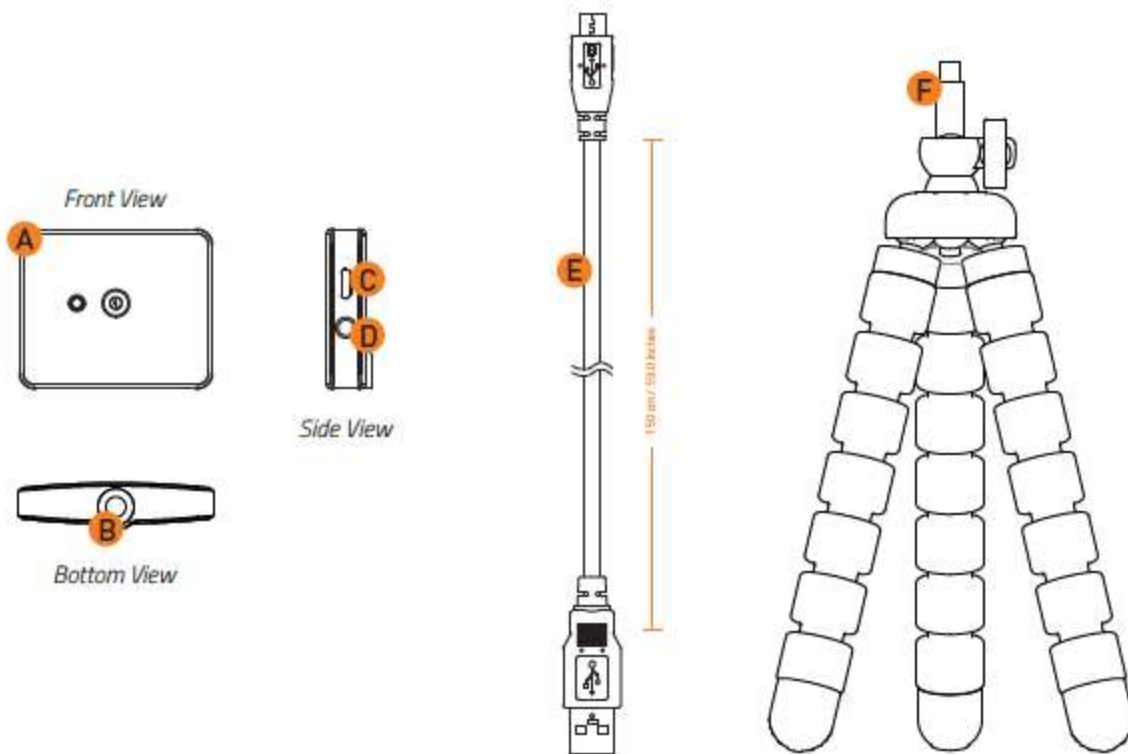
A. IR Positional Tracking camera
B. Mounting hole
C. Micro-USB port
D. 3.5mm split cable port
E. USB camera cable
F. Camera stand

# 3. SETTING UP YOUR VIRTUAL REALITY HEADSET

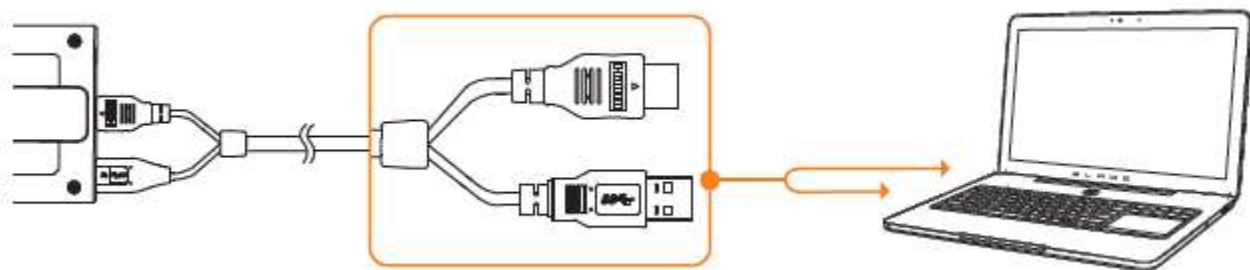1. Connect the dedicated HDMI connector to the Belt Box Module.



Top View

2. Connect the HMD & USB cable to the Belt Box Module.



Bottom View
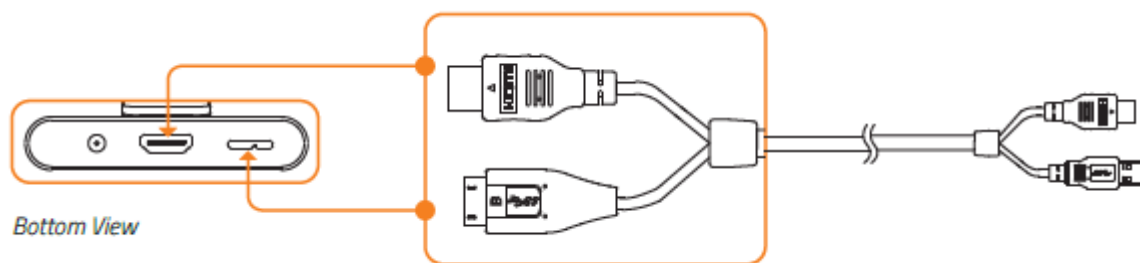
3. Connect the HDMI & USB 3.0 cable to your PC.

4.  Connect the Belt box plug of the Split Cable into the Belt Box Module.



Adapter jack

Belt box plug

Bottom View
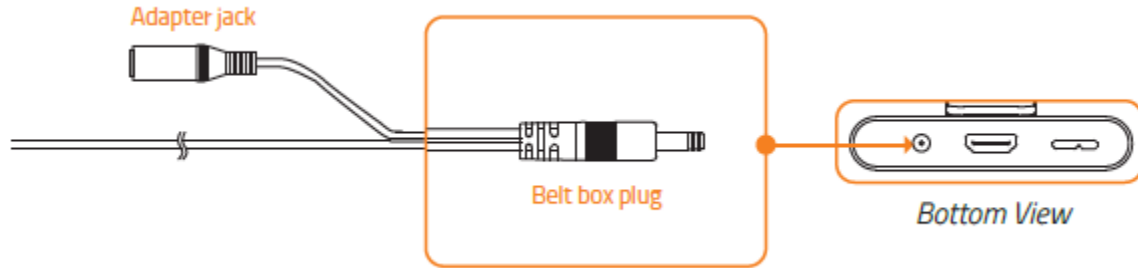
5.  Connect the Adapter jack of the Split Cable into the power adapter's Adapter plug and then plug into a power outlet.



POWER OUTLET

Adapter plug

Adapter jack
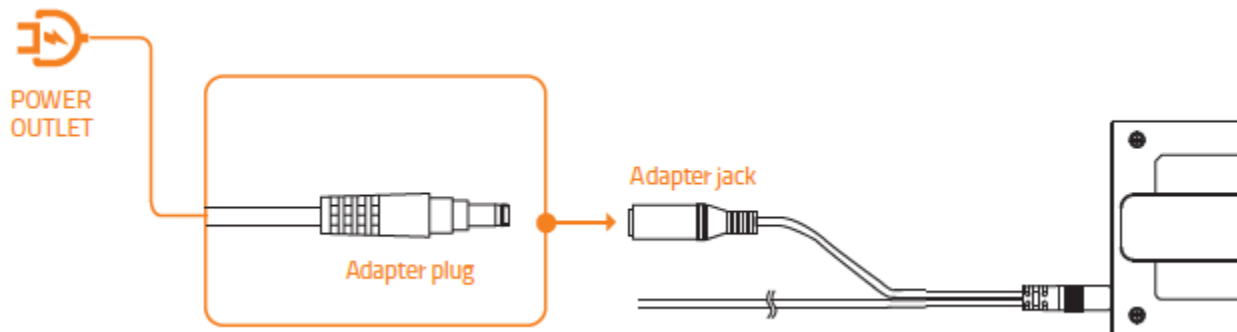
6.  Download and run the OSVR Hacker Development Kit software from osvr.github.io.

7. Secure the belt clip to your clothing and the cables to the cable fastener.

Side View

8. Remove the protective lens caps.

Bottom View
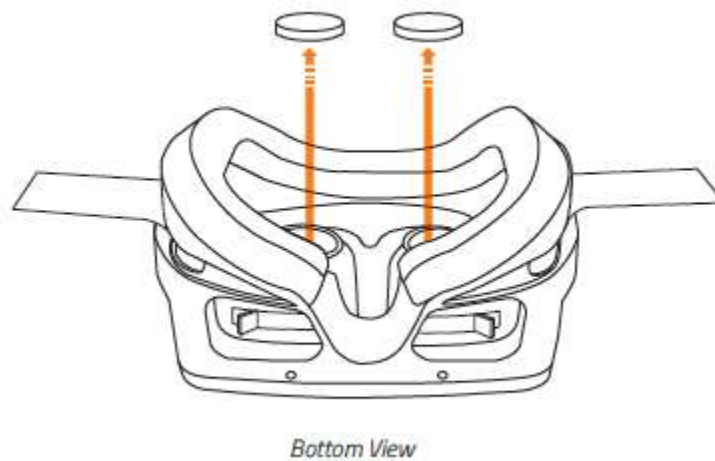
9. Put on the HMD and adjust the straps to a comfortable fit.



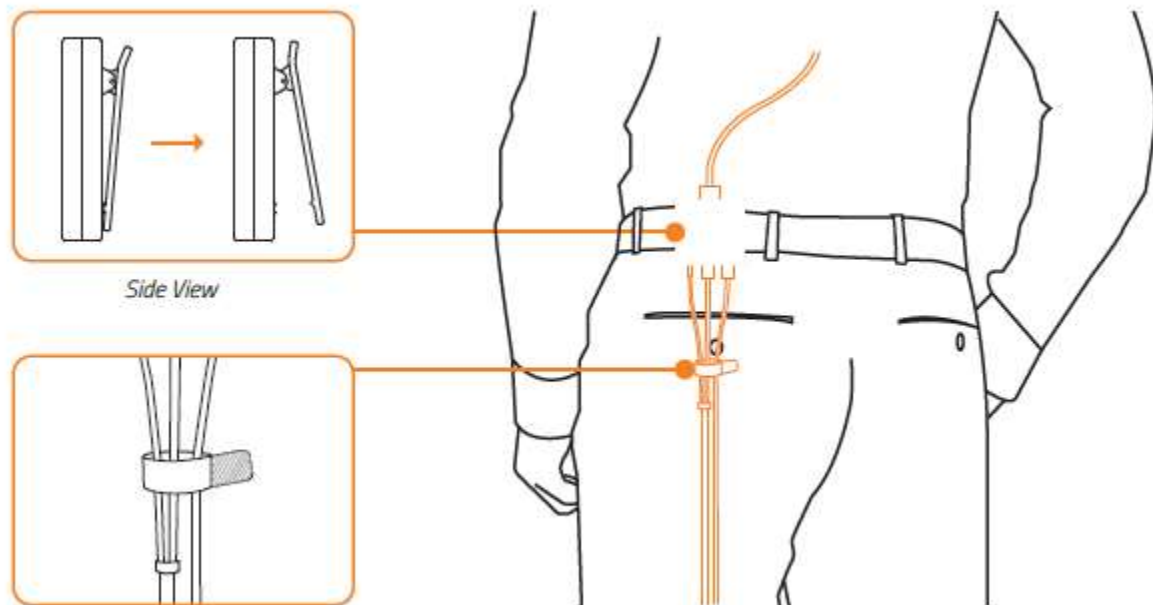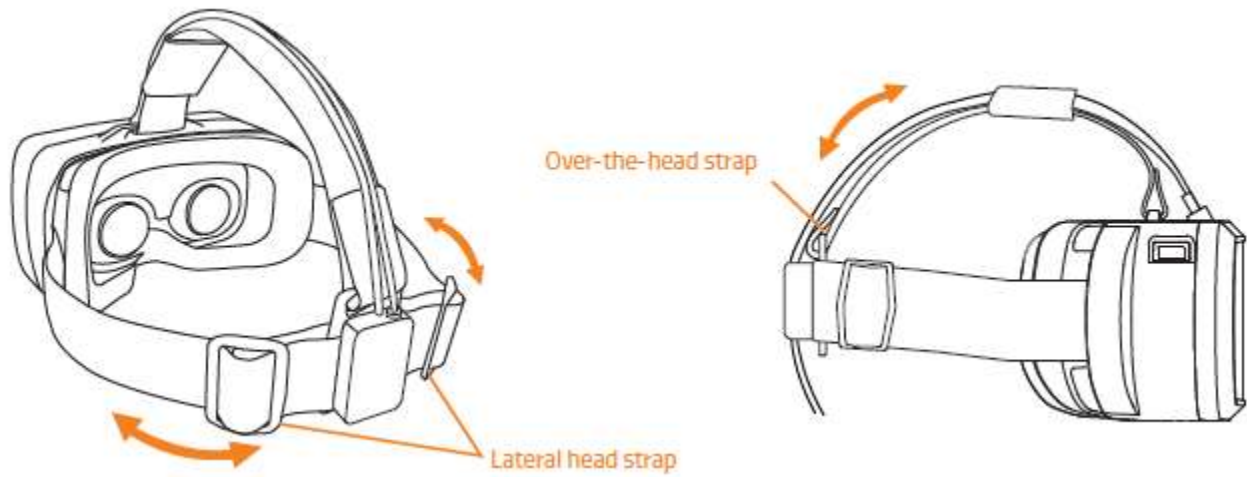*Note: Tightening the over-the-head strap can reduce the pressure of the HMD onto the nose and face. If you feel that you can't breathe properly or that the device is pressing too hard on your cheekbones, the strap is set too long. This will also help redistribute the weight to make the device feel lighter*

10. Adjust the lenses by moving the adjustment levers to match your vision.
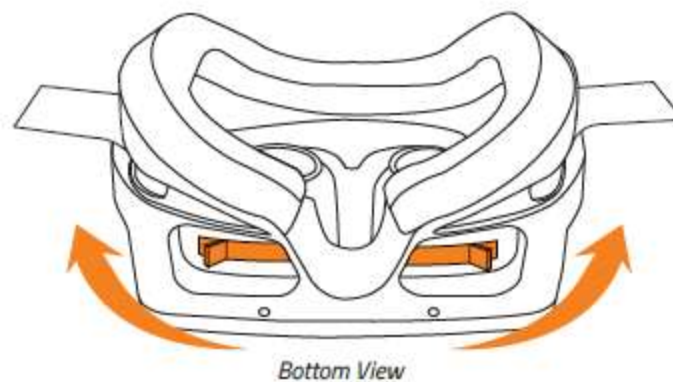


Move the lever inwards / outwards

# 4. SETTING UP YOUR IR POSITIONAL TRACKING CAMERA (OPTIONAL)

1. Mount the Camera stand to the IR Positional Tracking Camera.
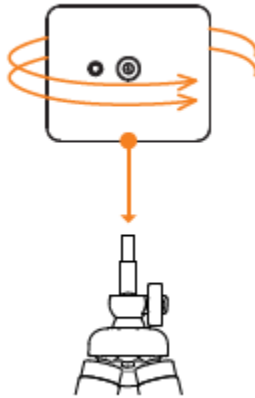
2. Place the camera near your monitor.

*Note: Move mirrors and other reflective objects that are visible to the camera. Ensure that the HMD is visible to the camera for tracking to work properly.*
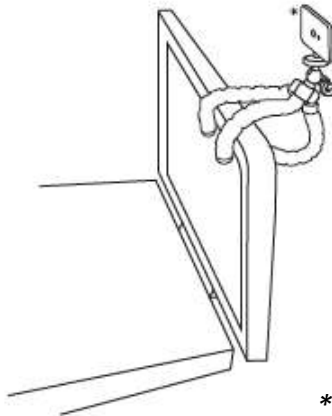
*Recommended Camera Placement*

3. Connect the IR Positional Tracking Camera to your PC.
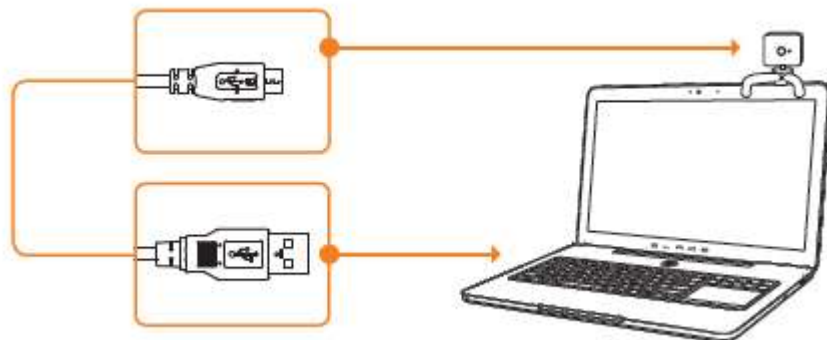
4.  Connect the IR camera sync plug to the IR Positional Tracking Camera.



Side View
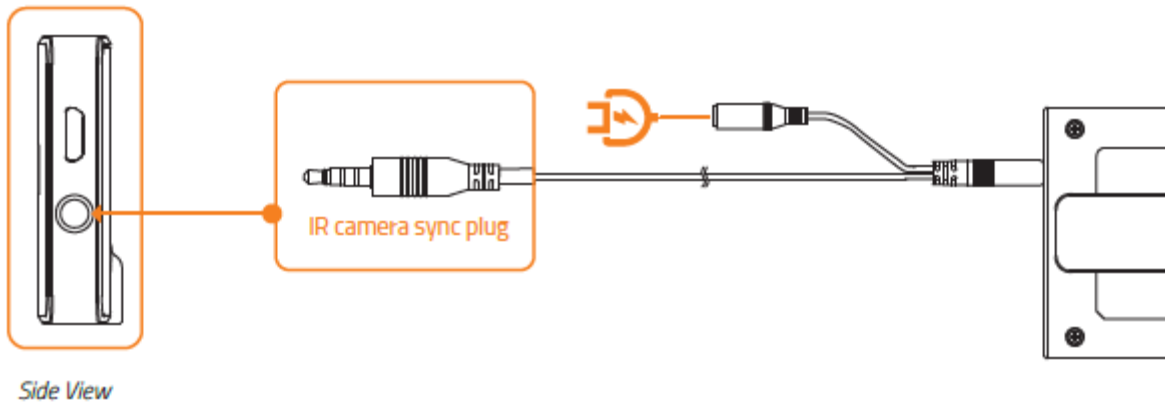
5.  Position yourself within 3 meters in front of the IR Positional Tracking Camera.
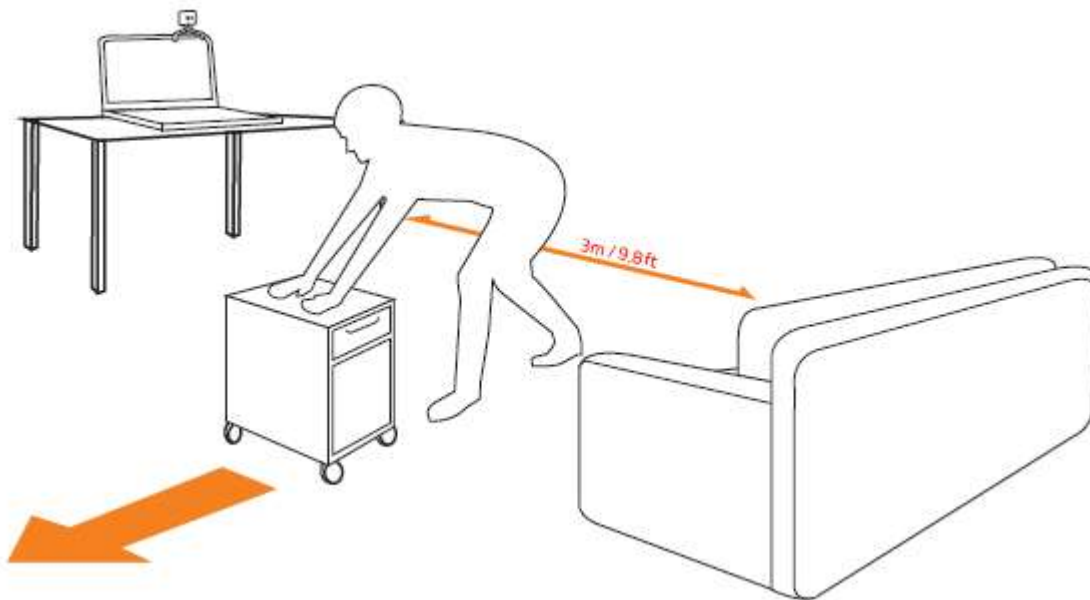


*Note: Ensure that your position is free of clutter and moving objects.*

***ADDITIONAL LINKS***
For inquiries, please refer to these links:
Getting Started: start.osvr.org
Support Portal: support.osvr.com/hc/en-us
Forum: osvr.org/forum
Wiki: wiki.osvr.com/doku.php

# 5. INSTALLING RAZER SYNAPSE FOR YOUR OSVR HDK
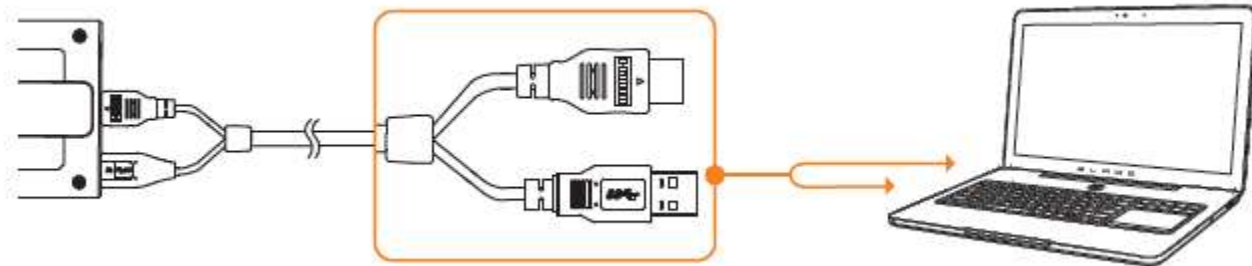


Step 1:   Make sure your OSVR HDK is connected to your computer.
Step 2:   Install Razer Synapse when prompted* or download the installer from www.razerzone.com/synapse2.
Step 3:   Register for a RazerID or log into Synapse with an existing account.

*Applicable for Windows 8 or later.

# 6. CONFIGURING YOUR OSVR HDK

*Disclaimer:*   *The features listed here require you to log in to Razer Synapse. These features are also subject to change based on the current software version and your Operating System.*

### *DEVICE SUMMARY TAB*
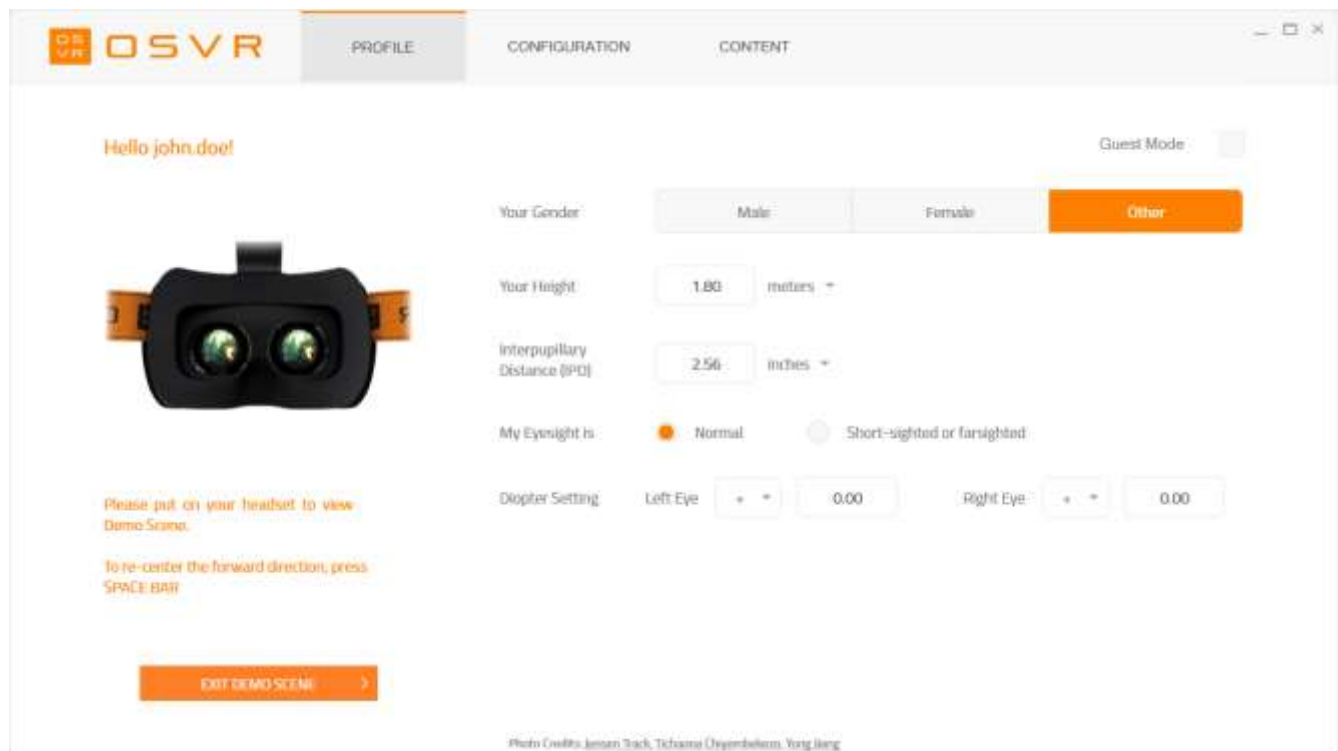
The Device Summary tab is the default tab for OSVR. Here you can view your Razer device's model type, firmware version, sensor class, polling rate, and other related input devices. Additionally, the Device Summary tab allows you to launch the OSVR HDK Configurator, open the OSVR Developer Resources website, and open or download the Razer Cortex app.
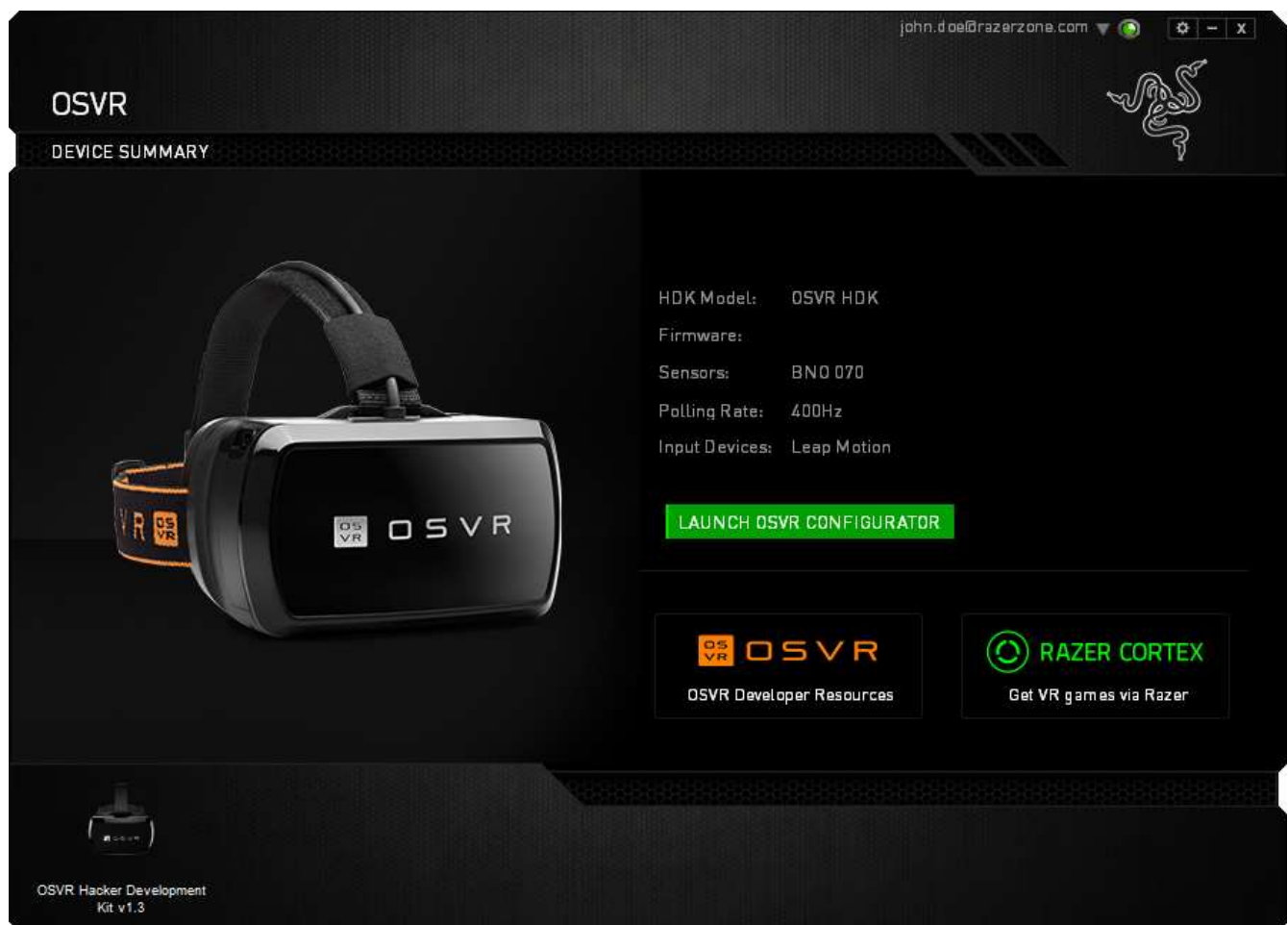


When you select to launch the OSVR HDK Configurator, a new window will appear where you can set your profile, configure your OSVR HDK, edit settings and view OSVR HDK related content.

## PROFILE TAB

The Profile tab allows you to setup your user profile to be used by various VR apps that support the OSVR HDK. In this tab you can select your gender, height, and provide other personal information. If you do not wish disclose these information, you may select Guest Mode instead.



The Profile tab also allows you to quickly configure your interpupillary distance, eyesight, and dioptre settings using the demo scene.

## *CONFIGURATION TAB*

The Configuration tab provides a step-by-step guide for setting up your user profile.

### *CONTENT TAB*

The Content tab gives you access to OSVR developer resources such as a guide for developing with OSVR, using the OSVR, and contributing to the OSVR project.

# 7. SAFETY AND MAINTENANCE

*Ensure that you have read the warnings below carefully before using the Gear VR to reduce the risk of accidents, personal injury, discomfort, and/or property damage.*
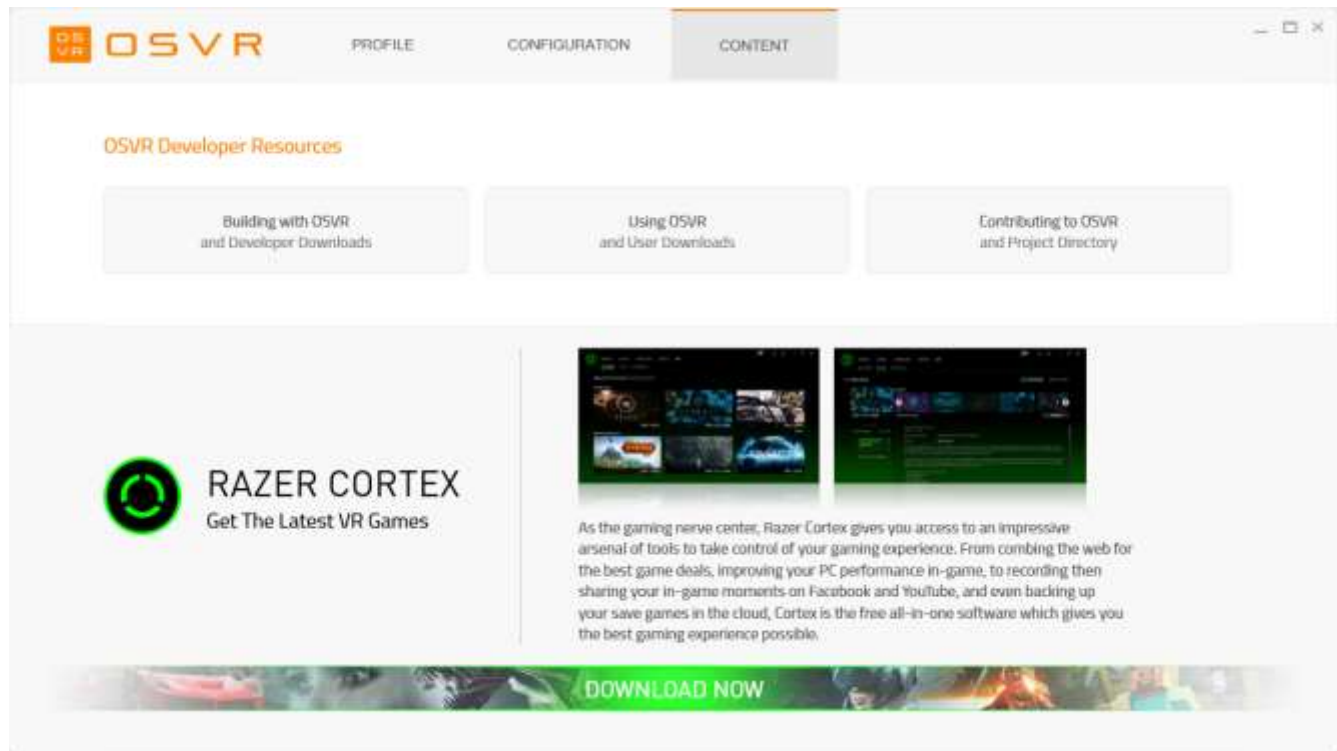
## *COMFORT*

Make sure the headset is properly levelled on your head and that the screen only shows a single clear image. Adjust the straps properly; too tight and it will pinch your ears or too lose and it will slide down your head. Do not wear glasses when using the headset. Doing so may cause discomfort and facial injuries. If you have poor eyesight, it is recommended that you customize the independent distance adjustment knobs to better suit your eyes or wear contact lenses.

Ease into the use of the headset to allow your body to adjust; use the device only a few minutes at a time for the first few days then increase the amount gradually as you grow accustomed to virtual reality. Do not use the device when you are tired, need sleep, are under the influence of alcohol or drugs, as this can increase your susceptibility to adverse symptoms. Take a 10 to 15 minute break every hour, even if you don't think you need it. Each person is different, so take more frequent and longer breaks if you feel discomfort. If the virtual-reality experience does not require lower body movement, remain seated at all times.

## *SAFETY GUIDELINES*

In order to achieve maximum safety while using your OSVR HDK, we suggest that you adopt the following guidelines:

1. Should you have trouble operating the device properly, unplug and/or remove the device and go to [www.osvr.com](www.osvr.com) for assistance. Do not attempt to fix the device yourself.

2. Do not take apart the device (doing so will void your 30-day warranty) and do not attempt to operate it under abnormal current loads.

3. Do not expose the device to liquids. Exposing the product to these conditions may result in an electric shock.

4. Do not use abrasive cleaners and/or harsh cleaning agents to clean the headset.

5. Do not expose the device to extremely high or low temperatures such as leaving the headset in direct sunlight or in snowy weather for extended periods of time.

6. Do not expose the device to open flames such as stoves, candles, or fireplaces.

7. Dispose the product in accordance with your local environmental laws and guidelines.

8. Do not use the product if any cable is damaged or any wires are exposed. Doing so may result in an electric shock.

9. Use only the power adapter provided with the product to avoid short-circuiting the system.

10. Do not tamper or abuse the product; including but not limited to dropping, shaking, crushing, excessive bending, puncturing, shredding, or inserting foreign objects into the device.

11. Do not expose the device to fine solid objects such as dust, dirt, and sand.

12. Avoid placing the product near devices that emit radio waves such as mobile phones, radio transmitters and Wi-Fi routers as it can be affected by their magnetic interference.

13. Stop using the device if you feel that the headset too warm. Prolonged contact with an overheated device can cause skin damage.


*MAINTENANCE*

Use the puffer with removable brush to ensure that the lenses are clean. Keep the lenses scratch-free for clear visibility. Keep your face clean and dry when wearing the HMD module to prevent dirt buildup and to avoid deteriorating the quality of the foam cushions. Do not paint the OSVR HDK. Paint can clog the device's moving parts or ventilation openings and prevent proper operation.

## HEALTH WARNING

Some people may experience severe dizziness, seizures, epileptic seizures or blackouts triggered by light flashes or patterns. This may occur while watching TV, playing video games, or experiencing virtual reality, even if they have no history of blackouts, seizures, or epilepsy. Anyone who has had a seizure, loss of awareness, or other symptoms linked to an epileptic condition should see a doctor before using the headset. We also recommend seeing a doctor before using the headset if you are pregnant, elderly, or suffering from a heart condition or other serious medical condition. Immediately discontinue use if you experience seizures, loss of awareness, eye strain, eye or muscle twitching, involuntary movements, altered, blurred, or double vision or other visual abnormalities. Do not use the device if you have symptoms of squint, amblyopia, or anisometropia as this device may aggravate these symptoms.

The headset produces an immersive virtual reality experience that can distract the user from and completely blocks his view of the actual surroundings. Always be aware of your surroundings when using the headset. Remain seated whenever possible and take special care to ensure that you are not near other people, objects, stairs, balconies, windows, furniture, or other items that you can trip over, bump into, or knock down when using—or immediately after using—the headset. Do not handle sharp or otherwise dangerous objects while using the device. Never wear the headset in situations that require attention, such as walking, bicycling, or driving.

It is not advisable for children under the age of thirteen to watch videos or play games using the device as it may affect their visual development. Prolonged usage could negatively impact hand-eye coordination, balance, and multi-tasking ability in children. Keep the headset and all its parts and accessories out of the reach of small children to avoid accidents and/or injuries.

When using the OSVR HDK, limit your usage time and ensure that you take frequent breaks. Stop using the device the moment you feel any discomfort. People who are prone to motion sickness may also experience the same discomfort when using the device. Immediately stop using the device the moment you feel sick, dizzy, disoriented, excessively sweaty, lightheaded, or drowsy. Do not use the device when suffering from a cold, flu, headache, migraine, or earache as this can increase your susceptibility to adverse symptoms. Do not use the device until all symptoms have completely subsided for several hours. Make sure you have properly configured the product before resuming use.

# 8. REGULATORY STATEMENT

*FCC DECLARATION OF CONFORMANCE*

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 the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.
For more information, refer to the online help system on www.osvr.com.

*FCC CAUTION*

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

*INDUSTRY CANADA COMPLIANCE STATEMENT*

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
Statement for CE;

CE STATEMENT OF COMPLIANCE WITH EU DIRECTIVE
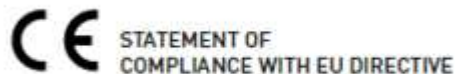
ENGLISH
STATEMENT OF COMPLIANCE WITH EU DIRECTIVE
Hereby, Razer (Europe) GmbH, declares that this OSVR Hacker Development Kit is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC.

FRANÇAIS
DÉCLARATION DE CONFORMITÉ AVEC LES DIRECTIVES DE L'UNION EUROPÉENNE
Par la présente Razer (Europe) GmbH déclare que l'appareil Razer OSVR Hacker Development Kit est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2004/108/EC.

ITALIAN
DICHIARAZIONE DI CONFORMITA' CON LE DIRETTIVE EU
Con la presente Razer (Europe) GmbH dichiara che questo OSVR Hacker Development Kit è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2004/108/EC.

DEUTSCH
EG-KONFORMITÄTSERKLÄRUNG
Hiermit erklärt Razer (Europe) GmbH, dass sich dieser/diese/dieses OSVR Hacker Development Kit in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 2004/108/EC befindet.

ESPAÑOL
DECLARACIÓN DE CONFORMIDAD CON LA DIRECTIVA DE LA UE
Por medio de la presente Razer (Europe) GmbH declara que el OSVR Hacker Development Kit cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2004/108/EC.

PORTUGUÊS
DIRECTIVA DA UE COM DECLARAÇÃO DE CONFORMIDADE.
Razer (Europe) GmbH declara que este OSVR Hacker Development Kit está conforme com os requisitos essenciais e outras disposições da Directiva 2004/108/EC.

DANSK

ERKLÆRING OM OVERENSSTEMMELSE MED EU-DIREKTIV

Undertegnede Razer (Europe) GmbH erklærer herved, at følgende udstyr OSVR Hacker Development Kit overholder de væsentlige krav og øvrige relevante krav i direktiv 2004/108/EC.

POLSKI

OSWIADCZENIE O ZGODNOSCI Z DYREKTYWA UE

Niniejszym Razer (Europe) GmbH oswiadcza, ze OSVR Hacker Development Kit jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2004/108/EC.

The full Declaration of Conformity can be requested via the following:
Company: Razer (Europe) GmbH
Address: Winterhuder Weg 82, D-22085 Hamburg, Germany
E-mail: compliance@razerzone.com

## 9. LEGALESE

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The OSVR Hacker Dev Kit is supplied solely to facilitate the creation and development of interactive software applications as well as integration of new hardware. All products created, developed, and integrated using the OSVR Hacker Dev Kit are to be used solely with the Virtual Reality Headset.

*LIMITED PRODUCT WARRANTY*

For the latest and current terms of the Limited Product Warranty, please visit: [www.osvr.com/warranty](www.osvr.com/warranty).

*LIMITATION OF LIABILITY*

Razer shall in no event be liable for any lost profits, loss of information or data, special, incidental, indirect, punitive or consequential or incidental damages, arising in any way out of distribution of, sale of, resale of, use of, or inability to use the Product. In no event shall Razer's liability exceed the retail purchase price of the Product.

*COSTS OF PROCUREMENT*

For the avoidance of doubt, in no event will Razer be liable for any costs of procurement unless it has been advised of the possibility of such damages, and in no case shall Razer be liable for any costs of procurement liability exceeding the retail purchase price of the Product.

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These terms shall be governed by and construed under the laws of the jurisdiction in which the Product was purchased. If any term herein is held to be invalid or unenforceable, then such term (in so far as it is invalid or unenforceable) shall be given no effect and deemed to be excluded without invalidating any of the remaining terms. Razer reserves the right to amend any term at any time without notice.