

Pimax Crystal

Pimax Crystal Setup



SYSTEM RECOMMENDATION

OS	Windows 10/ Windows 11
GPU	NVIDIA®GeForce RTX 2070 and above
CPU	intel i5-12500/ AMD R7-3700X and above
RAM	16GB and above
VIDEO OUTPUT	1 x DisplayPort 1.4
USB	1 x USB-A 3.0 / 3.1 1 x USB-A 2.0 and above

Please make sure you are using a desktop PC and meet the above system requirements.

Laptops are Incompatible
with the Crystal



Must use a desktop PC



Pimax Crystal

DISPLAY	QLED + Mini-LED Display 2880*2880 pixels per eye Brightness: 200nit Local dimming: 20000:1 Colors: 100% NTSC Motion-to-Photon (MTP) Latency: 15ms Refresh rate: 72Hz/90Hz/120Hz/ (144Hz/160Hz in testing mode) HDR
OPTICS	Customized replaceable aspheric optical lens, with 35PPD peak fidelity
FIELD OF VIEW	Horizontal: 125° Diagonal: 140°
INTERPUPILLARY DISTANCE (IPD)	Manual IPD and Automatic IPD Supported IPD range: 58-72mm
AUDIO	Original off-ear speakers (Optional high-fidelity DMAS headphones) 3.5 mm audio jack 1x microphones 3x
DIMENSIONS	280.10mm*108.20mm*135.90mm
CONNECTIVITY	Standard Pimax Custom 4.5m DP cable
POSITIONAL TRACKING	Inside-out (Standard cover/MR cover) Outside-in (Lighthouse cover)
EYE TRACKING	120Hz with sub-degree accuracy; 5-dot calibration for foveated rendering
BATTERY	6000mAh replaceable battery + 120mAh inside battery supports hot swap
INSIDE CHIPS	Qualcomm Snapdragon XR2, Pimax Customized PCVR Engine Dual-processor chips8+256G
VR MODE	PCVR + Standalone VR



Pimax Crystal

All Items in Box

1. Crystal Headset x1



3. Controller x2



4. DP Cable x1



2. Type-C Cable x2



7. Quick guide card + After-sales service card



5. Charging Dock x1 / Battery x2



6. Screwdriver + Screw x1 + Lens cloth

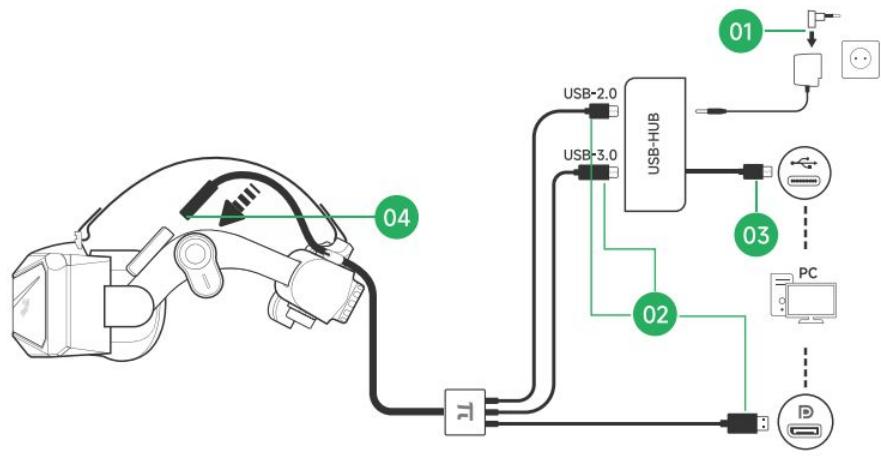


8. Power&Connection HUB Kit



Connect To PC

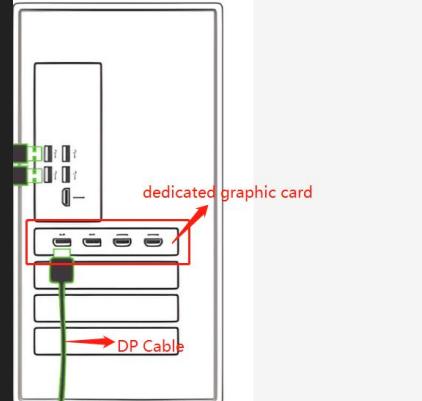
1. Connect the power adapter to the USB-HUB.
2. Connect the two USB plugs to the USB-HUB, then the DP cable into your PC.
3. Connect the USB-HUB to your PC using the USB cable included with the hub.
4. Connect the DP cable to your headset.



1. Before connecting to the PC ensure that both the headset and the controllers have been fully charged.



2. Please ensure you have connected the DP (DisplayPort) cable to the dedicated Display port on your desktop computer's graphics card.

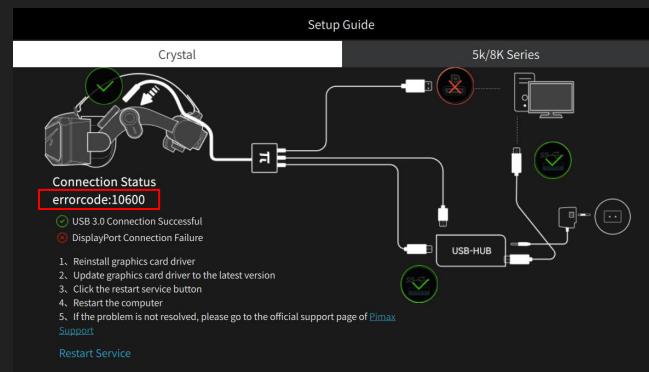
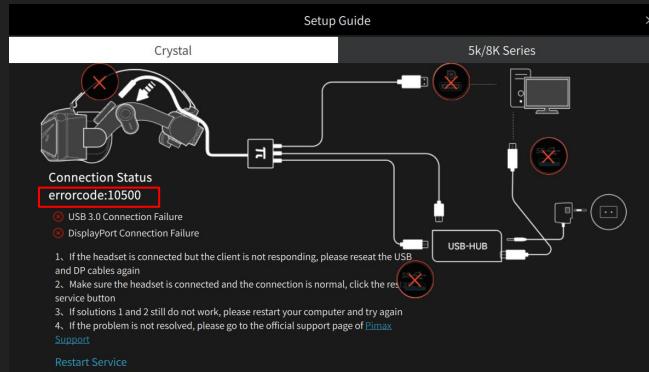
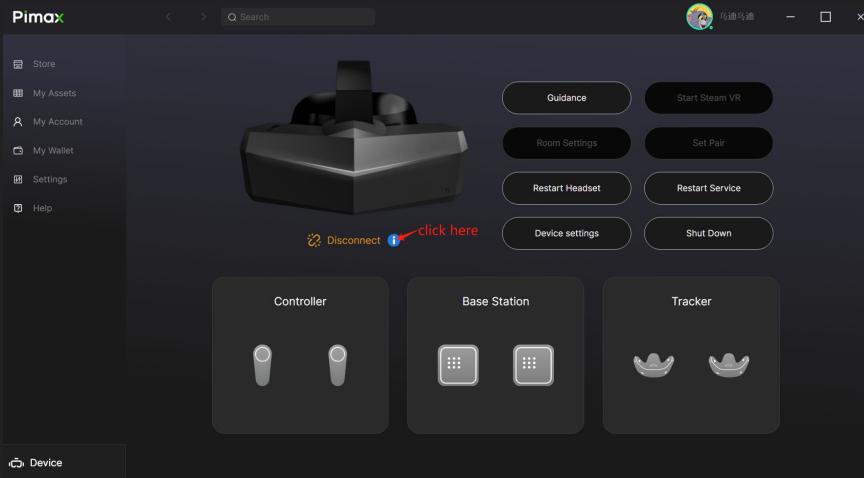


3. When you connect the DP cable to the headset, You should hear a *click* confirming that it has been properly inserted.



Pimax Crystal

What is your connection error code



Pimax Crystal

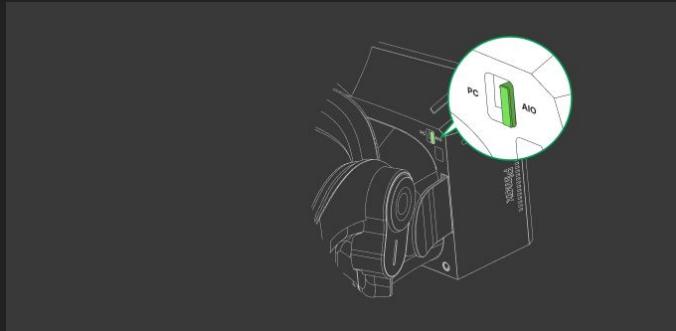
Solution for 10500 code

Error Code: 10500

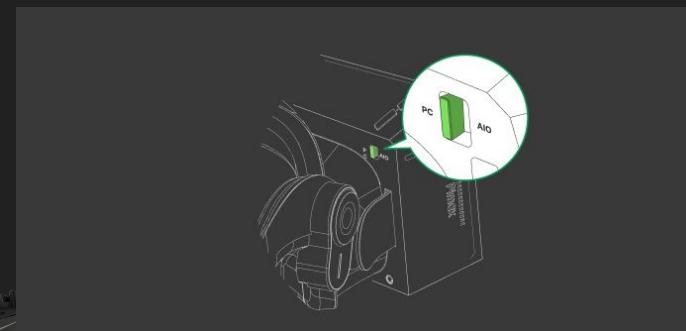
Troubleshooting Steps: DisplayPort Connection

Step 1: Verify Firmware Status

- Switch the headset toggle to AIO mode.
- Check for a solid green LED and Pimax lobby display upon boot.

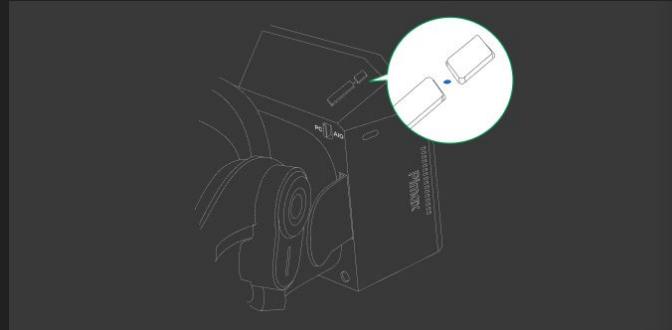


Step 2: Switch the headset toggle back to PCVR Mode.



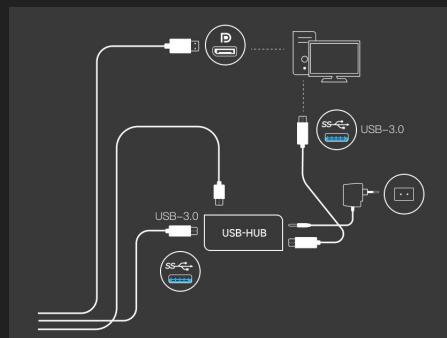
Step 3: Check Headset Indicator Light

- Ensure constant blue light during boot for correct connection.



Step 4: Verify USB Connection

- Secure the USB connection between the headset and the computer.

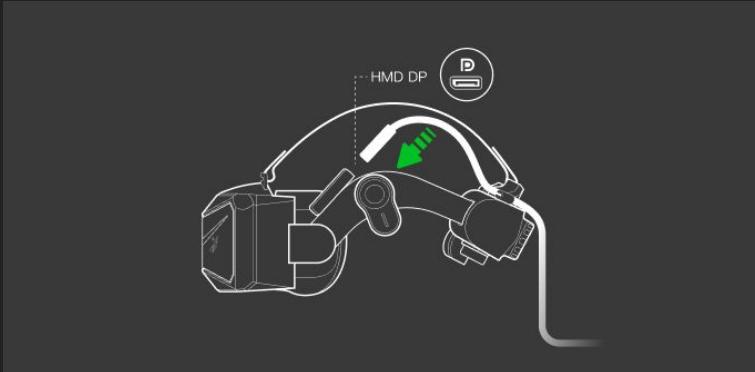


Pimax Crystal

Solution for 10500 code

Step 5: Verify DP Cable Connection

- Insert DP cable until you hear a "click" sound



Step 6: Confirm Connection

- PimaxPlay client should display "connected," and the headset's indicator light should be a constant green.

<https://www.youtube.com/watch?v=Z8HIH6AErRM>



Error Code: 10936 - Failure to Initialize Headset Screen

Step 1: Unstable DP Cable Connection

- Reconnect DP cables at both ends.

Step 2: Computer System or Graphics Card Abnormalities

- Restart the computer for normal functionality.

Error Code: 10938 - Graphics Card Output Reaches Maximum Capacity

Step 1: Using Multiple Displays

- Connect only one display along with the HMD.

Step 2: High-Resolution or High-Refresh-Rate Displays

- Lower display resolution or refresh rate. Try using an HDMI cable if using a DP connection for the display.

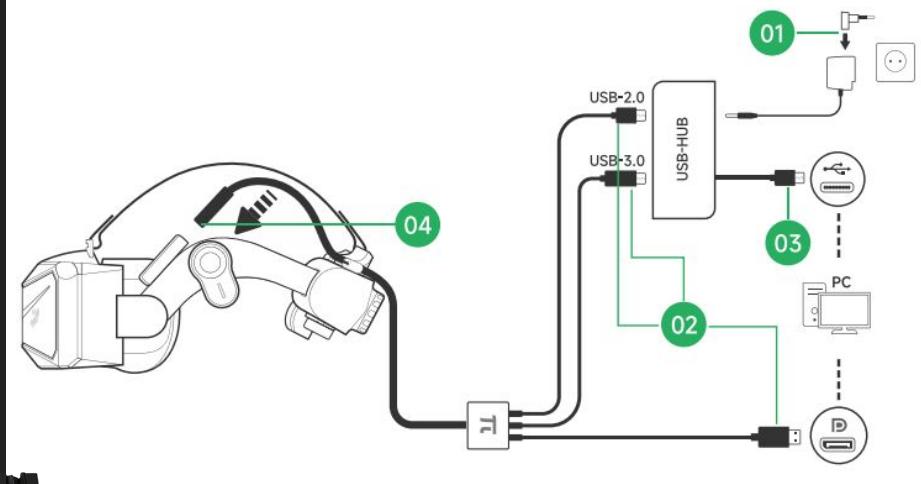
Error Code: 30205 - Timeout in HMD Connection to Computer

Solution: Restart the service or reboot the headset.



Connect To PC

1. Connect the power adapter to the USB-HUB.
2. Connect the two USB plugs to the USB-HUB, then the DP cable into your PC.
3. Connect the USB-HUB to your PC using the USB cable included with the hub.
4. Connect the DP cable to your headset.



<https://www.youtube.com/watch?v=AtxmVSYLo5Q>



The new Power Hub and how it extends battery life for the Pimax Crystal

Battery Installation/Replacement

Battery Installation

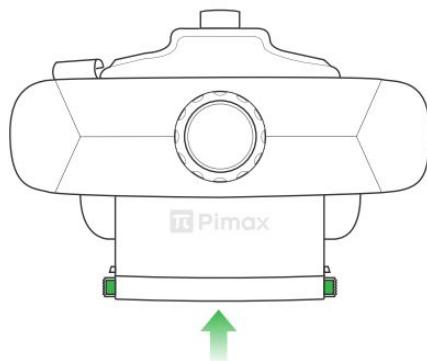
Hold the buttons on both sides of the battery, and then push the battery upwards into the battery holder.

Battery Replacement

Start by releasing the latch on one side, and then release the latch on the other side while tugging gently one side at a time.

Youtube:

<https://youtu.be/pQs9TyS3LZE>

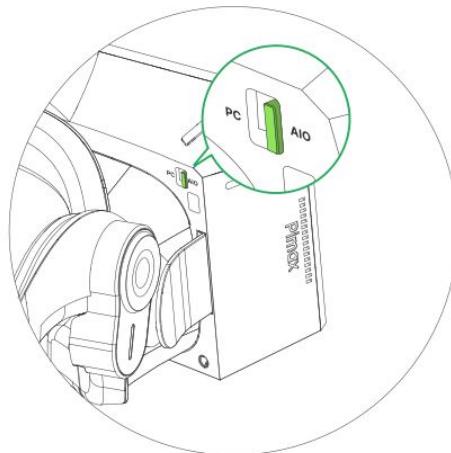


1. <https://youtu.be/pQs9TyS3LZE>
How to install the battery



PC / AIO Mode

To switch between 'PC' mode and 'AIO' mode (Standalone), locate the toggle switch and adjust it accordingly..



*** Reminder :** If the device is turned on, the headset will automatically restart if you switch modes.

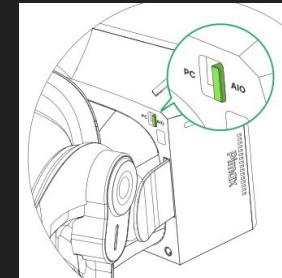
1. How to switch between PCVR and AIO modes:
<https://www.youtube.com/watch?v=nIJFWUnyF8>



How to switch from PCVR to Standalone mode on the Pimax Crystal

2. If you want to access PCVR mode, please make sure you have toggled the switch to the PC mode setting.

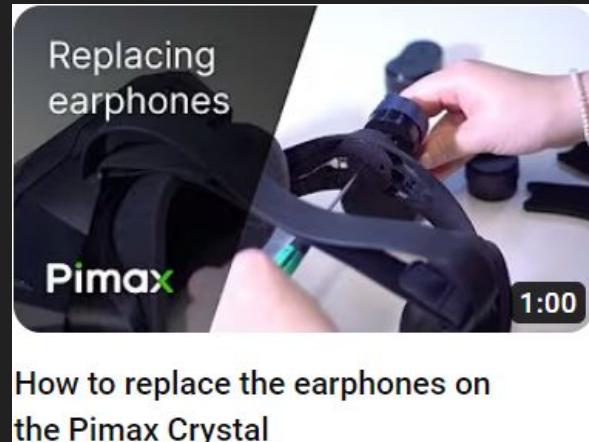
If you want to use your device in Standalone mode, please make sure you have toggled the switch to AIO mode



Pimax Crystal

How to replace the earphones on the Pimax Crystal

How to replace the earphones on the Pimax Crystal



How to replace the earphones on
the Pimax Crystal

https://www.youtube.com/watch?v=G223d-_rMj0

3.2.7. How To Connect And Turn On The Headset

Step 1: Connect the DP cable in the package to the corresponding interface of the PC slot, and USB2.0\3.0 to the HUB slots;

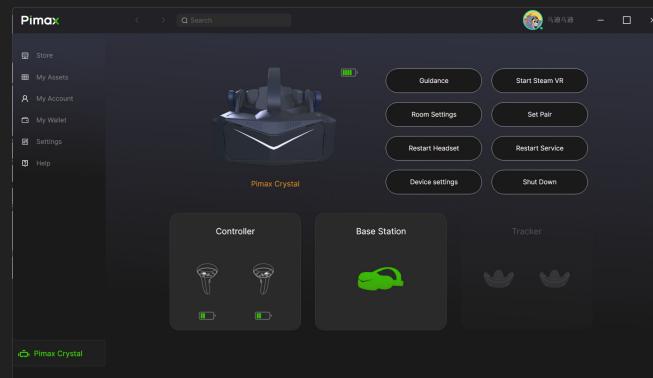
Step 2: Long press the power button on the right side of the headset to power on the headset;

Step 3: The headset turn on with Pimax Logo;

Step 4: Connect the DP port on the other side to the headset;

Step 5: The logo of the headset in the Pimax PC client light up means connection is successful.

※ For a more detailed guide, please refer to the PimaxClient beginners guide.



Headset Initialization Process

1. Connect all cables (pg7) and insert the battery.
2. Long press the power button for several seconds until the Battery indicator turns blue.
4. The headset power led will flash white for 3 seconds
5. At the same time, **The computer will play the windows tone signalling that a new usb device has been connected.**

(Unlike other PCVR headsets, the Crystal is actually a Qualcomm android device similar to a smartphone)

6. Open the Pimax Play Client
7. The Pimax Play client will show the headset as "connected" if the device page is selected (accessed by flicking the Device menu in the bottom left corner of the Pimax Client). Connection can take up to 20 seconds to complete.

No.	Function List
1	Auto IPD/Mannual IPD adjustment
2	Wear detection
3	Eye tracking
4	90Hz/120Hz Refresh rate
5	All in One mode review (2 games are available)
6	Charging and Charging Stability (Usage time: 6 hours)
7	Headset and controller camera tracking performance
8	AMD card compatible test (7900/6700/6950)
9	Local Dimming



Pimax Crystal

How to wear your VR headset correctly

Device Settings

Device Games General Advanced

Currently settings

DFR Smart Sth Active Closed

90 Hz

Tracking mode: Lighthouse (Inside-Out)

Display: 90 Hz

Refresh Rate: 90 Hz (Lab Mode)

Backlight: 100 (Default)

Eye Tracking: Eye Tracking ^①
 Auto IpD Adjustment ^①

Eye Tracking Calibration (Calibration)

Wearing Location Reminder

IPD Adjustment: Adjustment range 58.0 ~ 72.0 mm

Current value: 61.8 mm (Enter the target ipd mm)

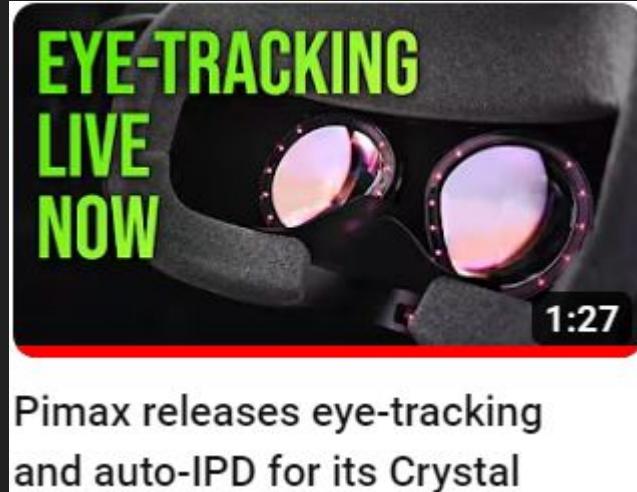


How to wear your VR headset correctly: Pimax Crystal

<https://www.youtube.com/watch?v=SwlKRiLeYx4>

Pimax Crystal

Wearing Location Reminder



Pimax releases eye-tracking
and auto-IPD for its Crystal

<https://www.youtube.com/watch?v=SAnQqa7B4k4>

Pimax Crystal

AutoIPD and DFR

Device Settings

Device | Games | General | Advanced |

Currently settings

DFR Active
Smart Sth Closed
90 Hz

Tracking mode: Lighthouse Inside-Out

Display

Refresh Rate: 120 Hz 90 Hz 72Hz (Lab Mode)

Backlight: 100 Default

Eye Tracking

Eye Tracking ⓘ

Auto IpD Adjustment ⓘ

Eye Tracking Calibration Calibration

Wearing Location Reminder

EyeTracking FAQ

IPD Adjustment: Adjustment range 58.0 ~ 72.0mm

Current value: 61.8 mm - mm + Settings



Auto-IPD & Dynamic Foveated
Rendering on the Pimax Crystal...

<https://www.youtube.com/watch?v=EvkG7ioFY1Q>



Pimax Crystal

DFR in Game



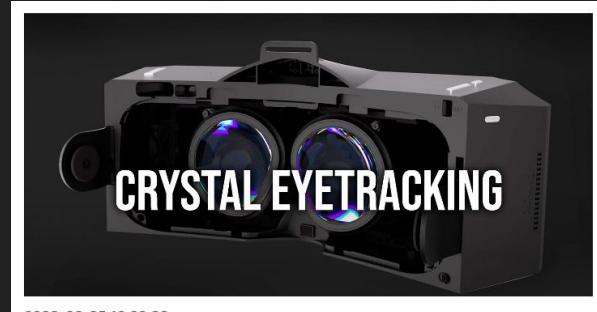
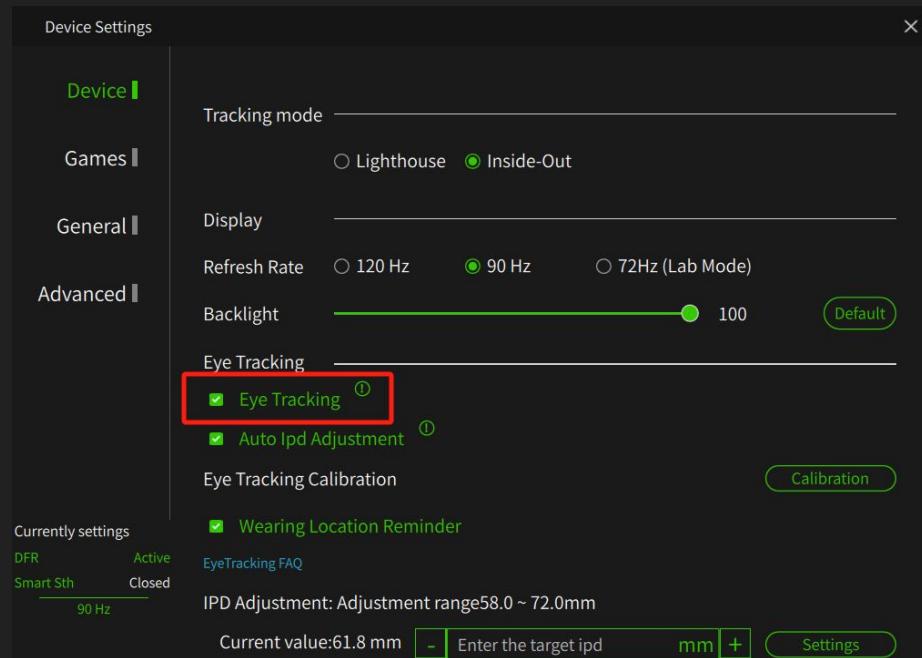
Pimax releases eye-tracking
and auto-IPD for its Crystal

<https://www.youtube.com/watch?v=SAnQqa7B4k4>

Pimax Crystal

Eyetracking

Launch Pimax Play, click and select “Eye Tracking”.

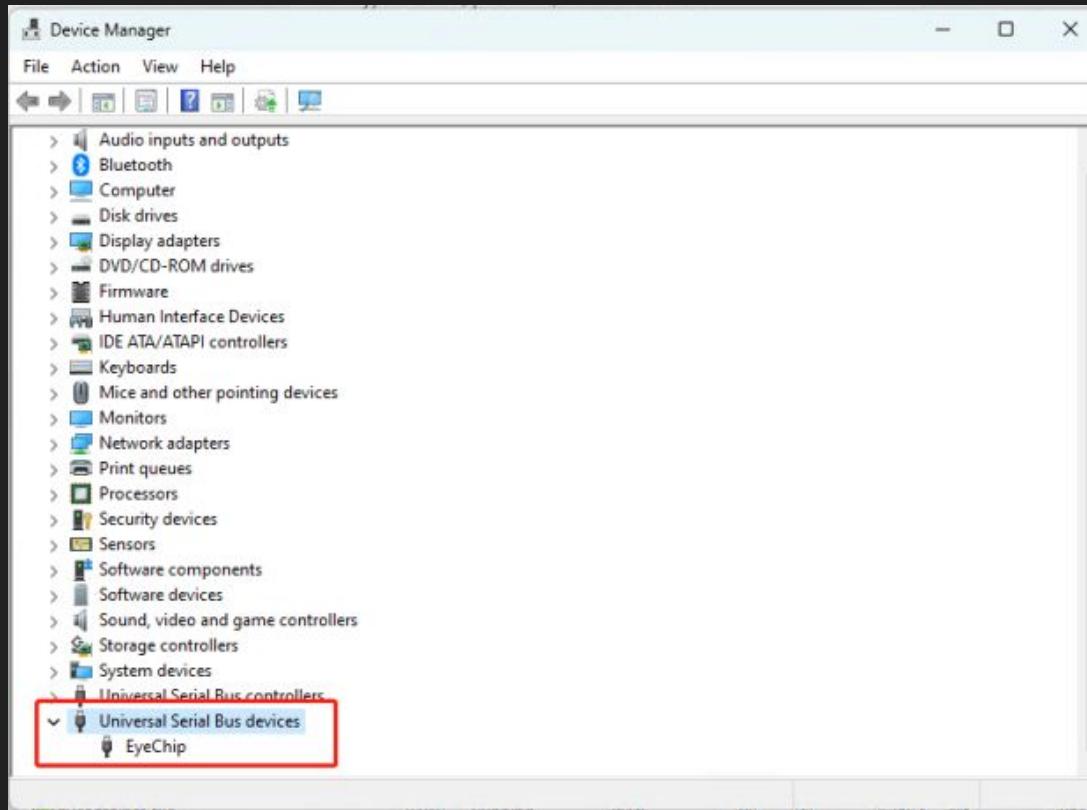


How to use eye-tracking on the Pimax Crystal

<https://pimax.com/how-to-use-eye-tracking-on-the-pimax-crystal/>



1.“EyeChip” should be in the “Device Manager”.



Pimax Crystal

Troubleshooting for Eye tracking

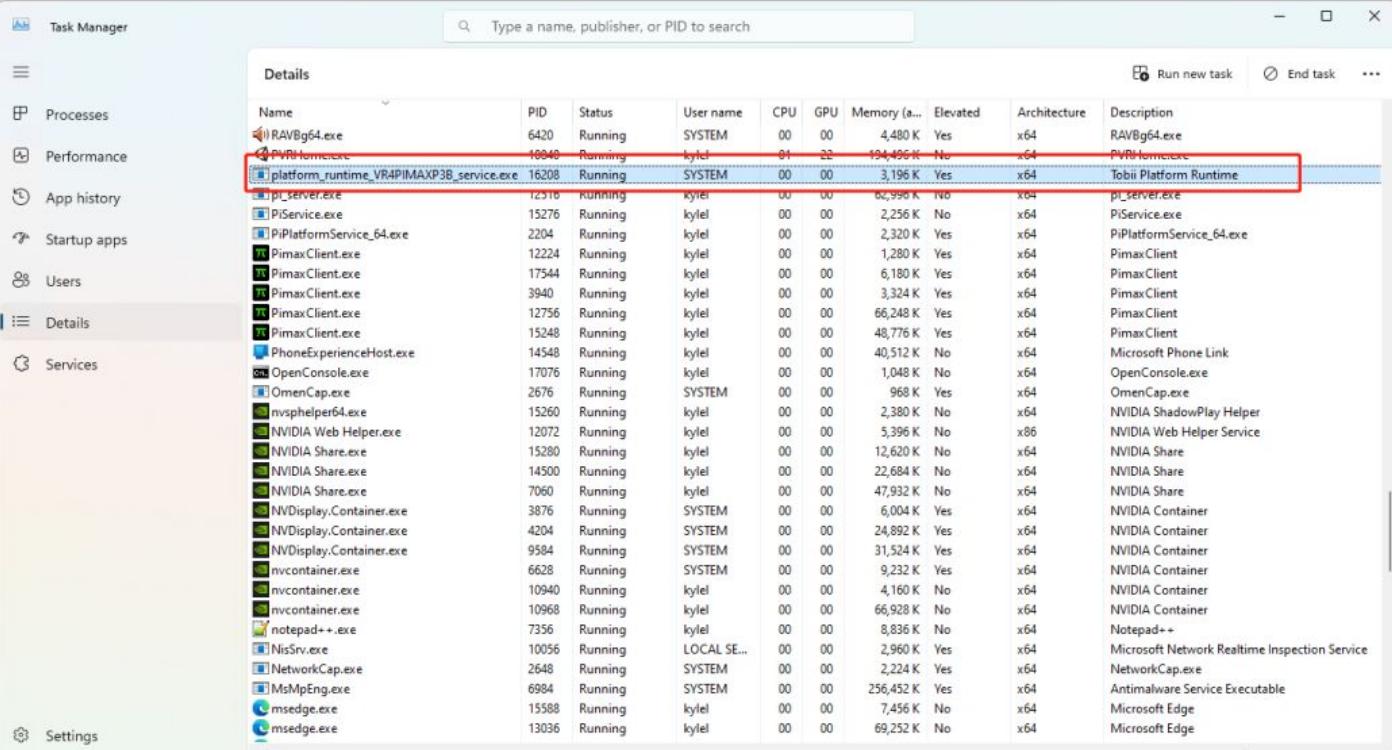
2. Look on the backside of the lenses and confirm the presence of electrical contact points such as those pictured in the image below. These contacts are necessary for the eye tracking functionality.



3. Confirm the presence and activation of the eye tracking sensors by taking a photo of the lenses with your smartphone. These sensors are invisible to the human eye but can be seen in photos and videos if photographed while the headset is ON and connected to the PC.



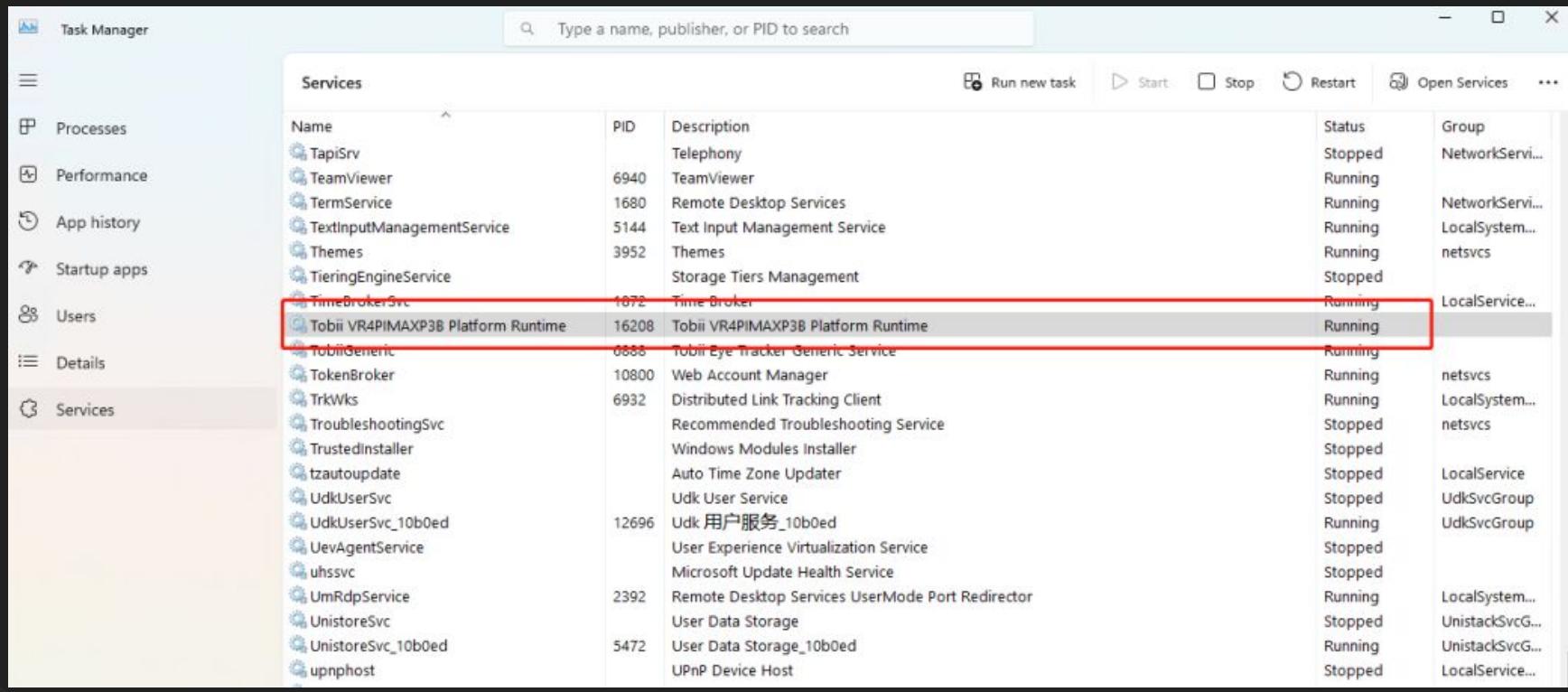
4. Look for the Tobii eye tracking process in the Task Manager pictured below



Details										
	Name	PID	Status	User name	CPU	GPU	Memory (a...)	Elevated	Architecture	Description
	RAVBg64.exe	6420	Running	SYSTEM	00	00	4,480 K	Yes	x64	RAVBg64.exe
	PVR!lumina.exe	10040	Running	kylel	01	22	104,406 K	No	x64	PVR!lumina.exe
	platform_runtime_VR4PIMAXP38_service.exe	16208	Running	SYSTEM	00	00	3,196 K	Yes	x64	Tobii Platform Runtime
	pi_server.exe	12576	Running	kylel	00	00	66,996 K	No	x64	pi_server.exe
	PiService.exe	15276	Running	kylel	00	00	2,256 K	No	x64	PiService.exe
	PiPlatformService_64.exe	2204	Running	kylel	00	00	2,320 K	Yes	x64	PiPlatformService_64.exe
	PimaxClient.exe	12224	Running	kylel	00	00	1,280 K	Yes	x64	PimaxClient
	PimaxClient.exe	17544	Running	kylel	00	00	6,180 K	Yes	x64	PimaxClient
	PimaxClient.exe	3940	Running	kylel	00	00	3,324 K	Yes	x64	PimaxClient
	PimaxClient.exe	12756	Running	kylel	00	00	66,248 K	Yes	x64	PimaxClient
	PimaxClient.exe	15248	Running	kylel	00	00	48,776 K	Yes	x64	PimaxClient
	PhoneExperienceHost.exe	14548	Running	kylel	00	00	40,512 K	No	x64	Microsoft Phone Link
	OpenConsole.exe	17076	Running	kylel	00	00	1,048 K	No	x64	OpenConsole.exe
	OmenCap.exe	2676	Running	SYSTEM	00	00	968 K	Yes	x64	OmenCap.exe
	nvsphelper64.exe	15260	Running	kylel	00	00	2,380 K	No	x64	NVIDIA ShadowPlay Helper
	NVIDIA Web Helper.exe	12072	Running	kylel	00	00	5,396 K	No	x86	NVIDIA Web Helper Service
	NVIDIA Share.exe	15280	Running	kylel	00	00	12,620 K	No	x64	NVIDIA Share
	NVIDIA Share.exe	14500	Running	kylel	00	00	22,684 K	No	x64	NVIDIA Share
	NVIDIA Share.exe	7060	Running	kylel	00	00	47,932 K	No	x64	NVIDIA Share
	NVDisplay.Container.exe	3876	Running	SYSTEM	00	00	6,004 K	Yes	x64	NVIDIA Container
	NVDisplay.Container.exe	4204	Running	SYSTEM	00	00	24,892 K	Yes	x64	NVIDIA Container
	NVDisplay.Container.exe	9584	Running	SYSTEM	00	00	31,524 K	Yes	x64	NVIDIA Container
	nvcontainer.exe	6628	Running	SYSTEM	00	00	9,232 K	Yes	x64	NVIDIA Container
	nvcontainer.exe	10940	Running	kylel	00	00	4,160 K	No	x64	NVIDIA Container
	nvcontainer.exe	10968	Running	kylel	00	00	66,928 K	No	x64	NVIDIA Container
	notepad++.exe	7356	Running	kylel	00	00	8,836 K	No	x64	Notepad++
	NisRn.exe	10056	Running	LOCAL SE...	00	00	2,960 K	Yes	x64	Microsoft Network Realtime Inspection Service
	NetworkCap.exe	2648	Running	SYSTEM	00	00	2,224 K	Yes	x64	NetworkCap.exe
	MsMpEng.exe	6984	Running	SYSTEM	00	00	256,452 K	Yes	x64	Antimalware Service Executable
	msedge.exe	15588	Running	kylel	00	00	7,456 K	No	x64	Microsoft Edge
	msedge.exe	13036	Running	kylel	00	00	69,252 K	No	x64	Microsoft Edge



5. In Task Manager → Services, check to see whether or not the Tobii service is running. If not, start it manually.



The screenshot shows the Windows Task Manager Services window. The 'Tobii VR4PIMAXP3B Platform Runtime' service is highlighted with a red box. The service details are as follows:

Name	PID	Description	Status	Group
TapiSrv		Telephony	Stopped	NetworkService
TeamViewer	6940	TeamViewer	Running	
TermService	1680	Remote Desktop Services	Running	NetworkService
TextInputManagementService	5144	Text Input Management Service	Running	LocalSystem
Themes	3952	Themes	Running	netsvcs
TieringEngineService		Storage Tiers Management	Stopped	
TimeBrokerSvc	1072	Time Broker	Running	LocalService
Tobii VR4PIMAXP3B Platform Runtime	16208	Tobii VR4PIMAXP3B Platform Runtime	Running	
TobiiGeneric	6868	Tobii Eye Tracker Generic Service	Running	
TokenBroker	10800	Web Account Manager	Running	netsvcs
TrkWks	6932	Distributed Link Tracking Client	Running	LocalSystem
TroubleshootingSvc		Recommended Troubleshooting Service	Stopped	netsvcs
TrustedInstaller		Windows Modules Installer	Stopped	
tzautoupdate		Auto Time Zone Updater	Stopped	LocalService
UdkUserSvc		Udk User Service	Stopped	UdkSvcGroup
UdkUserSvc_10b0ed		Udk 用户服务_10b0ed	Running	UdkSvcGroup
UevAgentService		User Experience Virtualization Service	Stopped	
uhssvc		Microsoft Update Health Service	Stopped	
UmRdpService	2392	Remote Desktop Services UserMode Port Redirector	Running	LocalSystem
UnistoreSvc		User Data Storage	Stopped	UnistackSvcGroup
UnistoreSvc_10b0ed		User Data Storage_10b0ed	Running	UnistackSvcGroup
upnphost	5472	UPnP Device Host	Stopped	LocalService

Device Settings X

Device | Auto Lens Settings

Games |

Lens Settings 35 PPD Glass

General |

Horizontal IPD Offset

Left 0 Default

Right 0 Default

Advanced |

screen vertical offset value

Left 0 Default

Right 0 Default

Local Dimming Level

Off balanced highlight extreme

Currently settings

DFR Active

Smart Stb Closed

90 Hz

Double-click the HMD to switch Pass through

Automatic active play area

Shortcut key switch Pass through Ctrl + Shift + Settings



Pimax Crystal

All-in-One mode

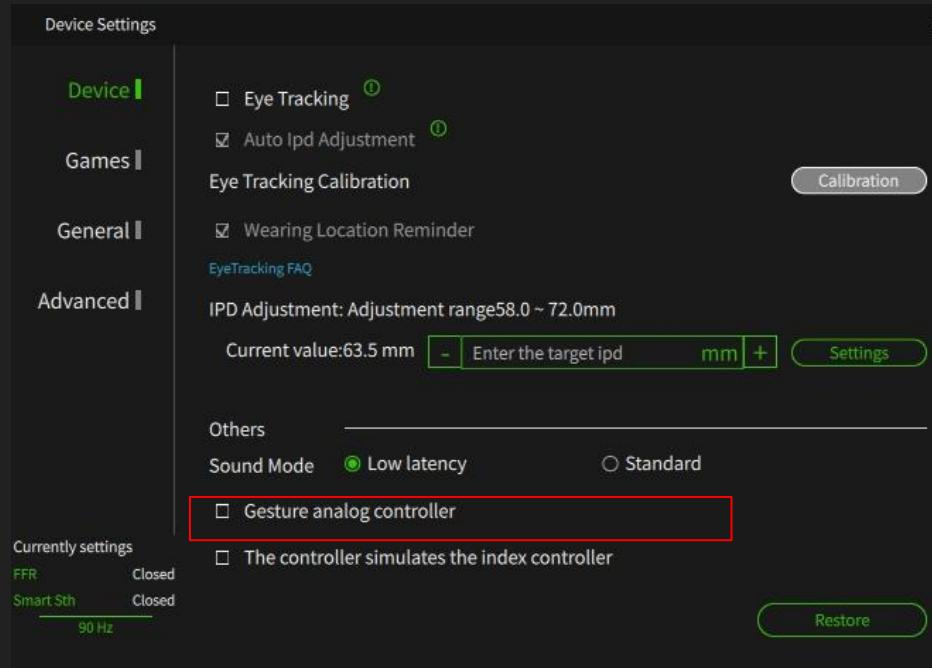


Nearly here: Pimax Crystal
standalone mode (X-Fitness demo)

<https://www.youtube.com/watch?v=wgAv3N7AdSw>



You can choose the sound mode between “Low latency” and “Standard” to improve audio latency issue.



Device Settings X

Device Games General Advanced

Currently settings
DFR Active
Smart Sth Closed
90 Hz

Tracking mode
 Lighthouse Inside-Out

Display

Refresh Rate 120 Hz 90 Hz 72Hz (Lab Mode)

Backlight 100 Default

Eye Tracking

Eye Tracking ①
 Auto IpD Adjustment ①

Eye Tracking Calibration Calibration

Wearing Location Reminder

EyeTracking FAQ

IPD Adjustment: Adjustment range 58.0 ~ 72.0mm

Current value: 61.8 mm - Enter the target ipd mm + Settings



Pimax Crystal

Lighthouse Cover

Device Settings

Device Games General Advanced

Currently settings

DFR Smart Sth Active
90 Hz Closed

IPD Adjustment: Adjustment range 58.0 ~ 72.0mm

Current value: 61.8 mm - Enter the target ipd mm + Settings

Tracking mode Lighthouse Inside-Out

Display

Refresh Rate 120 Hz 90 Hz 72Hz (Lab Mode)

Backlight 100 Default

Eye Tracking

Eye Tracking ^①

Auto IpD Adjustment ^①

Eye Tracking Calibration Calibration

Wearing Location Reminder

[EyeTracking FAQ](#)



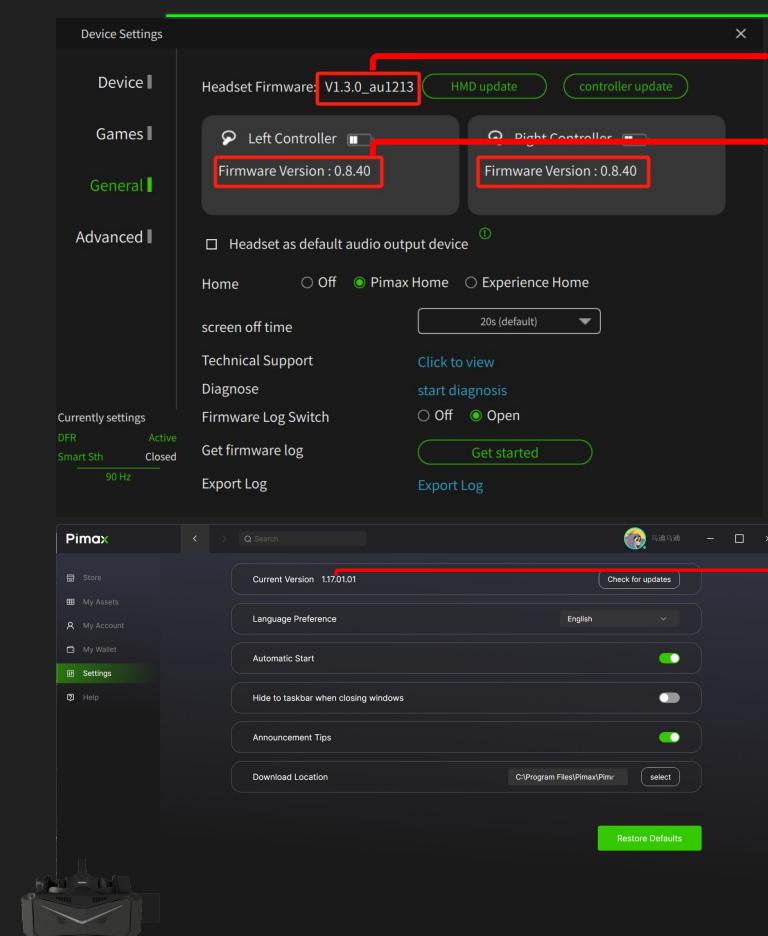
Pimax Crystal - Lighthouse cover
(prototype)

<https://www.youtube.com/watch?v=RCmuR7g2-HE>



Pimax Crystal

What is your Crystal Firmware version?



Headset Firmware
Headset Firmware: V1.3.0_ae1213

Controller Firmware
Left Controller: Firmware Version : 0.8.40
Right Controller: Firmware Version : 0.8.40

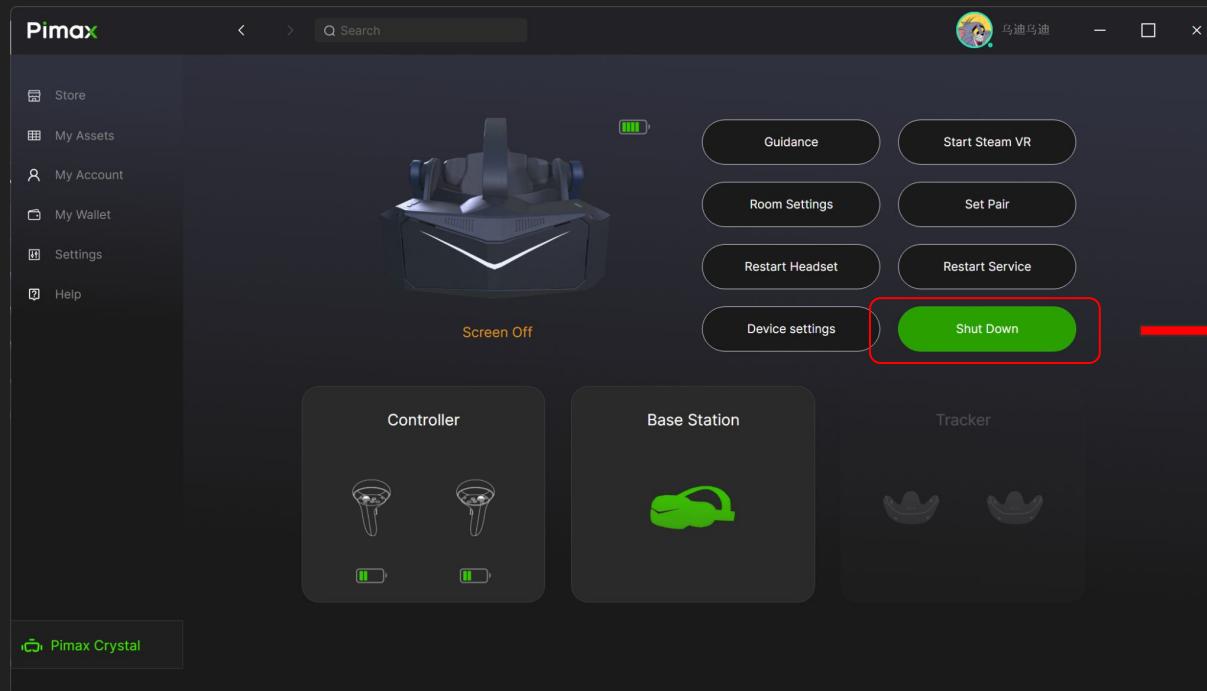
Pimax Client Version
Current Version: 1.7.0.1.01



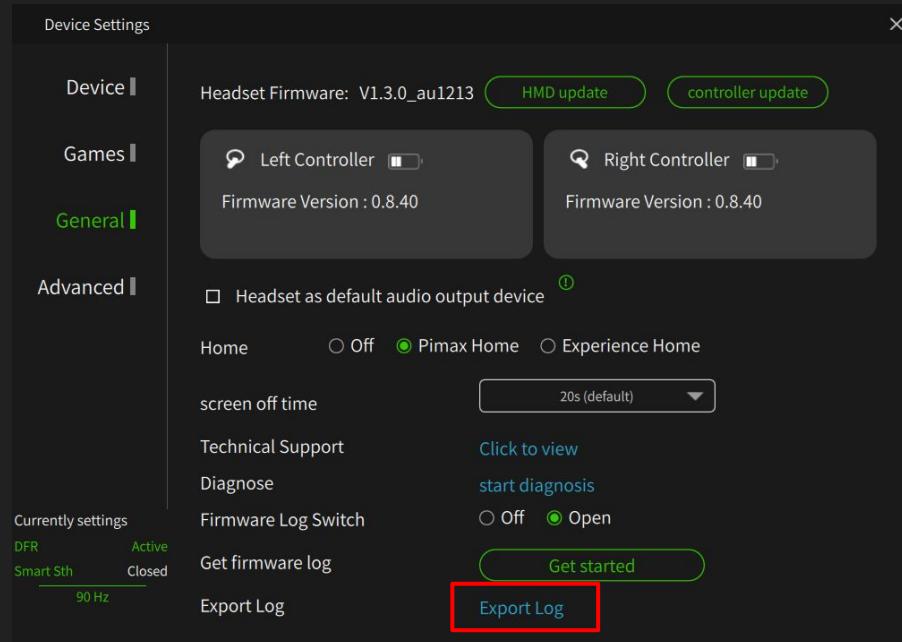
AIO Firmware
Software Version: Beta 0.9.0
Android Version: Android 10
Equipment Serial Number: PPIP021983210043833333
RAM: 8GB
Storage Spaces: 1TB



<https://www.youtube.com/watch?v=IK7vvulmzjg>



When you are done using your Crystal, it is best to shut it down by clicking on "Shutdown" Instead of simply unplugging the USB data cable from PC.





[How To Run MSFS2020 On A 3080 With The Pimax Crystal |](#)
[Pimax](#)



Quick Start Guide: <https://drive.google.com/file/d/1ISkOGp2xOXzkHDccinAjxaJkE9qHcxwE/view?usp=sharing>

Crystal User Guide: <https://drive.google.com/file/d/1KicX7Z6-oHjCSG9Jg8hn5ZfvsI0HUf8v/view?usp=sharing>

Video Unbox and installation guide: <https://www.youtube.com/watch?v=SiTwBVA0SD0&t=204s>

Eye Tracking Troubleshooting Steps <https://pimax.com/eye-tracking-troubleshooting-steps/>

How to set up the Pimax Crystal - 8 easy steps <https://www.youtube.com/watch?v=Z8HIH6AErRM&t=6s>

Crystal FAQ

[Crystal FAQ : Pimax Support](#)

