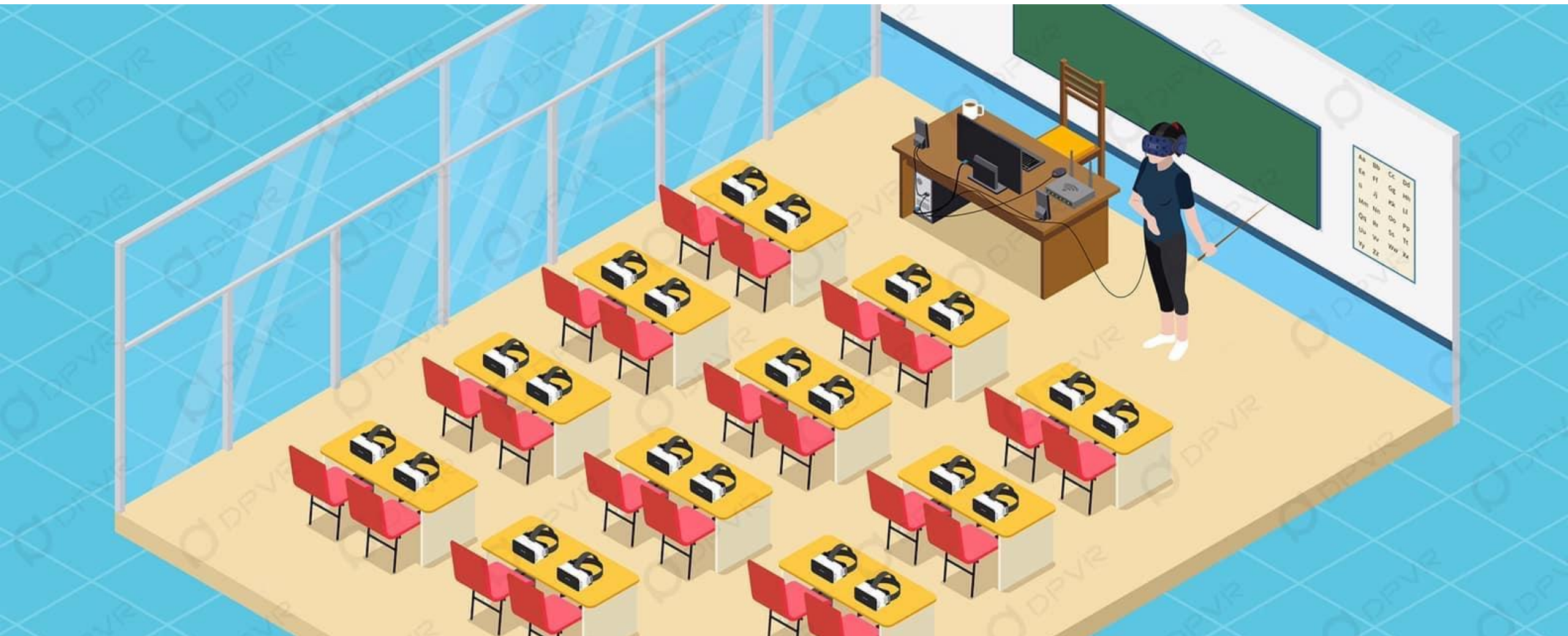




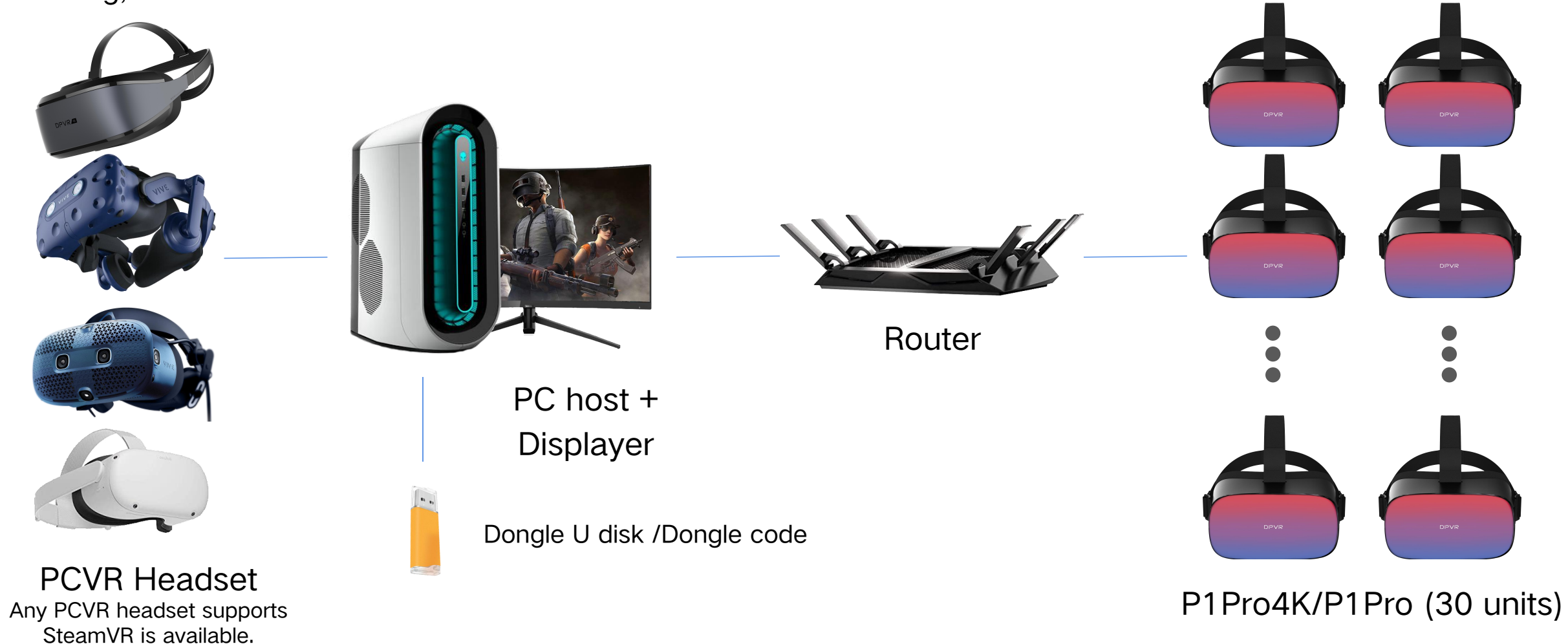
Introduction of “StarLink” Solution v1.0.1



Introduction

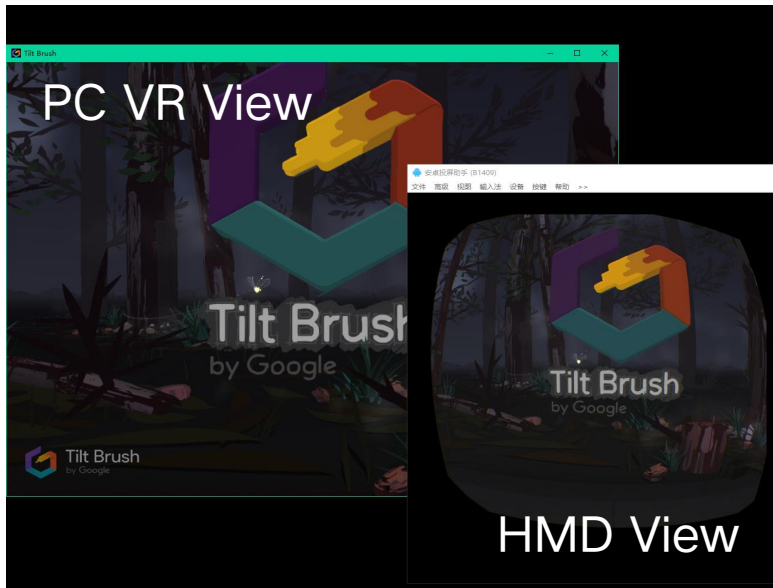


- Through the WLAN, the PCVR content can be mirrored into multiple HMDs, so that the user of HMD can have a first-person immersive perspective in real-time. This solution can be widely used in multi-person VR learning and training, etc.



Advantages: High Definition/Dizziness Free/Multi-Screened DPVR

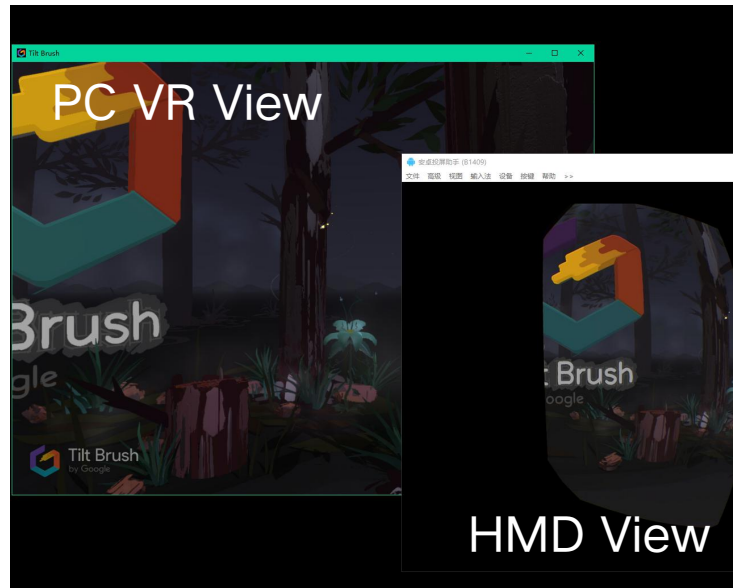
- HD: The high resolution of the content transmitted to the HMDs is approximately equal to a panoramic video with a resolution of 16K.
- Dizziness Free: The real-time drawing and position data transfer ensuring the viewer's perspective is consistent with the presenter's. And solve the problem caused by inconsistency between virtual reality and reality
- Multi devices: Supporting 30 devices on the screen at the real-time under 10M bitrate, and supports 50 devices under 5M bitrate.



PC VR Presenter



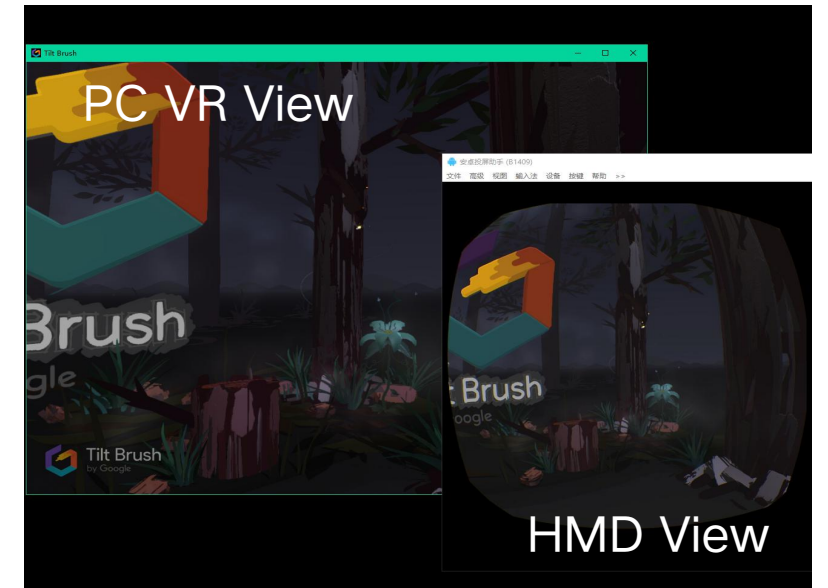
HMD Player



PC VR Presenter



HMD Player



PC VR Presenter



HMD Player

Hardware List and Configuration



VR Devices	Model Options	QTY
PC VR	HTC VIVE PRO	1
	HTC COSMOS	
	OC Quest 2	
	DPVR E3 Series	
HMD	P1Pro 4K	Less than 50 units
	P1Pro	
	P1	

PS: Any PCVR headset supports SteamVR is available.

PC Suit	Recommended Configuration	QTY
Displayer	-	1
PC Host	Processor: Intel i5-9600K equal or above.	1
	Display card: NVIDIA GeForce RTX 2060 equal or above.	
	RAM: 8GB equal or above.	
	System: Windows 10 64	
	USB / DP / HDMI: Depends on the type of PCVR headset.	

PS: The load on the "StarLink" SERVER is about 10% of the VR content load. The configuration of the PC mainly depends on the VR content.

PS: Only supports NVIDIA series graphics cards.

Other Devices	Recommended Configuration	QTY
Enterprise Router	NETGEAR R8000P equal or above.	1
Dongle	Depends on solution provider	1
Cable	CAT6	1

PS: Dongle U disk or Dongle code.

Software List and Configuration



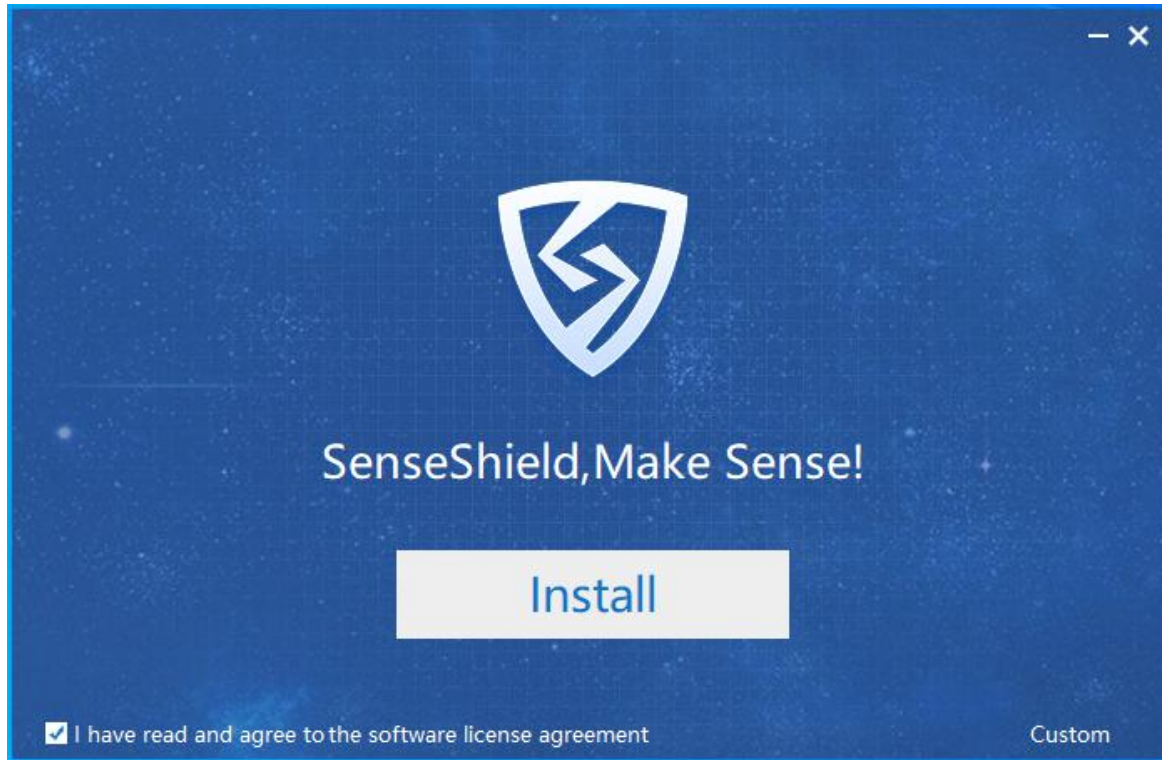
Software	Software
DPVR_StarLinkServer (SERVER end)	“StarLink” server will automatically discover and connect to the HMDs that have started the PLAYER end under the same WIFI, and transmit the content of the PC VR headset to the PLAYER end in real-time.
DPVR_StarLinkPlayer (Player end) (English version is under development)	Receive commands from the SERVER end under the same WIFI in real-time, and transfer the PCVR content to the HMD PLAYER end according to posture data.
DPVR_AppPatch	To recognize SteamVR's apps and games, need to have DPVR AppPatch. And to support modifications of FPS and resolution to optimize the performance.
Virbox User Tool Elite4S SDK	The software and driver for Dongle U disk and Dongle code activation.

Deployment and Use

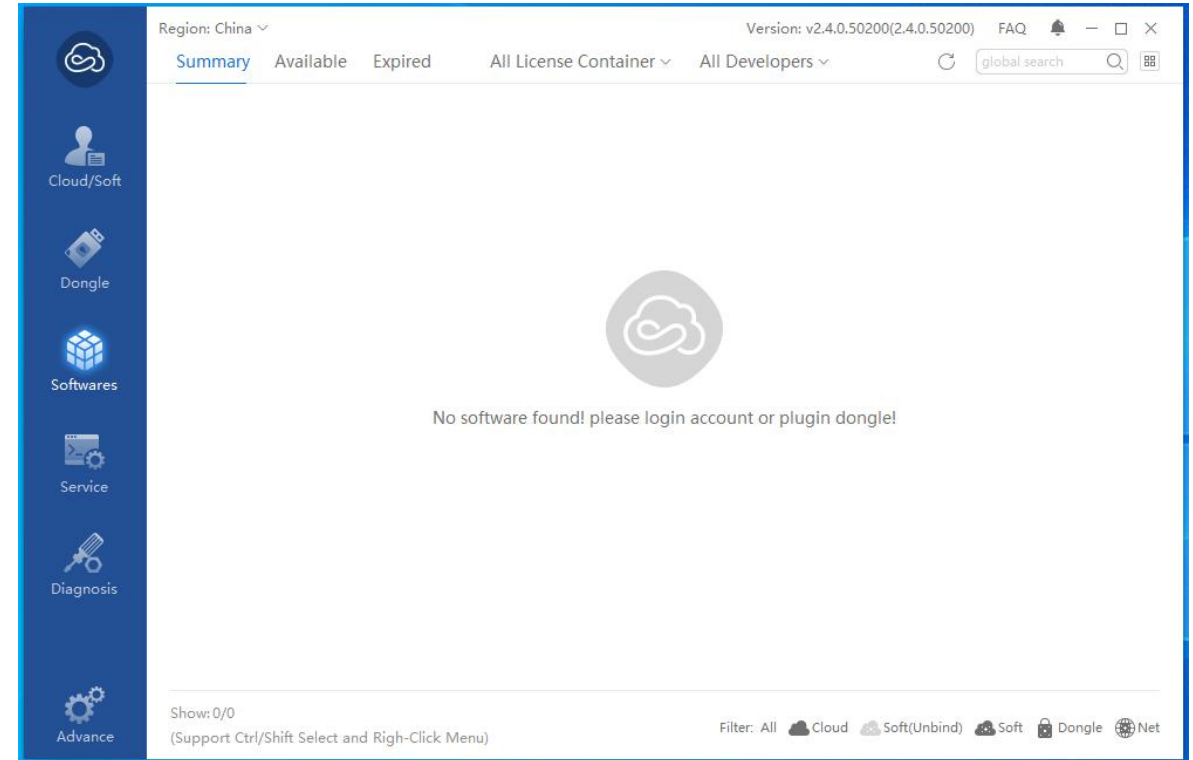


1. Turn off/uninstall the firewall software on the PC, install the Virbox User Tool.

Special note: If the Virbox is not installed, the dongle can not be activated.



Virbox User Tool installation interface



Virbox User Tool operation interface

2. Activation of “StarLink” SERVER end.



- For using the dongle U disk, insert it to the PC to activate.
- For using the dongle code, please follow the instruction below.

Region: China

Version: v2.2.0.45290(2.3.0.45)

Cloud Accounts +

Offline

>> Local Soft

Cloud/Soft

Dongle

Softwares

Service

Diagnosis

Advance

License Info

Account/Host: Local Soft

Host IP: 192.168.3.3

License: 0

Available Licenses: 0

Expired Licenses: 0

Refresh

Create Offline-Bound c2d File

Import Offline-Bound d2c File

License-key Activate Online

[License-key Activate From Web](#)

License-key Activate Online

License Key

License Key: 8MC [redacted] VG

Activate

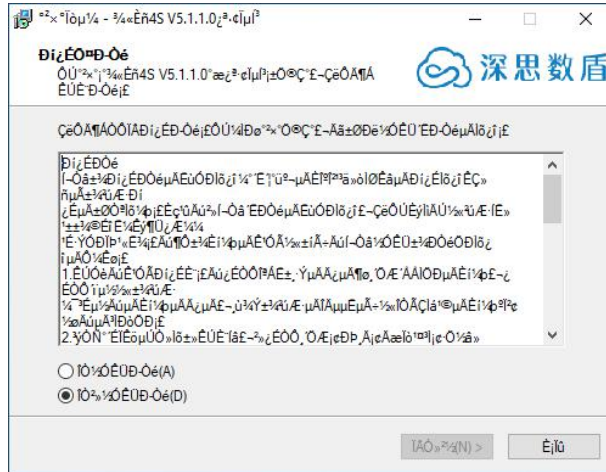
Refresh

License Key	Soft Lock S/N	Status	Other
-------------	---------------	--------	-------

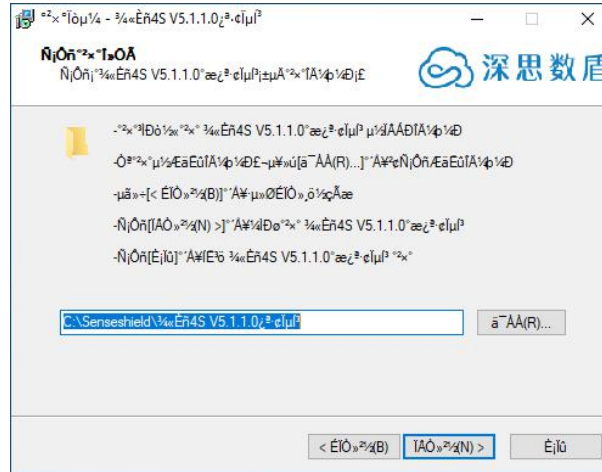
Warning: Unbinding License-key will delete its all licenses!

3. When the dongle is activated, it should be detected by the server. Otherwise, the Elite4S SDK installation is required as supplemental.

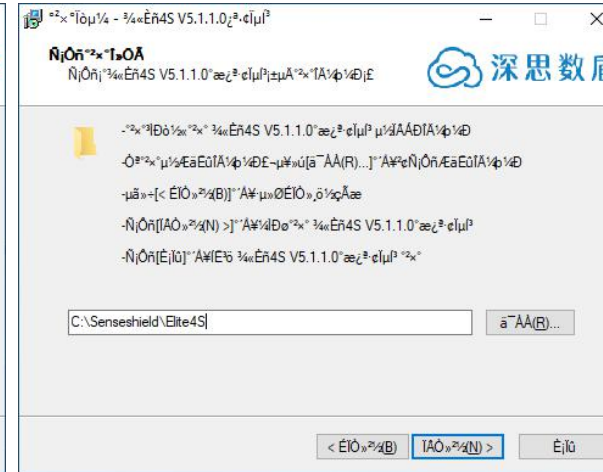
Special Note: When Elite4S SDK opens in non-Chinese Windows OS, the description will be unrecognizable due to the English version is not available.. , Please follow the steps below.



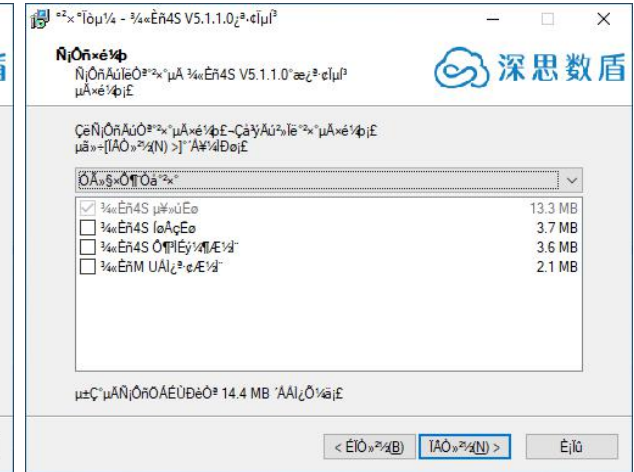
STEP 1



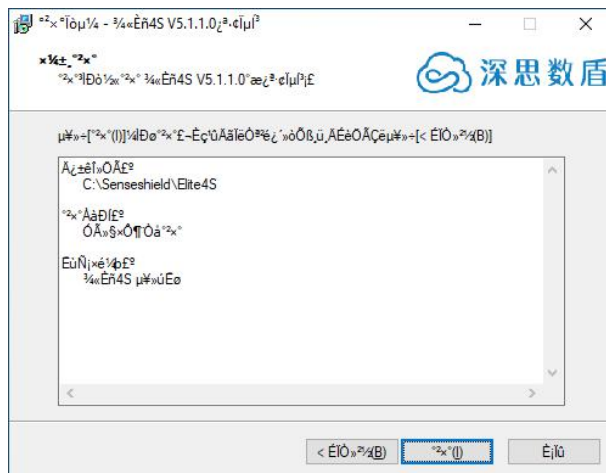
STEP 2



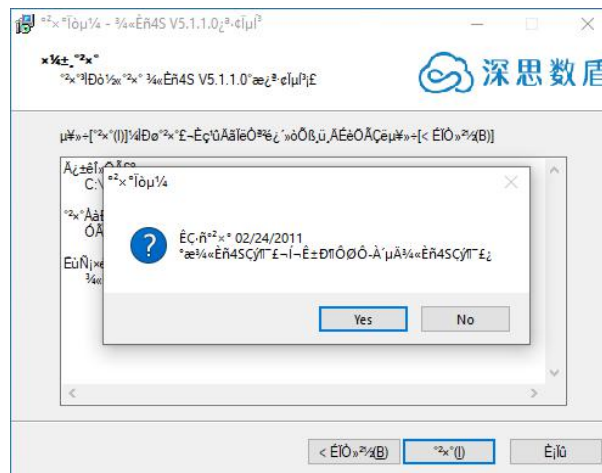
STEP 3



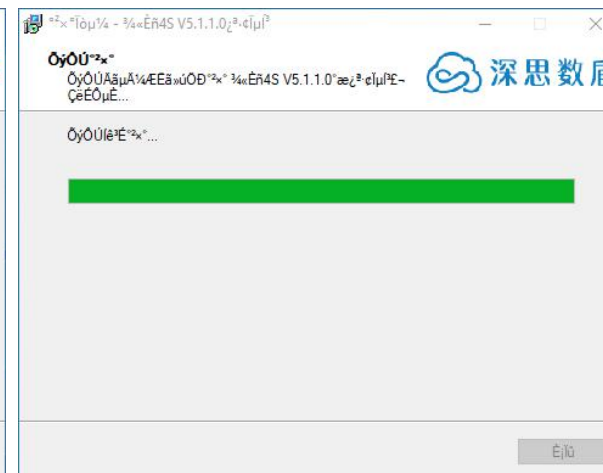
STEP 4



STEP 5



STEP 6



STEP 7



STEP 8

4. Running DPVR_AppPatch.exe: Drag the apps exe. to the window to patch.



Special Note:

- The unpatched app/game will not be recognized by “StarLink” .
- Drag the patched app/game icon to the window to un-patch..
- If the PC configuration is too low to run the multi-screens, lower the FPS and resolution to ensure smooth operation.

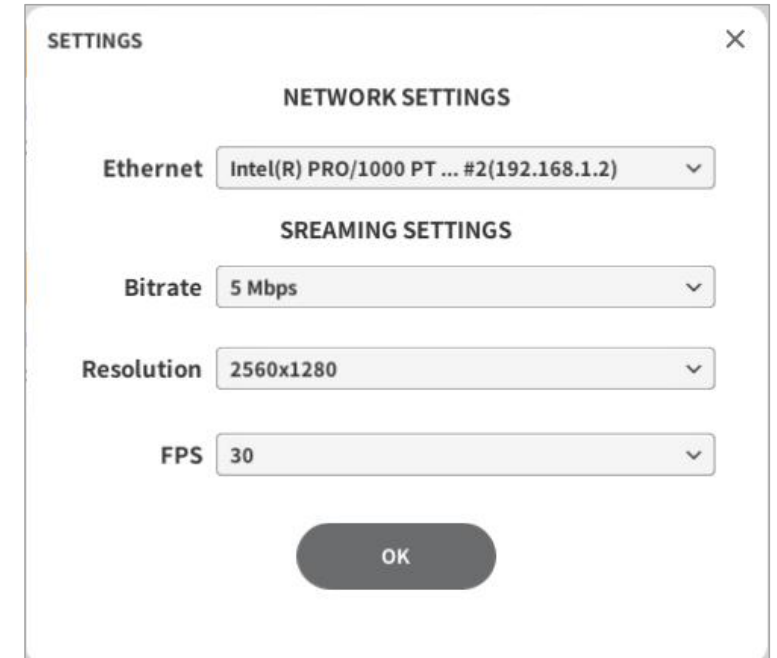
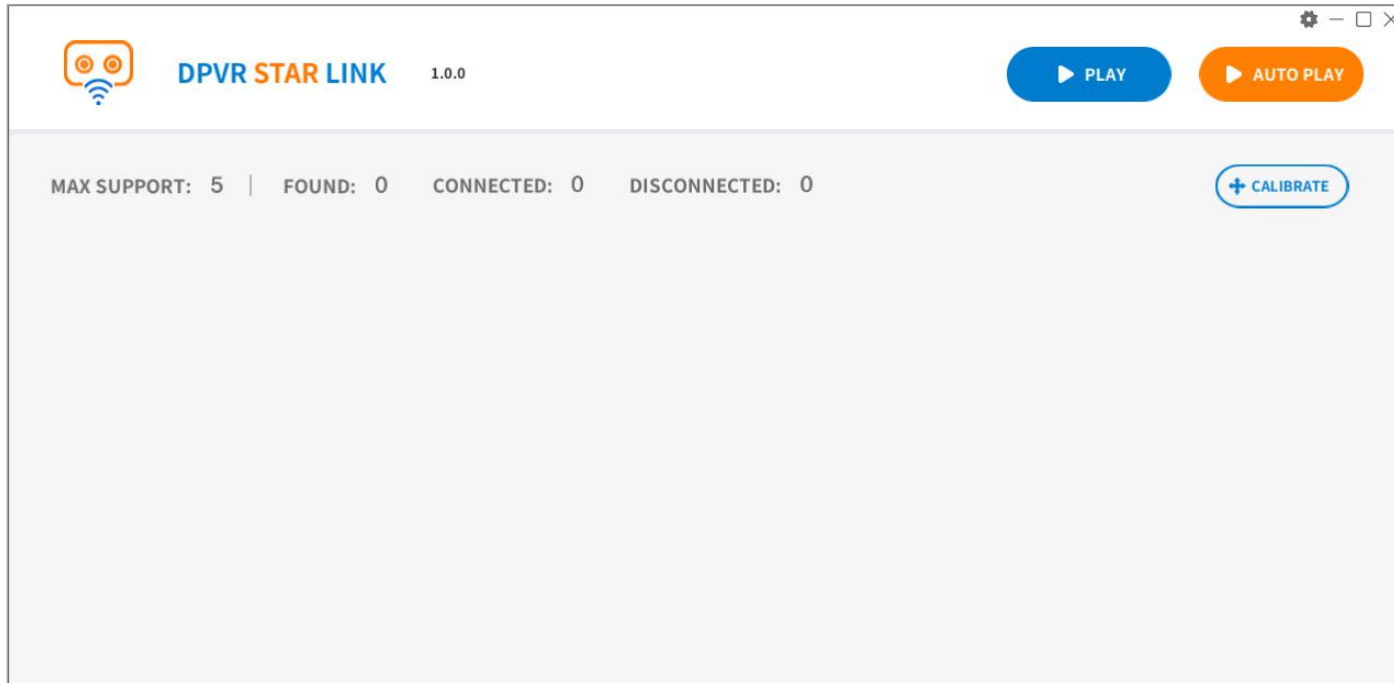


5. Running Steam VR: Please make sure the PC VR headset is connected, run the DPVR_StarLinkServer.exe to activate the SERVER end.



Special note:

- If the SteamVR is not activated, which will result in initialization failure and cannot be used normally.
- Please make sure the path of DPVR_StarLinkServer.exe only consists of English characters/digits/space and underline.
- Please make sure the “StarLink” SERVER end is activated.
- The access of internet is allowed and make sure the firewall or AntiVirus is turned off.
- Please click the setting to chose the internet, when there are multi internet cards available.



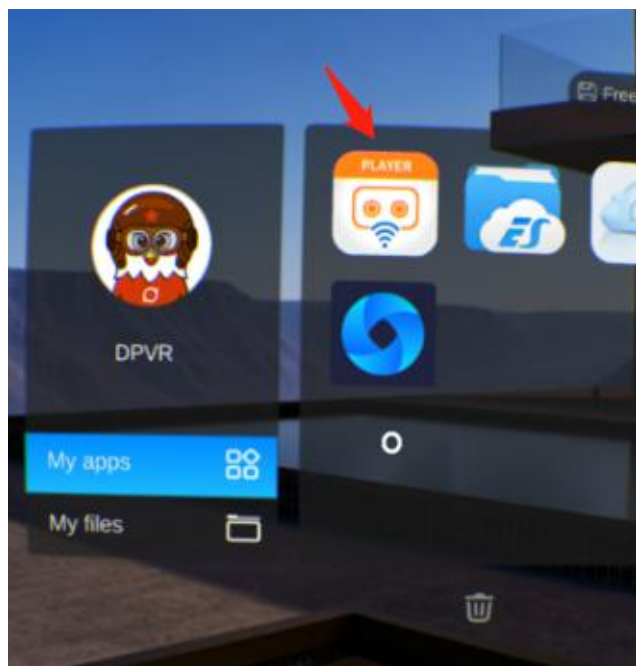
6. Upgrade the firmware according to the HMD model to complete the DPVR_StarLinkPlayer installation.



- P1Pro 4K: P1PV502B002SP244-STARLINK4K / P1Pro: P1PV002B002SP139-STARLINK / P1: under development
- Refer to AIO Upgrade Firmware.pdf for the upgrade instruction.

7. Connect the HMD and PC under the same enterprise router.

- Use CAT6 cable to connect the PC with the router.
- Click the DPVR_StarLinkPlayer at the My apps on the launcher, then enter the WIFI setting by clicking the icon on the upper right corner.



App entrance



Connecting interface

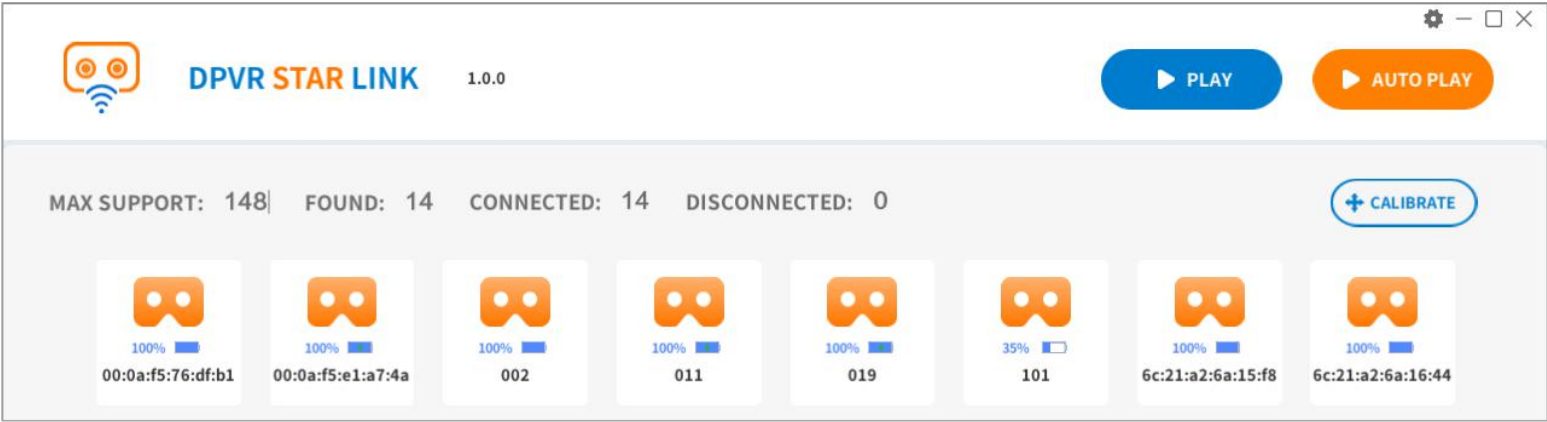


Setting interface

8. After the WIFI setting, wait for the connecting between SERVER end and PLAYER end automatically. 



- After connected successfully, the SERVER end will be shown as below.



Special Note:

- The English interface of the Player end is under development.
- After the initial activation of the Player end, the DPVR_StarLinkPlayer will be activated automatically once the HMD is turned on. To turn off the auto-activation in the setting.
- The " " setting " is available when the PLAYER end is not connected with the SERVER end. It is not

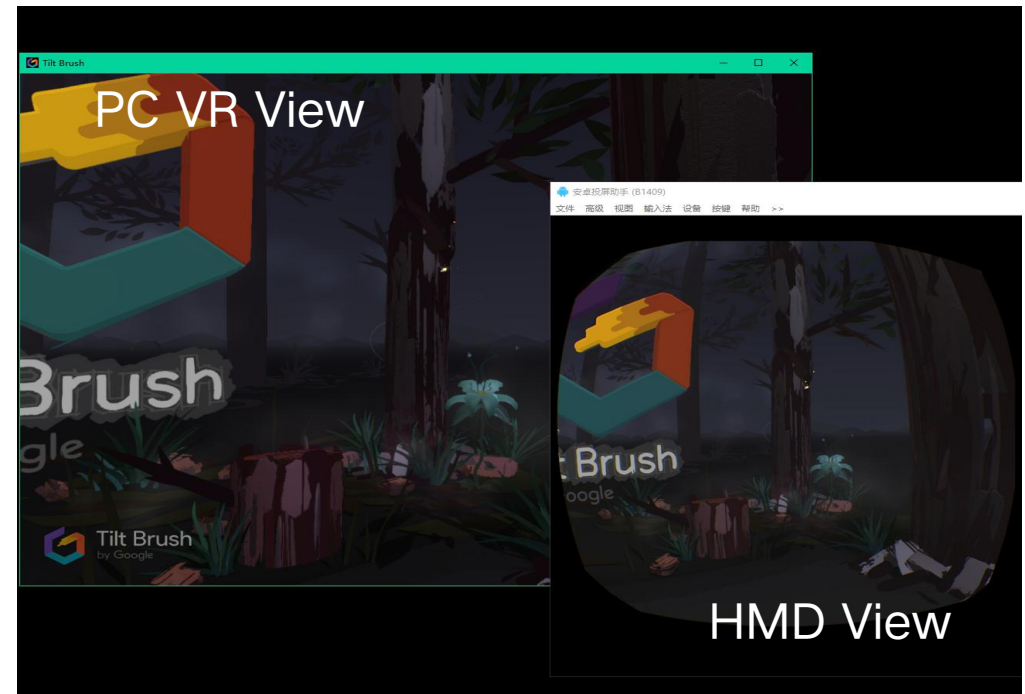
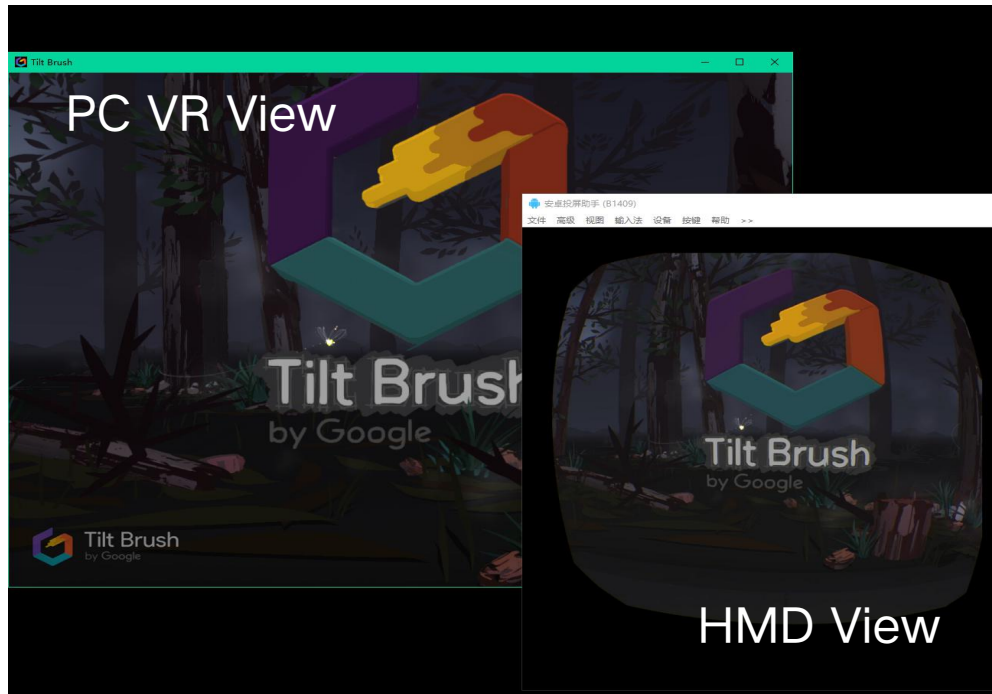


9. Click the “Play” to start the screen sharing between the PC VR and the HMD once the SERVER end and the PLAYER end are connected.

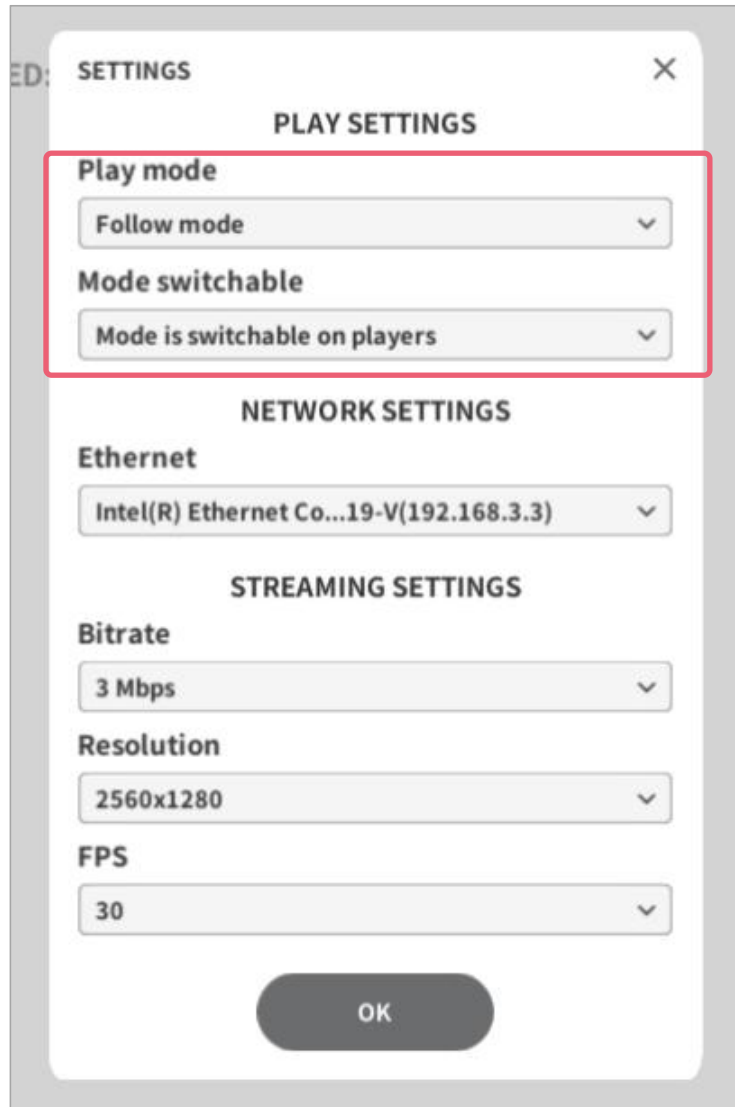


Special Note:

- Before playing, correcting the viewing angle by the SERVER end to ensure all HMDs at the PLAYER end are facing the same direction.
- Please do not pull out the dongle during playing. Otherwise, it will fail to play.
- Modification of streaming specification, including resolution, FPS, and Bitrate is supported by the setting of the SERVER end for a best playing performance.



Usage tips 1: You're capable of switching play mode in server ends.



Play Mode Type:

- Follow Mode (Default): Viewers' visual angle follows with the presenter's. (Viewers need to move their heads with the presenter)
- Cinema mode: Viewers virtually sit in a cinema. The projection screen is central, displaying the content from the presenter's view.
- Lock mode: Viewers don't need to move their heads. The content from the presenter's view is fixed in front of the viewers' eyes.
- Lock mode(far): The difference between Lock mode and Lock mode(far) is Lock mode(far) is not in full screen.

Mode switchable:

- Turn off (Default): Viewers can't switch play mode on their own when watching videos.
- Turn on: Viewers have the access to switch play mode when watching videos

Usage tips 2: You're also able to adjust streaming settings in server ends.

A screenshot of the DPVR settings interface. The window is titled 'SETTINGS' with a close button (X) in the top right corner. It contains three sections: 'PLAY SETTINGS' with 'Play mode' (set to 'Follow mode') and 'Mode switchable' (set to 'Mode is switchable on players'); 'NETWORK SETTINGS' with 'Ethernet' (set to 'Intel(R) Ethernet Co...19-V(192.168.3.3)'); and 'STREAMING SETTINGS' which is highlighted with a red rectangular box. The 'STREAMING SETTINGS' section includes 'Bitrate' (set to '3 Mbps'), 'Resolution' (set to '2560x1280'), and 'FPS' (set to '30'). An 'OK' button is located at the bottom of the settings window.

Bitrate: The default bitrate is 3 Mbps. If it's blurry for you, there are more options that can be chosen. But too much high bitrate will slow your Internet speed. You could choose other options based on your router's performance.

Resolution: The default resolution is 2560*1280. You could choose other options based on your CPU and GPU's performance. We recommend the highest load factor of CPU and GPU be under 80%.

FPS: The default FPS is 30. You can also choose other options based on your CPU and GPU's performance. We recommend the highest CPU and GPU load factor be under 80%.

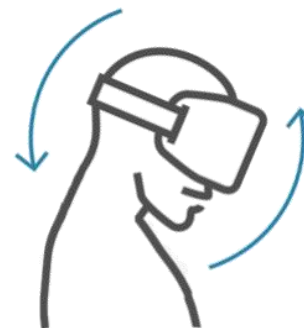
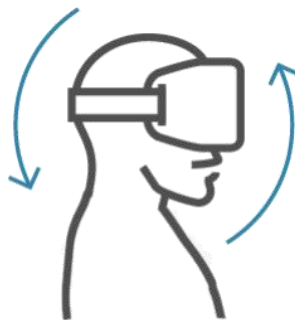
Special Note: The presenter can turn his head left and right/up and down at will when using it, but it is not recommended to tilt the head drastically, which will cause dizziness to the viewer.



Turning left and right
(360° supported)



Turning upside down
(180° supported)



Tilting left and right
(Less than 30° is supported)
(Above 30° is not recommended)

