

My experience with the VR1

As a social VR player

By Steve1734, November 3rd, 2024

My previous VR experiences

- Pico 4 Enterprise (main issues: glare, goes empty after 3 hours with the same cable I use for the Quest 2)
- Quest 3 (main issues: clear pancake lenses make compression artefacts more visible, goes empty after 2 hours with the same cable I use for the Quest 2)
- Valve Index (only tried at a friend's place, main issue: resolution)
- Quest 2 (my daily driver, ~2.700h of VRChat)

My setup

PC:

- AMD Ryzen 9 5900X
- MSI MPG X570 Gaming PLUS WiFi
- 2 x 16GB DDR4-3600 CL16
- Zotac GeForce RTX 4090 AMP Extreme AIRO
- Corsair RM850 PSU

VR:

- 3 x HTC Vive Tracker 3.0
- Rebuff Trackbelt & Trackstraps plus
- Valve Index Controller

Timeline

- Tue October 29th: Received the headset, did some rudimentary testing
- No further testing done till Friday due to (mainly) tracking delay issue
- Fri November 1st: Major software update
- Weekend November 2nd to 3rd: Spend around 10h in VRChat, spread across 2 night's
- November 3rd Afternoon to Evening: me writing this down

Settings (see also Pictures: Software (my settings); page 5)

Rendering:

- Render Resolution: 80% (2953 x 2920 per eye)

- Foveated Rendering: “off” (Resolution set to same as Render Resolution, Vertical and Horizontal size 100%)
- Upscaling:
 - NVIDIA Image Scaling SDK v1.0.3
 - Upscaling Quality: Ultra
 - Image Sharpness: 50%

Screen:

- Brightness: 60%
- Gamma: 1
- Contrast: 100%
- Brightness correction: 0%

Advanced:

- Field of View (FOV):
 - Vertical Angle: 98°
 - Horizontal Inner Angle: 45°
 - Horizontal Peripheral Angle: 53°
- Eye Relief Offset: 0mm

FOV & IPD

(Tested with HMD Tester (<https://www.infinite.cz/projects/HMD-tester-virtual-reality-headset-database-utility>), Rendered FOV was increased from the before mentioned numbers for the test to ensure that rendered FOV did not impact test results)

- HFOV: 108°
- VFOV: 98°
- IPD Used: 66mm

Getting used to the lenses

When I first received this headset, I was quite worried when I saw the very edges of my fov being blurry, I'm not sure if it's physically possible to make aspheric lenses without any kind of blur at the edges but if it is it's probably very complicated. But I'm used to edge to edge clarity with my Quest 2 so when I first used the VR1 (just looking around in SteamVR and not having the IPD adjusted) I really noticed the blur. But when I went into VRChat for the first time on Friday it was a lot better. The more I used this headset the more appreciated the clarity and noticed the blur less and less. The slight blurriness in the very edges (which also hopefully gets better with future warping profiles) is a worthwhile trade-off for the huge jump in clarity.

Build Quality

Phenomenal. The thing is built like a tank without being too heavy. Plastics feel high quality, have no flex. IPD slider is nice and clicky (though personally I'd prefer a non-clicky one for more precise IPD adjustments). Not much else to say.

Comfort

Face cushion feels nice but a bit stiffer compared to what I'm using with the Quest 2. Stock headstrap is nice but I ended up using the one from my Quest 2, not even because of comfort but because it's easier to fit my Corsair HS 80 Max headset for audio over it. I used it with my Quest 2 as well so it is the solution I'm used to. Balance on the head feels surprisingly well for the size (mainly due to the top strap anchor point on the headset being so far forward). The headset is big but not too heavy (also thanks to no glass lenses being used) which makes it more manageable for the headstrap. Also used the headset for 5h straight in VRChat without any comfort issue. The only thing is that I did feel the front-heaviness of the headset a bit more towards the end.

Visuals (see also Pictures: Through the lens; page 6)

Remarkable. Coming from a Quest 2 it's a huge upgrade, especially in terms of resolution and colours. Sweet spot is huge so I literally played around with the IPD to find the best mix between overlap and FOV for my taste (I don't even know what my IPD is lol). Brightness is literally too high, one of the first things I did when using the headset was to put the brightness down to 60% cause otherwise it was simply too bright (also because there is zero light leak). Coming from a Quest 2 with its USB-C compressed colours the vibrancy of the colours in the VR1 are a true bliss. Resolution and lens clarity are amazing (except the outer most edges like mentioned earlier), I was able to make out details in the fur textures of some of my friend's avatars that I've never seen before. Distortion also seems to be a non-issue except in the outer edges. Chromatic Aberration is visible but only towards the edge of the lenses. In short, the visuals are so amazing that words or even pictures/videos won't be able to show how awesome it looks, you simply have to experience it for yourself.

Performance

Performance is one of the things I'm most worried about. Even with the aforementioned settings I only managed to get ~20-30 fps in VRChat depending on the world and the amount of people in the instance/in my field of vision. This headset is truly meant for a generation of hardware that isn't out yet (one could say "the headset is ahead of its time" lol). On the one hand I'd say that whoever can afford a 2.000€+ headset will also be able to afford the newest generation of graphics cards but for someone like me who saved up for the headset since I've first read about it (and who doesn't earn that much money to begin with) it will be a tight squeeze in the budget.

Gripes, Issues, problems, things I've noticed

- Headset gets warm to the touch. Also noticed a bit of warmth around the eyes when taking off the headset and putting it back on. Not uncomfortably warm, just noticed it but could be a bit more of a problem in summer (barely anyone has A/C here in Germany).
- Quest 2 headstrap doesn't like to stay on the anchor points (might be due to increased width of the headset). Not a big deal, just fixed it by putting a piece of tape around either side but still a thing I noticed.
- Missing eye tracking documentation. The main reason I got a version with eye tracking is to use it in VRChat and for that a Module needs to be created for the VRCFT

software that communicates with VRChat. For the programming of that module the documentation is essential. Also, the access to the tracking camera streams cause that way there's a possibility for other eye tracking software to possibly read out the stream and thus read out more parameters than just eye position and open/closed like the position of the eyelids or eyebrows which for social VR makes a huge difference.

- IPD measurement does not work. When I try to measure my IPD the diamond appears in the middle and goes away after a few seconds without telling me the IPD anywhere.
- Headset doesn't get recognized by SteamVR after restarting (see also Pictures: SteamVR Issue; page 6). When I leave SteamVR and start it again the Headset doesn't get fully recognized. I turn it and see the base stations popping up as they see the headset but looking through the headset I only see grey. Only works again after restarting the PC which is quite annoying.
- Option to just turn off Foveated rendering. Right now, it seems there is no option to do that, instead you have to put the foveated rendering resolution and the normal rendered resolution to the same value and put the size to 100%, which is overcomplicated when you just want to turn of foveated rendering.
- Local dimming not working yet. Most people who are reading this know it but I just wanted to put this here in case someone who isn't as familiar with the headset does.
- Thinner Face cushion, slimmer facial interface and/or facial interface with different eye relief settings. I'm used to the Lenses of the headset being quite close to my eyes with the Quest 2 and noticed that it wasn't the case for the VR1. I'd appreciate having my eyes closer to the lenses for a bigger FOV. I know we received the 3D-Files for the facial interface but I don't know any 3d-programs and I would have appreciated the headset coming with a facial interface with a changeable eye relief setting in the first place (like Valve Index, Quest 3). Also, I hope that Somnium comes out with thinner face cushions in the future cause even though from what I've seen the HTC Vive Pro 2 ones seem to fit pretty well it would be preferable to have a first party option.
- Smaller FOV then all other numbers I've seen online. For some reason I seem to be getting a smaller FOV then most other people, even when I tighten the headset to an uncomfortable degree, which is also why I want to get my eyes closer to the lenses. It might be due to my face shape, the fairly small IPD used or something else, I don't really know.
- Black, vertical lines seen in single frames. When playing VRChat I noticed that sometimes there are black lines across the screen that can only be seen for a single frame or so. I'm not sure if it's an issue with SteamVR, the VR1 software or the NVIDIA driver.
- Wrong FPS-counter in the VR1 software. Even when I just get around 30 fps in VRChat the VR1 software shows that I have 90fps which is simply not the case.
- Off-ear audio solution. Though I know it's possible to mod the VR1 with the HTC Vive headstrap which also has off-ear speakers on it, for the price of the headset I would have preferred an off-ear audio solution to be included.

Conclusion

All in all, this headset is remarkable and at least from the headsets I've seen there's no one close in terms of visuals. The comfort is pretty good, not as good as a significantly smaller headset but it's comfortable enough to keep me playing VRChat for 5+ hours. Like I've mentioned above there's still some things missing and some small issues but nothing

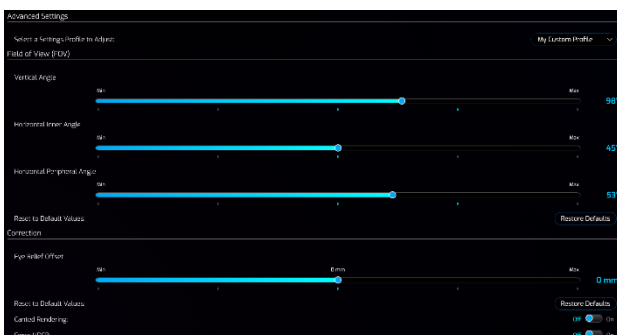
that can't be fixed and I'm happy to see this already amazing headset become even better in the future with software fixes, new warping profiles, possible mods and a new, more powerful generation of hardware.

Pictures

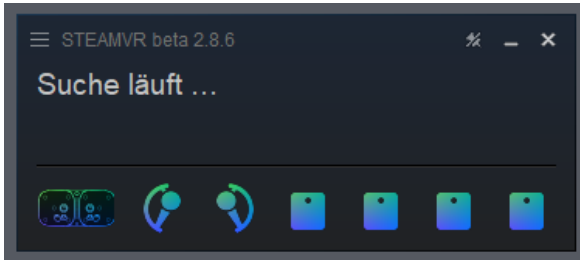
Unboxing:



Software (my settings):



SteamVR Issue:



Through the lens:

