VR on the cheap: a review of the Vuzix iWear VR920 video eyewear

By Ben Kuchera | Published: November 07, 2007

Making your reality virtual

iWear VR920 Manufacturer: Vuzix
System requirements: Windows XP
Games supported with head-tracking: *World of WarCraft, Unreal Tournament 2004, Half-Life, Counter Strike, MS Flight Simulator X, IL2-Sturmovik, X-Plane, Gtr-II, rFactor, Second Life*
Price: $399

There are a few products you get tired of hearing about when you begin to review hardware and gaming equipment, and none more so than video headsets. I love a good monitor, and I can shop for televisions for hours, but whenever I'm at a trade show and a company tries to strap video equipment to my face, I know I'm in for a headache. I've tried every damn video headset on the market—and I'm sure a few that never made it to market—and quite frankly, I thought they all sucked. Everyone thinks they have the next big video headset, and they're always wrong.

Why are these products so hard to get right? Small, high-quality video displays are expensive, and it's just not natural having them so close to your eyes. Low-resolution video usually rules the day, and trying to focus on a display that's running at 320x240 a few inches from your face is a painful task. Also, you look like a geek. It sounds like a sexy idea, but it's rare that a headset is anything approaching tolerable.

The future, is it now?

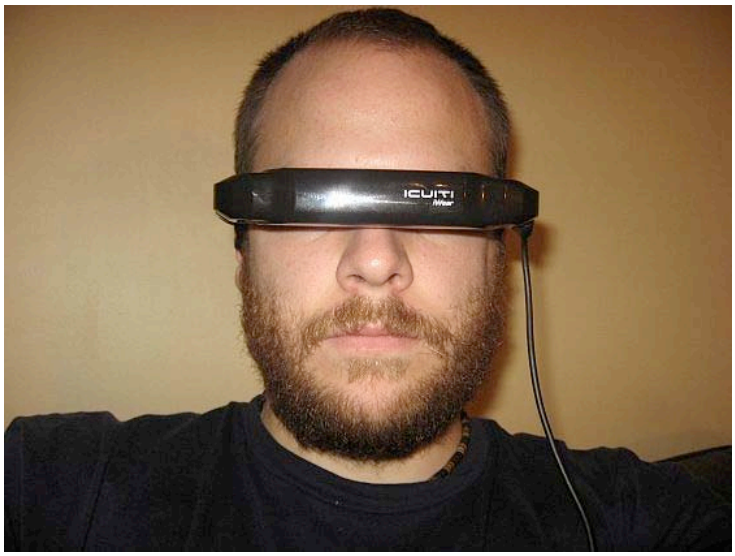
When Vuzix sent me the press release for the iWear VR920, a product that would include 3D, head tracking, and built-in audio, I was skeptical, but review samples *were* available. Why not? I told them I'd give it a look, but also that I wasn't sure where the review would go: a front-page feature or a blurb on a journal. "This is a front-page product," I was told, but of course they all say that.

The package came, and they certainly set reviewers up: each review sample comes with the headset, a very nice Saitek flight stick, and a copy of *Flight Simulator X*. The 30-day loaner sent a message: this will be a complete virtual reality setup. I began hooking things up. I don't know if I've ever gone into a review with lower expectations.

Setting up

Installing the drivers went as simply as expected, and hooking the headset into the computer consisted of

plugging into a USB port and then attaching the VGA cable into the back of the computer. Here's the thing, though: the cable comes out of the glasses as one wire and then splits into two parts for the USB and VGA connectors. I realize that most computers have USB ports on the back of the case, but if you wanted to use a port on the top or front of a large case, you might have to use an extender. Also, this is a proprietary cable that doesn't disconnect from the glasses; if your dog decides to chew through it, you'll have to send the glasses back to have them repaired. I would have preferred that the glasses came with a detachable cable that could be easily replaced, and while this may seem like a small nit to pick, the devil is in the details. Ruining a set of $400 glasses if cable goes bad would be infuriating.



The best form of birth control I've ever used

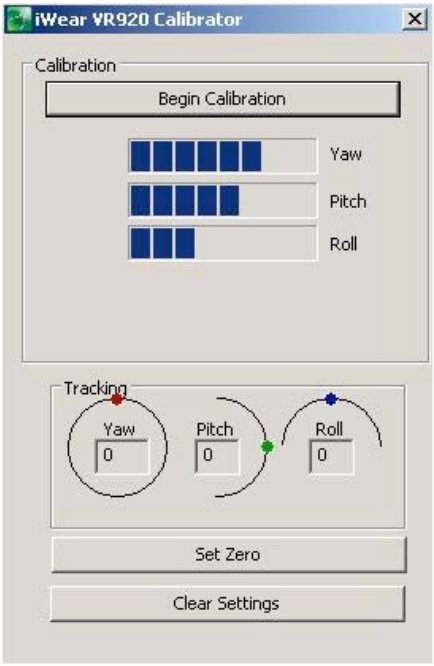
The glasses sport two 640x480 displays, and can scale down from 1024x768. While that resolution doesn't seem high on paper, it's rather impressive for a headset display. In fact, the first time I put the glasses on, I was impressed with the fact that my desktop looked fine, and text was easily legible on the screens. I was afraid that things would be hard to see, but the glasses were good for composing e-mails and instant messaging; the displays are sharp enough for general computing as well as watching video and playing games.

My first impressions with the glasses were impressive, but I did notice some rolling lines. You can also see above and below the display; the goggles do not block out reality completely. That may be nice for some people, but I would much rather have all of my visual focus be on the screen in front of me. I found myself turning the lights off in the room whenever I used the headsets. Vuzix offers an "Immersive Eyeshield" on its site for $15, but that would have made a nice pack-in. Luckily the headset is comfortable – even if you do look pretty ridiculous wearing it.

Audio is delivered through headphones built directly into the headset, and while the arms were adjustable, it took me a while to get them comfortably in my ears. While they may look like earbuds, the headphones are actually meant to rest right outside of your ears. The audio is decent, but nothing spectacular. Luckily, the headphones *are* removable, and if you can hook up your headphones of choice directly to the sound card or have a front-panel audio connection on your computer, you can use anything you want with the VR920. I think Vuzix would be better off removing the built-in audio to save a few bucks and simply adding a headphone jack directly on the unit.

One of the features on the glasses is the ability to show a stereoscopic effect using both screens for true 3D. Unfortunately, this only works with NVIDIA 3D Stereo drivers, and those haven't been updated in a very long time. Also, they don't play nice with the latest drivers for my 8800GTS. If you're running Vista or have an ATI card, you're out of luck completely . As of this writing, I have yet to be able to get stereoscopic 3D to work on my test system. Stereoscopic 3D is old technology, and no one has supported it since the days of those goofy pack-in glasses you used to get with your video cards. While it would have been neat to try it, I couldn't get it to work even after rolling back my drivers, and I wouldn't have been willing to live with old graphics card drivers to use it anyway. This seems to be a "We can do it, so why not?" feature, instead of something that's actively supported.

Where the ocean meets the sky, I'll be sailing



The first game tested was *Portal*, simply because *Portal* is awesome, and if you gave me anything from a new mouse to a new set of speakers, the first thing I would play is *Portal*. Again, text is easy to read, the graphics look pretty solid through the headset, and the view is large enough that falling into a portal only to be spit out of another with your view shifting and your velocity increasing was enough to make me feel ill. But in a good way.

I tried a few more games, like *Quake 3* and a few of the classic titles from the id Steam package and was impressed that even without stereoscopic 3D enabled, things did have a nice 3D look to them. Having a screen for each eye does give everything a sense of depth that a monitor lacks.

Then I decided to play the game they thought would best show off the hardware: *Flight Simulator X*. I installed the beast (15GB!?!?) and set up the flight stick so I could get the full effect. At the moment there are only a few games that support head tracking, such as *World of WarCraft*, *Half-Life*, *Counter-Strike*, *Second Life*, and a few others. If they haven't written the driver for the game yet, you're out of luck. A list of only 10 games is unfortunate for a $400 piece of hardware. Vuzix says that there is an SDK available for developers, but it's an open question how many people will use it.

I calibrate the headset by holding it in front of me after opening the calibration software, and then I twist it in every direction. When I'm happy, I lock the settings in. This is kind of a touchy process, and I had to practice a few times before I got to the point where it worked well with any regularity. Still, it takes seconds. I opened up *Flight Simulator X* after making some changes to the folders in the Program Files to get the headset to work properly, and the game wanted me to change my desktop resolution to 1024x768 to run correctly. No problem, although the glasses had some problems scaling the text; I found myself squinting trying to figure out what plane and mission I wanted to try.

Imagine looking around the cockpit in real time. Very cool stuff

Then the game started.

I've picked a lot of nits, and at this stage I've been wrestling with drivers and trying to put a shirt over my head to block out incoming light. I'm kind of cranky that way. All of that annoyance was gone, as I found myself inside the cockpit. Like, inside it. I look down and see

the instrument panel. I look left and see out the window. I look up and see the rivets holding the metal plates of the plane together. I took off, looked out the right window over the empty seat, and banked hard so I could see the ocean beneath me. Amazing. The sense of flight and actually being there is almost overwhelming.

The motion-tracking isn't perfect; it's helpful to remember to turn your head with moderately-paced, smooth motions. Also, if you didn't do a good job at calibration, you'll know it instantly. But once you get it to work the effect is very, very nice. This is the first time I've ever used a consumer-level headset that delivered actual, working virtual reality at a sub-$500 price point. If I were a hardcore flight sim player, I could see picking up the VR920 *just for this*.

Summing it up

There are many "gotchas" with the VR920. Stereoscopic 3D is an impossibility if you have Vista or a modern video card, and Vuzix even warns about head tracking in 64-bit versions of Windows. This one reason why I keep a dual-boot system for testing hardware, but not everyone does that, and this is advertised as a consumer product. The attached cables and built-in audio are questionable design choices, although the microphone built into the glasses works well.

The head-tracking only works with 10 games at the moment, and to get the head-tracking to work you'll have to dump some of Vuzix's code into the games as well as master the calibration tool; this isn't exactly plug-and-play. On the games it does work with though, the visual quality is more than adequate, and the head-tracking is so much fun it's almost unbelievable. If you have Windows XP, some patience, and a love of flight sims, this could be worth the purchase.

While the VR920 isn't an unconditional success, it is the closest anyone has ever gotten to a consumer-level, "gotta have" virtual reality headset. I can't wait to see what Vuzix comes up with next; it seems like the company is close to doing what I considered impossible before starting this review.

For $400 this product may not be a must-have for anyone but flight simulation fanatics, but it's a significant improvement over other products on the market.

The Good:

- Two 640x480 displays are higher resolution than the competition
- Visual quality is solid, good enough for general computing
- Head-tracking brings a new level of realism to *Flight Simulator X*

The Bad:

- Stereoscopic 3D is nearly impossible for newer video cards, ATI cards, or Vista owners
- The video and USB cable can't be removed
- Low refresh rate can be bothersome at times
- Getting games to utilize the head-tracking is an in-depth process

The Ugly:

- You're going to look like a bad science fiction movie from 1985 while you use the glasses