Virtual reality hardware for HolliDance

[Virtual Reality](#) (VR) hardware was released in the early 1990's but didn't sell very well. The potential was there and VR generated a lot of public interest, but early hardware was either too low quality or too expensive. Graphics capability, at that time, was also not sufficient for the demands of VR. The technology mostly disappeared from the market.

In the meantime, graphics capability increased significantly and VR is poised for a return. In 2012, Sony released a new [head set](#)

Sony HMZ-T1

The HMZ-T1 doesn't have head tracking technology and therefore isn't a full VR headset, but it is stereoscopic and can display 3D video via an HDMI cable connected to a small interface box. It's resolution of 720x1280 is an improvement over the 1990's VR headsets and it's use of organic LED displays results in a bright, colorful image that is completely free of 3D ghosting.

For the VR version of HolliDance, I added a [VirtualCube tracking unit](#). from the [Vrealities store](#).

VirtualCube

The VirtualCube provides fast, accurate head tracking for all three rotations. The graphics frame rate should be over 30 frames a second to avoid too much lag between head motion and the display. Simplify rendering options for a better VR experience on slower graphics cards.

Virtual motion about the HolliDance set can be made with a Playstation style PC USB joystick. I used the Logitech F510

Logitech F510

The left thumb stick controls forward and aft motion and left or right turning motion. Pressing the left thumb stick returns the virtual camera to it's 'home' position. The right thumb stick raises or lowers the camera. Pressing it resets the camera height.

Since I put together my virtual reality kit, a company called Oculus VR created a new type of VR headset.

Oculus-Rift

Previous VR headsets lacked sufficient pixels to cover the wide field of view necessary for an effective VR presentation. They compensated for this by limiting the field of view to minimize the resolution limits of their image. Viewing them was a bit like looking through a pair of cardboard tubes and one couldn't really move one's eyes much. I suspect over ten million pixels per eye are needed to cover a wide field of view with good resolution.

The prototype Oculus Rift currently displays only a few hundred thousand pixels per eye, but presents a very wide field of view. Despite its low apparent resolution, the Oculus Rift is a very effective VR headset. It's resolution will improve with time and it likely represents the future form of VR. It has been very well received by the public despite not yet being available for sale.

Developing for the Oculus Rift is different than traditional VR displays. HolliDance doesn't yet support this promising VR head set, but should in the future.

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