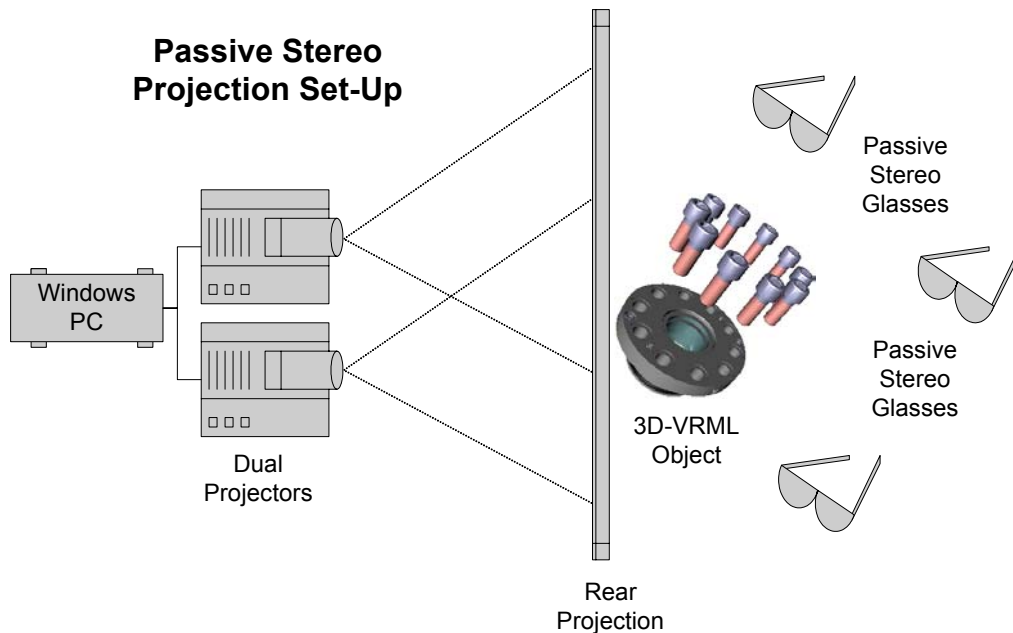
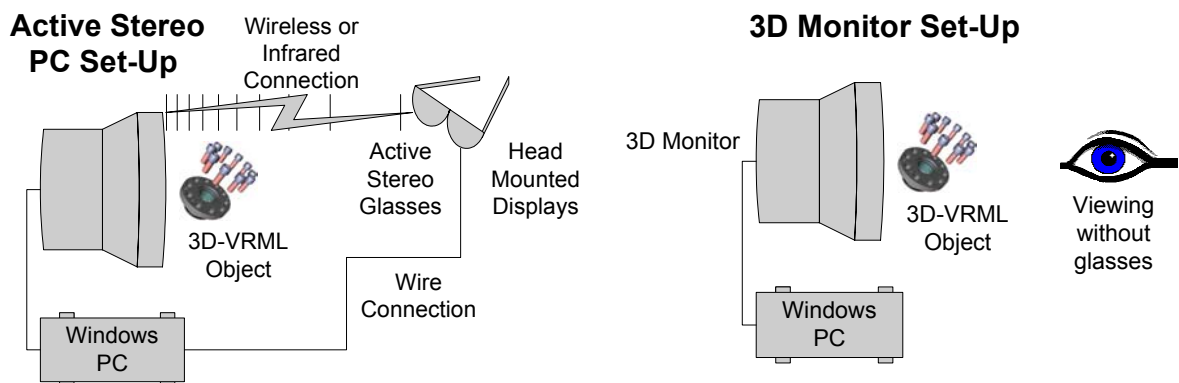


## BS Contact Stereo Technical Overview

Stereoscopy (also often referred to as "3D") requires presenting separate images with the right perspective for the left and right eye. In order to reach many Virtual Reality set-ups, BS Contact Stereo supports different stereoscopic rendering modes for active and passive projection systems (OpenGL Quad-Buffered Stereo, Red-Blue, Split-Screen).



The figure above shows a typical set-up for a passive stereo rear-projection system. BS Contact Stereo supports one wall displays with rear or front projection from a single Windows PC with suitable graphics card (e.g. NVidia Quadro, 3D Labs, ATI-Fire GL). As supplier of rendering software only, Bitmanagement Software GmbH is partnering with dedicated Virtual Reality and Augmented Reality companies for setting up the hardware of complete VR systems.



However BS Contact Stereo can also be used with a monitor with highrefresh rate (100-160 HZ). In the figure above at left active stereo glasses or a head mounted display are connected to the PC.

In the 3D monitor set-up above at right a dedicated 3D monitor is used (e.g. SeeReal, X3D). This set-up does not require any glasses to view the 3D stereoscopic images.

The following describes the supported stereoscopic rendering modes in BS Contact Stereo.

## **OpenGL Hardware Quad-Buffered Stereo**

OpenGL Hardware Quad-Buffered Stereo requires a professional graphics card with hardware Stereo Support (i.e. NVidia Quadro, 3D Labs, ATI-Fire GL). In the driver's control panel settings stereo support must be enabled. In the BS Contact Stereo OpenGL Settings dialog "Stereo" must be enabled in order to search for an stereo capable display format. And finally in the Graphics->Stereo Menu Quad Buffered must be enabled.

Beside the stereo capable OpenGL board an Monitor with a high refresh rate (100-160 HZ) and active Shutter Glasses connected to the Video Output / or stereo connector. Alternatives are an HMD, stereo capable projectors. Another option are splitter boxes separating the video signal into two signals for passive stereo projection.

## **Split Screen**

The Split Screen method displays the scene two times with split view ports. The viewing setup requires a dual output graphics cards, 2 stacked projectors with polarization filters and polarization glasses. The driver (e.g. NVidia Nview) needs to be configured to provide one continuous desktop over the two monitor outputs. BS Contact Stereo in full screen mode then covers both display area.

## **Red-Blue**

The Red-Blue method displays the scene in the same frame with red for the left eye, blue for the right. It requires RED-BLUE glasses. It works best with objects displayed in wire frame.