Lens Tweak Software Set-Up

4/01/10

New “Lens Tweak” software for the Hand Unit 3 (HU3) allows the user to match the focus, iris, and zoom scales of a stereo pair of lenses so that they track identically.

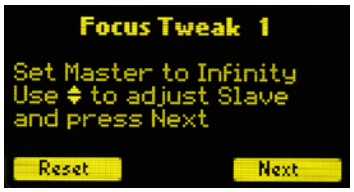
Before proceeding, set up the lenses with digital motors and a pair of MDR2 motor drivers. To operate in the 3D mode, one of the motor drivers is loaded with the normal software (version MDR1.41) and the other is loaded with “slave” software (version MDR1.411Simplex).

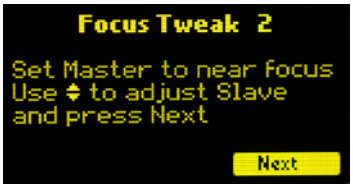
Press the Reset button on both MDR2’s to initiate lens calibration. After the motors find the mechanical end stops and come to a stop, turn the HU3 focus knob to infinity. Check that both lenses are at the infinity end. If not, change the setting of the motor direction switch located under the corresponding motor Lemo receptacle. Confirm that the focus and iris motor pairs are also moving in sync.

Focus Motor Direction Switch

Go to the Lens Tweak menu: Press: Menu, Mode. Select 3D Lens Tweak, OK.

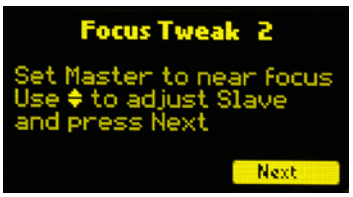
From the 3D Lens Tweak menu choose which lens function to match using the Navigation key ↕. For our example we choose Focus and press OK.





Turn the focus knob to set the master lens to infinity. Next, use the Navigation key↕ to adjust the slave lens also to infinity. This first step has removed any difference in the infinity positions of the two lenses. At this point the infinity offset has been stored in the slave MDR2. If you only need to change the focus

offset, you can exit the Lens Tweak menu by pressing the left side of the Navigation key three times to return to the main display screen. To remove the tweak compensation for focus, press Reset.



To complete the Lens Tweak calibration for focus press Next. This step will compensate for the differences in the focus travel (focus scale) between the two lenses. For greatest accuracy, position a lens chart near close focus. Turn the HU3 knob to focus the master lens, and then use the Navigation key to adjust the slave lens. Note that you must rotate the focus knob more than about 1/6th of a turn or 60^{o} from infinity or the Navigation key will not change the position of the slave lens.

Tweaking the Iris and Zoom is done in the same manner as focus. The zoom tweak allows the size of the images produced by the left and right cameras to be matched over the zoom range.

The Iris tweak can be used in either of two ways: to set equal signal levels from both cameras or to equalize the size of the out of focus blur circles.

The lens tweak data is stored in the slave MDR2. To remove all of the lens tweaks – focus, iris, and zoom - hold the reset button of the slave MDR2 until the motors begin to re-calibrate the lenses- about six seconds..