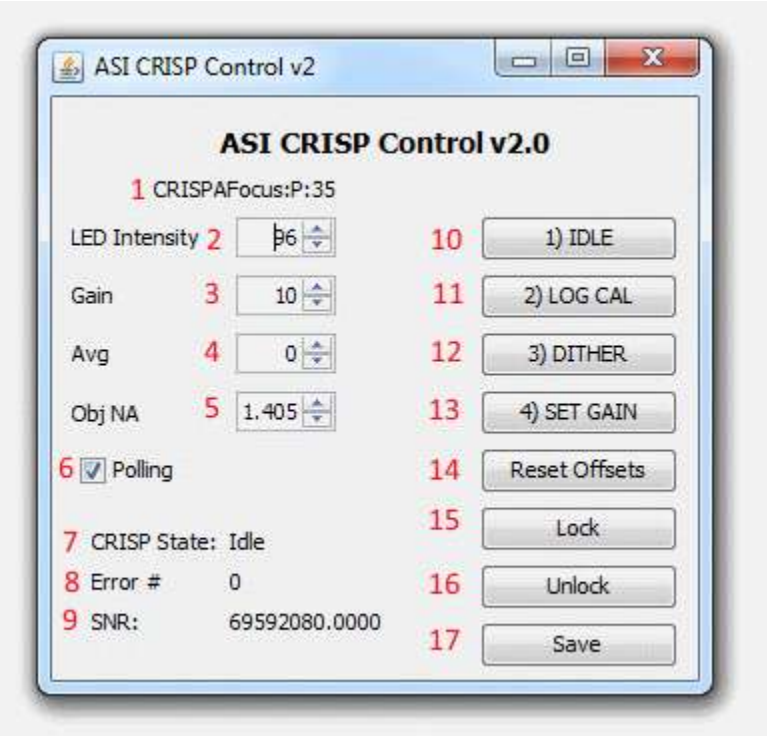
Using MicroManager's ASI CRISP Control v2



Plugin Controls Explained

1. Indicates the Axis the plug-in/control is interacting with.
2. Controls the intensity of CRISP's IR LED. Units in %. Adjust it if SNR number is low.
3. Controls the gain multiplier or loop gain. Decrease it if CRISP seems to oscillate or jittery.
4. Sets the number of samples to be averaged.
5. Sets the Objective's Numerical Aperture.
6. When checked, the plug-in polls or queries the controller at frequent intervals for CRISP state, error and SNR. When done calibrating crisp, turn it off or uncheck.
7. Indicates the CRISP state, such as Idle, Calibrating, Ready, In Focus etc.
8. Indicates the CRISP error.
9. Indicates CRISP SNR. Units in db .Usually atleast 2db. When below 2dbCRISP may be unstable and lock could be lost. Try increasing LED intensity and perform Log Amp Cal (#11)
10. Puts the CRISP in Idle state. CRISP's IR LED is turned off and CRISP stops adjusting the axis position.
11. Puts the CRISP in Log Amp Calibration state.
12. Puts the CRISP in Dither state.
13. Puts the CRISP in Set Gain state.

14. Reset Offset. If you like the CRISP to maintain focus at a certain position. However the error isn't "0", when CRISP is locked, CRISP will move the axis to a position where its error is zero. Use the Reset offset button to make your desired focal position have "0" error.
15. Puts the CRISP in Lock state.
16. Puts the CRISP in unlock state.
17. Saves all the settings on the controller to non volatile memory. Settings for LED Intensity, Gain, Average and Obj NA are among the save settings.

Quick Setup Guide

1. Begin by putting the CRISP in Idle state by pressing "Idle" button (#10).
2. Set your Objective's NA in field #5. Objective NA sets the Dither Distance.
3. Perform Log Amp Calibration by press "Log Cal" button (#11).
4. SNR number after calibration will be at least 2db. If it isn't, try increasing LED Intensity and performing Step 3 again. If SNR is still below 2db, continues to step #5 anyway.
5. Put CRISP in Dither mode by pressing "Dither" Button (#12). CRISP moves the axis back and forth based on the Objective's NA.
6. During Dither the "Error number" (#8) must be atleast +/- 100 for a strong lock. If it isn't, try adjusting the Lateral Adjustment screw for higher "Error" numbers. Higher the Error numbers, stronger the lock.
7. Perform Gain Calibration by pressing the "Set Gain" button (#13).
8. Now press "Lock" button (#15) to lock focal position. Then Press "Unlock" button(#16) to release CRISP lock.
9. If CRISP looses lock, repeat all the steps again. Try to high error number during Step #6.

Additional Tips

If you like the CRISP to maintain focus at a certain position. However the error isn't "0", when CRISP is locked, CRISP will move the axis to a position where its error is zero. Use the Reset offset button (#14) to make your desired focal position have "0" error.

Further Reading

Refer to “CRISP AutoFocus Instruction Manual” for a better description of CRISP operation and troubleshooting guides.

http://tinyurl.com/crisp-manual

Changelog

9/12/2014, First draft