

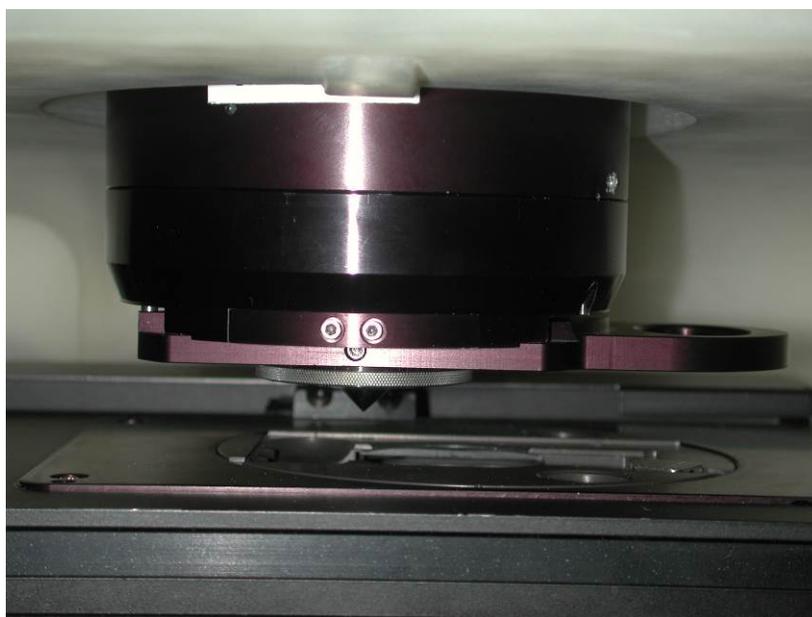
1. **Turn the power on to the iN10.**
2. **Cool the single point MCT detector.**
3. **Remove all samples from the sample stage.**
4. **Remove the ATR from the dove mount if it is installed.**
5. **Launch OMNIC Picta.**
6. **Set the system parameters.** Select the *View and Collect* menu, click the *Experiment Setup* tab and set the *Collection* parameters as follows:
  - Collection Mode = Transmission
  - Collection Time = 1s
  - Background = Collect background every 300 minutes
  - Detector = Cooled
  - Spectra = Transmission
7. **Align the interferometer.** Click the *System Status* tab and choose *Align* to optimize the signal. Align will move all mirrors and assemblies to their optimal positions for the mode selected.
8. **Change system parameters.** From the *Experiment Setup* window set the *Collection* parameters as follows:
  - Spectra = Interferogram
  - Collection mode = Reflection
9. **Prepare for alignment check.**
  - 9.1 **Lower the Z Stage (if necessary).** Expand the joystick from the video screen and use the Z focus bar to lower the Z Stage enough to provide ~1" of space between the dovetail mount and the sample stage.
10. **Check the crystal for rough centering.** Visually check that the crystal is roughly centered in the crystal holder. Adjust the centering screws as necessary.

## Replacing or adding an ATR crystal

**Note** One screw is a plunger that only needs to be adjusted if it is too tight to allow enough adjustment of the other two screws. See below.

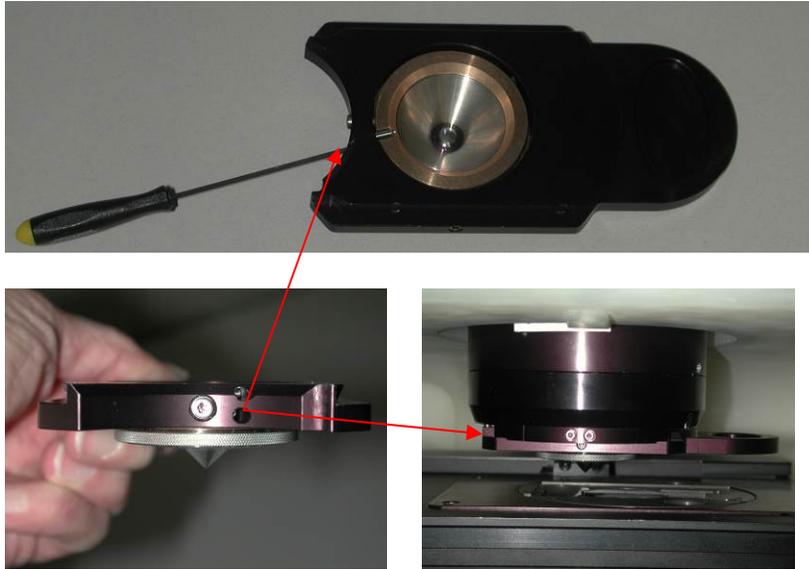


11. **Insert the ATR slider.** Insert the ATR slider into the dovetail mount until it hits the hard stop.

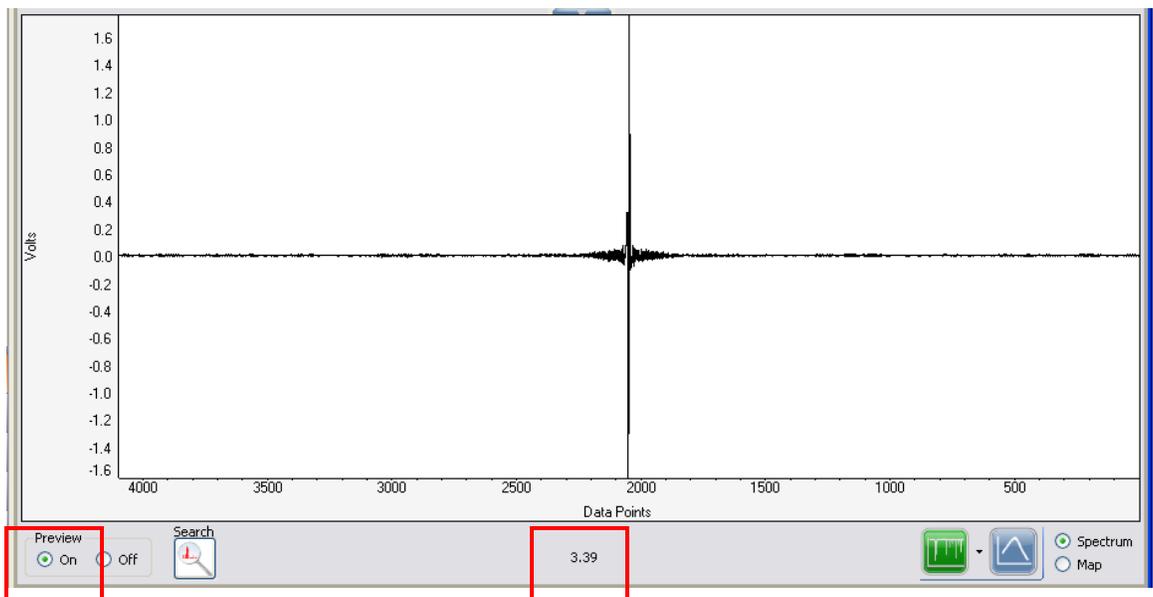


## Replacing or adding an ATR crystal

12. **Focus the ATR Crystal.** If not already loose, using a .05" ball driver, back the setscrew out just enough to allow for crystal rotation.



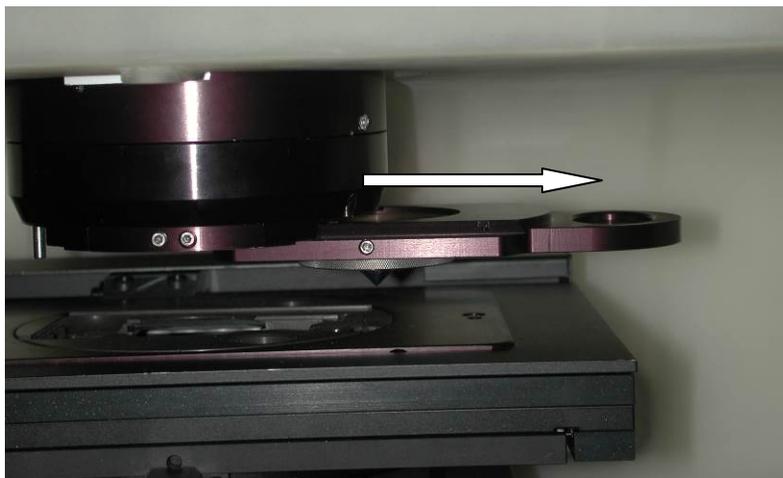
12.1. **Adjust for maximum throughput.** From the preview window turn *Preview* on. While observing the signal, slowly rotate the crystal clockwise in the holder to maximize the signal as displayed at the bottom of the preview window. If the signal only decreases, rotate the crystal counter-clockwise to maximize signal throughput. Tighten the setscrew.



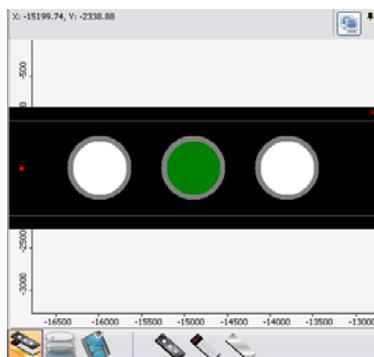
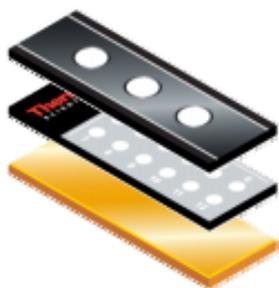
13. **Turn preview mode off.**

## Replacing or adding an ATR crystal

14. **Remove the ATR crystal from the beampath.** Pull the ATR slider out until it clicks in the first detent and is out of the beampath.



15. **Insert the service test slide into the sample mount.**
16. **Change system parameters.** From the *Experiment Setup* window set the *Collection* parameters as follows:  
Collection Mode = ATR
17. **Select the sample.** Using *Slide View*, select the 3-hole slide and click on the center hole. This will bring the polycarbonate window on the *Service test slide* into the beampath.

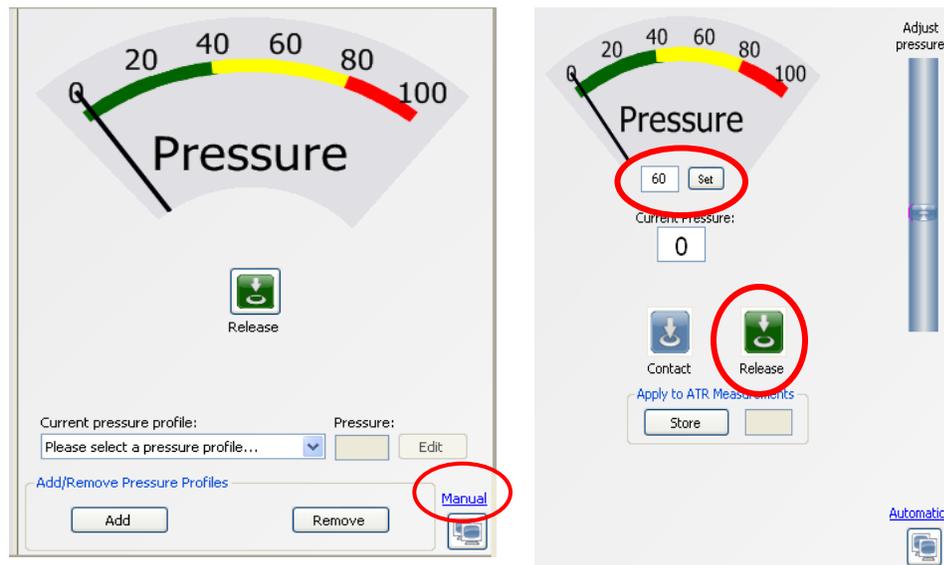


18. **Focus and locate sample area.** Expand the joystick icon and using the focus bar, focus the Z stage. Find an area on the polycarbonate window that is clean (no previous footprint).

## Replacing or adding an ATR crystal

19. **Insert the crystal into the beampath.** Carefully, while observing the clearance between the *Service test slide* and ATR crystal tip, fully insert the slider back into the dovetail until it hits the hard stop.
20. **Rough center the crystal image.** While viewing the video screen locate the shadow image of the crystal tip and using the centering screws, roughly center the image so it is centered on the video crosshairs. See step 10 for centering screw location.
21. **Identify crystal location.** From the ATR contact screen select *Manual*. Enter 60 into the pressure dialog box and then click *Set*. The stage will automatically move up (until the pressure reaches 60) and stop.

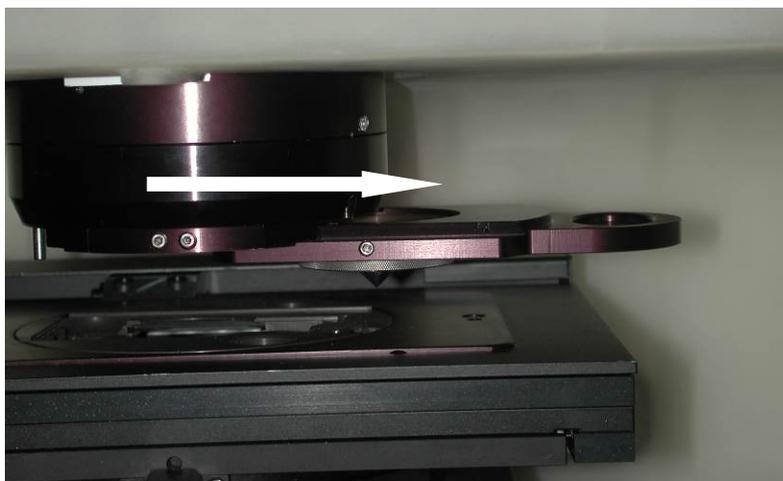
**Note** If this pressure does is not enough to create a well defined footprint, increase the pressure as necessary.



- 21.1. **Release contact.** Click *Release* (see above) to relieve pressure on the polycarbonate window. The stage will move down automatically and the pressure should go down to 0.
- 21.2. **Remove the ATR crystal from the beampath.** Pull the ATR slider out until it clicks in the first detent and is out of the beampath.
- 21.3. **Focus Z Stage.** Without moving the X-Y position of the stage, bring the Z Stage into focus and view the location of the crystal footprint. It must be centered on the video crosshairs. If the footprint is centered, skip to step 24.

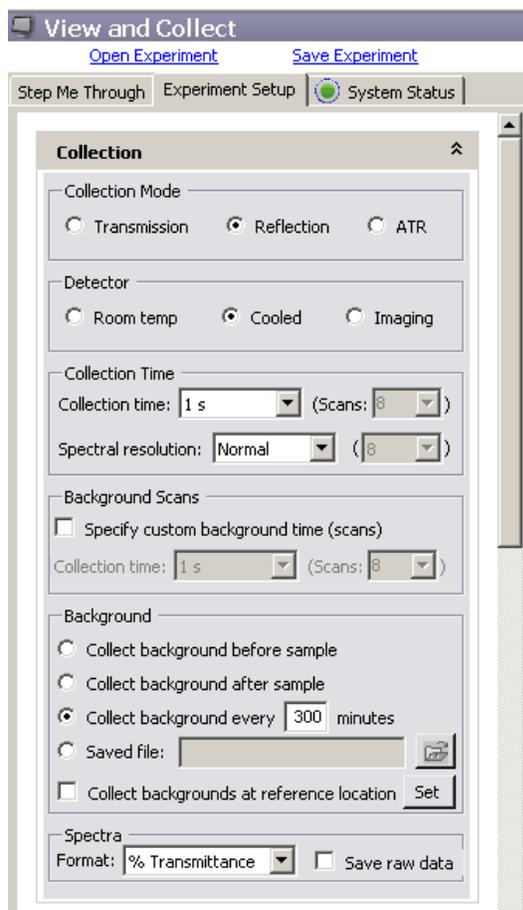
## Replacing or adding an ATR crystal

- 21.4. **Center the ATR crystal.** Using two 5/64" balldrivers adjust the two centering screws to move the crystal in the direction necessary to center the footprint on the crosshairs. See step 12 for centering screw location.
- 21.5. **Identify crystal location.** Repeat steps 18 through 21.4 until the crystal footprint is centered on the video crosshair.
22. **Verify ATR performance.** If the ATR crystal is in the beampath, pull it out to the first detent so it is out of the beampath.

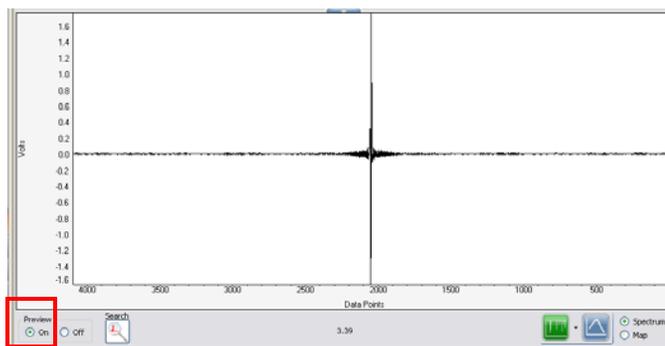


23. **Lower the Z Stage.** Lower the Z stage enough to provide ~1" of space between the dovetail mount and the stage. Remove the *Service test slide* from the sample holder.
24. **Insert the pinhole slide.** Insert the 100um pinhole slide into the sample holder.
25. **Set collection parameters.** From the *Experiment Setup* window (see following page) set the following collection parameters:
- Collection Mode = Reflection
  - Collection Time = 1s
  - Background = Collect background every 300 minutes
  - Detector = Cooled
  - Spectra = Transmission

## Replacing or adding an ATR crystal



- 26. Select the gold mirror.** Using *Slide View*, select the 3-hole slide and click on the hole where the gold mirror is mounted. This will bring the gold mirror on the slide into the beampath.
- 27. Focus on the gold mirror.** Adjust the Z stage to focus on the gold mirror. Assure you are focused on the mirror by either moving the X-Y stage and see if you observe any spots moving **or** change the *Spectra* parameter to Interferogram and turn *Preview* on to observe the interferogram and focus for maximum throughput.



## Replacing or adding an ATR crystal

28. **Collect background.** If preview mode is on, turn it off and then click the collect background icon.



29. **Insert the ATR crystal.** Carefully, while observing the clearance of the pinhole slide and ATR crystal tip, push the ATR slider into the dove mount until it hits the hard stop. This places the crystal into the beampath.

30. **Observe throughput.** Turn *Preview* on and observe the open beam to crystal ratio. Throughput must be 50% Transmission or greater.