

## Rigaku Mercury CCD@ FSU for Ultima III PXRD [CSL 1011]

### Quick Shut-down and start-up procedure for Rigaku Mercury CCD on Ultima III XRD

[Updated by [Thayumanasamy Somasundaram](#), V.: Apr 18, 2014; Original by B. vande Burgt]

#### Shut-down and Start-up Procedure for frozen Mercury CCD

## Rigaku Mercury CCD on Ultima III PXRD in CSL 1011

Note: After a general power-failure please follow the Rigaku Ultima III Standard Operating Procedure and NOT the procedure described here.

The CCD camera should not freeze during power failures.

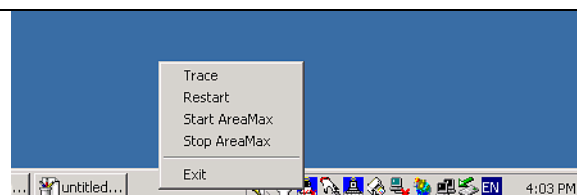
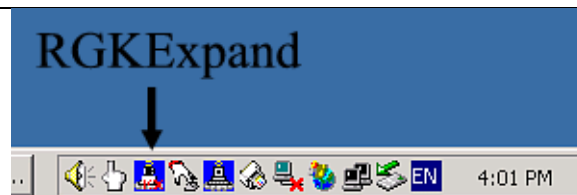


If the CCD camera freezes during operation, stop the AreaMAX (icon with red RGKExpand) and Exit.

Left Click on RGKExpand on the left side of System Tray, then select

- Stop AreaMax

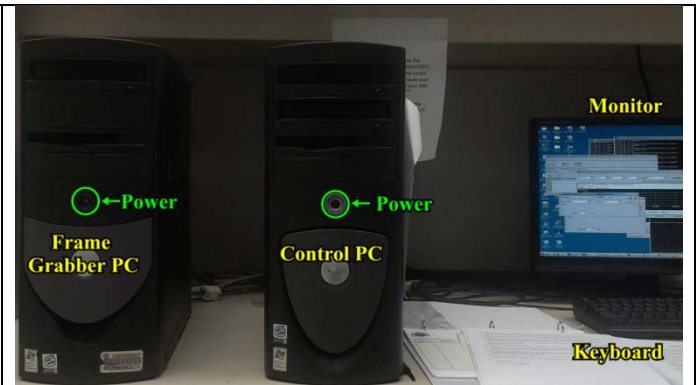
This closes the AreaMax window (better way to close it)



Turn the control computer (Control PC) off by closing all Windows programs and executing a Windows 2000 shutdown.

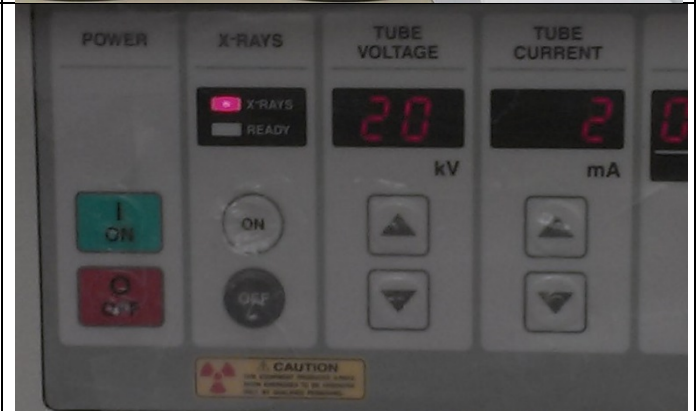
Switch the monitor to the frame grabber computer (the left PC) by pressing <Scroll Lock> twice and execute a Windows 2000 shutdown.

Press <Scroll Lock> twice to switch to the Control Computer.



Now, in the Ultima III Generator's Left Top Panel,

- Under X-RAYS
  - Press the Grey OFF button



In the Ultima III Generator's Left Top Panel, under the SAFETY RELEASE panel, press the 'DOOR' button. While the 'DOOR' button is blinking, open the sliding door all the way to left and right.



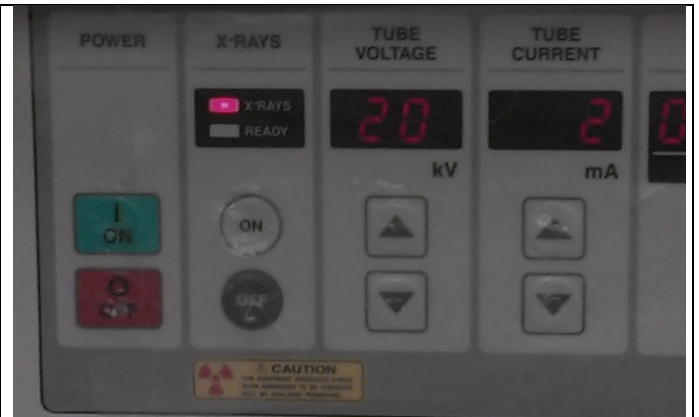
Inside the x-ray enclosure, locate the DALSA power supply (usually located on the right hand side and sits on the base plate) for the CCD detector. Power it down by switching it OFF (the power switch is located in the front of the unit, however, only the unit's back is visible) by locating the switch on the far right hand side.



Now, in the Ultima III Generator's Left Top Panel,

- Under POWER

Press Red OFF button

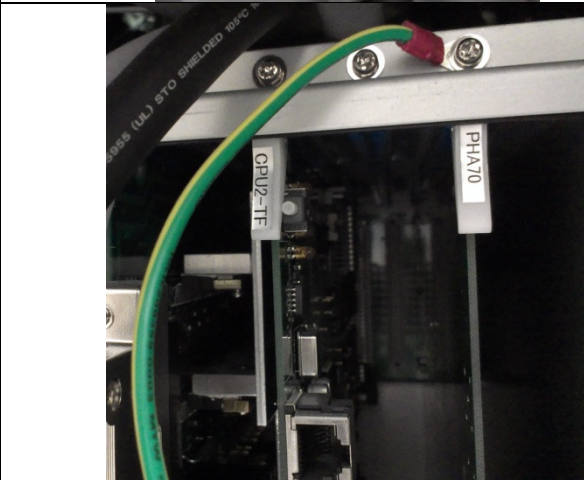


Then, in the Ultima III Generator's Left Bottom Panel, open the door and locate the SERVO AMP UNIT,

- Turn it OFF by pressing the black power switch to off position.



Press the reset button located on the vertical card second from the right (white button next to the label "CPU2-TF").



Now open the Left Hand Side Bottom panel on the generator

- Press the third switch from top on the left-most PC card once
- This should make the control panel flash once

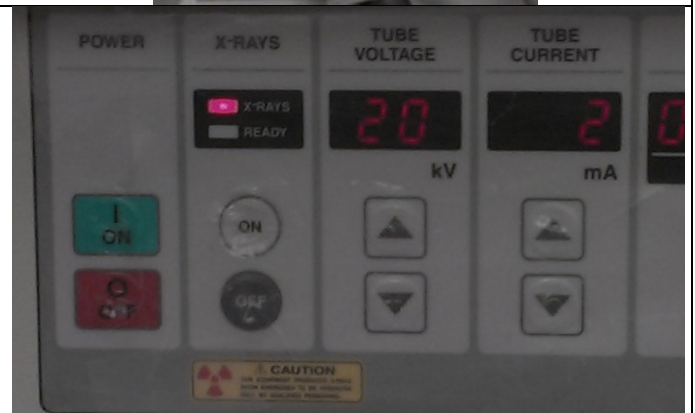


Turn the power ON at the SERVO AMP UNIT and close the front door



Now, in the Ultima III Generator's Left Top Panel,

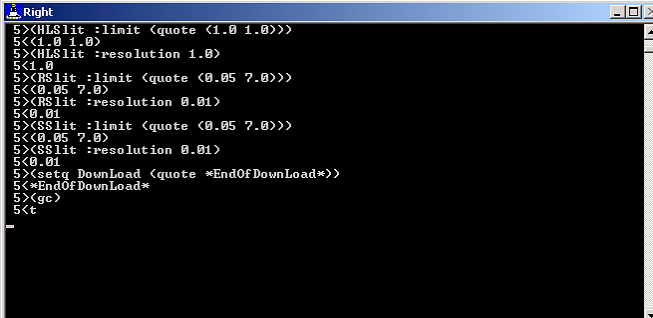
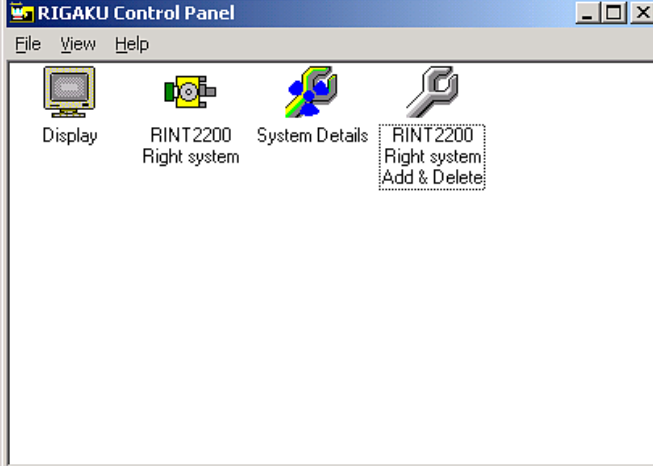
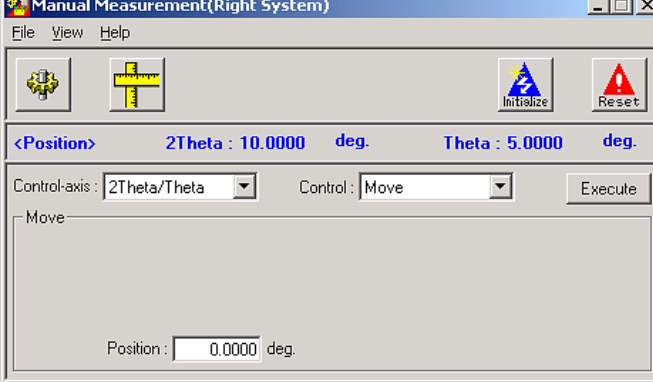
- Under POWER
  - Press Green ON button
  - Press the X-Rays ON button (after the READY light is lit)
  - Now the RED LED light for X-RAYS will come on

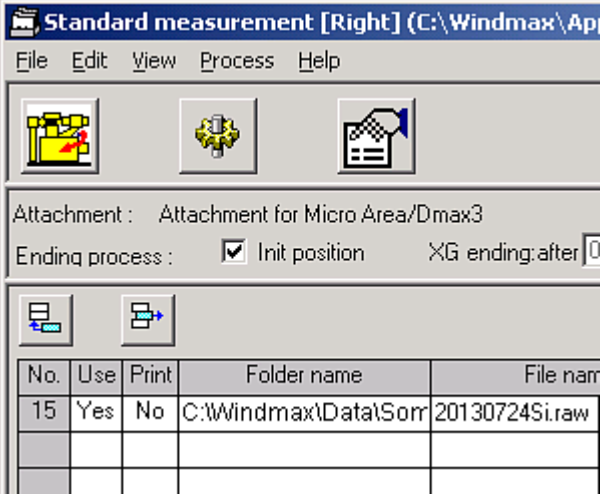


Turn the control computer (Control PC) on by pressing the power button on the front of the PC. You should see the normal boot up windows (if not press <Scroll Lock> twice on the keyboard, the monitor will switch to Control PC's display). Log in using the username administrator and password (ask PXR D Personnel).

Leave the frame grabber PC OFF (for now)



<p>Wait for the “Right” window to finish two initializations</p>	 <pre> 5&gt;&lt;HLSlit :limit &lt;quote &lt;1.0 1.0&gt;&gt; 5&lt;&lt;1.0 1.0&gt; 5&gt;&lt;HLSlit :resolution 1.0&gt; 5&lt;&lt;1.0 5&gt;&lt;BSlit :limit &lt;quote &lt;0.05 7.0&gt;&gt; 5&lt;&lt;0.05 7.0&gt; 5&gt;&lt;BSlit :resolution 0.01&gt; 5&lt;&lt;0.01 5&gt;&lt;SSlit :limit &lt;quote &lt;0.05 7.0&gt;&gt; 5&lt;&lt;0.05 7.0&gt; 5&gt;&lt;SSlit :resolution 0.01&gt; 5&lt;&lt;0.01 5&gt;&lt;setq Download &lt;quote *EndOfDownload*&gt; 5&lt;&lt;EndOfDownload* 5&gt;&lt;gc&gt; 5&lt;t </pre>
<p>Open the RINT 2200 Right System (located in the Rigaku Control Panel)</p> <ul style="list-style-type: none"> <li>• Change the Slit to Auto Variable Slit (Micro Area/Ultima III)</li> <li>• Click “OK”</li> <li>• Then “Yes” to update</li> </ul>	
<p><b>Initialization Step</b></p> <p>Open Manual Measurement and click “Initialize”.</p> <ul style="list-style-type: none"> <li>• Watch for the rotation of camera beam</li> <li>• The initialization is finished when the “Right” window stops updating</li> </ul>	 <p>Manual Measurement(Right System)</p> <p>File View Help</p> <p>Initialize Reset</p> <p>&lt;Position&gt; 2Theta : 10.0000 deg. Theta : 5.0000 deg.</p> <p>Control-axis : 2Theta/Theta Control : Move Execute</p> <p>Move</p> <p>Position : 0.0000 deg.</p>
<p>Open the “RINT2200 Right System” (located in the “Rigaku Control Panel” folder)</p> <ul style="list-style-type: none"> <li>• Change the Slit to Auto Variable slit (Mercury CCD (General/UI))</li> <li>• Click “OK”</li> <li>• Then “Yes” to update it</li> </ul>	
<p>Check the Alignment Settings by going to the Manual Measurement window and selecting View, Setting Results and comparing the values listed there to the values obtained during the last calibration (this values can be found on a sheet of paper in the upper left hand drawer of the PC desk)</p>	
<p>If the values are good, click “OK”. If not change</p>	

<p>the values to those listed in the calibration paper and reinitialize. (<a href="#">Initialization Step</a>)</p>																					
<p>Close the x-ray shutter, open the door and turn on Dalsa Camera Interface. Close the door.</p>																					
<p>Switch the PC Monitor to Frame Grabber PC (the one of the left) by pressing, &lt;Scroll Lock&gt; twice.</p> <ul style="list-style-type: none"> <li>• Power up the Frame Grabber PC and log-in using the following credentials</li> <li>• Username: Administrator</li> <li>• Password: ***** [Ask PXR Person Responsible]</li> </ul>	<p>Multi-thread Listening ... Client connection ...</p>																				
<p>Press &lt;Scroll Lock&gt; twice to switch to Host PC</p>																					
<p>If the x-ray tube has been off more than an hour, the tube needs to be “Aged” by opening “XG Operation” control button and executing “Aging Icon”. Aging the tube properly extends its lifetime. This procedure will take 45 minutes. Otherwise proceed to next step</p>																					
<p>If the Julabo chiller is at or below -4°C, the CCD detector is ready</p>																					
<p>Open “Standard Measurement”</p>	 <table border="1" data-bbox="862 1465 1458 1598"> <thead> <tr> <th>No.</th> <th>Use</th> <th>Print</th> <th>Folder name</th> <th>File name</th> </tr> </thead> <tbody> <tr> <td>15</td> <td>Yes</td> <td>No</td> <td>C:\Windmax\Data\Sorr</td> <td>20130724Si.raw</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	No.	Use	Print	Folder name	File name	15	Yes	No	C:\Windmax\Data\Sorr	20130724Si.raw										
No.	Use	Print	Folder name	File name																	
15	Yes	No	C:\Windmax\Data\Sorr	20130724Si.raw																	

Open "RAX Video"



The system is now ready!

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