Power Interruption

In the event of a power interruption, the system console will recover automatically under the control of **SmartSoft-VersaProbe** software and begin to turn on pumps and valves necessary to maintain vacuum. It will be necessary to manually restart the **SmartSoft-VersaProbe** software from the PC. Sometimes partial or full power cycling is needed to recover system operation.

Shutting down the Optics

Three optics devices in the system use hot filaments: the **Electron Gun (X-Ray)**, the **Ion Gun**, and the **Electron Neutralizer** (flood gun).

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To maintain thermal stability and minimize drift, the **LaB**₆ filament used in the electron gun is left on continuously. The electron beam is either blanked or parked when not in use.

The **Ion Gun** has a tungsten filament ionizer and it may be shut off daily. If you expect to use the sputter ion gun, it is recommended that you put the **Ion Gun** in the **Standby** mode shortly before using it so that the ion gun is allowed to warm up (15 minutes).

The **Electron Neutralizer** (flood gun) used for charge neutralization uses a barium oxide cathode. It is recommended that the neutralizer be shut off at the end of the day. The software controls the neutralizer with choices of **OFF**, **Standby** or **ON**. There is an **Auto-Neutralization** mode that turns the neutralizer **ON** at the start and **Standby** at the end of an acquisition.

If you get sometime software frozen, you need to cycle CardRack power first:

Cycle CardRack Power

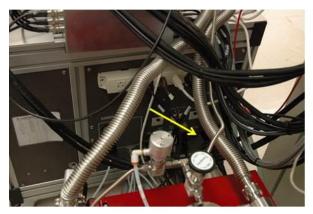
Note: It is recommended to exit **SmartSoft-VersaProbe** and cycle the CardRack supply to provide correct synchronization of USB control when electronics controllers are turned back ON

- 1. Exit SmartSoft-VersaProbe
- 2. Turn OFF **CardRack** power [manual] switch on the front panel of the system.
- 3. Wait 10 seconds
- 4. Turn ON **CardRack** power [manual] switch on the front panel of the system.
- 5. Wait for 3 USB devices to reconnect. [Data Acq, Analyzer, Stage]

If this doesn't help you need to cycle power of all units on the racks (including Red/Green buttons). Check rough pumps status after power cycling (you feel slight vibration when you touch them)

Note: Usually system starts rough pumps automatically after power cycling, but sometime you need restart them manually

- 1. Turn off power switches on both rough pumps.
- 2. Turn on the main rough pumps power switch (see images for location)







3. Turn on rough pumps power switches.

Daily Shutdown

At the end of the day, shut off the **Electron Neutralizer** and the **Ion Gun** unless you are performing unattended analysis. The **SmartSoft-VersaProbe** software will automatically set the **Electron Neutralizer** and the **Ion Gun** control to **OFF** if they have not been used within the operator-defined automatic turnoff time, (it is set for 1 hour). The automatic turnoff time can be adjusted in the **Properties** Menus.

Communication: Re-Initialize Gun Controls

- 2. To determine if there is a communication error or loss of communication Go to that controller's application tab in the **Hardware** session, right-click within the application tab and open the **Application Log** for that controller.
- 3. Check for power to the controller.
- 4. Right-click on the controller in the **SmartSoft-VersaProbe Status Fields** and select **Reinitialize** Note: the red border should disappear if the controller is initialized correctly or Right-click within the controller's application window and select **Diagnostics** and then select **Reinitialize**.

1. A red border around the corresponding controller in the SmartSoft-VersaProbe status barindicates a loss of communication or error with that controller.

Communication: Re-Initialize Data Acquisition, Gauze Lens, Analyzer and/or Stage Controls

Note: It is recommended to exit SmartSoft-VersaProbe and cycle the CardRack supply to provide correct synchronization of USB control when electronics controllers are turned back ON

- 1. Exit SmartSoft-VersaProbe
- 2. Turn OFF CardRack power [manual] switch on the front panel of the system.
- 3. Wait 10 seconds
- 4. Turn ON CardRack power [manual] switch on the front panel of the system.
- 5. Wait for 3 USB devices to reconnect. [Data Acq, Analyzer, Stage] and Optional 4th USB device[AES Deflection]
- 6. Run SmartSoft-VersaProbe

Note: Stage may need to be initialized (refer to PHI manual)