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:
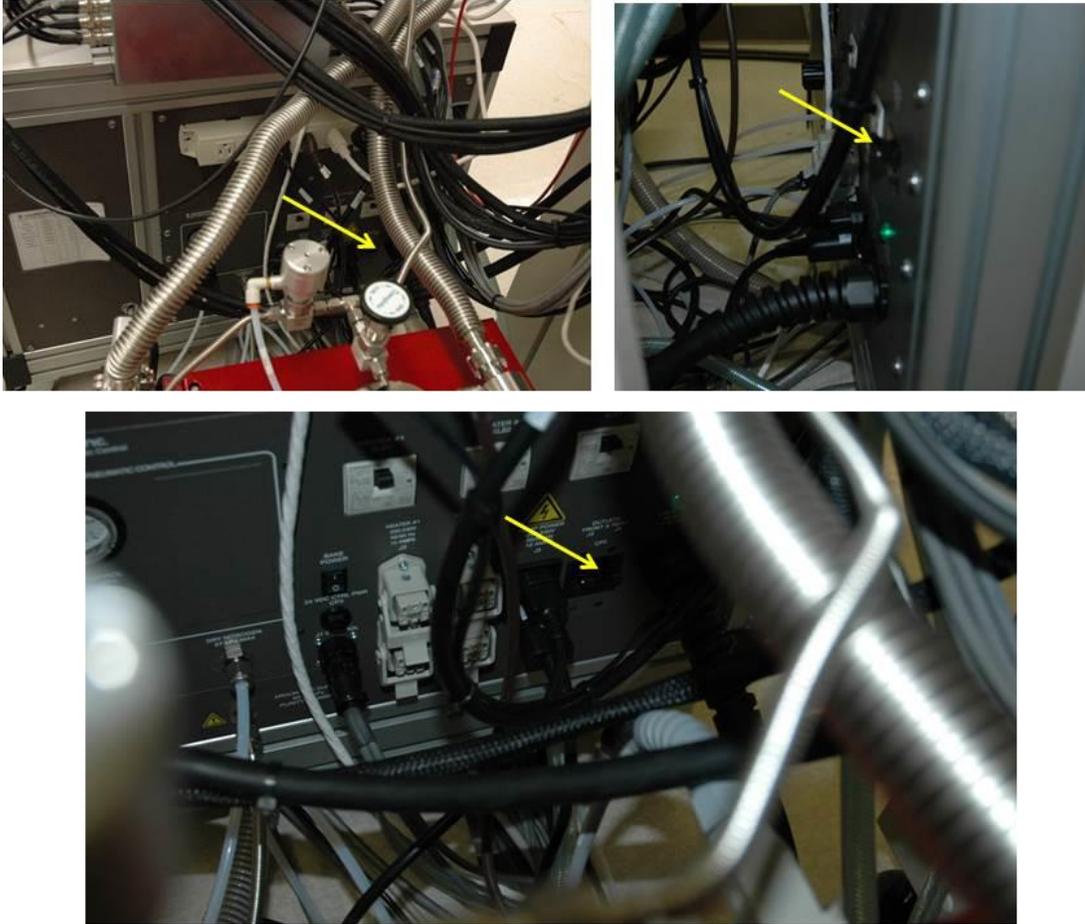
Cycle CardRack Power

*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)