

# NUCLEAR MAGNETIC RESONANCE RESEARCH RESOURCE

## Powering Up/Down the AV-300 Spectrometer

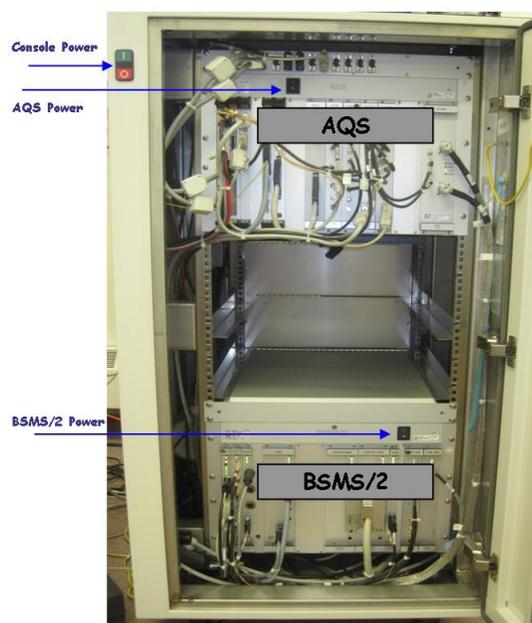
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### SECTION A: Powering Down

1. Eject any sample from the magnet and exit out of TopSpin (File → Exit)
2. Double click on the spect icon on the desktop.
3. Once the HyperTerminal window opens press Enter. At the “spect Console login:” prompt, type “root” to login.
4. Once logged in, you will see the prompt “spect >”. Type “init 5” to initiate shutdown of the CCU (takes ~1 minute). Shutdown is complete when you see the message “The system is down. Sorry no interactive reboot yet”.
5. Close the HyperTerminal window and then shut down the Windows workstation (Windows Start button -> Turn off Computer).
6. Open the spectrometer console door using the black handle. With reference to the figure on the right, power off the BSMS/2 and AQS modules.
7. Power off the console using the RED push button on the front (top-left) of the console. Leave the console door open.



### SECTION B: Powering Up

1. **CAUTION** - If power was lost due to an unplanned power outage, manually turn power switches to the OFF position on the BSMS/2 and the AQS rack. The location of these switches is shown in the above picture.
2. Turn on the workstation and allow it to boot. Login to the workstation using the “NMR” Windows account. Optional Step: double-click on the spect icon on the desktop to monitor the boot-up of the CCU.
3. Supply main power to the console by pressing the GREEN push button on the front of the console (top-left).
4. Turn on the AQS module and after about 5 seconds also turn on the BSMS/2 module.
5. Wait for ~2 minutes for the CCU to finish booting. Before proceeding, check for proper communication with the CCU by launching the desktop “spect” icon and logging in as root. If login is fine, type exit to log-out of spect. If this step fails (rare), reset the CCU and try again. There is a red reset button about 1/3 of the way down from the top on the CCU board which you push to reset.
6. Power on the SampleExpress Lite autosampler and wait for the status indicator light to turn green.
7. Launch TopSpin by double clicking on the Topspin 2.1 desktop icon.
8. Type “ii” in the topspin command line and close any error windows that open. If errors occur, reissue the “ii” command. Do not proceed to the next step until ii executes without error (normally twice).
9. Define the current probe by typing “edhead” in the topspin command line. Make sure that probe [01] is selected: “5 mm PABBO BB-1H/D Z-GRD”. If so, click on “Define as current probe”. A new window opens stating the current probe selection. Close that window by clicking on “Seen” and then click “Exit” in the edhead window.
10. A window displaying the cable connections between the preamplifiers and the probe RF inputs opens. The default connections are always correct so click “Close” to finish.
11. Enable sample temperature regulation @ 298K by typing “edte” from the TopSpin command line. Within the edte window:

- In the Main display tab, turn the heater on by clicking the “off” button beside the Probe Heater line.
  - In the “Config.” Tab, select “Load Configuration...” and open the configuration file bbfo\_298K\_400lh\_1percent.tcf.
12. Make sure an NMR experiment is displayed in TopSpin (any experiment will do). If nothing is displayed (blank blue screen), open a dataset. Then issue the command “atma” which will initialize the probe automatic tuning and matching module.
  13. Configure TopShim by typing in the TopSpin command line “topshim cf”. A window appears asking how the shim system is attached to the shim current boards. Type “2” to specify single plug plus adapter. Another window opens asking for the version of the shim coil adapter. Type “1” to specify the old version, ECL00, PLN Z4P3334.
  14. Make sure the connection with the AV-300 archiving folder on the data server has been established by double-clicking on the desktop shortcut “AV300 Data on New Server”.