

Resetting the Lock Frequency in VNMRJ

Magnets drift over time and on occasion the lock frequency will need to be reset in order to lock properly. You will know when this happens because you will need to adjust Z0 to a larger value than -32767 in order to lock and -32767 is the largest value that can be set.

NOTE: It is best to adjust Z0 before it goes out of range to ensure that it does not drift out of range during an experiment. For example, let's say you lock with the Z0 value of -31500, which is still within range. It is not advisable to run a long experiment without adjusting the lock frequency as the Z0 under computer control during the experiment may drift out of range and adversely affect the lock.

NOTE: If a sample has been in the 600 for many weeks it is a good idea to unlock and relock to be sure that Z0 is still within range.

To adjust the lock frequency follow these directions:

- Exit vnmrj, logout, and re-login as vnmr1
- Go to "Edit" → "System Settings"
- Click on "System Config" from the dialog box that appears
- On a piece of paper write the current lock frequency down in case you make a mistake so you can retrieve the original value
- Enter a new lock frequency that is 0.002 or 0.003 lower than the current lock frequency.
- Hit "OK"
- Click of "Setup RF" or type su
- Click on "Lock Scan" and slide Z0 to the right until you find lock.
 - If Z0 is out of range to the right now repeat the process adding 0.001 to the lock frequency.
- Adjust the lock phase as it likely will have changed during the process. It may even be necessary to adjust the lock phase in order to get the sample to lock properly.
- Edit the file /home/vnmr1/lock_freq_log.txt and enter the date, the starting lock frequency, and the lock frequency that you changed to.
- Logout of vnmr1, re-login and check the lock and lock phase.