

Warm NMR Setup

LANL NMR notes:

password to LANL NMR machine: lh8midas

Tune voltage varies from 1.2 V - 2.0 V

When tuning, once the curve has been centered and the phase adjusted, you should find that IF offset to be around 4.xxx. If it is too low(high), the attenuation can be adjusted from 0-13 dB; this will require retuning.

Steps to start NMR:

- 1) Make sure sure you are using the proper CPU for the NMR
 - * LANL NMR -> develop
 - * Cold NMR -> nuc3
- 2) Disable the wifi on the machine you are using.
- 3) Start Netburner and scan for devices if you don't see the NMR and its IP listed.
- 4) Check that all inputs to the NMR are connected properly and tightened.
- 5) Check that the proper channel is selected. The LANL VME crate has 3 total channels, the channels for each set of boards are set using a rotary switch on the front of the analog board (add picture).
- 6) On the NMR Labview GUI make sure the IP address is set to the proper value (the one found in netburner) and then click the GPIB drop-down menu and click refresh. After a moment you should see a choice for the GPIB if it is connected correctly. Select the GPIB address that is found.
- 7) On the Labview NMR GUI, choose the "Tune?" option.
- 8) On the Global NMR GUI, make sure the frequency is set to the expected central frequency; the same goes for the sweep range.
- 9) Run the Labview GUI. If everything is working you should see a Q-curve on the global NMR GUI.

Tune process:

- 1) Choose the option "Diode tune" from the [tune.vi](#) drop-down menu. Adjust the tune voltage (1.2 V - 2.0 V) until the Q-curve is in the center of the NMR graph.
- 2) Choose the option "Phase tune" from the [tune.vi](#) drop-down menu. Adjust the phase tune to maximize the signal amplitude.
- 3) Choose the option "Operating" from the [tune.vi](#) drop-down menu. Fine adjust both tune options until the signal is the desired amplitude and centered in the NMR graph.
- 4) Check that the IF Offset is within range (around 4.xxx). If it is not, adjust the attenuation and repeat steps 1)-3).