To: Bruker ARX-300 (G43 RPH) Users
From: John Harwood (jharwood@purdue.edu)
Date: October 3rd, 2011
Subject: URGENT: ARX-300 Probe Change - QNP to BBI

We have been having problems with the QNP probe on the ARX300 for some time now. It has recently become apparent that these problems have worsened, and we have to remove the QNP probe from service in order to get it repaired. We have a second probe for this spectrometer which we will install in place of the QNP probe. This second probe is a BBI probe. This probe differs from the QNP probe in the geometry of the RF coils and the fact that it has a tunable broadband channel which will allow it to observe additional nuclei compared to the QNP probe.

For the casual user of the ARX300, the following changes will be apparent after we change the probe:
1. For $^1$H and $^{13}$C observation, the user simply needs to load the correct parameter sets. For all experiments/nuclei, the correct parameter sets will have "bbi" in the probe field instead of "qnp," e.g., h1.qnp.cdcl will become h1.bbi.cdcl.
2. The sensitivity for $^1$H is higher than with the QNP probe, and for $^{13}$C it is lower.
3. For $^{31}$P observation, the user will have to tune the broadband channel from $^{13}$C to $^{31}$P using the sliders on the base of the probe. This procedure is the same as is used on the DRX500-2 with the BBO probe. If you need training on this procedure please contact PINMRF staff. **IF YOU TUNE THE PROBE TO $^{31}$P YOU MUST TUNE IT BACK TO $^{13}$C after you finish your work.** The sensitivity for $^{31}$P will be lower with the BBI probe than with the QNP probe.
4. For $^{19}$F observation, the user will have to recable the probe RF connections and then tune the $^1$H coil of the BBI probe to $^{19}$F. **YOU MUST MEET WITH PINMRF STAFF FOR TRAINING BEFORE YOU ATTEMPT THIS PROCEDURE.** Also, **IF YOU TUNE THE PROBE TO $^{19}$F YOU MUST TUNE IT BACK TO $^1$H AND RECALE THE SPECTROMETER CORRECTLY after you finish your work.** The sensitivity for $^{19}$F will be higher with the BBI probe than with the QNP probe.

I am planning on installing the BBI probe during the afternoon and early evening on Monday, October 3rd.

Thank you very much for your consideration. If you have any questions or comments please contact PINMRF staff.

cc: P. Kissinger
RPH NMR Users' Faculty
NMR Advisory Committee
NMR Support Staff