

DRX500-2 probe swap

This document details the steps to swap probes between TXI and BBO for DRX500-2 at RHPH.

1. make sure that no experiment is running or pending.
 2. turn off the lock. In edte, turn off the heater. Eject and leave the sample outside the magnet.
 3. disconnect the VT air tubing to the probe (on the back side of the probe; see Fig 1)
 4. disconnect (twist on or off) RF cables to the probe (near the probehead; see Fig 1). For TXI probe, disconnect gradient, heater, BT sensor and power cables on the right-hand side (Fig 1). For BBO probe, disconnect heater and thermocouple cables (no separate sensor power cable) from the under side. There is no gradient cable for the BBO probe (Fig 1).
 5. loosen the two copper screws (Fig 1). Carefully pull out the probe and put it into the box.
 6. find the other probe, and gently put it back in and do the reverse of 5, 4 and 3: connect all cables. Note: VT sensors are different for TXI and BBO (DO NOT HAVE SENSORS CONNECTED TO TWO PROBES AT THE SAME TIME). Since BBO has only two channels, you can only hook three cables to the probe (2H is always there, plus 1H and X cables). For TXI, the x-BB cable goes to the carbon channel and Y cable that by-passes HPPR goes to the N channel.
 7. if you change TXI to BBO, you may also check the filter for X cable after the pre-amp. Make sure that the filter is appropriate for the intended X observation frequency.
 8. make sure that the gradient amplifier is turned on for TXI/TXZ probe (BBO probe does not have a gradient).
 9. in xwinnmr, type edhead and define the right kind of probe (BBO or TXI/TXZ)
 10. in xwinnmr type edte to open the temperature control monitor. Click sensor from the setup menu and select either the first (thermocouple K for BBO) or the last entry (BTO2000 for TXI). Without the heater turned on, it should give the temperature in the room (~293k). If the reading is off, check the sensor cable connection (on the probe) and setting (in "edte").
 11. put the lock (CDCI3) sample back in, and type command "standard" in xwinnmr (assuming you've already have a data directory and parameter set). The correct shim will be read and spectrometer will be locked.
- Alternatively, an analyte sample can be put in. type in command within xwinnmr: "rsh shims.txi" (or shims.bbo), "lock_solv" (or lock), and "ii".
12. in shell, type "cp /etc/motd.txi /etc/motd" if current probe is TXI or "cp /etc/motd.bbo /etc/motd" if BBO.
 13. touch up the shim and run a quick 1d to make sure that the spectrometer is working properly.

You can quit or resume your work.

Figure 1 BBO and TXI probe setup on DRX500-2.

BBO probe on drx500-2

TXI probe (standing alone)

