DRX-499 has remained, for many years, the mainstay 500 MHz spectrometer for most of the research work using NMR in the department. It continues to be a popular spectrometer that is very reliable and stable. It is used for multinuclear 1D as well as 2D spectra acquisition.

Between the two 500 MHz instruments, DRX-499 is preferred for $^{13}$C, $^{19}$F, and $^{31}$P detection.

Features

- Bruker Avance DRX series instrument
- $^1$H Frequency: 500.13 MHz
- $^2$H field-frequency lock system
- MAGNET and Shim system
  - Oxford narrow bore (53mm) Cryomagnet
  - BOSS2 shim system
  - 28 RT shim gradients
  - BSMS/2 keyboard
  - Bruker vibration damper system included (doughnut type)
- Host Operating System: RedHat Enterprise Linux 6.2
- VT range: −80°C to +70°C (up to 12 hrs. at max temperature)
- RF Section
  - Three channels (FCU1, FCU2 and FCU3)
  - Dual (50 W $^1$H + 300W X) BLAXH50 amplifier
  - Dedicated 300W BLAX300RS amplifier for third channel
  - System is equipped with QNP switch accessory to perform $^{19}$F ($^1$H) double resonance experiments.
  - HPPR/2 2H-STOP preamplifier.
Pulse shaping capability to design shaped and shifted RF pulses and gradient pulses.

- Digital
  - Digital quadrature detection
  - 5 MHz sampling rate ADC
- Accustar Z gradient amplifier that can generate a maximum of 56 Gauss/cm field gradients is part of the system.
- Gradient assisted shimming can be performed with available software in Topspin.

- Software
  - Runs on TOPSPIN 1.3

Currently installed Probehead

**Bruker triple resonance BBO : X \{ ^1H \} with Z-gradient**

Other probeheads available:

- Bruker triple resonance TXO : \( ^{19}F \{ ^1H, ^{13}C \} \) with Z-gradient
- Bruker triple resonance HCP : \( ^1H \{ ^{13}C, ^{31}P \} \) with Z-gradient
- Bruker triple resonance HCN : \( ^1H\{ ^{13}C, ^{15}N \} \) with Z-gradient