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 \{ \textsuperscript{1}H \} with Z-gradient**

Other probeheads available:
- Bruker triple resonance TXO : \textsuperscript{19}F \{ \textsuperscript{1}H, \textsuperscript{13}C \} with Z-gradient
- Bruker triple resonance HCP : \textsuperscript{1}H \{ \textsuperscript{13}C, \textsuperscript{31}P \} with Z-gradient
- Bruker triple resonance HCN : \textsuperscript{1}H\{ \textsuperscript{13}C, \textsuperscript{15}N \} with Z-gradient

Source URL: https://chem.washington.edu/instruments/drx-499