

Technical Bulletin L0030 - Carbon Pulse Width Calibration (Bruker)

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For Bruker System XWINMR 2.x or Higher

Introduction: This document describes a simple procedure for calibrating a hard carbon pulse on a Bruker system using the indirect observe procedure.

Step 1: Optimize a ^1H parameter set for the observation of chloroform in the line shape sample. Make sure $\text{SR} = 0$ before setting O1P.

Step 2: Enter edc or iexpno in the XWINNMR command line to open a new experiment. In eda, select decp90 as the new pulse program. Save and close.

Step 3: Type ased in the command line. You should still have the proper P1 (^1H p90) and PL1 (power for the ^1H p90), o1p (as for the optimized ^1H experiment). Set o2p to 77 ppm, CNST2 to 214, and if the remarks for automatic calculation in the pulse programs were not removed during XWINNMR install, set D2 to 3.34 ms. Set D1 to 10 s, DS = 0, NS = 1. RG as in Step 1 (~ 265 or 512). Set P3 to 0 and PL2 to 120. Take one scan and process. Phase, one satellite should be up, the other down. After phasing set P3 to approximately 3 us, and PL2 to 20. Take another scan and check phasing. Run paropt, and in the dialogue set the number of experiments to 16, modify P3 (start with 3 us, increment by 1). The ^{13}C p90 is where the satellites cancel, and when you exceeded p90, the satellites will flip.

Note: If you should have another inverse probe, such as a 5 mm probe, the power needed for the microcoil probe should be approximately 15 to 20 dB less for ^{13}C .