

Block Averaging on GN-300WB

This handout about block average is written for observing low natural abundant and low nucleus which typically needs very short recycle time but very large number of scans. Some setup conditions are different from the block average on GN-500.

Set all **WD** parameters to drive \emptyset . Do not attempt to store data to floppy while this experiment is running. You may copy the files to floppy when the experiment is complete.

Make sure that the experimental parameters such as **SW**, **CB**, **P2** and **D5** setup correctly as a normal experiment.

In many cases, a large spike appears in the beginning of FIDs which overflow the 20th bit very quick. To eliminate it, use long DE (>100) and RG(>40) or even longer.

After eliminate the spike, Set the maximum gain with **GN** so that the FID would not fill full screen with VS=12, typically **GN**=2047 because the signal is usually very weak.

The computer would automatically shift 4 bits for **ONCE** (next time it would stop) when the 20th bit got filled. **NA**=2000 (without bit shift) or 20000 (with 4 bits shift) should be good choice for **NA**.

Type **TT** and multiple the time by the number of blocks you want (ie., 1.5 hours x 12 blocks) and make sure that the total experiment time is less than your allowed instrument time since you will need time for data storage and workup.

When you are ready to start data acquisition, type **GS** = the total number of blocks
Name your first file cxxxxx.ØØ1.
Be sure that the numeric extension .ØØ1 is on this first file name.
Auto Replace? **Y**

Check on your experiment every now and then and make sure the experiment is not stopped.

During this experiment you cannot move to block #1 and try to block average before all the data is collected. You can move to block #1 and **GA** one of the individual blocks and transform it and look at it to see if any peaks have come up out of the noise.
NOTE: When you return to block #Ø you must type **CB**, and check the block size, then type two <>'s. If you still don't see a FID on the screen, type **^F** to make the FID appear.

When your data acquisition is complete, copy the raw files onto floppy disk.

Change all **WD** parameters back to zero (\emptyset) and get your first file CXXXXX.ØØ1 with **GA**.

Type **ZER** and then **BA**.

```
>BA
BA FILE = ABCDEF.BAF cxxxx.BAF <return>
ADD TO EXISTING FILE? N
BA FILE = cxxxx.BAF <return>
```

COMMENT: <return>

The data line will go green while the file is being created. When the ">" prompt returns, continue.

Make a link **LI = GABA**.
Increment Names? Y

Type **AU** = the number of spectra you accumulated
DATASETA = ABC.001 **cxxx.001**
BA FILE = cxxx.BAF <return>

The process should take awhile and the lines on the screen should turn green and flash. If nothing seems to have happened after a few minutes, start over with making the .BAF file.

When it is done, get the block averaged file with **BG**.

Process the FID the way you normally would. If it has a rolling baseline or is extremely out of phase, the automatic scaling parameter which it set when you did **BG** might be too big. Try **BG** again and manually set the number to a higher value, until with VS=20, the FID looks like a "normal" FID.

You can save the processed spectrum to your floppy as normal but you cannot save the .BAF FID file. It is easier to just put all the raw data files on the data station and block average again if you need to look at the data again.