

NMR NOTES #11

Capturing Graphics Files

It is possible to capture graphic output from the VnmrX software as either an HPGL format file or as a postscript file. Either of these file formats may be imported into word processors or other software packages for alternative presentations. The basic procedure is to define an output format, plot the data desired, save the data in a file, and move that file to the final destination. One other side trip is possible, previewing the captured file on the workstation before moving it to the PC or other graphic processor.

The first step is to choose a format for the output file. This is done by choosing the plotter device. Pen devices such as the HP7550A and the lexmark plotter require HPGL format files, so choosing one of these devices will generate HPGL format files. The LaserJet1318_PS_R and LaserJet1221_PS_R devices are defined for postscript output. If you select something like LaserJet1318_300R for output, the file will be in the PCL format which cannot be imported into most programs.

After selecting the plotter device, execute the plot commands that you want to be included in the captured graphic. This might include the `pl`, `pscale` and `ppf` commands, but would probably not include the `hpa` or `ap` commands. Remember that everything you plot will be included in the captured graphic file.

After all the desired plot commands have been executed, use the **page('filename')** command to write the output file. Page by itself simply sends the output file to the plotter device, but including a file name as an argument will write the output file to the named file **instead** of to the output device. Convention dictates that you include a `.ps` extension on a postscript file, and a `.hpgl`, `.hgl`, or `.hpg` extension on an HPGL file. This simply makes it easier to identify the file contents. Beware that DOS can only support a 3 character extension. If you want a plotted copy as well, you would have to plot the data twice or print the file after you capture it. To print the file, use the `lp` command **lp -dplotter -o nobanner filename** from the unix command line. *plotter* is the plotter name (under unix, not VnmrX) and *filename* is the same name you gave the output file with the page command. For Postscript files, the plotter name you would use to plot a copy of the file can be the same as that used to generate the plot file in VnmrX. In the case of the postscript files, however, there is a table lookup done to avoid multiple redefinitions of the laser jet printers. The two devices available for printing a postscript file are the LaserJet IV printers, one in 1318 and one in 1221. The names for these are LaserJet4a_plt and LaserJet4b_plt respectively. You cannot use LaserJet1221_PS at the UNIX prompt.

Once you have captured the data in a file, you may preview the data with one of the X-windows views available. The `xhpgl` (hpgl files) and `gs` (ghostscript for postscript files) commands are both run at the UNIX prompt.

The **xhpgl filename** command will preview an HPGL file. There are several one letter commands available after you move the focus to the graphic display window:

- 'z' Puts up a cross cursor, lets you select a box by clicking and dragging with the left button to zoom on a region of the display;
- 'u' 'unzoom' - move out by a factor of 2;

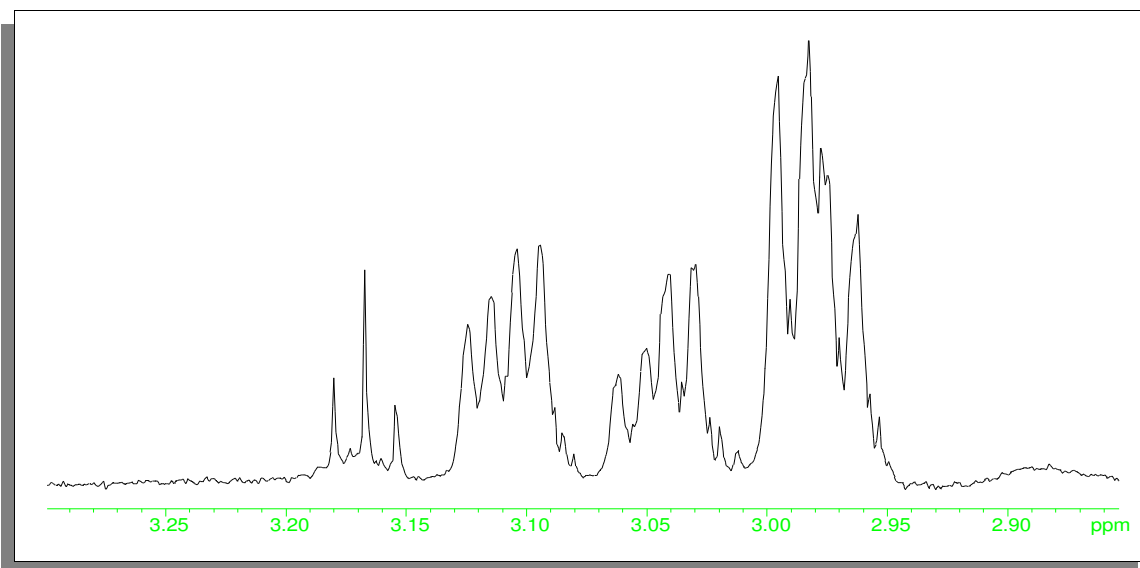
'o' return to the original display;
'q' quit.

man xhpgl will give a few more details.

Ghostscript is the postscript previewer, and the man page for **gs** (**man gs**) will probably give you much more information than you really want. The command **gs filename** will start the ghostscript viewer in a separate graphics window. The window you use to start **gs** will be used for command input. There is no provision here for zooming or examining the display in detail. The system will prompt you to press return to execute the showpage command. The command to exit the ghostscript viewer is 'quit'. It is possible to view multiple files and run a variety of commands within the **gs** command interpreter, but it is not a simple matter to learn or explain.

Once the file is captured, previewed, and deemed satisfactory, you can move it to the PC or Mac using either FTP to send it across the network or the floppy disk drive to move it to machines that are not networked. If you are using a PC as an X-server, and want to FTP back to that machine, you must have an FTP server running in background on the PC. I have a public domain server available for Windows environments. This server would also permit plotting to a LaserJet on your LPT1: port, using the plotter device `remote_hplj_300R`.

The spectrum expansion below is from a data set collected on the Unity+500 system, processed and plotted remotely on an X-server from nmrsun2, and then plotted as HPGL to a disk file. This was FTP'd to a PC and inserted as a picture into a frame for positioning within this Word-for-Windows document. The shadowed box is provided by Word, not the NMR software.



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