

Appendix 8

Waveform display program - agnu

Alecsis creates files with results (extension '.ar'), and does not create graphical representations of these results. A separate program, named **agnu** is used for that. Current version of this program is 1.1). Program agnu is an interface to widely distribute program **gnuplot**. agnu invokes gnuplot, and send simulation results in appropriate format. In other words, for agnu to work gnuplot needs to be present.

Program is invoked as:

```
agnu file_name[.ar]
```

Extension '.ar' can be omitted when invoking the program. All waveforms specified in **plot** command, i.e. printed out in file for results, will be drawn on the screen. Analogue waveforms can be grouped, i.e. can use the same scaling, or can be drawn separately. This is controlled by **plot** command. See Chapter 5 for detailed explanation of this command. Digital waveforms are always drawn separately.

After displaying the waveforms, **gnuplot** prints its prompt and stays open for interactive control. Program agnu accepts **gnuplot** commands and options adds some of its own, which permits a more flexible work environment.

A8.1. agnu command line options

All command line options beginning with '-' are directly passed to `gnuplot`. Options beginning with '+' are new options, defined for `agnu` only:

```
agnu [gnuplot options] [+am] [+h[analog_ratio]] [+l] name_file
```

Options starting with '+' have the following effect:

+am without this option, y-axis range for each waveform is determined by the minimal and maximal value of the waveform. With such scaling, neighbouring waveforms can "touch" each other, making graphics unreadable. This option gives somewhat higher range on y-axis for waveforms, which creates distance between them.

+h[analog_ratio] this option defines the part of the screen occupied by analogue waveforms. Input file has to possess both analogue and digital waveforms for this option to take effect. By default, half of the screen is used for analogue waveforms and half for digital waveforms (default value for this option is '-h' or '-h1', which gives drawing proportions 1:1). Since digital values are drawn on separate waveforms, and analogue can be on the same one, this can result in a disproportionately large analogue waveforms compared to the digital. The value of parameter *analog_ratio* less than 1 reduces the analogue part, and vice-versa.

+l opens the window of large dimensions (default is small).

Explanation of `gnuplot` options can be found in the Manual for this program.

A8.2. agnu commands

When the prompt appears, you can use the following `agnu` commands beside `gnuplot` commands (`gnuplot` commands by typing `help`).

g on/off of the grid

z 2x enlargement with respect to the centre of the graphic

Z 2x reduction with respect to the centre of the graphic

l, r, u, d moving the window for a half of the size with the respect to the centre of the graphics (**l** - left, **r** - right, **u** - up, **d** - down).

b returns back to the original graphics regardless of the transformations

Using commands of program `gnuplot`, graphics can be exported to a file in a large number of formats (HPGL, PostScript, EPS, etc.).