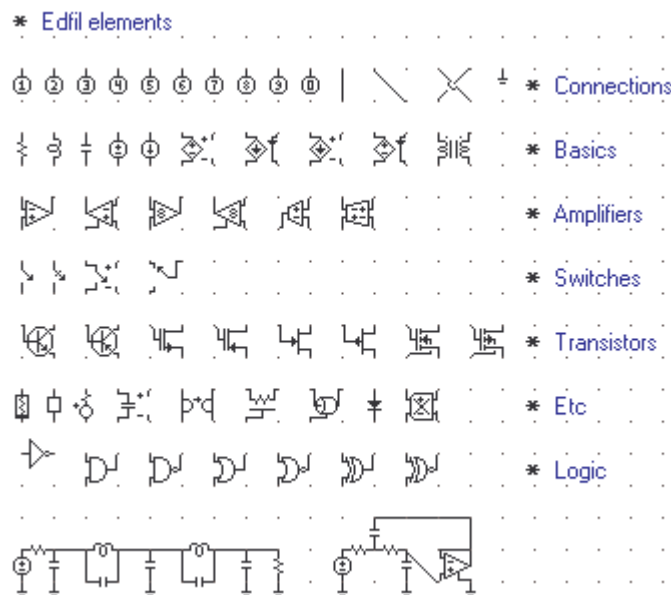# The EdFil editor program

Windows version

The EdFil editor can be used to generate the input net-list file for the ASIZ program, other circuit simulators developed by the author, and also for other programs, even SPICE. It was written (by 1983) after the conclusion that it is virtually impossible to write a textual netlist for a nontrivial circuit without errors. This program is rather different from the schematic capture programs found in other packages, but it is very easy to use.

The circuit is drawn on the screen using the mouse and some keyboard keys, which cause the insertion of a corresponding component between the two nodes closest to the mouse position. The orientation of the component can be changed by pressing Space or Backspace. Names and parameters for the elements are given by moving the cursor to the component and touching the Return key or the left mouse button, or by Ctrl-X, what causes the program to ask parameters for all the visible elements. The best method is usually to firstly draw all the circuit and later give the parameters. There are default names and parameters for all elements. The parameters are a text, to be given accordingly to what the simulator to be used requires, and are reproduced in the netlist exactly as given, in uppercase, unless for formulas, that must be enclosed in parenthesis.

Once drawn the circuit, the netlist is generated by pressing Ctrl-Q. The program then asks the names of the files where to save the netlist (.net file) and the circuit file (.cir file). The program will ask if the circuit file (.cir file) shall be saved if you try to close the program without saving it

An important feature of the program is the optional use of formulas in the parameters. Any mathematical expression using constants and values given in a value list can be used for a numerical parameter, listed as a formula between parentheses, separated from the remaining text by spaces. The expressions are evaluated in the netlist generation. This allows easy use of component value lists generated by synthesis programs, or even the use of EdFil as a synthesis program, with components parameters given by project formulas. The "=" sign can be used in formulas to create new values in the internal value list. Use comments (or resistors with both nodes grounded, obsolete method) to create sets of values in this way, and operate the program as a simple spreadsheet. Evaluation is from bottom to top for all elements, from top to bottom for comments, always from left to right. Note that "=" has high precedence, not low. Always use parenthesis after "=" if what follows is a formula.

Comments and commands can be added to the schematic diagram with the use of the "*" and "." commands. Comments only appear in the netlist if the corresponding option is set. Formulas can be used in comments and commands too, with the evaluation from top to bottom, before the evaluation of formulas in the elements. Create values and reference them in uppercase in comments, because the program converts everything to uppercase, except comments.

Recent changes:

Version 1.0k, 18/5/2005 - Added command to center the circuit in the screen (Ctrl-A). The parameters of the elements can have up to 100 characters (50 in the previous versions). Commands (".") are always sent to the netlist.

Version 1.1, 30/10/2008 - Added operational amplifier with 4 terminals and connections as the other controlled sources ("o"). The analysis programs will eventually be modified to accept it.

Version 1.1a, 06/11/2008 - Bug with the centering function corrected. Added amplifier with 4 terminals ("a").

Version 1.2, 28/10/2009 – Added elements B, N, K, and W.

Version 1.3, 25/01/2010 – Added element $, voltage-controlled switch.

Version 1.4, 7/9/2011 – Added element # (translates to G), balanced operational amplifier. Added Exp function. Log is Ln.

Version 1.5, 6/12/2011 – Added element &, voltage multiplier.

Version 1.6, 28/12/2011 – Elements W and w (MOS transistors with 4 terminals) are listed as M in the netlist. Formulas can be used in the comments. Larger parameter text (200 characters).

Version 1.6a, 19/1/2012 – Corrected bug in the "." command.

Version 1.7, 12/12/2012 – Added logic gates.

Version 1.7a, 14/3/2013 – A command line without "." is generated if the text starts with ".". Useful for coupling coefficients between inductors.

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