

SchematiCAD

COLLABORATORS

	<i>TITLE :</i> SchematiCAD		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
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REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

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Chapter 1

SchematiCAD

1.1 main

SchematiCAD v1.7

=====

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Introduction

SchematiCAD was originally conceived for the purpose of designing electronic circuits. Such is the versatility of the program that it may be used to create virtually any kind of schematic drawing, from flow charts to garden layout - SchematiCAD does what you need.

Requirements

Amiga A1200 with Workbench 3 or better
Regtools.library and ASL.library in LIBS:

Hard drive installation

Make a directory called "SchematiCAD" and copy into it the following:

```
SchematiCAD  Blank  Deflib  (dir)
SchematiCAD.info  Template  Circuits  (dir)
```

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Overview

SchematiCAD v1.7 now opens a screen of 640 x 512 (or 400 - NTSC) pixels. Upon startup, the program presents the main edit window and to the top right of this a smaller "Parts" window. It is from this window that the user may select one of up to 96 parts. The current part will be highlighted. By clicking now on the main edit window the selected part will be displayed at the mouse pointer position. A simple drawing can be created in this manner.

The parts window displays 48 items at a time. To change to the next or previous set of 48 items use the slider bar at the bottom of the window. Note that when changing sets, the current part will always default to the first in the set, i.e. the top left corner in the window. The entire library of parts (i.e. all 96 items) may be changed. See menu item

LIBRARY

New palette and text windows have been introduced in this version and these assist during freehand and miscellaneous drawing operations. ↔

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PROJECT OPTIONS

EDIT

DRAW

LIBRARY

PRINT

Info I

A requester will appear giving the following information:
Screen Width, Height, Colours. Free Chip, Fast and total memory and
the name of the currently used parts library. Press "OK" to close.

New N

The current drawing (if any) will be replaced by a clear screen and the
title will be "Unnamed".

Open O

The "Open File" requester will appear. Double click the required file to
load or click "OK" once the required file is highlighted. "CANCEL" takes
you back to the main edit window without any change.

Save S

Saves the current drawing with the name as displayed in the title bar.

Save as A

As for save except the "Save file" requester will appear prompting for
a name to save the file as.

About ?

The copyright and registration details. Please take notice of this!

Quit Q

Safeguarded by the "Are you sure?" requester.

PROJECT
OPTIONS

EDIT

DRAW

LIBRARY

PRINT

Text T

Allows the insertion of text into the drawing. A string requester will
appear and after clicking "OK" or pressing return, you will be able to
stamp the text down as you would with a "paste" operation.

Grid G

When checked, the main edit window will contain a grid of dots
corresponding to the size of a single part (i.e. 32 x 16 pixels).
All placement of parts, (and cut, copy, paste operations), will 'snap' to
the grid automatically when this menu item is checked.

Jotter J

This is a spare area where sections of drawings may be stored etc.

>Other R

The current drawing will be copied to the jotter when this is selected. If the jotter is currently being edited then the display will be copied to the main edit area. Note that the entire drawing is copied over the contents of the other, thus erasing the original. Use cut,copy,paste if you do not wish to lose any part of your drawing.

MemWarn =

When either the available chip or fast memory falls below a certain level the "Low Memory Warning" will appear giving you the option of clearing the memory used by the clips, the "undo" buffer and/or the jotter. Alternatively the user has the option to cancel the requester if more memory has become available since the requester appeared.

Undo U

Any operation which affects the drawing can be undone by using this item.

PROJECT

OPTIONS

EDIT

DRAW

LIBRARY

PRINT

Cut X

You will be prompted for a start position. Once the mouse is clicked and released a white rectangle displays the area to be cut from the drawing. Click again to activate the cut. The portion cut from the drawing will be stored for subsequent pasting.

Copy C

As for cut, except the selected area will not be removed.

Paste V

You will be prompted as to where to position the previously cut or copied portion of the drawing.

Once the mouse button is clicked, the portion will be displayed.

If the grid option is checked the portion will be aligned with the grid.

Spare -

SchematiCAD has two separate areas for storing portions of the drawing. Checking this item selects the spare clip area.

Blank .

When this item is selected, regardless of which part is current, the area beneath the mouse pointer will be blanked - erasing the section of drawing.

This is ideal for clearing certain sections of your drawing rather than undoing it to reveal the previous part.

Load clip \

A file requester will appear prompting you to select a previously saved section of drawing. This section will be loaded into the current clipboard.

Save clip /

Sections of your drawing may be copied from the screen and saved to disk to be used later in other (or the same) drawings. Follow the prompts to mark and then save the area you require.

PROJECT

OPTIONS

EDIT

DRAW

LIBRARY

PRINT

Line L

You will be prompted for a start and end position. The grid may be selected during the time that your drawing is taking place. This enables the start position to be aligned but not the end position and vice versa.

Box B

See above.

Ellipse E

See above.

Freehand D

This is a rather special feature of SchematiCAD.

Once this menu item is checked, you may draw freehand.

This is accomplished by holding down one of the number keys at the top of the keyboard whilst moving the mouse pointer.

Note that the mouse button does not need to be pressed.

The size of the "nib" is determined by the number key that is held down.

From left to right, 1 is the smallest and 0 is the largest.

Only the palette menu item is operative during this mode to enable changing of colours during the freehand edit.

To quit back to normal operation just uncheck the freehand menu item.

Fill ,

You will be prompted to click on an area to fill and when the left mouse button is pressed the area beneath the pointer will be filled with the current colour.

PROJECT

OPTIONS

EDIT

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PRINT

Load Y

Parts libraries are contained in drawers on your disk.

To load a new library simply double click on the drawer you wish to use.

Save Z

To save a library that you have created use this option.

A new drawer will be made and the parts will all be stored in there.

Make Part M

If the current clip is exactly 32 x 16 pixels, (use the grid to make sure of this), then a copy can be made and used as the current part.

Erase Part ;

The current (i.e. selected in the "Parts" window) part will be erased ready to accept a new part as above.

PROJECT

OPTIONS

EDIT

DRAW

LIBRARY

PRINT

Start P

The current drawing will be shown full size on a new screen and then directed to the printer.

Set width W

A requester asking for a printed width size of between 400 and 2000 printer pixels will appear.

Set height H

A requester asking for a printed height size of between 400 and 2000 printer pixels will appear.

Titles Y

When checked, this option will allow the print of the drawing name, (as shown in the window title), and the current date.

Centred K

When checked all printed output will be centred on the page.

FormFeed F

When checked, the program will send character 12 to the printer, (i.e. eject the page), when the drawing has finished being printed.

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Notes on Printing.

The min and max size of print is set at 400 and 2000 pixels respectively. The minimum of 400 pixels is the least realistic size you can expect the average printer to be capable of - anything smaller becomes a tiny blur on the page. Also any size above 2000 pixels is likely to overrun the page. You may need to experiment with your printer graphics settings to achieve the best output for your particular setup and print requirements.

Reccomended settings:

(PRINTERGFX SETTINGS)							
QUALITY	SPEED	SIZE	WIDTH	HEIGHT	DENSITY	SHADE	SMOOTHING
High	Slow	Large	2000	2000	7	B&W	ON
High	Slow	Small	400	400	7	B&W	ON
Low	Fast	Large	2000	2000	1	B&W	OFF
Low	Fast	Small	400	400	1	B&W	OFF

PCB Layout:

Again some experimentation may have to be done for the best printout but as an example the circuit "555Timer" was printed at 700 wide and 500 high with prntergfx density at 1 in order to get the IC pin spacings correct. This produced a printout size for the PCB of 27mm x 25mm.

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QUICK KEYS =====

Press these keys without a qualifier:

- Mirrors the clipboard on its X axis.
| Mirrors the clipboard on its Y axis.
R Rotates the clipboard by 90\textdegree{} clockwise.

1-9 (Numeric keypad) Changes to the corresponding handle position:

7 8 9 Top left Top centre Top right

4 5 6 = Centre left Centre Centre right

1 2 3 Bottom left Bottom centre Bottom right

X Flips the current part on its X axis
 Y Flips the current part on its Y axis
 1-0 (During freehand mode). By holding down one of the number keys and dragging the mouse, simple editing takes place.
 1 = small edit - 0 = large edit.
 The colour may be changed with the palette requester.
 ESCAPE Same as Undo.

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MENU OPTIONS

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PROJECT

OPTIONS

EDIT

		Iconify	I	Text	T	Cut	X
New	N	Grid	G	Copy	C		
Open...	O	Jotter	J*	Paste	V		
Save	S	>Other	R	Spare	-*		
Save as	A	MemWarn	=*	Blank	.*		
About	?	Undo	U	Load clip	\		
Quit	Q			Save clip	/		

DRAW

LIBRARY

PRINT

		Line	L	Load	Y	Start	P
Box	B	Save	Z	Set width	W		
Ellipse	E	Make part	M	Set height	H		
Freehand	#*	Erase part :		Titles	Y*		
Fill	,*			Centred	K*		
		* = Toggle		Formfeed	F*		

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TOOLTYPES

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The following entries in the SchematiCAD.info icon tooltypes may be set.

```

Name:           Set:   Default if not set:

FONT *         PEARL   Or if font cannot be found - TOPAZ.
MEMWARN                100000 (bytes)
PRTWIDTH        2000   1000
PRTHEIGHT       2000   1000
S_DEPTH         4 4
F_RATE          3500   3500

```

S_DEPTH determines the screen depth i.e. the number of colours available.
 F_RATE determines the "Flash Rate" when pasting from the clipboard.

* FONT does not need ".font" suffix

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SHAREWARE REGISTRATION DETAILS =====

Author: Mike Hughes Email: mike@hughes.mersinet.co.uk

Address: 21 Lee St, Sutton, St. Helens, MERSEYSIDE, ENGLAND. WA9 3LJ

Price: £10 UK - £15 Non-UK. Payment MUST be in £ Sterling!

For your convenience please fill in, cut out and print the following:

8<- - - - -

SchematiCAD Registration Form -----

To: Mike Hughes

21 Lee St,
 Sutton,
 St. Helens,
 Merseyside,
 ENGLAND
 WA9 3LJ

Dear Mike,

I have enjoyed using SchematiCAD and would now like to register my copy.
 Enclosed is £ to cover payment for the latest version of SchematiCAD,
 one free upgrade when available and postage costs.

My name is:

My address is:

I received my shareware copy of SchematiCAD from:

Signed:

Thank you.

8<- - - - -

What you will receive:

The latest version of SchematiCAD without the "annoying pop-up requester", full Amigaguide documentation, one free upgrade when released and..... the knowledge that you are supporting the best computer in the world!

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IN THE PIPELINE =====

- 1, INFO menu item to display more current file information.
- 2, Ability to print without having to display the image.
- 3, A screenmode requester.
- 4, Autorouting option to connect two points whilst avoiding any others.

And don't forget, your ideas for improvements are always welcome!

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BUGS -----

Aaaaargh don't mention the word! No seriously, I've spent many a long night

trying to trip the program up in any way I can to find any problems. But you know how it is, you can't find something that you think isn't there - it takes someone else to do that for you! If you do have a problem with SchematiCAD then I would be glad to hear from you.

To report a problem, write to me at my email address and I promise I will do all I can to remedy it. If you've any suggestions for improving SchematiCAD I would like to hear them also. Also, if your ideas are incorporated into SchematiCAD you will be given full credit in these docs.

CREDITS

Henrik Tikanvaara : Flash rate suggestion incorporated.
Screen-mode requester and window scrolling on its way!

Mark Ritter : Tool window made taller.
Main window no longer overlaps tool window.
Window scrolling still on its way!

Andreas Jânich : My only official beta tester! Thanks Andy!

Thank you for reading this far!
