Features

Overview:

1. Maximum drawing area 64 x 64 inches
2. Resolution 1/10.000 mm (0.1 microns)
3. Mm or inch grid
4. Up to 255 layers, user definable colors
5. Command files (Script files)
6. C-like User Language for data import and export
7. Simple library editing
8. Library browser with powerful search function
9. Support of technology feature (e.g. 74L00, 74LS00.)
10. Generation of graphics output as well as manufacturing and testing output with the CAM processor or the help the User Language.
11. Printouts via the OS's printer drivers.
12. Partlist generation with database support.
13. Drag Drop in the Control Panel.
14. Automatic backup function.

Layout Editor:

1. Full SMD support.
2. Full multilayer support (16 signal layers).
3. Design Rule Check for board layouts (checks e.g. overlaps, measures of pads or tracks).
4. Copper pouring (ground plains).
5. Package variants support.

Schematic Module:

1. Up to 99 sheets per schematic.
2. Forward - Back Annotation between schematic and board.
3. Automatic board generation.
4. Automatic generation of supply signals.
5. Electrical Rule Check (error check in the schematic and consistency check between schematic and layout).

AutoRouter Module:

1. Fully integrated into basic program
2. Uses the layout's Design Rules
3. Change between manual and automatic routing at any time.
4. Rip Up and Retry algorithm.
5. User-Definable strategy by cost factors.
6. Routing grid down to 0.02 mm (about 0.8 mil).
7. No placement restrictions.
8. Up to 16 signal layers (with user definable preferred directions).
9. Up to 14 supply layers.
10. takes into consideration various signal classes (wire width, minimum distances).

Schematic Editor

The various commands used in this are:

1. INFO - Shows information about an object (component, signal, trace, etc.)
2. MOVE - Allows components to be moved (same as schematic.)
3. GROUP - Groups a collection of objects into a ”group” that can be manipulated.
4. DELETE - Delete an object. Items created in schematics need to be deleted there.
5. SMASH - Separate the text labels of a part from the part itself, so they can be moved independently.
6. BREAK - Add a corner to a line (or trace.)
7. ROUTE - Turn an air wire into a trace.
8. LINE - Draw lines (usually in non-copper layers. ROUTE is for drawing copper.
9. VIA - Create a hole and pad associated with some signal.
10. HOLE - A hole that isnt associated with a signal, i.e. for mounting.
11. RATSNEST Re computes air wires and polygons, example after components have been moved.
12. CHANGE - Changes an objects properties.
13. RIPUP - Changes a routed trace back to an air wire.
14. TEXT - Add text
15. POLYGON - Create a polygon.(selection)
16. DRC - Invoke the Design Rule

Board Layout

Check and parameter setting. Up in the file menu, theres a ”Switch to board” selection. If we do that from a bare schematic, it will offer to create the board from the schematic for us (say ”yes”), and then leave us sitting in the Board Editor.

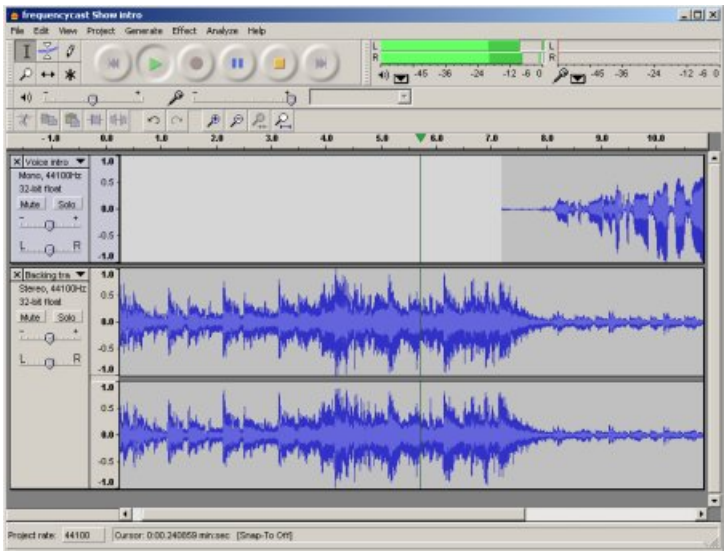
The various commands used in board layout editor are:

1. AIR WIRES - All the signals you created in the schematic are currently air wires; thin yellow lines that are drawn in the shortest possible way, crossing each other as needed. They stay connected to component pins even when you move the component around.
2. RATSNEST Re computes and redraws these after you move things around (and, say, make two connected pins closer together than they used to be.)
3. ROUTING - A signal consists of turning an air wire into an actual copper trace on some layer(s) of the board, and positioning that trace so that it doesnt short against other traces on the same layer of the board.
4. AUTOROUTE - Invokes the AutoRoute.

AUDACITY

Audacity is open source software, easy-to-use, multi-track audio editor and recorder for Windows, Mac OS X, GNU/Linux and other operating systems. The interface is translated into many languages. We can use Audacity to:

1. Record live audio.
2. Record computer playback on any Windows Vista or later machine.
3. Convert tapes and records into digital recordings or CDs.
4. Edit WAV, AIFF, FLAC, MP3 and OggVorbis sound files.
5. AC3, M4A/M4R (AAC), WMA and other formats supported using optional libraries.
6. Cut, copy, splice or mix sounds together.
7. Numerous effects including change the speed or pitch of a recording.



Generating Lissajous Patterns

Audacity software is used to obtain synchronized signals of required frequency, amplitude and phase difference. This output is fed to the oscilloscope. The signals can be studied in time domain as well in relative signal mode where the two signals form the part of quadrature axis.

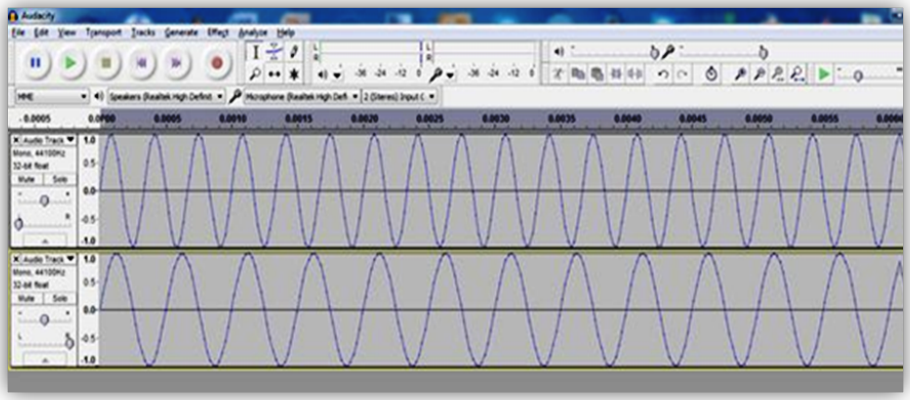


Figure 1: for phase diff:0◦or180◦

Figure 2: for phase diff:90◦

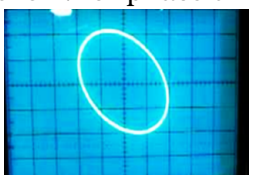


Figure 3: for phase diff:135◦

LATEX

We have made this report using latex software. LaTeX is a high-quality typesetting system; it includes features designed for the production of technical and scientific documentation.
LaTeX is the de facto standard for the communication and publication
of scientific documents. LaTeX is available as free software.