**NAME**
>      hyp2mat – convert hyperlynx files to octave/matlab scripts for electromagnetic simulation.

**SYNOPSIS**
>      **hyp2mat** [-*h*] [ *-o outfile* ] [ *-f pdf*/*csxcad* ] [-*n net*]... [*OPTIONS*]... [-*v*] [*infile*]

**DESCRIPTION**
>      hyp2mat 0.0.5
>
>      Converts Hyperlynx Signal–Integrity Transfer Format files to Octave/matlab scripts.

**OPTIONS**
>      **−h**, **−−help**
>               Print help and exit
>
>      **−V**, **−−version**
>               Print version and exit
>
>      **−o**, **−−output**=*filename*
>               Output file.  (default='−')
>
>      **−f**, **−−output−format**=*ENUM*
>               Output file format.  (possible values="csxcad", "pdf" default='pdf')

>   **Processing options:**
>      **−n**, **−−net**=*STRING*
>               Import net. Repeat to import several nets.  Default is importing all nets.
>
>      **−l**, **−−layer**=*STRING*
>               Import layer. Repeat to import several layers.  Default is importing all layers.
>
>      **−e**, **−−epsilonr**=*DOUBLE*
>               Set dielectric epsilon r.
>
>      **−x**, **−−xmin**=*DOUBLE*
>               Crop pcb. Set lower bound of x coordinate.
>
>      **−X**, **−−xmax**=*DOUBLE*
>               Crop pcb. Set upper bound of x coordinate.
>
>      **−y**, **−−ymin**=*DOUBLE*
>               Crop pcb. Set lower bound of y coordinate.
>
>      **−Y**, **−−ymax**=*DOUBLE*
>               Crop pcb. Set upper bound of y coordinate.
>
>      **−z**, **−−zmin**=*DOUBLE*
>               Crop pcb. Set lower bound of z coordinate.
>
>      **−Z**, **−−zmax**=*DOUBLE*
>               Crop pcb. Set upper bound of z coordinate.
>
>      **−g**, **−−grid**=*DOUBLE*
>               Set output grid size.  (default='10e−6')
>
>      **−p**, **−−arc−precision**=*DOUBLE*
>               Set maximum difference between perfect arc and polygonal approximation.  (default='0')

>   **PDF output options:**
>      **−−hue**=*DOUBLE*
>               Set PDF color hue. Range 0.0 to 1.0 (default='0')
>
>      **−−saturation**=*DOUBLE*
>               Set PDF color saturation. Range 0.0 to 1.0 (default='0.6')

−−**brightness**=*DOUBLE*
Set PDF color brightness. Range 0.0 to 1.0 (default='0.9')

**Debugging options:**

**−r**, −−**raw**
Raw output. Do not join adjacent or overlapping copper. Do not invert planes. (default=off)

**−d**, −−**debug**
Increase debugging level. Repeat for more detailed debugging.

**−v**, −−**verbose**
Print board summary.

All lengths are in meters.

Hyperlynx input files conventionally end in **.hyp** .

*hyp2mat* reads input from file *infile*. If no input file is specified input is read from standard in.

If no output file is specified output is to standard out.

If a syntax error occurs during conversion, error recovery is attempted. *hyp2mat* exits with zero status if conversion was succesful and non-zero if not.

The **--verbose** option can be used to list board dimensions.

If only a small region of the board needs to be simulated the **--xmin --xmax --ymin** and **--ymax** options can be used to crop the board to a smaller region.

If not all layers of the board need to be simulated, the **--zmin** and **--zmax** options may be used to remove layers.

The option **--net=?** lists all available nets.

Arcs are approximated by polygons. If higher accuracy is needed, set **--arc-precision** to the desired precision. This will increase the number of line segments used to draw circular, oval and oblong pads, amongst others.

Typical use of *hyp2mat* is with simulation packages such as OpenEMS.

**FILES**

**/usr/share/hyp2mat/matlab/**
Supporting matlab routines for OpenEMS.

**/usr/share/hyp2mat/eagle/**
Examples and tutorial.

**EXAMPLES**

Convert pcb.hyp to pdf:
hyp2mat -o pcb.pdf pcb.hyp

Examine original Hyperlynx file:
hyp2mat -o pcb.pdf --raw pcb.hyp

Draw arcs with an accuracy of 0.1 mm or better:
hyp2mat -o pcb.pdf --arc-precision 1E-4 pcb.hyp

## NOTES

Common causes of errors are unquoted strings, and unassigned component values.

### Unquoted strings

Error:     *syntax error, unexpected STRING at 'Logo'*

Source:
            (? REF=My Logo BOT1 L=Bottom_Layer)

Cause:     An unquoted string contains a space (' ').

Solution:
            Edit the .hyp file and put the string between double quotes:
            (? REF="My Logo BOT1" L=Bottom_Layer)

### Unassigned component values

Error:     *syntax error, unexpected L, expecting FLOAT or STRING at 'L'*

Source:
            (R REF="R1" VAL= L="Top")

Cause:     Component has not been assigned a value (VAL=).

Solution:
            Edit the .hyp file and assign a value to resistor R1:
            (R REF="R1" VAL=0 L="Top")
            or assign the resistor a value in the schematics editor and re-export to HyperLynx.

## AUTHOR

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## SEE ALSO

*octave*(1)
*OpenEMS*, a free and open-source electromagnetic field solver using the FDTD method.