Printed Circuit Board
—by EAGLE

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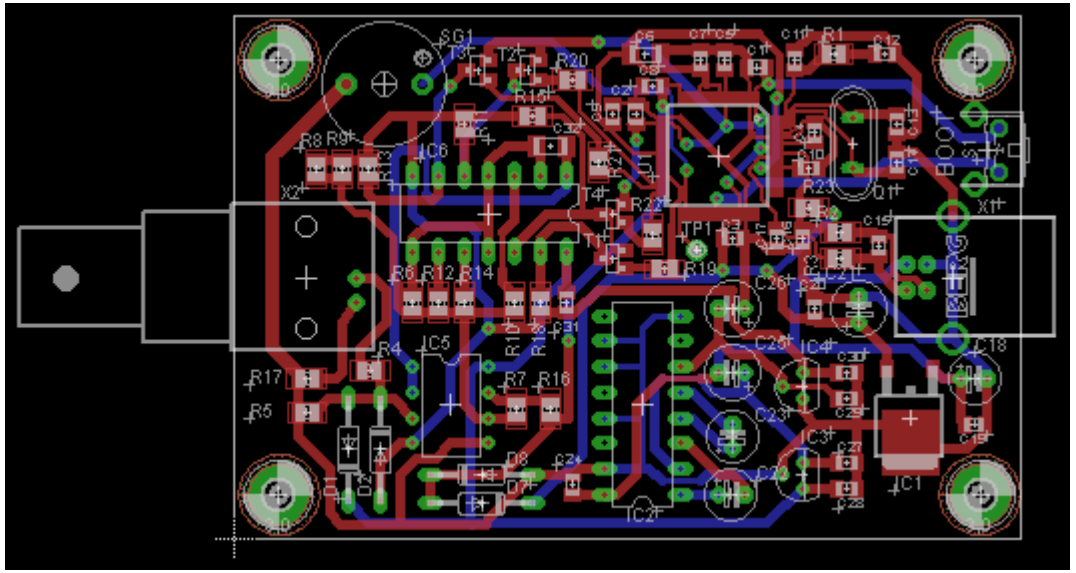
Outline

- 1.软件学习理念（EAGEL简介）
- 2.绘制流程
- 3.使用介绍
- 4.Key Points

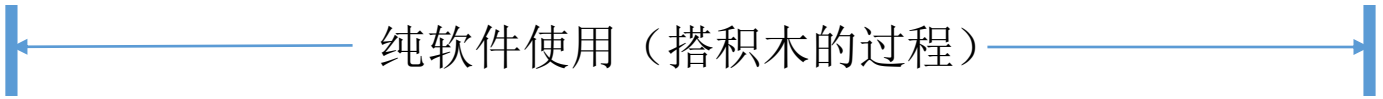


1.Eagle 介绍

- A.免费开源
- B.国外使用很多（随之教材也会很多）例如：sparkfun
- C.绘制原理图（逻辑连线）和电路板（实物连线）
- 入门时间（参考）：2-3天

2.绘制流程

- 操作流程：
- 逻辑电路→ 绘制原理图 → 绘制实物图 （*.board）→生成gerber文件



- 目的：
- 实现目标→ 完成逻辑连线→ 完成实物连线→ 转化成工厂加工文件

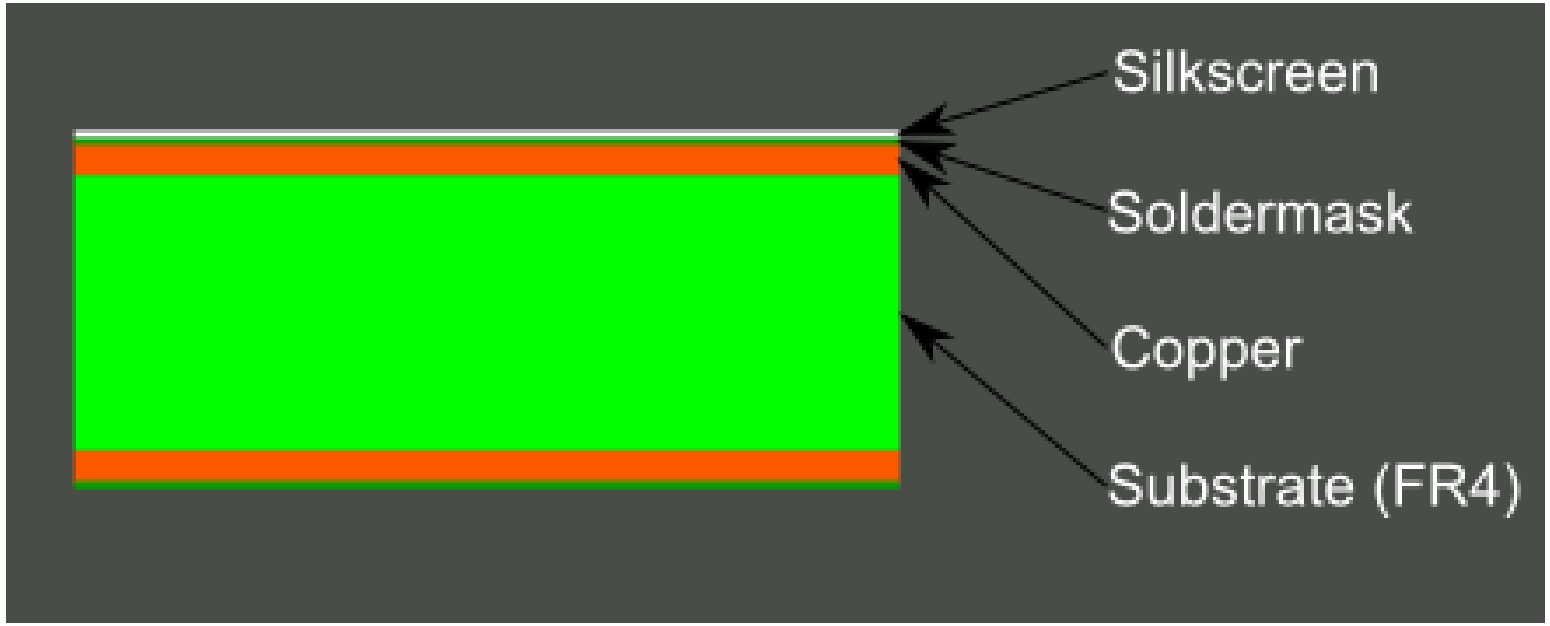
3.使用介绍

- 0.“层”
- 1.界面
- 2.操作
  - a.添加元器件（绘制）
  - b.连线
  - c.布线
  - d.敷铜（教程）

3.0 “层”

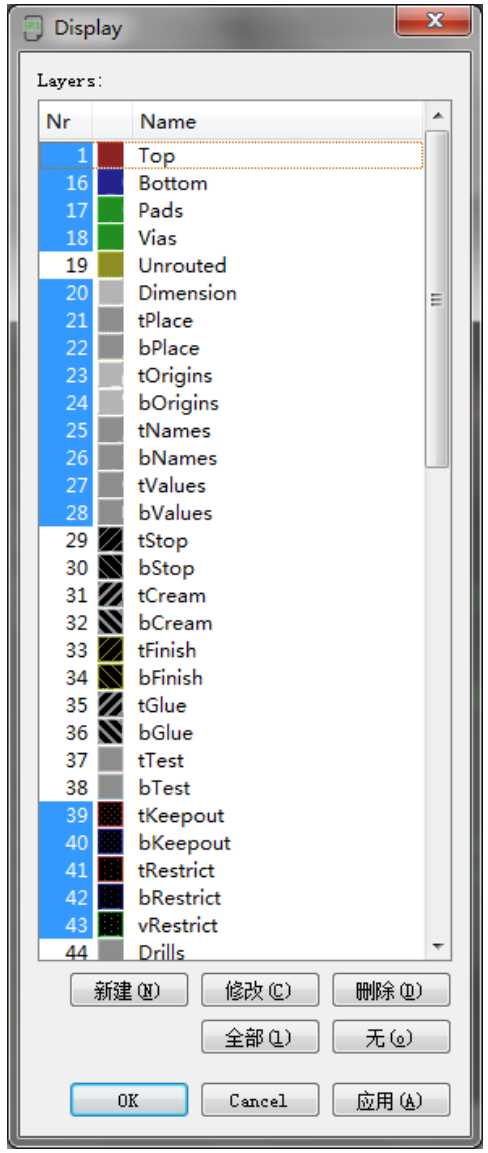
- 0.对称的

- 丝网层
- 组焊层
- 铜层
- 衬底层

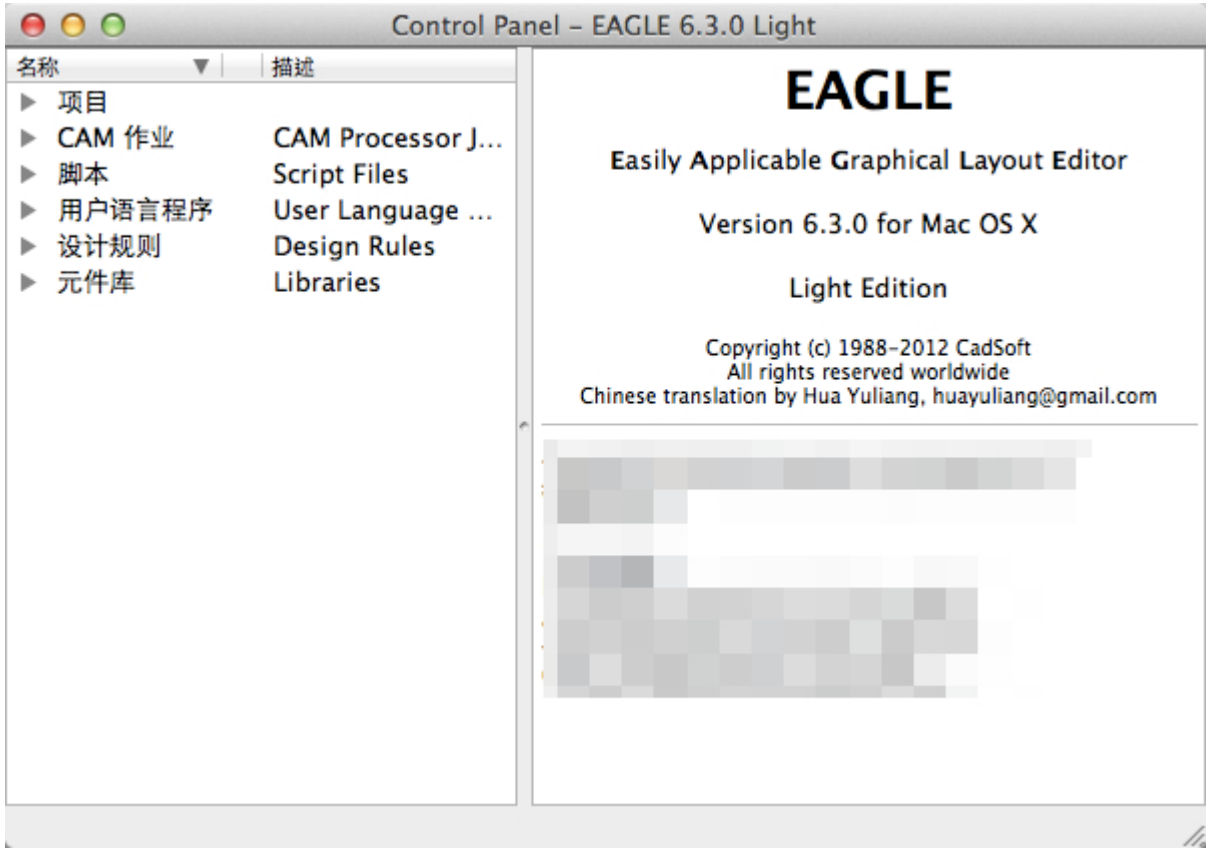


3.0 “层”

Color	Layer Name	Layer Number	Layer Purpose
	Top	1	Top layer of **copper**
	Bottom	16	Bottom layer of **copper**
	Pads	17	Through-hole pads. Any part of the green circle is exposed **copper** on *both* top and bottom sides of the board.
	Vias	18	Vias. Smaller copper-filled drill holes used to route a signal from top to bottom side. These are usually covered over by soldermask. Also indicates **copper** on both layers.
	Unrouted	19	Airwires. Rubber-band-like lines that show which pads need to be connected.
	Dimension	20	Outline of the board.
	tPlace	21	**Silkscreen** printed on the top side of the board.
	bPlace	22	**Silkscreen** printed on the bottom side of the board.
	tOrigins	23	Top origins, which you click to move and manipulate an individual part.
	bOrigins	24	Origins for parts on the bottom side of the board.
/ / Hatch	tStop	29	Top stopmask. These define where **soldermask** should *not* be applied.
\ \ Hatch	bStop	30	Absent **soldermask** on the bottom side of the board.
	Holes	45	Non-conducting (not a via or pad) holes. These are usually drill holes for stand-offs or for special part requirements.
	tDocu	51	Top documentation layer. Just for reference. This might show the outline of a part, or other useful information.



3.1 界面


Control Panel – EAGLE 6.3.0 Light
名称
描述
项目
CAM 作业
CAM Processor J...
脚本
Script Files
用户语言程序
User Language ...
设计规则
Design Rules
元件库
Libraries
EAGLE
Easily Applicable Graphical Layout Editor
Version 6.3.0 for Mac OS X
Light Edition
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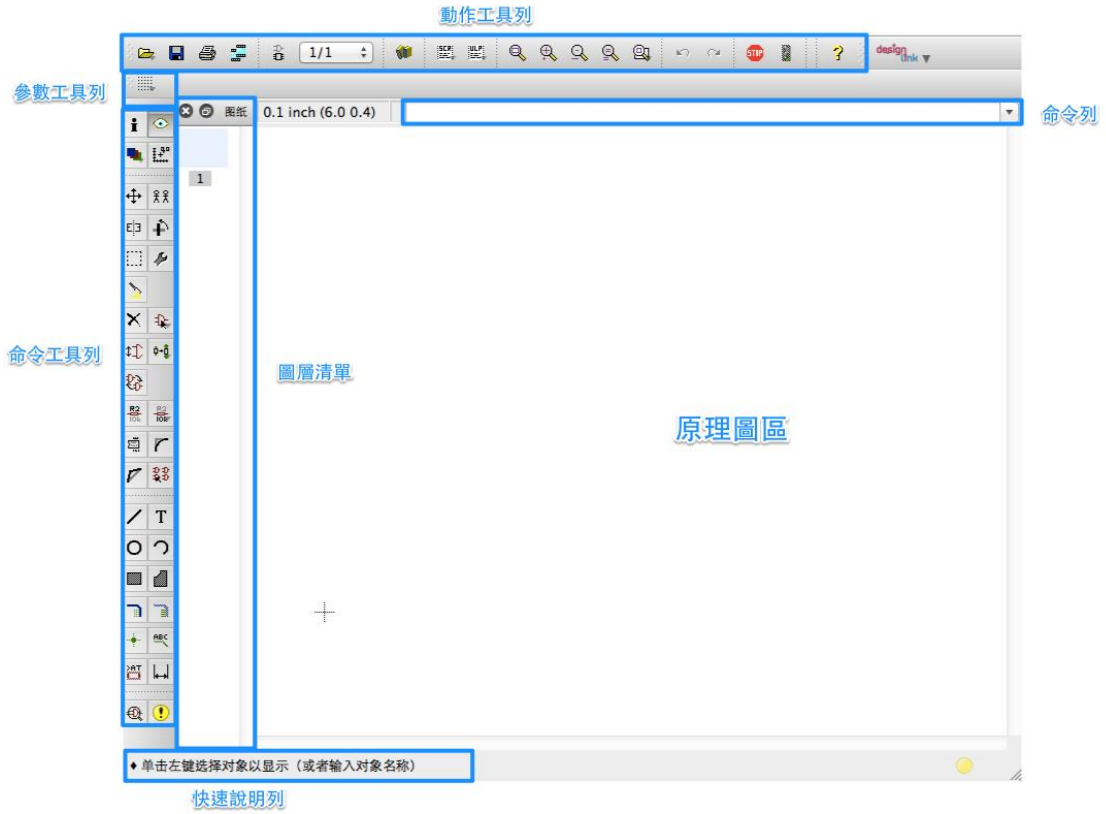
Chinese translation by Hua Yuliang, huayuliang@gmail.com


動作工具列
參數工具列
命令列
命令工具列
圖層清單
原理圖區
快速說明列
0.1 inch (6.0 0.4)
♦ 单击左键选择对象以显示（或者输入对象名称）

3.2 操作

（空白）

4. Key Points

- 元器件的添加
  - 库（一般都能找到）
  - 自己绘制

- 尺寸设置
  - 网格大小设置

- 快捷键
  - 会让你感觉人生很美好

THANKS

（完）