



ELECTRONICS  
CRAFTSMANSHIP  
**Boldport**

**PCBmodE**

*Saar Drimer*

2016-01-30

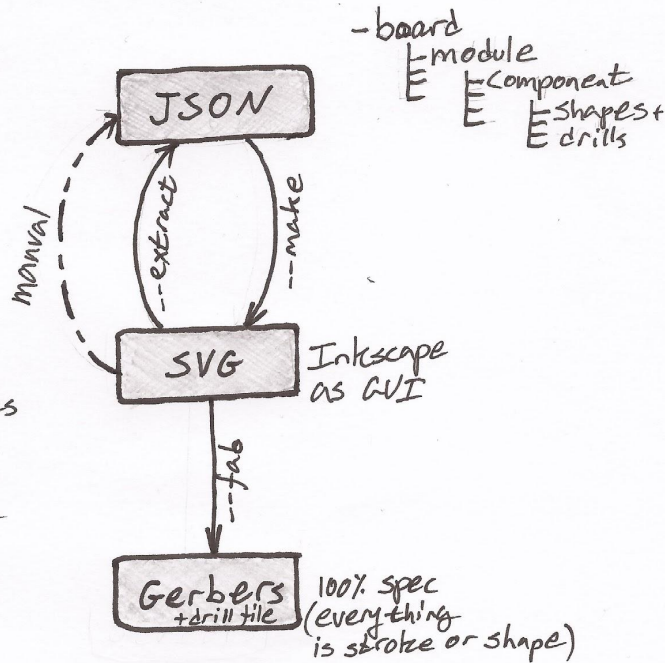
FOSDEM '16

A PCB design  
tool w/ a  
twist

# PCBmode

"modern"  
"modification E"  
"PCB-mode"  
-or-  
"PCB-mod-E"

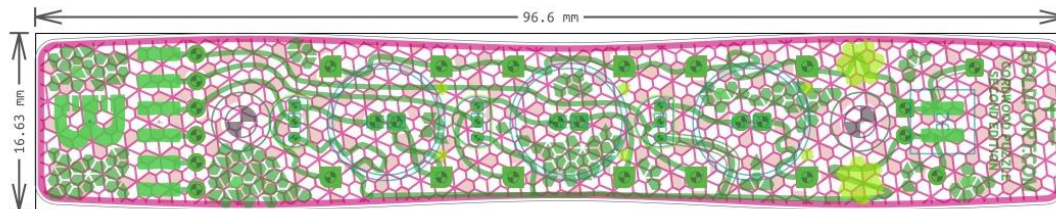
- \* command-line tool ("wrapper")
- \* Python
- \* MIT license



- \* No schematics
- \* No DRC
- \* Hand routing

\* contributors: 1

pcbmode.com  
@pcbmode



39 drills:



Board details:  
 Name: Cordwood Puzzle 2nd edition  
 Revision: A  
 Description: A soldering kit and puzzle  
 License: MIT  
 Company: Boldport Limited  
 Designer: Saar Drimer, saar@boldport.com

Manufacturing:  
 RoHS and lead free compliant manufacturing process  
 Unit of length: Millimetre (mm)  
 Number of layers: 2 ('top', 'bottom')  
 Board thickness: 1.6 mm  
 Material: FR4 35/35 um copper  
 Silkscreen: top (white), bottom (white)  
 Soldermask: top (green), bottom (green)  
 Surface finish: lead free

Designed with PCBmode, an open source software  
<http://pcbmode.com>  
 Stay updated:  
 @boldport @pcbmode <http://boldport.com>

Align and Distribute (Sh...

Align

Relative to: First selected

Treat selection as group: ☐



Distribute



Rearrange



Remove overlaps

H: 0.0 V: 0.0

Nodes



Layers (Shift+Ctrl+L)

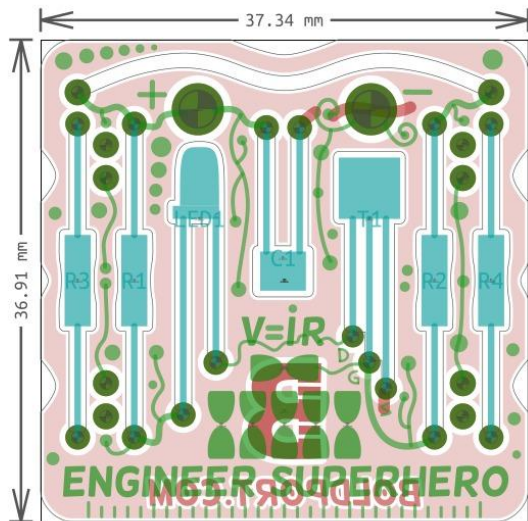
- oucuine
- dimensions
- origin
- top
  - placement
  - assembly
  - solderpaste
  - silkscreen
  - soldermask
- copper
  - pours
  - pads
  - routing
- bottom

Blend mode: Normal

Opacity (%) 100.0

Fill: N/A Stroke: N/A O: 0 documentation No objects selected. Click, Shift+click, Alt+scroll mouse on top of objects, or drag around objects to select.

X: 47.83 Y: 2.68 Z: 295%



■ top conductor  
■ top silkscreen  
■ top assembly

■ bottom conductor  
■ bottom silkscreen  
■ bottom assembly

#### 27 drills:



#### Board details:

Name: emergency

Revision: A

Description: the tiny 'engineer superhero' emergency kit, 2nd edition

License: Solderpad Hardware License, version 0.51

Company: Boldport Limited

Designer: Saar Drimer, saar@boldport.com

#### Manufacturing:

RoHS and lead free compliant manufacturing process

Unit of length: Millimetre (mm)

Number of layers: 2 ('top', 'bottom')

Board thickness: 1.6 mm

Material: FR4 35/35 um copper

Silkscreen: none,

Soldermask: green, top and bottom

Surface finish: ENIG (lead free)

Designed with PCBmodeE, an open source software

<http://pcbmode.com>

Stay updated:

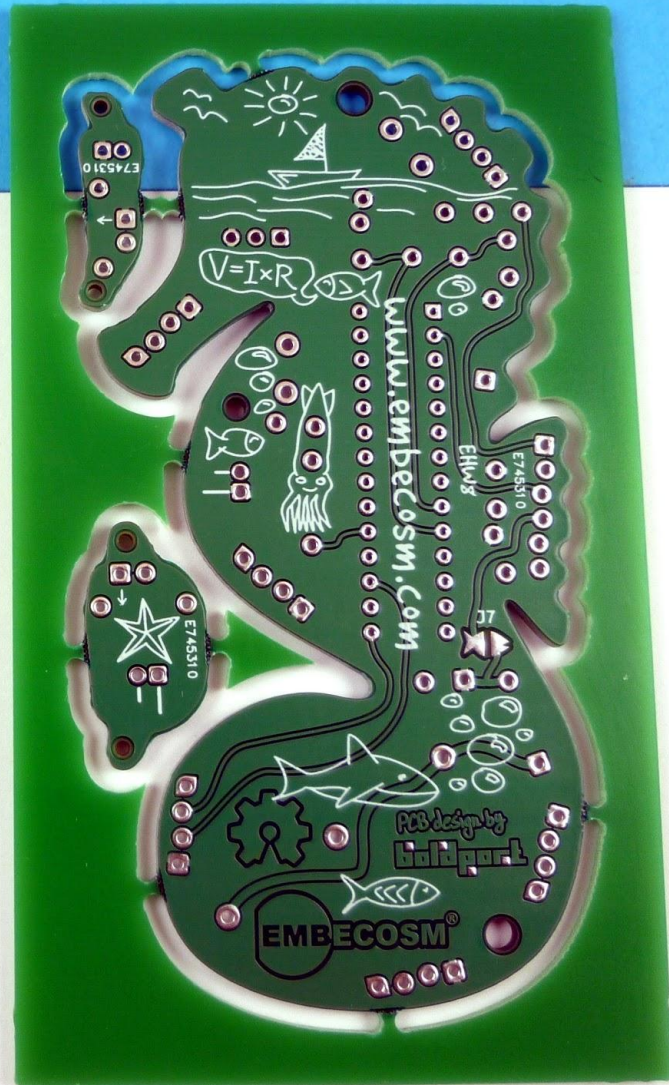
@boldport @pcbmode <http://boldport.com>

#### Layers (Shift+Ctrl...

- documentation
- drills
- outline
- dimensions
- origin
- top
  - placement
  - assembly
  - solderpaste
  - silkscreen
  - soldermask
- copper
  - pours
  - pads
  - routing
- bottom
  - placement
  - assembly
  - solderpaste
  - copper
    - soldermask
    - silkscreen

Blend mode: Normal  
Opacity (%) 100.0







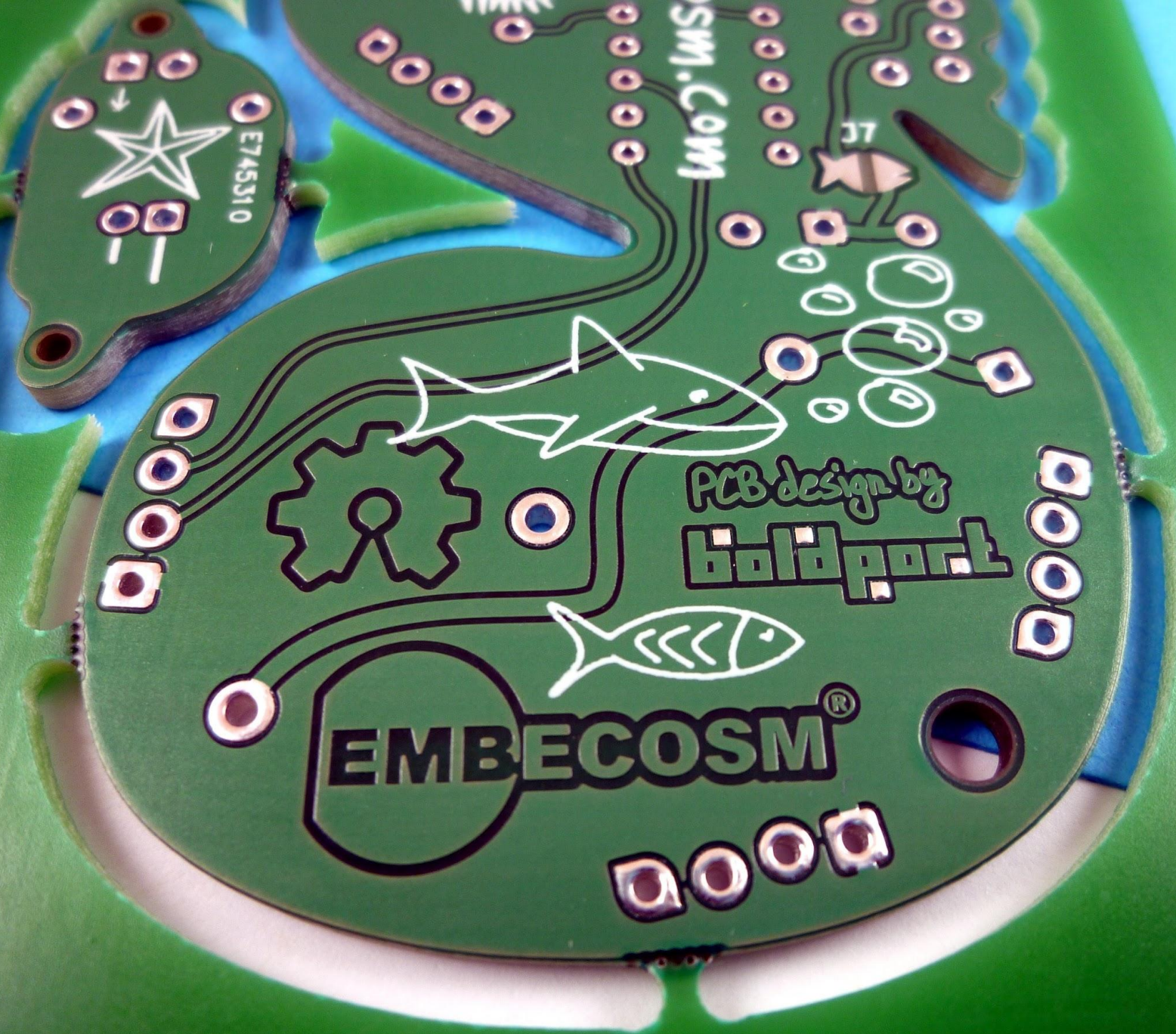
Sm.Com

E745310

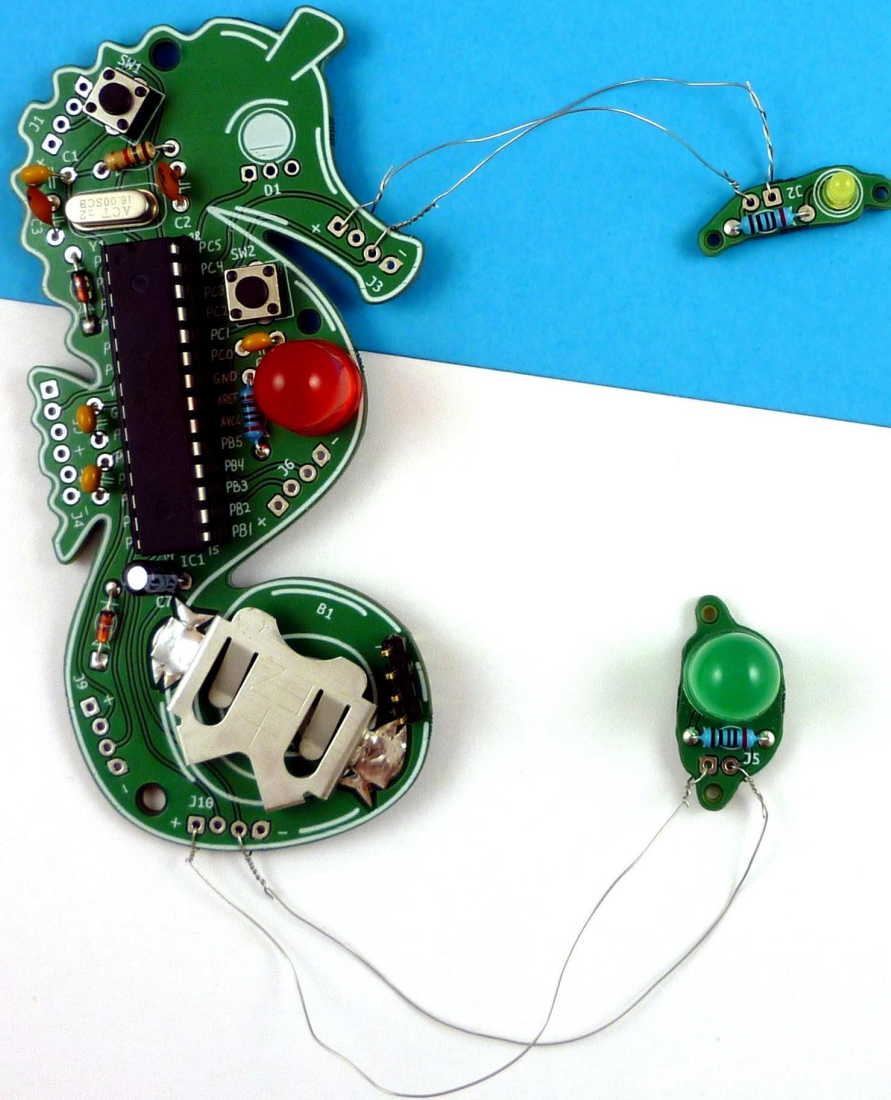
37

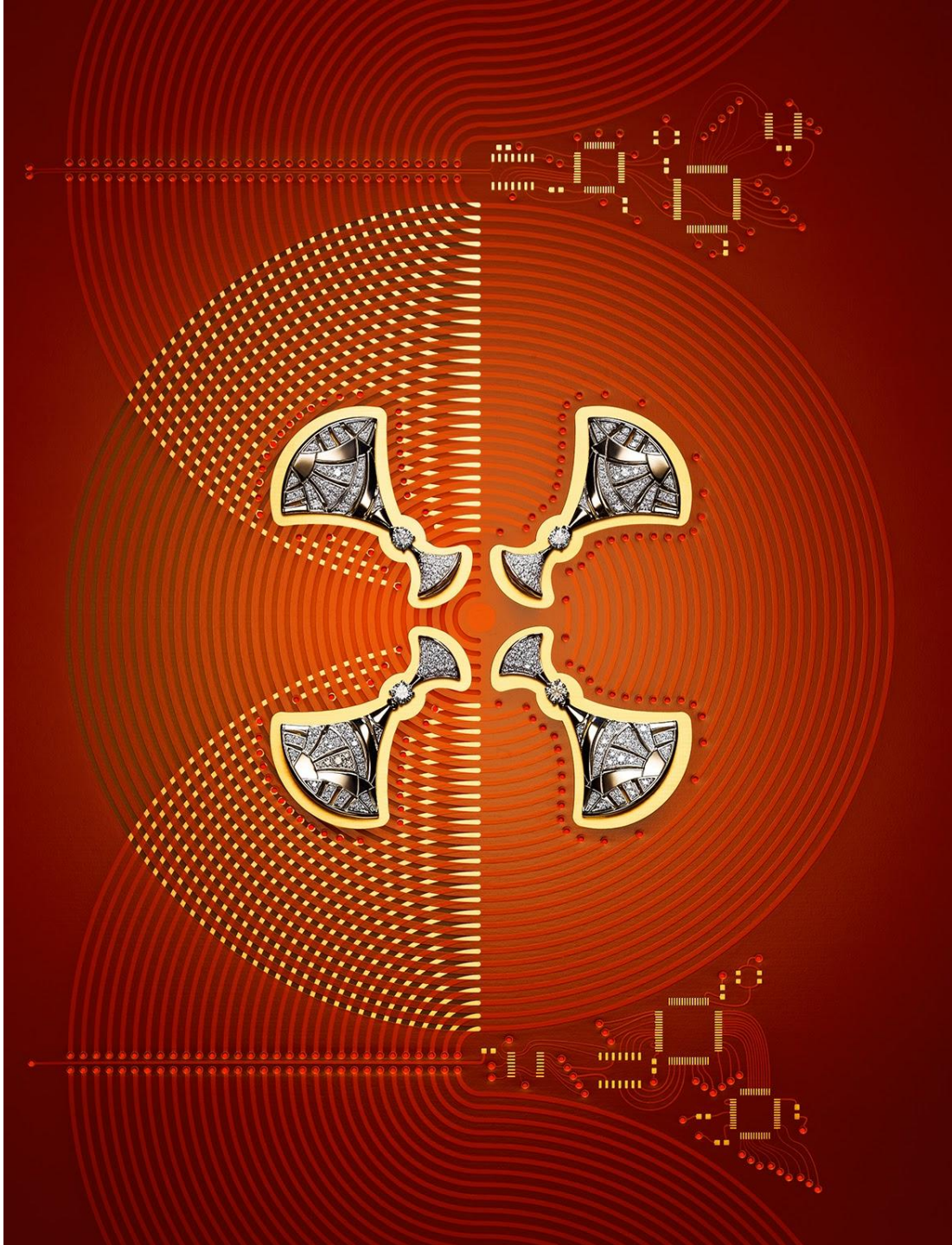
PCB design by  
**boldport**

**EMBECOSM<sup>®</sup>**











PCBmode

# <sup>but</sup> Why?

- \* I wanted to design a painting
- \* I was frustrated with interfaces and limitations
- \* I wanted to create my own vehicle for trying ideas, not 'retrofit' existing tools

.~.  
It started out as a personal project  
and took ~6 months to write, until  
first board, January 2013

.~.

well, Gerber...

1. Use open standards/formats
2. Do NOT implement GUI

↖ where good ideas go  
to die

\* I've been designing PCBs with PCBmode  
for the past three years.

PCBmodE is a useful tool, but

still very much  
a personal tool

- \* is not practically a replacement for 'traditional' tools
- \* not very well documented
- \* can be frustrating to start out with



- \* improve UI/UX (while still using stock Inkscape)
- \* better documentation
- \* extend SVG usage
- \* attract contributors / increase community involvement

~THE END~

oh, did I mention

Boldport Club?