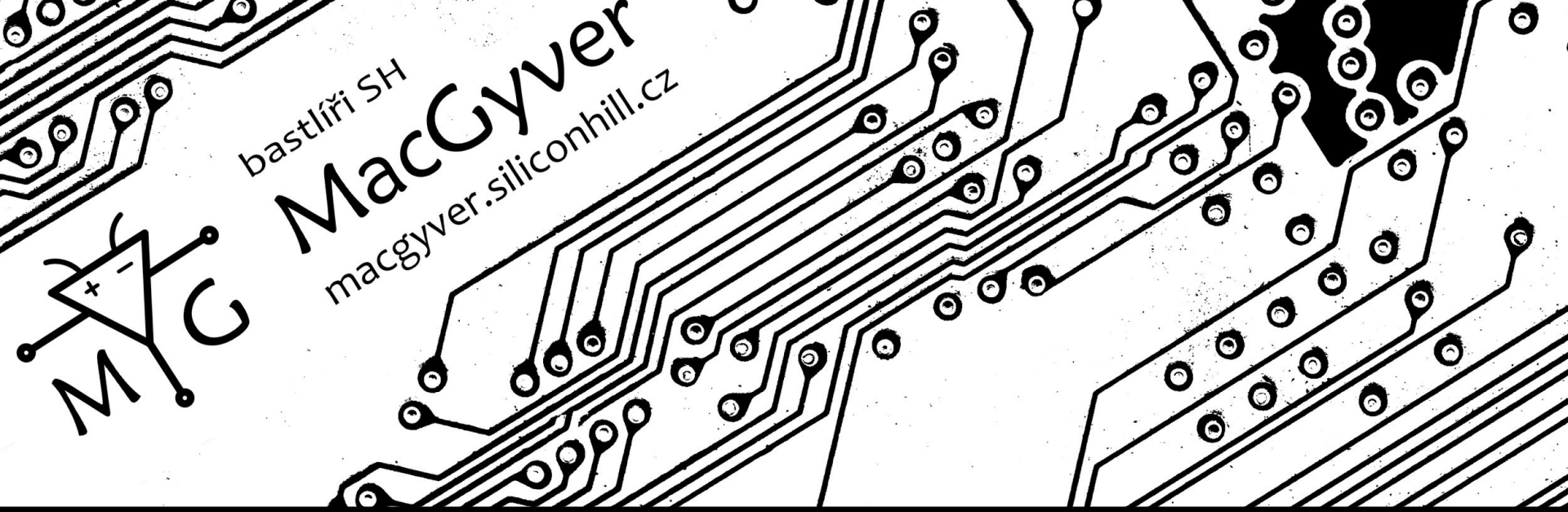


Technologie návrhu a výroby DPS

Pavel Vitvar

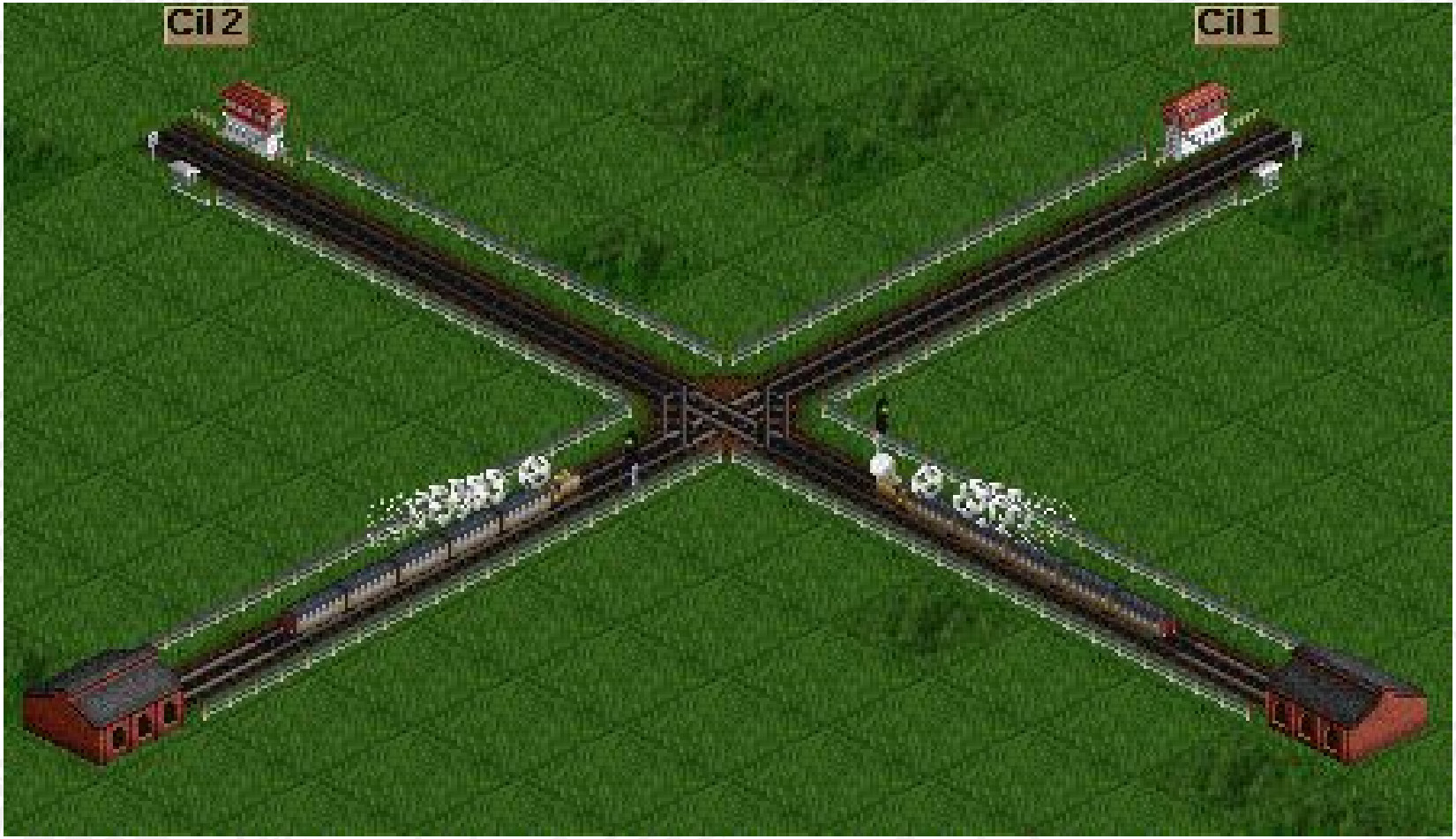
Transport Tycoon

Transport Tycoon - rezistor + ledka + zem

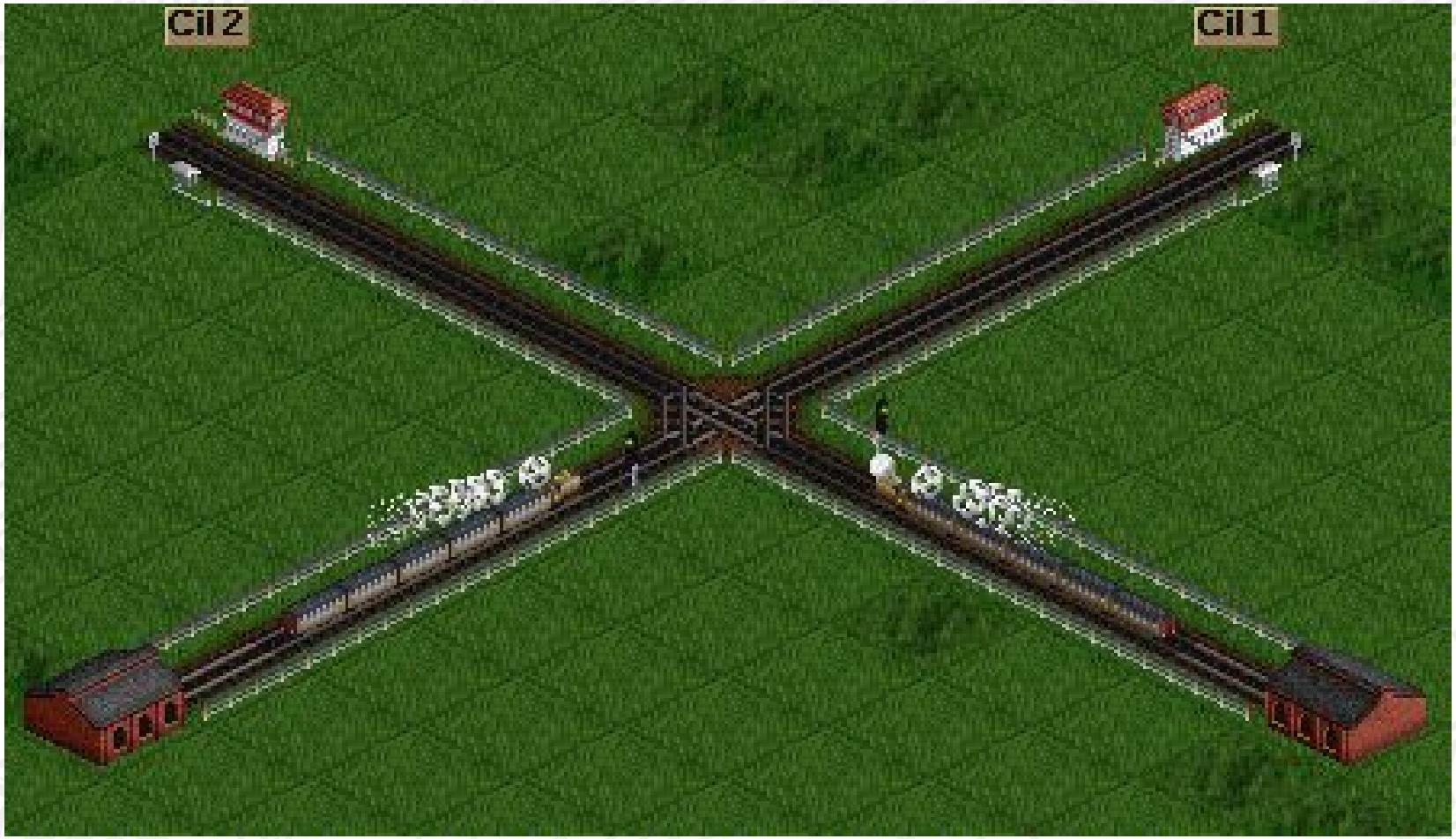
Transport Tycoon

Transport Tycoon - dvě žárovky

Transport Tycoon



Transport Tycoon - zkrat!



Trocha historie

1903 - Albert Hanson návrh propojení součástek tenkou fólií

1913 - Arthur Berry - patent na leptání spojů

1927 - Charles Durcase - patent na galvanické pokovení

1943 - 2. světová válka - roznětky v protiletadlových střelách

1950 - THT ve spotřební elektronice v USA

1980 - SMT ve spotřební elektronice v USA

2015 - ...

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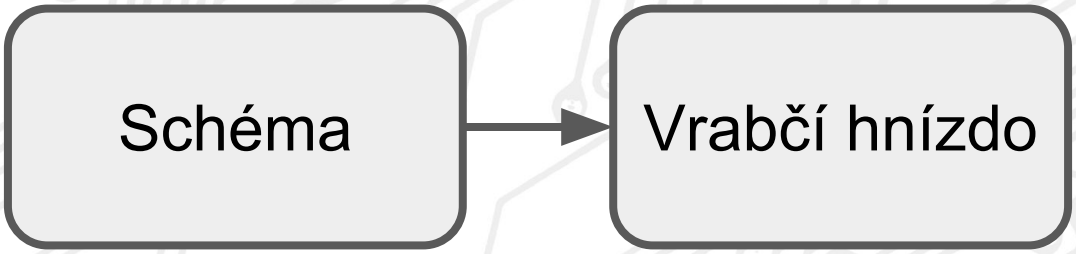
Technologie - bastlíř úroveň 0



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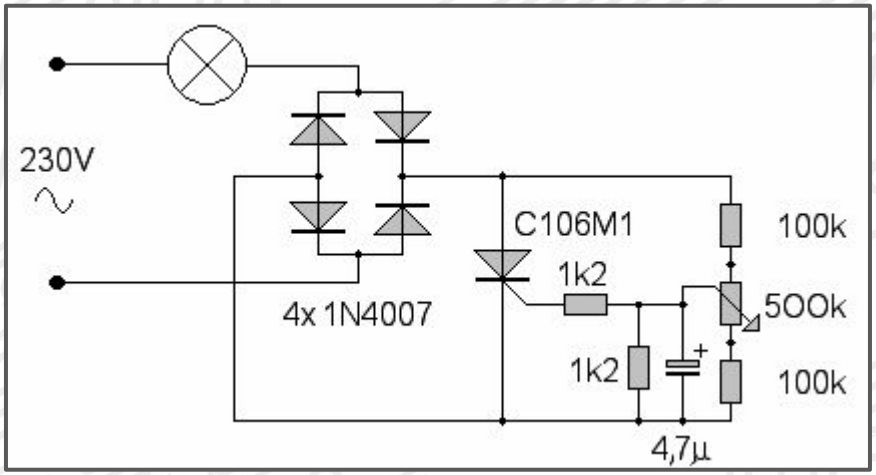
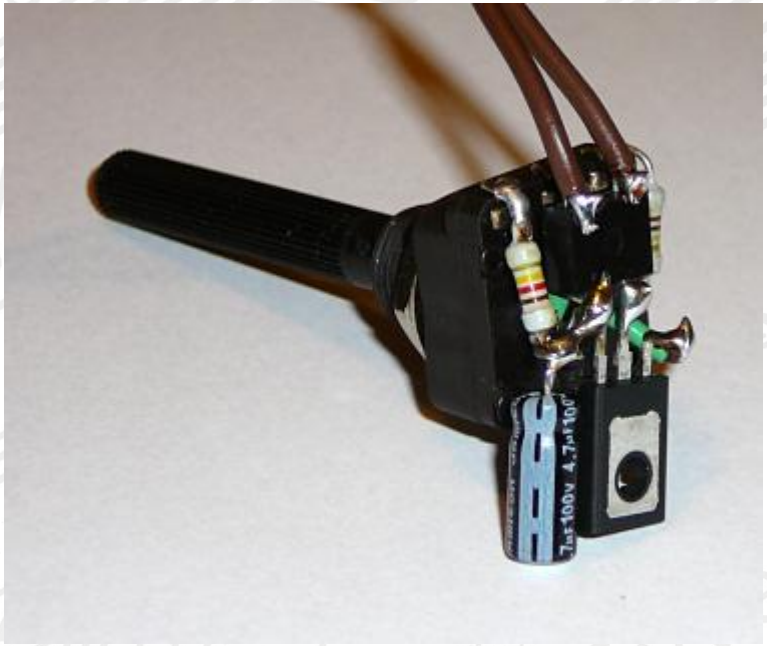
Technologie - bastlíř úroveň 0





zdroj: http://tera.peklo.biz/

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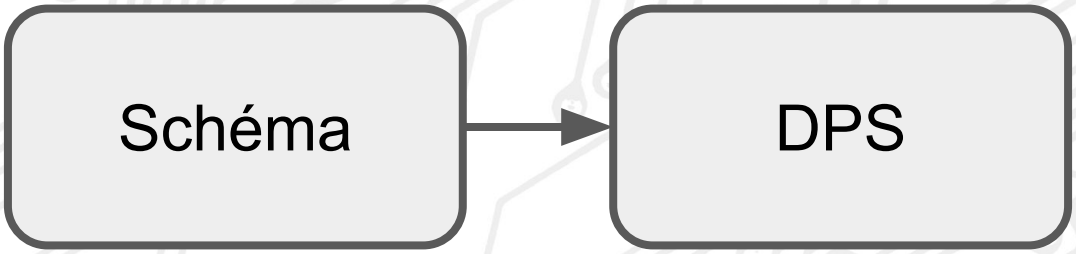

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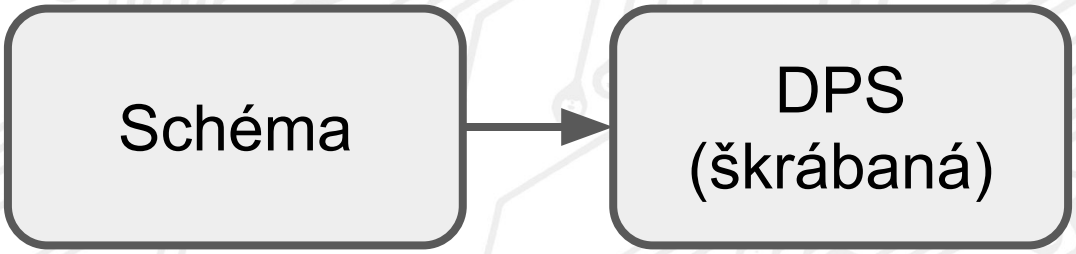
Technologie - bastlíř úroveň 1



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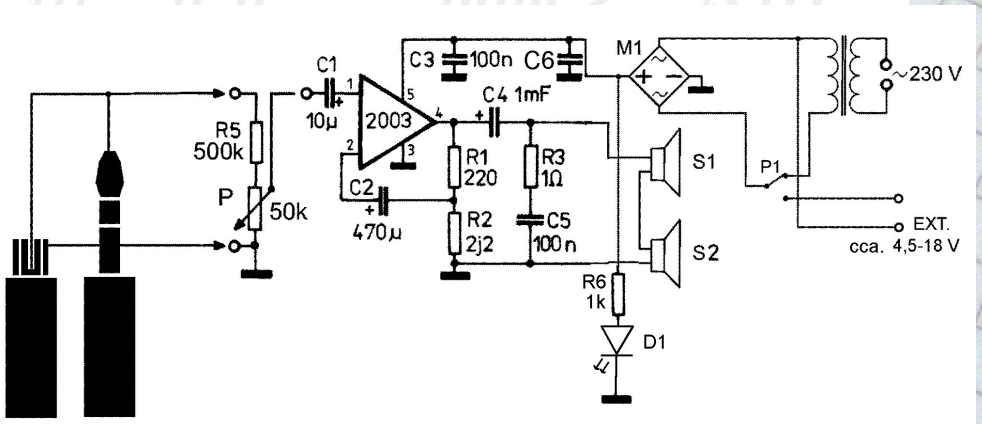
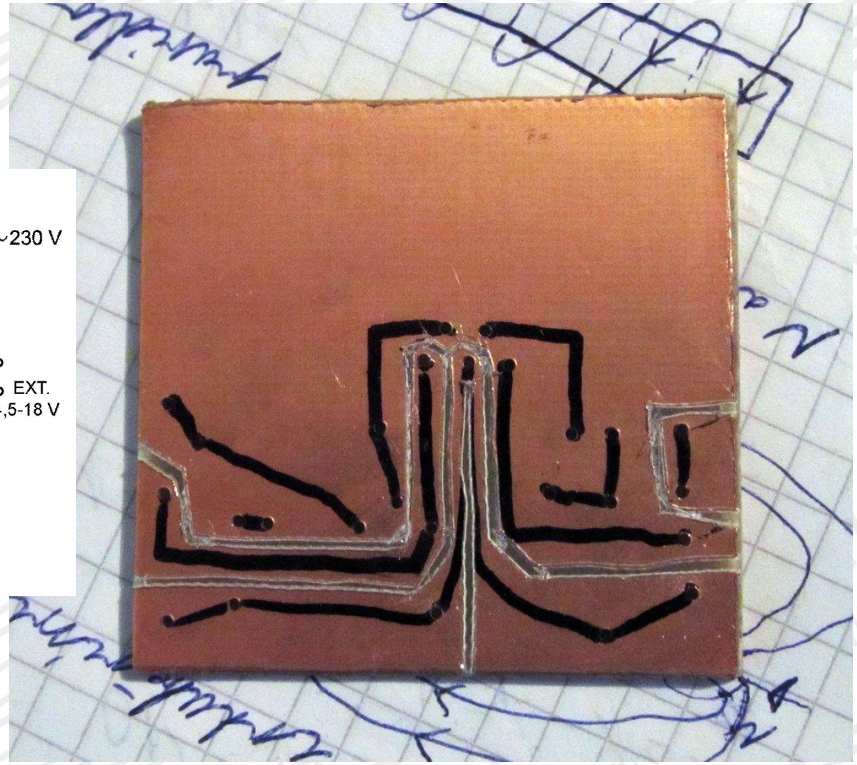
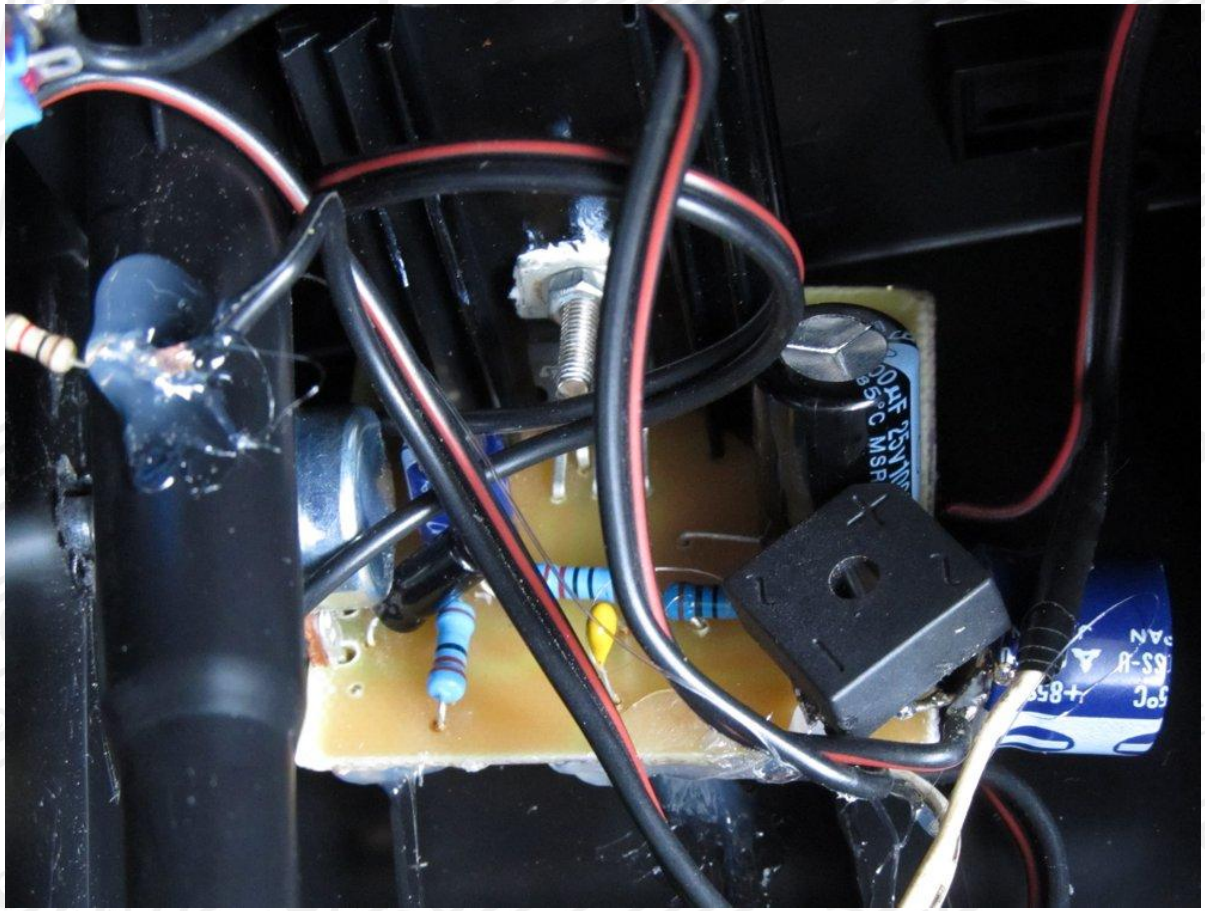
Technologie - bastlíř úroveň 1





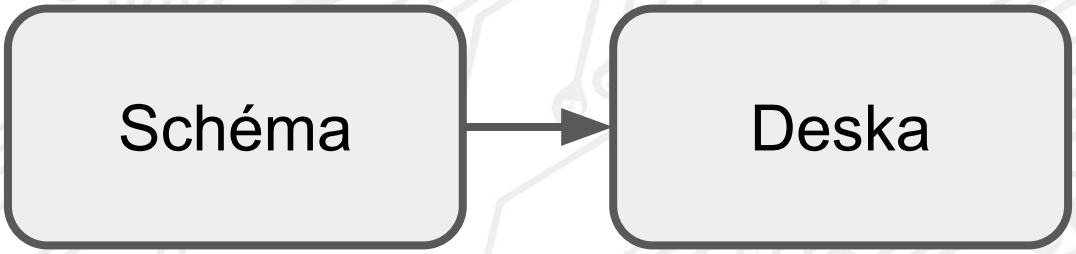
zdroj: http://www.simuvweb.wz.cz/

Technologie - bastlíř úroveň 1



zdroj: http://www.simuvweb.wz.cz/

Technologie - bastlíř úroveň 2



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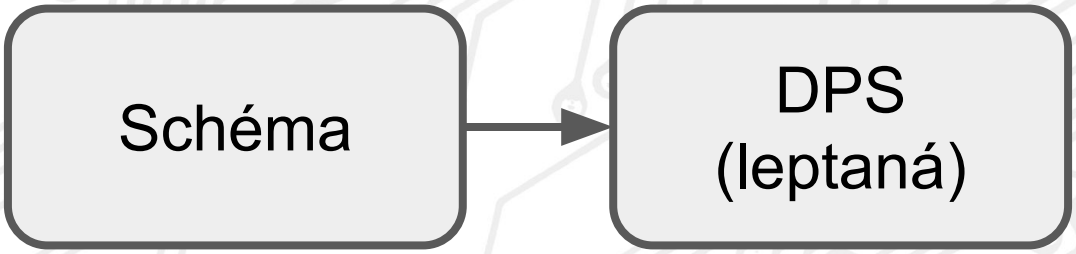
Technologie - bastlíř úroveň 2



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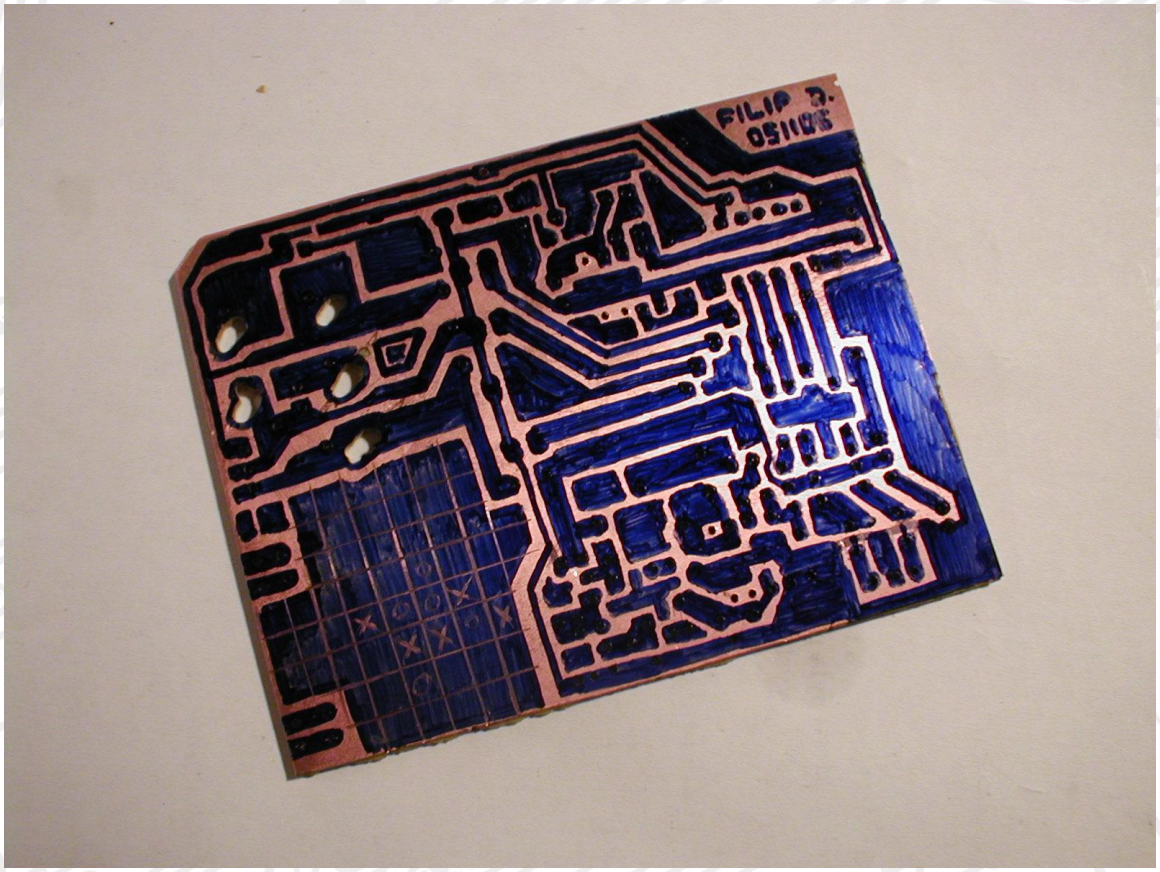
Technologie - bastlíř úroveň 2



zdroj: https://cs.wikibooks.org/

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Technologie - bastlíř úroveň 3

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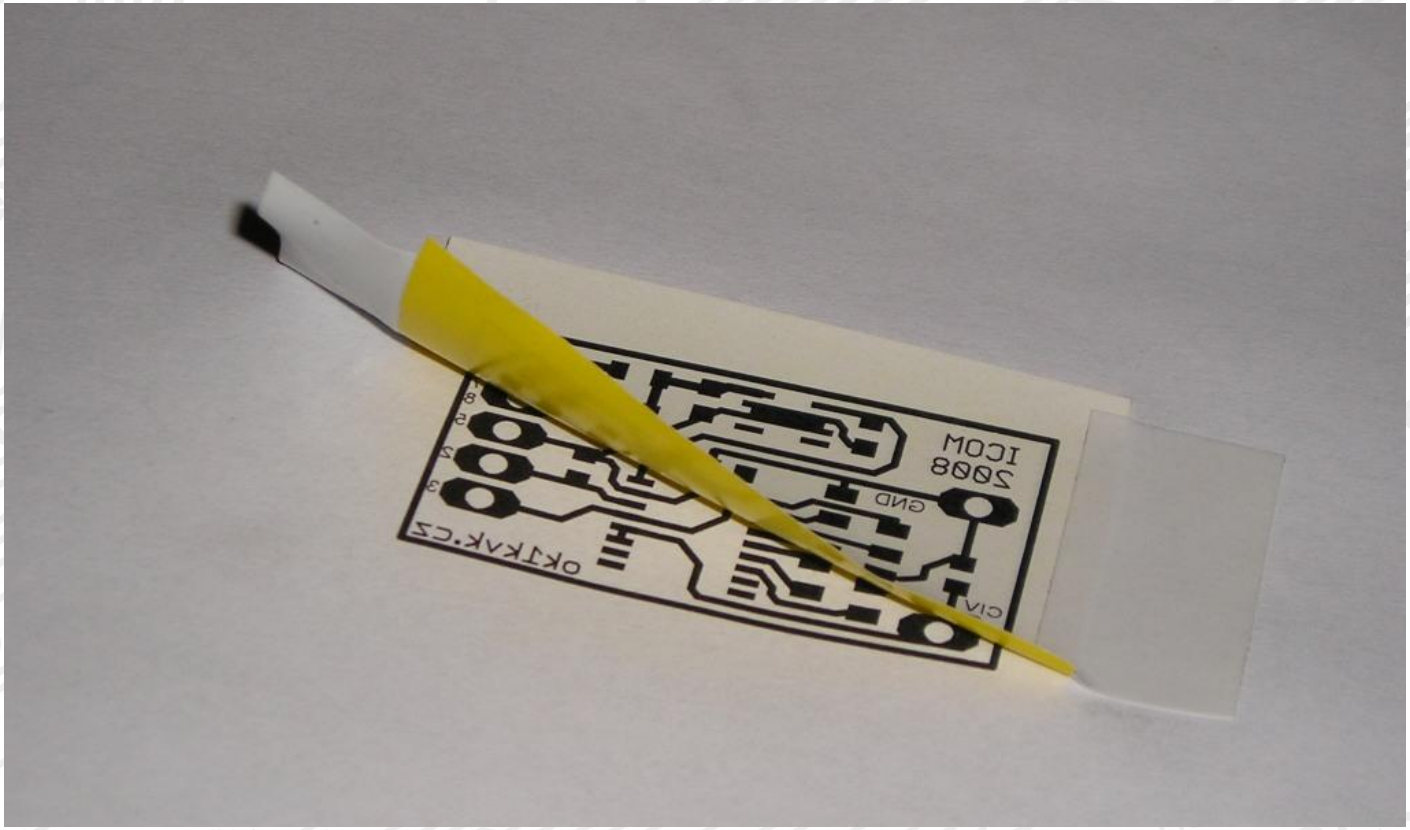
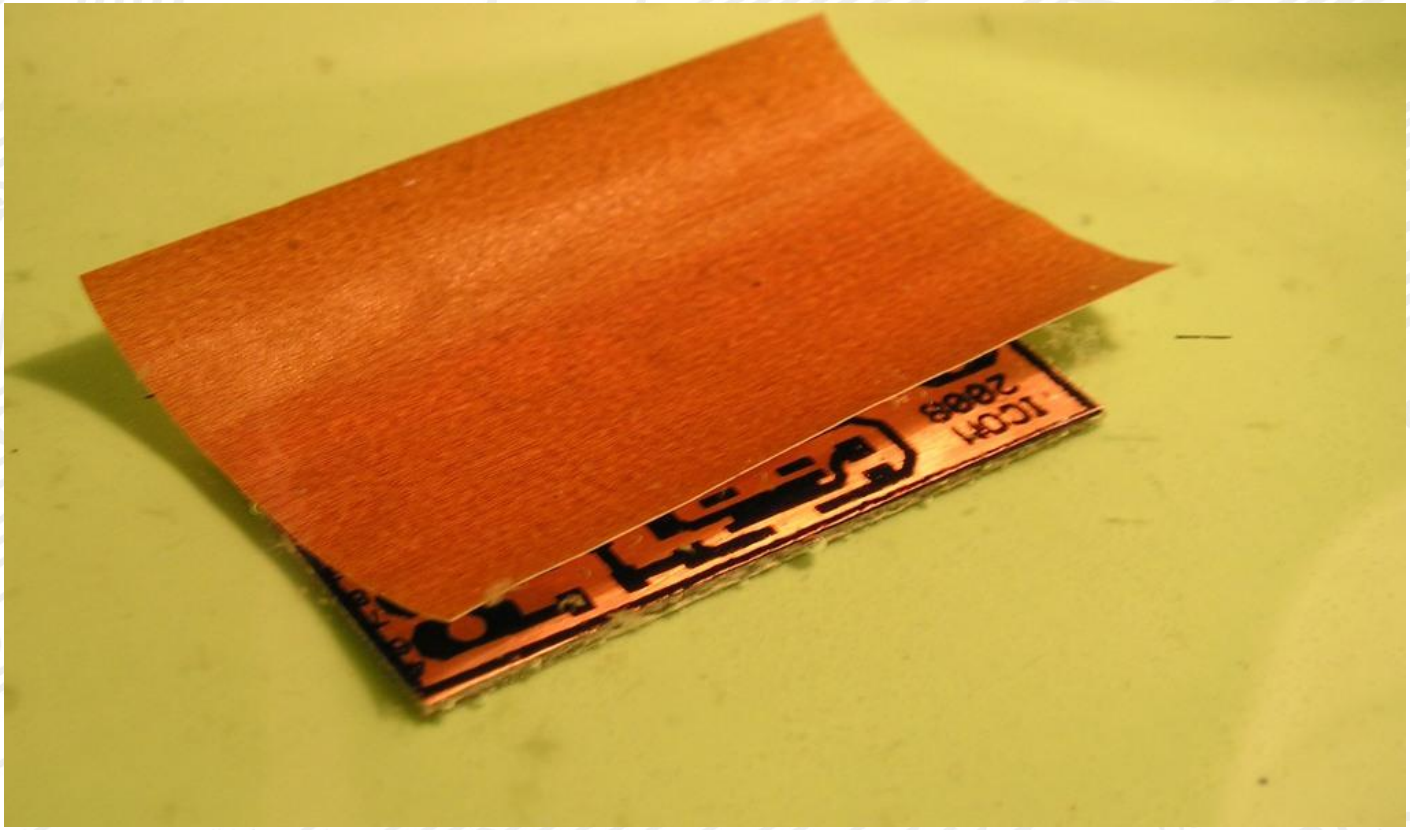
Technologie - bastlíř úroveň 3



zdroj: http://www.ok1kvk.cz/

Technologie - bastlíř úroveň 3



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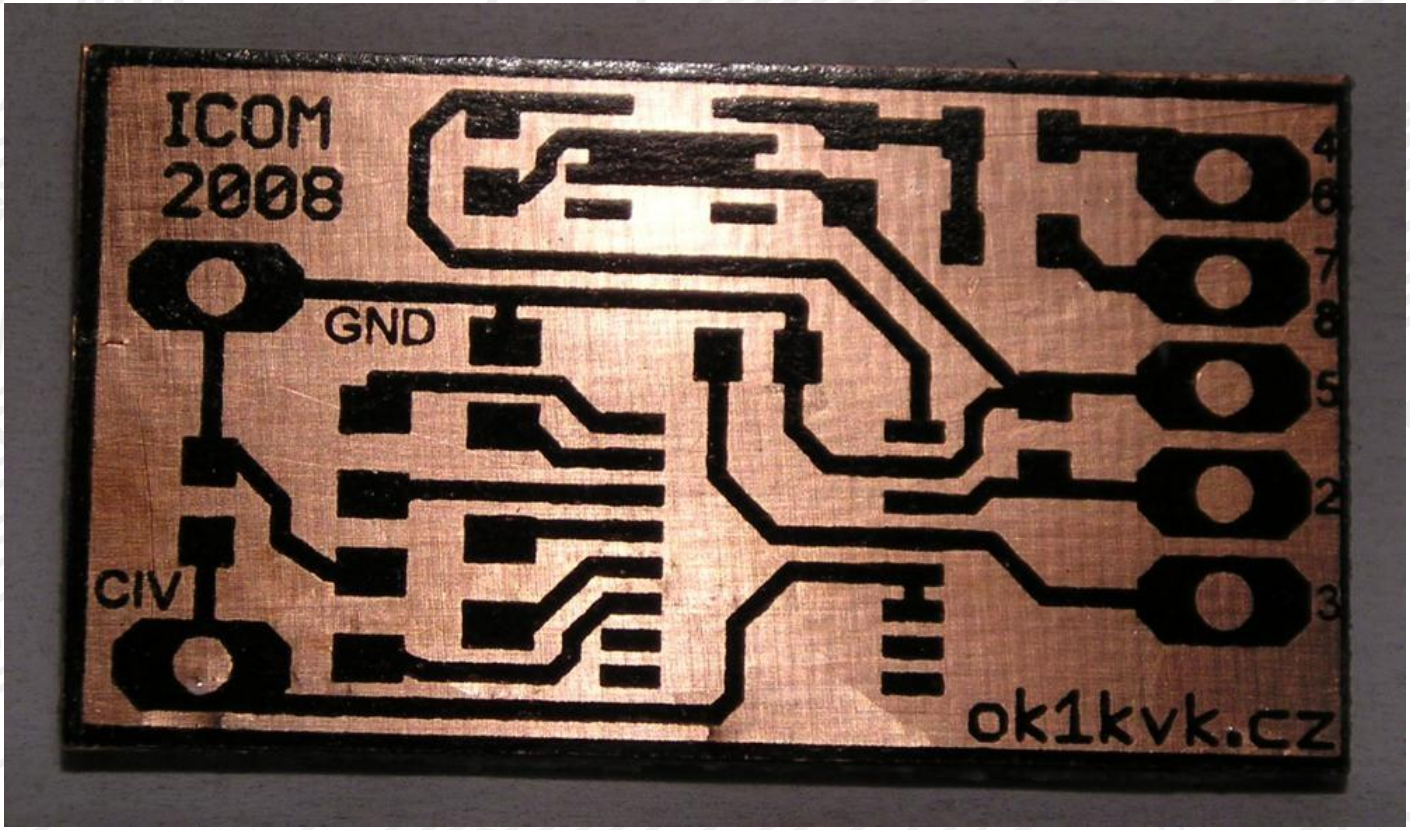

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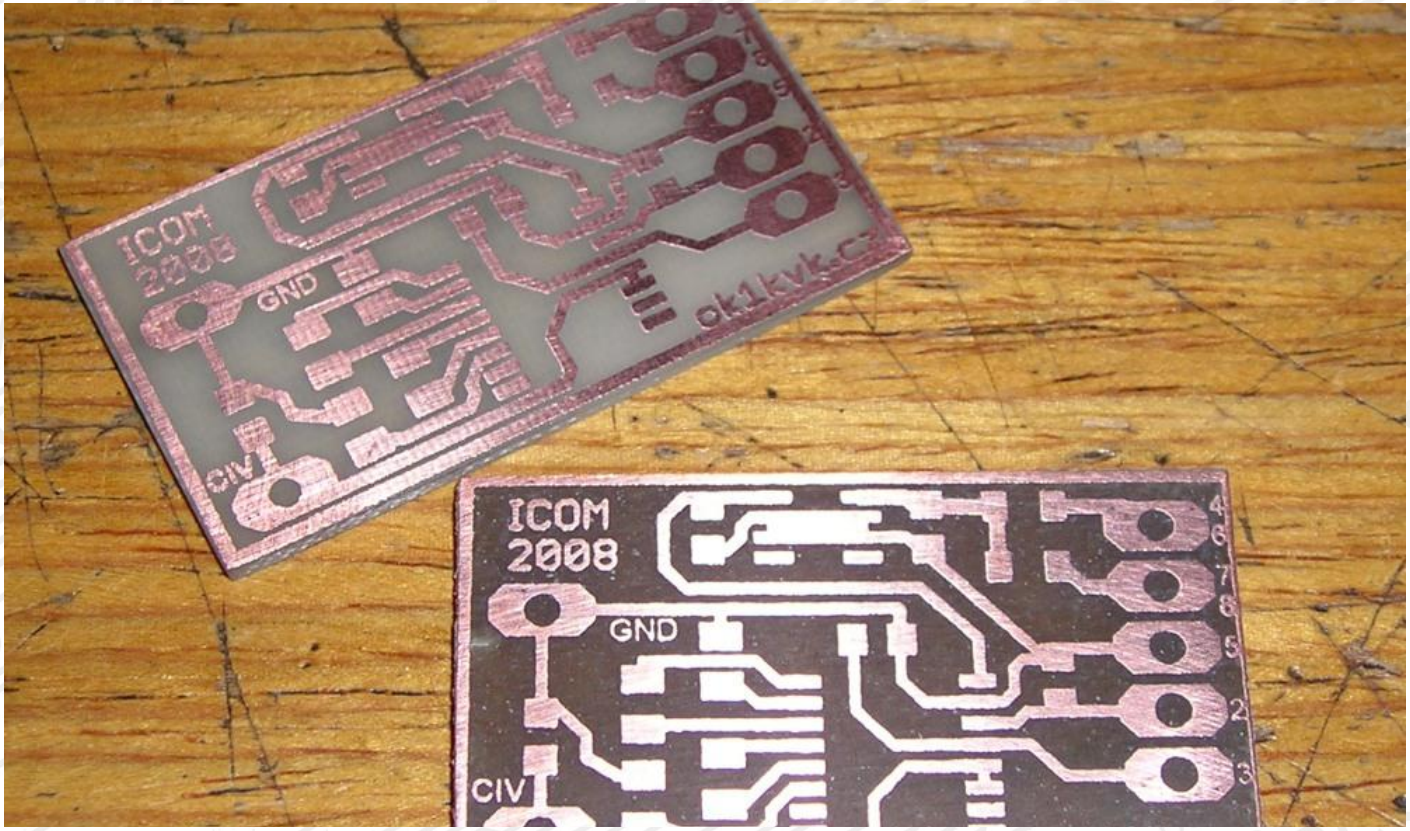
Technologie - bastlíř úroveň 3



zdroj: http://www.ok1kvk.cz/

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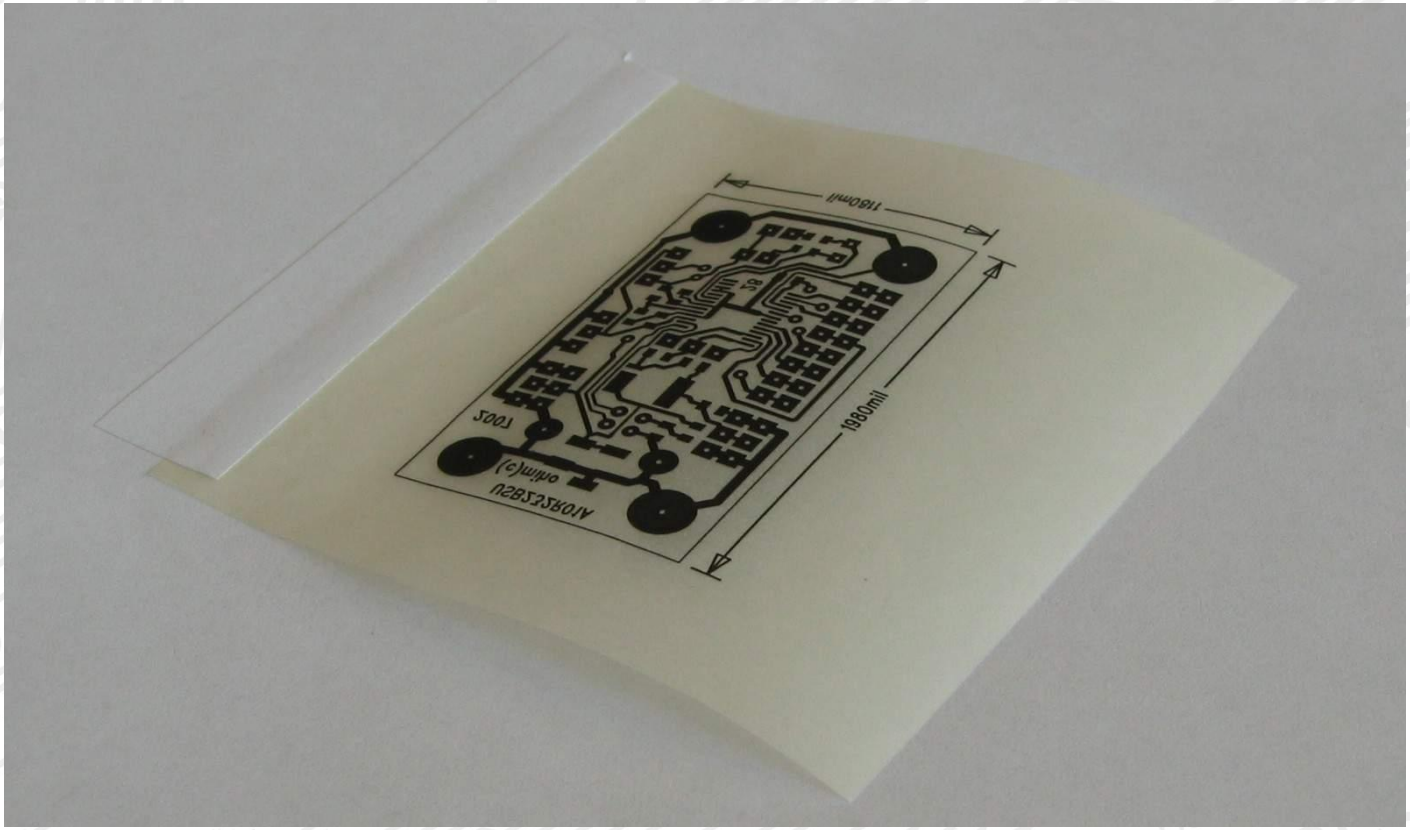

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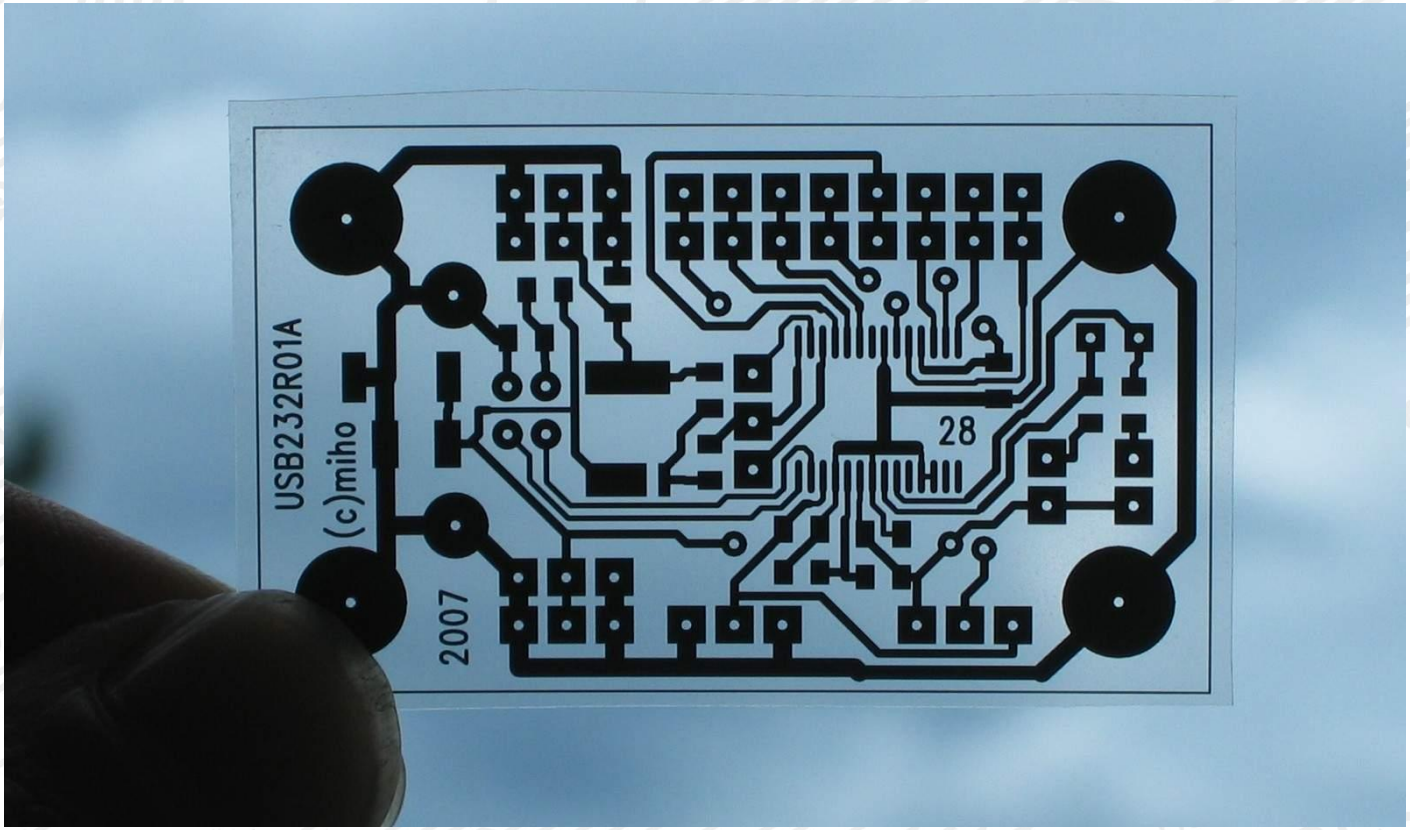
Technologie - bastlíř úroveň 4

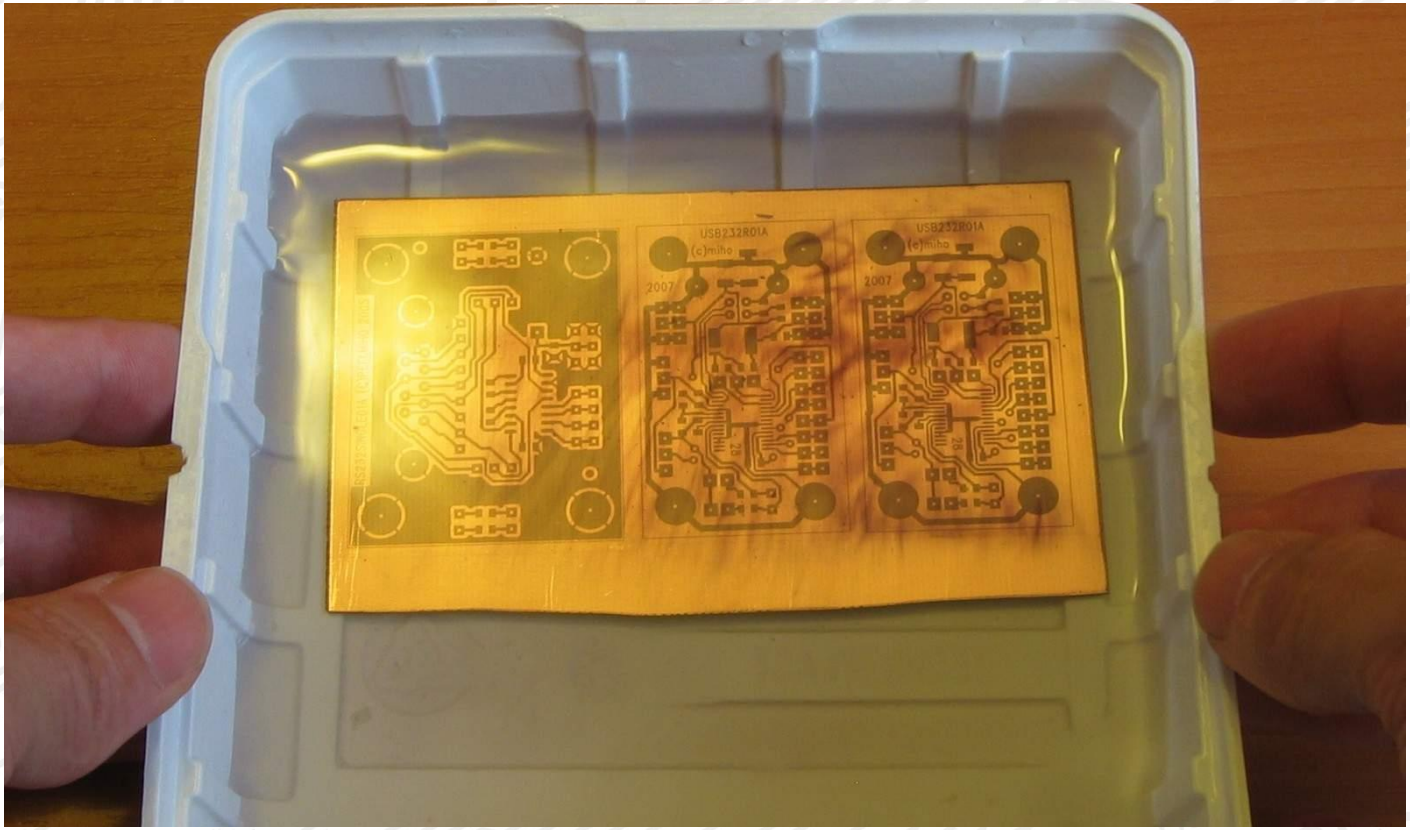


zdroj: http://www.mlab.cz/

Technologie - bastlíř úroveň 4

zdroj: http://www.mlab.cz/

Technologie - bastlíř úroveň 4



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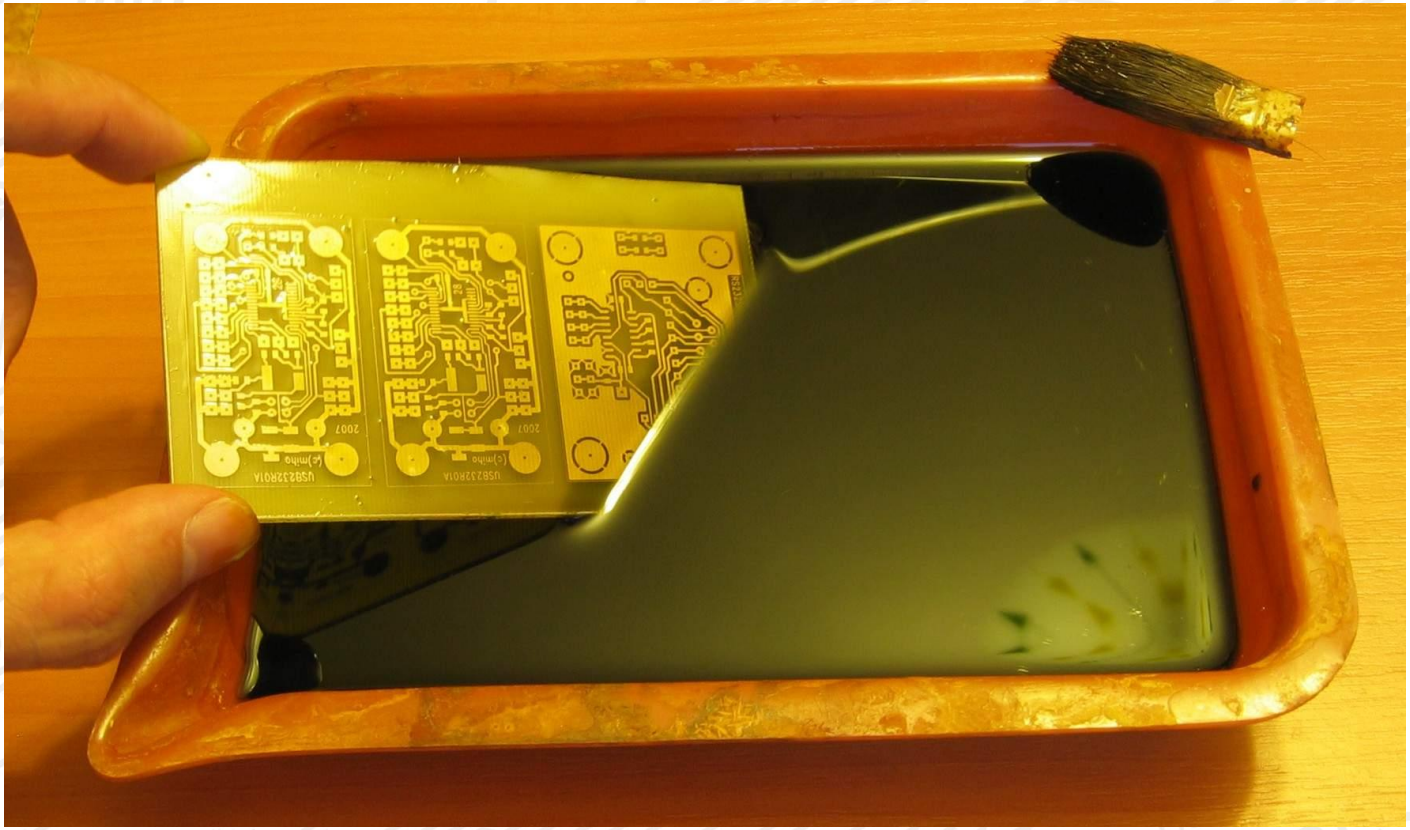


zdroj: http://www.mlab.cz/

Návrhové programy

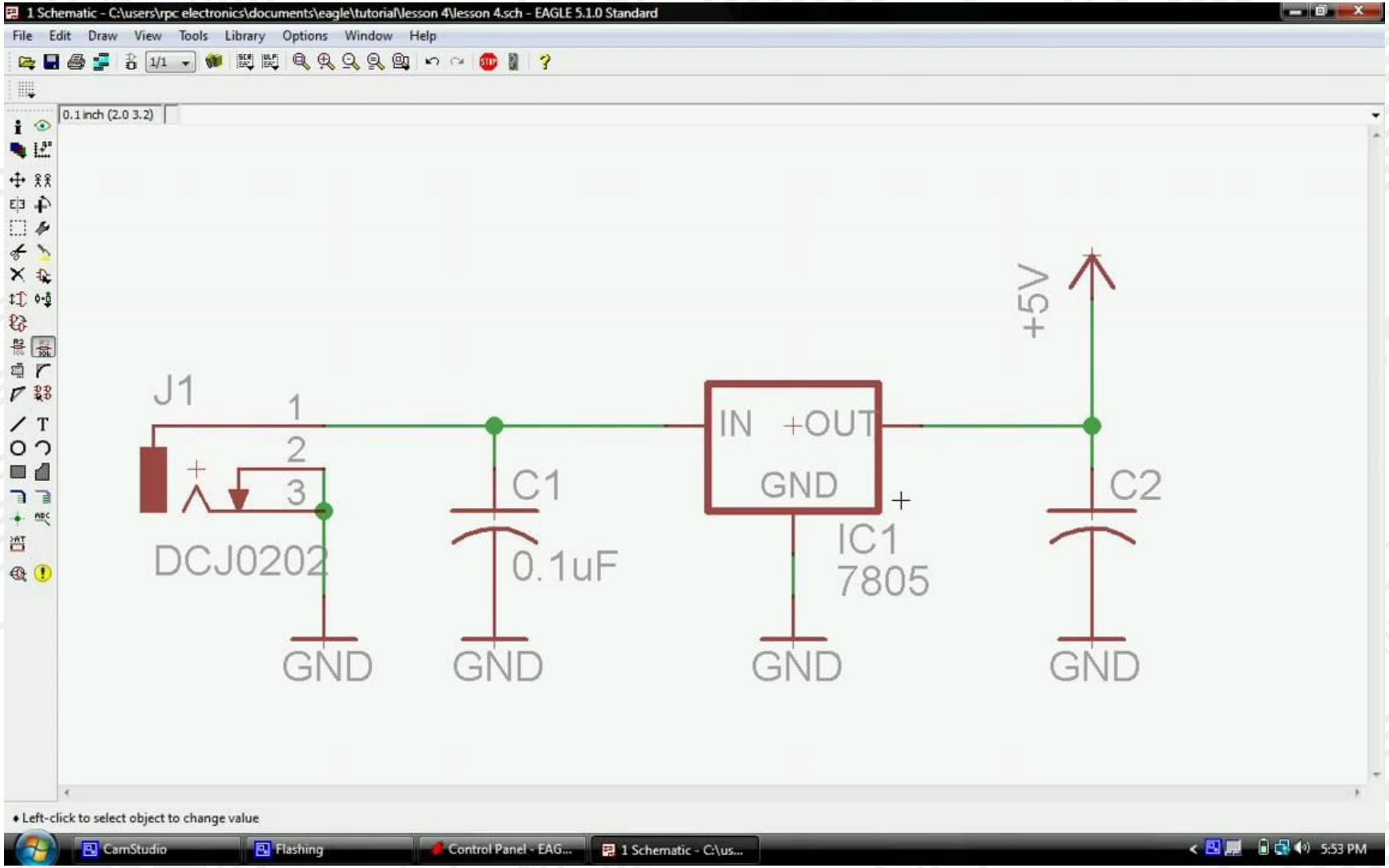
EAGLE®
www.cadsoft.de

Altium
Designer®

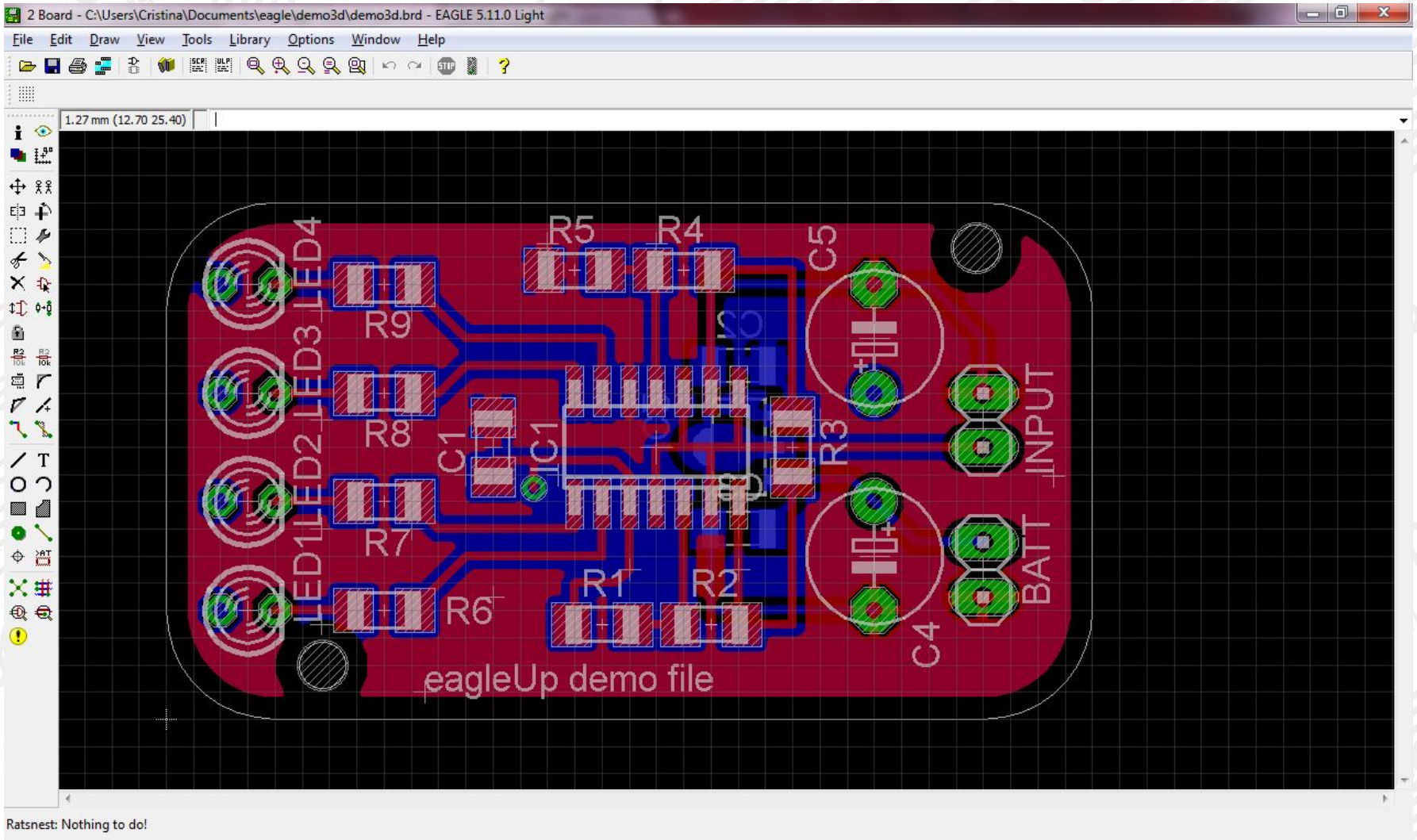
CIRCUITMAKER

kicad

Návrhové systémy - Eagle



Návrhové systémy - Eagle



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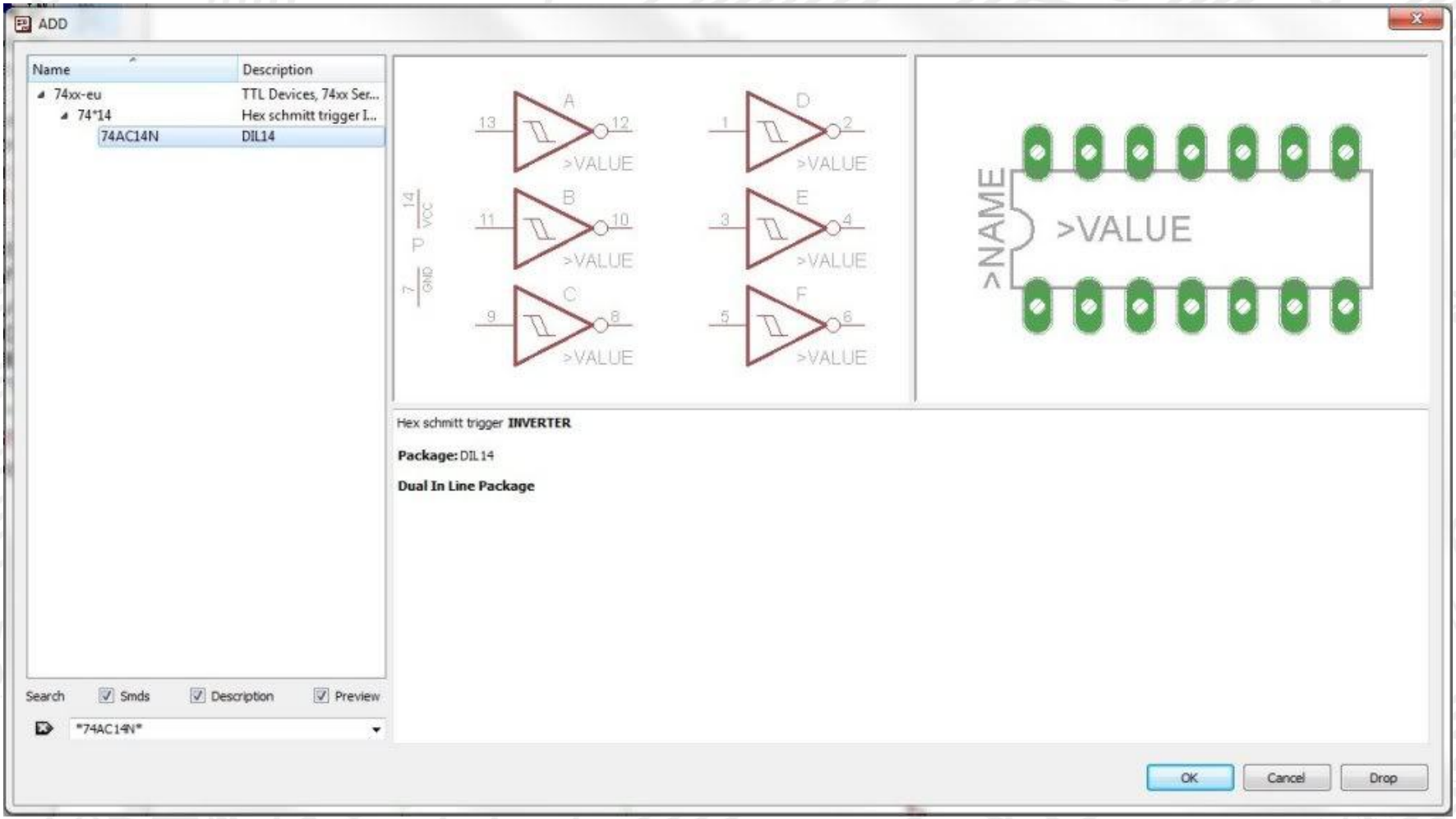
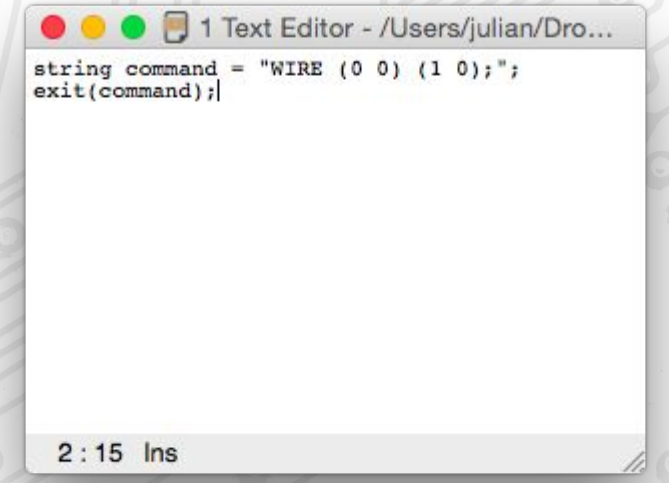
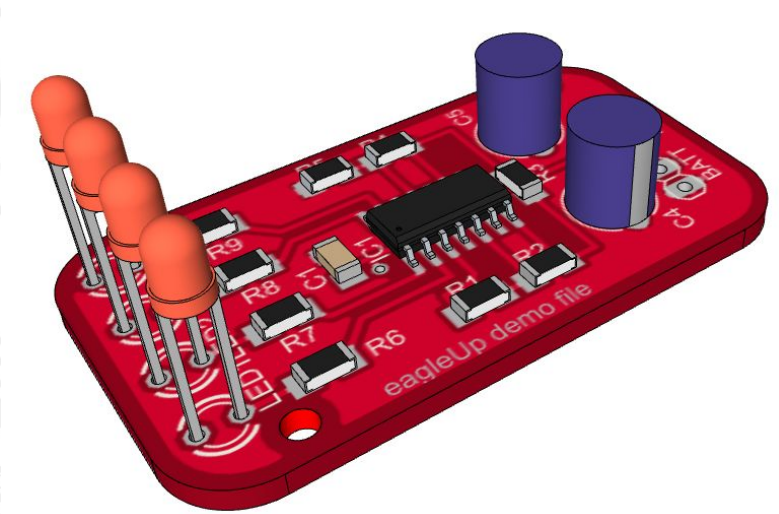
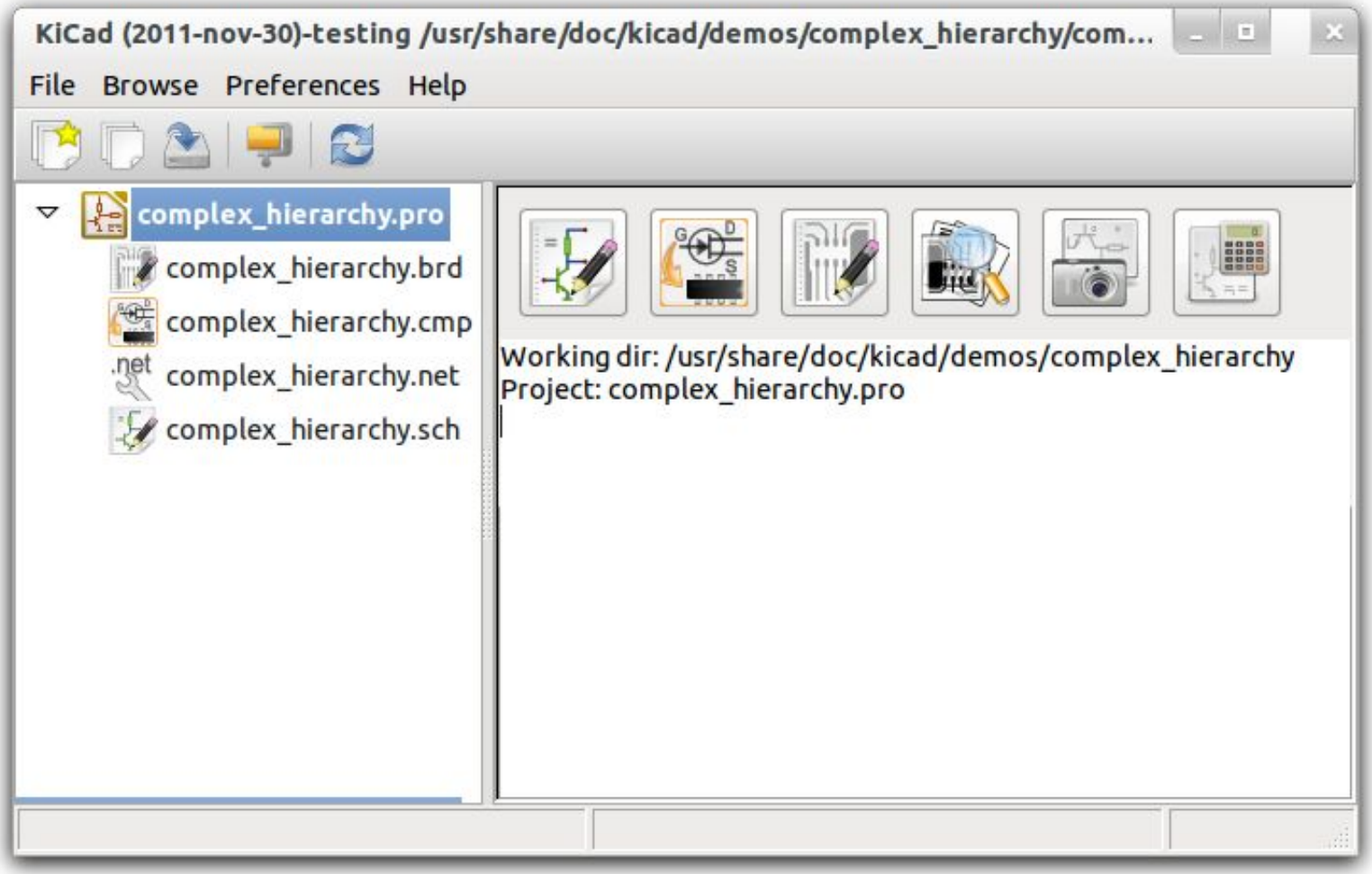


Návrhové systémy - Eagle

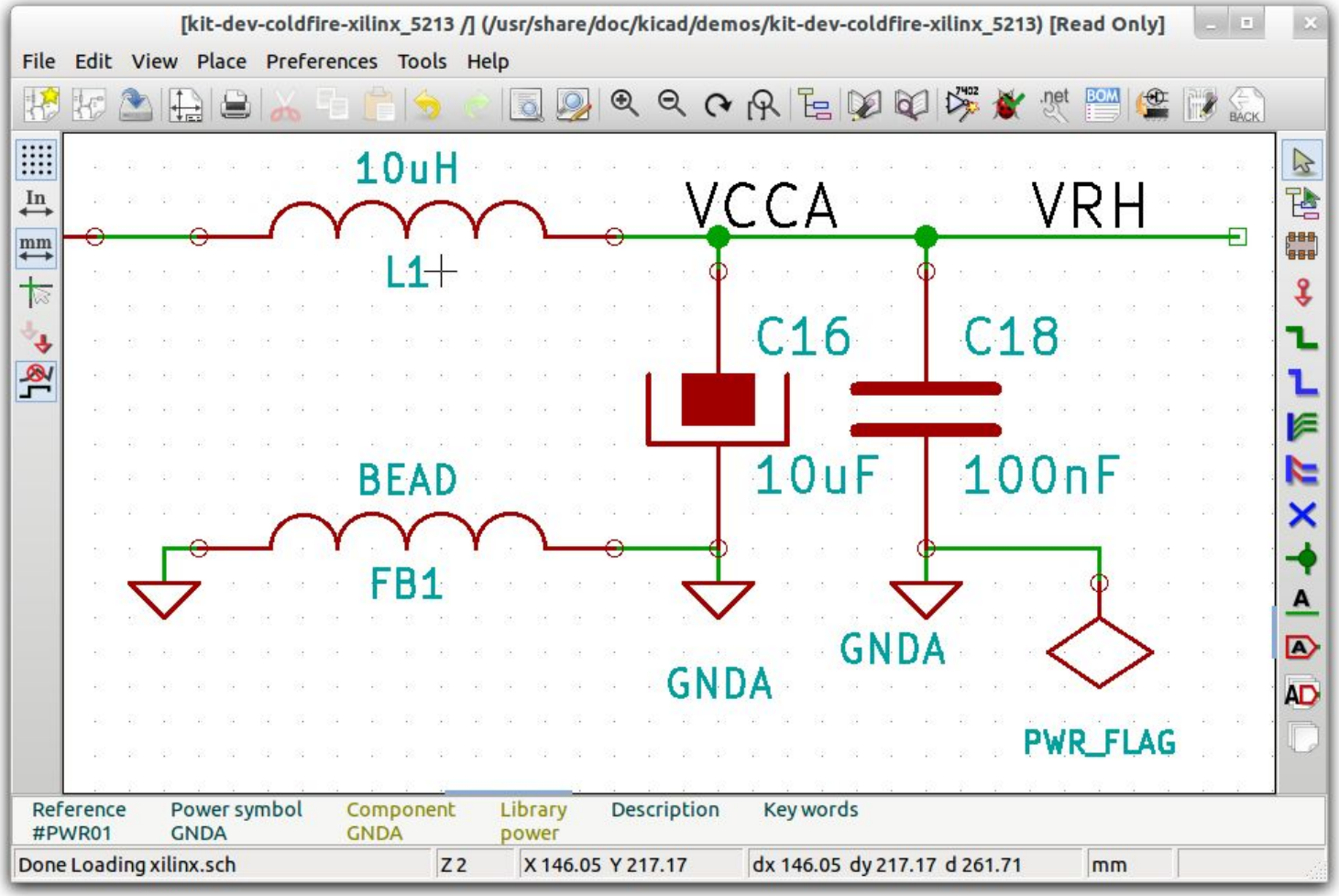




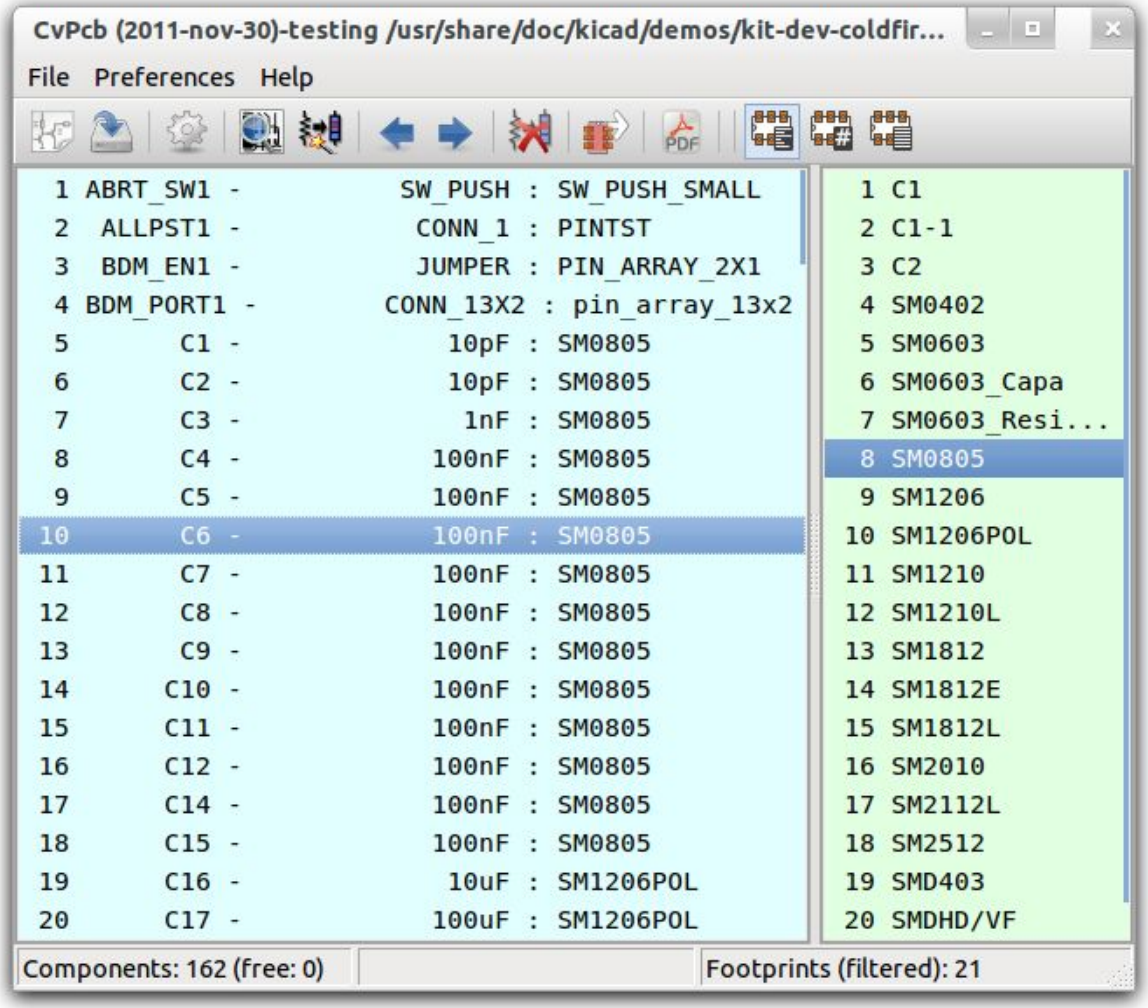
Návrhové systémy - KiCAD



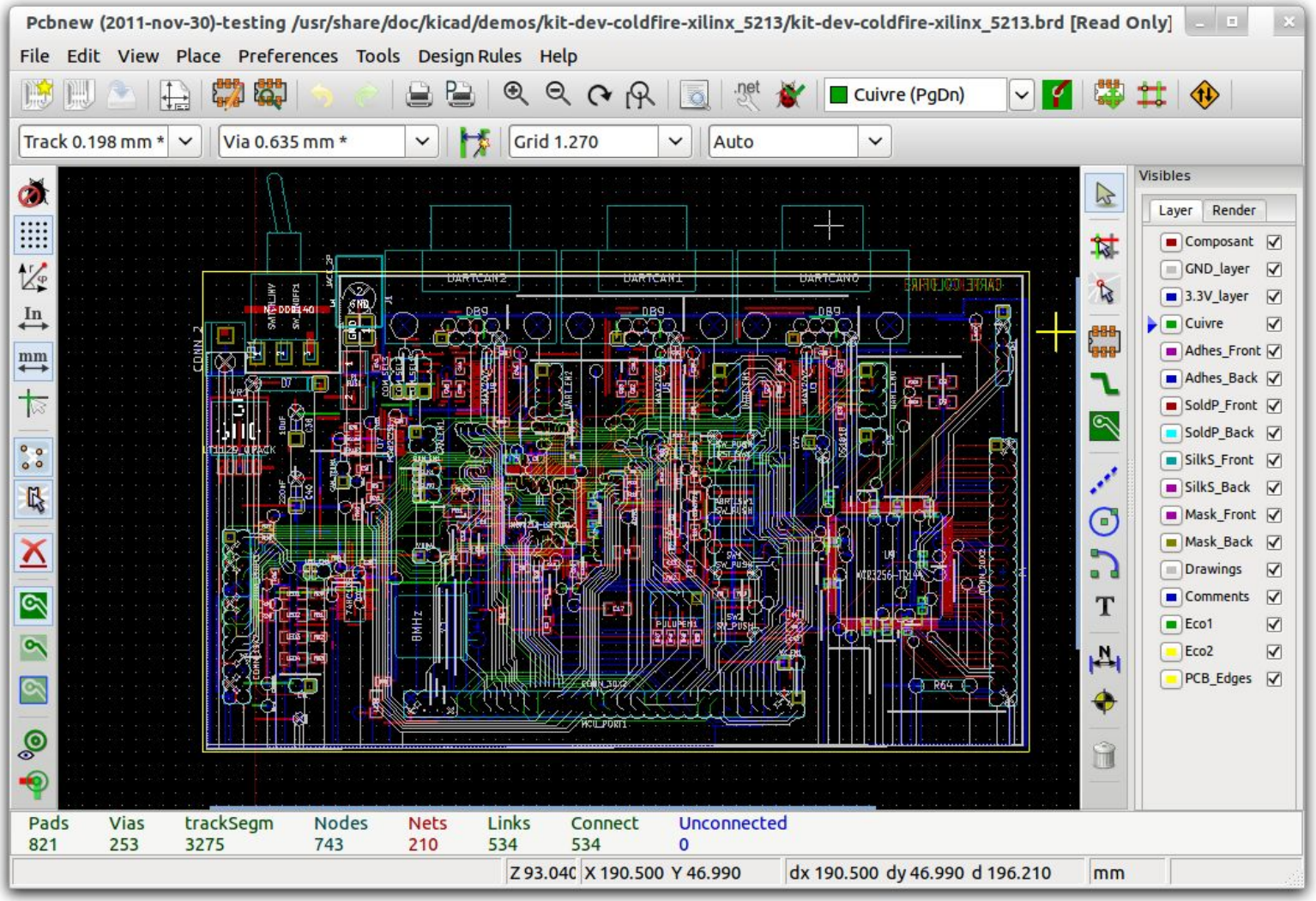
Návrhové systémy - KiCAD



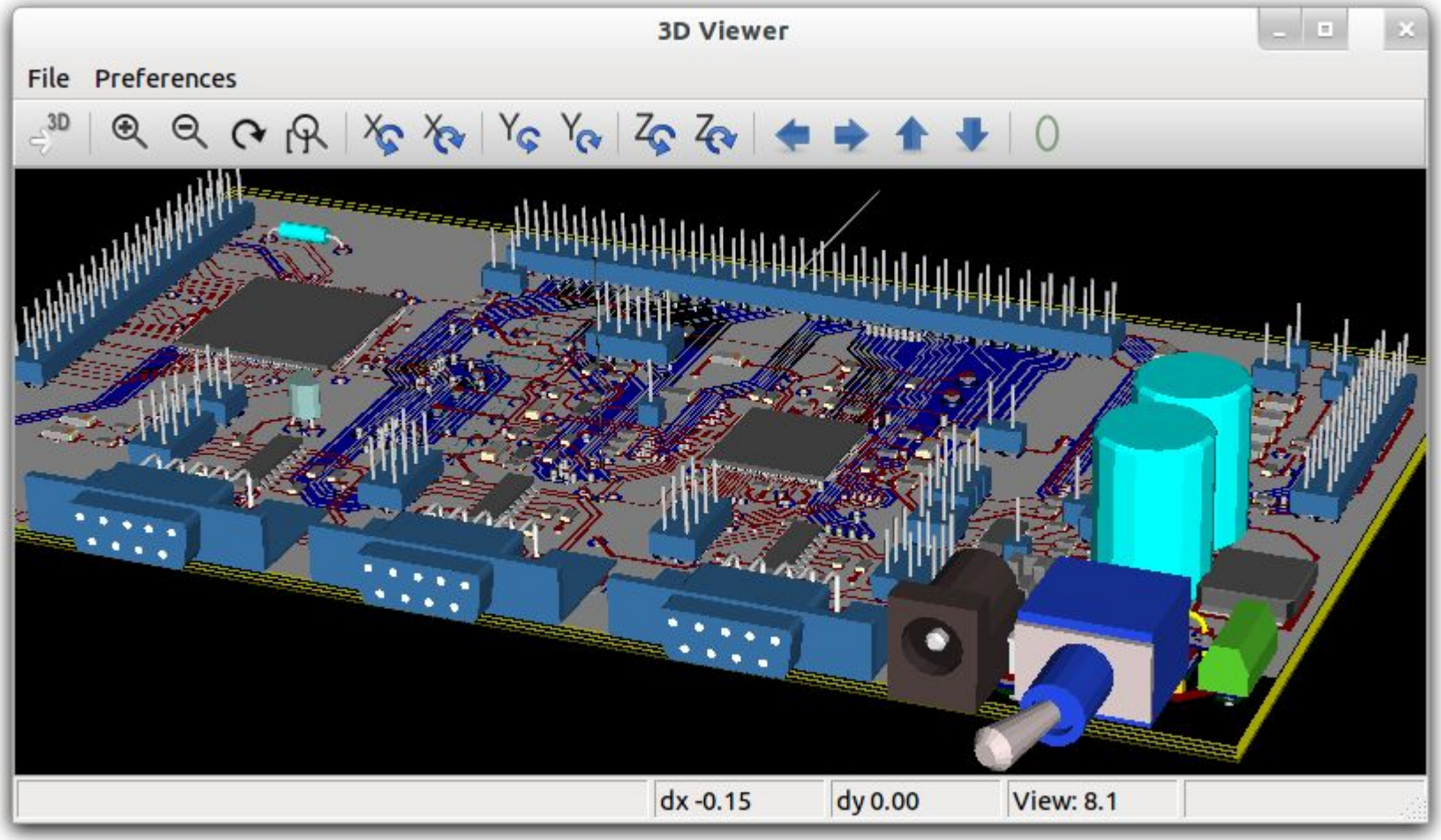
Návrhové systémy - KiCAD



Návrhové systémy - KiCAD



Návrhové systémy - KiCAD



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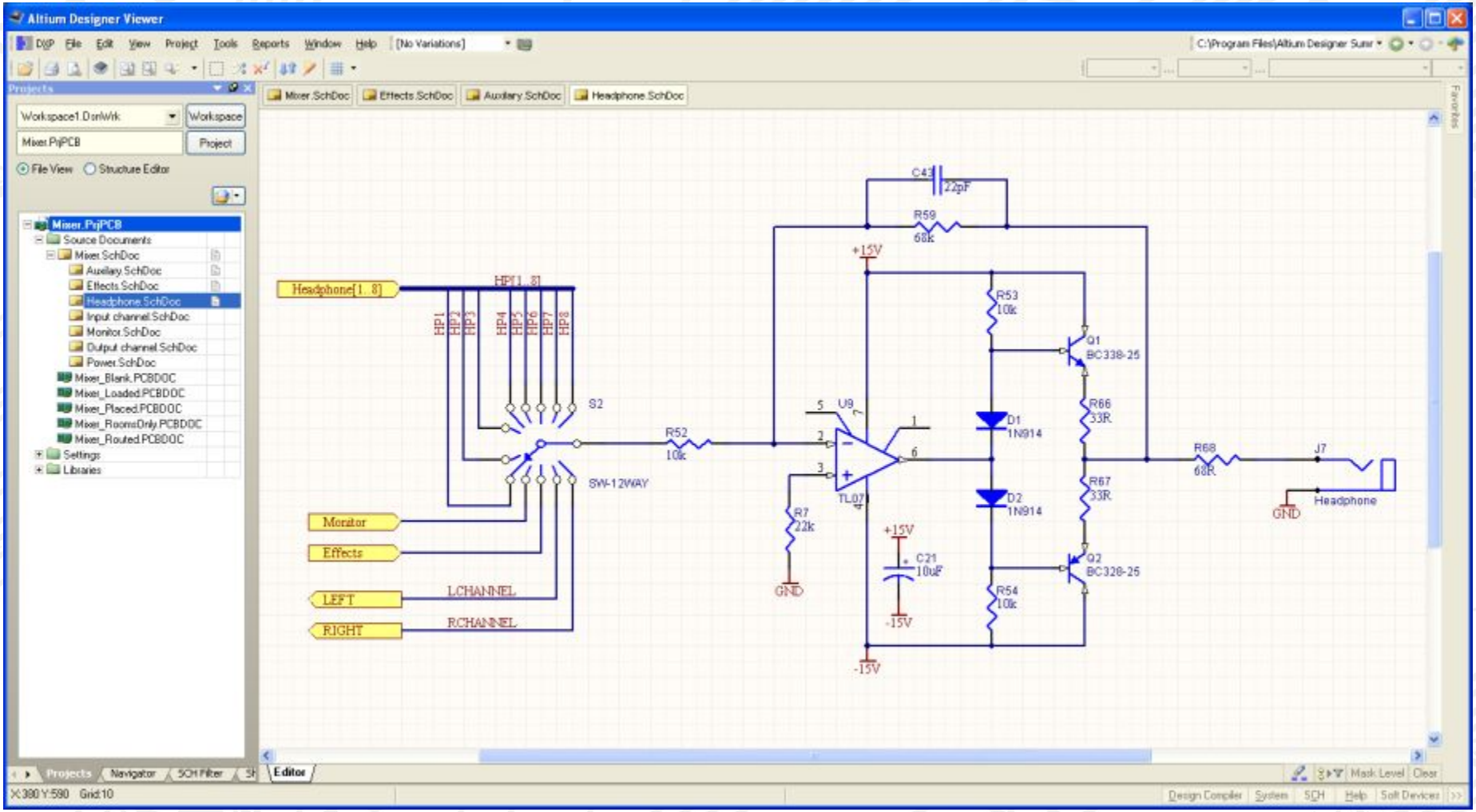

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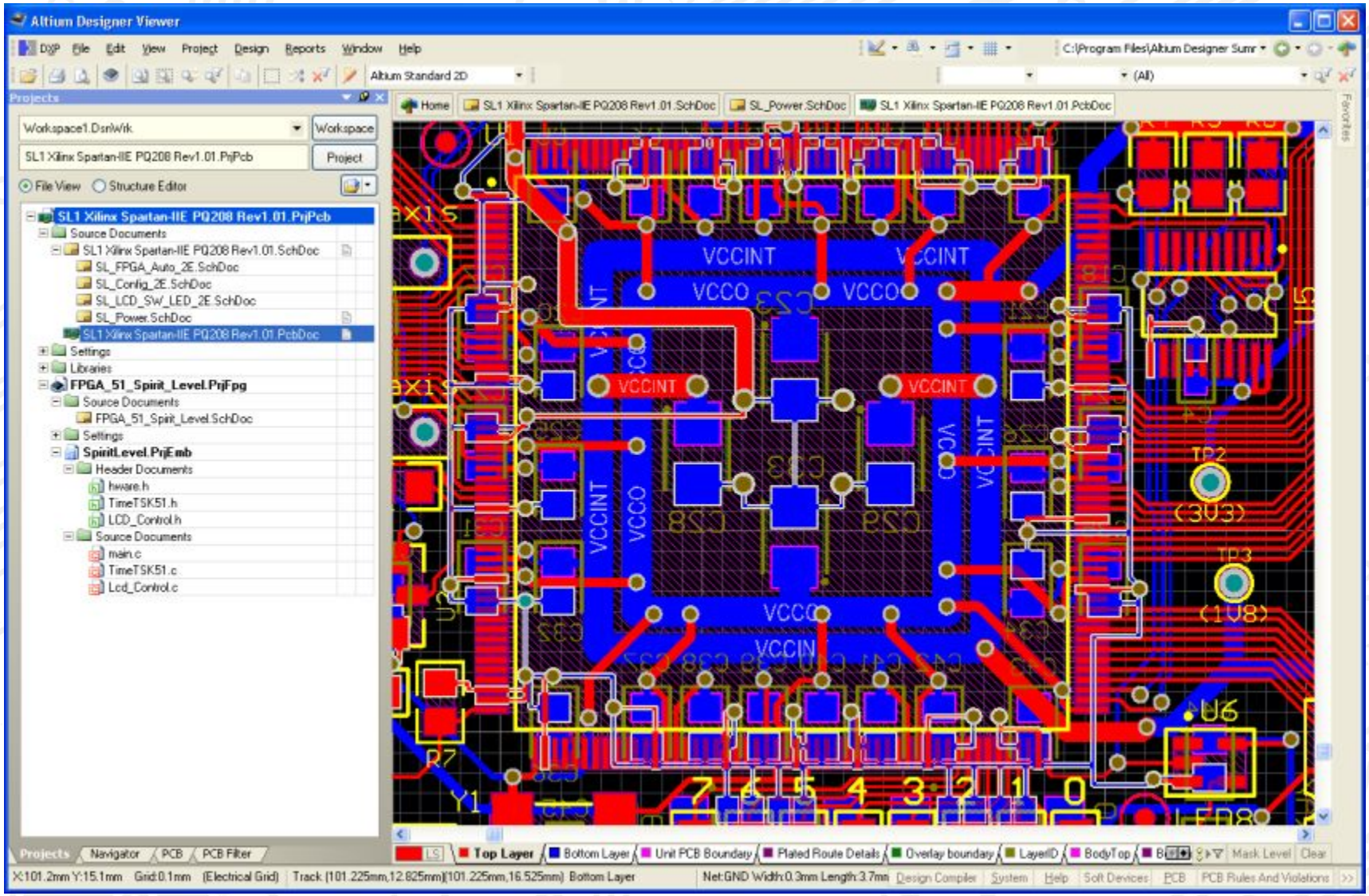

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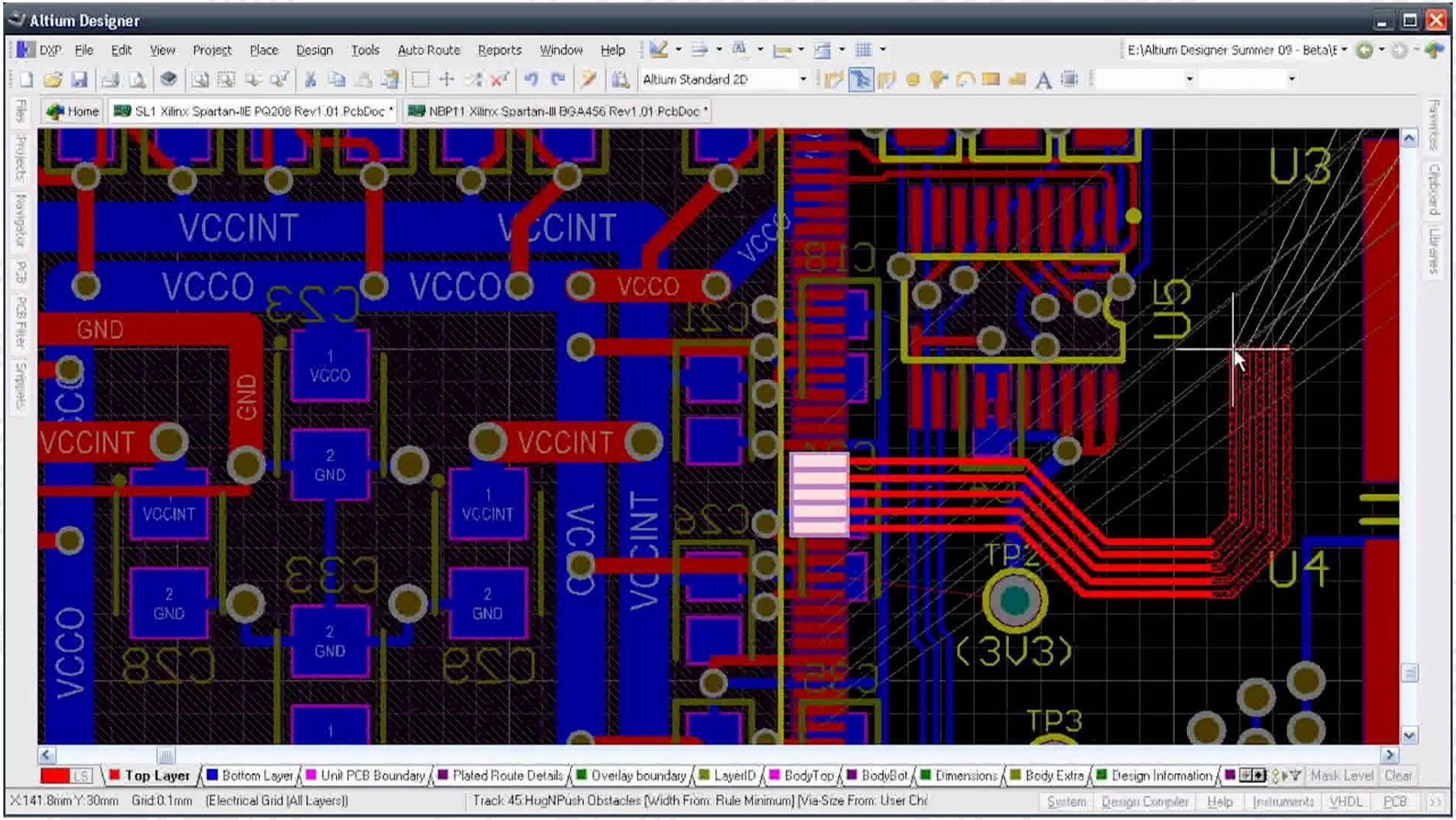

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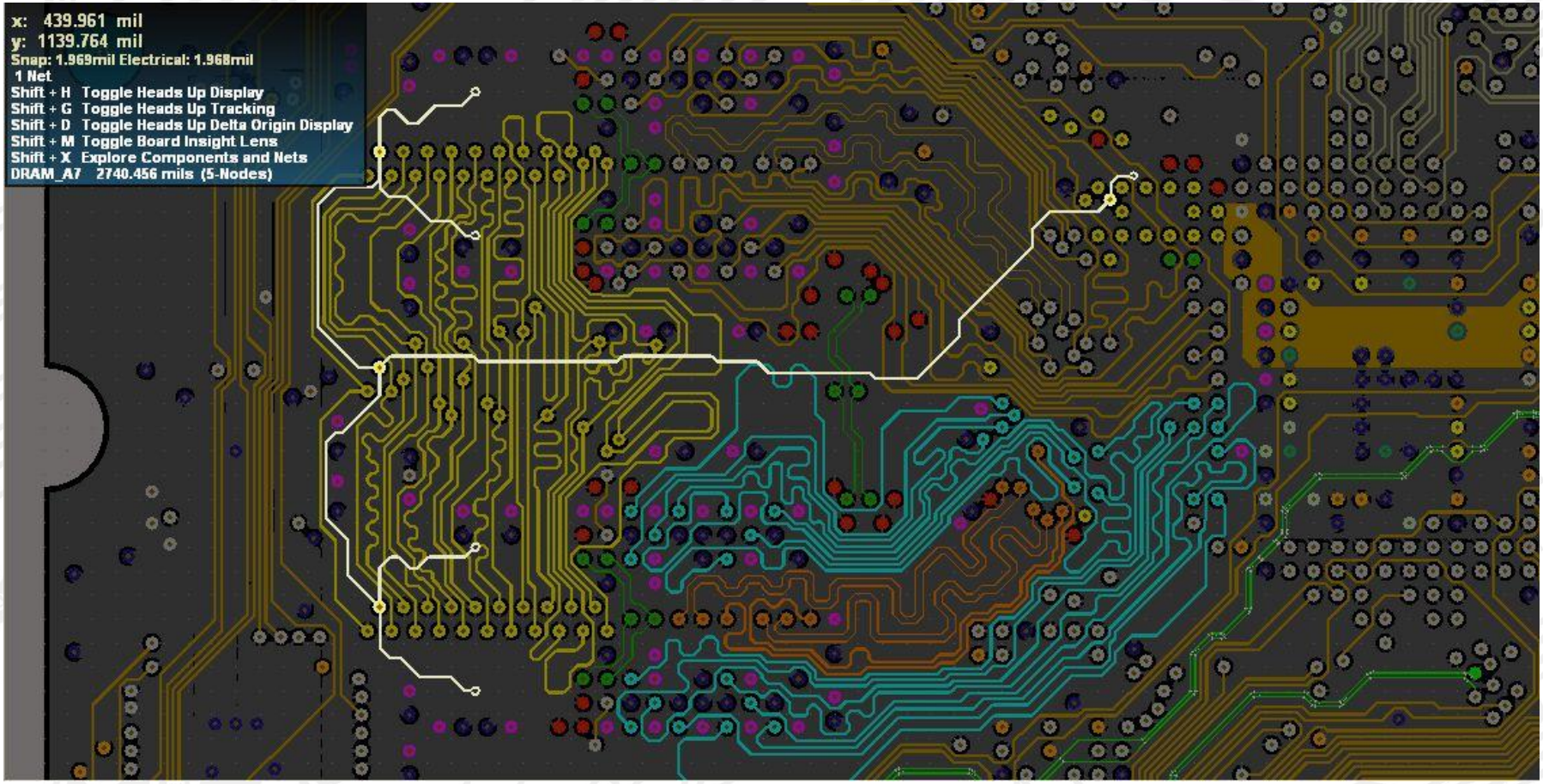

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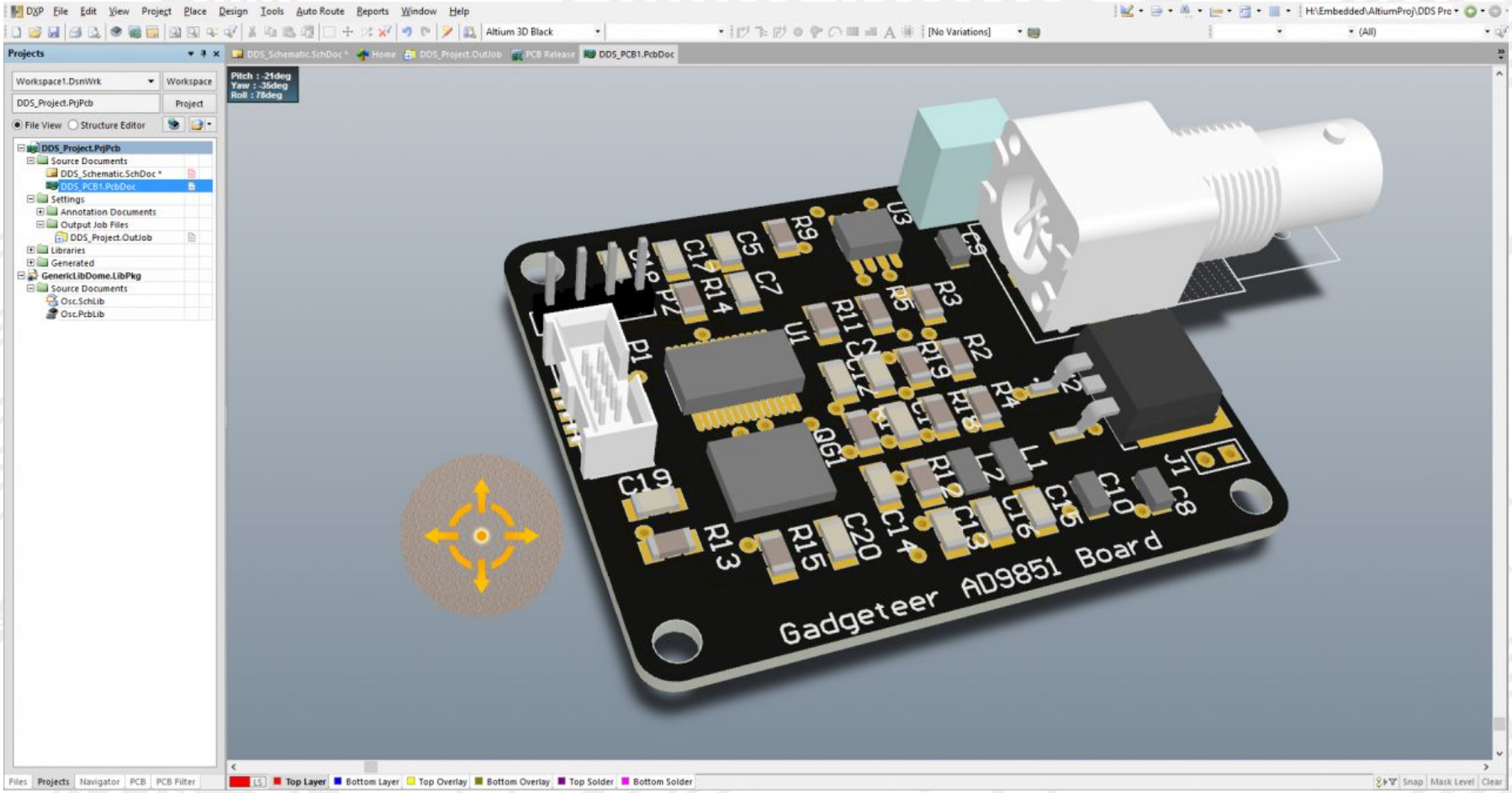

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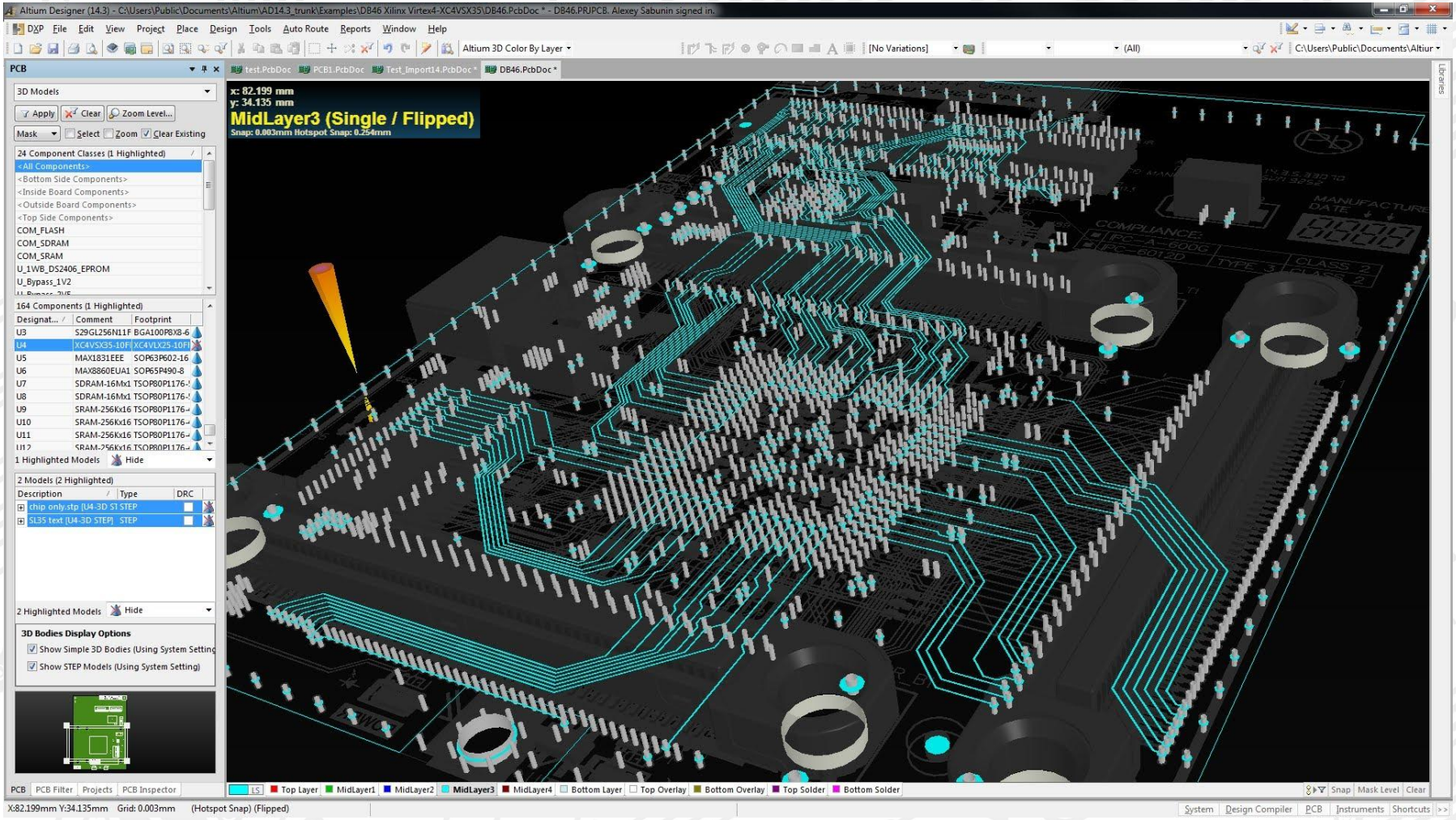
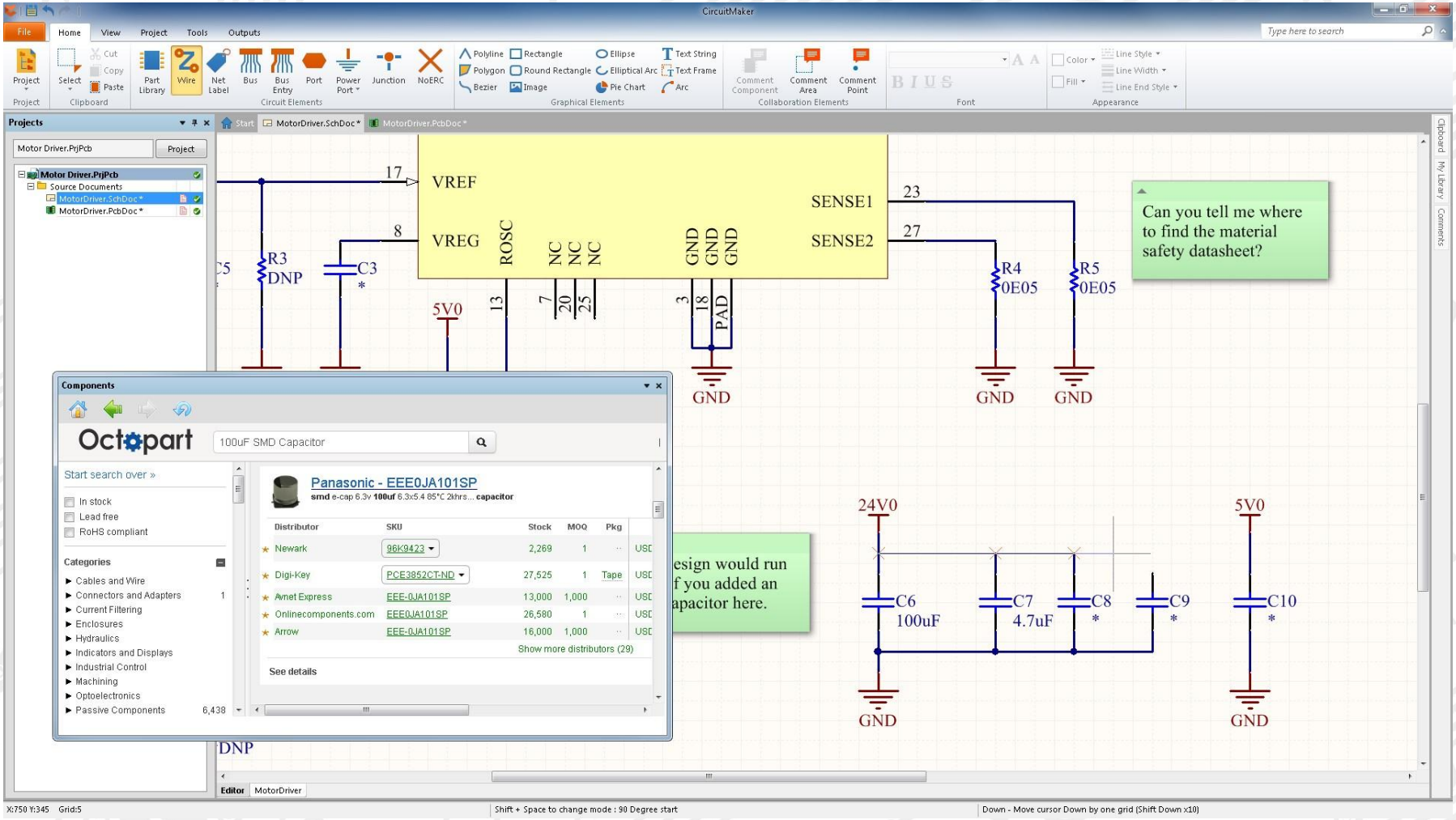
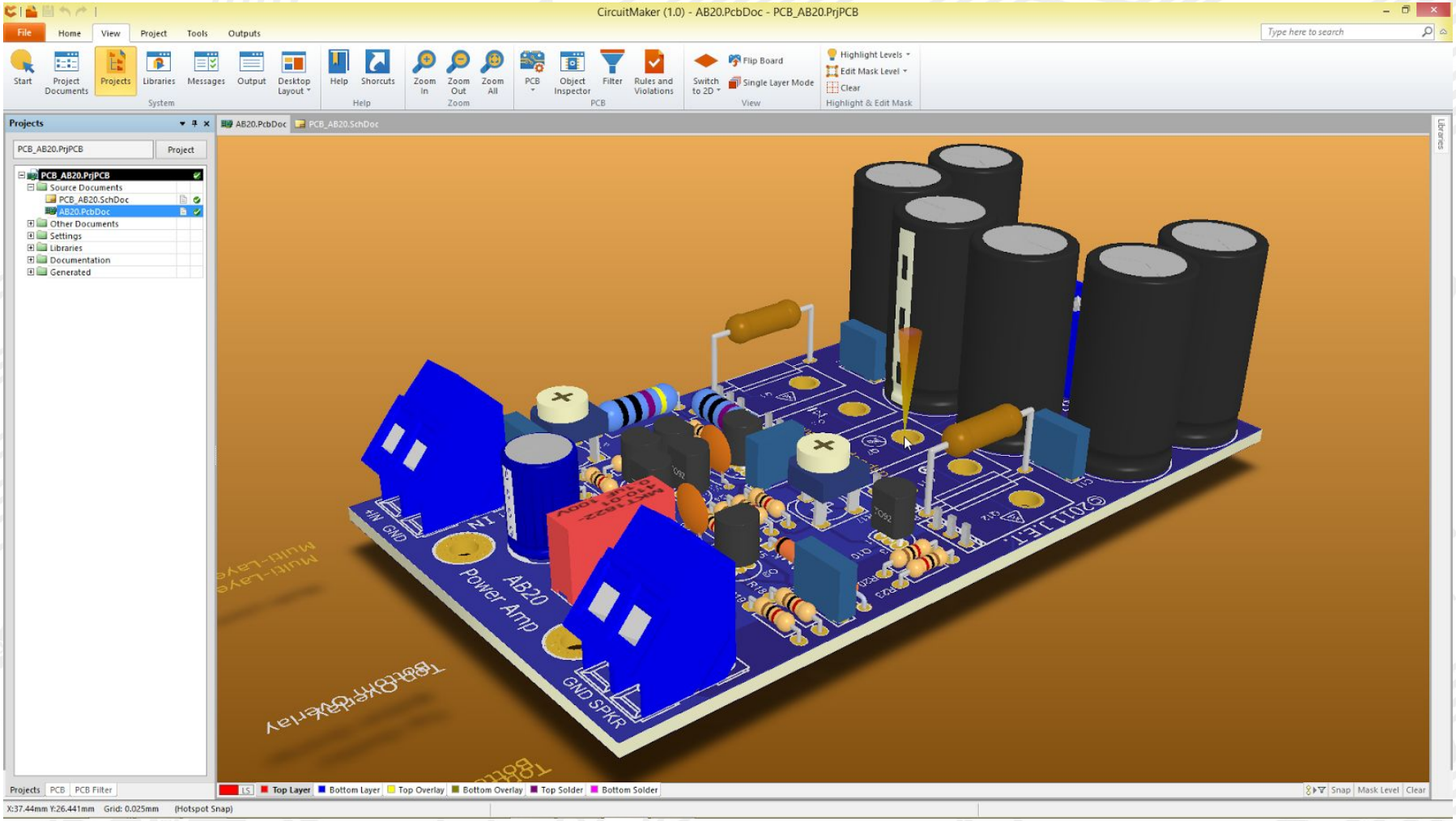


Návrhové systémy - Circuit Maker



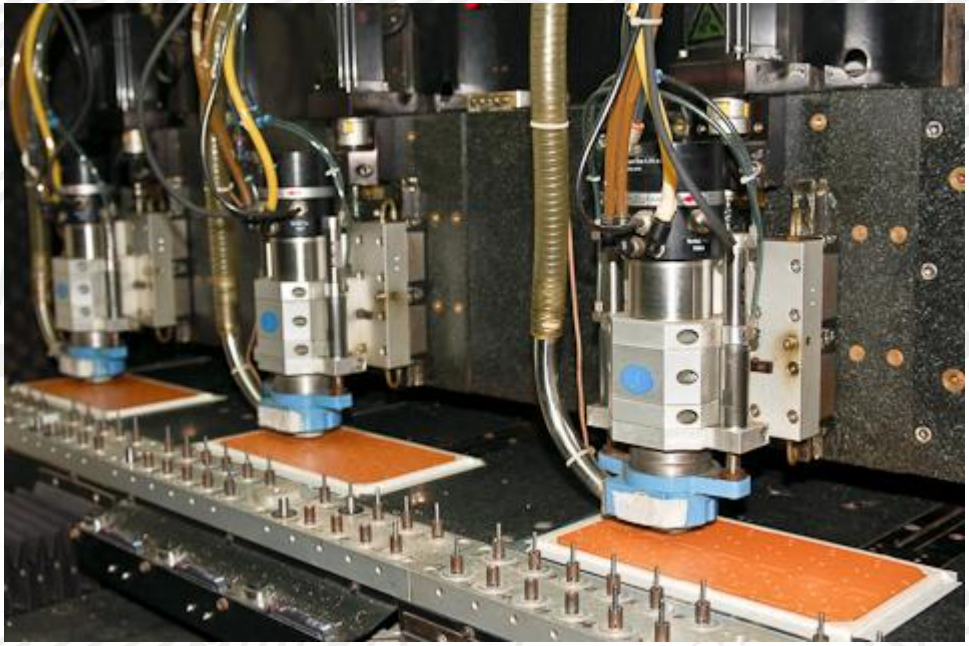
Návrhové systémy - Circuit Maker



Výroba DPS profesionálně

Místní
- Pragoboard
- Gatema
- Printed
- Jablo PCB

Čína
- Seedstudio



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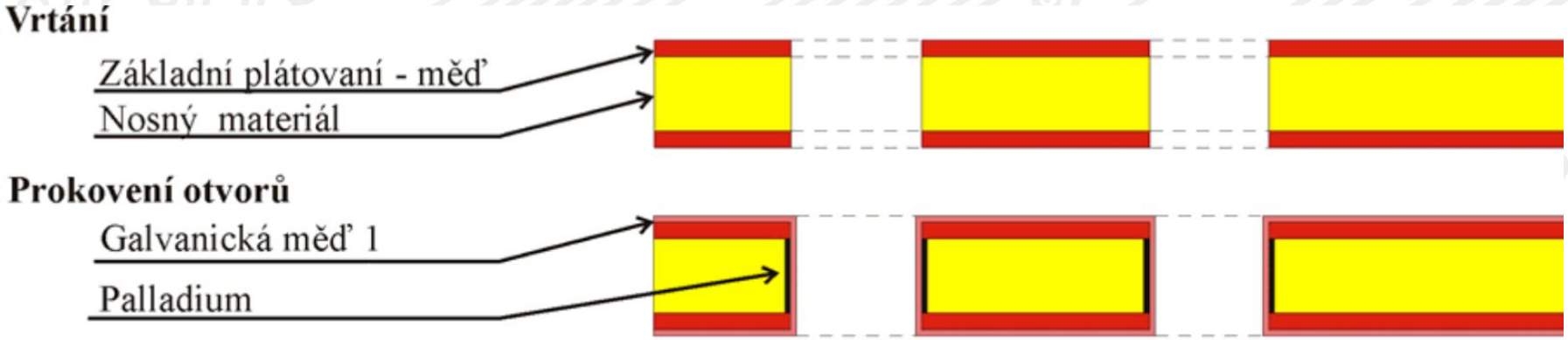
Technologie - profesionál



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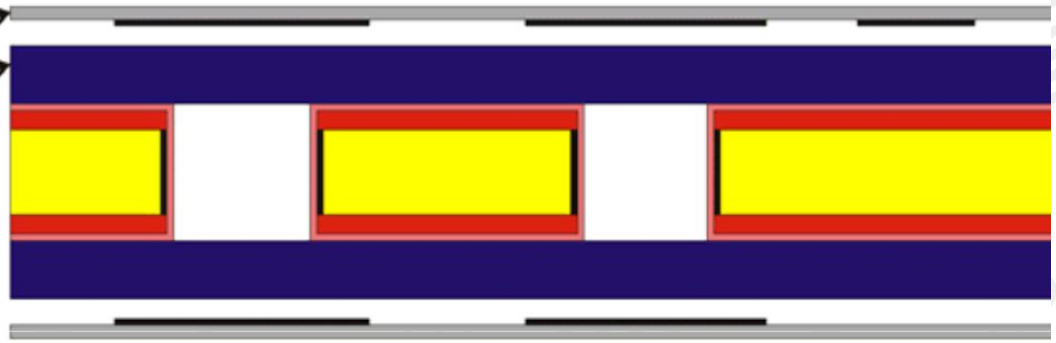
Technologie - profesionál

Laminace fotorezistu a osvit

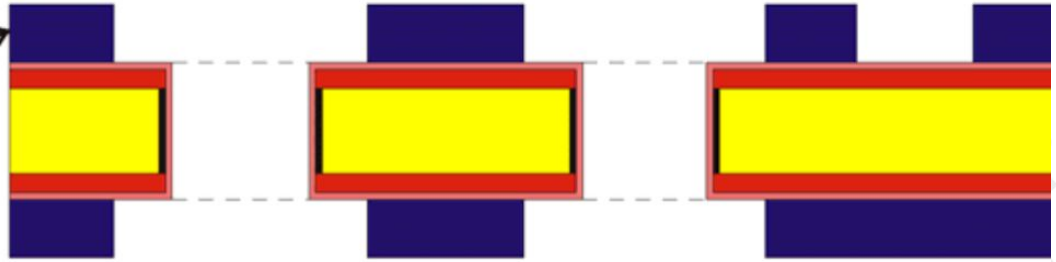
Film s motivem spojů

Fotorezist

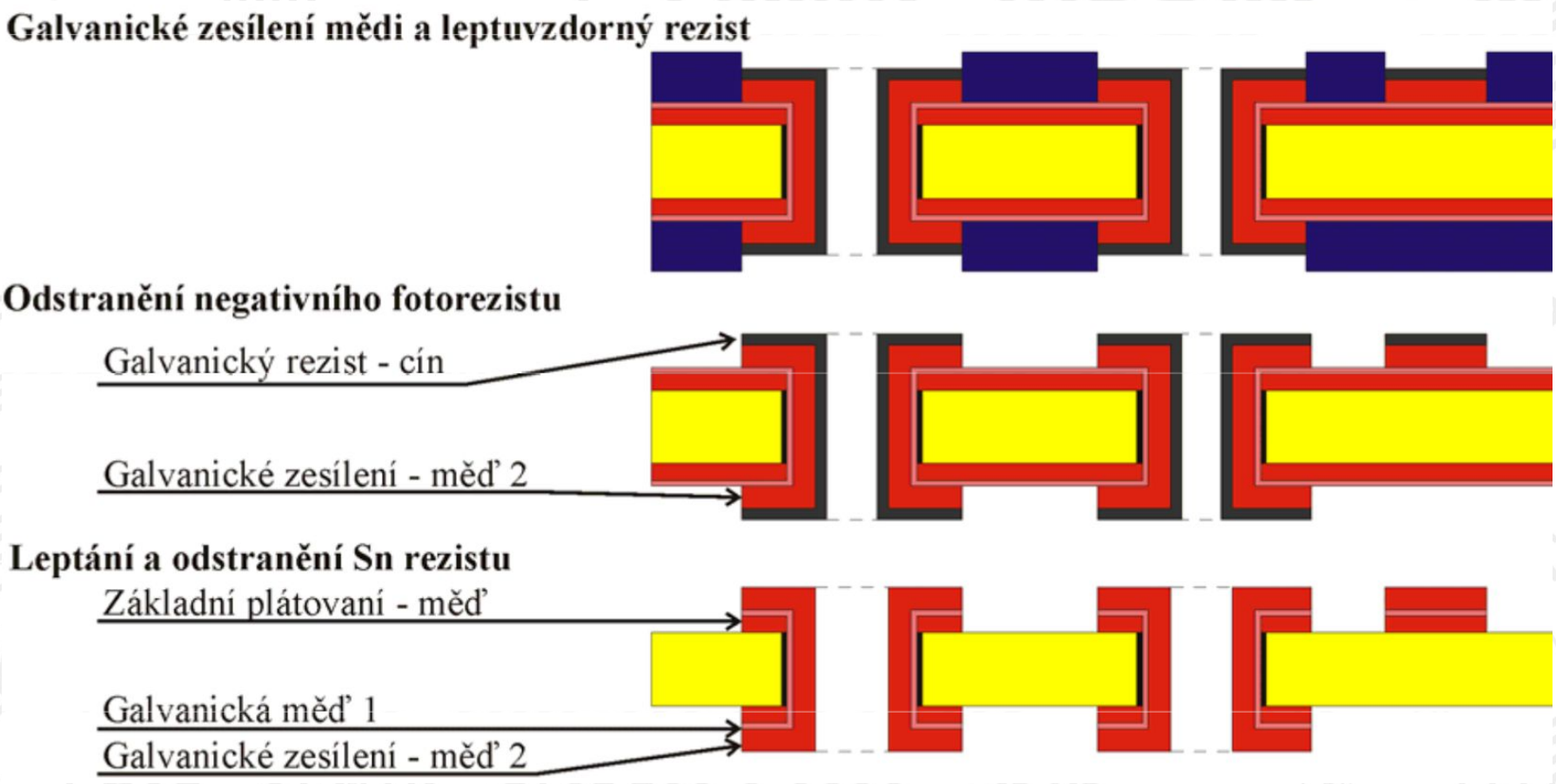


Vyvolání negativního motivu

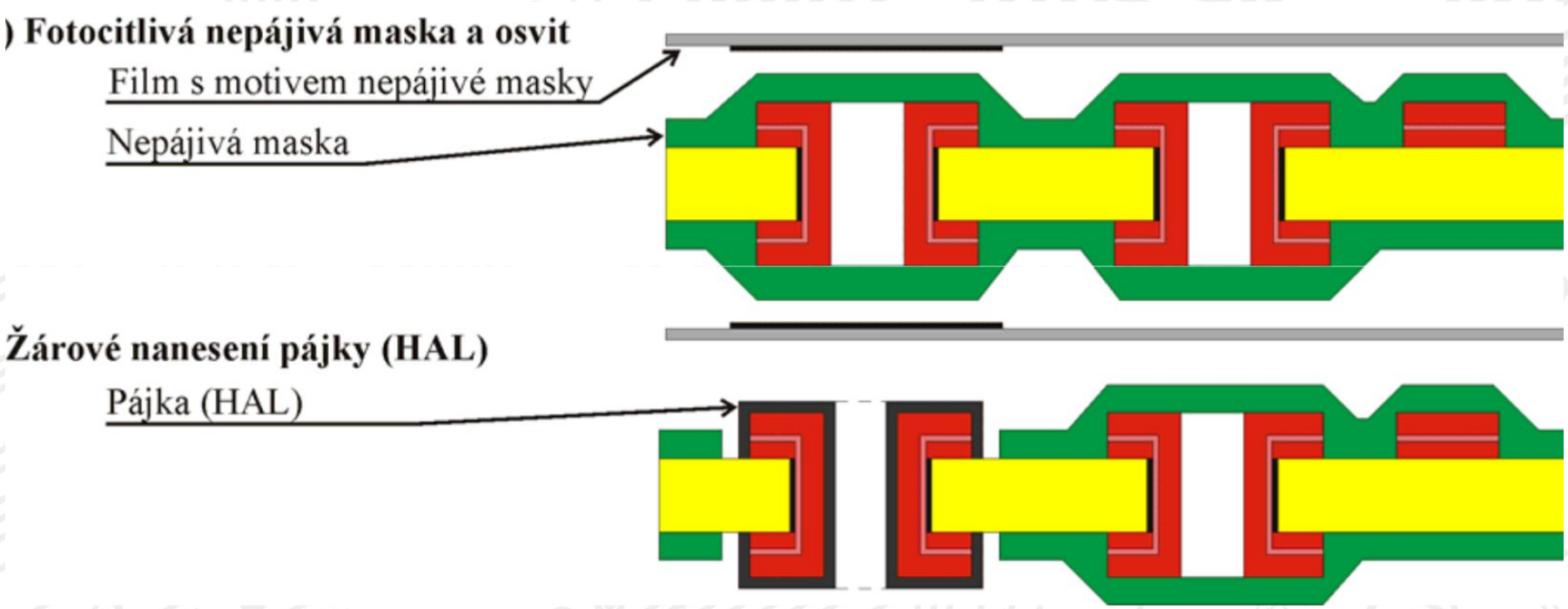
Fotorezist - negativní motiv



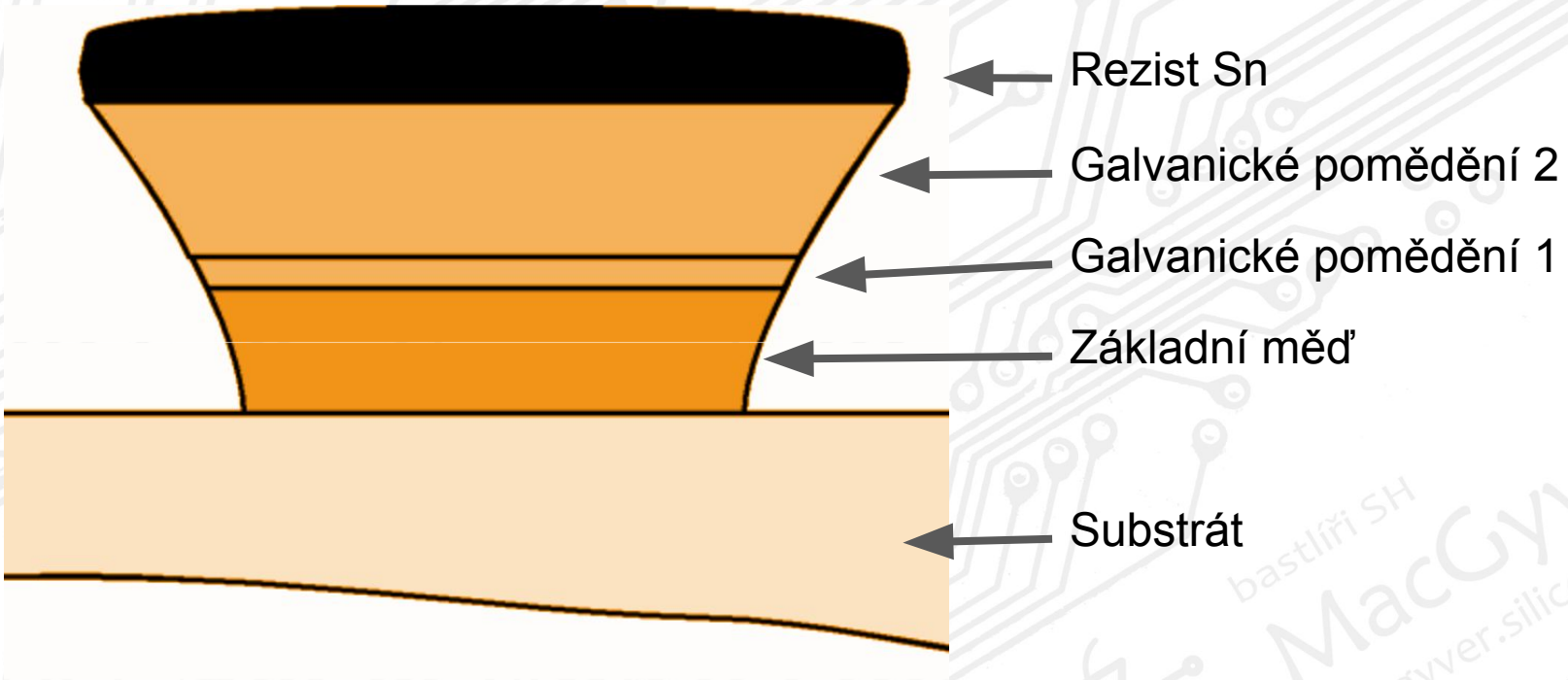
Technologie - profesionál



Technologie - profesionál



Technologie - profil vodiče



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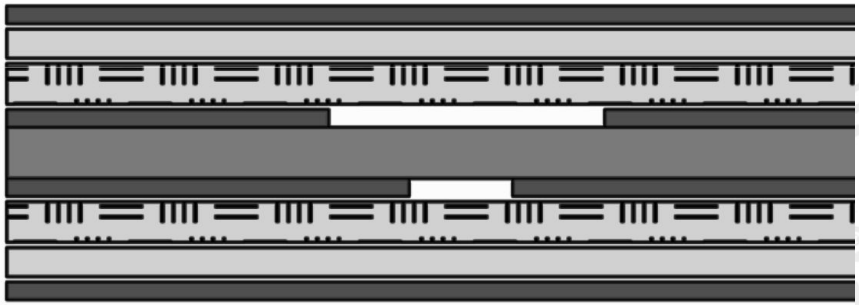
Technologie - 4 vrstvy

Oboustranně vyleptané jádro

Vrstvení fólií nevytvrzených laminátů a mědí



Měď

Jádro

Měď

Měď

Prepreg

Leptané jádro

Prepreg

Měď

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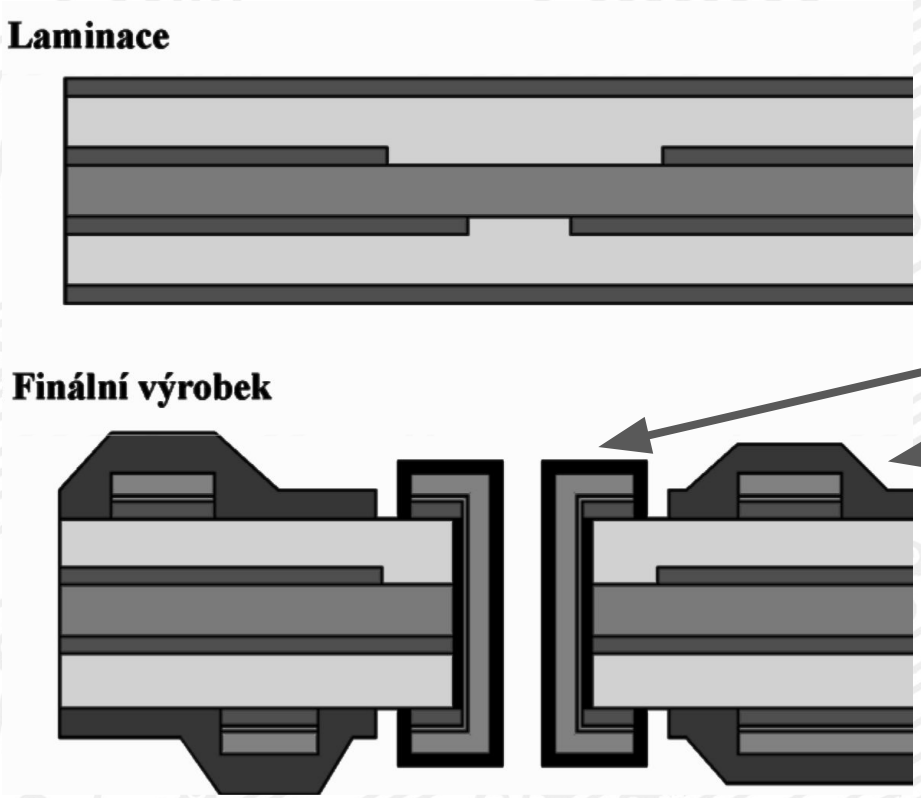
Technologie - 4 vrstvy



Rezist Sn

Maska

Měď 1,2,3

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Zdroje

- Wikipedia
  - https://en.wikipedia.org/wiki/Printed_circuit_board
- Skriptum
  - Principy a pravidla elektronického návrhu - Vít Záhlava
- Web
  - Altium.com
  - CircuitMaker.com
  - Cadsoftusa.com

Děkuji za pozornost

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