

Capstone Overview I

Design in the Age of Innovation

Bruce Jacob

Keystone Professor

Electrical & Computer Engineering

University of Maryland at College Park



Modern Entrepreneurship:

The high-tech cottage industry

Important development in last 20 yrs:



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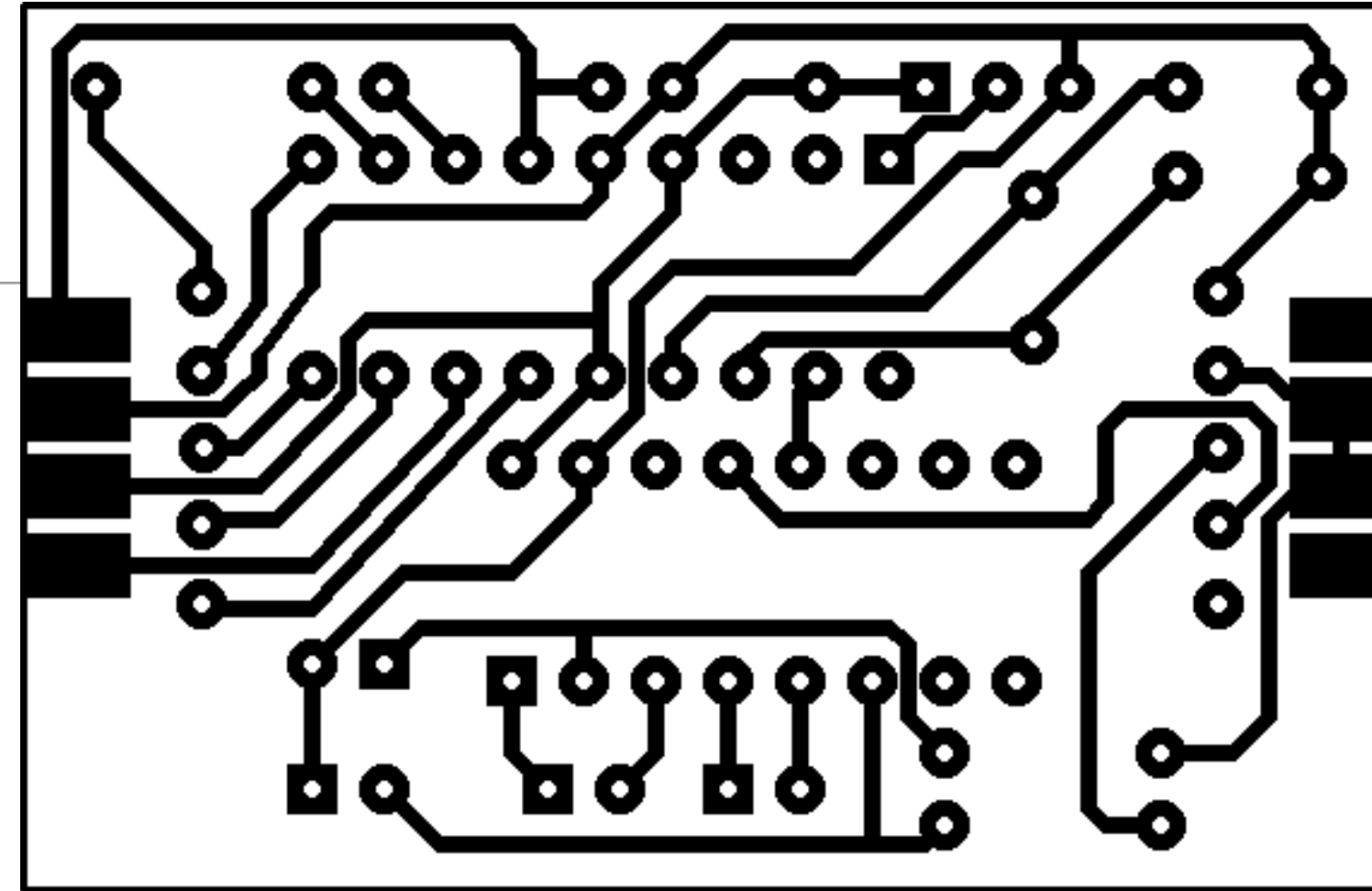
Important development in last 20 yrs:

**Manufacturing
as a Service**

The Basic Idea



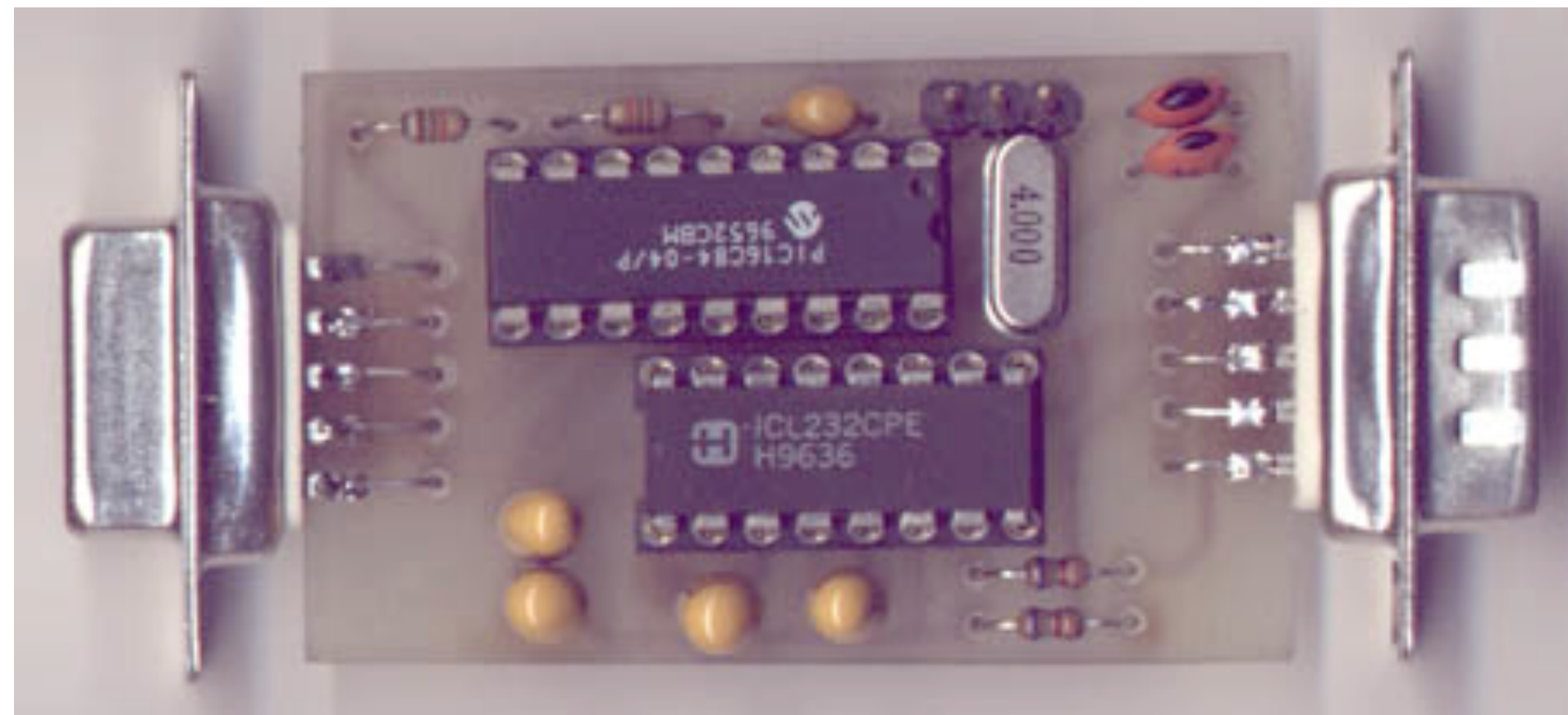
You



Design Blueprint



Factory

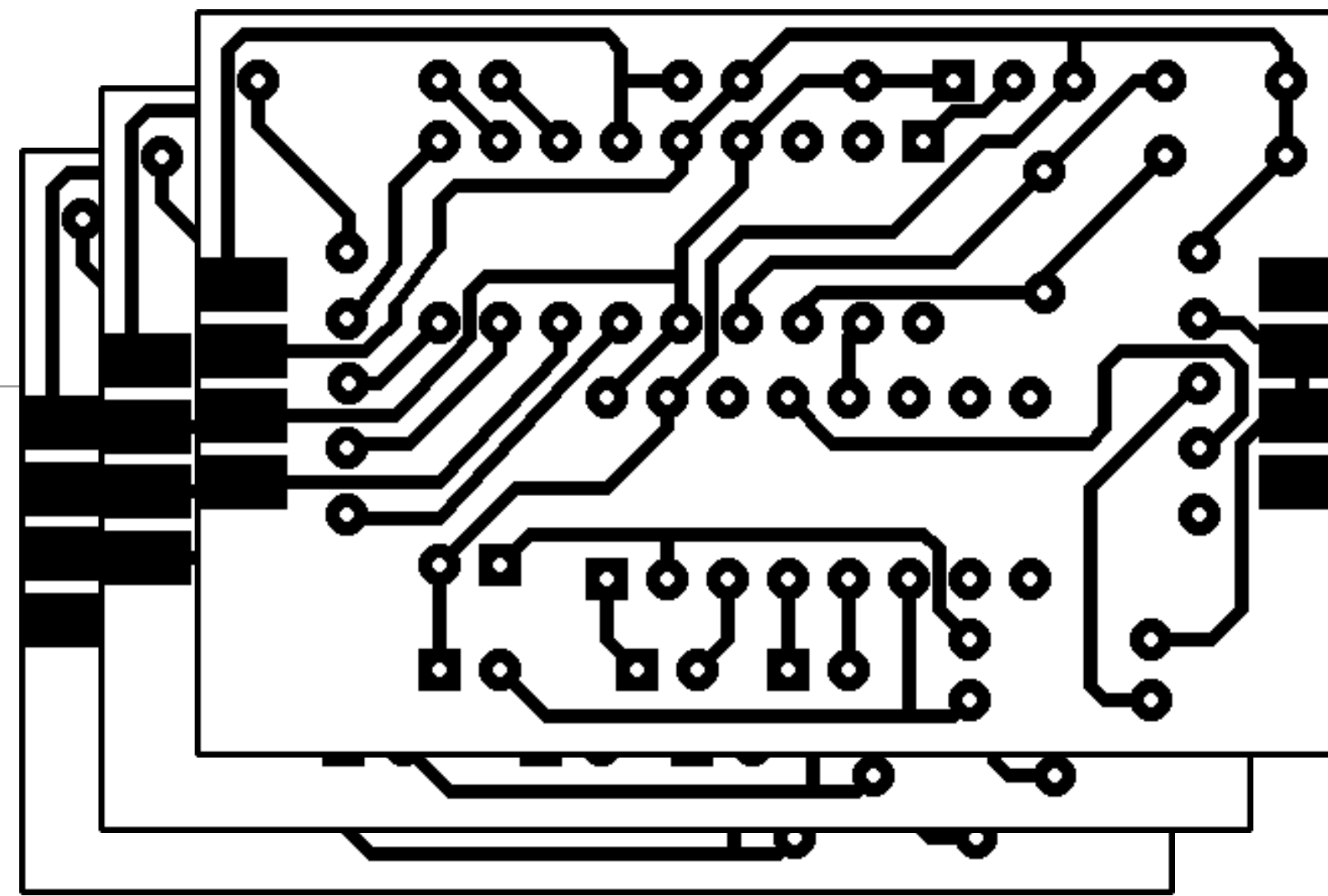


Manufactured Device

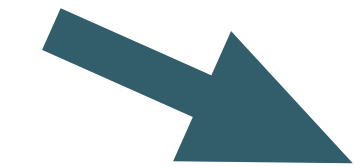
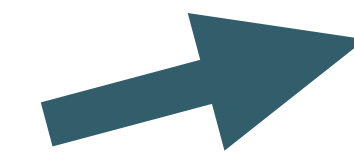
The Basic Idea



You



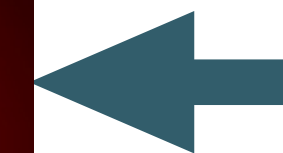
Design Blueprints



Factories



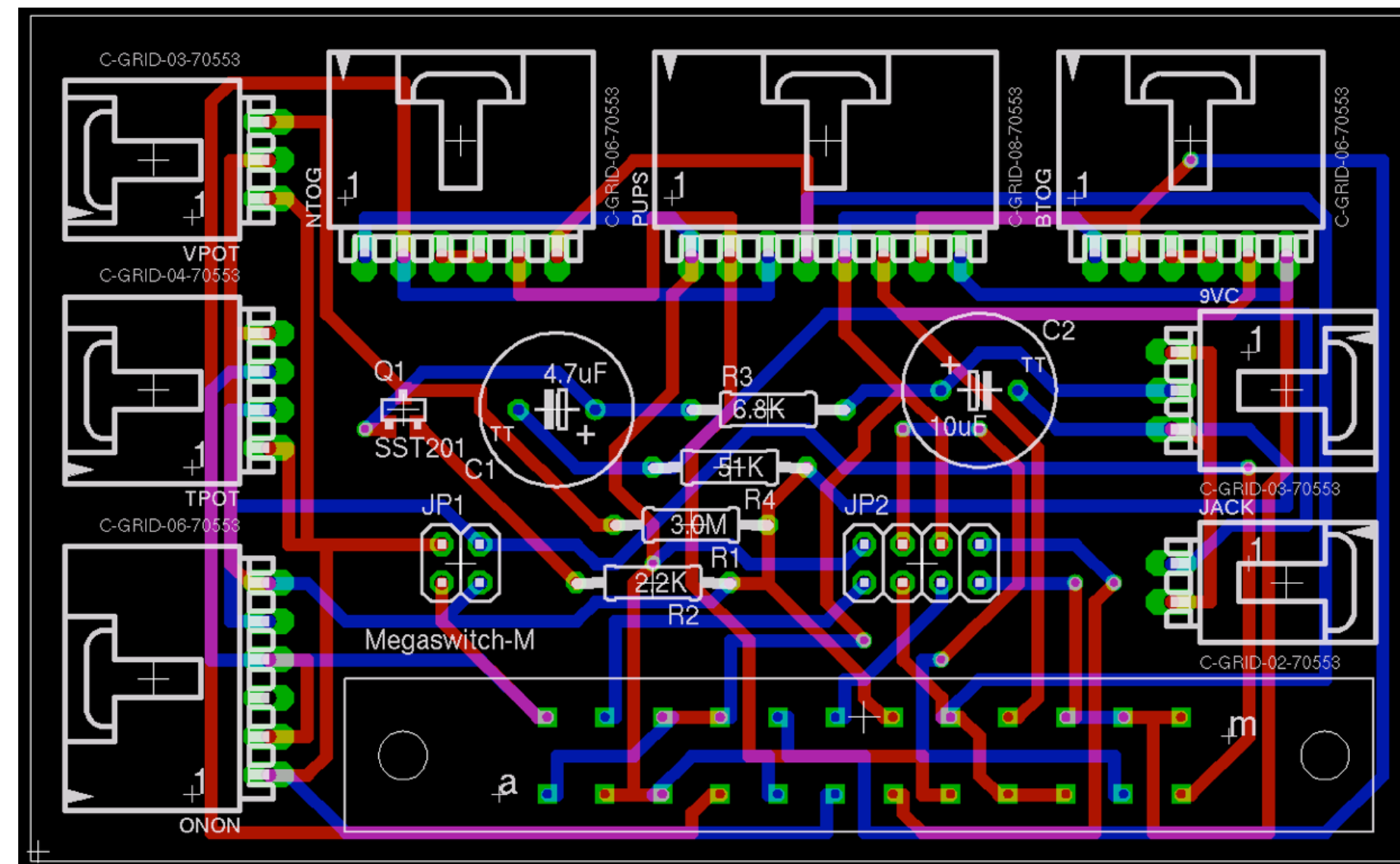
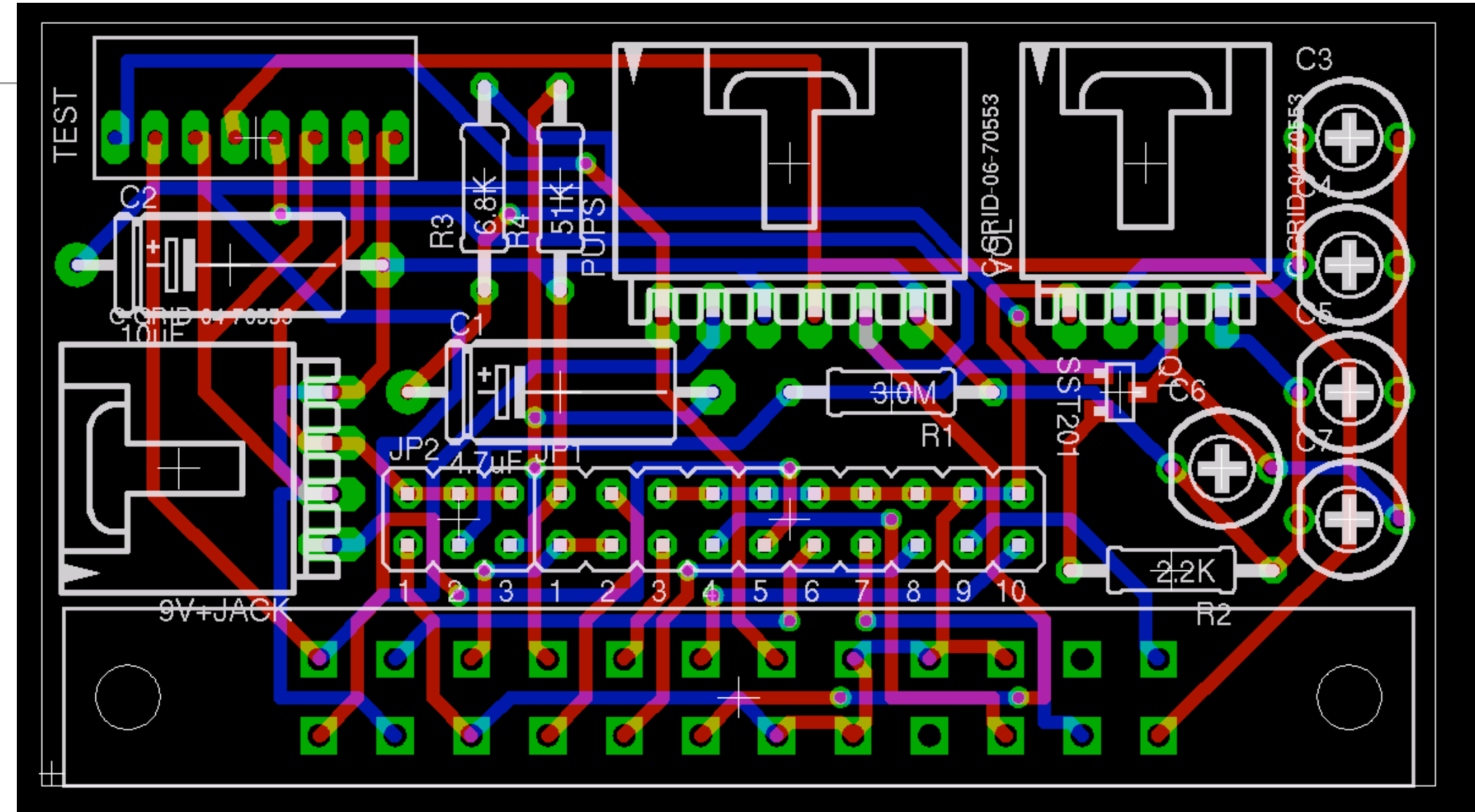
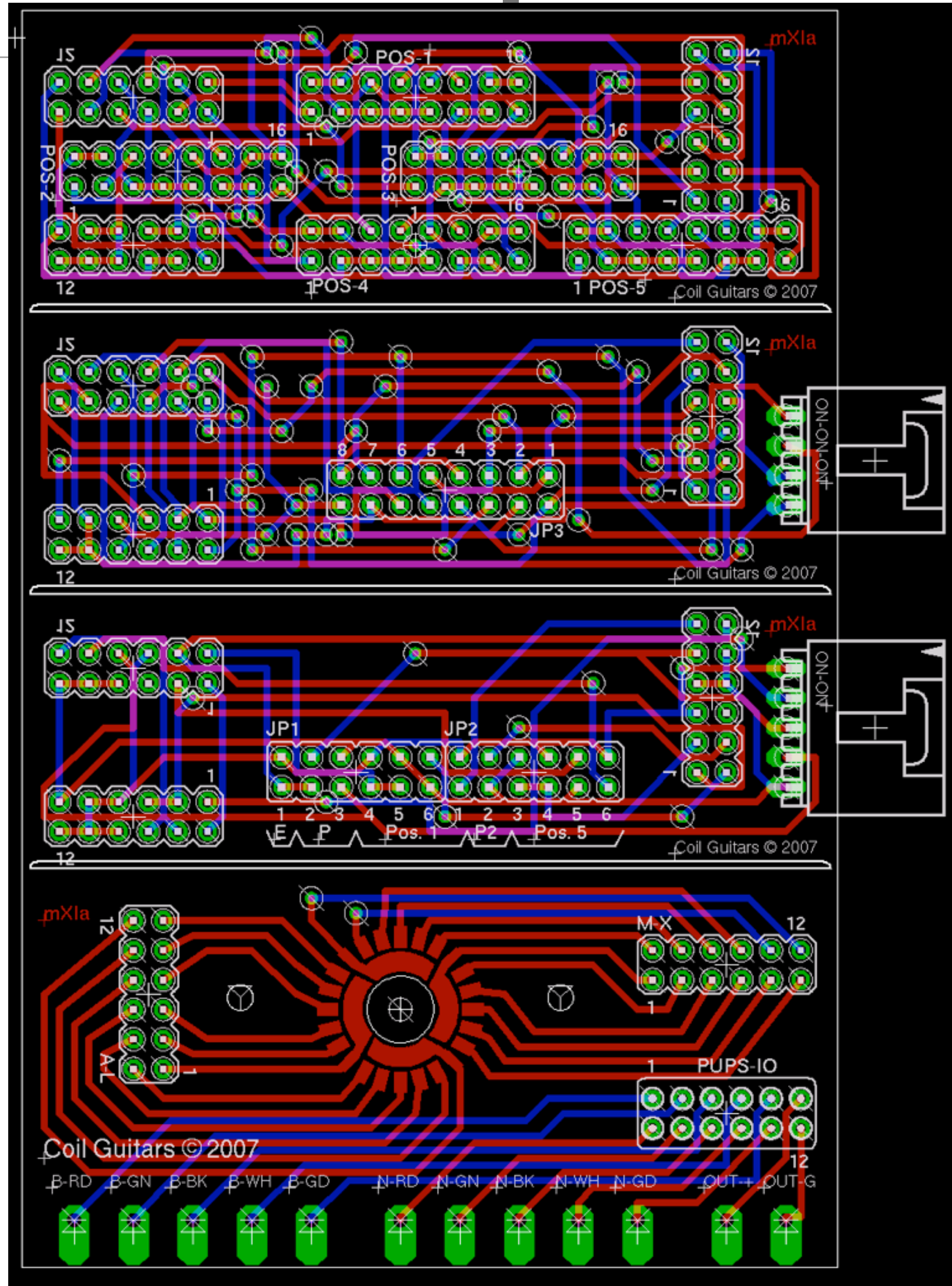
Assembly



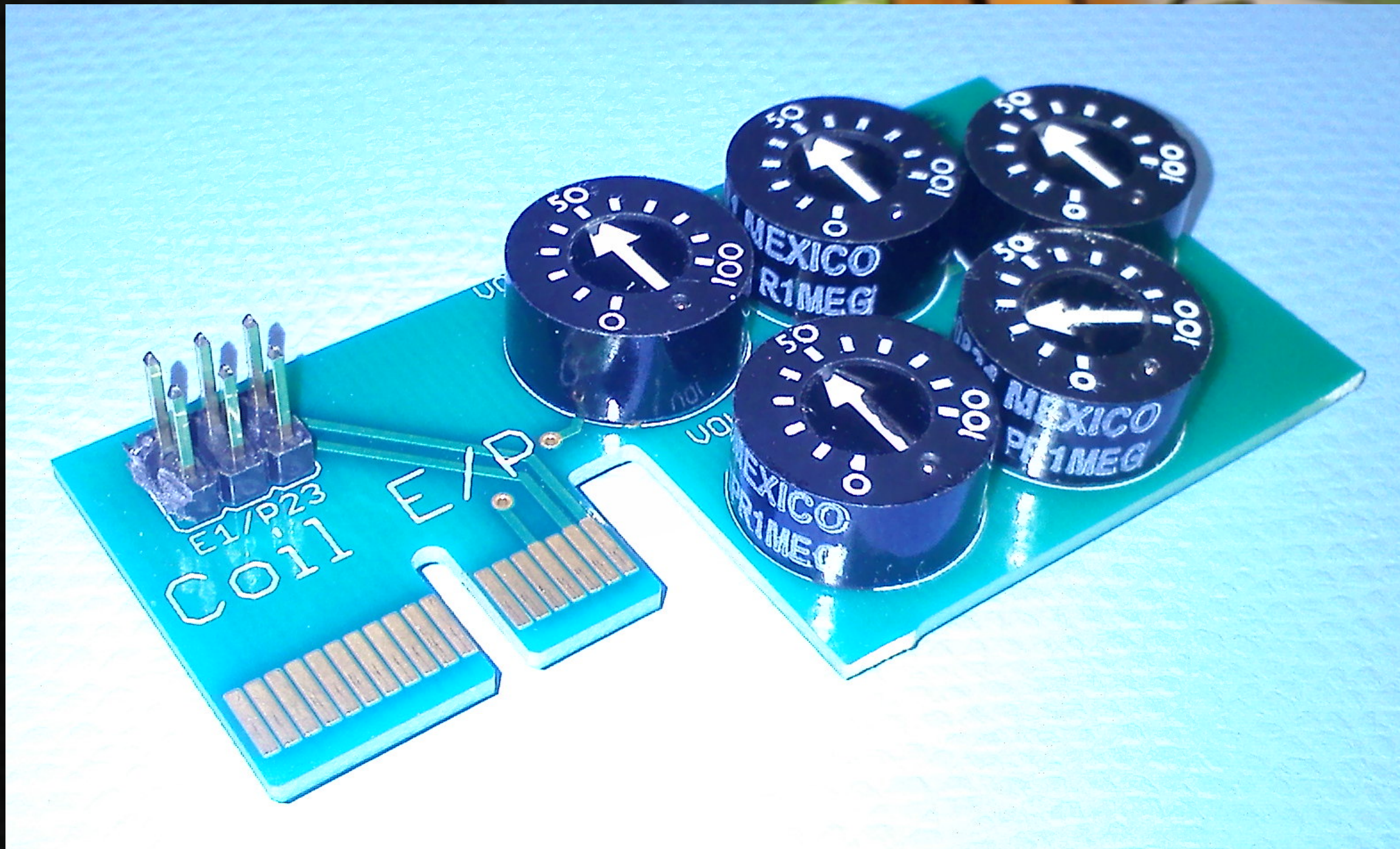
Manufactured Device



Some Blueprints



... & what they became



Some (other) Blueprints

Coil Guitars © 2007
Model: Hammer 25
6-string 25.5" scale
Coil Proprietary: Do not copy or distribute

Mail Guitars © 2006
Model: Angel 625
String 25.5" scale
Drawing scale: full size
Proprietary: Do not copy or distribute

Proprietary: Do not copy or distribute

... & what they became



Pros & Cons: High-Tech Cottage Industry

- Can't Possibly compete with big companies
- Might fail
- Can't afford it
- Window of opportunity?
- Idea already proven in marketplace (shareware, boutique electronics)
- Win/win situation (even company failure is good résumé material)
- Low risk/reward ratio
- Start soon

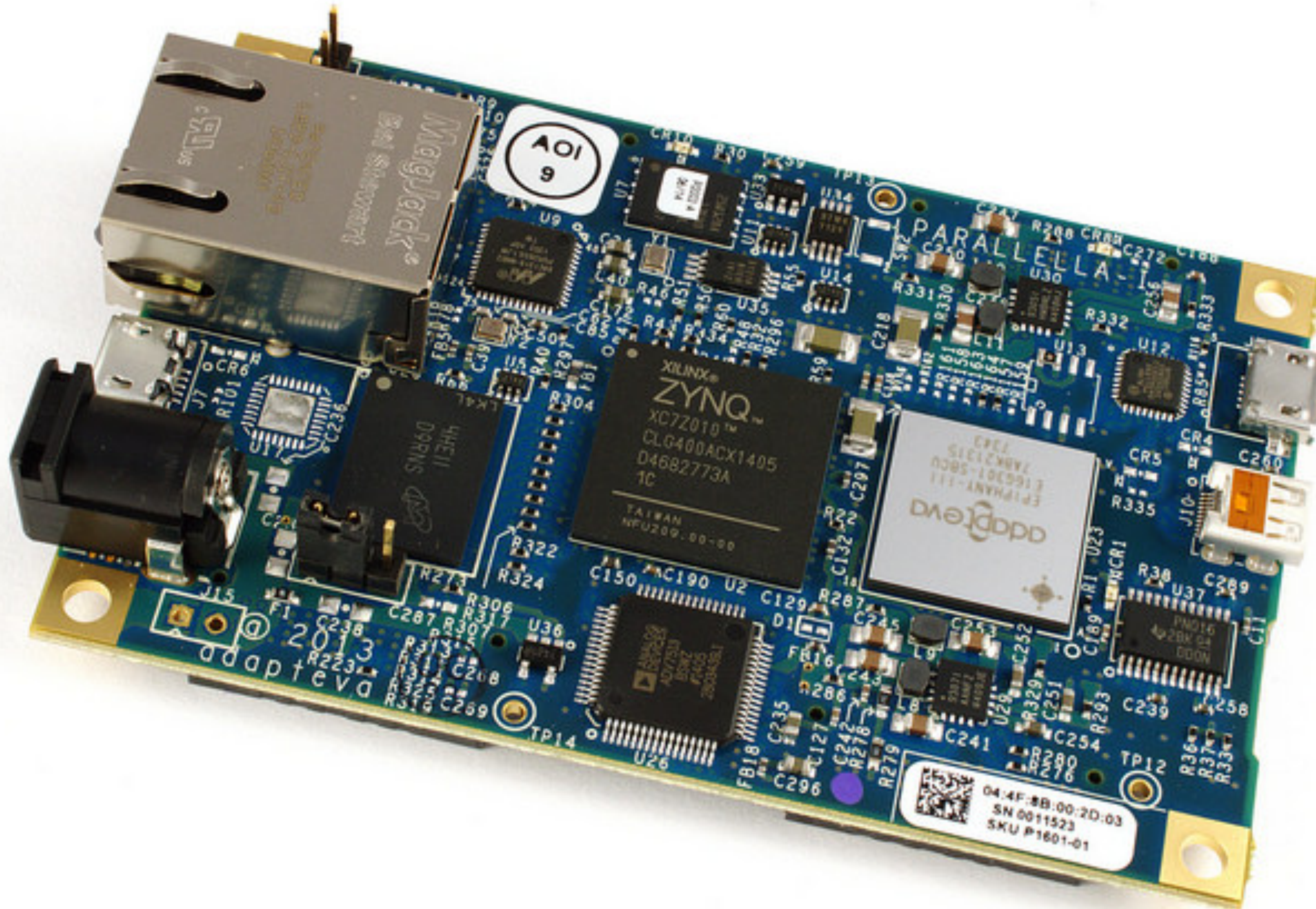
Bottom line: a path well worth exploring

Pros & Cons: High-Tech Costly Industry

- Can't Possibly compete with big companies
- Might fail
- Can't afford
- Wind
- Idea of a marketplace (electronics)
- Low risk/reward ratio
- Start soon
- Company failure (résumé material)

Bottom line: a path well worth exploring

A High-Tech Example



Perspective:

Innovation is good design & good design is iteration

What is **Science**?

The process of not accepting the first result,
or the second, or the third ...

Innovation is the same thing:
it is the burning need to refine and to improve
and **not** to accept the first design, or second, or third ...

Excellent Advice

Big companies cannot innovate,
whereas startups **must**.

Startups are engineer-dominated; **founders**
(engineers) are rewarded for company's success.

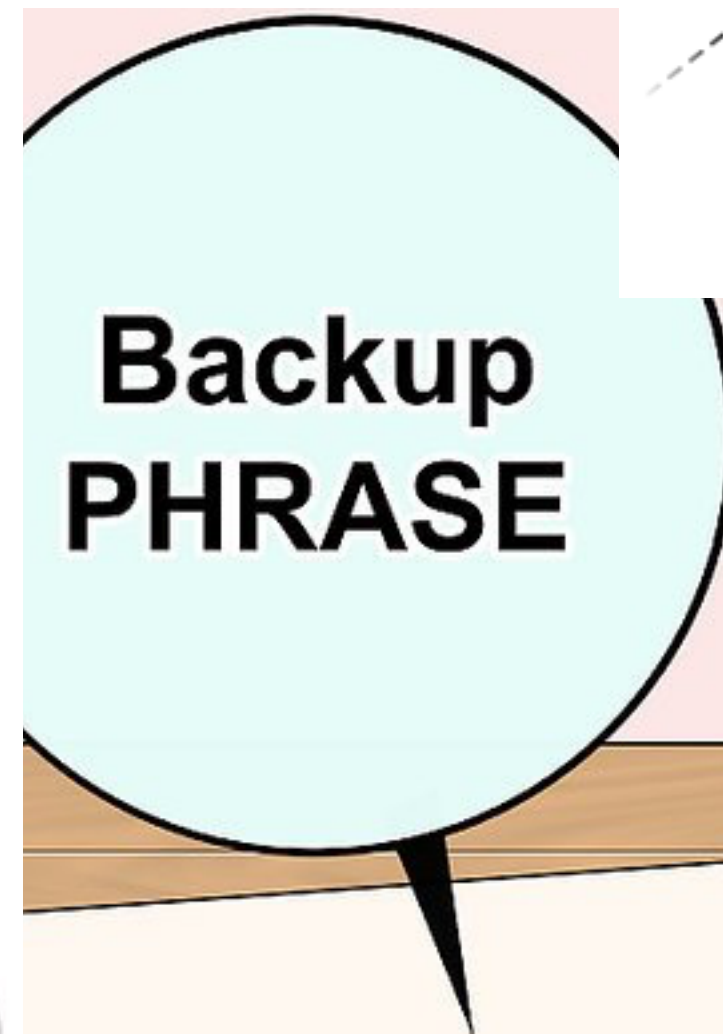
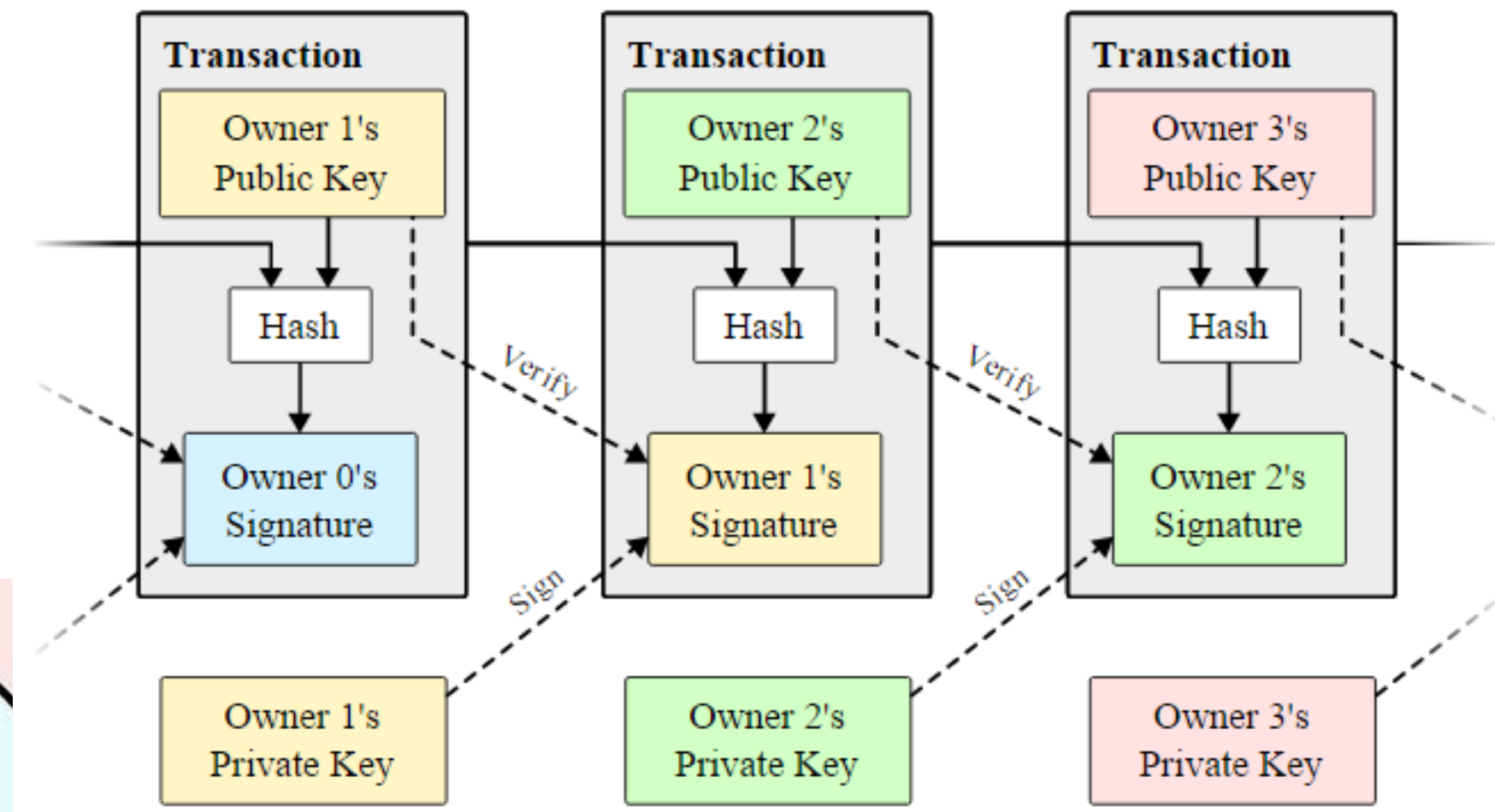
Upon maturity, startups become management-
dominated; **executives** (non-engineers) are
rewarded for company's success.

(thus #1, above)

Goal: break this cycle



What's Broken?



wikiHow to Send Bitcoin from a Paper



wikiHow to Send Bitcoin from a Paper Wallet

Also: What do people NEED?



For example — access to telecommunications improves the standard of living of **everyone**

Wealth:

Having something other people want

What is Wealth?



Wealth



Not Wealth

What is Wealth?



Wealth



Not Wealth

What is Wealth?

**“User data integrity is more valuable
than the money in our wallets”**

Google reliability talk

Replay

- Not all startups need to be **software** startups:
you can start a *de facto* **manufacturing company** in your dorm room
- Figure out **what is broken** (and you can fix);
figure out **what people need** (and you can provide)
- **Wealth \neq money**

Questions?

(thank you for your kind attention)

Bruce Jacob

blj@umd.edu

www.ece.umd.edu/~blj

... or just Google “professor guitar maryland”

