Adding Open Hardware to Open Software for a More Equitable IoT

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https://mcqn.com
1. What's wrong with IoT?
2. How can Open Hardware and Open Software help?
3. My journey so far
4. The future...
Reliance on Distant Servers

Geoff Belknap
@geoffbelknap

I... can't vacuum... because us-east-1 is down.

8:06 PM · Nov 25, 2020

11K 1.5K people are Tweeting about this
Surveillance Capitalism

Fyodor
@Fyodor32768

Replying to @internetofshit

Literally all of the reviews are "This is a great product but don't stick a facebook camera in your house"

No one should buy the Facebook Portal TV
In over six years of testing tech, this is a first for me.
http://cnet.com

1:55 PM · Dec 9, 2020
Nest is permanently disabling the Revolv smart home hub

Starting May 15th, the Revolv hub and app won't work

By Nick Statt | @nickstatt | Apr 4, 2016, 3:40pm EDT
Via Arlo Gilbert (Medium) and Business Insider / Source Revolv
# Materials Energy Toxicity Matrix

Designing out waste matrix template.

Thanks to ThingsCon 2018 and @mrchrisadamss excellent talk on Reducing Carbon In the Digital Realm at Festival of Maintenance

<table>
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</thead>
<tbody>
<tr>
<td>Materials Material as an input mined, grown, harvested</td>
<td>What are the materials used?</td>
<td>What processes are used to make it?</td>
<td>What kind of packaging is used for the item and in transit?</td>
<td>What consumables are used by the product? What is needed to keep it working?</td>
<td>Which bits can be recycled? Are their local recirculation schemes for them?</td>
</tr>
<tr>
<td>Energy Energy used in production</td>
<td>How much energy is used to get the materials you use? How did they make the raw material?</td>
<td>How much energy does the manufacturing cost?</td>
<td>How easy is it to transport? How is it transported?</td>
<td>How much power does it use? How much energy is used</td>
<td>How much energy is used to treat the waste?</td>
</tr>
</tbody>
</table>
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Data and UI On Device
Open Standards

DMX Start address: 1
DMX mode: Multi RGB

Timeout: 2500 ms
Force max brightness:
Disable realtime gamma correction:
Realtime LED offset: 0

Alexa Voice Assistant

Emulate Alexa device:
Alexa invocation name: Light

Blynk

Blynk, MQTT and Hue sync all connect to external hosts!
This may impact the responsiveness of the ESP8266.
For best results, only use one of these services at a time.
(alternatively, connect a second ESP to them and use the UDP sync)

Device Auth token:
Clear the token field to disable.

MQTT

Enable MQTT:
Broker: broker.mqtt-dashboard.com
Port: 1883

The MQTT credentials are sent over an unsecured connection.
Open Supply Chains?
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Kicad: Schematic
Kicad: PCB layout
PCB Manufacturing

* OSHPark – https://oshpark.com/
* JLCPCB – https://jlcpcpcb.com
* European Circuits – https://european-circuits.co.uk
* Many more...
The future I want embodies different values.

I want my home to be voice controlled – but I want it without centralised data capture.

I want car-sharing schemes and last mile delivery – but I want it to operate through mutualism and co-operatives.

I want home security drones – but I want them to make their domestic visual index available to a private app so I can text-search my bookshelves for that book I can’t lay my hands on, rather than them using it to train their ad targeting A.I.


I’m not saying these futures are impossible, but they feel hard to reach from where we are right now.

Because honestly, it feels like I don’t get to choose, we don’t get to choose, those futures.
PCB Assembly
Fabrication: Laser-cutting
Fabrication: CNC
Sales

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Thank you.

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