

SHA 2017 Badge

Sneak preview

Anne Jan Brouwer

ELECTRON JUNCTION
Pixelbar April 22nd 2017

Badges

- CCCamp 2011
 - r0cket
- EMF tilda
 - Many iterations
- CCCamp 2015
 - radi0

Brainstorms

- CCCamp 2015
 - Big OLEDs
 - OpenWRT
- ETH0 Winter 2016
 - E-Ink
 - ESP32
- EMF camp
 - MicroPython

SHA Badge

- Core values:
 - Function as a badge
 - Augment event
 - Easy to hack
- Distribute 3500+ awesome devices

Demo of current HW

SHA

+2017

SHA Badge

- ESP32
 - WiFi + BTLE
 - Dual core 240 MHz Tensilica LX6
- GDEH029A1
 - AMEPD
 - 296x128 pixels 1 bit
- CPT112S
 - TouchXpress I2C
 - 1 – 200 μ A

Current issues

- I2C
- Capacitive touch

Current issues

- ~~I2C~~
- ~~Capacitive touch~~
- Sponsorship

SHA Badge

- Minimal C(++) firmware
- Signed OTA updates
- uPython
- Communication / notification
 - Persistent

App store

- Easy to hack
- No toolchain needed for appdev
- Git(hub) like interface
 - Namespace (username)
 - Clone & (optionally) rename
 - Browser or phone
- Browse on badge (autocomplete)

uPython

- User apps
- API extensions for hardware
 - Display low and high level
 - Input (proximity)
 - Output
 - GPIO
 - 6 RGB LEDs
 - Matrix ?!

What is Matrix

- An open network for secure, decentralized communication.
- HTTP API
- Standards
- Simple
- Secure

Why Matrix

- Persistence
 - 99% downtime :-)
- Simple API
- Compatible with \$everything
- Momentum

Sponsorship

ESP32

Sensors

- Display
- PCB + Assembly
- Touch + USB Serial
- Charger, Passives, LEDs, buzzer

Sponsorship

- On the PCB
- In the booklet
- In our talk at SHA2017

CYA @ SHA2017

SHA

+2017