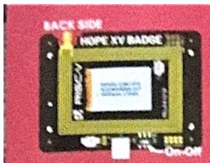
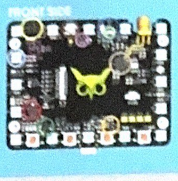
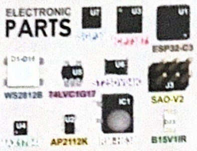




ELECTRONIC PARTS



BATTERY POWER

Charge State	Red	Green	Yellow
Shutdown	OFF	OFF	OFF
Standby	OFF	OFF	ON
Low Battery	ON	OFF	OFF
Charging	ON	OFF	ON
Charge Complete	OFF	ON	ON
Fault Condition	ON	ON	ON

Press the RST button to reset the MCU. Press the rightmost button while resetting to flash the chip.

BUTTONS LIGHTS

Long press on the third button to iterate the animations. Short press to change the light intensity or totally disable the lights.

The first two buttons act on light animation, and should be reimplemented to your taste.

Animations interrupt on CO2 congestion.

A white LED indicates a powered on state.

INFRARED TV

Press the rightmost button to fire a data code from the infrared diode. RGB lights indicate a successful transmission with an animation.

A badge receiving a transmission will flash the lights according to the code received.

The infrared circuit is able to communicate with a number of common television monitors. The TV-B-Gone boss advised us well enough to allow kludging badge circuits accordingly.

RADIO NFC

If your badge includes an NFC EEPROM and RFID loop antenna, then 4Kbits of data can be stored on the EEPROM by aligning the Kapton antenna with a smartphone.

A NDEF Type-5 tag puts data in MIME structs.

Reading and writing are supported, and this works even when the badge has no power. Some people use NFC Tools with a phone.

Some readers cannot work with NDEF Type-5.

TVOC AIR

If your badge includes the luxurious total volatile organic compounds (TVOC) sensor, it may flash the lights distinctively to alarm.

A common application involves polling the sensor's CO2 level and informing of a need to ventilate.

The TVOC communicates on the I2C bus.

CONTACT

HOPE Badge Chat

Join the Signal group (QR)
https://www.novelcircuits.com/
wiki:HOPE_XV_Electronic_Badge
https://gitlab.com/tidklaas/hip-badge/
FRS GMRS (FCC) channel 7 (462.7125 MHz)

To schedule an interview, or to sponsor the next distribution: hope.badge.team@hope.net

NOTES

To register your product please visit https://www.zombo.com

HOPE XV BADGE GUIDE

RISC-V

LEGAL

1. STATUS

[illegible]

2. AUDIENCE

[illegible]

3. PURPOSE

[illegible]

4. MISUSE

[illegible]

5. REPRESENTATIONS

Pictures of the HB may vary from the current state of production and distribution.

6. PERMISSIONS

[illegible]

[illegible]

ABOUT

IR, USB, vibration, switch and light animation are supported on this ESP32 RISC-V powered badge. Please sponsor the next HOPE badge production.

Sponsored by Signal
https://www.signal.org/

Sponsored by PCBWay
https://www.pcbway.com/

Hardware revision three New York edition

HACK

Personalising your badge is possible in two ways.

Solder SAO headers to plug in third party addons. Adding chips (TVOC or fuel gauge) is achieved using a hot air solder station and solder field SF1.

Write new application logic using firmware tools:

```
$ idf.py fullclean set target esp32-c3 menuconfig
$ idf.py build flash (rinse and repeat)
```

Program the ESP-C3 chip with original firmware:

```
$ git clone https://git.sr.ht/~rcs/HiP-Badge/
```

FEATURES

Lights	SUPPORTED
Buttons	SUPPORTED
Infrared	SUPPORTED
Vibra PMOS	CANCELLED
HDK on USB	CANCELLED
TVOC sensor	CANCELLED
SPI EEPROM	CANCELLED
SMA antenna	CANCELLED
RFID antenna	CANCELLED
NFC EEPROM	CANCELLED
Smart giftbox	CANCELLED
48-hour battery	CANCELLED
SAO connector	CANCELLED
Secure element	CANCELLED

All cancelled features are available on the *HOPE XV Badge Pro Model.*

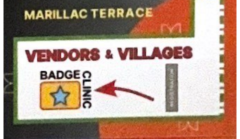
Visitor, speaker, and staff editions have identical feature sets, sorry.

If you failed or refused to contribute:
- A single line of code
- A single hour of work
- A single graphic image
- A single dollar of funds
- A single call to sponsors
- A single metre of storage
- A single trip in an automobile

...then congratulations for success in damaging your HOPE badge team

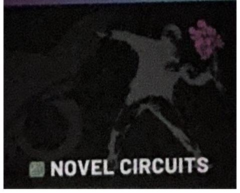
ACCESS

GMRS CHANNEL 7



FAQ

Q1: What can my badge do for me?
A1: Anything you develop for RISC V
Q2: How long does the battery last?
A2: 20-40 hours, depending on use.
Q3: Is the badge design Opensource?
A3: Yes, on license terms CERN-OHL-S
Q4: Is this badge design an original?
A4: No, it is derived from the CCC HiP
Q5: Why is input and output instable?
A5: Use of USB interrupts the features
Q6: Vibration makes my badge freeze?
A6: Disable the vibramotor for stability



NOVEL CIRCUITS