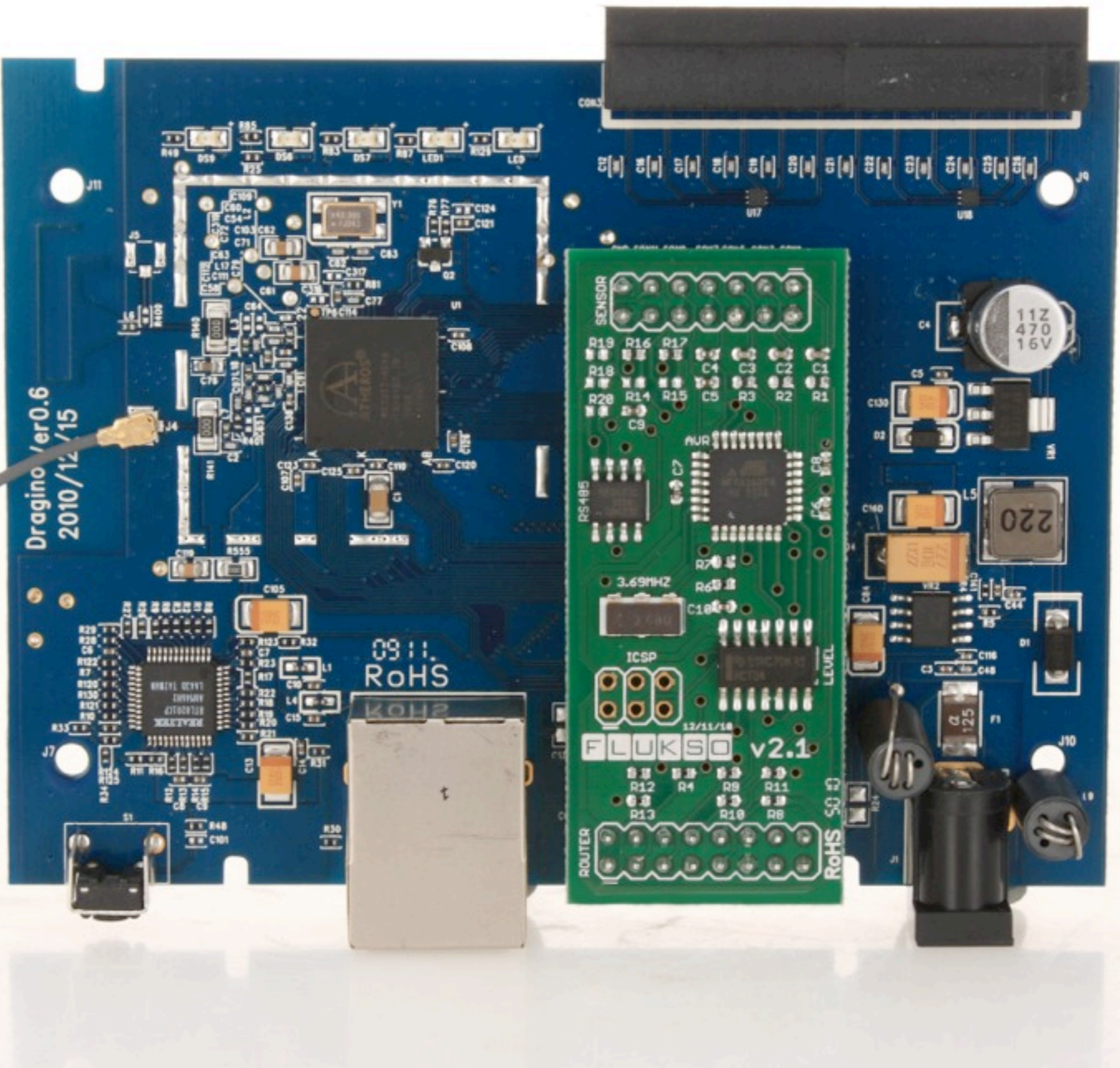
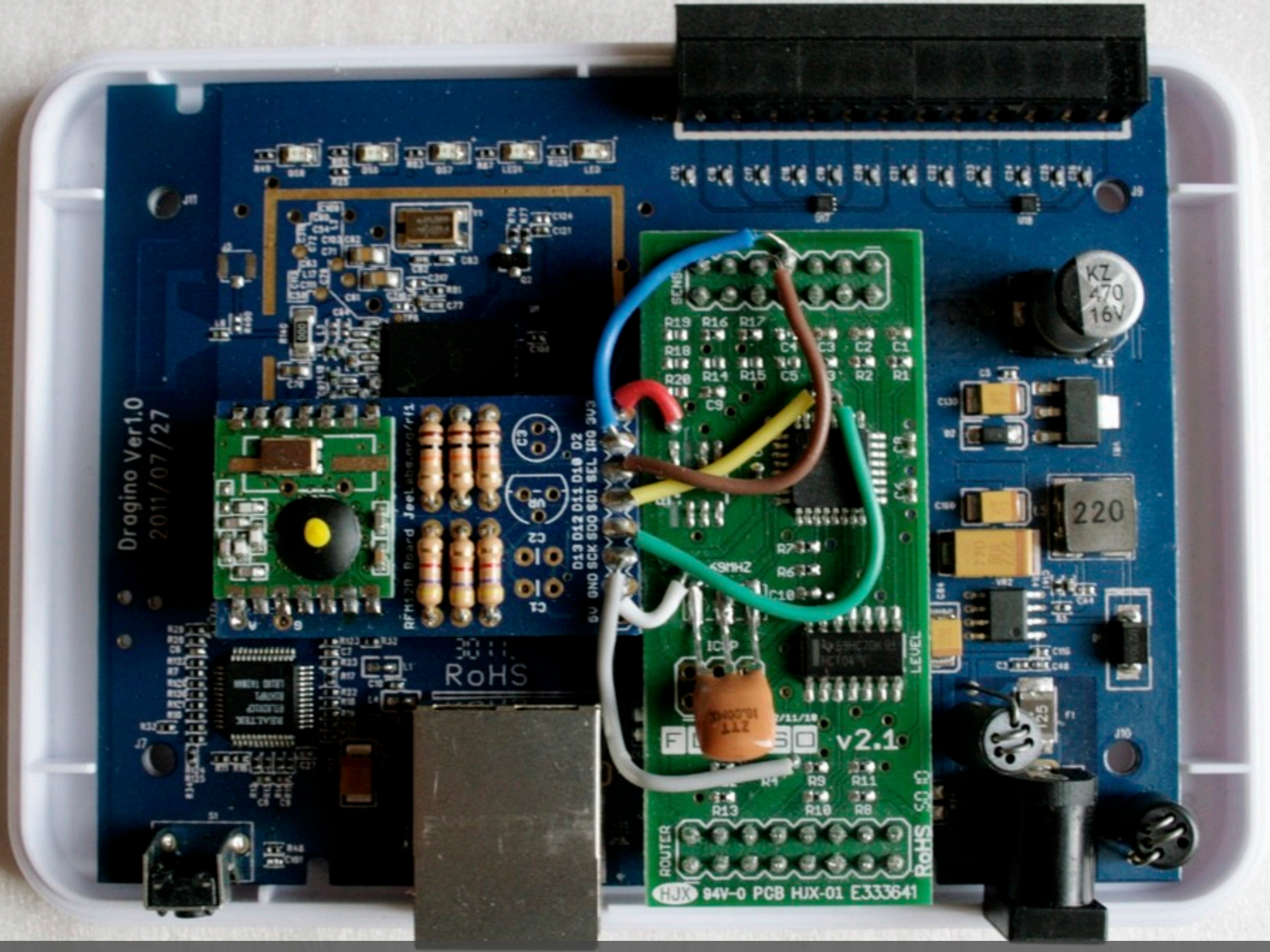




community metering





Dragino Ver1.0
2011/07/27

RFM12B Board JeeLabs.org/rf1
D13 D12 D11 D10 D2
5V GND SCK SDO SDI SEL IRQ 3V3

ROUTER
HJX 94V-0 PCB HJX-01 E333641
RoHS SO10
v2.1
ICP
R19 R16 R17
R18 R14 R15
R20 R13 R15
C9
SENS
R1 R2
C1 C2
C3 C4
C5

KZ
470
16V

220

RoHS

- Straightforward module integration
- Readily available, open drivers (Jeelabs, Das Labor)
- Popular in the Arduino world
- Range of Jeelab plugs available
 - DC motor, Dimmer, Pressure, Relay, Room board
- Simple protocol stack
 - low packet overhead
 - low energy per packet

Dragino Ver1.0
2011/07/27

P.O.C
PASSED
07

30 11.
RoHS

SENSOR BOARD

FLUKSO v2.2

2701-FLUKSO

ROUTER

Y1

C11

C4

C3

C5

R2

R3

R4

R5

R6

R7

C8

C10R1

U5

U2

U1

U4

U3

U6

U7

U8

U9

U10

U11

U12

U13

U14

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U100

KZ
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16V

220

C160

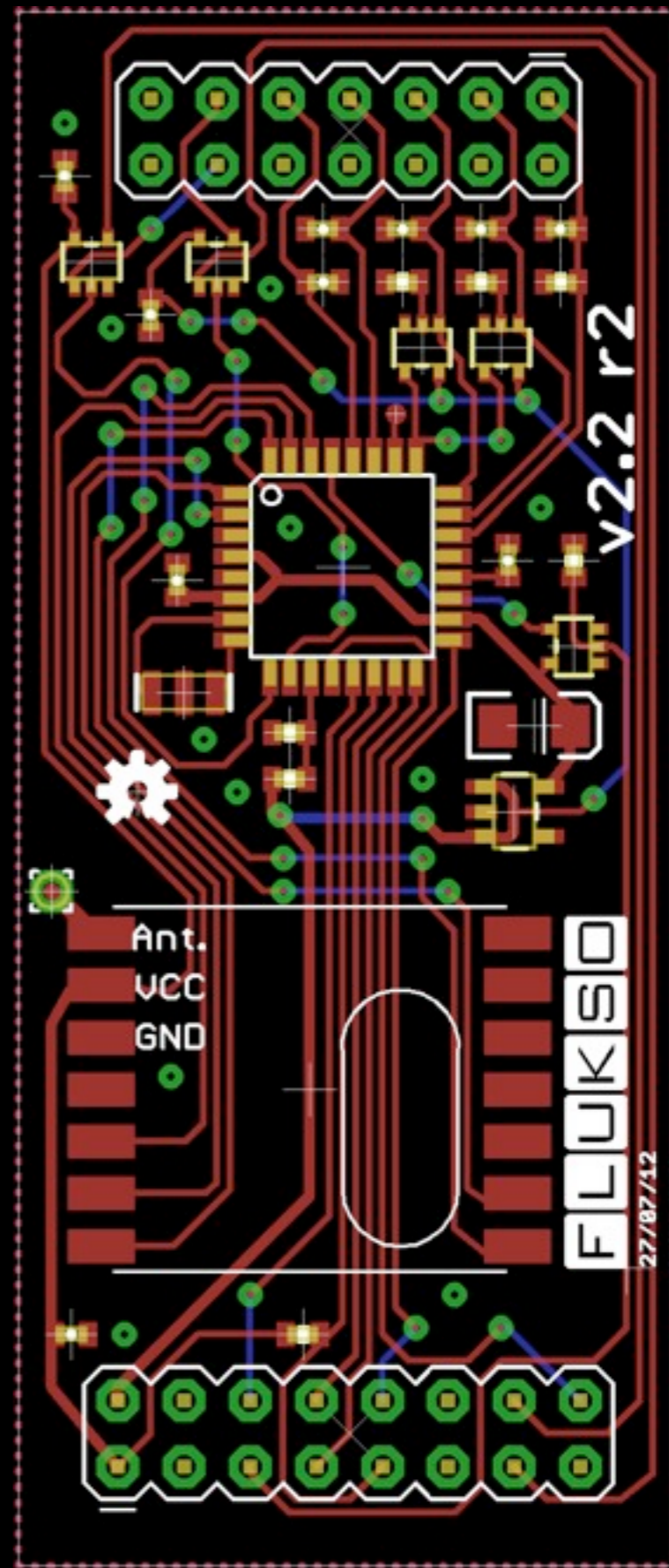
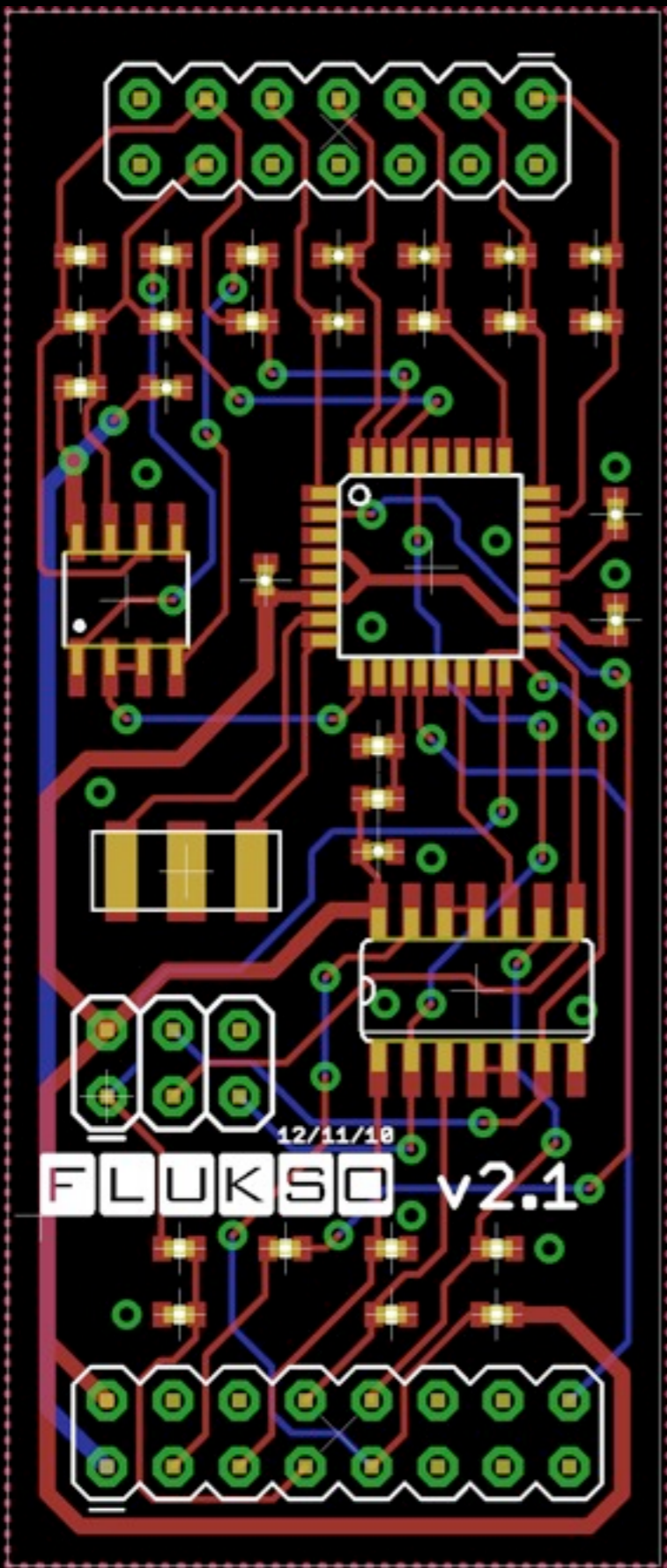
C161

C162

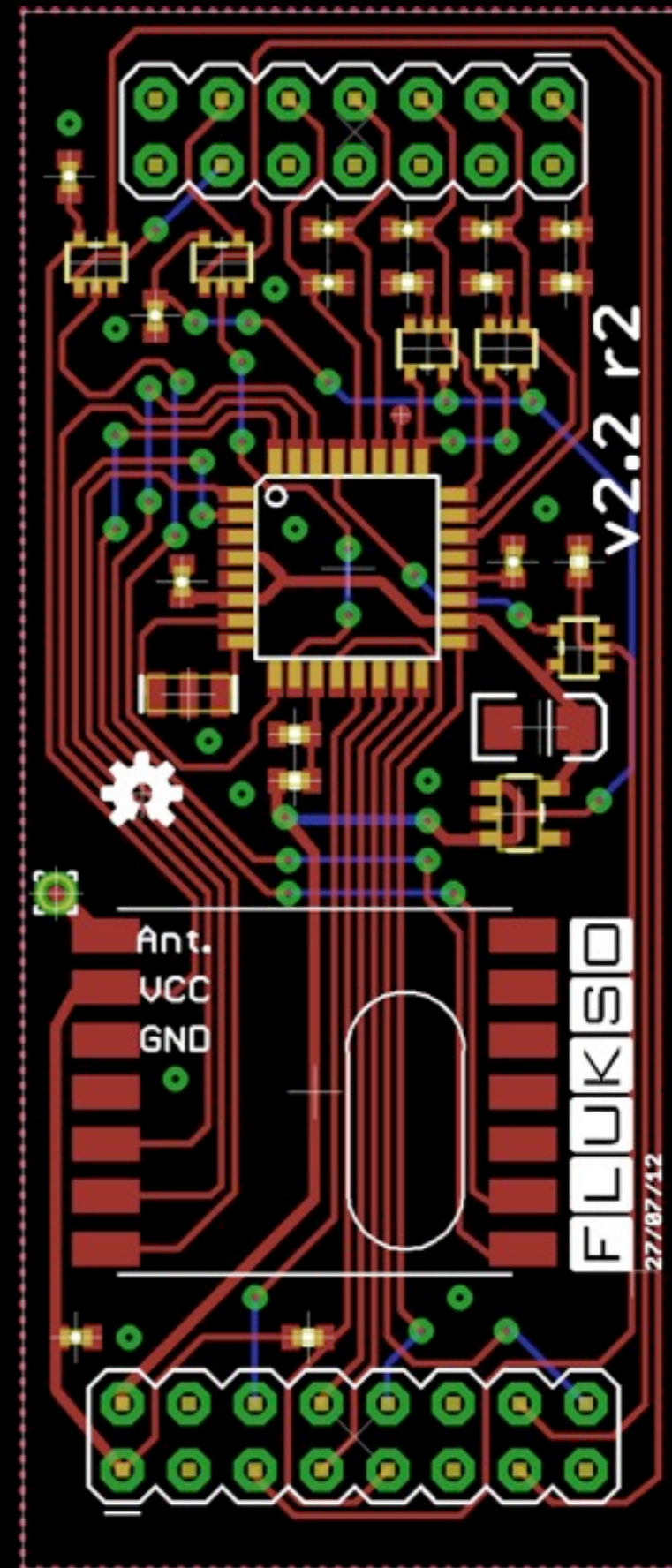
C163

C164

C165



- Use USART as SPI for RFM12
- Run all components on 3.3V
 - no more level shifting
 - boost frequency to 16MHz
- Keep BOD at 1.8V
- Route AR2317 UART to port 6
- Analog switches on port 2 & 3



- GPL'ed AVR RFM12 driver available in Flukso repo
- <https://github.com/flukso/rfm12>
- Forked from Das Labor driver
- Double packet input buffer
- Works with both SPI and USART
- Adapted to Jeenode compatible packet format
- Includes fast ack'ing
- Easy inclusion into any AVR project as a git submodule

- New sensor board allows direct Dutch Smart Meter readout via port 6
- Prototype packet decoder in 'parse' branch of FLM02
 - <https://github.com/flukso/flm02>
- PI uses DLMS, aka D0, line-based, plaintext protocol
- Parser returns COSEM objects in a Lua Table
- Decodes Hager EHZ datagrams as well!
- Should work with Udo's opto-head [TBI]

- Ports 2 & 3 have an analog switch in series with the 1.91k resistor
- Can be switched on/off by a single AVR GPIO
- Allows dynamic configuration of these ports
- Choice between
 - 3x clamp, 2x pulse, 1x 'UART'
 - 1x clamp, 4x pulse, 1x 'UART'

- repo: <https://github.com/flukso>
- forum: www.flukso.net/forum
- dev mailing list: flukso-dev-join@lists.flukso.net
- freenode: #flukso







Macarena C., ?

www.flickr.com/photos/room_onfire/403830495/