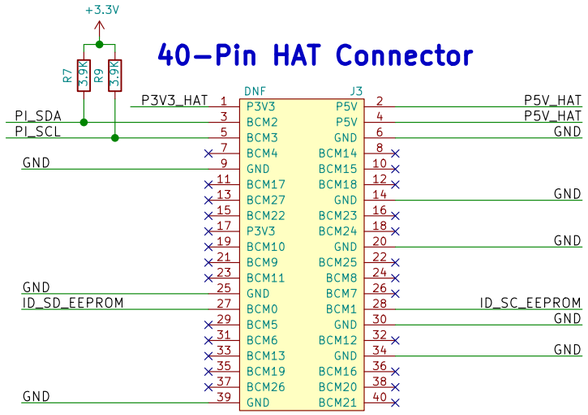
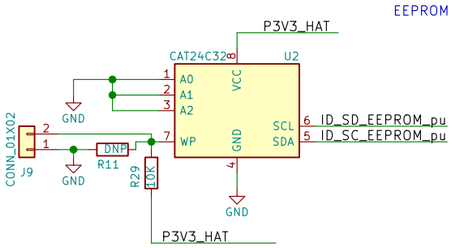
This is based on the official Raspberry Pi spec to be able to call an extension board a HAT.
https://github.com/raspberrypi/hats/blob/master/designguide.md

## 40-Pin HAT Connector



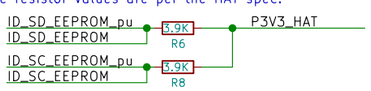

## HAT EEPROM

The HAT spec requires this EEPROM with system information to be in place in order to be called a HAT. It should be set up as write protected (WP pin held high), so it may be desirable to either put a jumper as shown to enable writing, or to hook up a spare IO pin to do so.

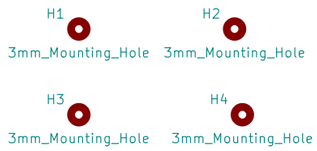


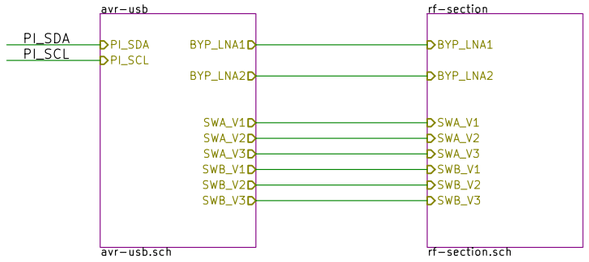

## Pullup Resistors

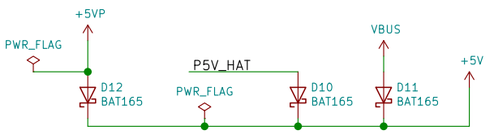
These are just pullup resistors for the I2C bus on the EEPROM.
The resistor values are per the HAT spec.




## Mounting Holes

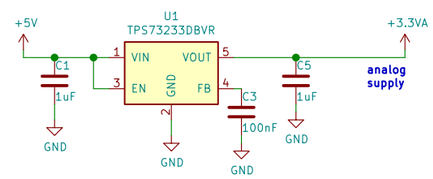









SCH: 505-201
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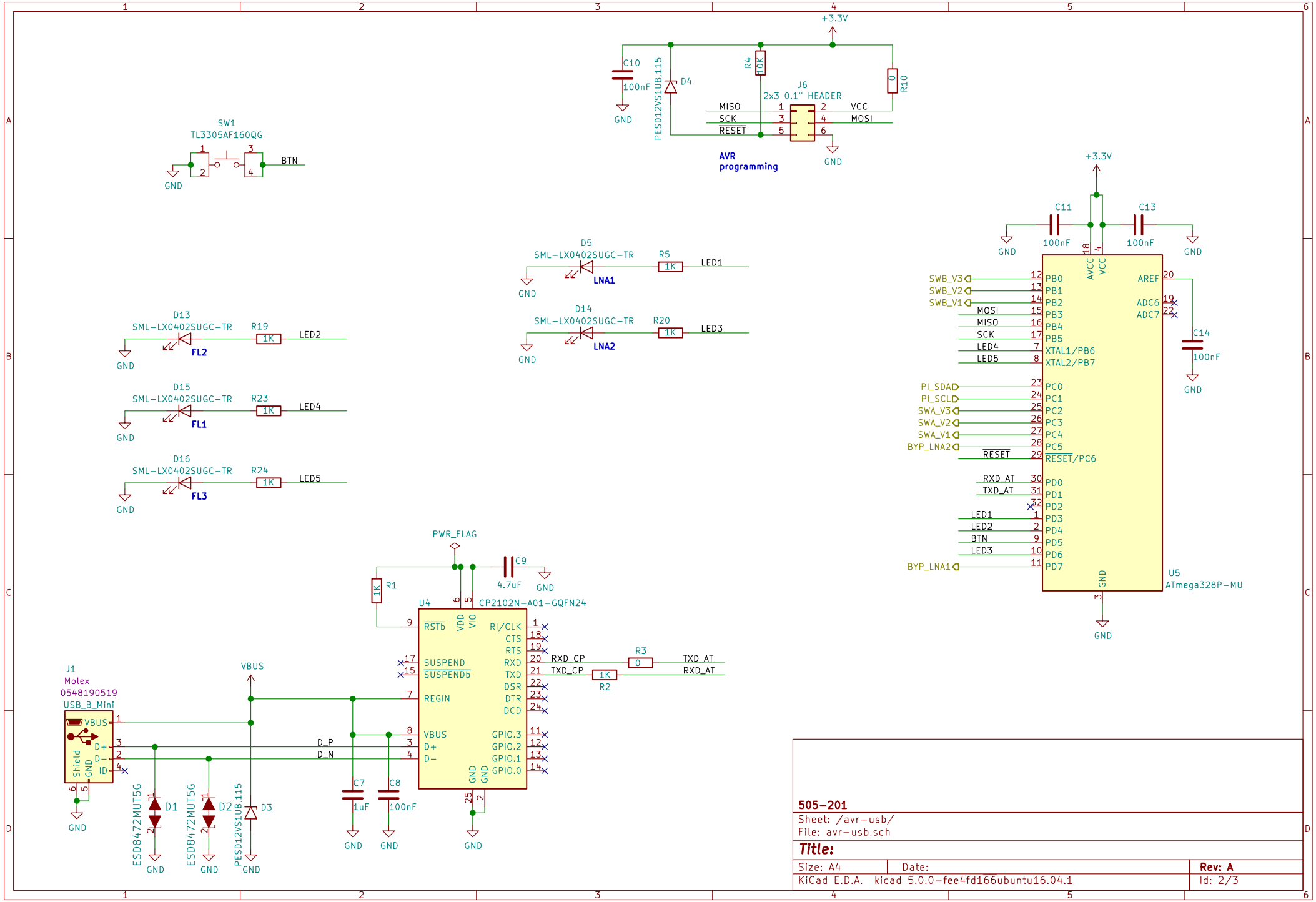
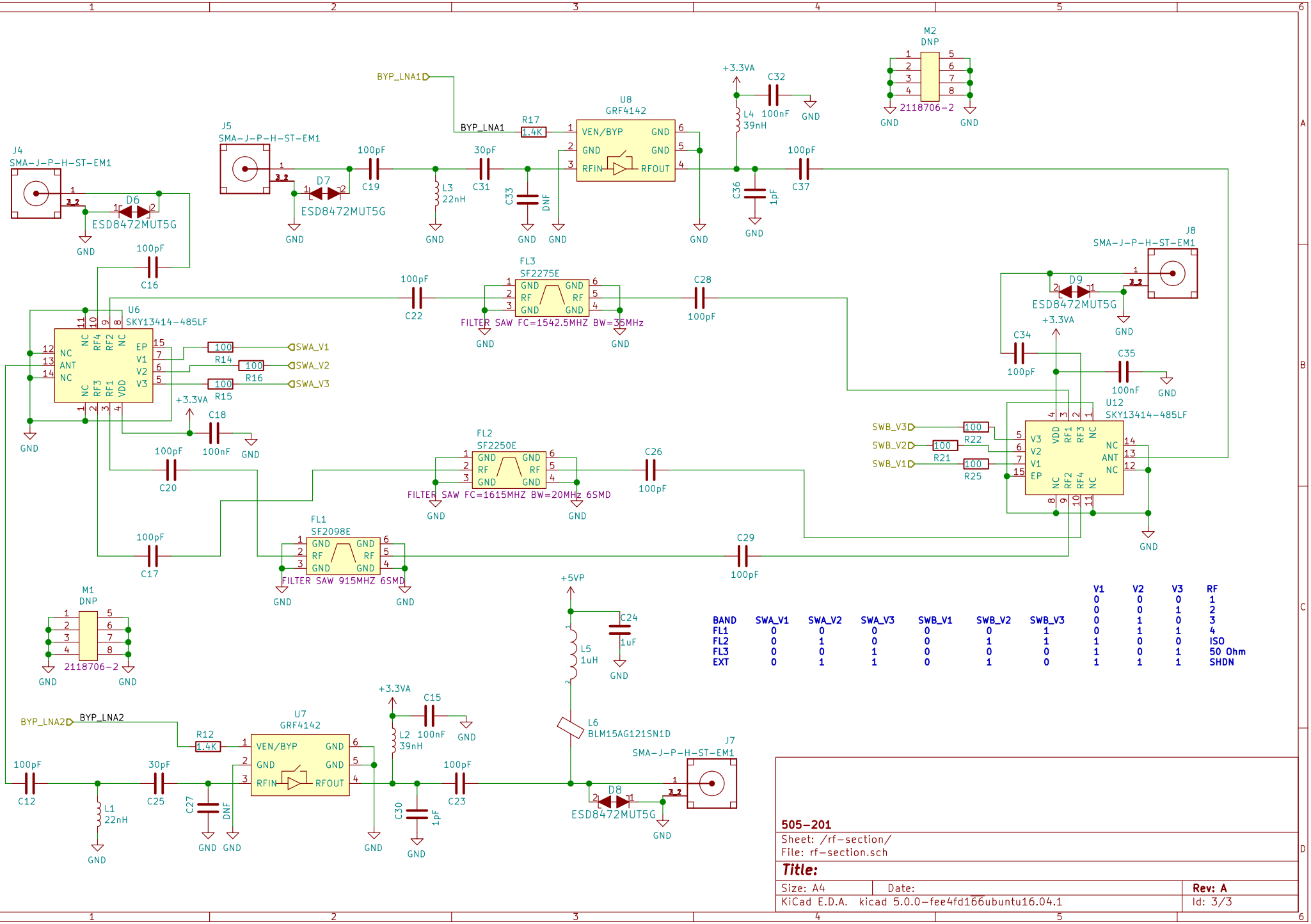
**Title: Multi-Band Low Noise Amplifier**

| Size: A3 | Date: | Rev: A |
|---|---|---|
| KiCad E.D.A. kicad 5.0.0-fee4fd166ubuntu16.04.1 | | Id: 1/3 |


+3.3V
C10
100nF
GND
D4
PESD12VS1UB.115
R4
10K
R10
0
J6
2x3 0.1" HEADER
MISO
SCK
RESET
VCC
MOSI
AVR
programming
SW1
TL3305AF160QG
BTN
D5
SML-LX0402SUGC-TR
R5
1K
LED1
LNA1
D14
R20
LED3
LNA2
D13
R19
LED2
FL2
D15
R23
LED4
FL1
D16
R24
LED5
FL3
C11
C13
C14
U5
ATmega328P-MU
SWB_V3
SWB_V2
SWB_V1
PI_SDA
PI_SCL
SWA_V3
SWA_V2
SWA_V1
BYP_LNA2
BYP_LNA1
RXD_AT
TXD_AT
PWR_FLAG
C9
4.7uF
R1
U4
CP2102N-A01-GQFN24
RXD_CP
TXD_CP
R3
R2
J1
Molex
0548190519
USB_B_Mini
VBUS
D_P
D_N
ESD8472MUT5G
C7
1uF
C8
505-201
Sheet: /avr-usb/
File: avr-usb.sch
Title:
Size: A4
Date:
Rev: A
KiCad E.D.A. kicad 5.0.0-fee4fd166ubuntu16.04.1
Id: 2/3




| BAND | SWA_V1 | SWA_V2 | SWA_V3 | SWB_V1 | SWB_V2 | SWB_V3 | V1 | V2 | V3 | RF |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 0 | 0 | 0 | 1 |
| | | | | | | | 0 | 0 | 1 | 2 |
| | | | | | | | 0 | 1 | 0 | 3 |
| FL1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 4 |
| FL2 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | ISO |
| FL3 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 50 Ohm |
| EXT | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | SHDN |

505-201

Sheet: /rf-section/

File: rf-section.sch

**Title:**

Size: A4 | Date: | **Rev: A**

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