Raspberry Interface

File: raspberry.kicad_sch

LEDs

File: leds.kicad_sch

I2C

File: i2c.kicad_sch

Peak Detector Interface

File: peak_detector_interface.kicad_sch

GPS

File: gps.kicad_sch

Input Stage

File: input_stage.kicad_sch

Digital Pulse Processor

File: digital_pulseprocessor.kicad_sch

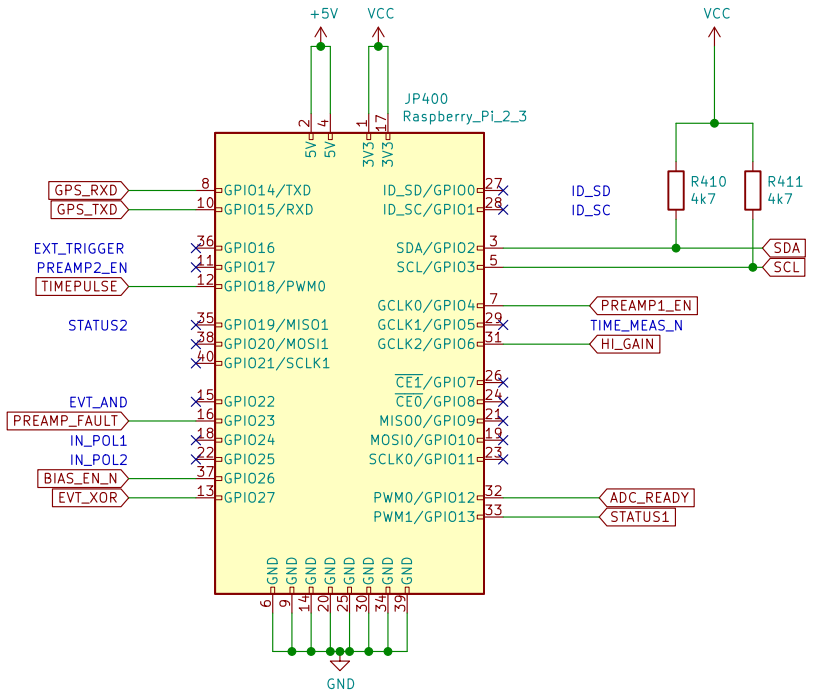
Power and BIAS Supply

File: power_and_bias_supply.kicad_sch

Sheet: /
File: cdu-lite.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.99.0-10928-g75ce97e260)		Id: 1/9

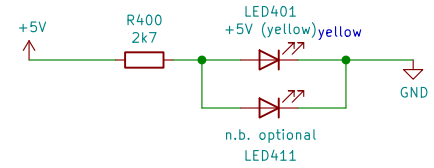


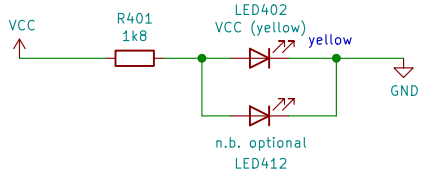
H1 MountingHole
H2 MountingHole
H3 MountingHole
H4 MountingHole

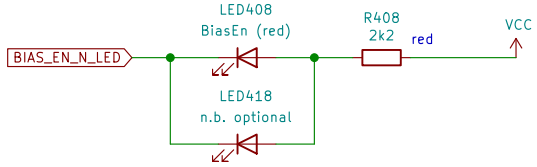
Sheet: /Raspberry Interface/
File: raspberry.kicad_sch

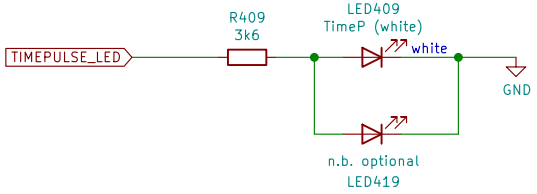
Title:

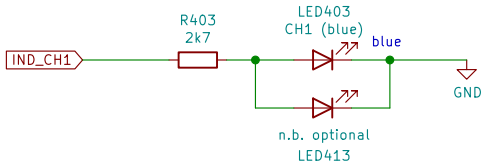
Size: A4 | Date: | **Rev:**
KiCad E.D.A. kicad (5.99.0-10928-g75ce97e260) | Id: 2/9

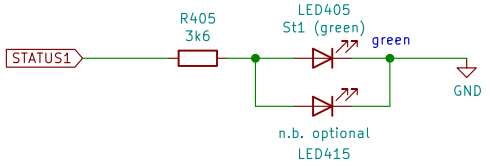








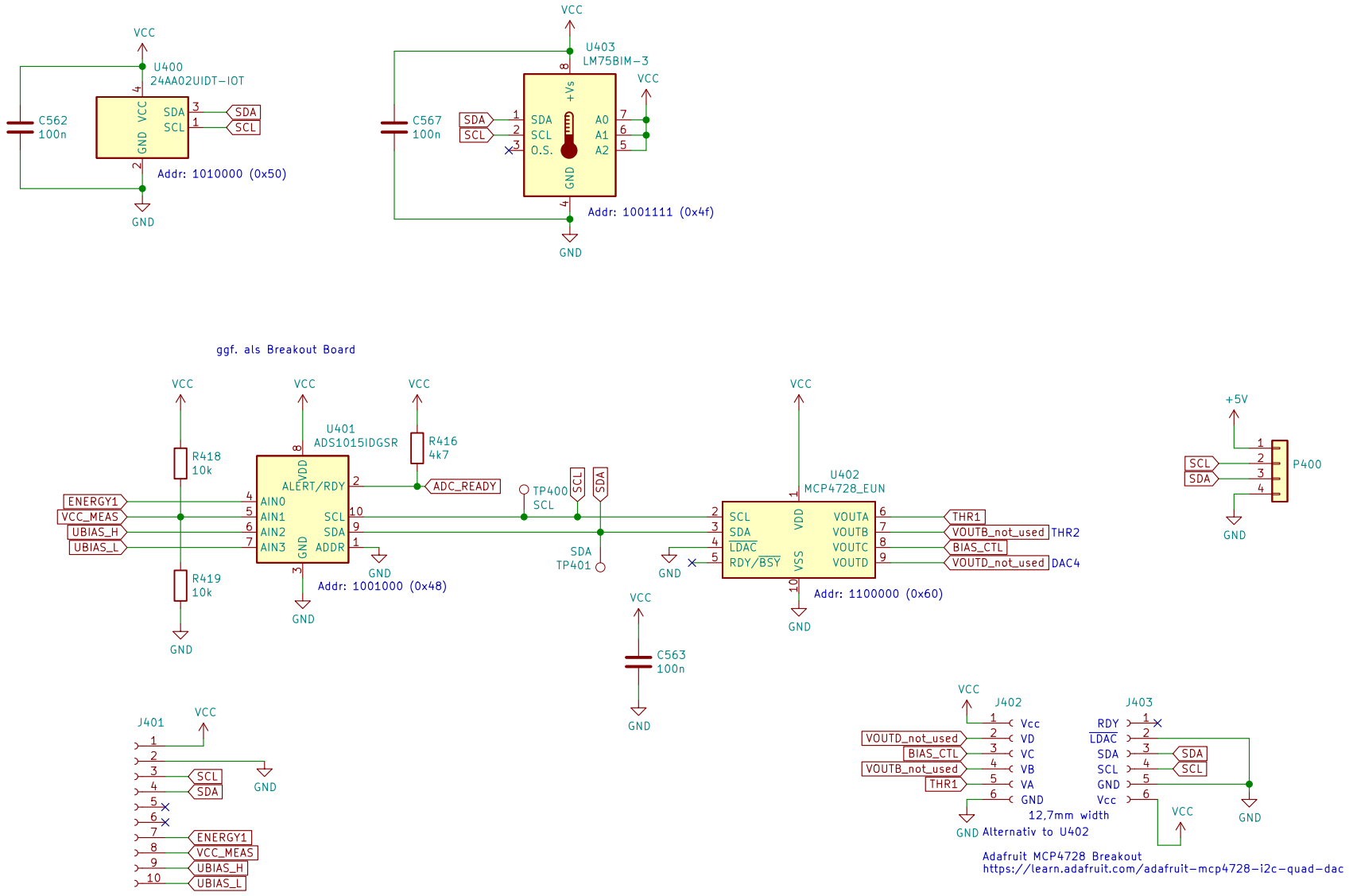




Sheet: /LEDs/
File: leds.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.99.0-10928-g75ce97e260)		Id: 3/9



Alternativ to U401 socket for a ADS1015 Breakout Board
eg.:
ADS1015 12-Bit ADC - 4 Channel with Programmable Gain Amplifier
https://www.adafruit.com/product/1083

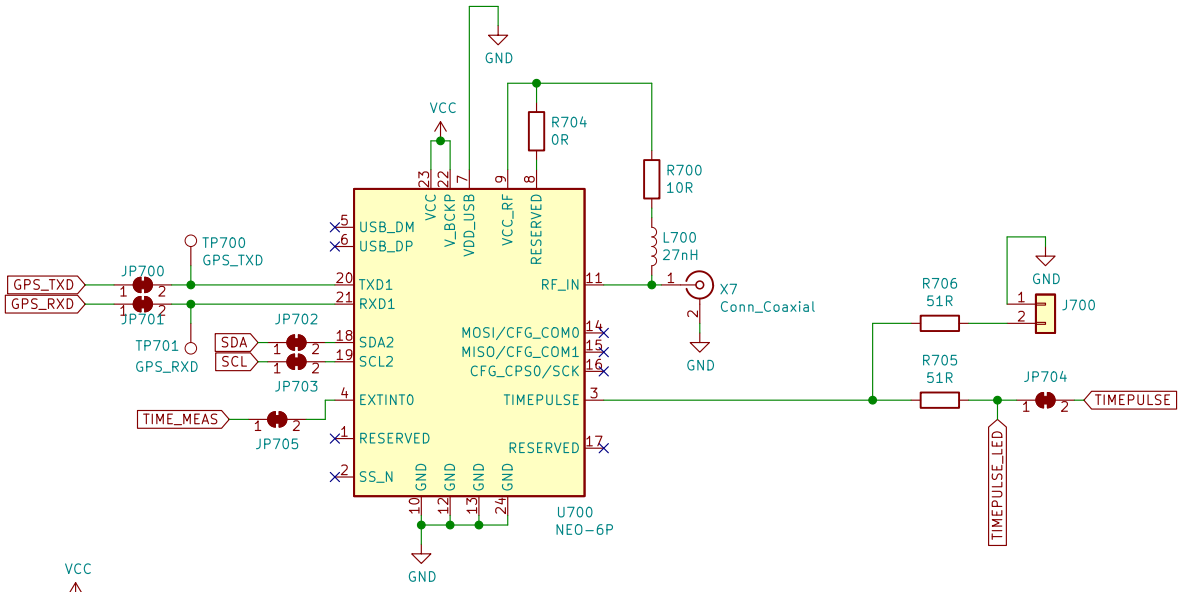
DEBO AMP 12BIT 2 Entwicklerboards
https://www.reichelt.at/at/de/entwicklerboards-verstaerker-platine-4-kanal-12-bit-ads1015-debo-amp-12bit-2-p266041.html

Sheet: /I2C/
File: i2c.kicad_sch

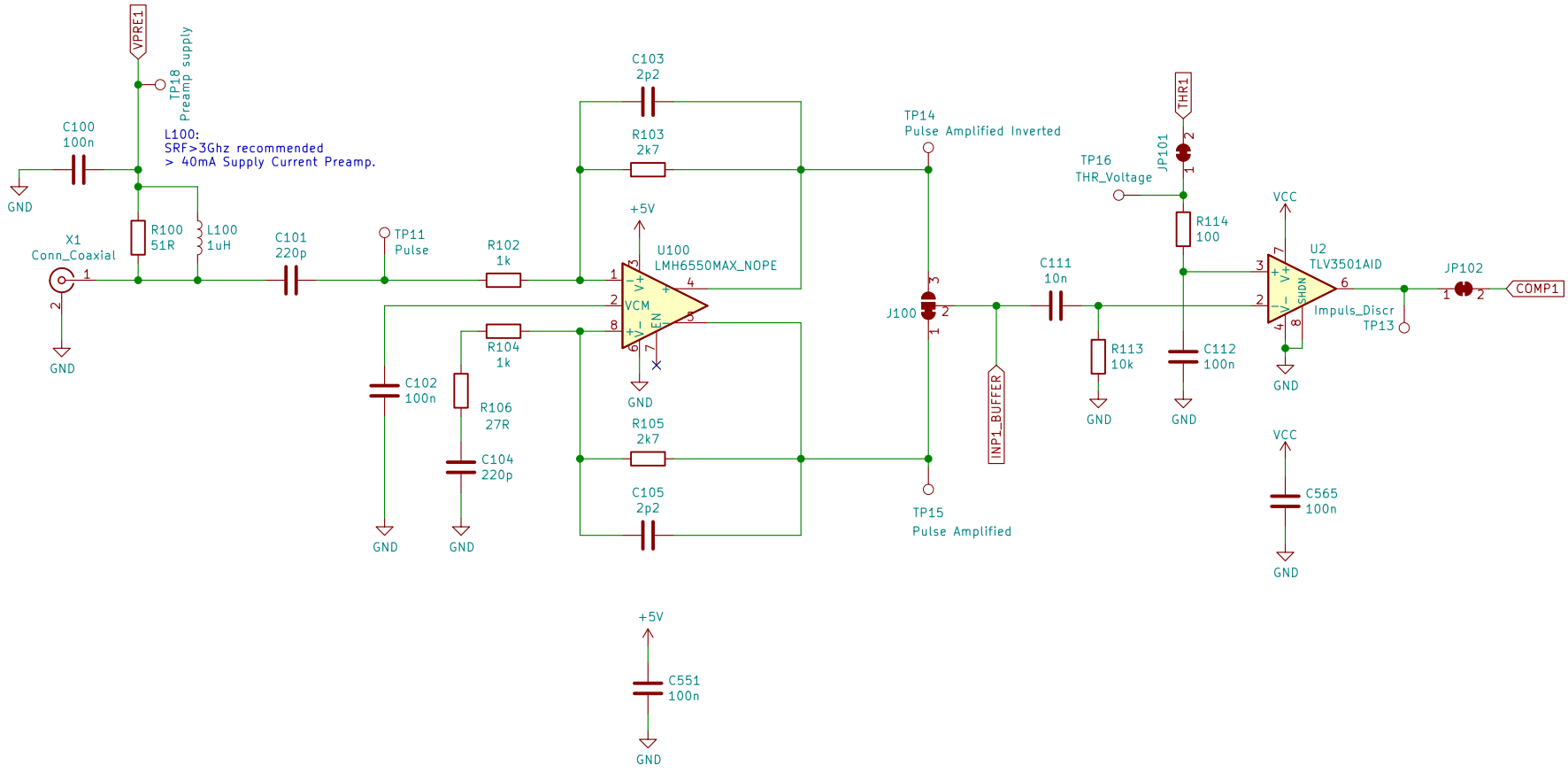
Title:

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

KiCad E.D.A. kicad (5.99.0-10928-g75ce97e260) | Id: 4/9



Sheet: /GPS/ File: gps.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.99.0-10928-g75ce97e260)		Id: 5/9



Sheet: /Input Stage/		
File: input_stage.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.99.0-10928-g75ce97e260)		Id: 6/9

2 Variants

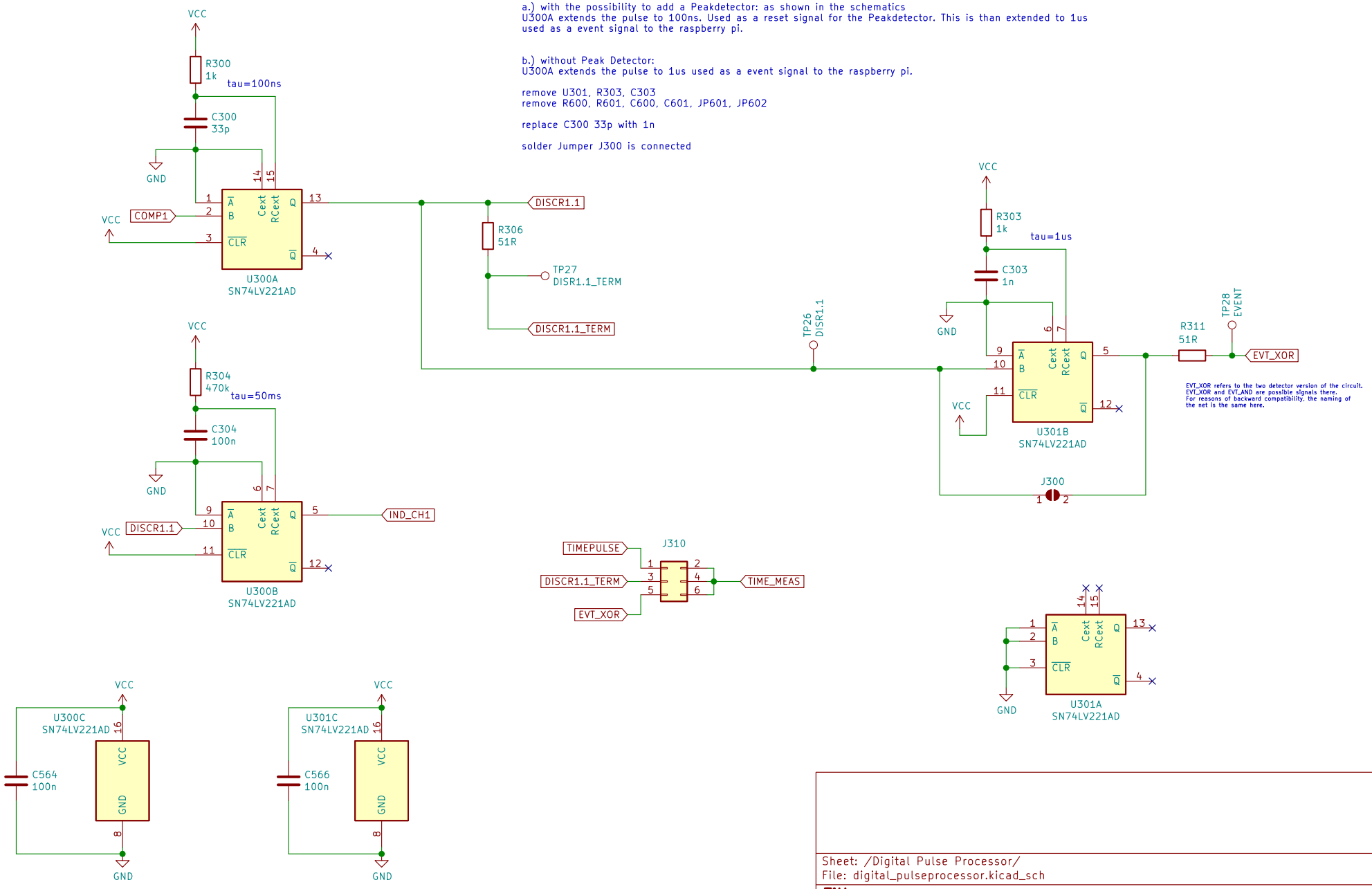
a.) with the possibility to add a Peakdetector: as shown in the schematics
U300A extends the pulse to 100ns. Used as a reset signal for the Peakdetector. This is than extended to 1us used as a event signal to the raspberry pi.

b.) without Peak Detector:
U300A extends the pulse to 1us used as a event signal to the raspberry pi.

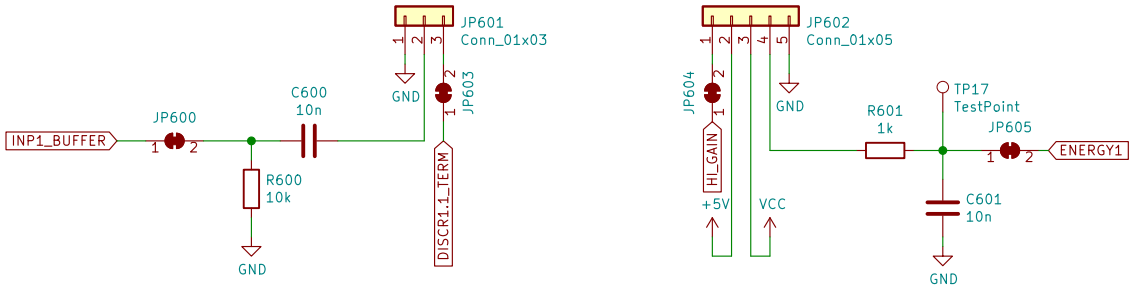
remove U301, R303, C303
remove R600, R601, C600, C601, JP601, JP602

replace C300 33p with 1n

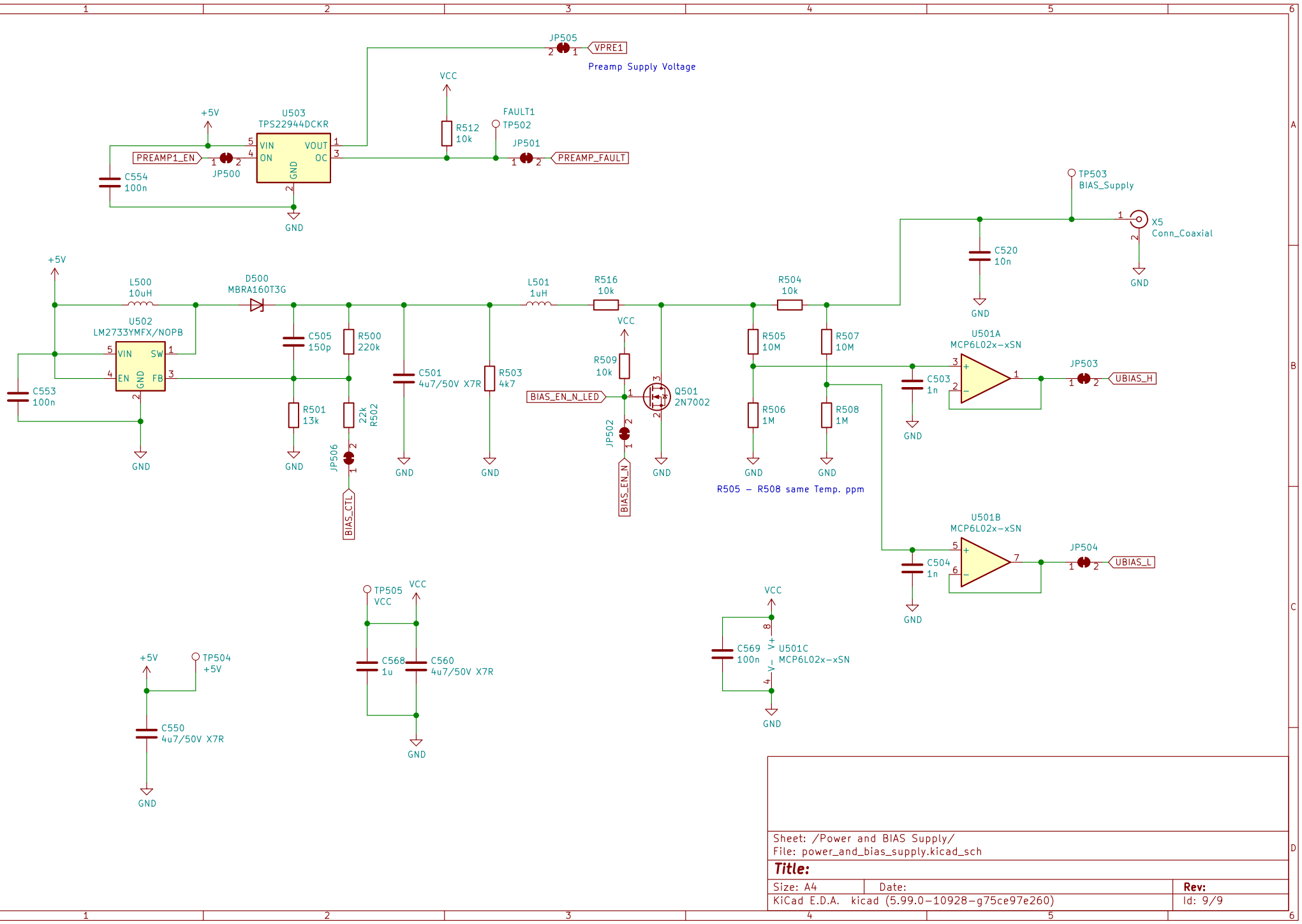
solder Jumper J300 is connected



Sheet: /Digital Pulse Processor/		
File: digital_pulseprocessor.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.99.0-10928-g75ce97e260)		Id: 7/9



Sheet: /Peak Detector Interface/		
File: peak_detector_interface.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. kicad (5.99.0-10928-g75ce97e260)		Id: 8/9


JP505
VPRE1
Preamp Supply Voltage
VCC
R512
10k
FAULT1
TP502
JP501
PREAMP_FAULT
+5V
U503
TPS22944DCKR
VIN
VOUT
ON
OC
GND
PREAMP1_EN
JP500
C554
100n
GND
TP503
BIAS_Supply
X5
Conn_Coaxial
C520
10n
+5V
L500
10uH
D500
MBRA160T3G
L501
1uH
R516
10k
R504
10k
U502
LM2733YMFX/NOPB
VIN
SW
EN
GND
FB
C553
100n
C505
150p
R500
220k
R501
13k
22k
R502
JP506
BIAS_CTL
C501
4u7/50V X7R
R503
4k7
VCC
R509
10k
BIAS_EN_N_LED
Q501
2N7002
JP502
BIAS_EN_N
R505
10M
R507
10M
R506
1M
R508
1M
R505 – R508 same Temp. ppm
U501A
MCP6L02x-xSN
C503
1n
JP503
UBIAS_H
U501B
MCP6L02x-xSN
C504
1n
JP504
UBIAS_L
TP505
VCC
C568
1u
C560
4u7/50V X7R
U501C
MCP6L02x-xSN
C569
100n
TP504
+5V
C550
4u7/50V X7R
Sheet: /Power and BIAS Supply/
File: power_and_bias_supply.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. kicad (5.99.0-10928-g75ce97e260)
Id: 9/9