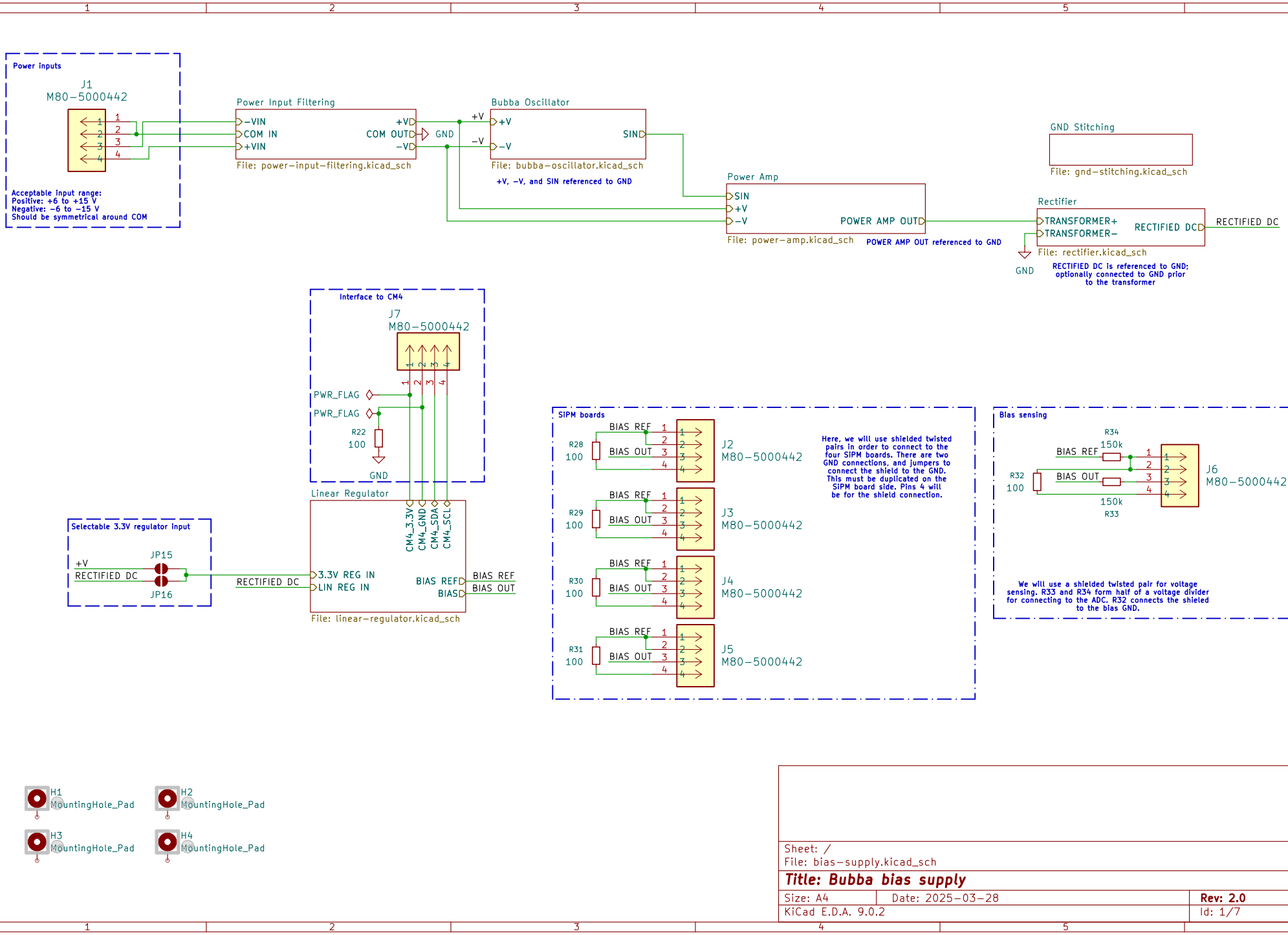
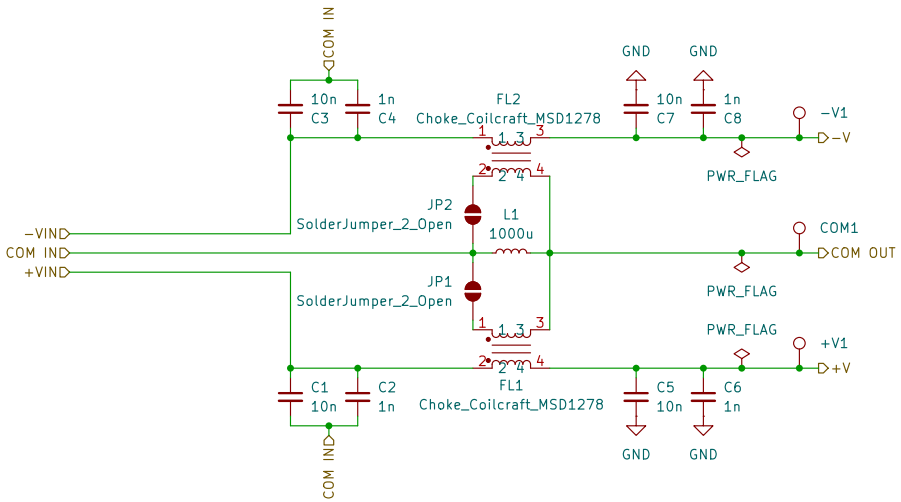
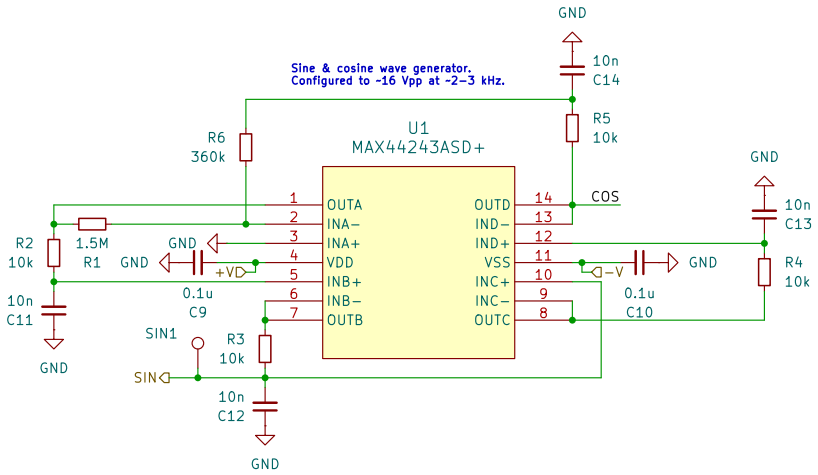

Power inputs
J1
M80-5000442
Acceptable input range:
Positive: +6 to +15 V
Negative: −6 to −15 V
Should be symmetrical around COM
Power Input Filtering
-VIN
COM IN
+VIN
+V
COM OUT
GND
-V
File: power-input-filtering.kicad_sch
Bubba Oscillator
+V
-V
SIN
File: bubba-oscillator.kicad_sch
+V, -V, and SIN referenced to GND
Power Amp
SIN
+V
-V
POWER AMP OUT
File: power-amp.kicad_sch
POWER AMP OUT referenced to GND
GND Stitching
File: gnd-stitching.kicad_sch
Rectifier
TRANSFORMER+
TRANSFORMER-
RECTIFIED DC
RECTIFIED DC
File: rectifier.kicad_sch
GND
RECTIFIED DC is referenced to GND; optionally connected to GND prior to the transformer
Interface to CM4
J7
M80-5000442
PWR_FLAG
PWR_FLAG
R22
100
GND
Linear Regulator
CM4_3.3V
CM4_GND
CM4_SDA
CM4_SCL
3.3V REG IN
LIN REG IN
BIAS REF
BIAS
BIAS REF
BIAS OUT
File: linear-regulator.kicad_sch
Selectable 3.3V regulator input
+V
RECTIFIED DC
JP15
JP16
RECTIFIED DC
SIPM boards
R28
100
BIAS REF
BIAS OUT
J2
M80-5000442
R29
100
J3
M80-5000442
R30
100
J4
M80-5000442
R31
100
J5
M80-5000442
Here, we will use shielded twisted pairs in order to connect to the four SIPM boards. There are two GND connections, and jumpers to connect the shield to the GND. This must be duplicated on the SIPM board side. Pins 4 will be for the shield connection.
Bias sensing
R34
150k
BIAS REF
R32
100
BIAS OUT
150k
R33
J6
M80-5000442
We will use a shielded twisted pair for voltage sensing. R33 and R34 form half of a voltage divider for connecting to the ADC. R32 connects the shield to the bias GND.
H1
MountingHole_Pad
H2
MountingHole_Pad
H3
MountingHole_Pad
H4
MountingHole_Pad
Sheet: /
File: bias-supply.kicad_sch
Title: Bubba bias supply
Size: A4
Date: 2025-03-28
Rev: 2.0
KiCad E.D.A. 9.0.2
Id: 1/7

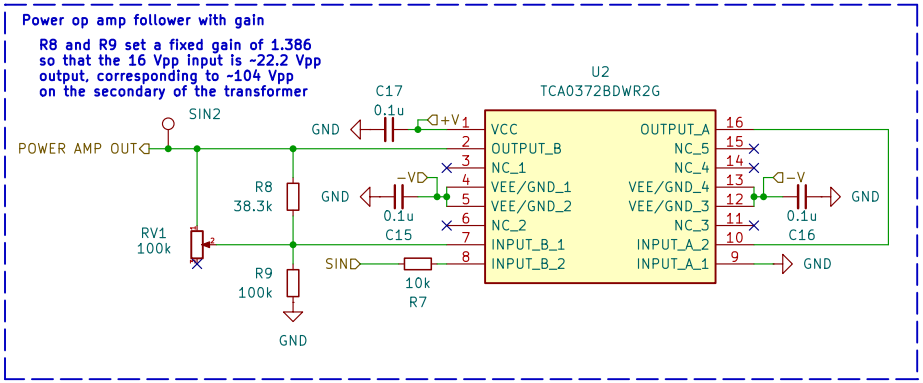


GND or REF for these bypass capacitors on the input of the CMC???

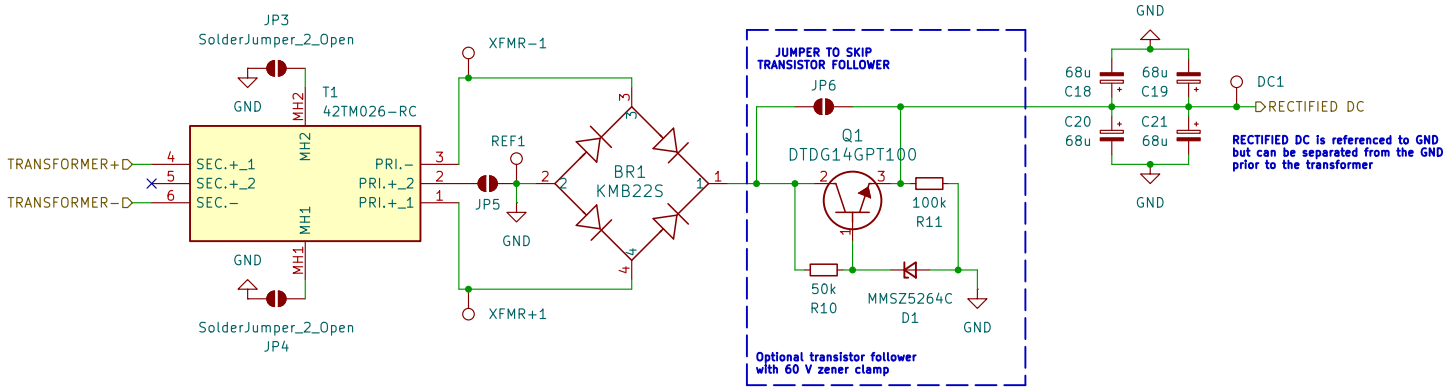
Sheet: /Power Input Filtering/		
File: power-input-filtering.kicad_sch		
Title: Power input filtering		
Size: A4	Date: 2025-03-28	**Rev: 1.0**
KiCad E.D.A. 9.0.2		Id: 2/7



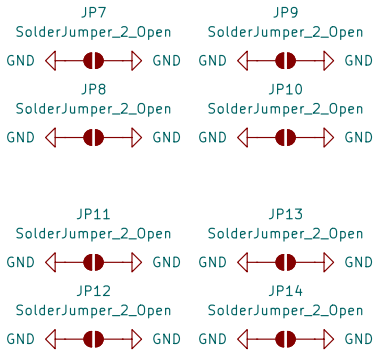
Sheet: /Bubba Oscillator/		
File: bubba–oscillator.kicad_sch		
Title: Bubba oscillator		
Size: A4	Date: 2025–03–28	**Rev: 1.0**
KiCad E.D.A. 9.0.2		Id: 3/7



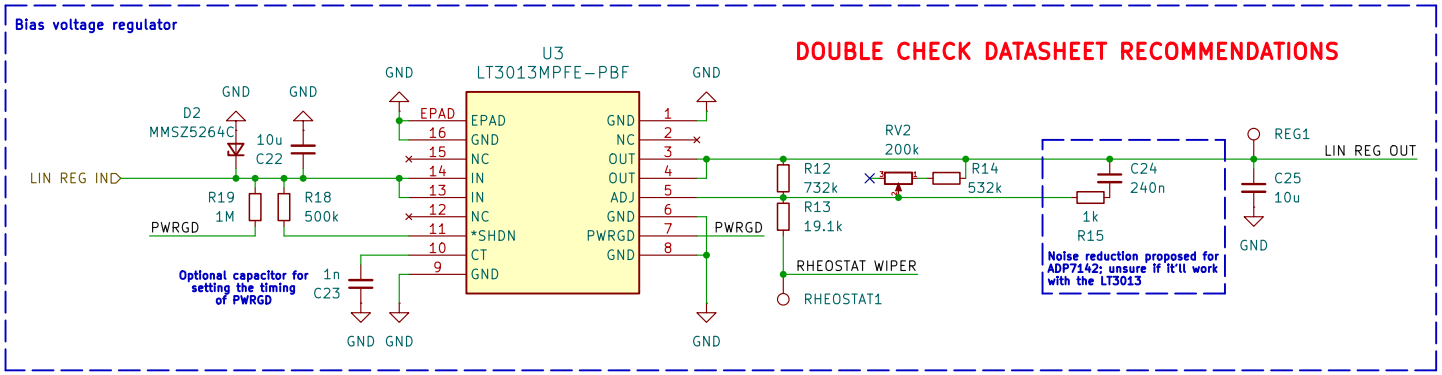
Sheet: /Power Amp/		
File: power-amp.kicad_sch		
Title: Power amp with controllable gain		
Size: A4	Date: 2025-03-28	**Rev: 1.0**
KiCad E.D.A. 9.0.2		Id: 4/7

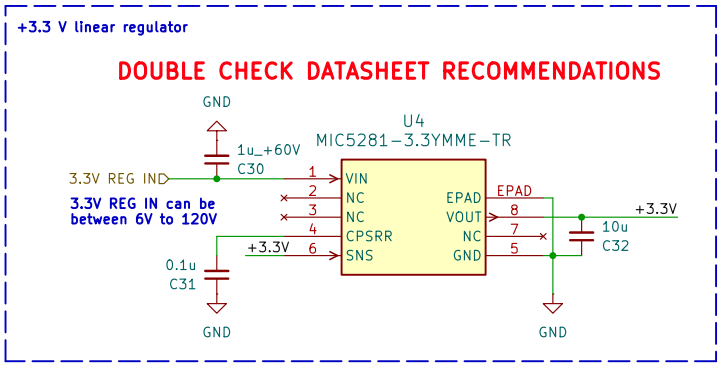


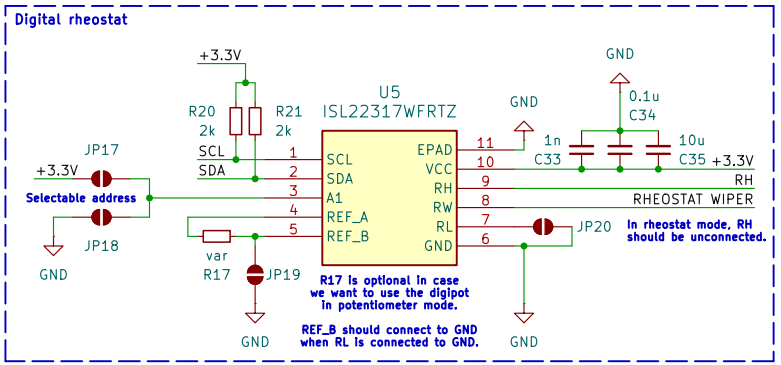
Sheet: /Rectifier/		
File: rectifier.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.2		Id: 5/7

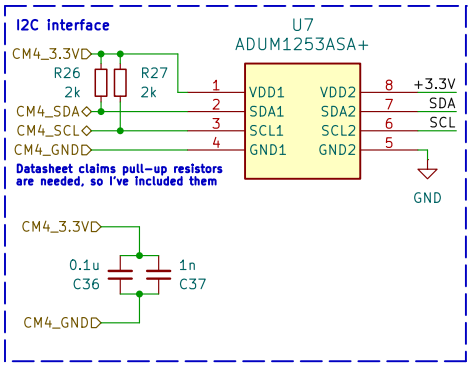


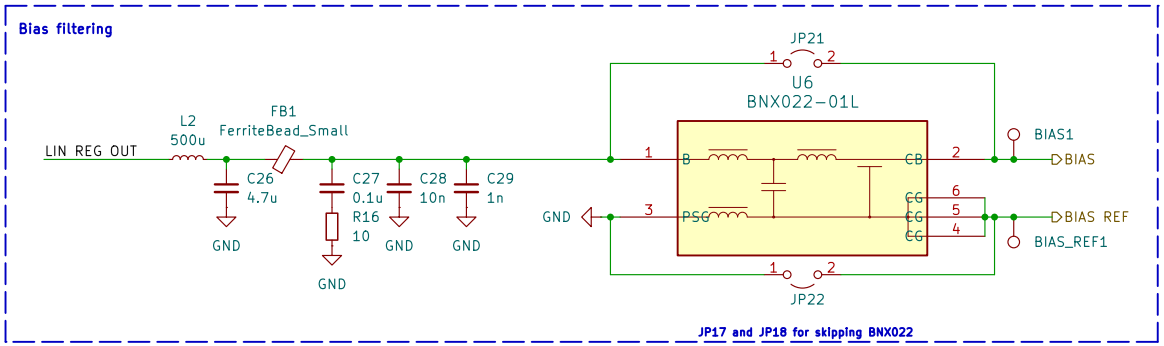
Sheet: /GND Stitching/		
File: gnd-stitching.kicad_sch		
Title: Ground stitching		
Size: A4	Date: 2025-03-28	**Rev: 1.0**
KiCad E.D.A. 9.0.2		Id: 6/7











Sheet: /Linear Regulator/		
File: linear-regulator.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.2		Id: 7/7