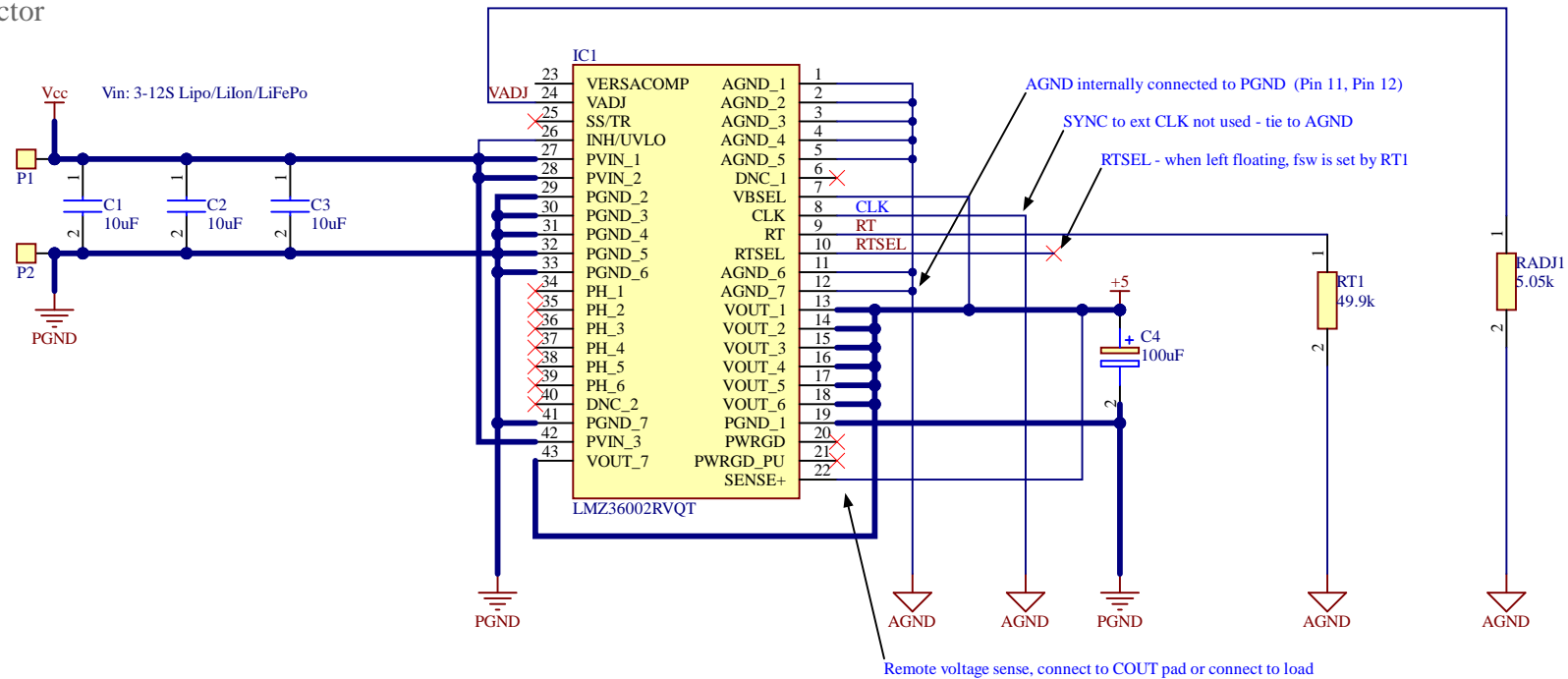
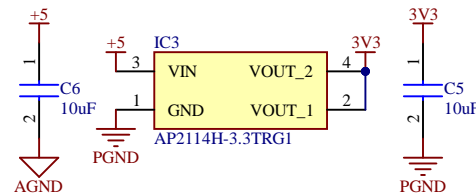



5V Buck Regulator Integrated Inductor

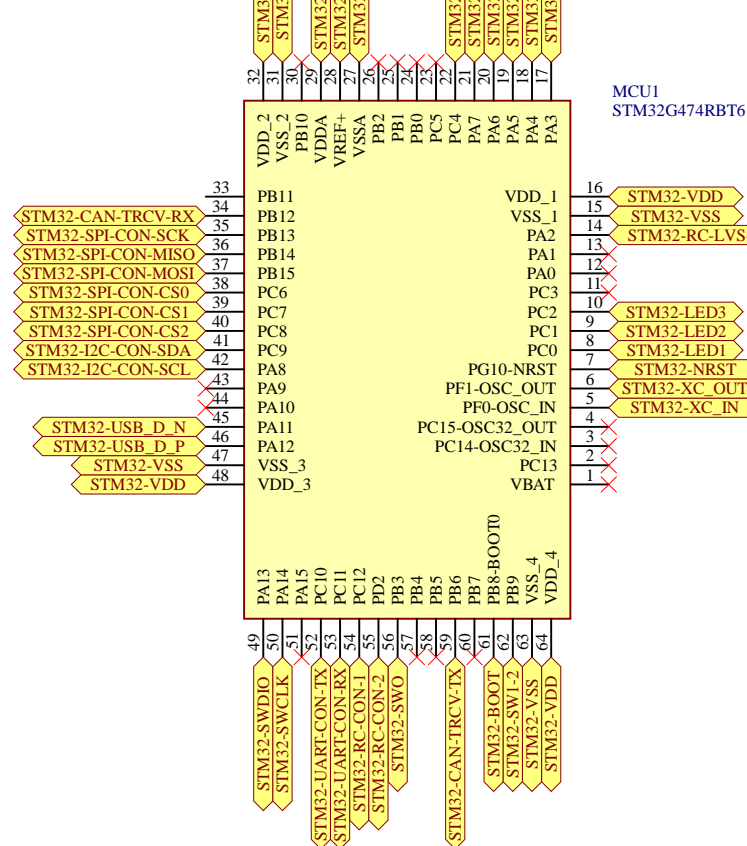


3.3V Linear Regulator

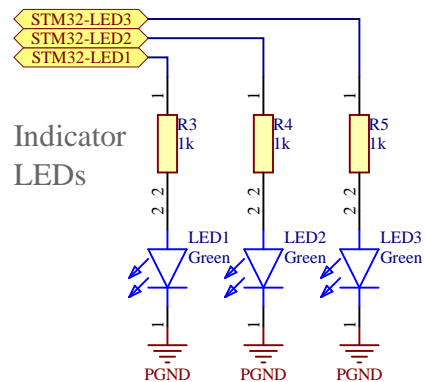


Title <i>modFOC-Power_Module</i>			HTL St. Pölten Thomas Hofmann		
Size: A4	Number: 1	Revision: 1.0	*		
Date: 06.04.2021	Time: 11:52:03	Sheet 1 of 3	*		
File: C:\Users\Thomas\Documents\GitHub\modFOC\Hardware\modFOC-MCU\modFOC-Power_Module.SchDoc					

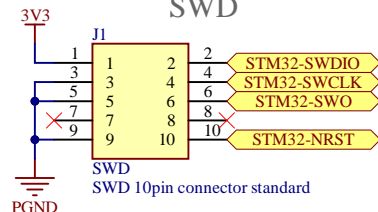
STM32 MCU



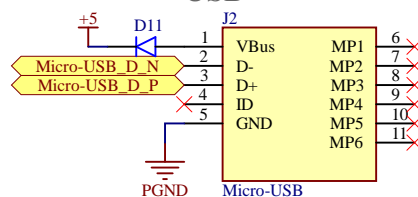
Indicator LEDs



SWD

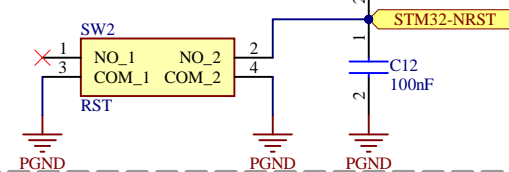


USB

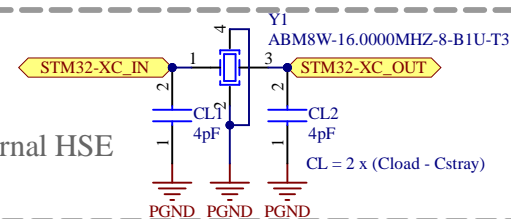


Reset Button

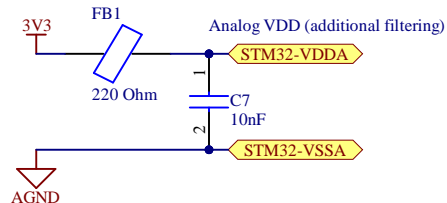
Active low reset of MCU1
(debounce cap to prevent parasitic resets)



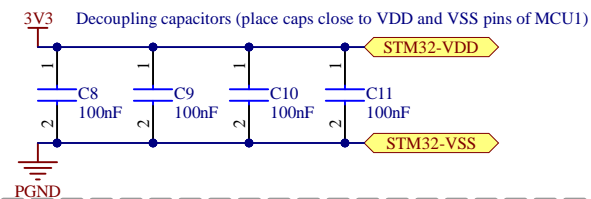
External HSE



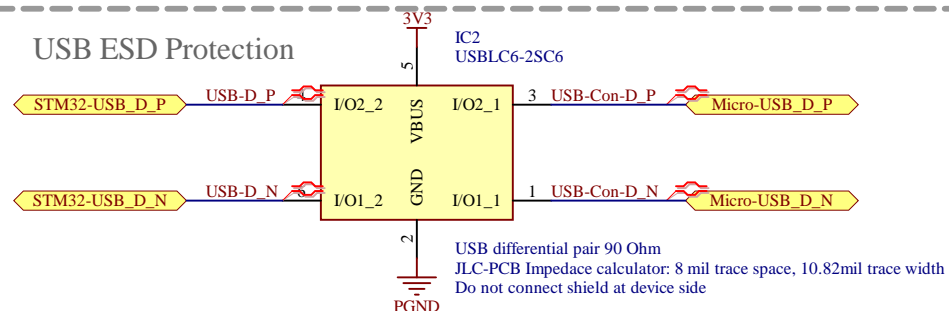
Analog Supply Filtering



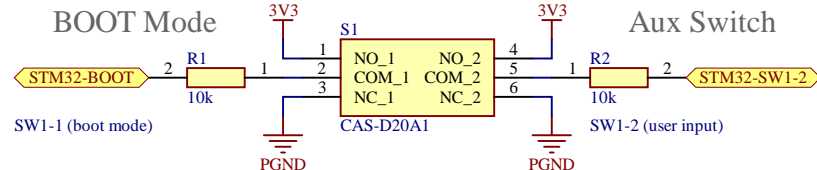
Decoupling Capacitors



USB ESD Protection



BOOT Mode



Aux Switch

Title **modFOC-MCU**

Size: **A4**

Number: 2

Revision: 1.0

Date: 06.04.2021

Time: 11:52:03

Sheet 2 of 3

File: C:\Users\Thomas\Documents\GitHub\modFOC\Hardware\modFOC-MCU\modFOC-MCU.SchDoc

HTL St. Pölten
Thomas Hofmann

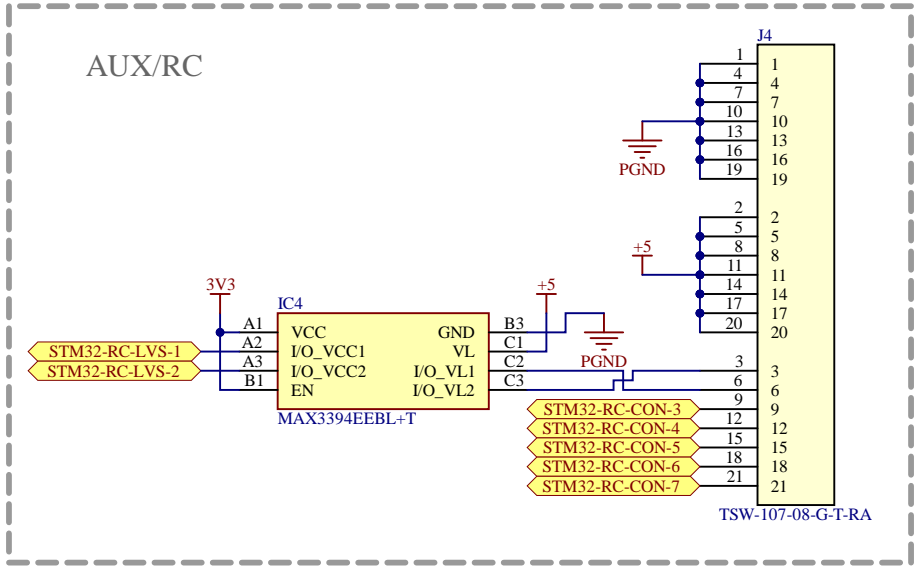
Altium

A

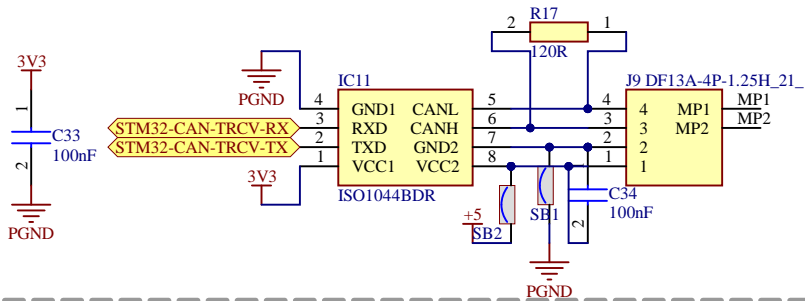
B

C

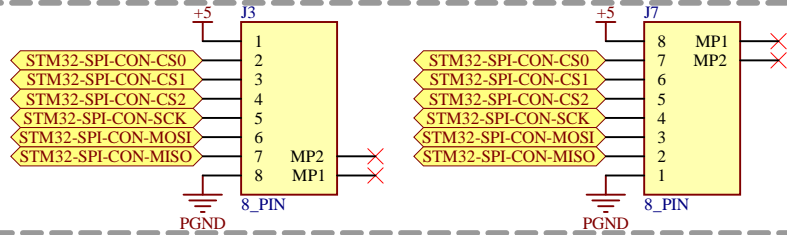
D



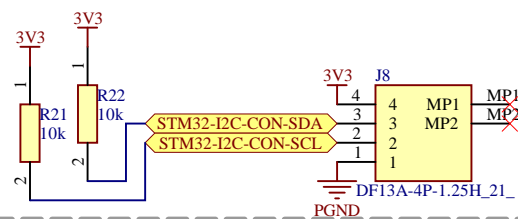
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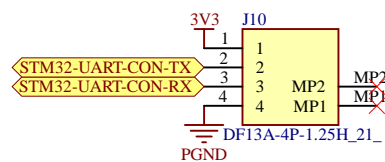
SPI



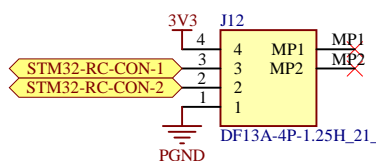
I2C

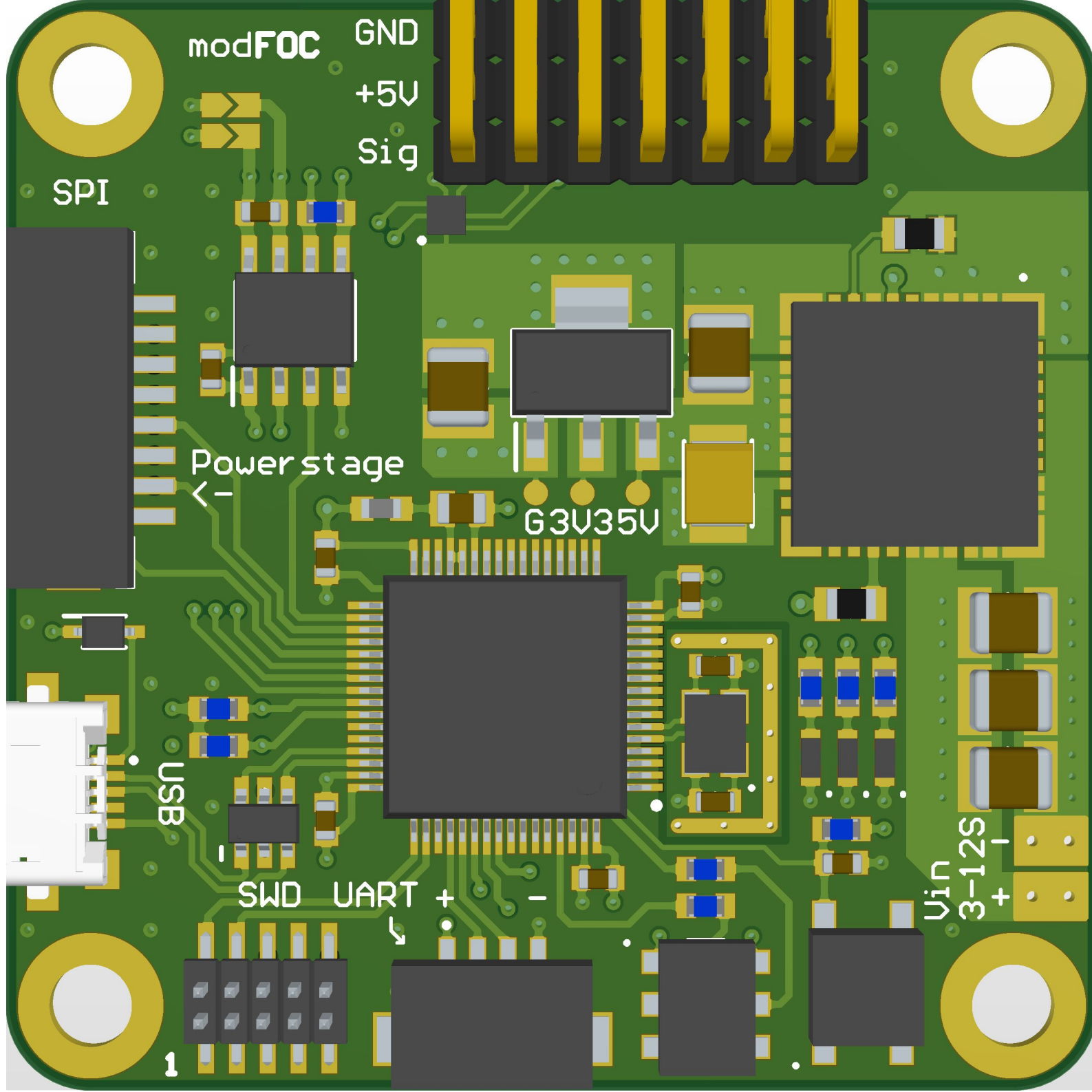


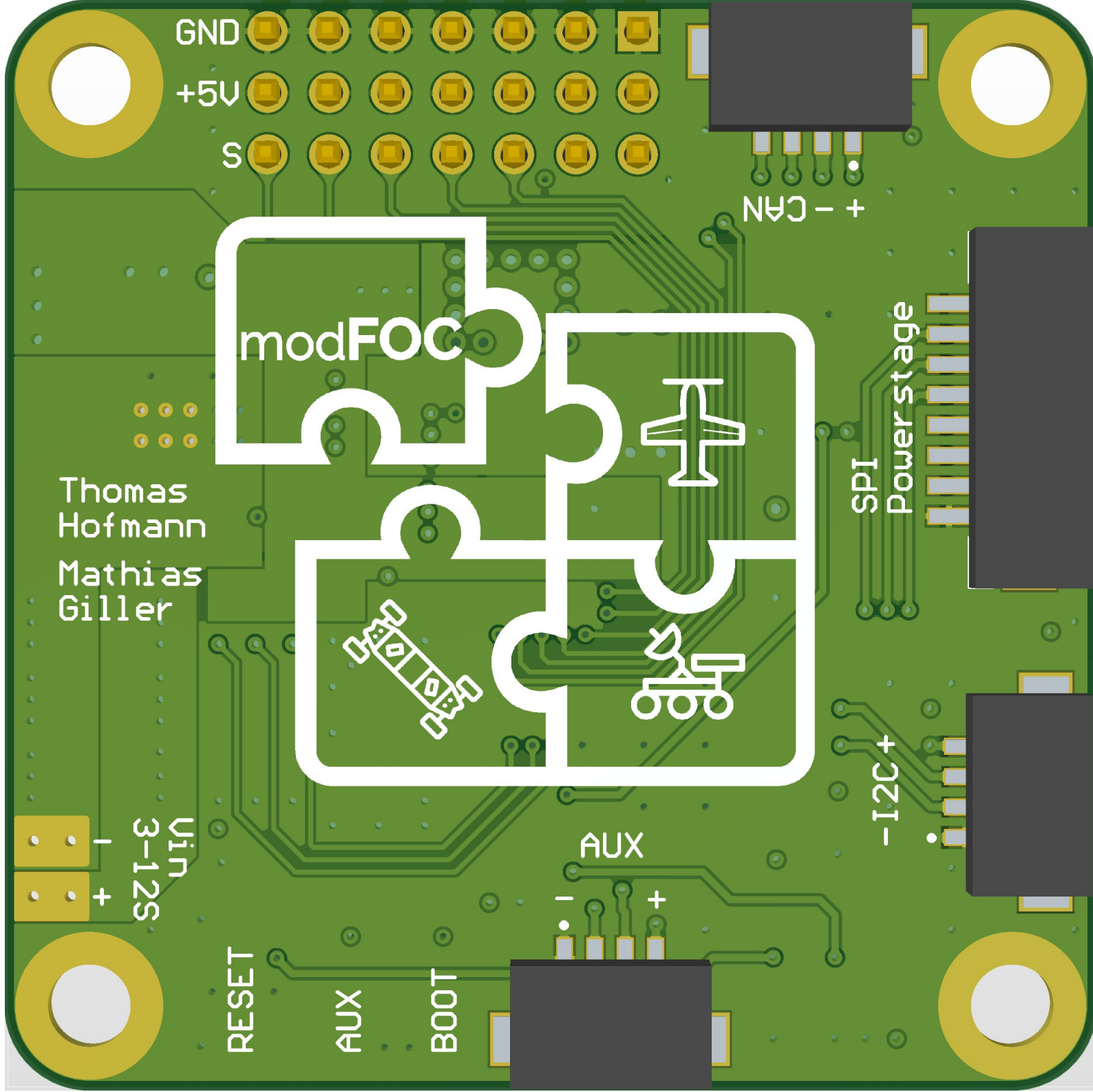
UART

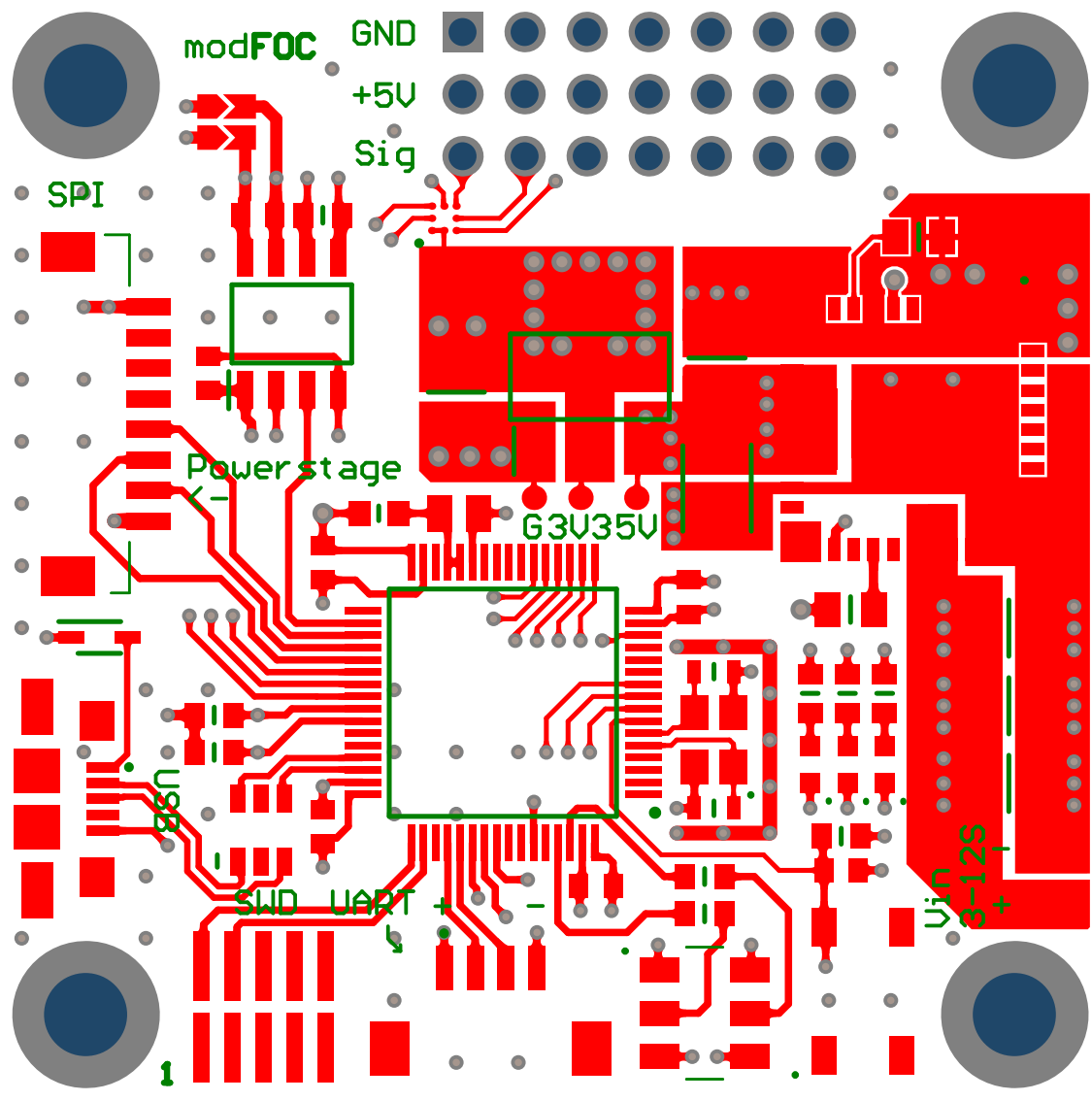


SBUS









GND

+5V

S

+ CAN -

modFOO

Thomas
Hofmann
Mathias
Giller

SPI
Power stage

2.5V

-12V

AUX

RESET

AUX

BOOT

Designator	Description	Comment	Manufacturer_Name	Manufacturer_Part_Number	Footprint	Quantity
C1, C2, C3, C5, C6	Capacitor	10uF	Samsung Electro-Mechanics	CL32B106KMVNNWE	CAPC3225X280N	5
C4	Capacitor Polarised	100uF	Panasonic	8TPE100MAZB	CAPPM3528X200N	1
C7	Capacitor	10nF	Kemet	C0805C103J3GACTU	CAPC2012X88N	1
C8, C9, C10, C11, C12, C33, C34	Capacitor	100nF	Vishay	VJ0603Y104JXJAC	CAPC1608X97N	7
CL1, CL2	Capacitor	4pF	Samsung Electro-Mechanics	CL10C040CB8NNNC	CAPC1608X90N	2
D11	Diode	BAS3010A03WE6327HTSA1	Infineon	BAS3010A03WE6327HTSA1	SOD2513X110N	1
FB1	Ferrite Bead	220 Ohm	TDK	MPZ1608S221ATA00	BEADC1608X75N	1
IC1	Integrated Circuit	LMZ36002RVQT	Texas Instruments	LMZ36002RVQT	LMZ36002RVQR	1
IC2	Integrated Circuit	USBLC6-2SC6	STMicroelectronics	USBLC6-2SC6	SOT95P280X145-6N	1
IC3	Integrated Circuit	AP2114H-3.3TRG1	Diodes Inc.	AP2114H-3.3TRG1	SOT230P700X180-4N	1
IC4	Integrated Circuit	MAX3394EEBL+T	Maxim Integrated	MAX3394EEBL+T	BGA8C50P3X3_160X160X67	1
IC11	Integrated Circuit	ISO1044BDR	Texas Instruments	ISO1044BDR	SOIC127P600X175-8N	1
J1	Connector	SWD	Harwin	M50-3600542R	HU5SP10W40P127_2X5_635X340X420P	1
J2	Connector	Micro-USB	TE Connectivity	1981584-1	19815841	1
J3, J7	Connector	8_PIN	Hirose	DF13A-8P-1.25H(21)	DF13A8P125H21	2
J4	No Description Available	TSW-107-08-G-T-RA		TSW-107-08-G-T-RA	TSW-107-08-T-T-RA_SAI	1
J8, J9, J10, J12	Connector	DF13A-4P-1.25H_21_	Hirose	DF13A-4P-1.25H(21)	DF13A4P125H21	4
LED1, LED2, LED3	LED	Green	OSRAM	LG Q396-PS-35	LGO396PS35	3
MCU1	Integrated Circuit	STM32G474RBT6	STMicroelectronics	STM32G474RBT6	QFP50P1200X1200X160-64N	1
P1, P2		PowerPad			POWER_PAD_S	2
R1, R2, R13, R21, R22	Resistor	10k	Vishay	MCT06030C1002FP500	RESC1608X55N	5
R3, R4, R5	Resistor	1k	Vishay	MCT06030C1001FP500	RESC1608X55N	3
R17	Resistor	120R	Panasonic	ERJPA3J121V	RESC1608X55N	1
RADJ1	Resistor	5.05k	Yageo	RT0805BRD075K05L	R0805	1
RT1	Resistor	49.9k	Panasonic	ERJ-6ENF4992V	R0805	1
S1	Switch	CAS-D20A1	Copal Electronics	CAS-D20A1	CASD20A1	1
SB1, SB2	Solder Bridge	Solder Bridge		RC0603JR-070RL	SOLDER-BRIDGE_R0603-0R	2
SW2	Switch	RST	C & K COMPONENTS	PTS 647 SK38 SMTR2 LFS	PTS647SK38SMTR2LFS	1
Y1	Crystal or Oscillator	ABM8W-16.0000MHZ-8-B1U-T3	ABRACON	ABM8W-16.0000MHZ-8-B1U-T3	ABM8W160000MHZ8B1UT3	1