

B-U585I-IOT02A

MB1551

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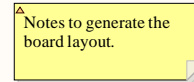
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- Sheet 16 : Mechanical Parts

Legend

General comment such as function title, configuration, ...

Text to be added to silkscreen.

Warning text.



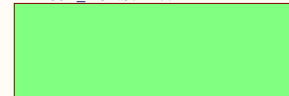
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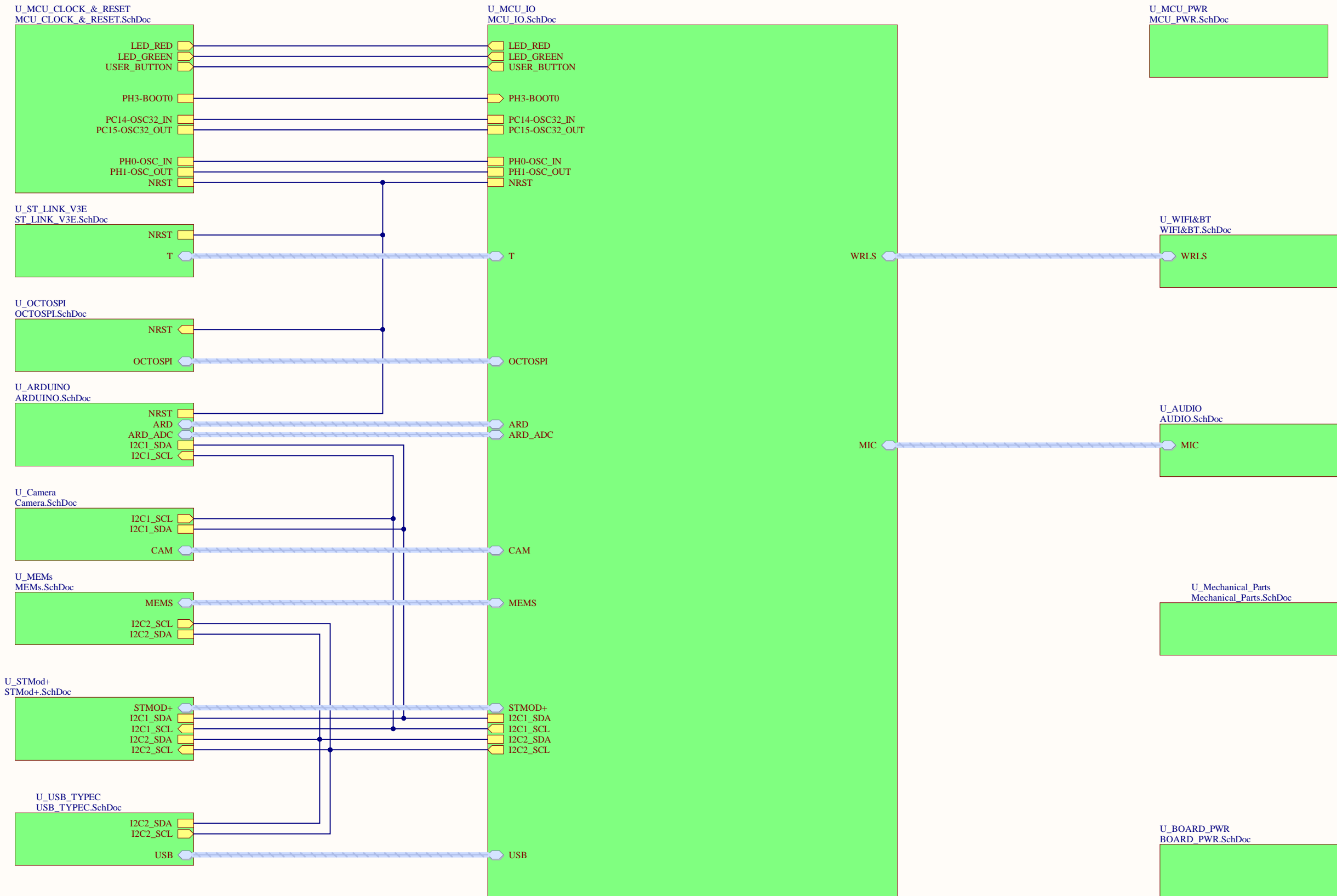
By using the enclosed reference designs, schematics, PC board layouts, and documentation, in hardcopy or CAD tool file format (collectively, the “Reference Material”), You are agreeing to be bound by the terms and conditions of this Agreement. Do not use the Reference Material until You have read and agreed to this Agreement terms and conditions. The use of the Reference Material automatically implies the acceptance of the Agreement terms and conditions.

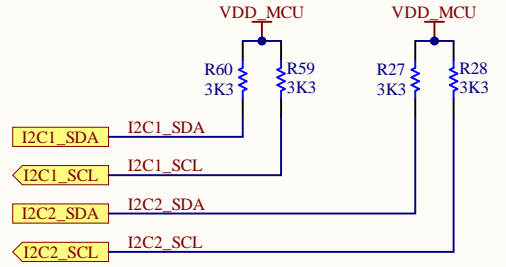
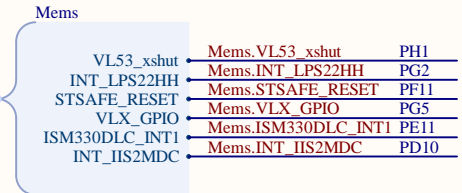
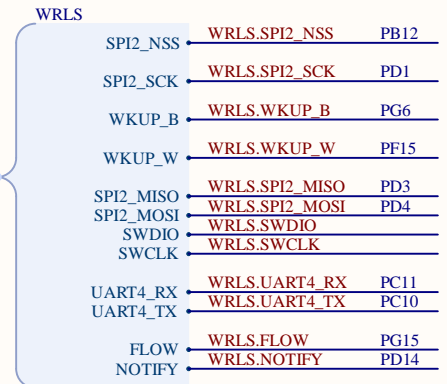
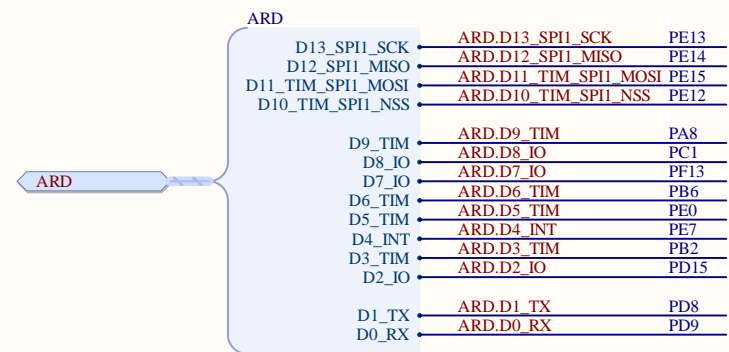
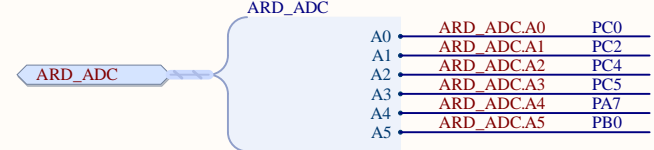
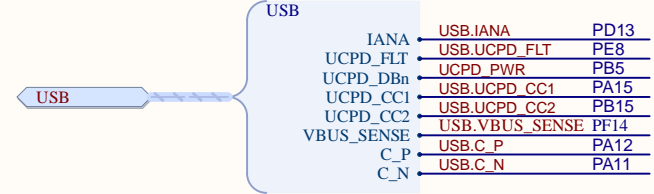
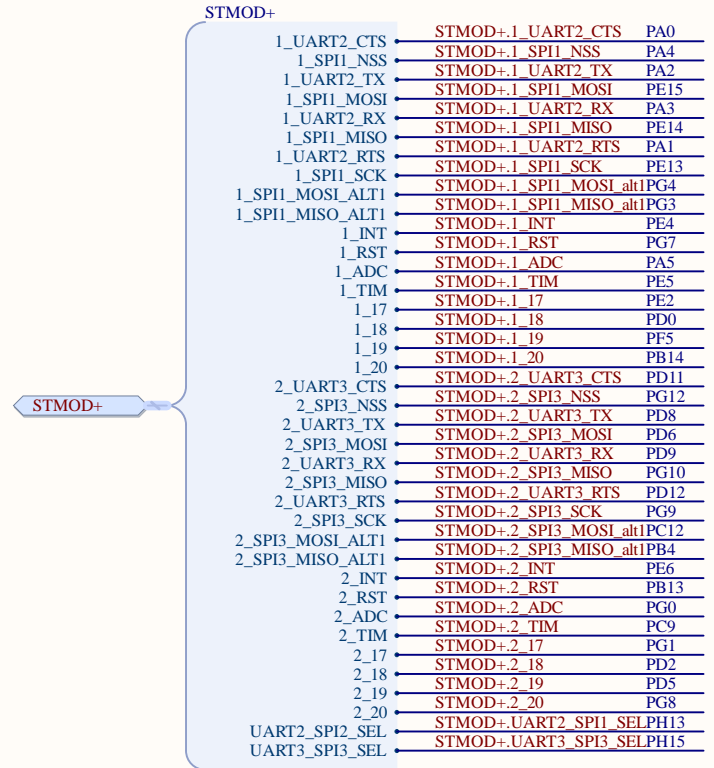
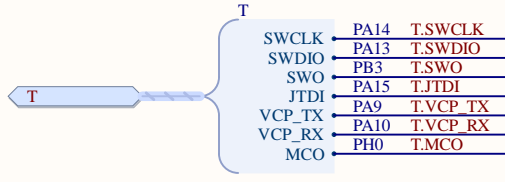
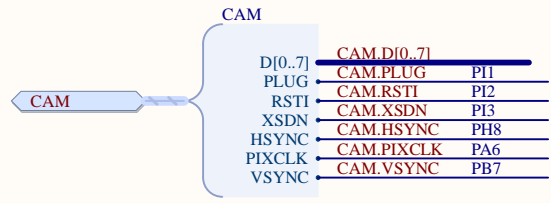
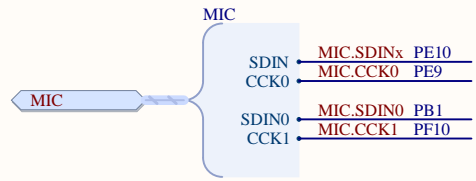
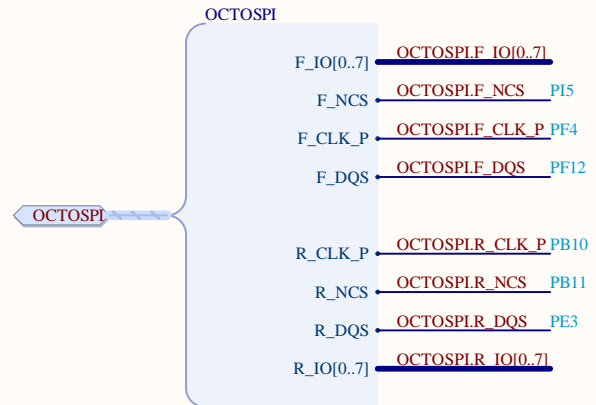
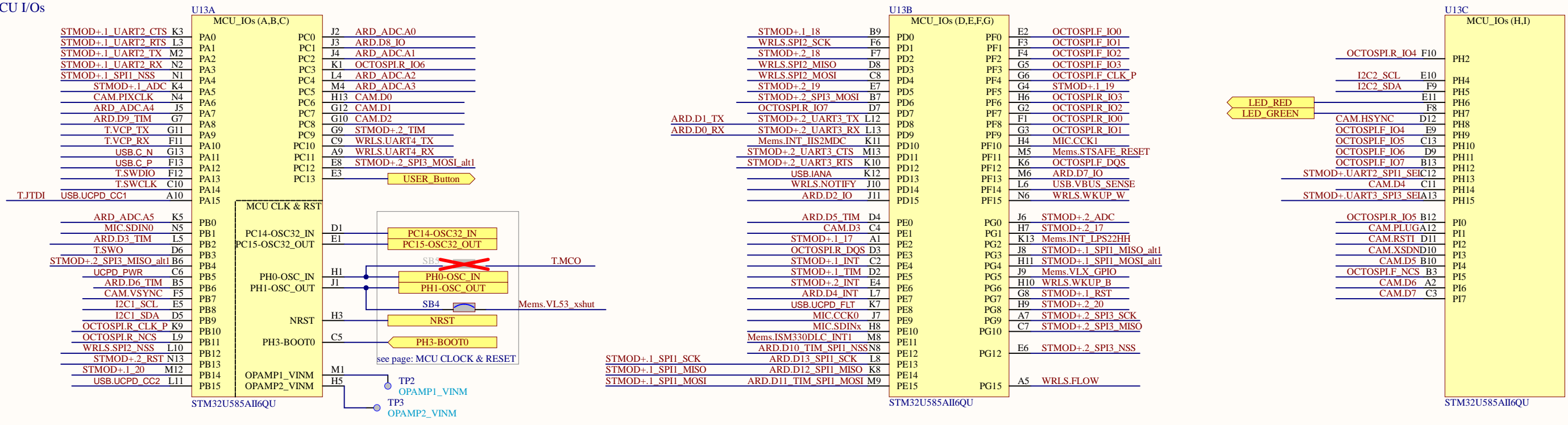
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U_MB1551_TOP
MB1551_TOP.SchDoc



Title: Project overview		
Project: B-U585I-IOT02A		
Variant: U585I		
Revision: C-02	Reference: MB1551	
Size: A4	Date: 09 SEPT 2021	Sheet: 1 of 16

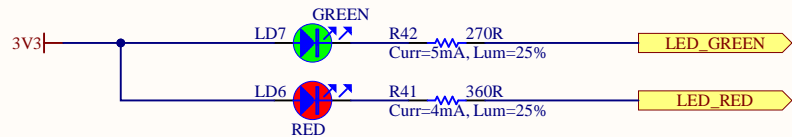




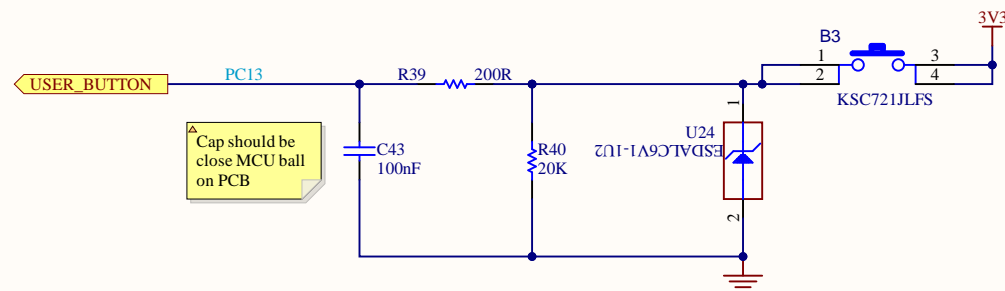
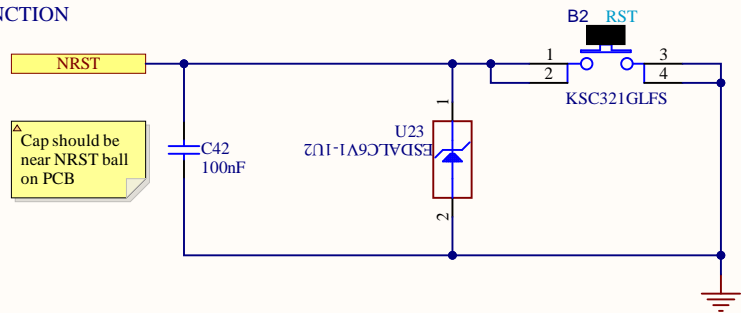
LIMITATION: Jtag exclusive with USB_CC1



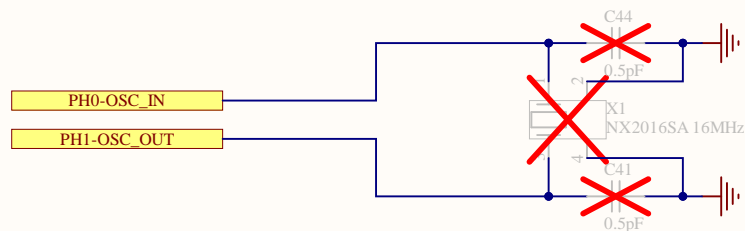
USER LEDs



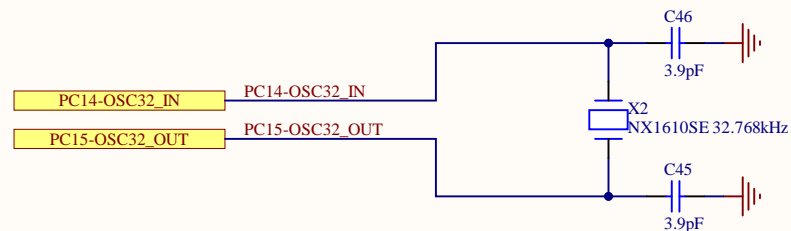
RESET FUNCTION



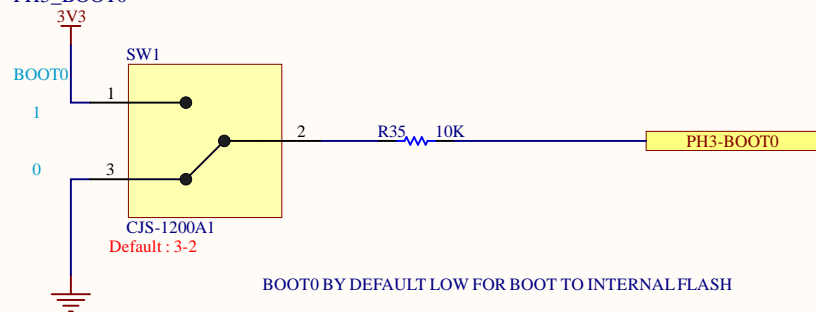
EXTERNAL HSE CLK



EXTERNAL LSE CLK

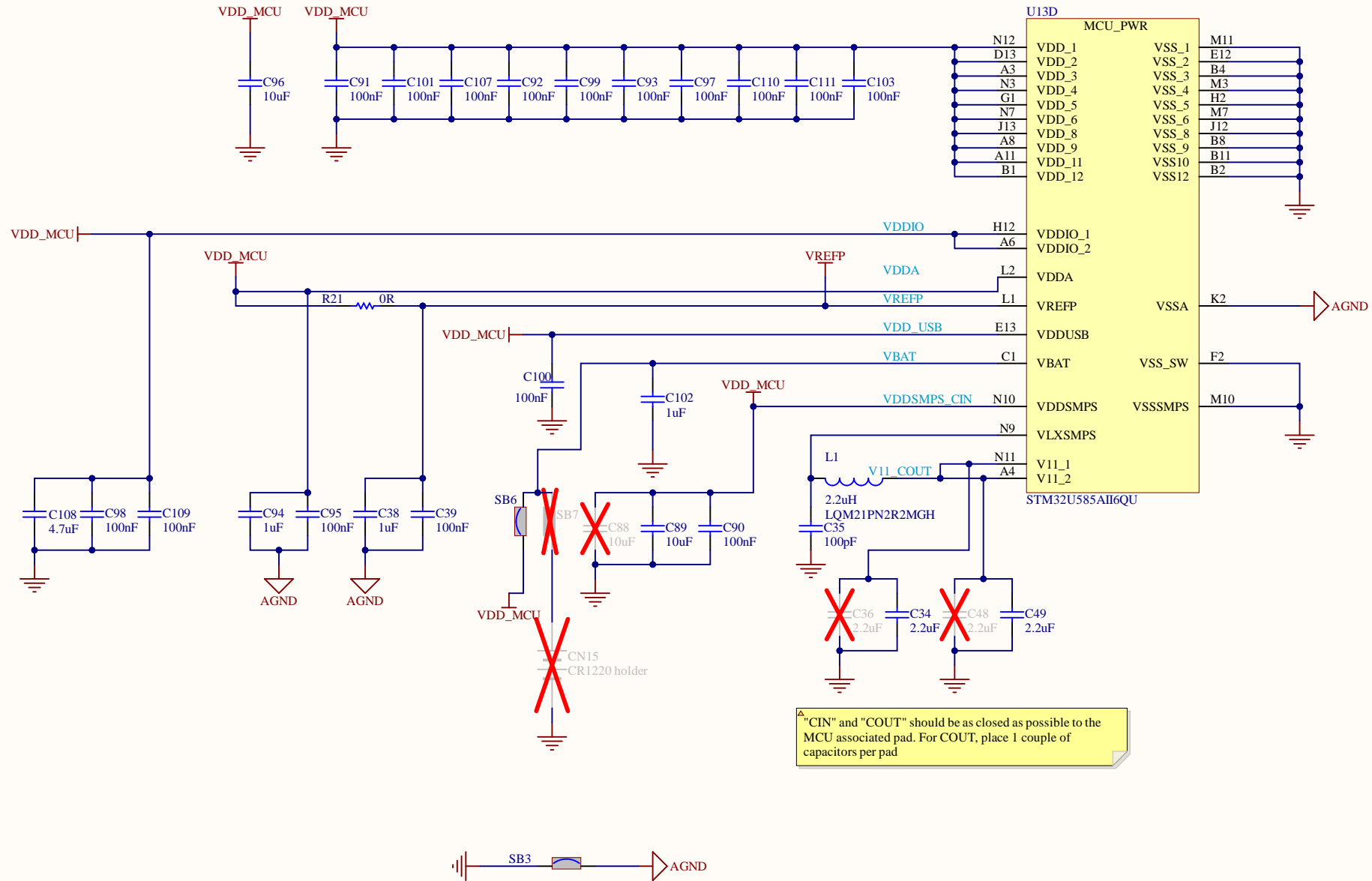


PH3_BOOT0



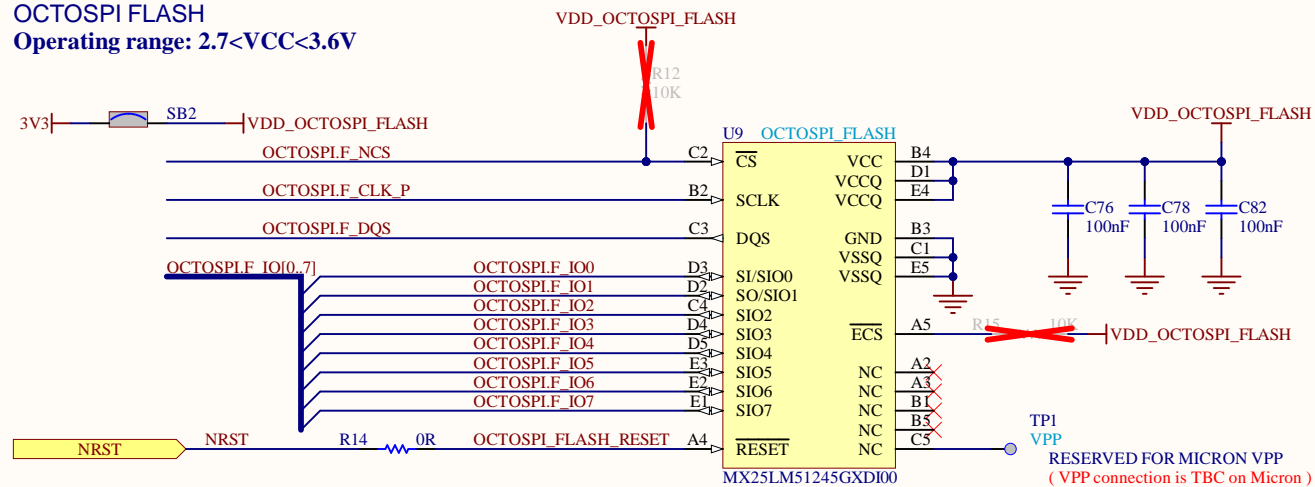
MCU PWR SUPPLIES

MCU DECAPS
Ceramic capacitor (Low ESR, ESR<1ohm)



OCTOSPI FLASH

Operating range: $2.7 < VCC < 3.6V$

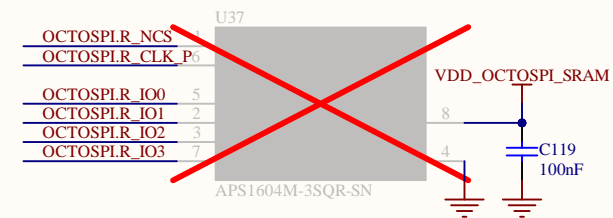


(RESET pins of Flash have internal pull-up by default)

^A OCTOSPI bus should be routed in 50 ohm +/- 15%

^A Place CAPS close to OCTOSPI_FLASH PWR pin

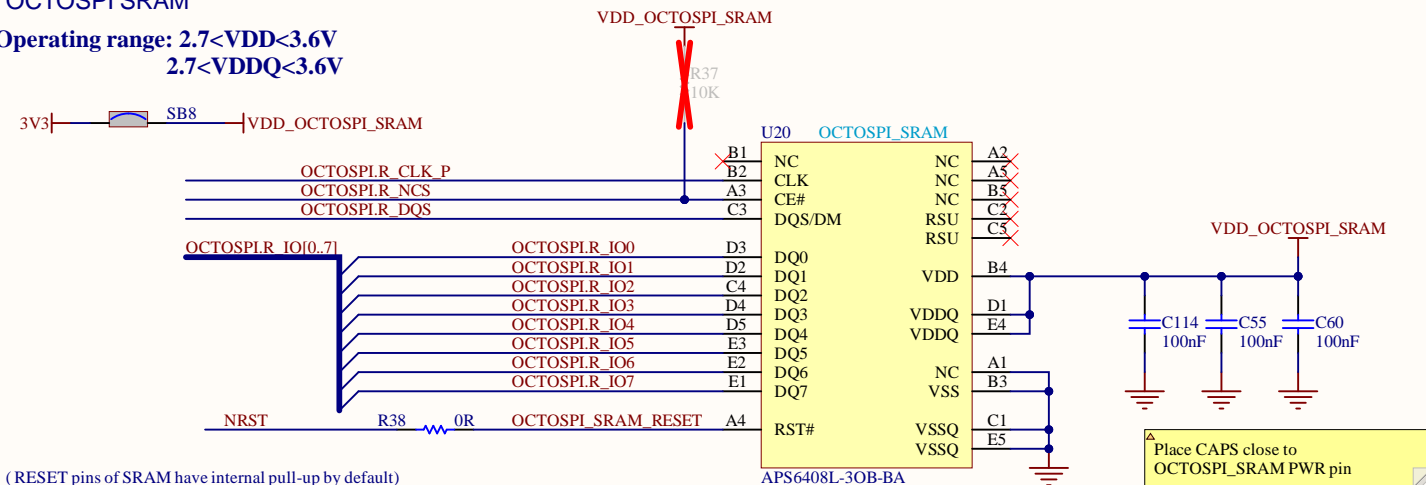
QUAD SRAM



add the footprint to support APMemory QSPI in package SO8

OCTOSPI SRAM

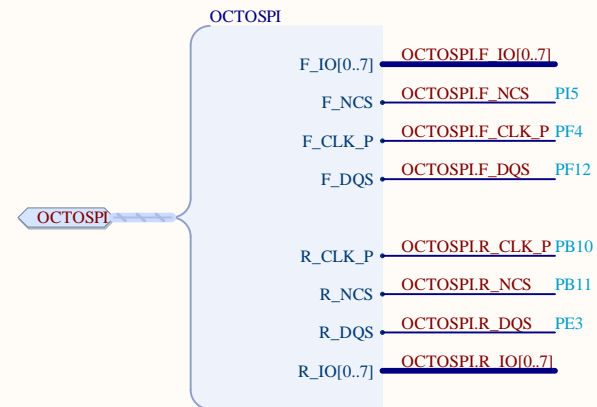
Operating range: $2.7 < VDD < 3.6V$
 $2.7 < VDDQ < 3.6V$



(RESET pins of SRAM have internal pull-up by default)

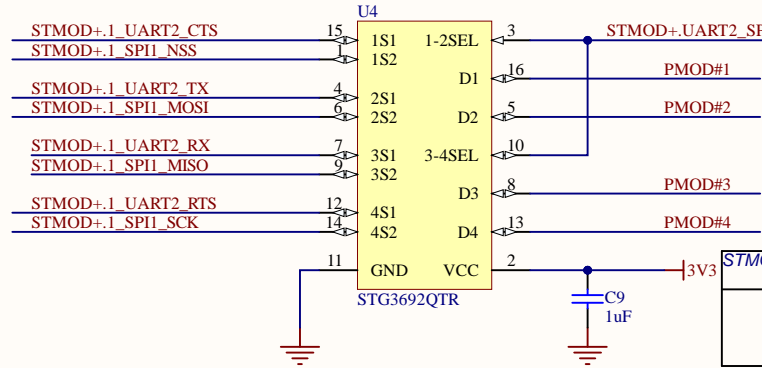
^A OCTOSPI bus should be routed in 50 ohm +/- 15%

^A Place CAPS close to OCTOSPI_SRAM PWR pin



3V3
R11
10K

PMOD / STMOD+1 SWITCH

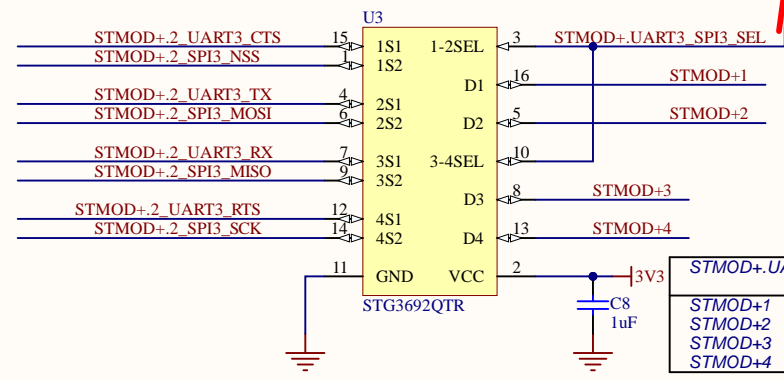


	SPI	UART (*)
STMOD+.UART2_SPI1_SEL	0	1
PMOD#1	NSS	CTS
PMOD#2	MOSIp	TX
PMOD#3	MISOp	RX
PMOD#4	SCLK	RTS

(*) default configuration

3V3
R10
10K

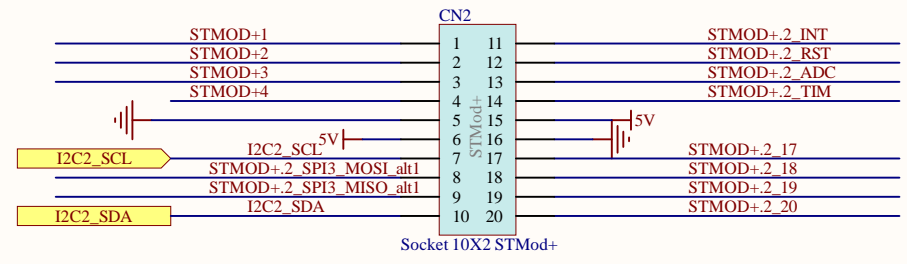
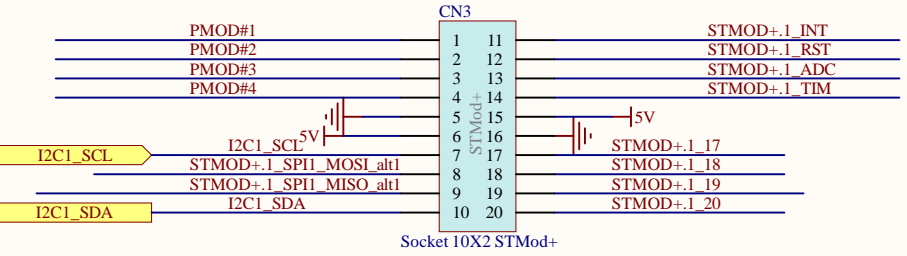
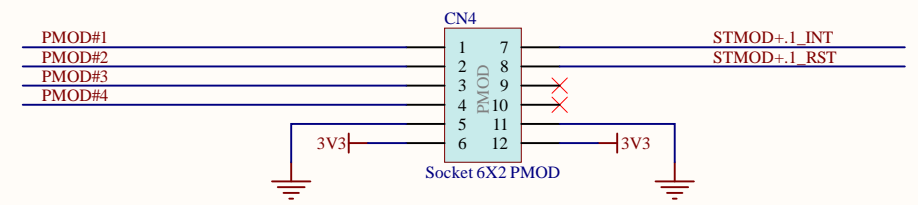
PMOD / STMOD+2 SWITCH



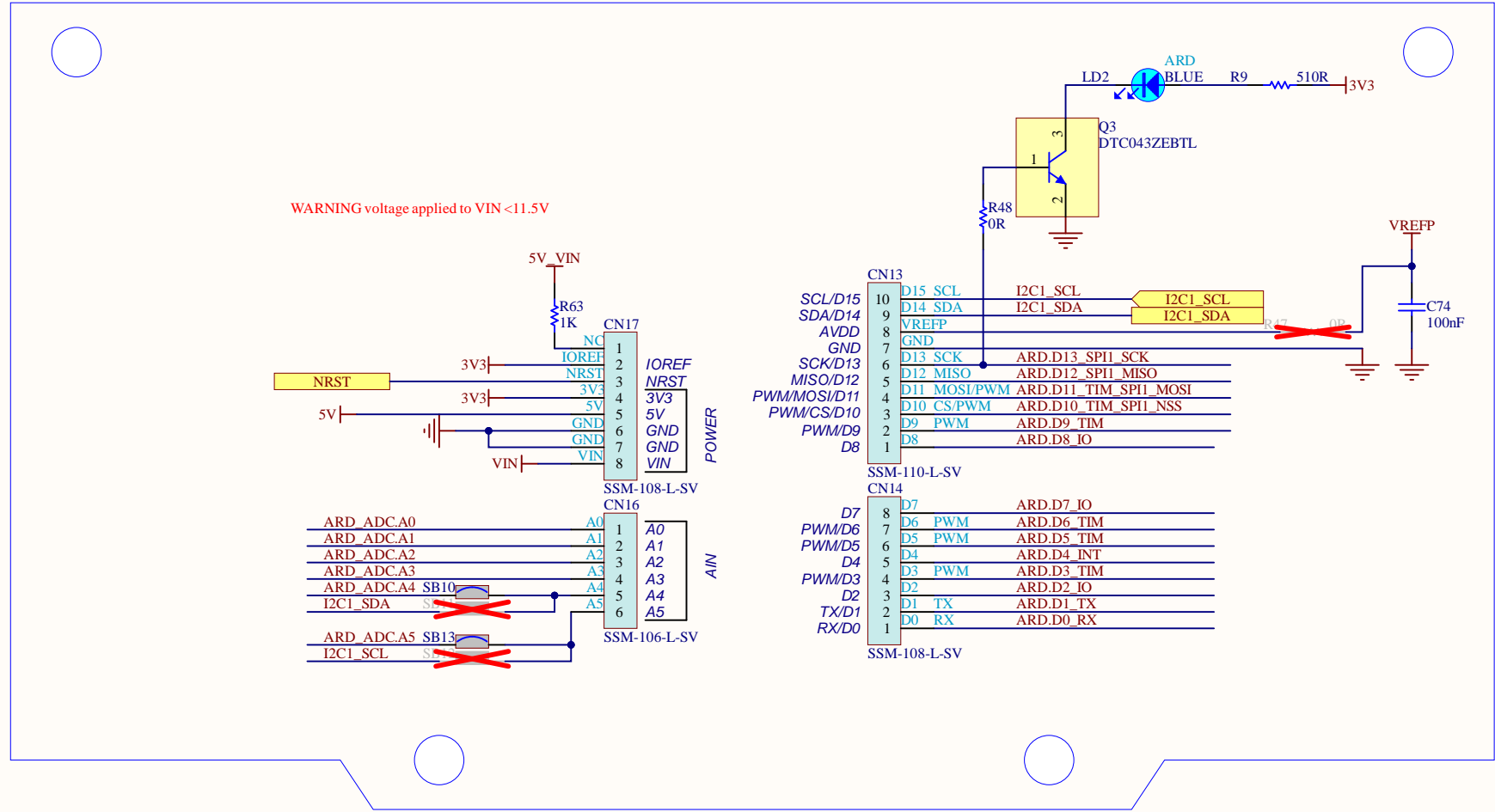
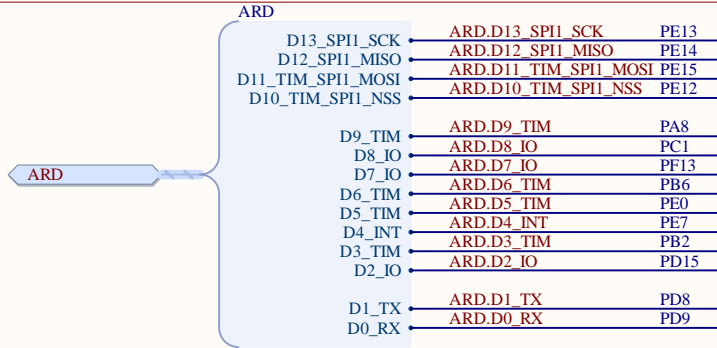
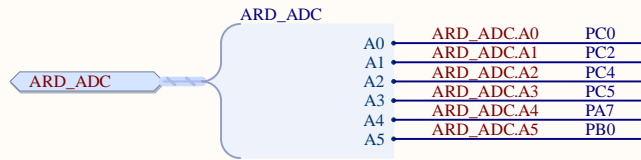
	SPI	UART (*)
STMOD+.UART3_SPI3_SEL	0	1
STMOD+1	NSS	CTS
STMOD+2	MOSIp	TX
STMOD+3	MISOp	RX
STMOD+4	SCLK	RTS

(*) default configuration

PMOD

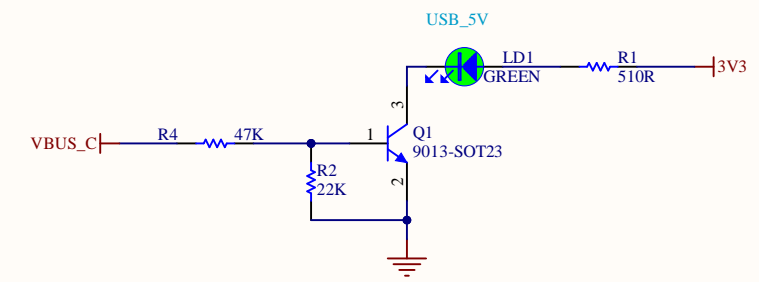
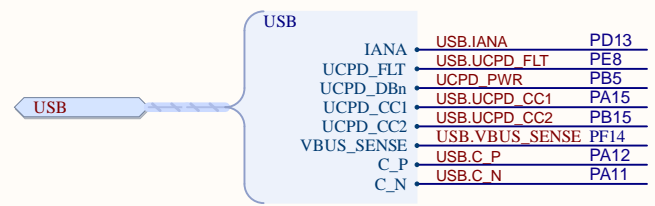
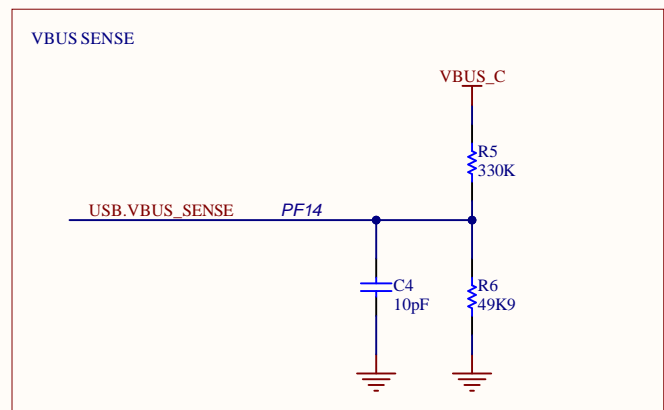
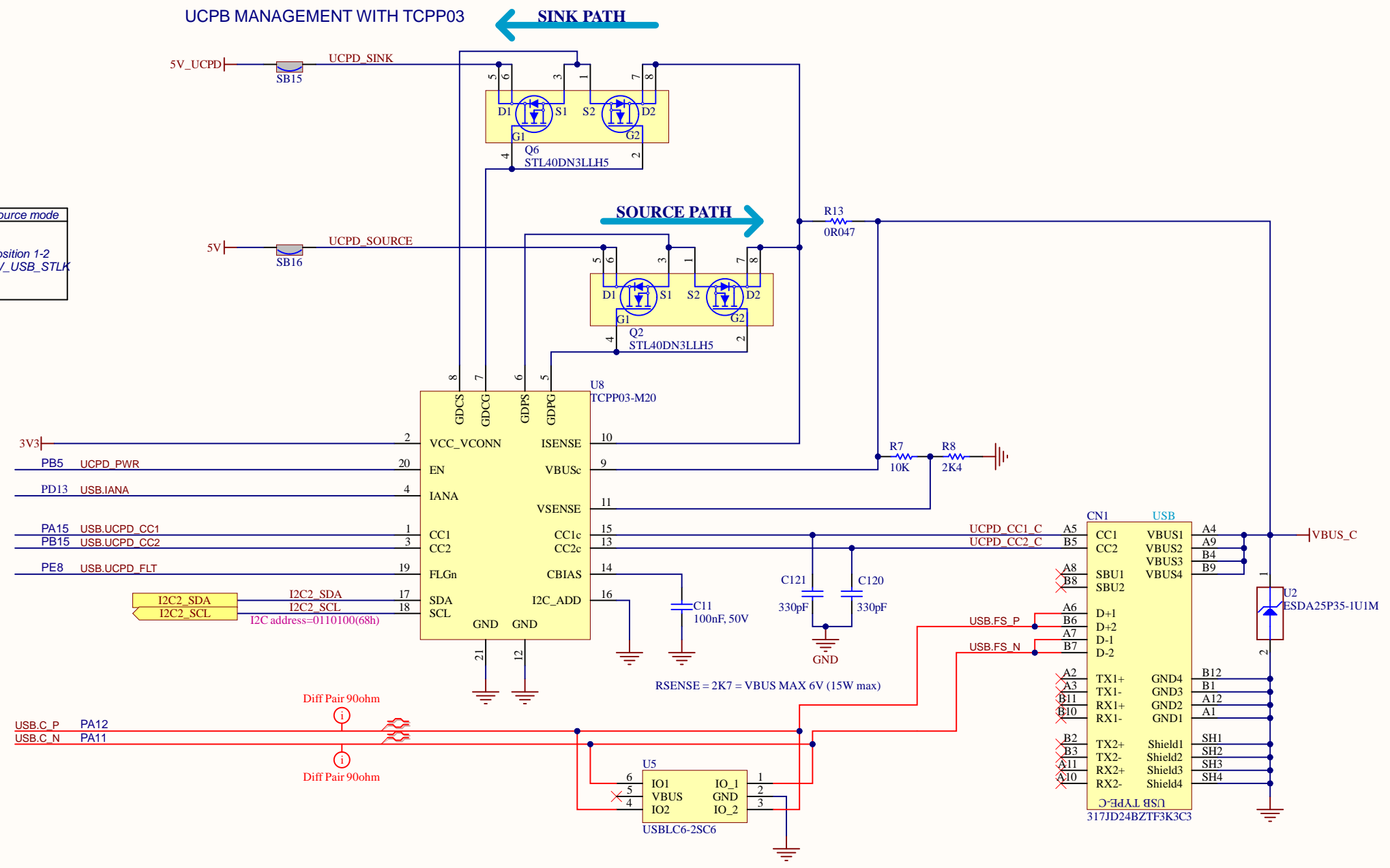


STMOD+	Signal	Pin
1	UART2_CTS	PA0
1	SPI1_NSS	PA4
1	UART2_TX	PA2
1	SPI1_MOSI	PE15
1	UART2_RX	PA3
1	SPI1_MISO	PE14
1	UART2_RTS	PA1
1	SPI1_SCK	PE13
1	SPI1_MOSI_ALT1	PG4
1	SPI1_MISO_ALT1	PG3
1	INT	PE4
1	RST	PG7
1	ADC	PA5
1	TIM	PE5
1	17	PE2
1	18	PD0
1	19	PF5
1	20	PB14
2	UART3_CTS	PD11
2	SPI3_NSS	PG12
2	UART3_TX	PD8
2	SPI3_MOSI	PD6
2	UART3_RX	PD9
2	SPI3_MISO	PG10
2	UART3_RTS	PD12
2	SPI3_SCK	PG9
2	SPI3_MOSI_ALT1	PC12
2	SPI3_MISO_ALT1	PB4
2	INT	PE6
2	INT	PB13
2	RST	PG0
2	ADC	PG0
2	TIM	PC9
2	17	PG1
2	18	PD2
2	19	PD5
2	20	PG8
UART2_SPI2_SEL	STMOD+.UART2_SPI1_SEL	PH13
UART3_SPI3_SEL	STMOD+.UART3_SPI3_SEL	PH15



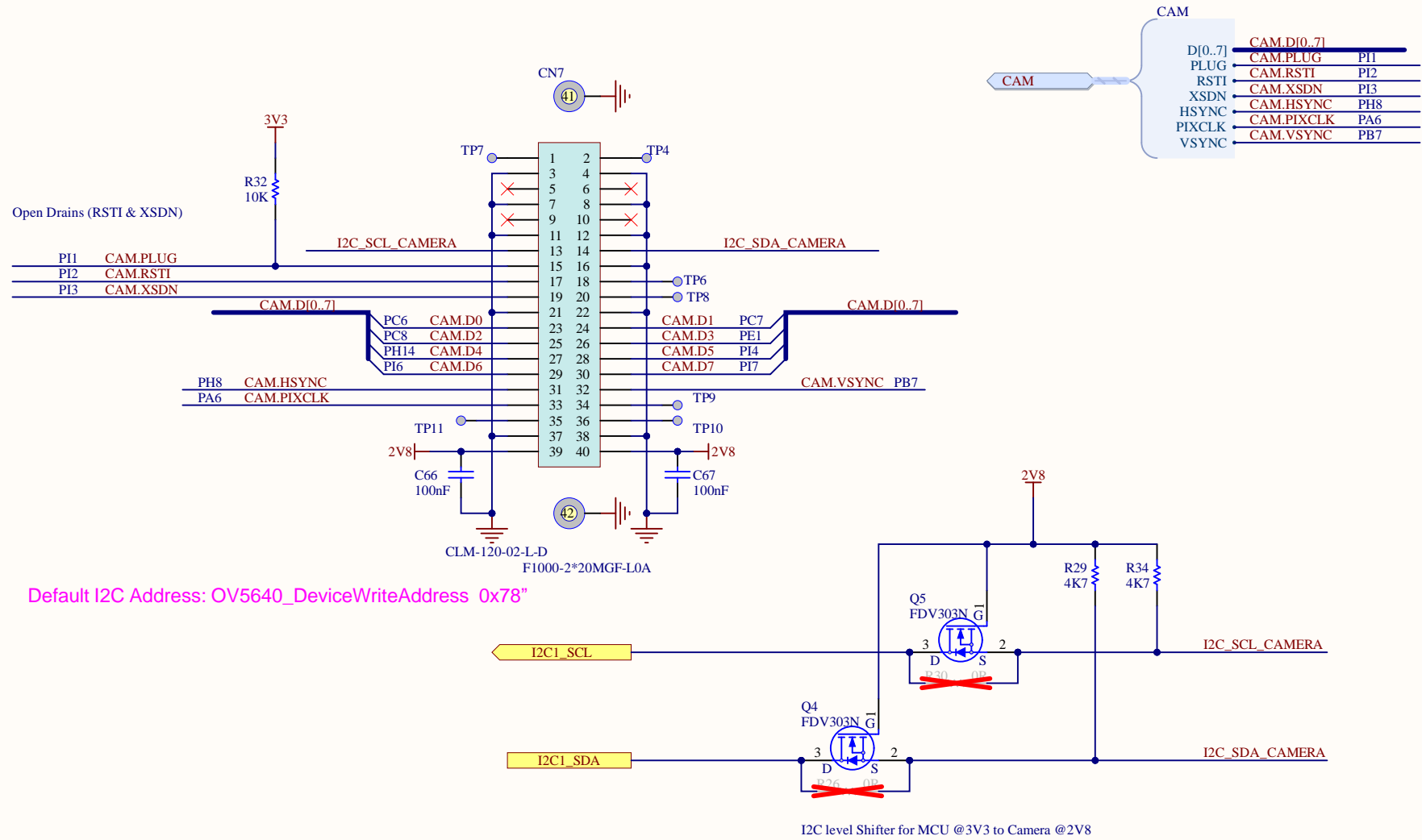
SINK and SOURCE

	SINK Mode	Source mode
jumper JP4 configuration see "Board Power" Page	position 5-6 5V_UCPD	position 1-2 5V_USB_STLK



CAMERA MODULE CONNECTOR

Operating range: 2.8<VDD<3.6V

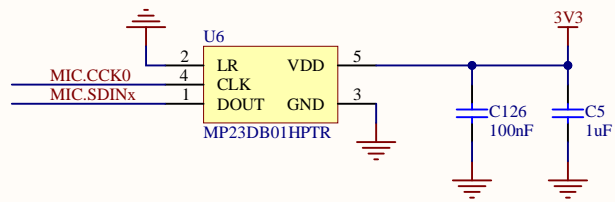


△ OCTOSPI bus should be routed in 50 ohm +/- 15%

AUDIO MEMS

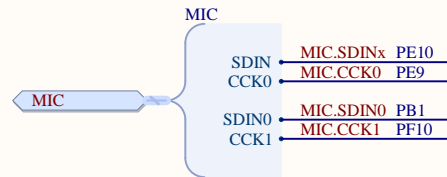
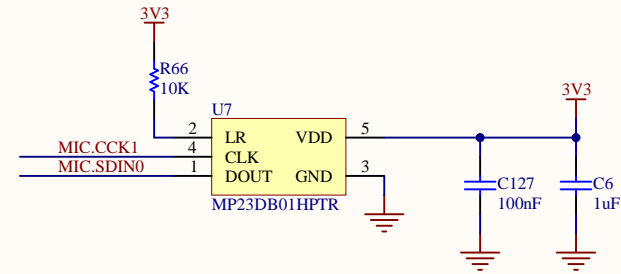
Operating range: $1.64 < VDD < 3.6V$

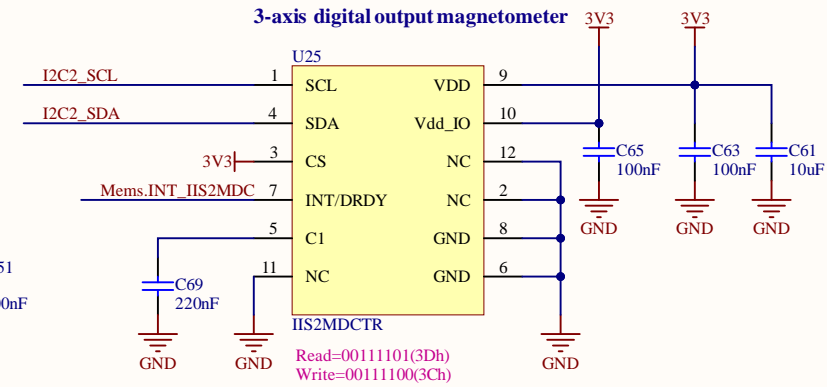
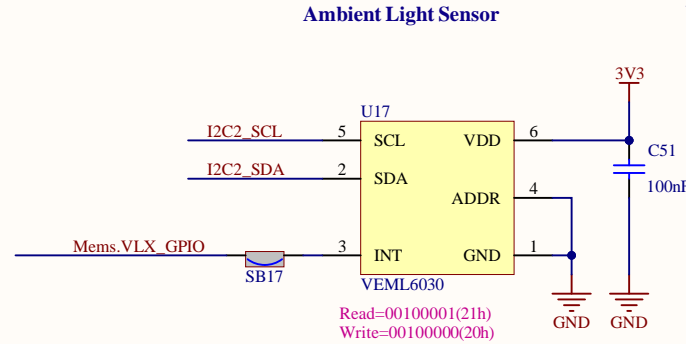
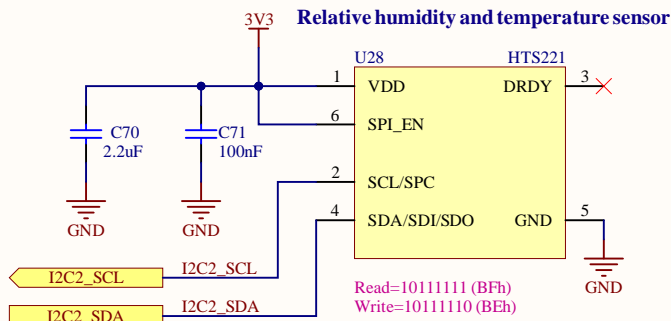
MDF&ADF INTERFACE



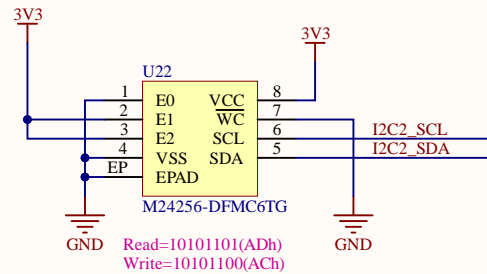
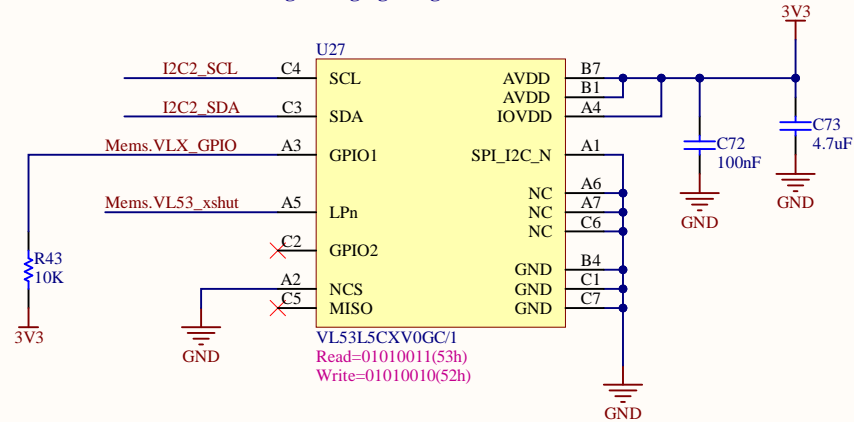
Operating range: $1.64 < VDD < 3.6V$

MDF INTERFACE



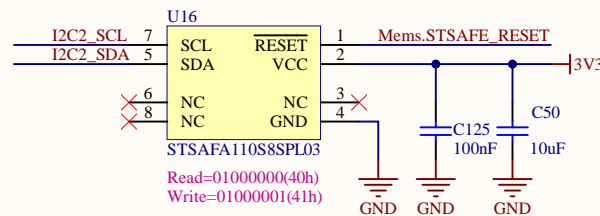
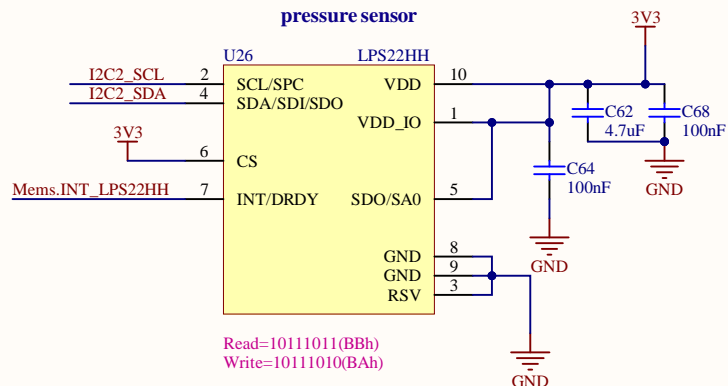


Time-of-Flight ranging and gesture detection sensor

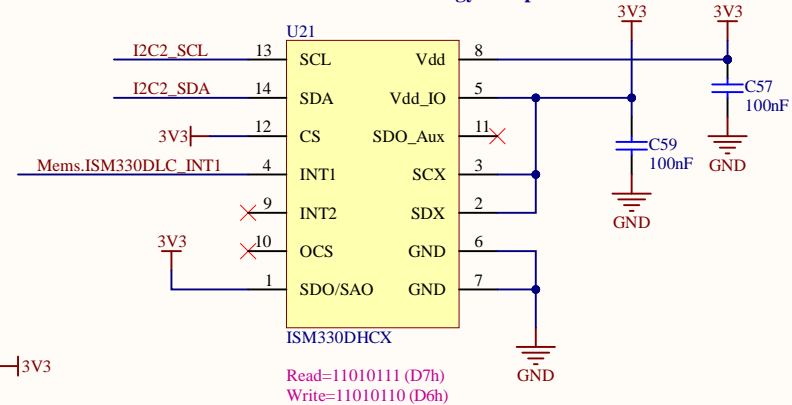


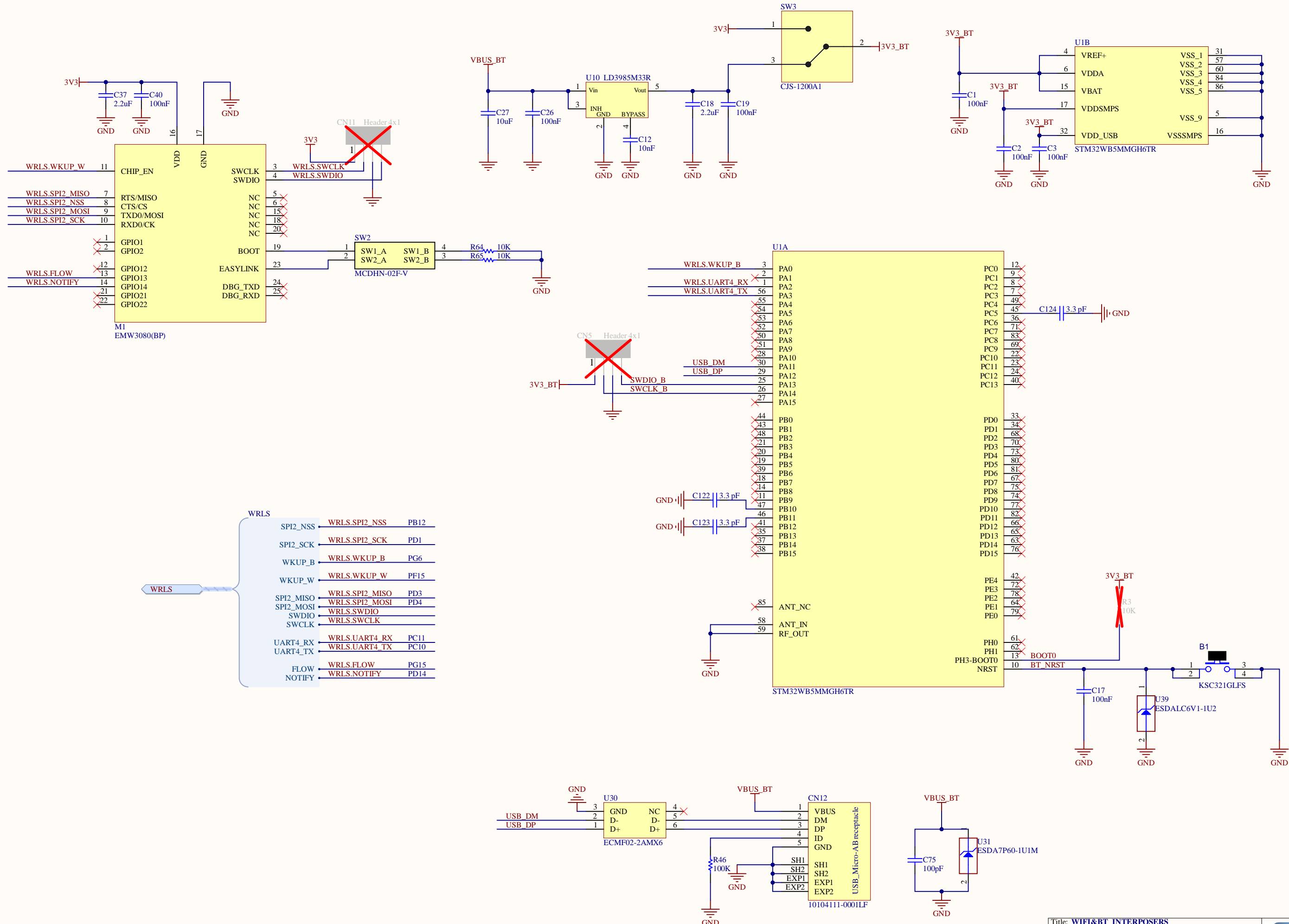
Mems		
VL53_xshut	Mems.VL53_xshut	PH1
INT_LPS22HH	Mems.INT_LPS22HH	PG2
STSAFE_RESET	Mems.STSAFE_RESET	PF11
VLX_GPIO	Mems.VLX_GPIO	PG5
ISM330DLC_INT1	Mems.ISM330DLC_INT1	PE11
INT_IIS2MDC	Mems.INT_IIS2MDC	PD10

pressure sensor

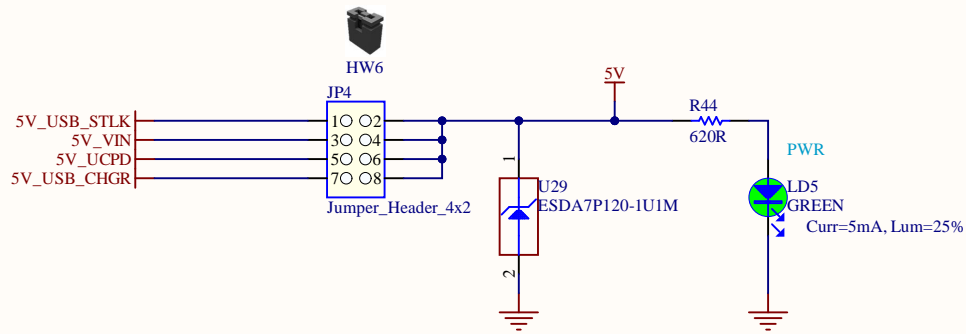


3D accelerometer and 3D gyroscope



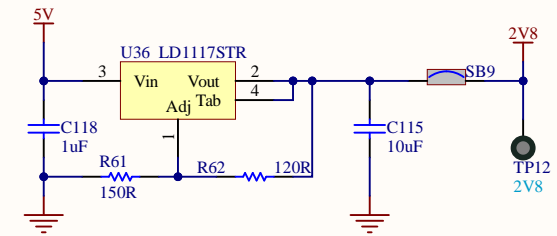


5V PWR SOURCE SELECTION



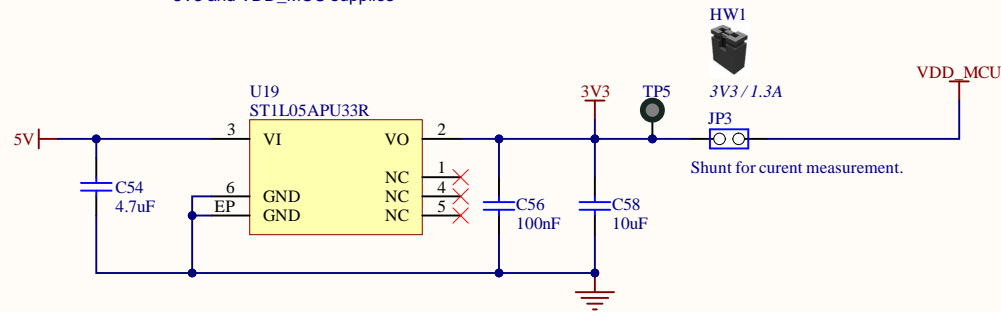
2V8_LDO: CAMERA

2V8 / 800mA

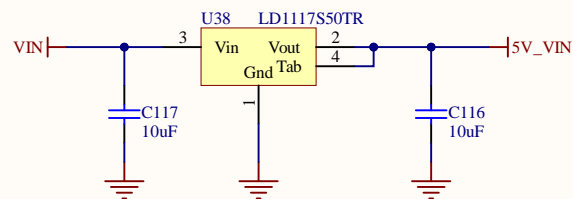


3V3 PWR SOURCE: 3V3 / 1300mA

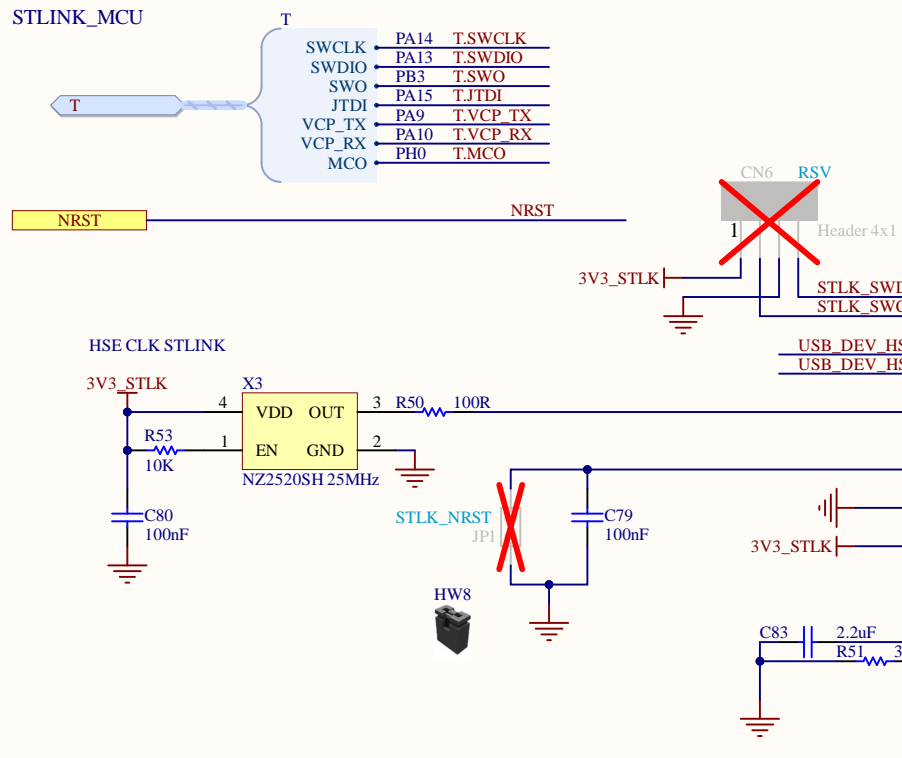
3V3 and VDD_MCU supplies



VIN FROM ARDUINO up to 12V: OUTPUT 5V / Up to 800mA (depend of VIN)



STLINK_MCU

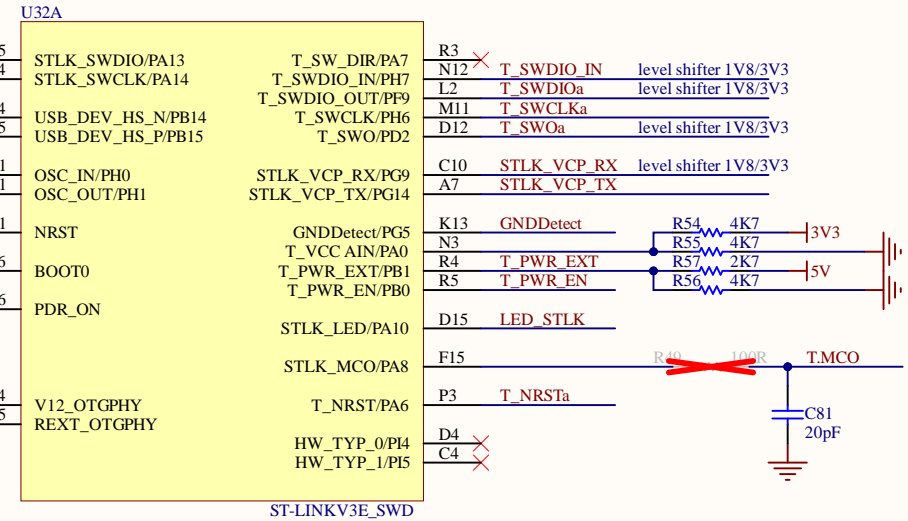


LIMITATION :

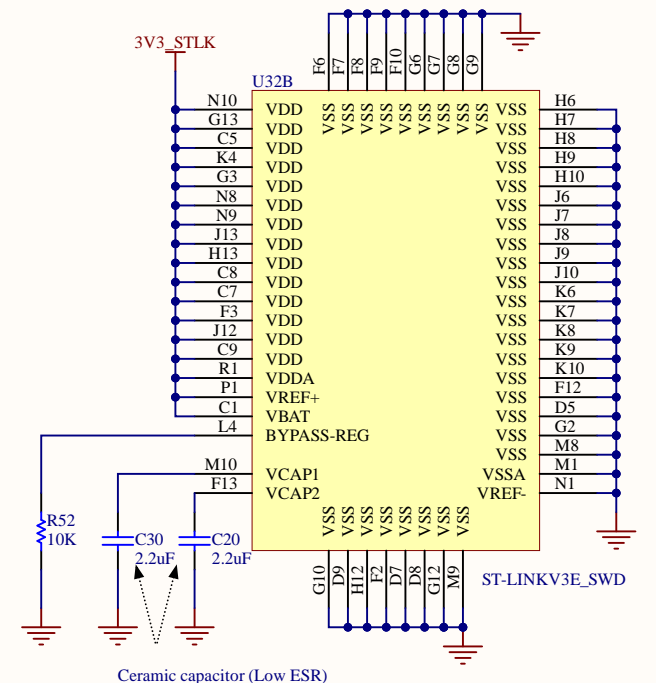
Some JTAG signals are multiplexed with UCPD: T_JTDI
In case JTAG is plugged, UCPD signals can be disconnected.
User need to check that multiplexed signals are not used on both features simultaneously.

The routing of the tracks must be done on continuity from ST-LINK to 220ohm resistors and from resistors to Target MCU to avoid stub noises and EMC approach. (220ohm resistors must be very close to STDC14)

Connector must be on the border of the PCB



ST-LINK POWER



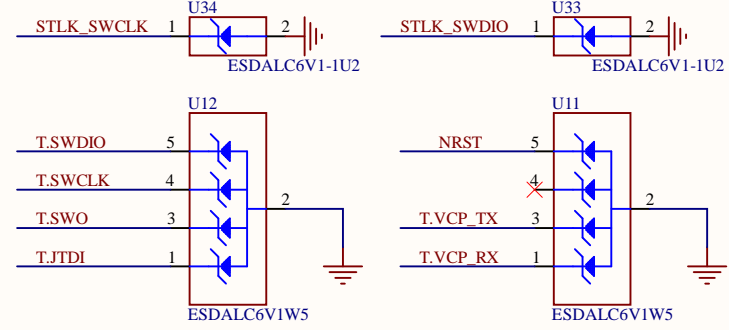
Ceramic capacitor (Low ESR)

TAG CONNECTOR



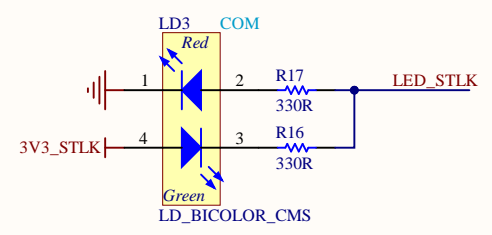
TAG: Only footprint with cable: TC2050-IDC-NL

ESD PROTECTIONS

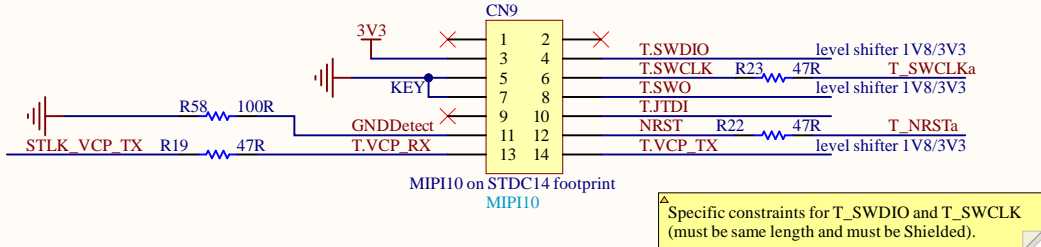


Pin attributions on ESD can be swapped for layout optimisation

LED STLK

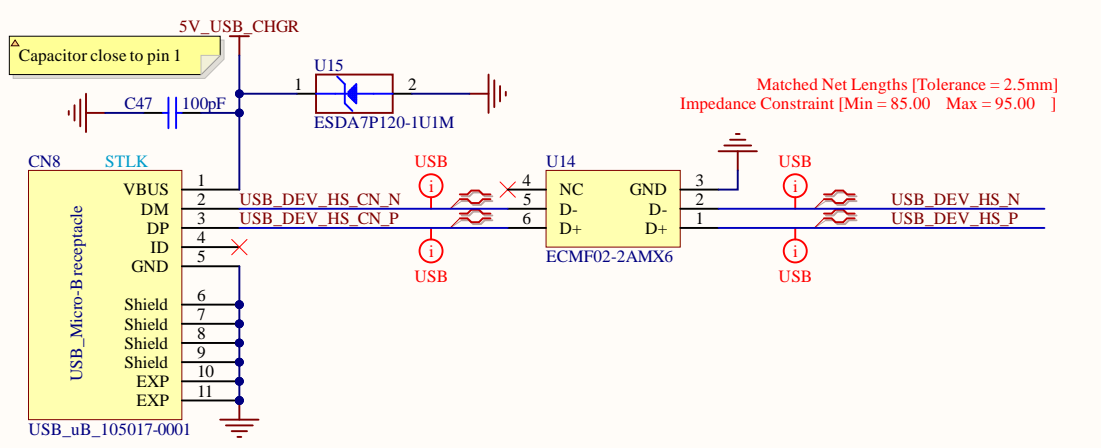


STDC14 RECEIVER

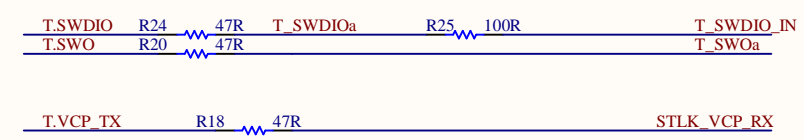


Specific constraints for T_SWDIO and T_SWCLK (must be same length and must be Shielded).

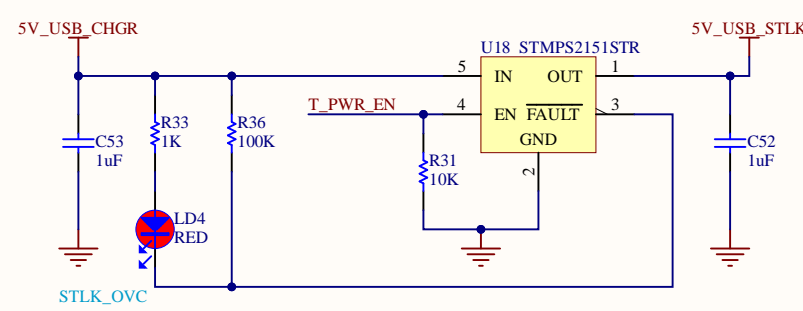
ST-LINK USB CONNECTOR



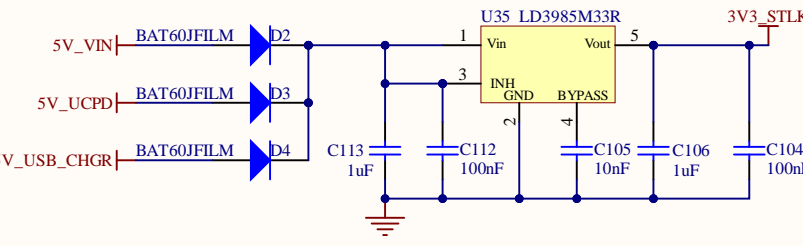
Matched Net Lengths [Tolerance = 2.5mm]
Impedance Constraint [Min = 85.00 Max = 95.00]



5V ST-LINK PROTECTION



ST-LINK POWER 3V3 / 150mA



PCB / STICKERS

HW3



HW4

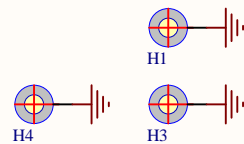


HW5

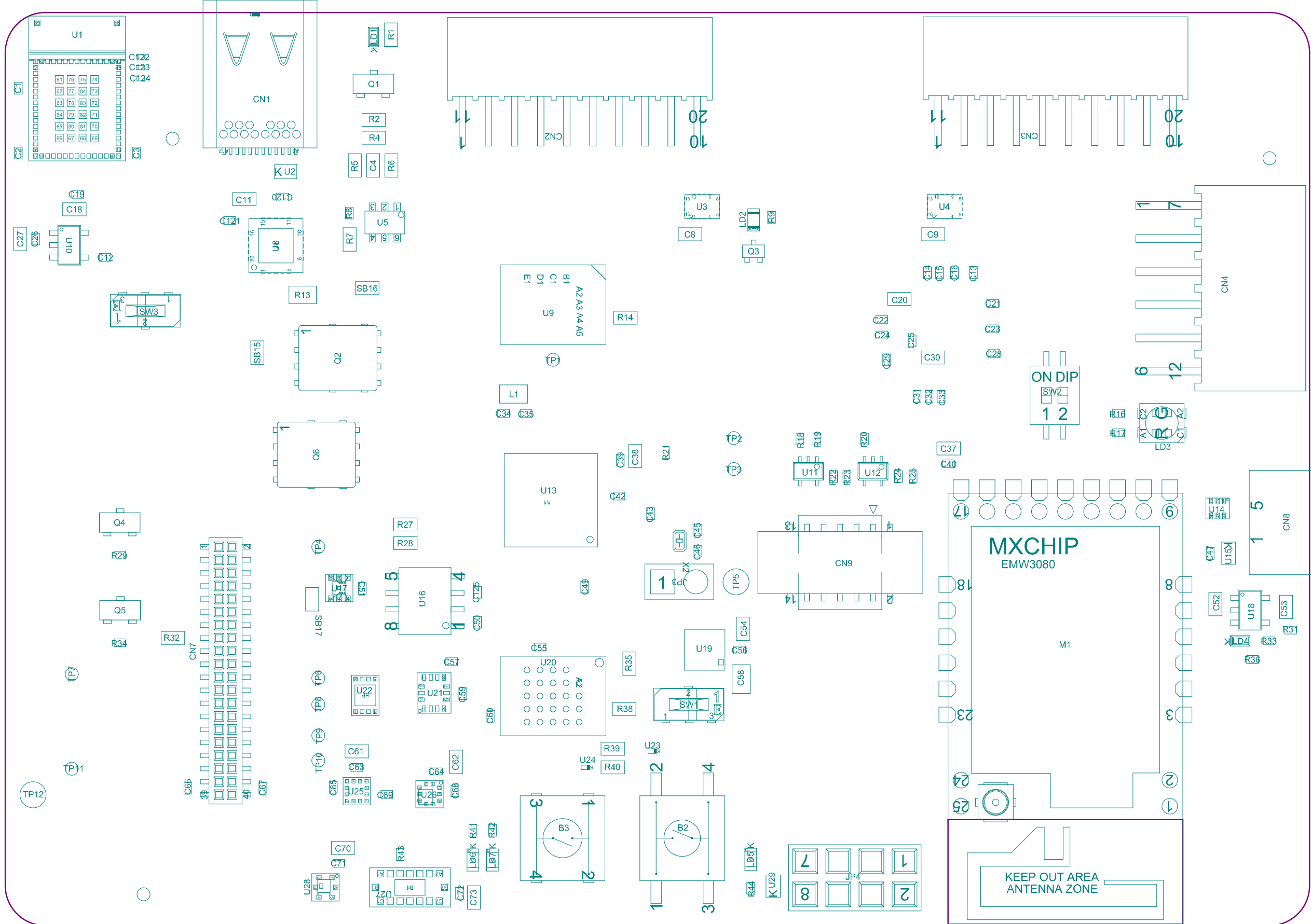


MB1551C

MECHANICAL PARTS



ADDED MODULES



Project: B-U585I-IOT02A

Layer: M14-Top Assembly

Variant: U585I

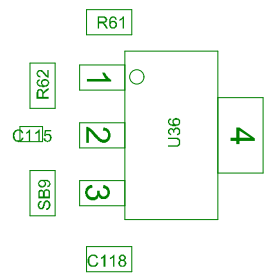
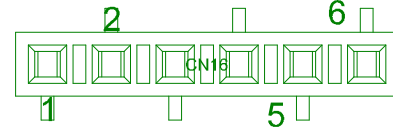
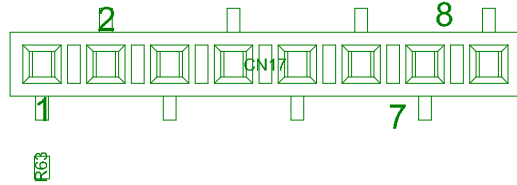
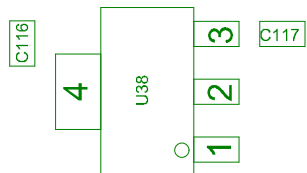
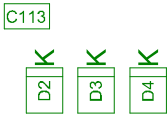
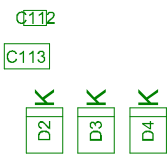
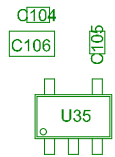
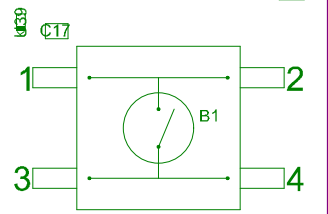
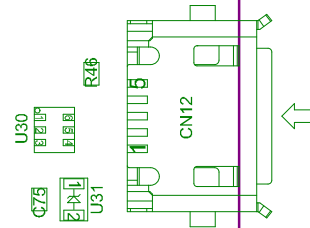
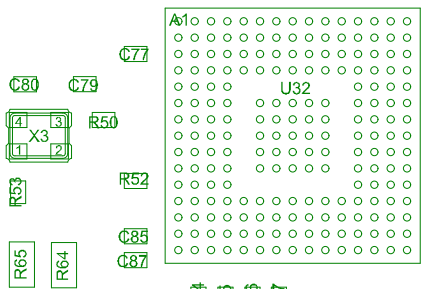
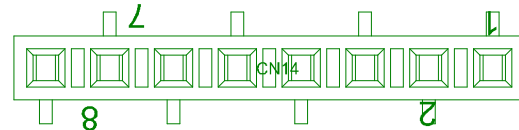
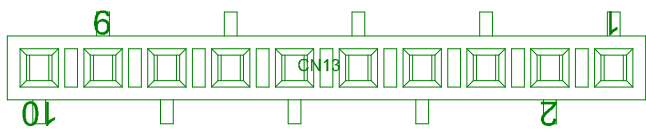
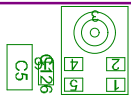
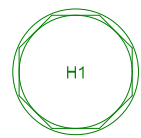
Date: 09 SEPT 2021

Gerber: .GM14

Ref: MB1551

Rev: C





Project: B-U585I-IOT02A

Layer: M15-Bottom Assembly

Variant: U585I

Date: 09 SEPT 2021

Gerber: .GM15

Ref: MB1551

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