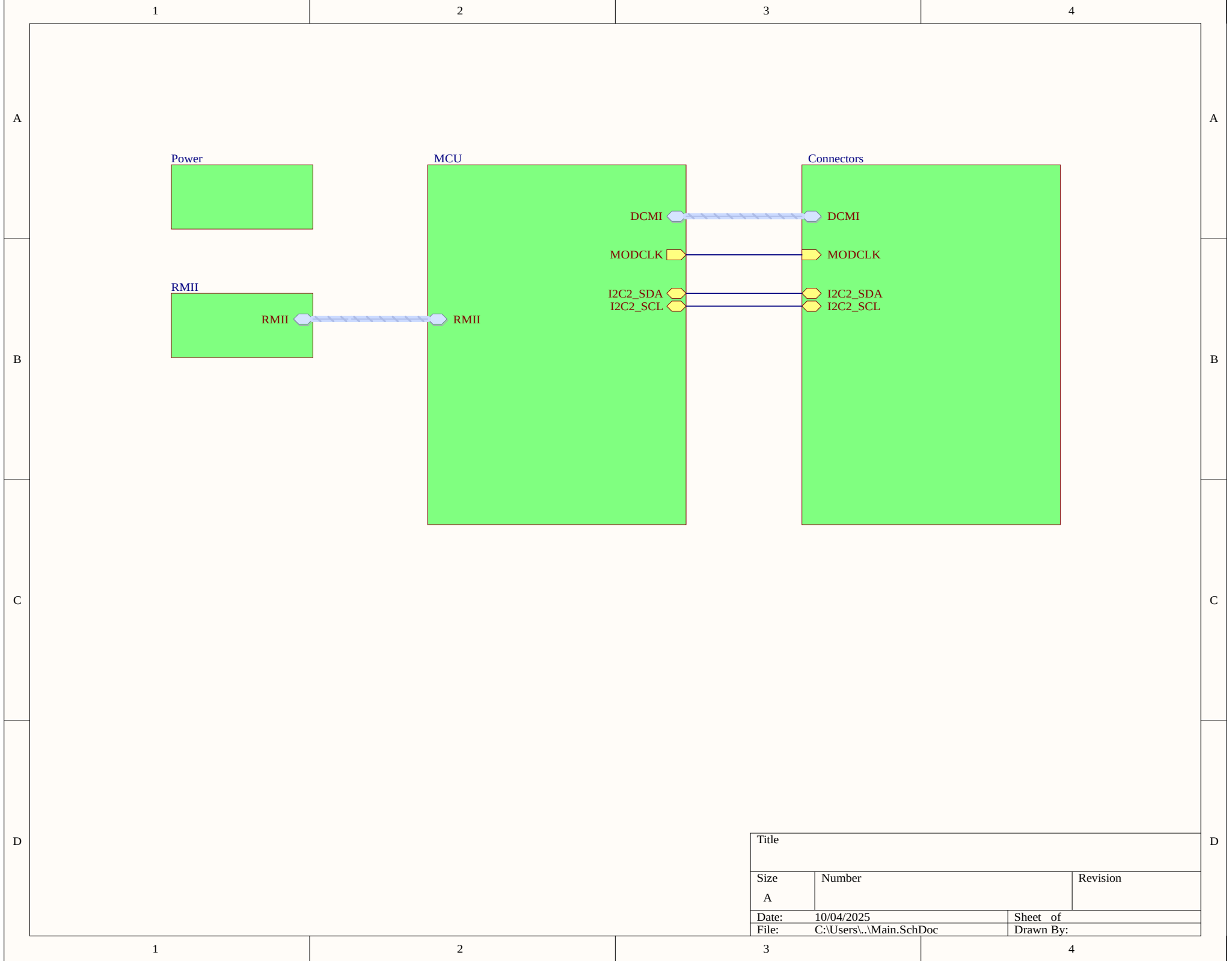




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Δ epc660 max 1300 mW, 750 mW typical
 STM32H563RI (depending on package) max 300 mA,
 typical <150 mA
 driver is 23 mW
 LEDs 10V, 5V, 3.3V, 1.8V

Δ 3V3 : 80mA EPC660 digital logic, 50mA EPC660 I/O / TCMI / h
 speed lines, no internal LED driver
 = round up to 200mA
 STM32 : 300mA
 driver + LED : 50mA

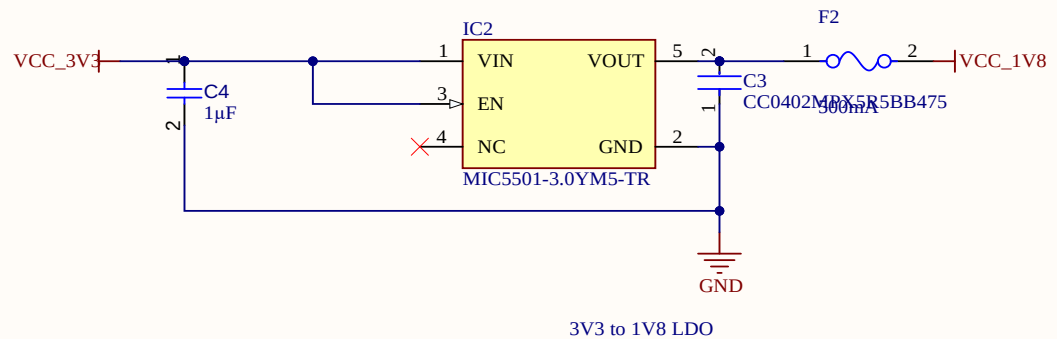
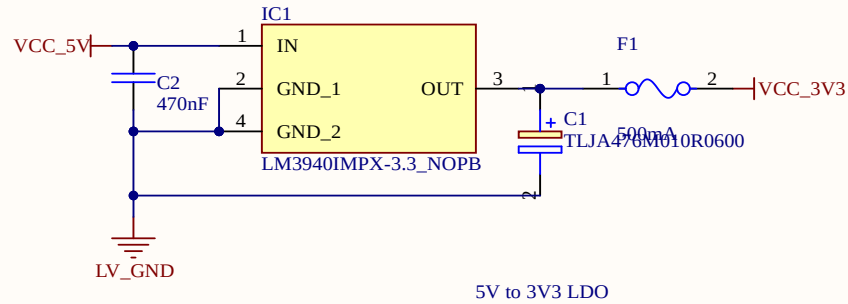
Total 550mA

Power loss: $550\text{mA} * (5.5\text{V} - 3.3\text{V}) = 1.21\text{ W}$
 TO-263 package with $R_{\theta JA} = 40.9\text{ degrees C/W}$
 Temp. Rise = $1.21 * 40.9 = 49.489\text{ degrees C}$ above ambient

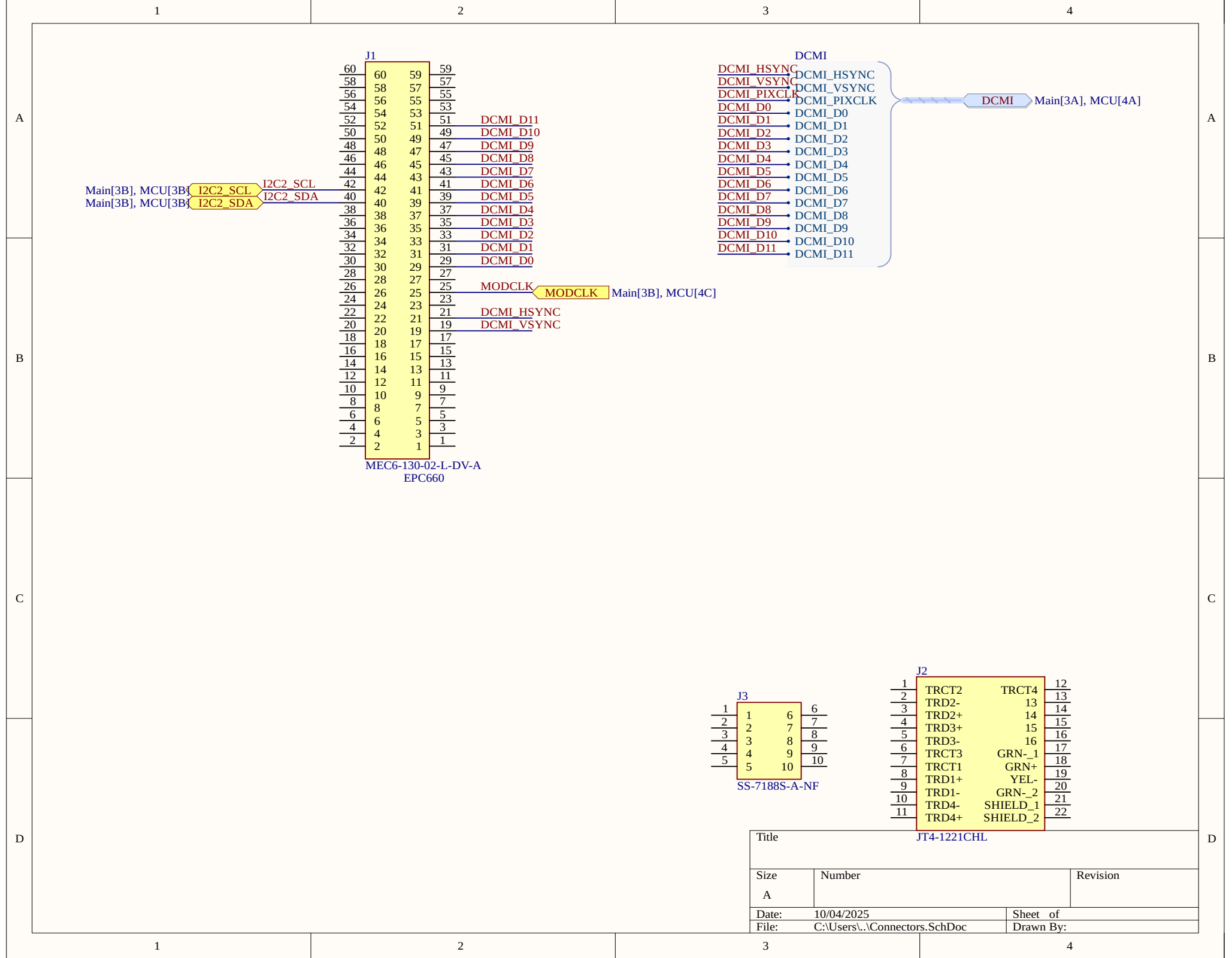
1V8 : 100mA EPC660
 LED : 25mA

Total 125mA < 300mA max I_{out} of LDO

Power loss: $125\text{mA} * (3.3\text{V} - 1.8\text{V}) = 187.5\text{ mW}$
 SOT23-5 package $\theta_{JA} = 253\text{ degrees C/W}$
 Temp. Rise = $.1875\text{ W} * 253 = 47.44\text{ degrees C}$ above ambient



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A

A

B

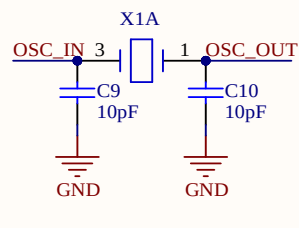
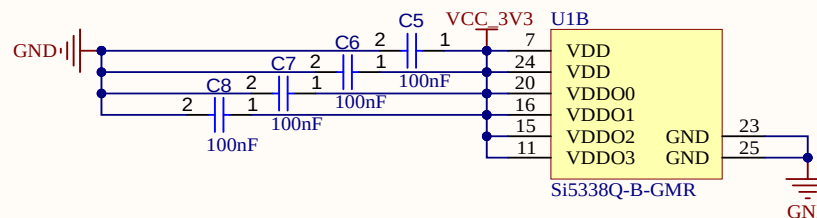
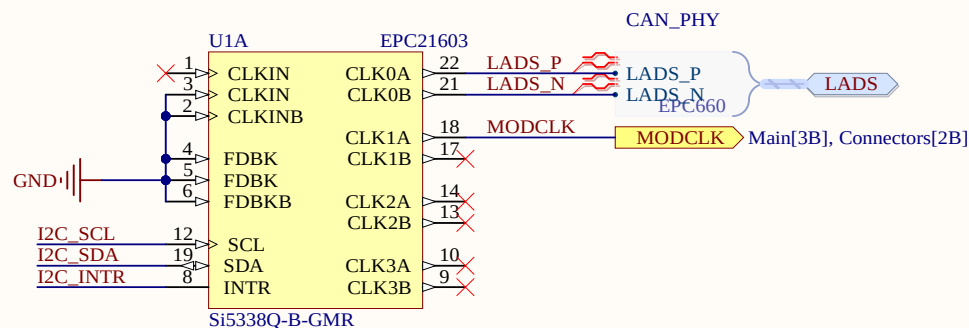
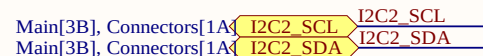
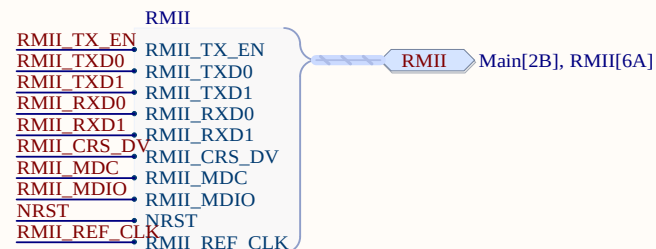
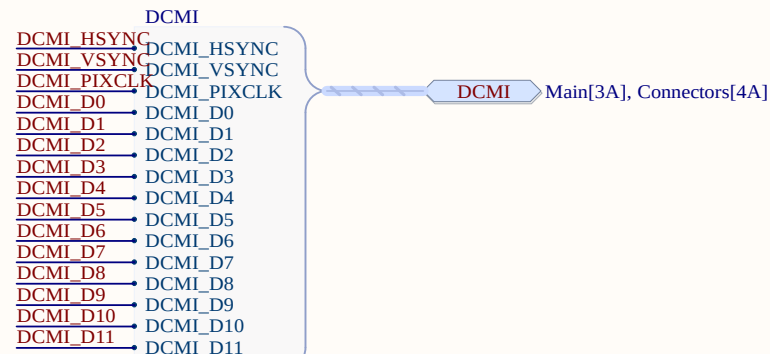
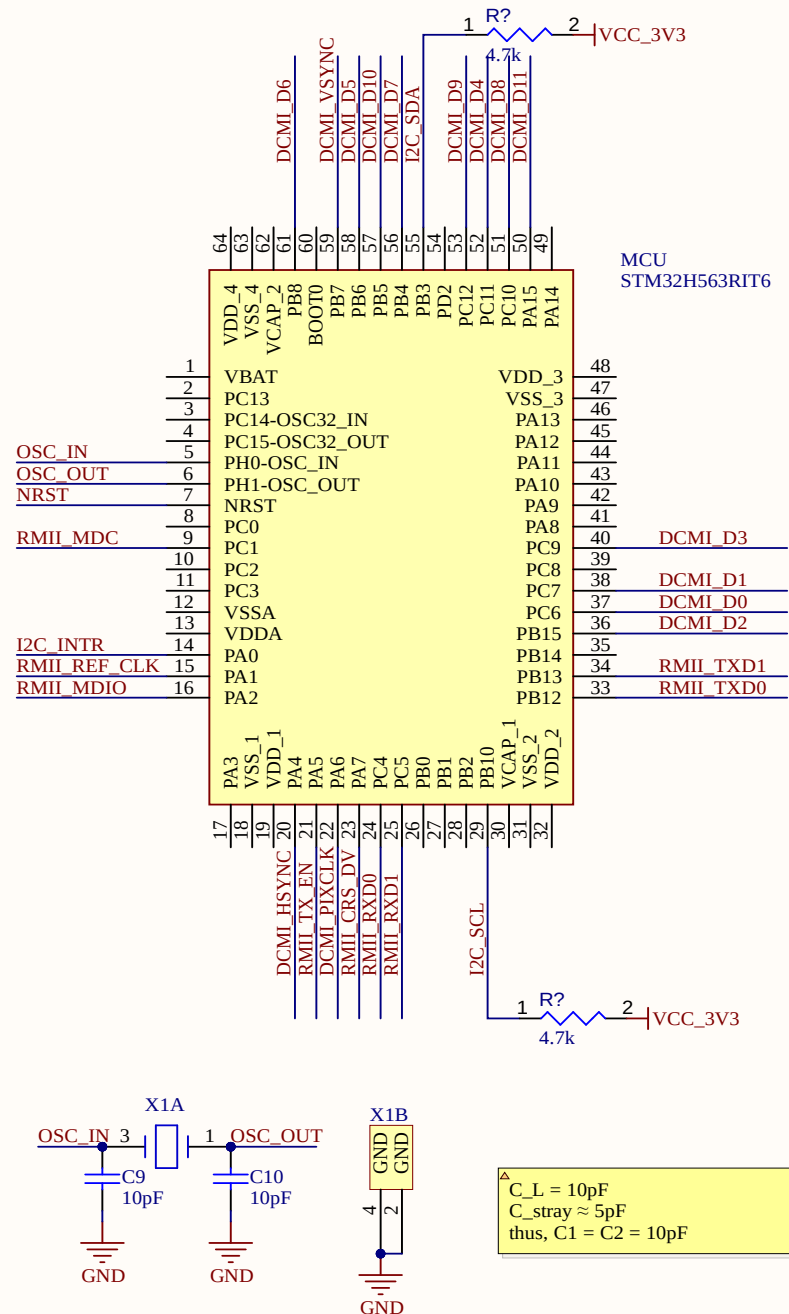
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C

C

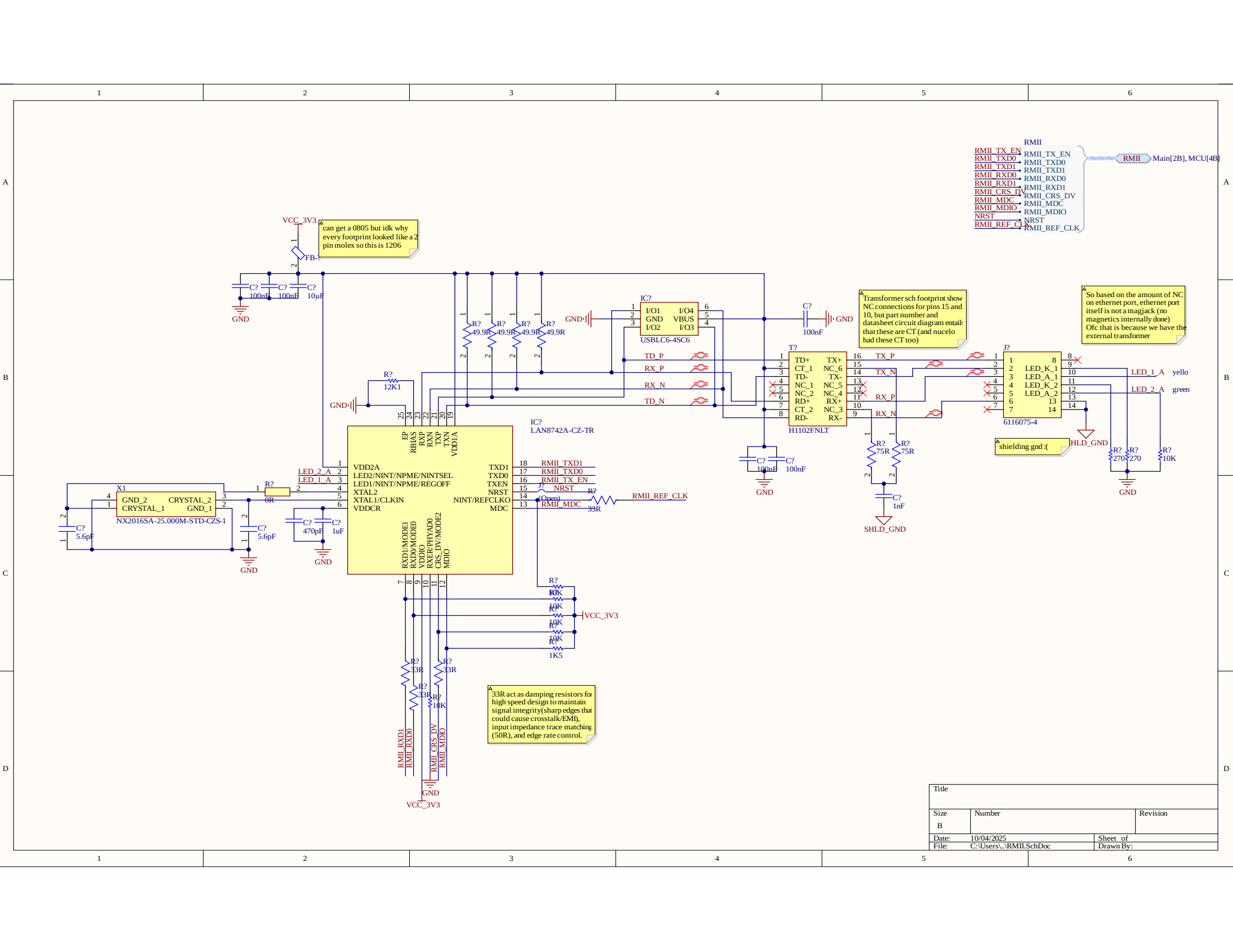
D

D



C_L = 10pF
C_{stray} ≈ 5pF
thus, C₁ = C₂ = 10pF

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can get a 0805 but idk why every footprint looked like a 2 pin molex so this is 1206

Transformer sch footprint show NC connections for pins 15 and 10, but part number and datasheet circuit diagram entail that these are CT (and nucelo had these CT too)

So based on the amount of NC on ethernet port, ethernet port itself is not a magjack (no magnetics internally done) Ofc that is because we have the external transformer

33R act as damping resistors for high speed design to maintain signal integrity (sharp edges that could cause crosstalk/EMI), input impedance trace matching (50R), and edge rate control.

- RMII
- RMII TX_EN
 - RMII TXD0
 - RMII TXD1
 - RMII RXD0
 - RMII RXD1
 - RMII CRS_DV
 - RMII MDC
 - RMII MDIO
 - NRST
 - RMII REF_CLK
- RMII_TX_EN
- RMII_TXD0
- RMII_TXD1
- RMII_RXD0
- RMII_RXD1
- RMII_CRS_DV
- RMII_MDC
- RMII_MDIO
- NRST
- RMII_REF_CLK
- RMII Main[2B], MCU[4B]

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Board Stack Report