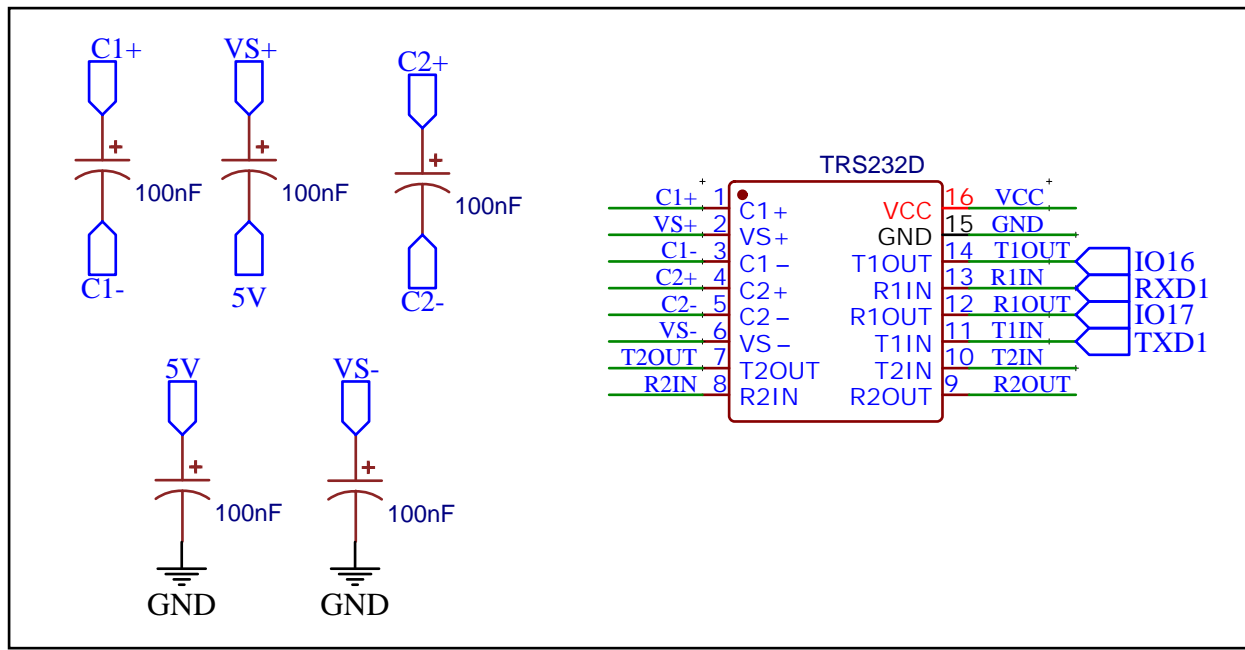
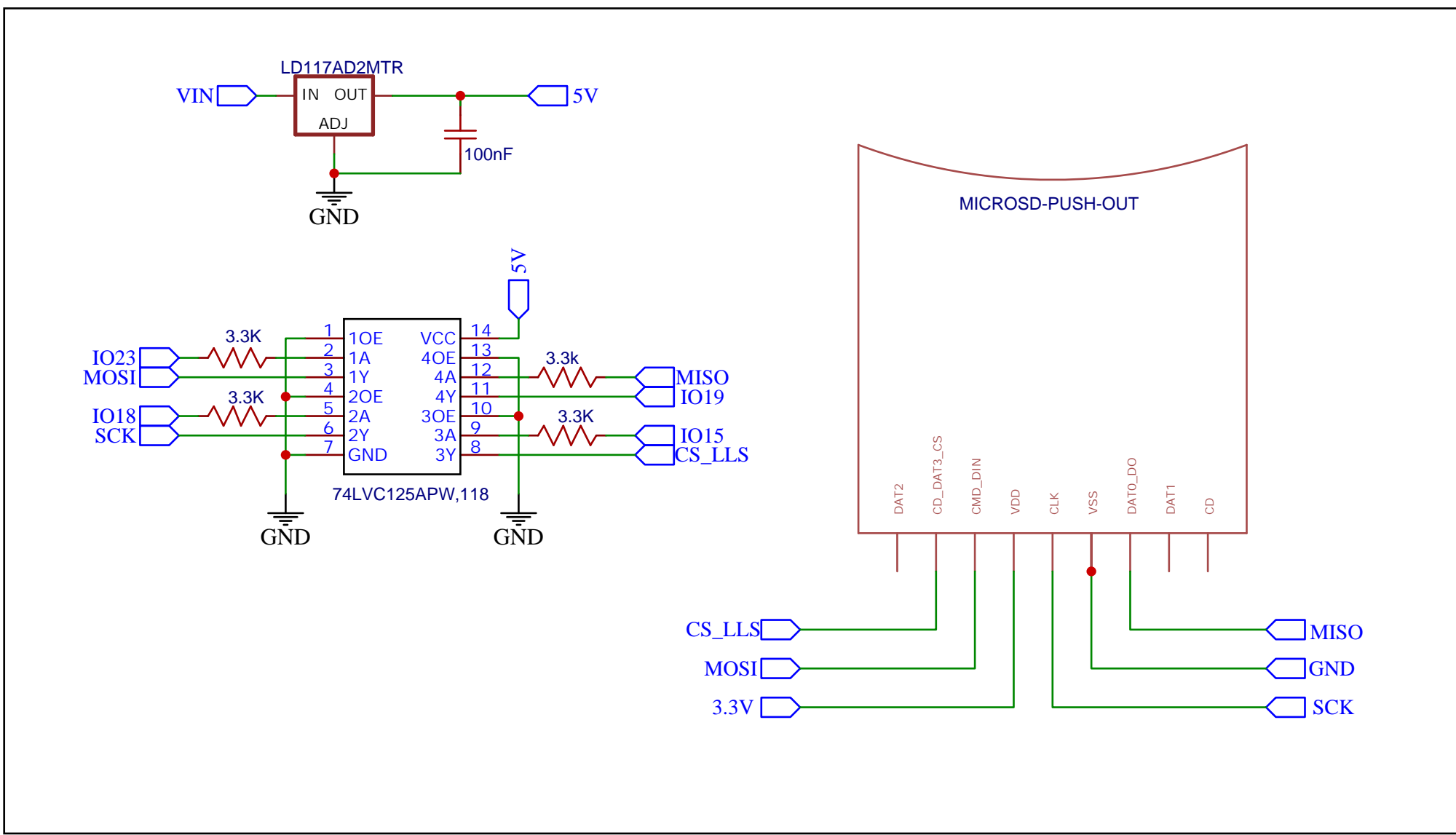


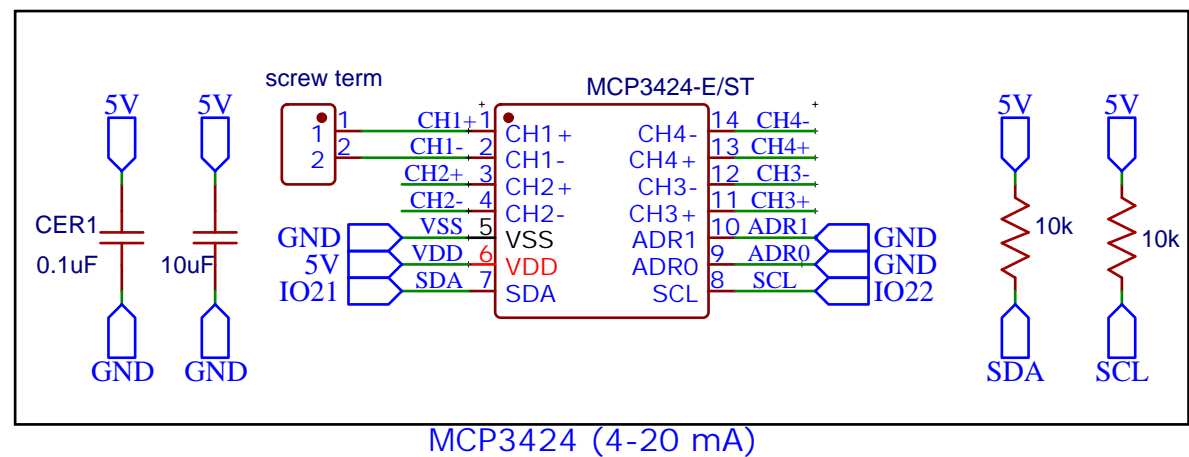
Max485 to AtMega1280



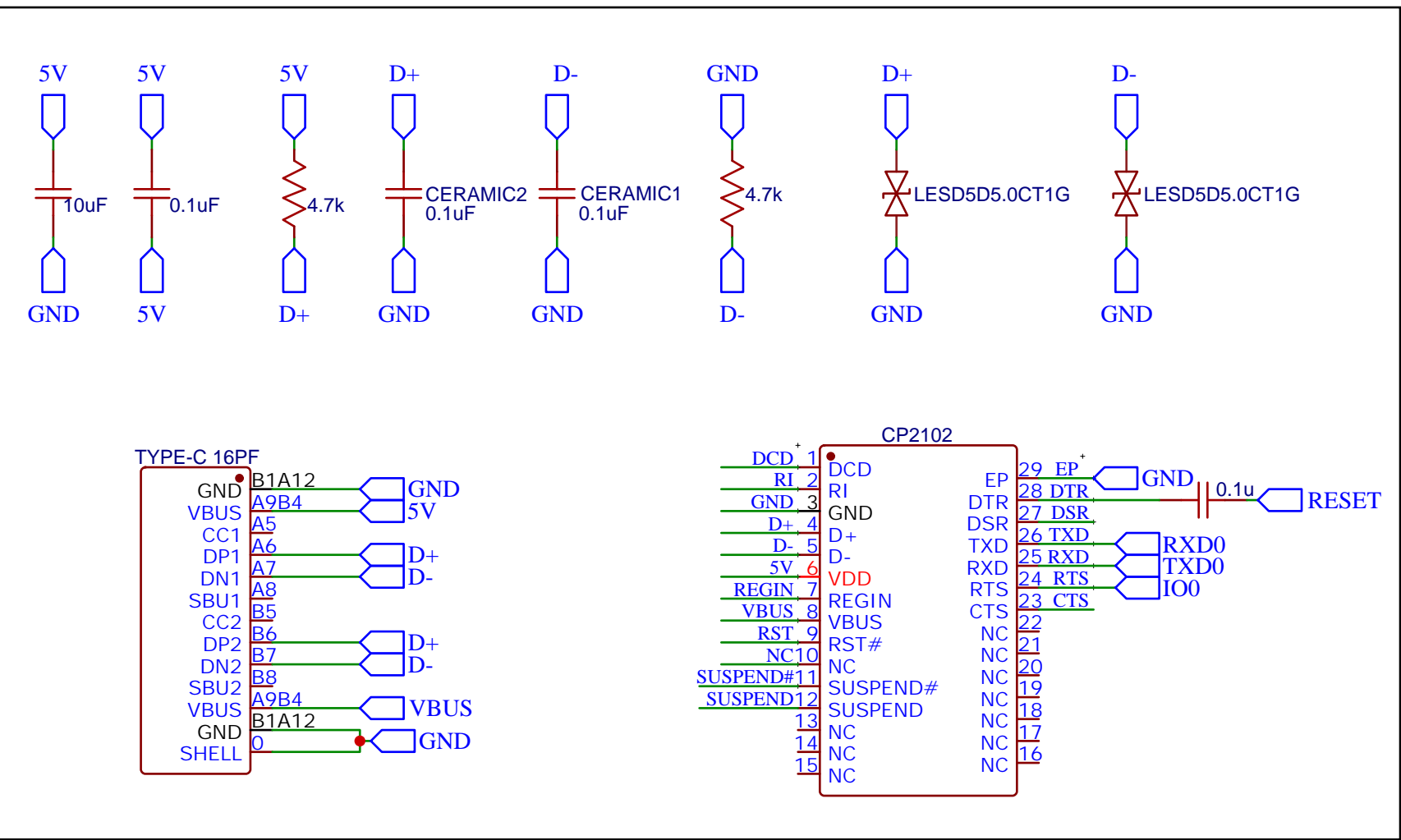
Rs232 to AtMega1280



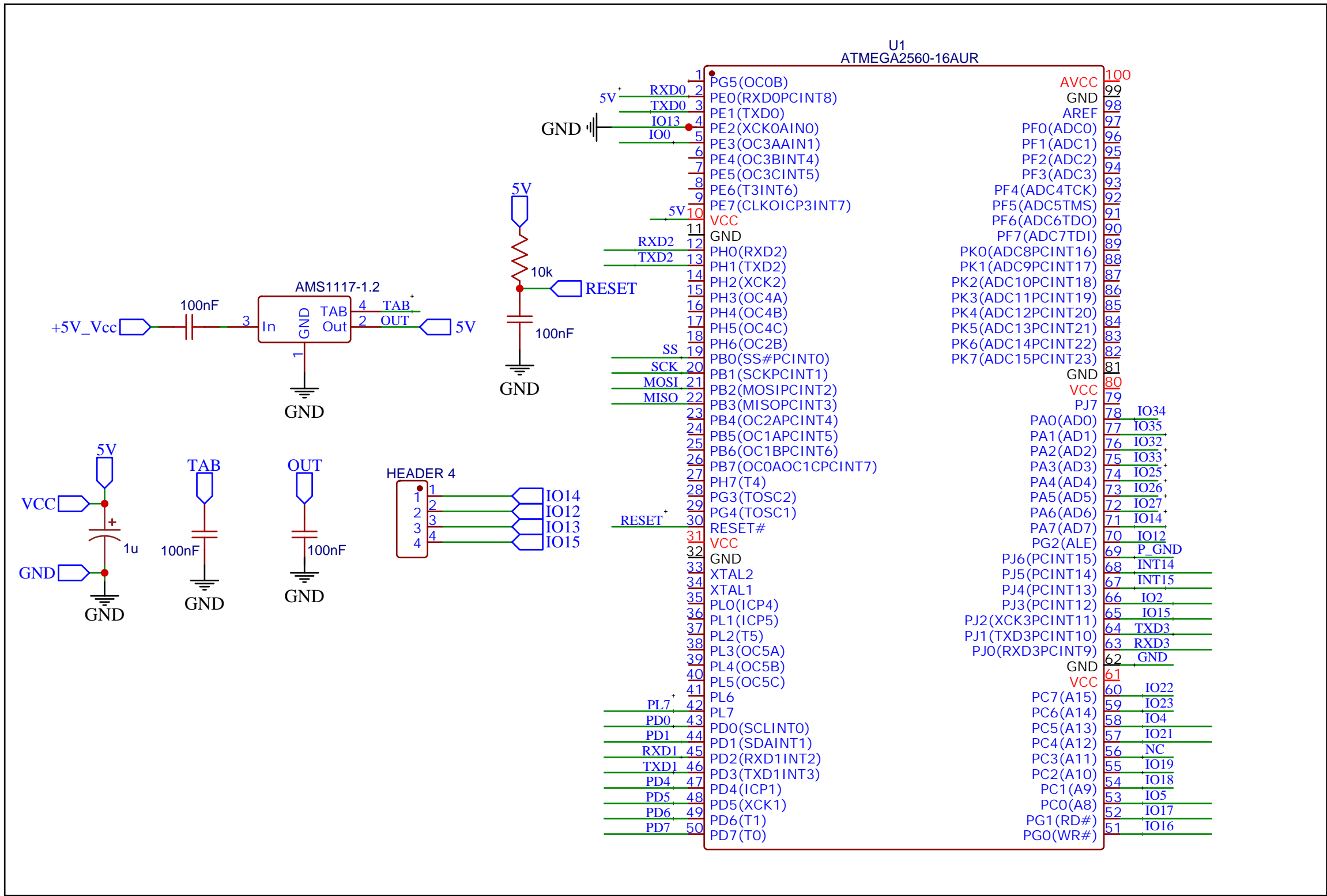
Micro SD Card Module



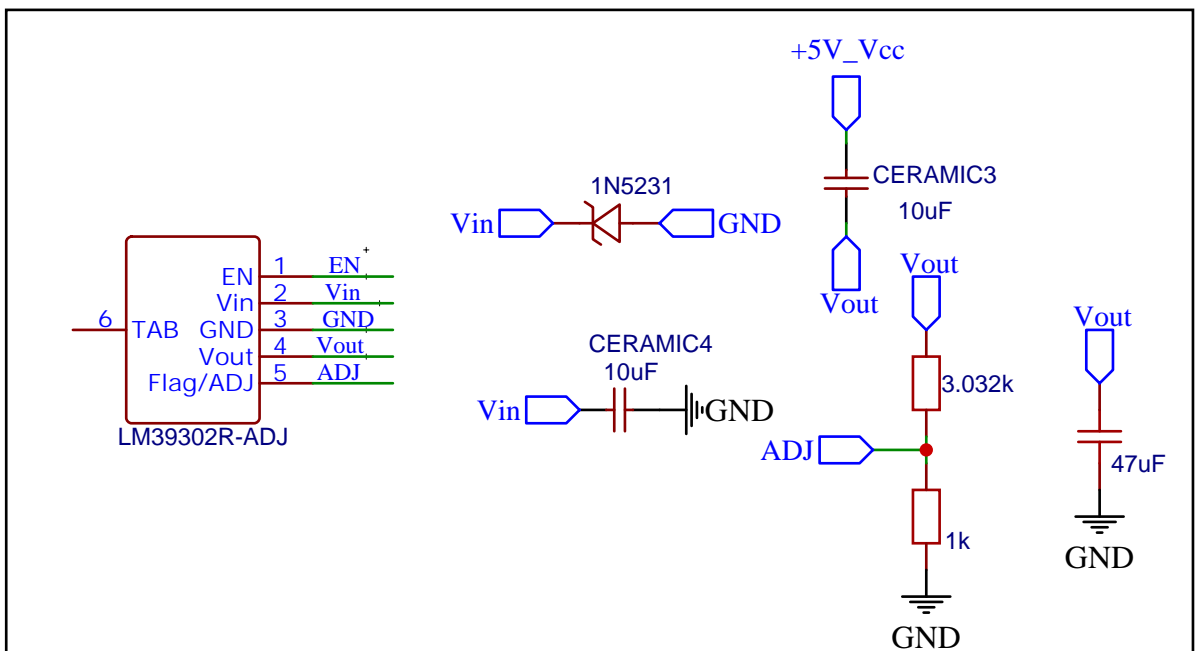
MCP3424 (4-20 mA)



USB C to PROGRAMMER



ATmega2560



Voltage Regulator

$R1/R2 = (V_{out}/V_{ref}) - 1$

$R1/R2 = (5V/1.240V) - 1$

$R1/R2 = 4.032 - 1$

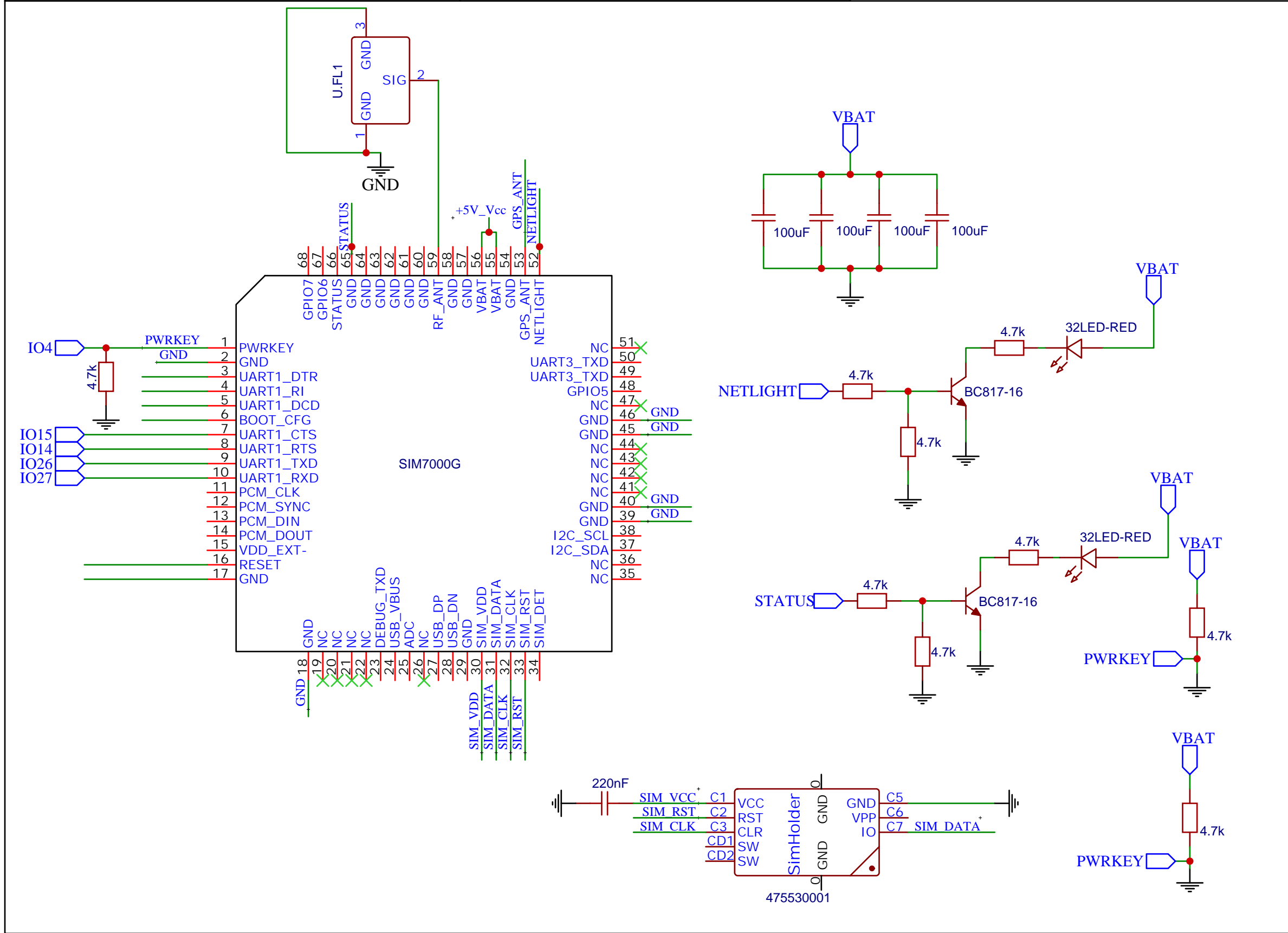
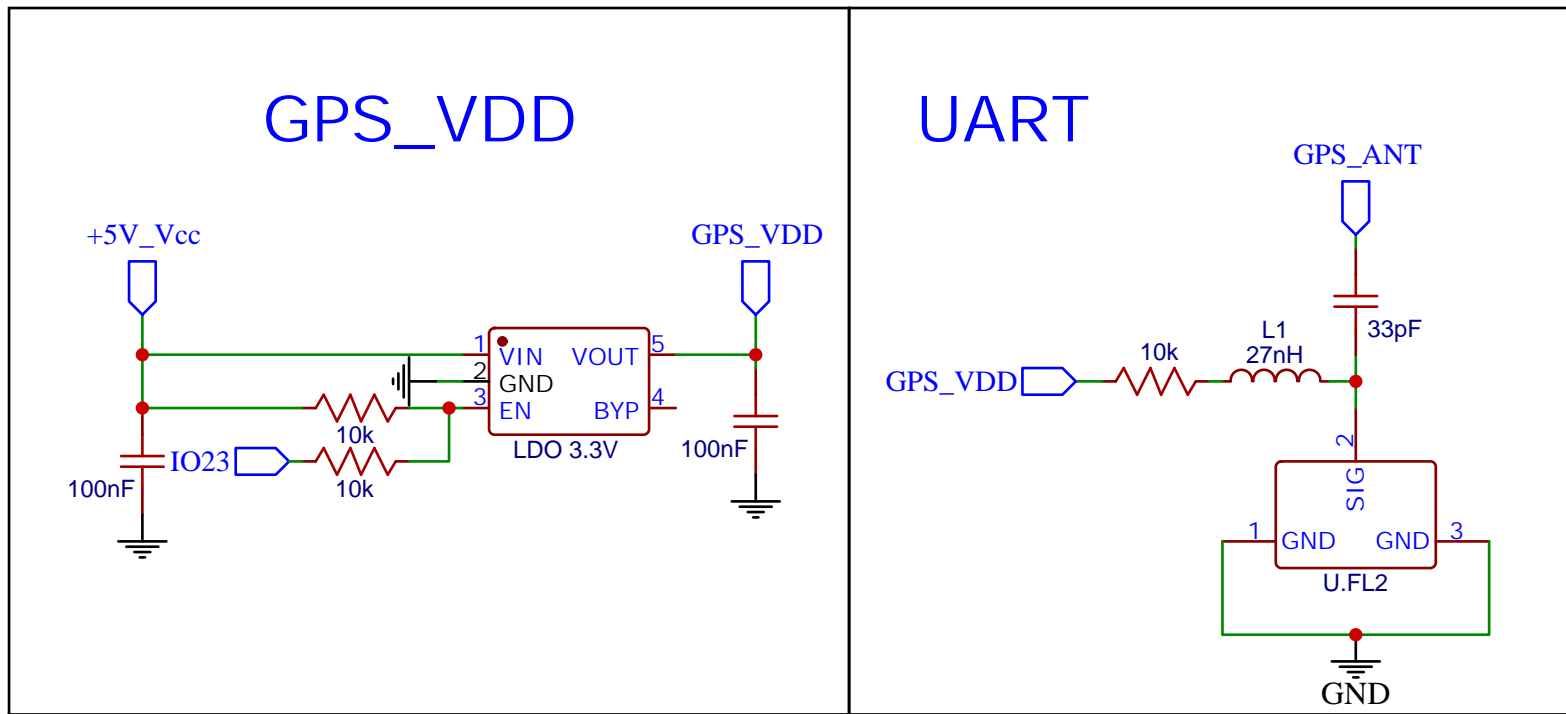
$R1/R2 = 3.032$

$R1 = 3.032 \times R2$

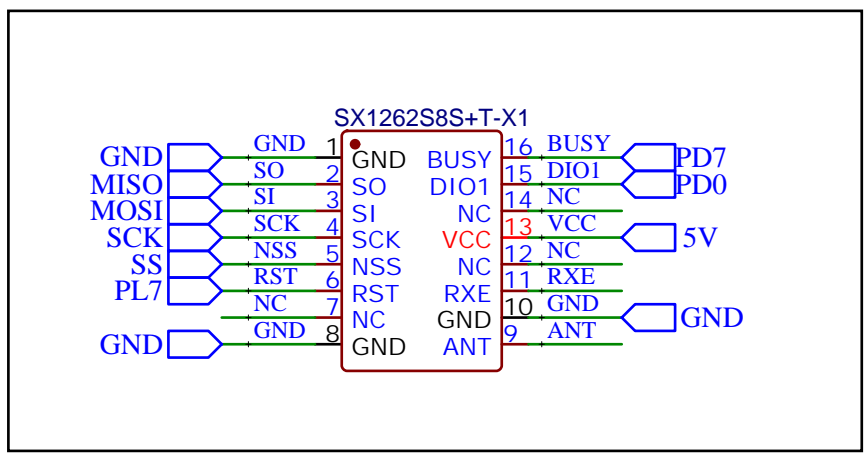
$R1 = 3.032 \times 1k$

$R1 = 3.032k$

$V_{out} = 5V$   
 $V_{ref} = 1.240V$



Sim7000G GPS,RF Antenna to esp32



SX1262 (LoRa)

Componnts to ATMEGA2560 Connections -

| Max485 |      |
|--------|------|
| RO     | RXD2 |
| RE     | IO4  |
| DE     | IO4  |
| DI     | TXD2 |
| VCC    | 5V   |

| MCP3424 (4-20mA) |      |
|------------------|------|
| VSS              | GND  |
| VDD              | 5V   |
| SDA              | IO21 |
| ADR0             | GND  |
| SCL              | IO22 |

| RS232 |      |
|-------|------|
| T1OUT | IO16 |
| R1IN  | RXD1 |
| T1OUT | IO17 |
| T1IN  | TXD1 |

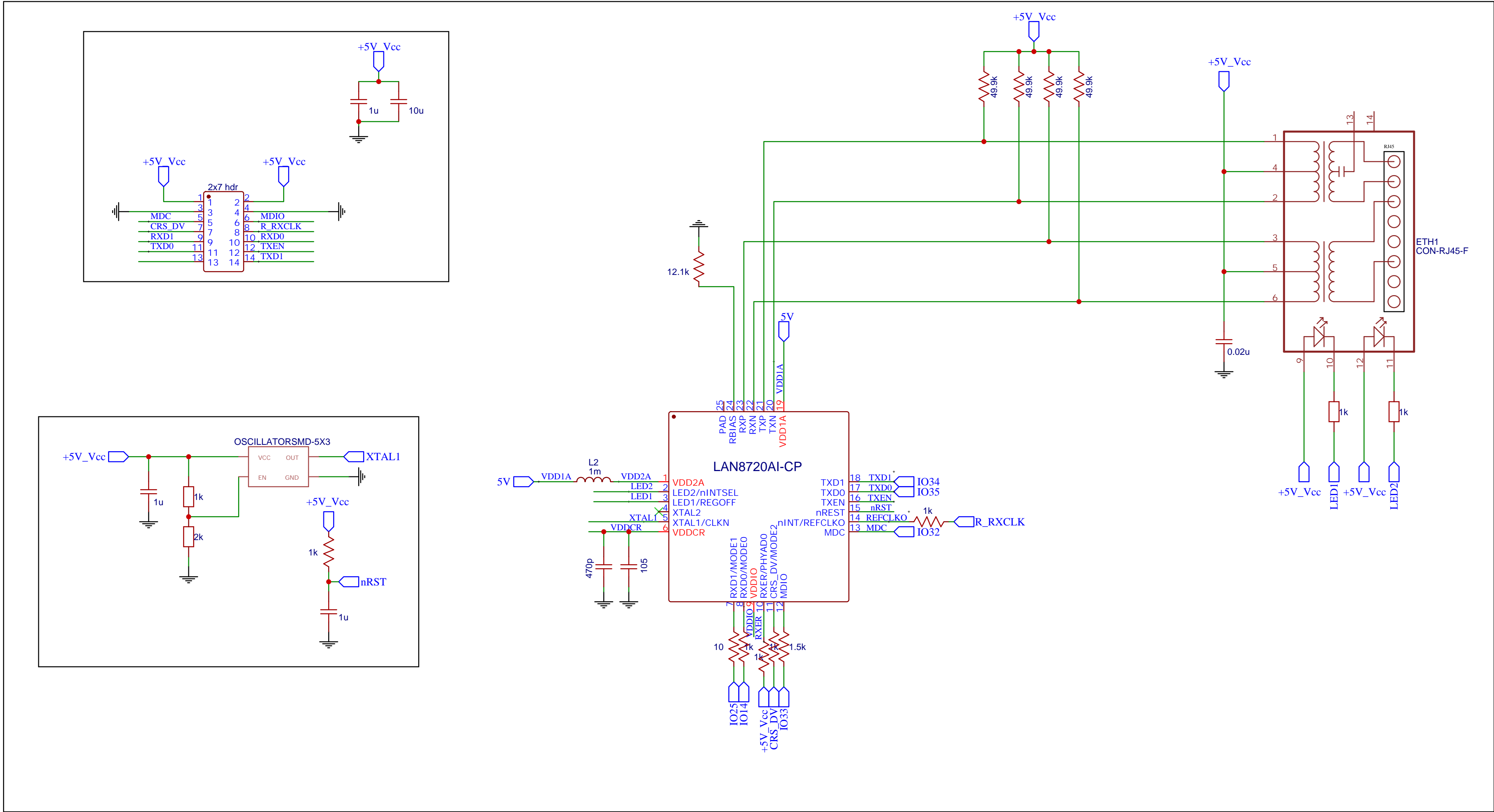
| USB Type-C |      | CP2102 |       |
|------------|------|--------|-------|
| B1A12      | GND  | EP     | GND   |
| A9B4       | 5V   | DTR    | 0.1uF |
| A6         | D+   | TXD    | RESET |
| A7         | D-   | TXD0   |       |
| B6         | D+   | RXD    |       |
| B7         | D-   | RTS    |       |
| A9B4       | VBUS |        |       |
| B1A12      | GND  |        |       |

| 74LVC125APW,118 |        |      |
|-----------------|--------|------|
| 2               | 3.3K   | IO23 |
| 3               | MOSI   |      |
| 5               | 3.3K   | IO18 |
| 6               | SCK    |      |
| GND             | GND    |      |
| VCC             | 5V     |      |
| 12              | 3.3K   | MISO |
| 11              | IO19   |      |
| 9               | 3.3K   | IO15 |
| 8               | CS_LLS |      |

| SX1262 (LoRa) |      |
|---------------|------|
| GND           | GND  |
| SO            | MISO |
| SI            | MOSI |
| SCK           | SCK  |
| SS            | NSS  |
| PL7           | RST  |
| GND           | GND  |
| GND           | GND  |
| VCC           | 5V   |
| DIO1          | PD0  |
| BUSY          | PD7  |

| SIM7000G |      |
|----------|------|
| PWRKEY   | 4.7K |
| 7        | IO15 |
| 8        | IO14 |
| 9        | IO26 |
| 10       | IO27 |

| LAN8720 |      |       |    |
|---------|------|-------|----|
| VDD2A   | 1mH  | VDD1A | 5V |
| 7       | 10K  | IO25  |    |
| 8       | 1K   | IO14  |    |
| 12      | 1.5K | IO33  |    |
| 13      |      | IO32  |    |
| TXD0    | IO35 |       |    |
| TXD1    | IO34 |       |    |
| VDD1A   | 5V   |       |    |



Ethernet to LAN8720A to esp32