

# ESP32-S3 GPS + IMU Data Sender

PROJECT FILES



**Generated by:** antonio.openspace@celus.io

**Exported date:** 07 June 2023, 15:19

## PROJECT DETAILS

**Project name:**

ESP32-S3 GPS + IMU Data Sender

**Project description:**

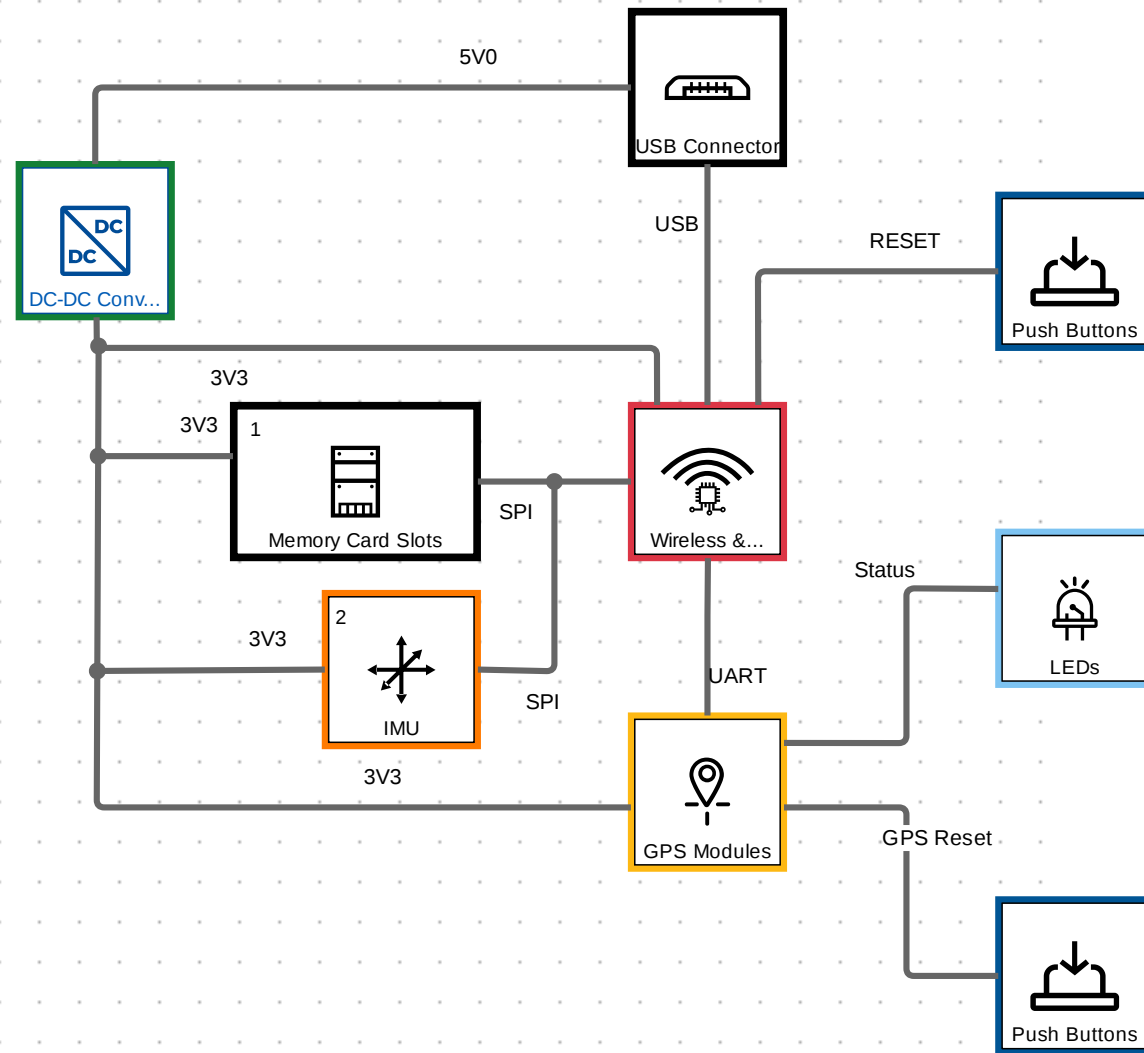
Little board with a GPS receiver. Thank to the ESP32-S3 Wi-Fi and Bluetooth®, the information about the position can be sent via Bluetooth or Wi-Fi to another location.

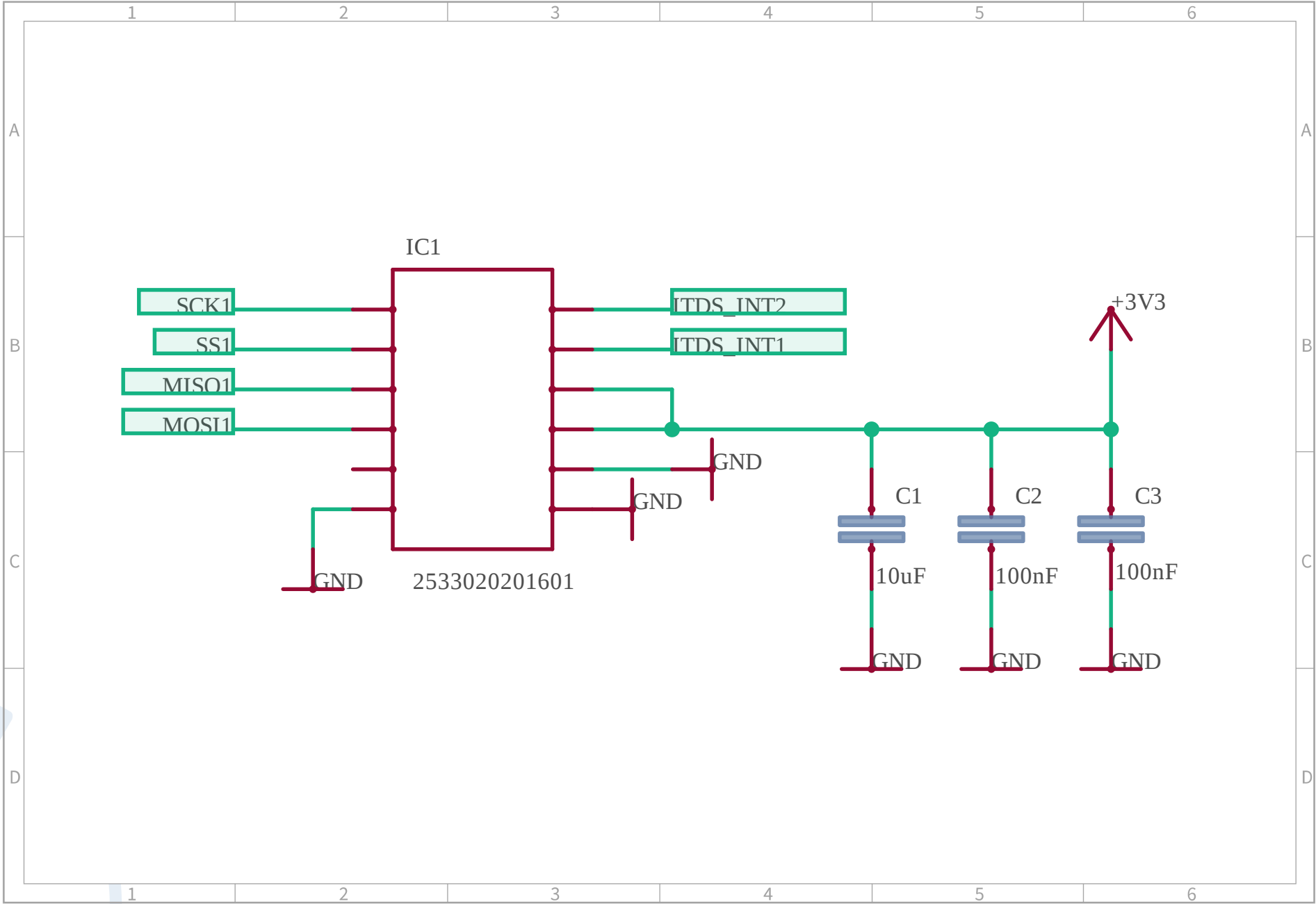
**Selected CAD tool:**

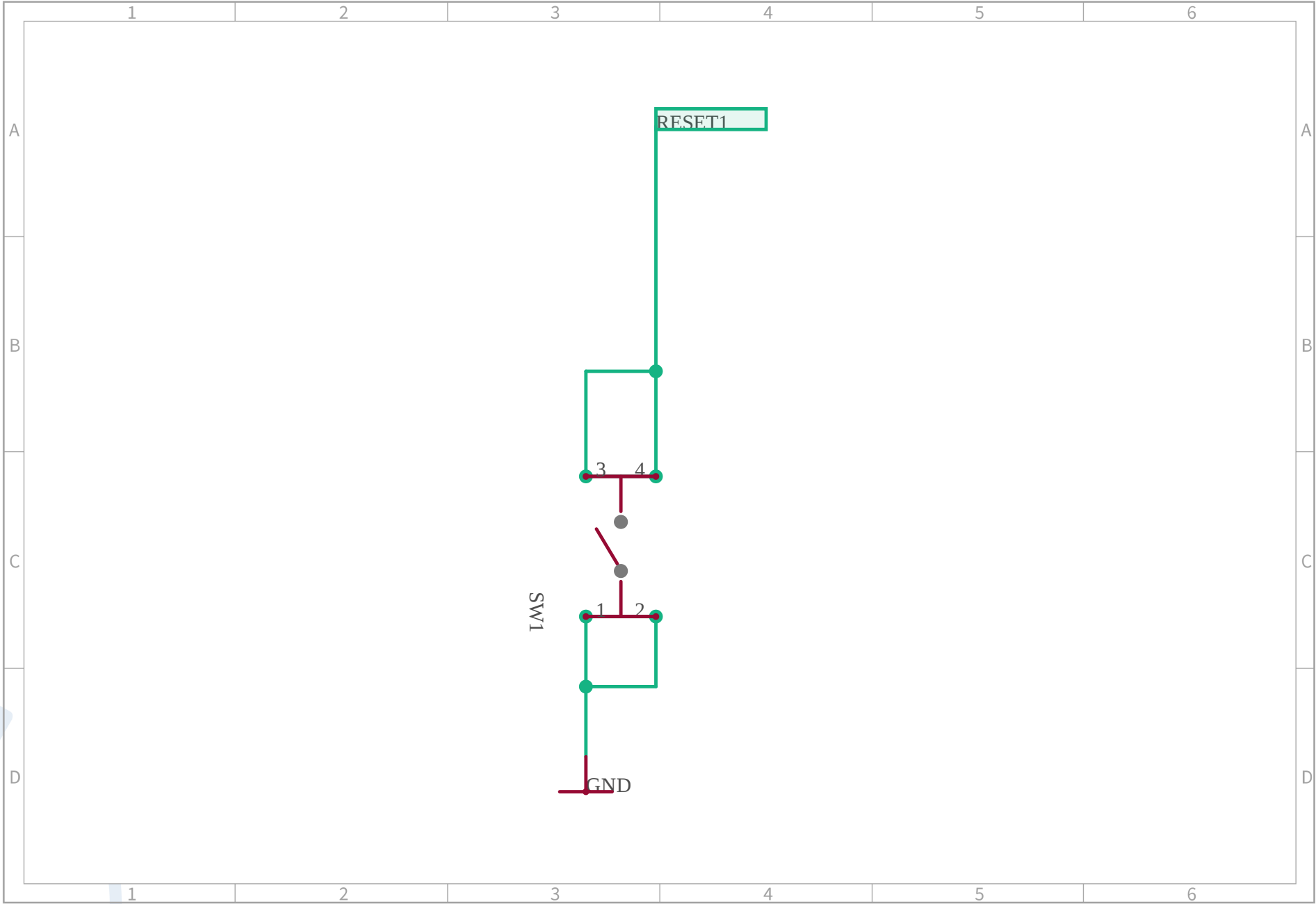
Eagle

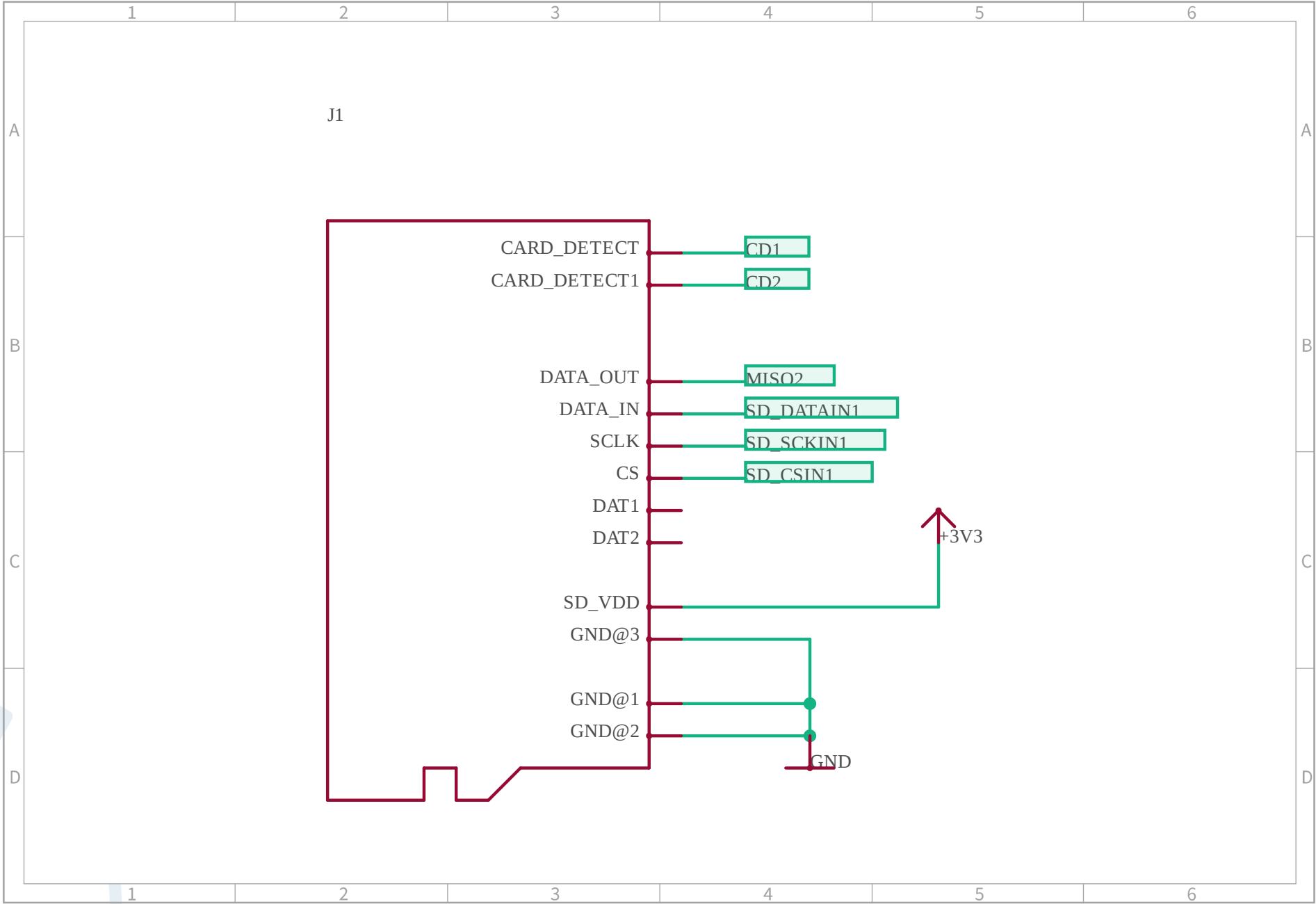
**Generated by:** antonio.openspace@celus.io

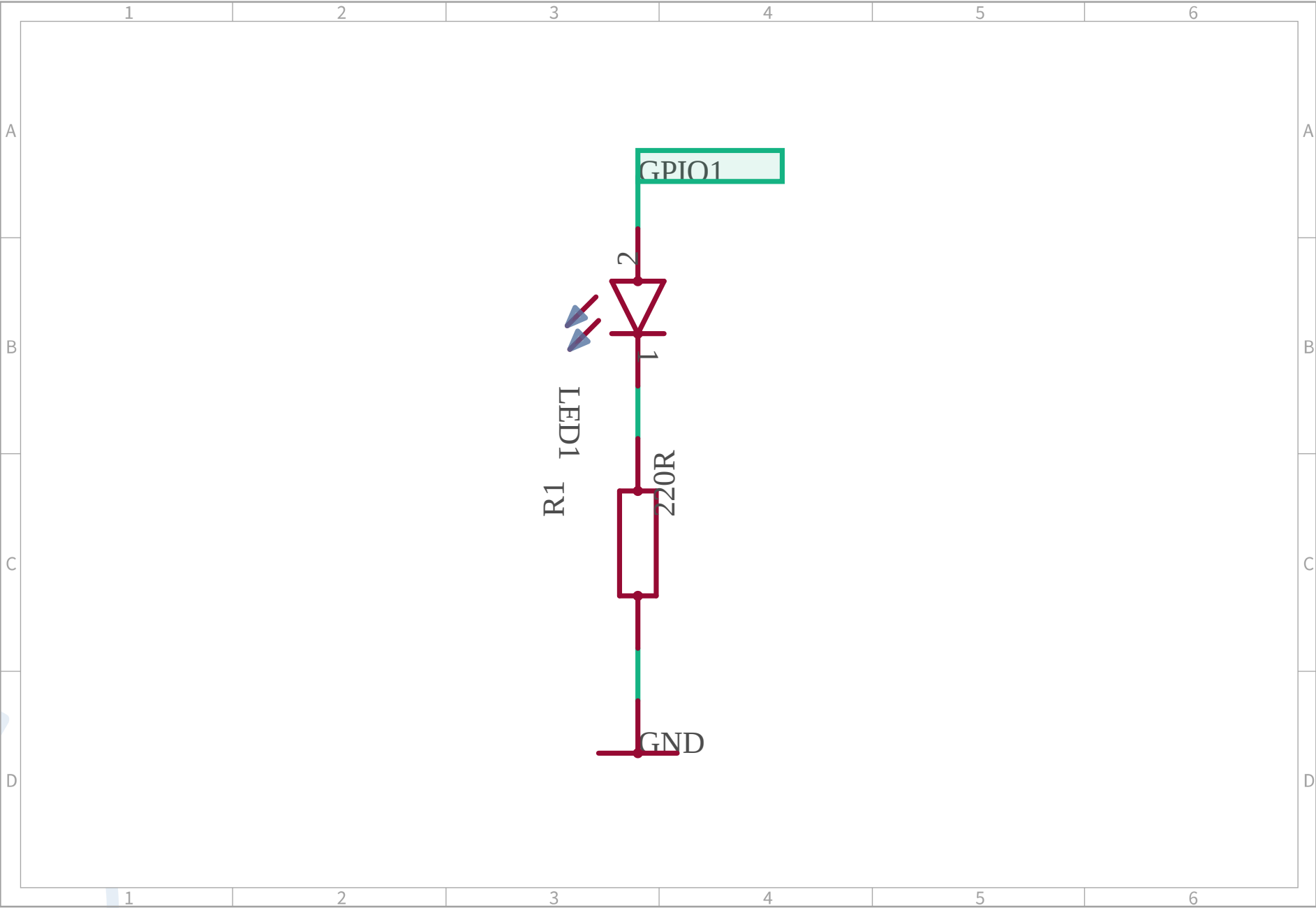
**Exported date:** 07 June 2023, 15:19

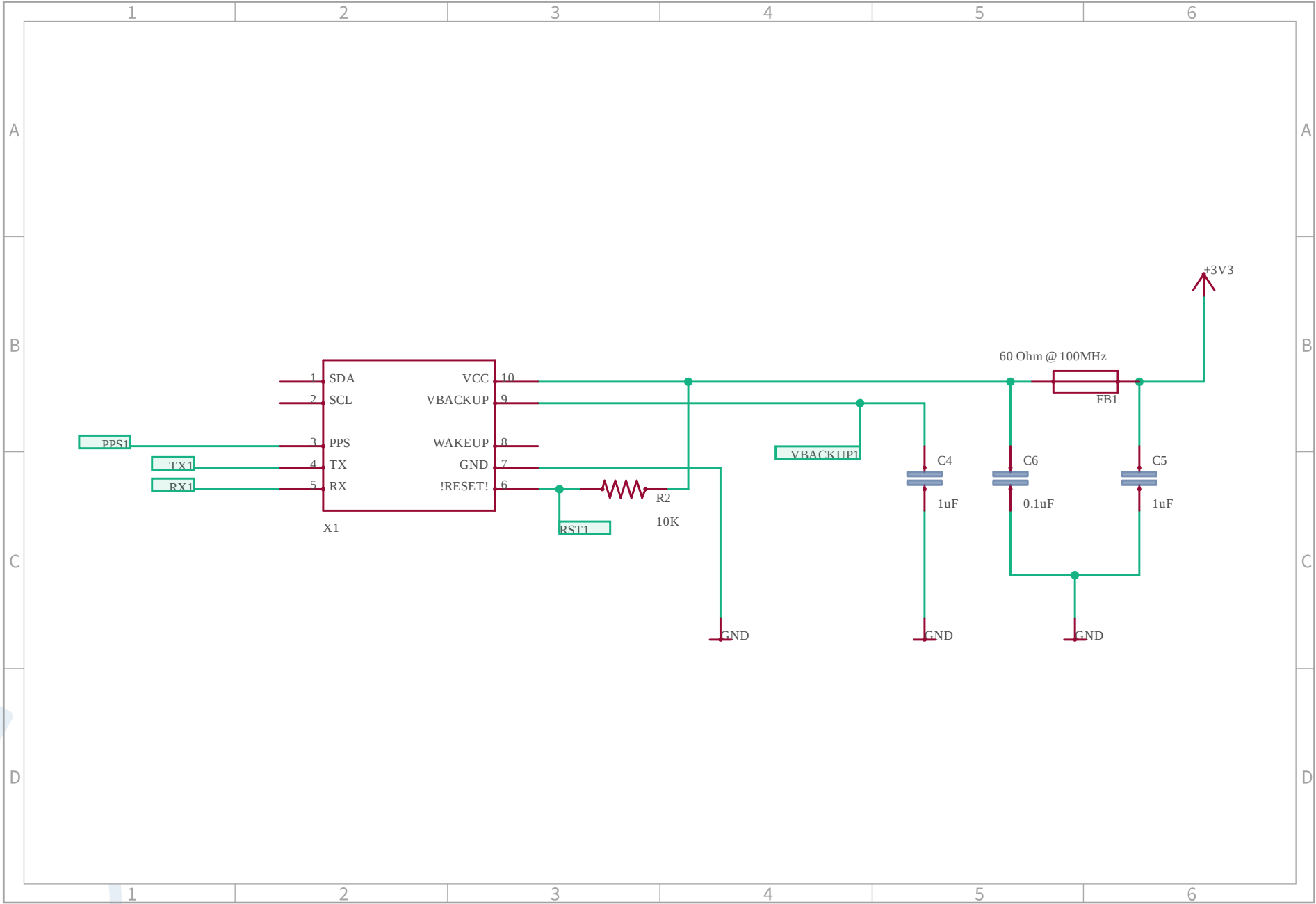


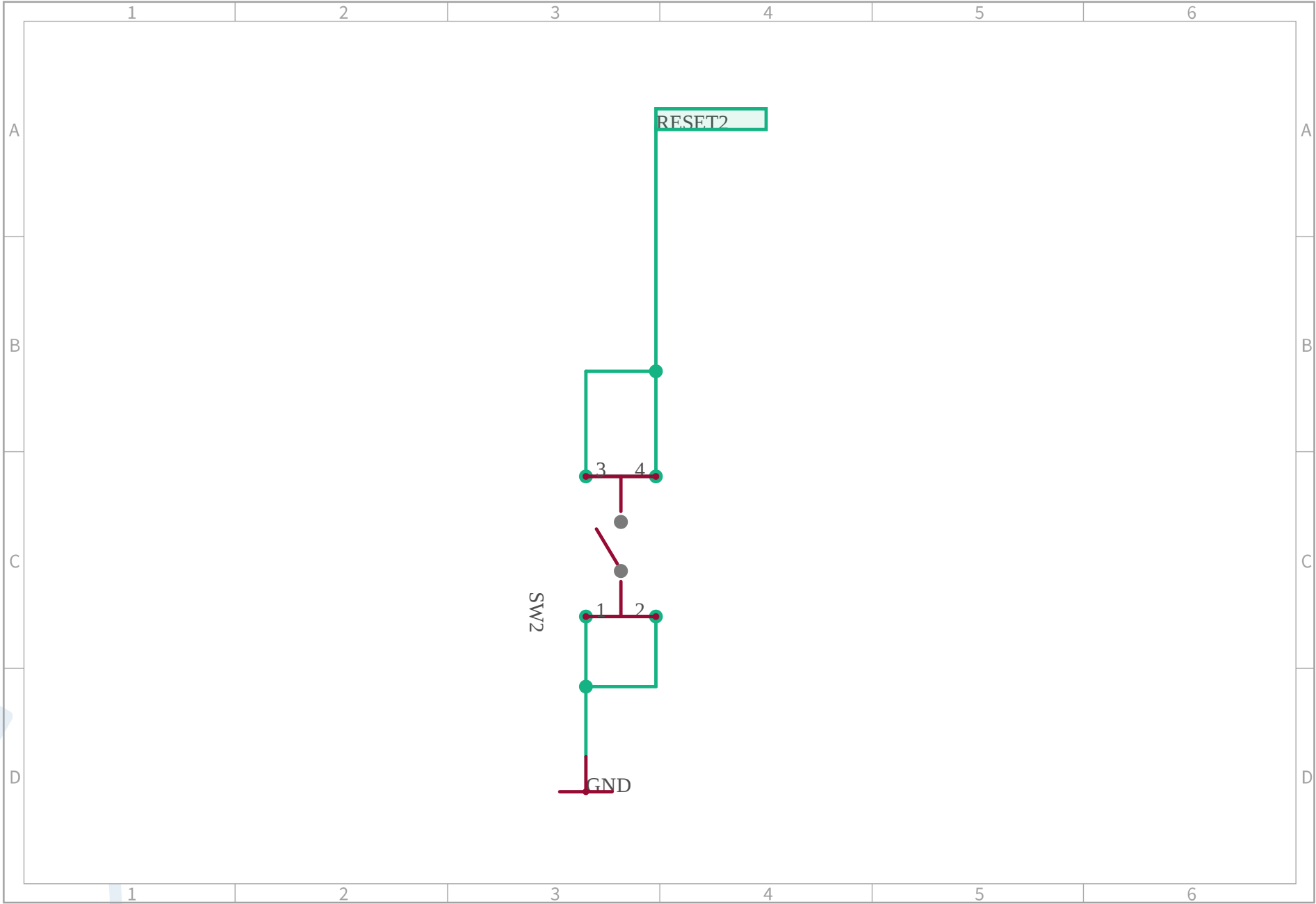


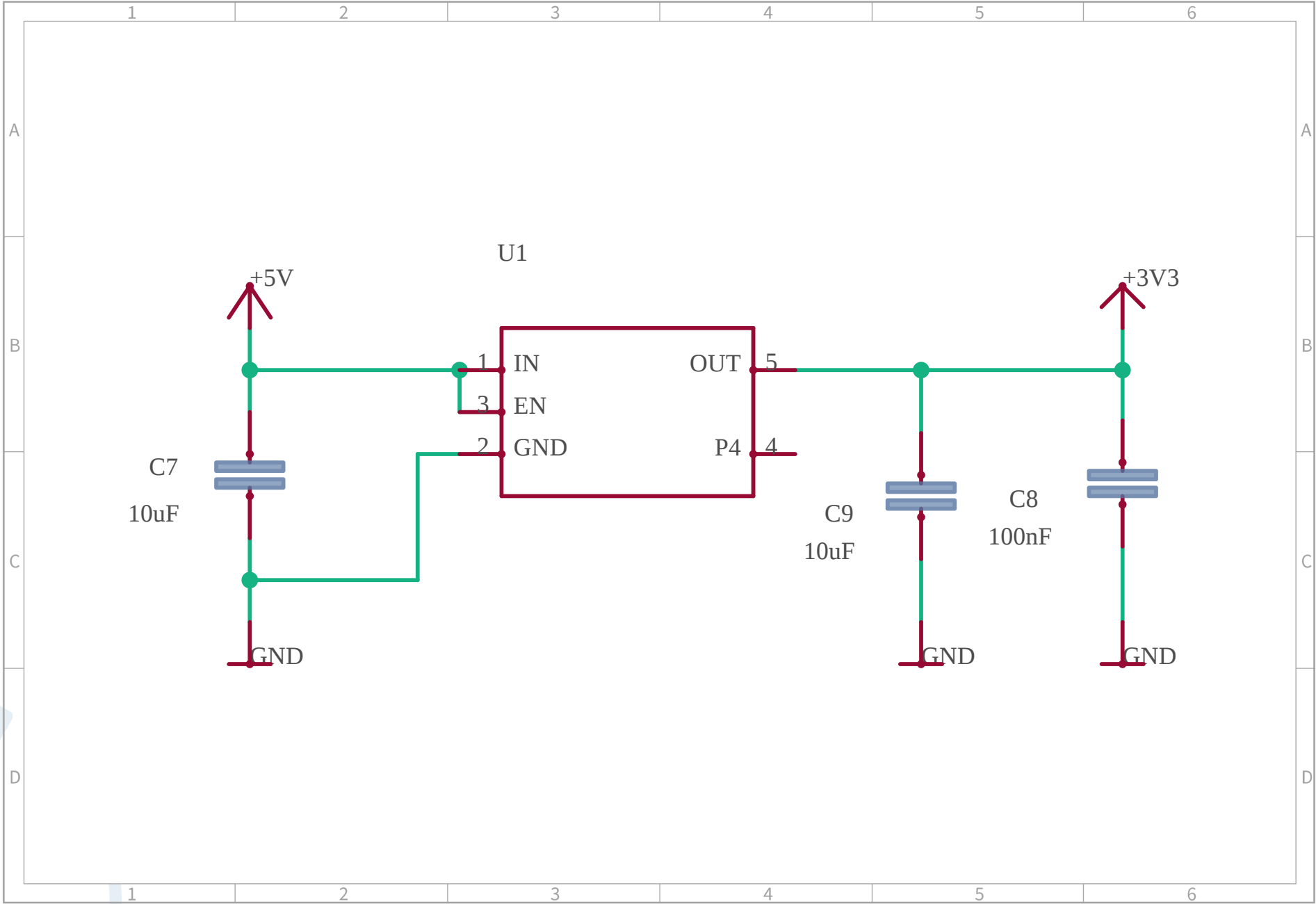


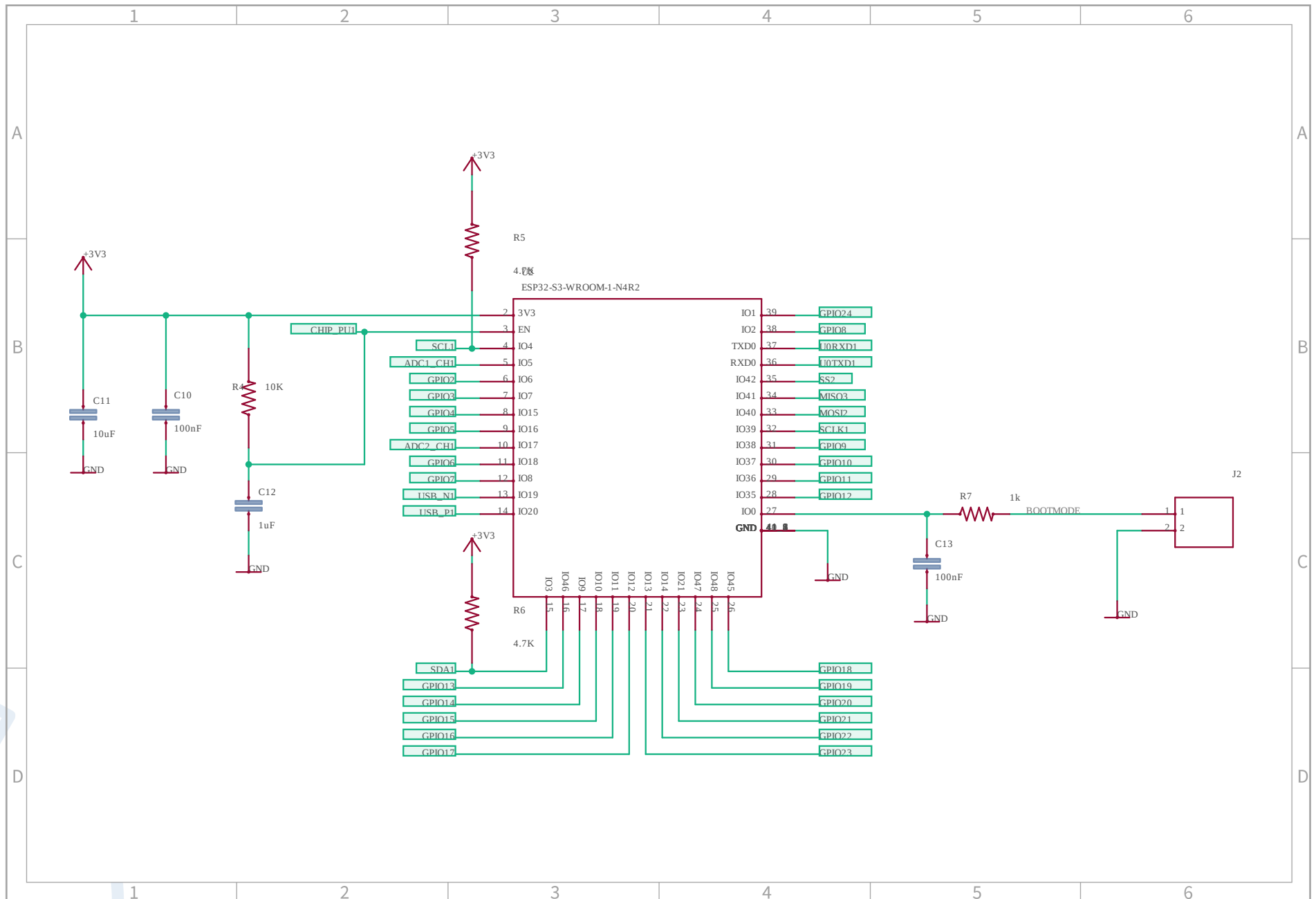


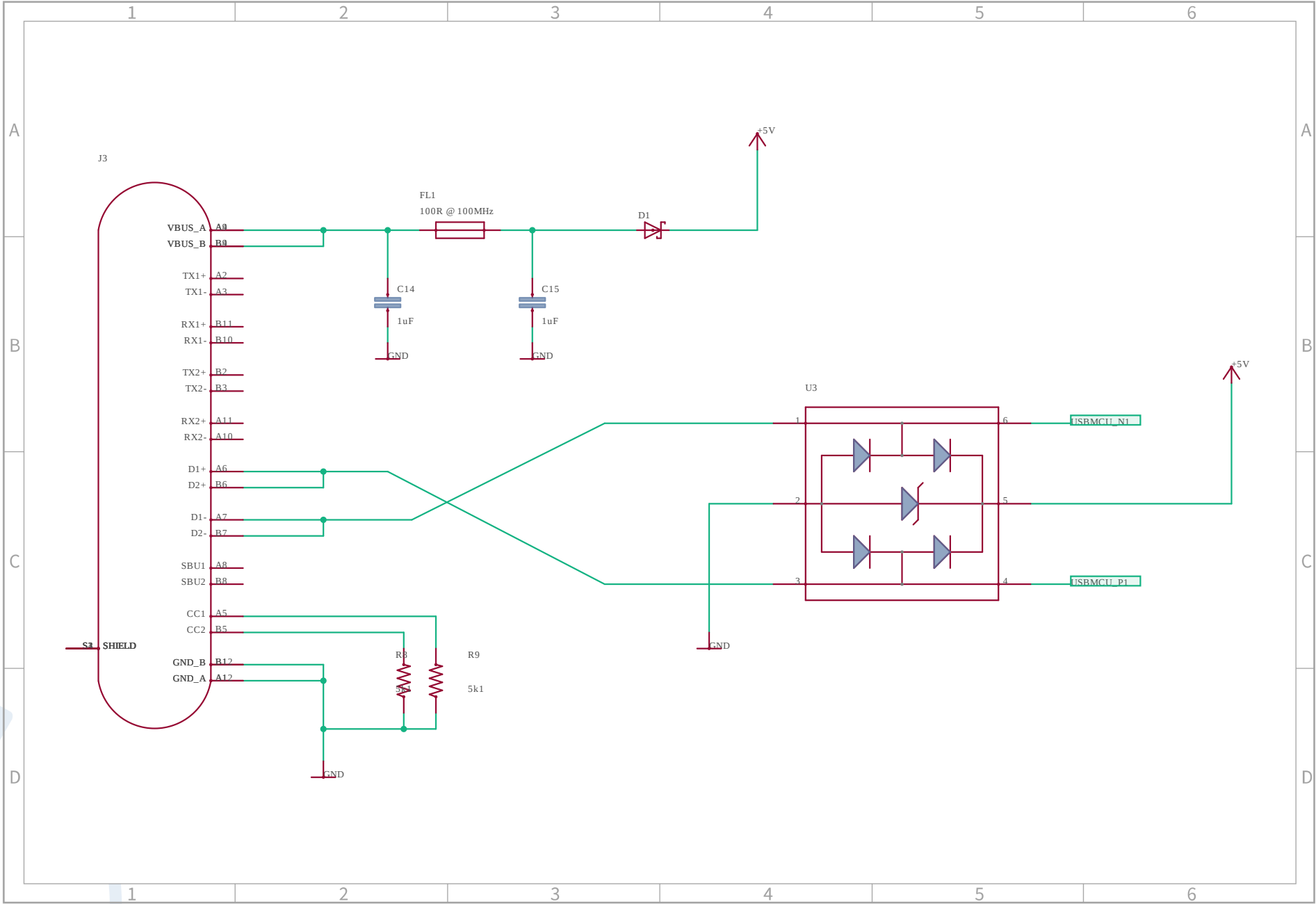


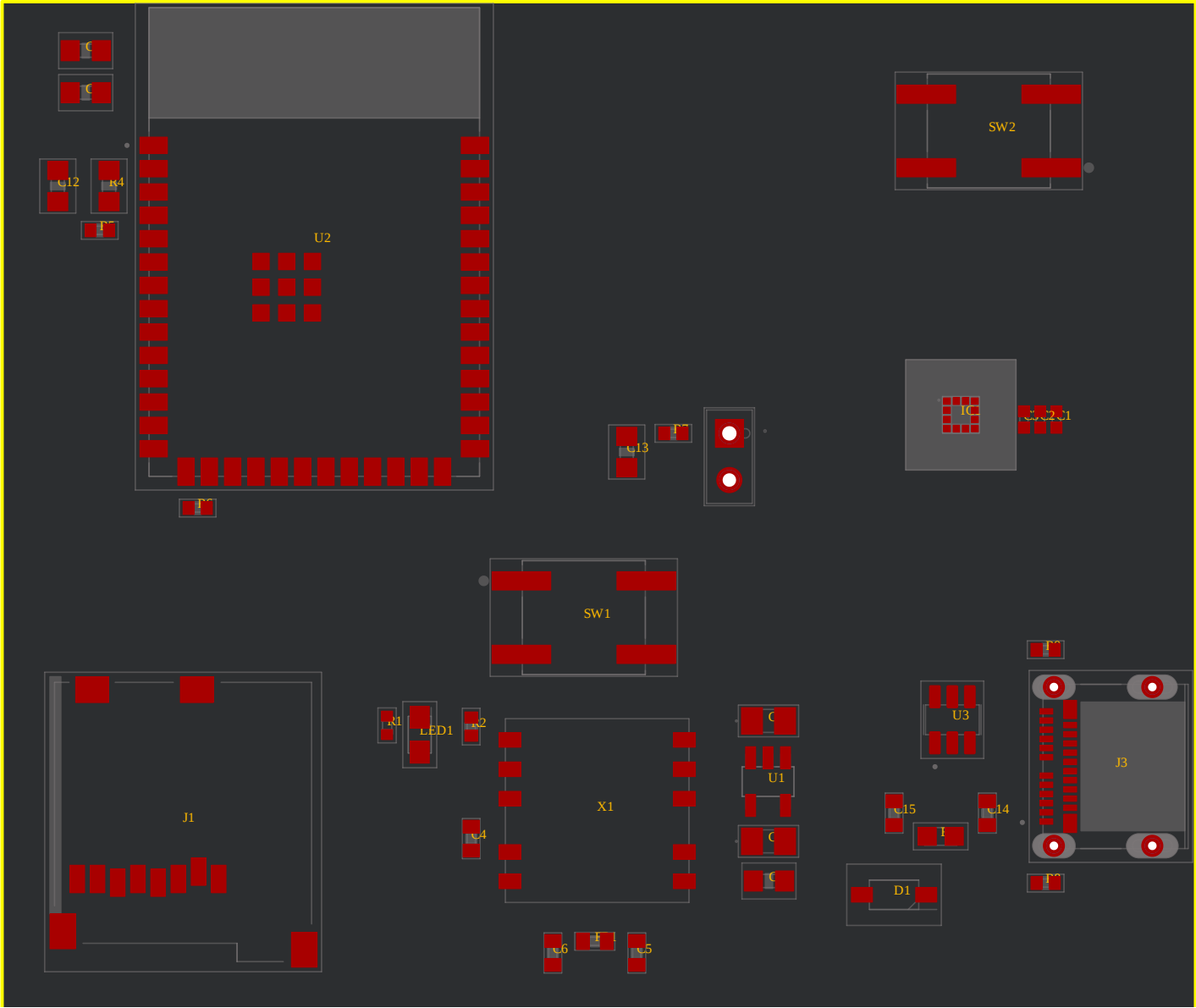


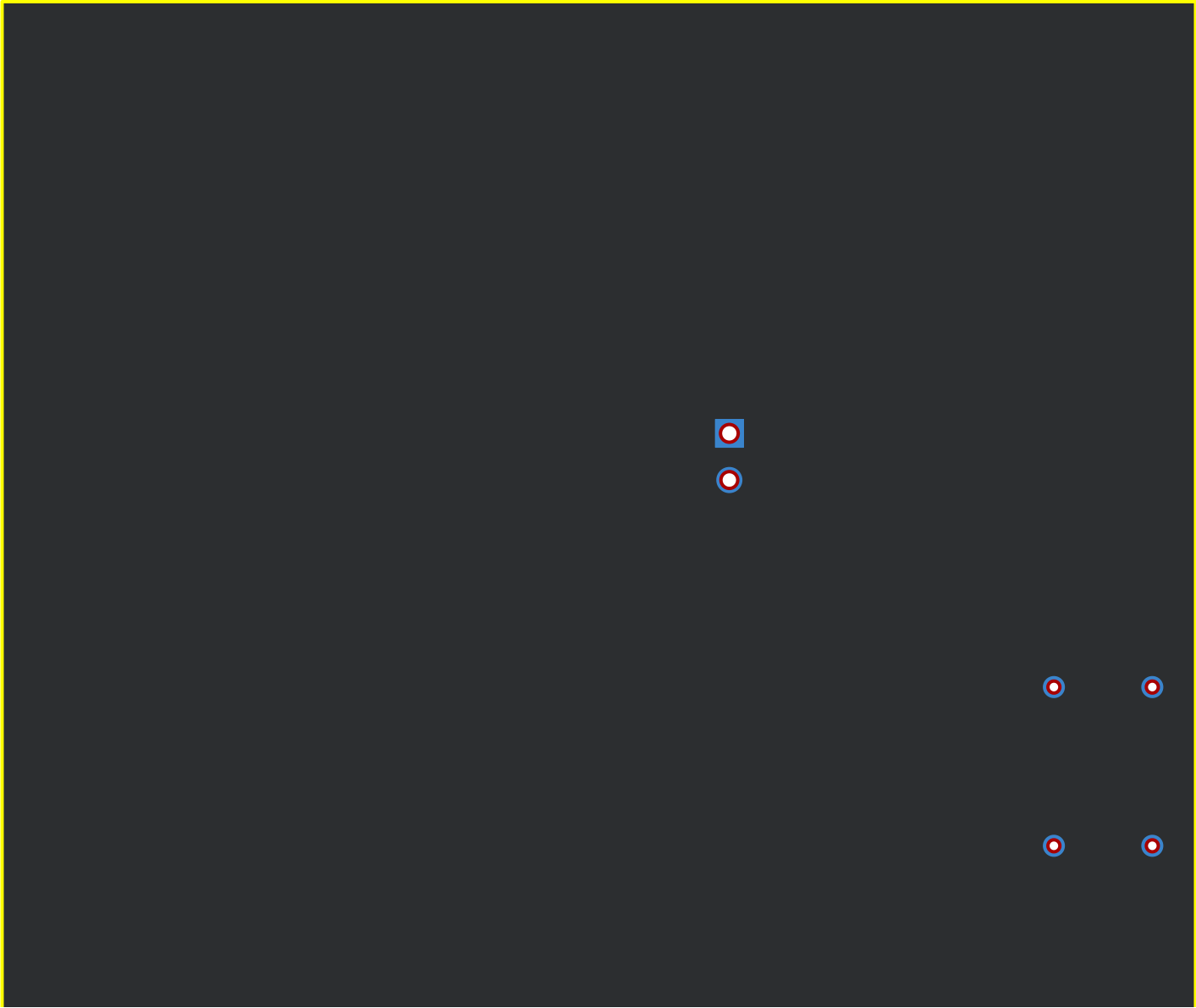












| Part | Value           | Package  | Description                                                             | Man. P/N           | Man. Name           |
|------|-----------------|----------|-------------------------------------------------------------------------|--------------------|---------------------|
| C1   | 10uF            | 0402     | Cap, 10Uf, 6.3V, Mlcc, 0402 Rohs Compliant                              | 885012105020       | Wuerth Elektronik   |
| C2   | 100nF           | 0402     | Cap Ceramic 0.1uF 16V X7R 10% Pad SMD 0402 125C                         | 885012205037       | Wuerth Elektronik   |
| C3   | 100nF           | 0402     | Cap Ceramic 0.1uF 16V X7R 10% Pad SMD 0402 125C                         | 885012205037       | Wuerth Elektronik   |
| IC1  |                 | LGA-10   | Mems Accelerometer, X/Y/Z, Lga-10                                       | 2533020201601      | Wuerth Elektronik   |
| SW1  |                 |          | SPST Tactile Switch, Non Illuminated, 3.5 N, 15 V, 20 mA, Solder        | EVQ-Q2Y03W         | Panasonic           |
| CN1  |                 |          | 8 Position Card Connector Secure Digital - microSD Surface Mount, Ri... | 2908-05WB-MG       | 3M                  |
| LED1 | Blue            | 0805     | Blue 470 nm LED Indication - Discrete 3.2V 0805                         | 150080BS75000      | Wurth Elektronik    |
| R1   | 220R            | 0402     | Res Thick Film 0402 220 Ohm 1% 1/16W +/-100ppm/ Deg C                   | RC0402FR-07220RL   | Yageo               |
| C4   | 1uF             | 0402     | Multilayer Ceramic Capacitor, 1 uF, 10 V, +/- 10%, X5R, 0402            | 0402ZD105KAT2A     | KYOCERA AVX         |
| C5   | 1uF             | 0402     | Multilayer Ceramic Capacitor, 1 uF, 10 V, +/- 10%, X5R, 0402            | 0402ZD105KAT2A     | KYOCERA AVX         |
| C6   | 0.1uF           | 0402     | Multilayer Ceramic Capacitor, 0.1 uF, 10 V, +/- 10%, X5R, 0402          | 0402ZD104KAT2A     | KYOCERA AVX         |
| FB1  | 60 Ohm @ 100MHz | 0402     | Ferrite Beads Multi-Layer 60Ohm 25% 100MHz 1.7A 60mOhm DCR 0402         | BLM15PD600SN1D     | Murata              |
| R2   | 10K             | 0402     | Thick Film Res 0402 10K Ohm 1% 1/16W +/- 100ppm/ Deg C Molded ...       | CRCW040210K0FKED   | Vishay              |
| X1   |                 |          | Module; GPS/GLONASS/GALILEO/QZSS; L1; 22/66; MT3339; TTF 1s ...         | PA1010D            | CDTop Technology    |
| SW2  |                 |          | SPST Tactile Switch, Non Illuminated, 3.5 N, 15 V, 20 mA, Solder        | EVQ-Q2Y03W         | Panasonic           |
| C7   | 10uF            | 0805     | 10uF, +/-10%, 35V, Ceramic Capacitor C0G, JB 0805 (2012 Metric)         | C2012JB1V106K085AC | TDK                 |
| C8   | 100nF           | 0603     | 0.1uF, 25V, +/-5%, 0603(1608 Metric), Ceramic Capacitor X7R             | 06033C104JAT2A     | Kyocera             |
| C9   | 10uF            | 0805     | 10uF, +/-10%, 35V, Ceramic Capacitor C0G, JB 0805 (2012 Metric)         | C2012JB1V106K085AC | TDK                 |
| U1   |                 | SOT-23-5 | Linear Voltage Regulator IC Positive Fixed 1 Output 600mA SOT-25        | AP2112K-3.3TRG1    | Diodes Incorporated |
| C10  | 100nF           | 0603     | 0.1uF, 50V, Y5V, -20%,+80%, 0603, MLCC - SMD/SMT                        | 06035G104ZAT4A     | KYOCERA AVX         |
| C11  | 10uF            | 0603     | Multilayer Ceramic Capacitor, 10 uF, 25 V, +/- 20%, X5R, 0603           | GRM188R61E106MA73D | Murata              |
| C12  | 1uF             | 0603     | 1uF, 50V, +/-10%, 0603 (1608 Metric), Ceramic Capacitor X7R             | UMK107AB7105KA-T   | Taiyo Yuden         |
| C13  | 100nF           | 0603     | 0.1uF, 50V, Y5V, -20%,+80%, 0603, MLCC - SMD/SMT                        | 06035G104ZAT4A     | KYOCERA AVX         |
| R3   | 0R              | 0603     | 0 Ohm, Jumper, 1/10W, 0603 (1608 Metric) Chip Resistor - Thick Film     | CRCW06030000Z0EAC  | Vishay              |
| R4   | 10K             | 0603     | 10 kOhm, 0.25W, 1%, 0603, Thick Film Resistors                          | ERJ-UP3F1002V      | Panasonic           |
| R5   | 4.7K            | 0402     | Thick Film Res, 4K7, 0.5%, 0.1W, 0402                                   | ERJ-H2RD4701X      | Panasonic           |
| R6   | 4.7K            | 0402     | Thick Film Res, 4K7, 0.5%, 0.1W, 0402                                   | ERJ-H2RD4701X      | Panasonic           |
| R7   | 1K              | 0402     | Res Thick Film 0402 1K Ohm 1% 1/16W ±100ppm/°C Molded SMD               | CRCW04021K00FKED   | Vishay              |

| Part | Value                 | Package  | Description                                                            | Man. P/N              | Man. Name          |
|------|-----------------------|----------|------------------------------------------------------------------------|-----------------------|--------------------|
| U2   | ESP32-S3-WROOM-1-N4R2 |          | WiFi-Modul 802.11/BT 2, 4-2, 5GHz 150Mb/s                              | ESP32-S3-WROOM-1-N4R2 | Espressif Systems  |
| J2   | 1x2                   |          | Conn Unshrouded Header HDR 2 POS 2.54mm Solder ST Top Entry T...       | 22-28-5024            | Molex              |
| J3   |                       |          | USB-C (USB TYPE-C) USB 3.2 Gen 2 (USB 3.1 Gen 2, Superspeed + ...      | 105450-0101           | Molex              |
| R8   | 5k1                   | 0402     | Res SMD 5.1K Ohm 5% 1/5W 0402                                          | CRCW04025K10JNEDHP    | Vishay             |
| R9   | 5k1                   | 0402     | Res SMD 5.1K Ohm 5% 1/5W 0402                                          | CRCW04025K10JNEDHP    | Vishay             |
| C14  | 1uF                   | 0402     | 0402 1 uF 16 V +/-10 % Tolerance X5R Surface Mount Multilayer Cera...  | 0402YD105KAT2A        | KYOCERA AVX        |
| C15  | 1uF                   | 0402     | 0402 1 uF 16 V +/-10 % Tolerance X5R Surface Mount Multilayer Cera...  | 0402YD105KAT2A        | KYOCERA AVX        |
| D1   |                       | SOD-123  | BAT54T1 Series 30 V 600 mA Surface Mount Schottky Barrier Diode - ...  | BAT54T1G              | onsemi             |
| FL1  | 100R @100MHz          | 0603     | Ferrite Beads Multi-Layer 100Ohm 25% 100MHz 3A 30mOhm DCR 0603         | BLM18KG101TN1D        | Murata             |
| U3   |                       | SOT-23-6 | USBL6 Series 2 Line 6 V Uni / Bi-Directional ESD Protection - SOT-23-6 | USBL6-2SC6            | STMicroelectronics |

## Disclaimer:

1. The electronic designs created by the CELUS application software represent machine-generated drafts and always require verification and validation by qualified specialists.
2. Under our Terms & Conditions, you have acknowledged that Content uploaded or generated by you under a Community Account (the "**Community Content**") shall be accessible by other users of the Software and visitors of CELUS's websites. You have granted to CELUS and any other users of the Software and visitors of CELUS's websites the non-exclusive, unlimited (in terms of time, territory and content), sublicensable, transferable, royalty-free and irrevocable right to comprehensively use the Community Content in any known and currently unknown manner, in particular to reproduce, distribute, publish, put on display, recite, perform, present, make available to the public, send, forward or otherwise communicate to the public the Community Content in all media via any way and technique of transmission, regardless of the devices used therefor, and to change, translate, create derivative works from or otherwise rearrange the Community Content. Such right shall also include the right to use and exploit any such changed, translated, or otherwise rearranged Community Content and derivative works in the above mentioned manner.
3. Under our Terms & Conditions, you acknowledged that Content uploaded or generated by you under a Professional Account (the "**Professional Content**") shall not be accessible by other users of the Software and visitors of CELUS's websites unless you used functionality of the Software to share Content with such other users and visitors. You granted to CELUS the non-exclusive, unlimited (in terms of time and territory), sublicensable, transferable, royalty-free and irrevocable right to use the Professional Content for the sole purpose of performing CELUS's obligations under the Agreement and of improving and optimizing the Software and specific functionalities thereof, including for bug fixing, testing and rectifying defects as well as for statistical analyses.
4. Under our Terms & Conditions, you warranted that (a) you have sufficient rights to upload and generate the Content, (b) you have sufficient rights to grant to CELUS and any other users of the Software the rights specified in clauses 2 and 3, (c) there are no third-party rights, including privacy rights and intellectual property rights which restrict the uploading or generation of the Content by you and the use of the Content by CELUS and any other user of the Software pursuant to clauses 2 and 3, (d) the Content does not contain any viruses, worms, Trojan horses, malicious code or other harmful or destructive content, and (e) the Content does not contain any infringing, libellous, or otherwise unlawful or tortious content.