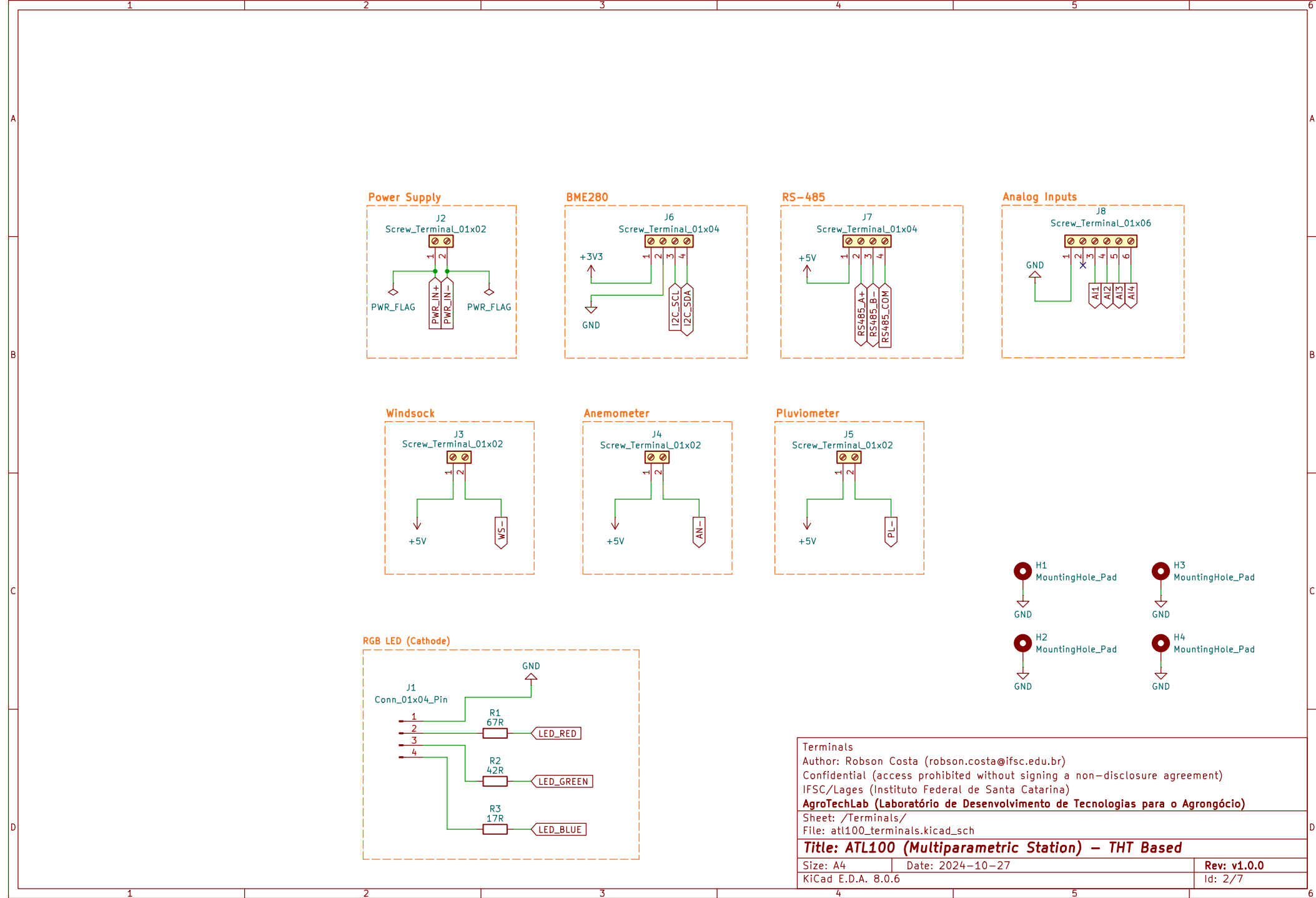
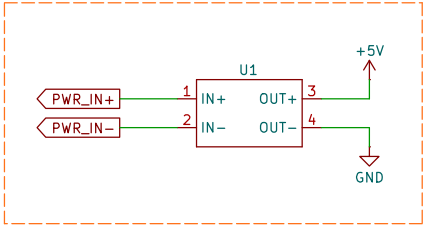


	1	2	3	4	5	6
A	<div>ATL-100 (Multiparametric Station)</div> <div>Components Format: THT</div> <div>Internal Modules:<ul style="list-style-type: none">– MCU (ESP32-S3)– XL4005 (Voltage Regulator – Step Down)– Voltage Sensor (power supply voltage)– HW-519 (RS-485)– RGB LED</div> <div>External Modules:<ul style="list-style-type: none">– BME-280 (I2C port)<ul style="list-style-type: none">– Air Temperature (°C)– Air Humidity (%)– Atmospheric Pressure (mmHg)– Pluviometer (pulse port)<ul style="list-style-type: none">– Rain Amount (mm)– Anemometer (pulse port)<ul style="list-style-type: none">– Wind Speed (m/sec. or Km/h)– Windsock (ADC port)<ul style="list-style-type: none">– Wind Direction (N, NE, E, SE, S, SW, W, NW)– ADC 4mA – 20mA (4x ports)– Soil Sensor (RS-485 port)<ul style="list-style-type: none">– Temperature (°C)– Moisture (%)– PH (index)– Conductivity (µs/cm)– Nitrogen (mg/Kg)– Potassium (mg/Kg)– Calcium (mg/Kg)</div> <div>BME280</div> <div>Air Temperature: –40°C ~ 85°C (0,01°C / ±1°C) Air Humidity: 0% ~ 100% (0,008% / ±3%) Atmospheric Pressure: 300hPa ~ 1100hPa (0,18hPa / ±1hPa) I2C Addr: 0x76 (SD0 Low) 0x77 (SD0 High)</div> <div>DS18B20</div> <div>Soil Temperature: –55°C ~ 125°C (0,01°C / ±0,5°C) Resolution: 9 ~ 12 (adjustable)</div>					
B						
C						
D	<div>Power Supply</div> <div>MCU</div> <div>Analog Inputs</div> <div>Terminals</div> <div>RS-485</div> <div>LTE</div> <div>Total Supply Current: ??mA (??mA) Author: Robson Costa (robson.costa@ifsc.edu.br) Confidential (access prohibited without signing a non-disclosure agreement) IFSC/Lages (Instituto Federal de Santa Catarina) AgroTechLab (Laboratório de Desenvolvimento de Tecnologias para o Agronegócio) Sheet: / File: atl100_tht.kicad_sch</div> <div>Title: ATL100 (Multiparametric Station) – THT Based</div> <div>Size: A4Date: 2024-10-27Rev: v1.0.0</div> <div>KiCad E.D.A. 8.0.6Id: 1/7</div>					
	1	2	3	4	5	6

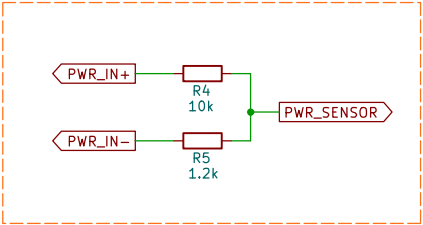


Power Supply
Input: +5V ~ +30V (DC)
Output: +0.8V ~ +24V (DC) – adjustable
Current: +2.5A / +5A (with heat sink)
Conversion efficiency: >90%
Switching Frequency: 300kHz
Maximum Output Power: 80W
Maximum Voltage Fluctuation: ±30mV

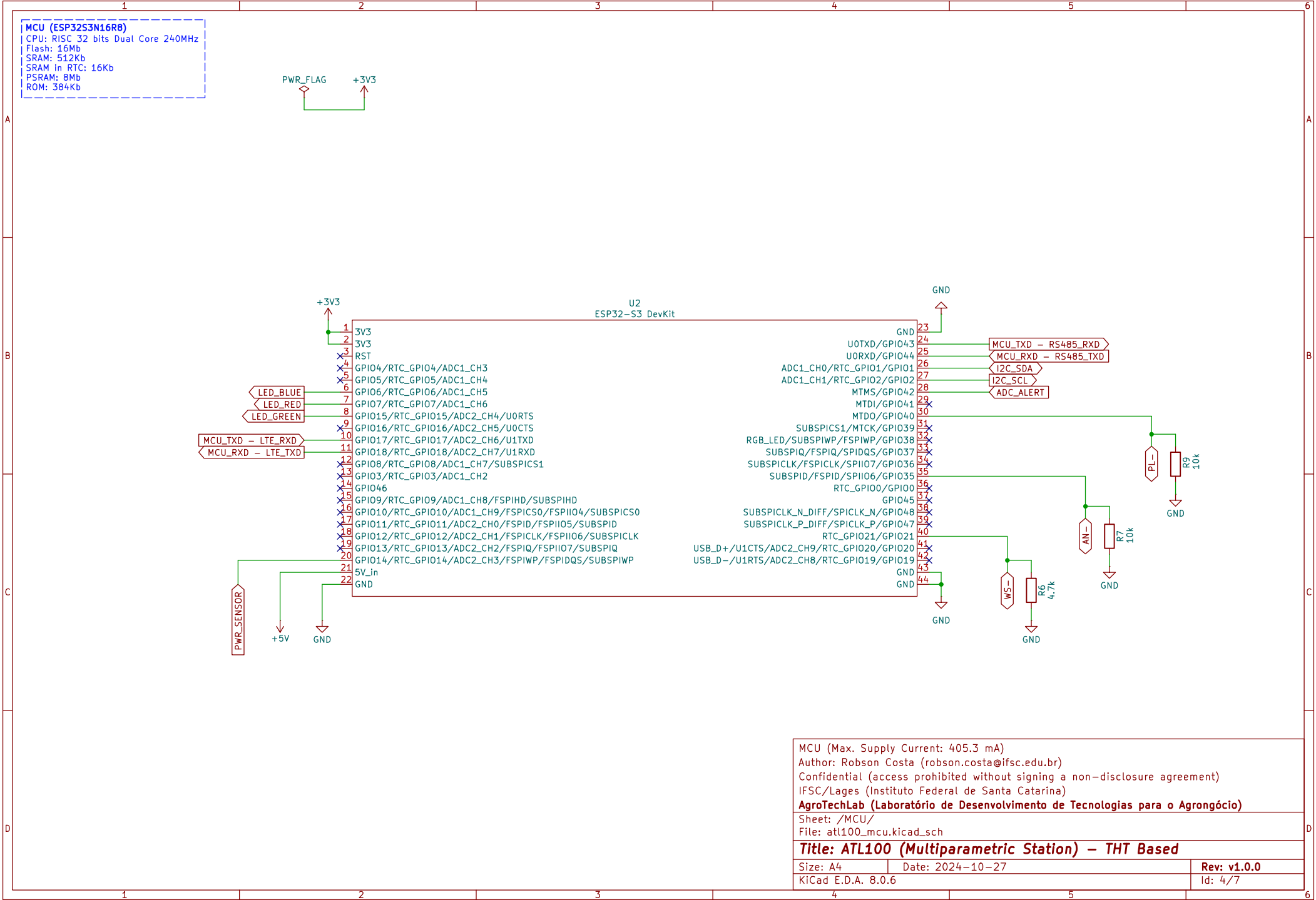
XL4005 Module



Voltage Sensor

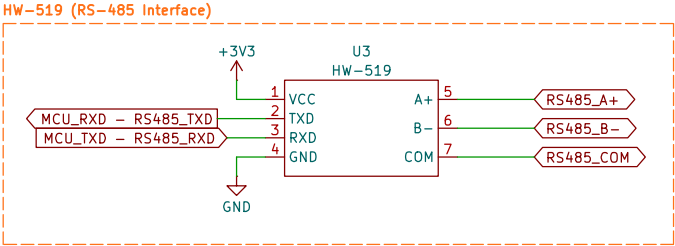


Power Supply (Max. Supply Current: 2.5 A)		
Author: Robson Costa (robson.costa@ifsc.edu.br)		
Confidential (access prohibited without signing a non-disclosure agreement)		
IFSC/Lages (Instituto Federal de Santa Catarina)		
AgroTechLab (Laboratório de Desenvolvimento de Tecnologias para o Agronegócio)		
Sheet: /Power Supply/		
File: atl100_power_supply.kicad_sch		
Title: ATL100 (Multiparametric Station) – THT Based		
Size: A4	Date: 2024–10–27	Rev: v1.0.0
KiCad E.D.A. 8.0.6		Id: 3/7



MCU (Max. Supply Current: 405.3 mA)		
Author: Robson Costa (robson.costa@ifsc.edu.br)		
Confidential (access prohibited without signing a non-disclosure agreement)		
IFSC/Lages (Instituto Federal de Santa Catarina)		
AgroTechLab (Laboratório de Desenvolvimento de Tecnologias para o Agronegócio)		
Sheet: /MCU/		
File: atl100_mcu.kicad_sch		
Title: ATL100 (Multiparametric Station) – THT Based		
Size: A4	Date: 2024-10-27	Rev: v1.0.0
KiCad E.D.A. 8.0.6		Id: 4/7

RS-485 (HW-519)
Mode: Half-Duplex
Protection: Thermal Fuse
Noise Reduction: Transient Suppressor Diodes

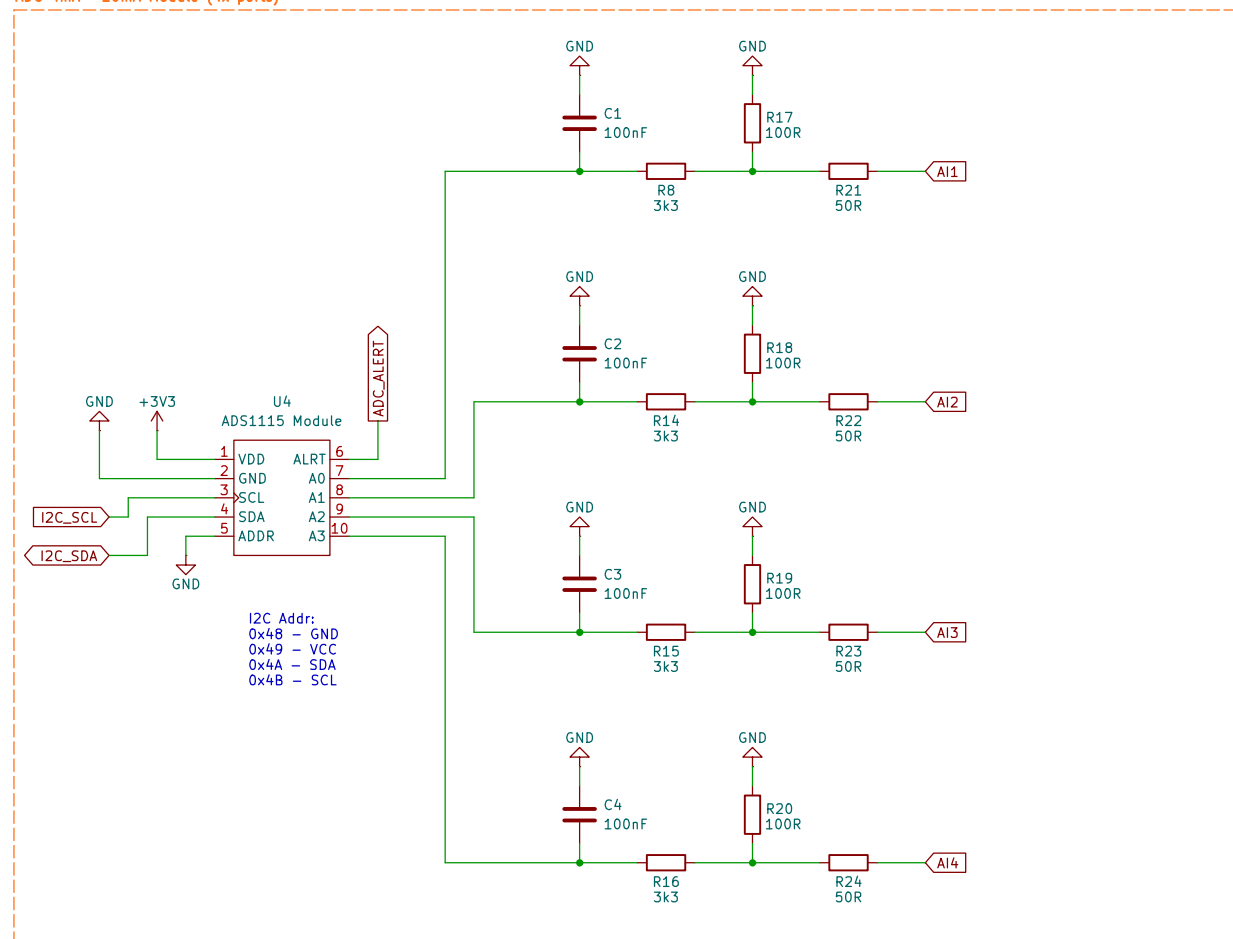


RS-485		
Author: Robson Costa (robson.costa@ifsc.edu.br)		
Confidential (access prohibited without signing a non-disclosure agreement)		
IFSC/Lages (Instituto Federal de Santa Catarina)		
AgroTechLab (Laboratório de Desenvolvimento de Tecnologias para o Agronegócio)		
Sheet: /RS-485/		
File: atl100_rs485.kicad_sch		
Title: ATL100 (Multiparametric Station) – THT Based		
Size: A4	Date: 2024-10-27	Rev: v1.0.0
KiCad E.D.A. 8.0.6		Id: 5/7

Analog Inputs

Qty: 4
Typ: 4mA ~ 20mA
Max: 30mA / 5V

ADC 4mA ~ 20mA Module (4x ports)



Analog Inputs (4 x 2mA ~ 20mA)

Author: Robson Costa (robson.costa@ifsc.edu.br)

Confidential (access prohibited without signing a non-disclosure agreement)

IFSC/Lages (Instituto Federal de Santa Catarina)

AgroTechLab (Laboratório de Desenvolvimento de Tecnologias para o Agronegócio)

Sheet: /Analog Inputs/

File: atl100_ai.kicad_sch

Title: ATL100 (Multiparametric Station) – THT Based

Size: A4

Date: 2024-10-27

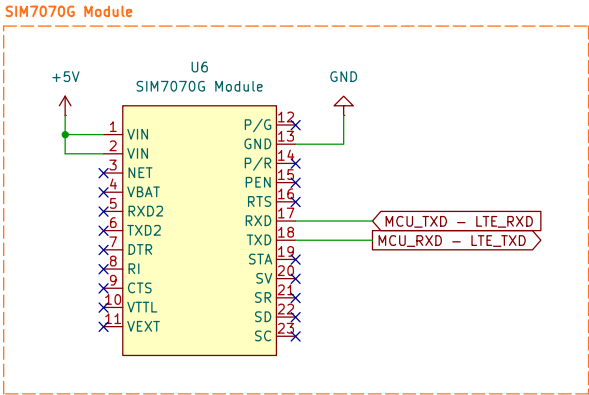
Rev: v1.0.0

KiCad E.D.A. 8.0.6

Id: 6/7

LTE Module (SIM7070G)

Mode: Half-Duplex
Protection: Thermal Fuse
Noise Reduction: Transient Suppressor Diodes



LTE Module (SIM7070G)		
Author: Robson Costa (robson.costa@ifsc.edu.br)		
Confidential (access prohibited without signing a non-disclosure agreement)		
IFSC/Lages (Instituto Federal de Santa Catarina)		
AgroTechLab (Laboratório de Desenvolvimento de Tecnologias para o Agronegócio)		
Sheet: /LTE/		
File: atl100_lte.kicad_sch		
Title: ATL100 (Multiparametric Station) – THT Based		
Size: A4	Date: 2024-10-27	Rev: v1.0.0
KiCad E.D.A. 8.0.6		Id: 7/7