Grunwaldzka 61 bud. T3. Biuro nr 3
50-357 Wrocław
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ELECTRONICS HARDWARE REPORT

Part Rt12e_ELE_ACC

Department	Electronics
Owner	Bartosz Gwiazda
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Owner's phone no.	505613201
Season	2020/21
Car	RT12e

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1. RULES DEFINING THE PART

2. SCHEDULE

Beginning	End	Task
5.11	13.11	Scheme creation
13.11	25.11	Layout creation
11.12	18.12	Fixes
4.01	12.01	Case model

3. DESCRIPTION AND ASSUMPTIONS OF THE PART

Accelerometer, part used to read vehicle position and transfer it to can to future use.

4. RESEARCH

(previous team mainly)

- IAM-20680 datasheet
- STM32F042K6T datasheet

5. SIMULATIONS

(none)

6. PROTOTYPES

(in progress)

RT12e ACC 00

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- DESIGN RULES
  (type of paths, paths width, min. size of vias – in the table, layers, etc.)

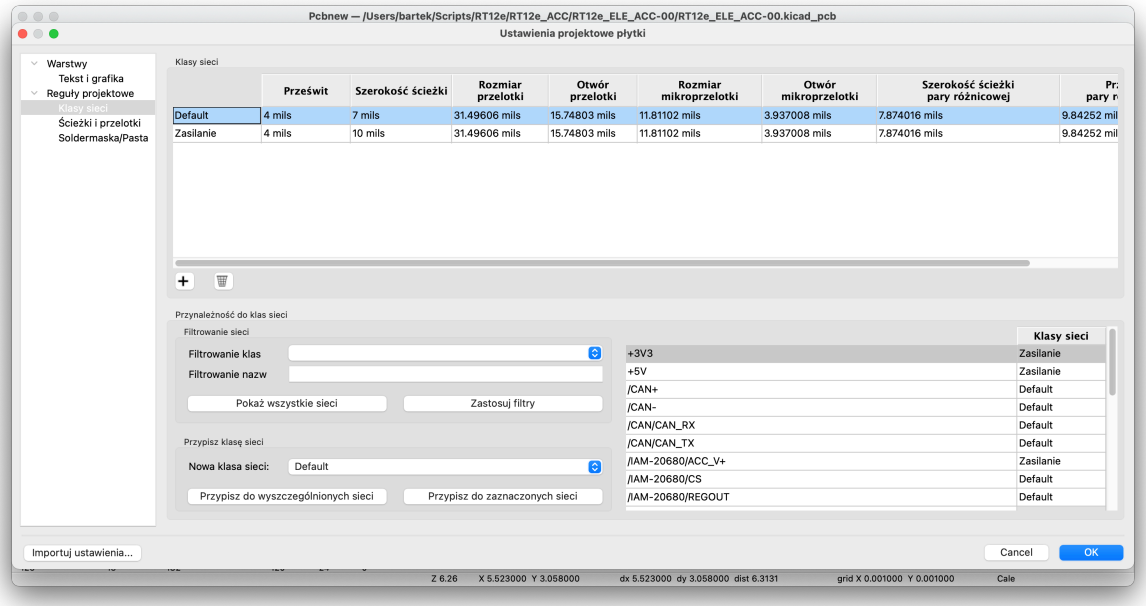

Figure 1. Paths classes

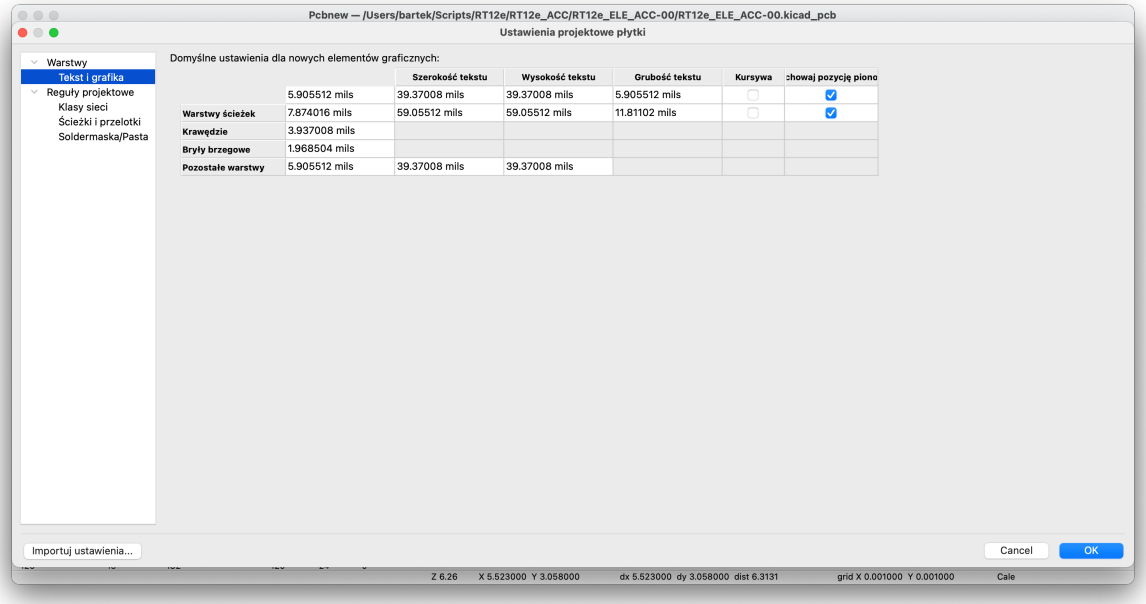

Figure 2. Text classes

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- SCHEMA
  (drawings, printed screens, photos – must have!. Includes each page of hierarchical sheet)

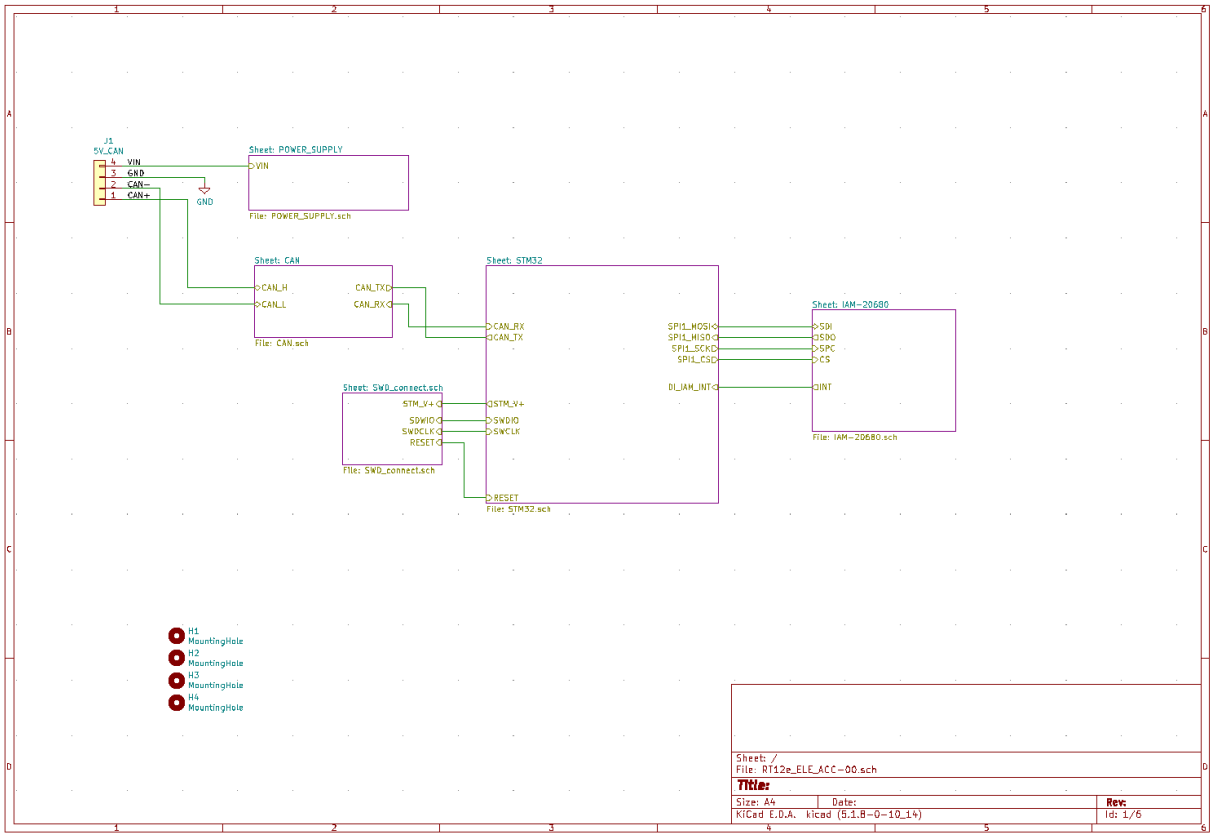

Figure 3. Main sheet of schema

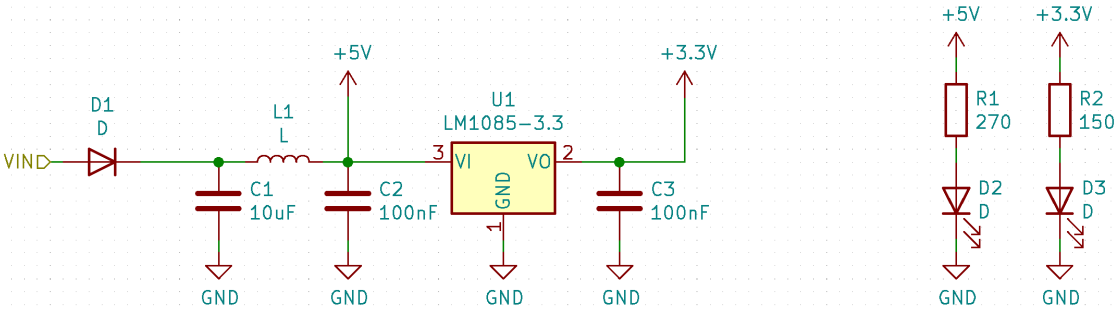

Figure 4. Power supply filer

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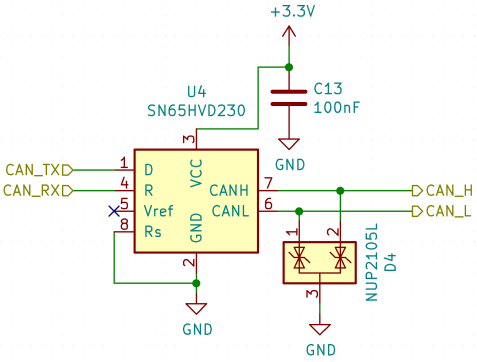

Figure 5. Can transceiver

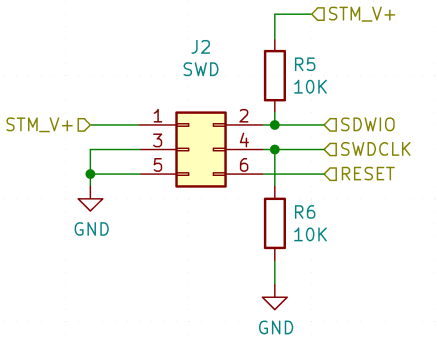

Figure 6. SDIO connector

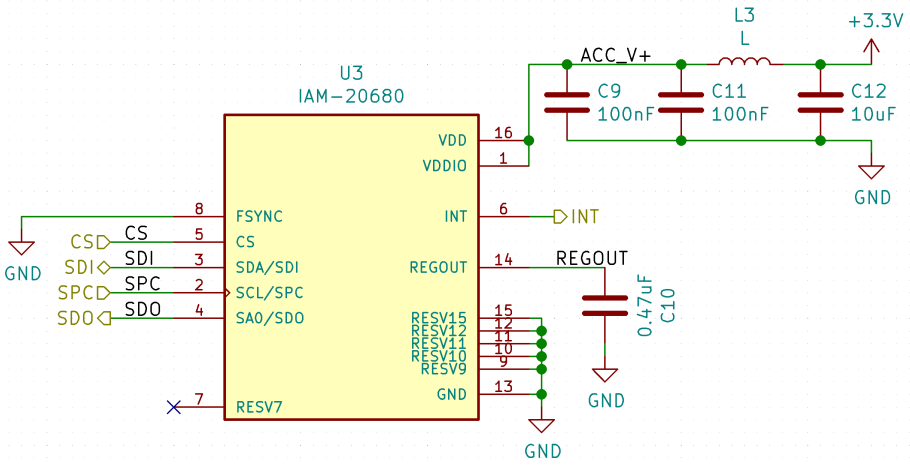

Figure 7. Accelerometer module

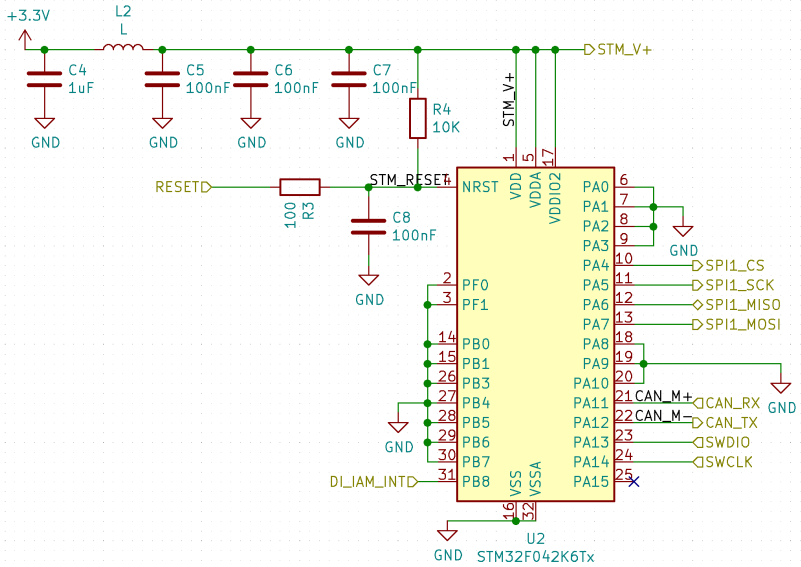

Figure 8. STM32 module

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- LAYOUT PCB
  (drawings, printed screens, photos – must have!. Includes each page of hierarchical sheet. If the PCB is large - many photos enlarged.)

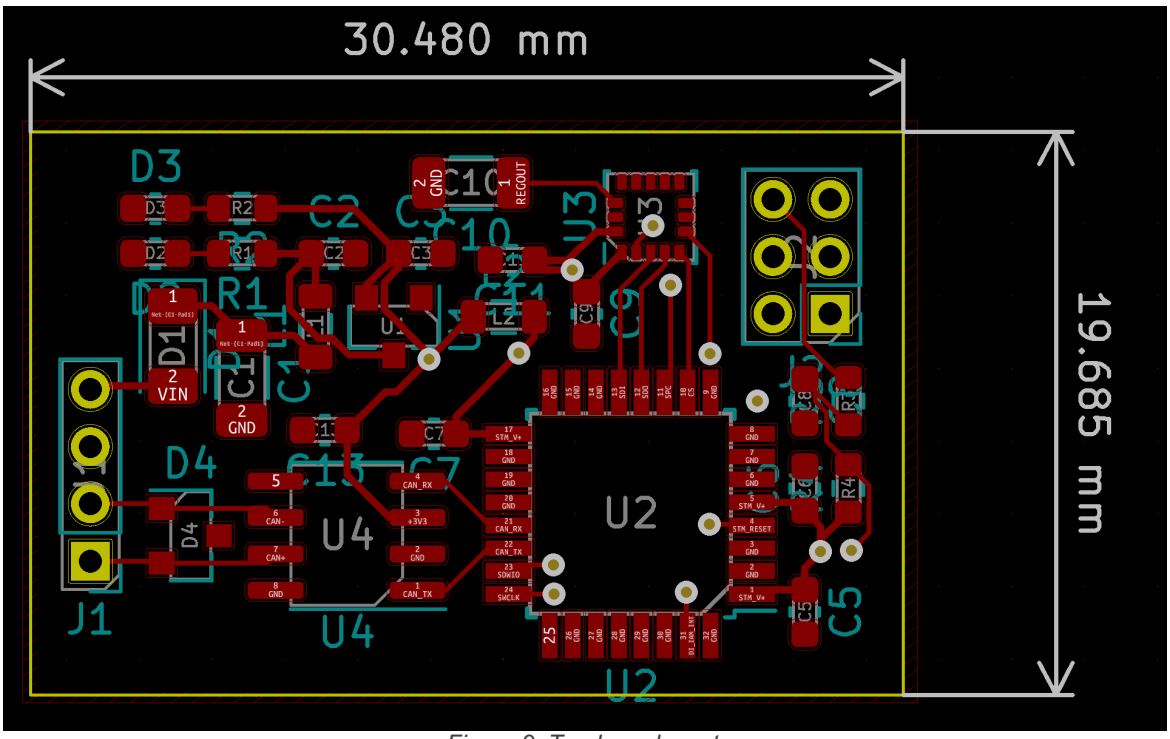

Figure 9. Top layer layout

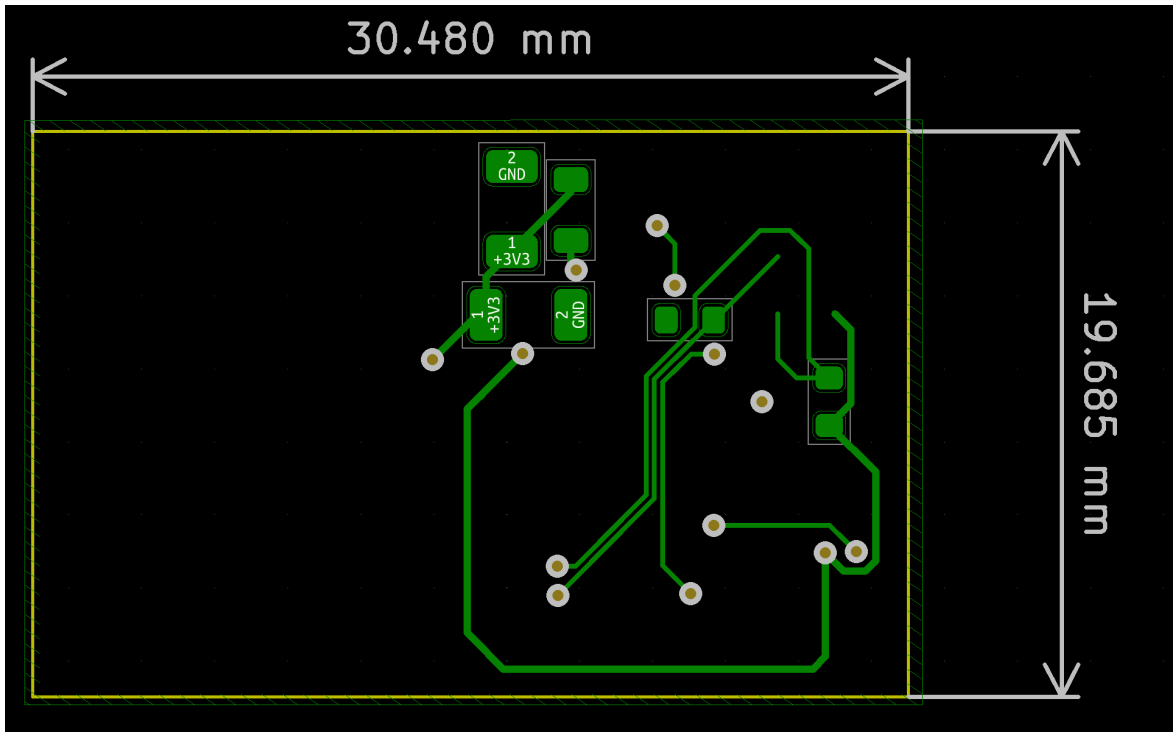

Figure 10. Bottom layer layout

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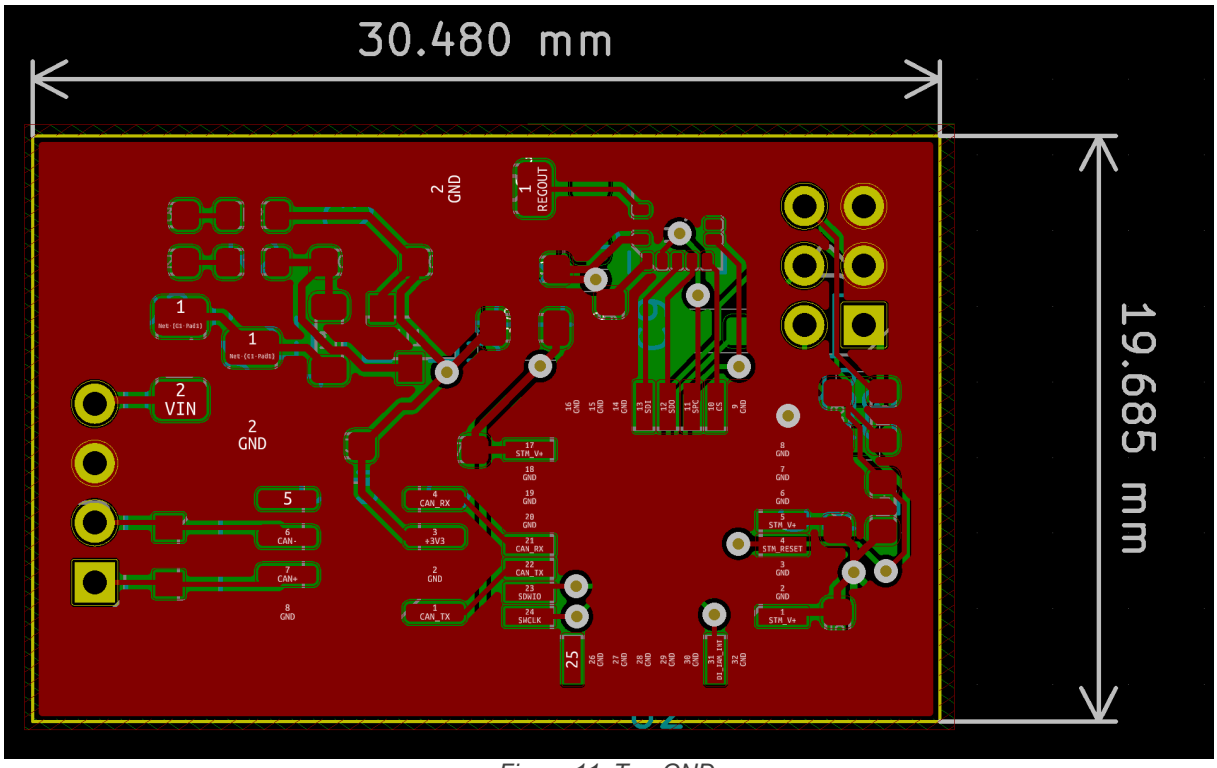

Figure 11. Top GND

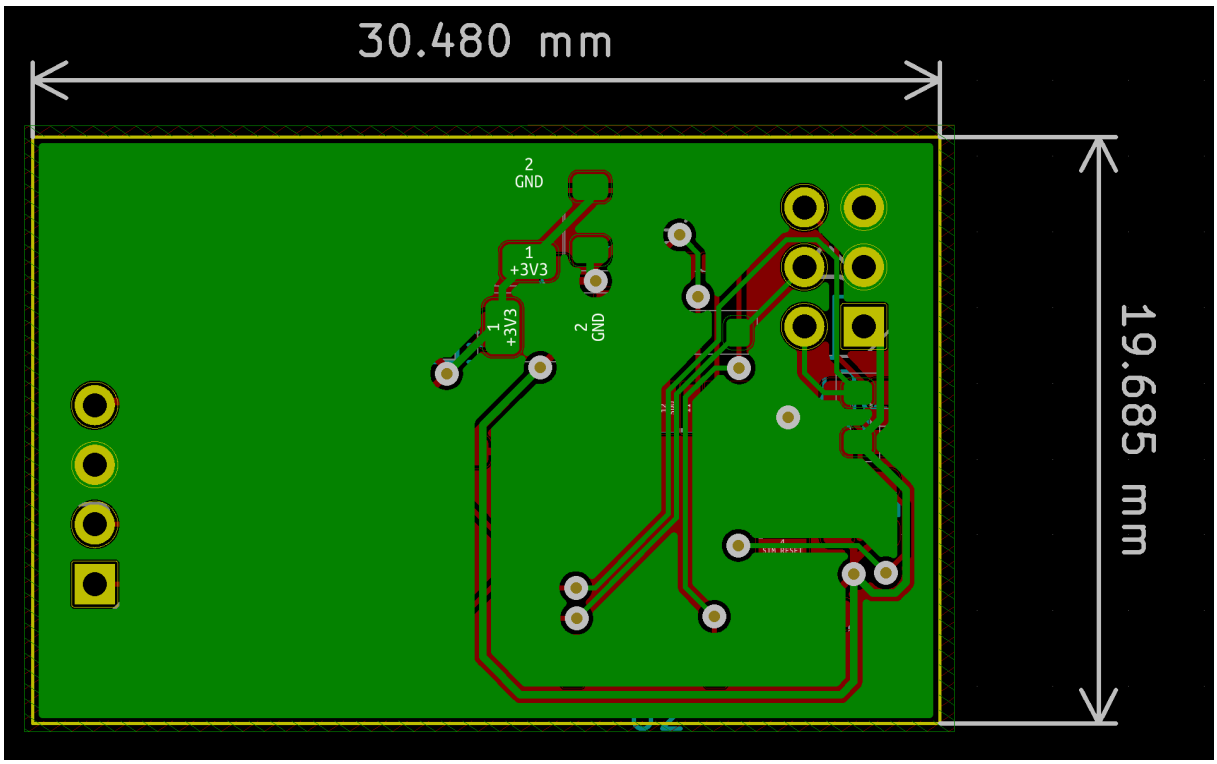

Figure 12. Bottom GND

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7. FINAL MODEL

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- SCHEMA
  (drawings, printed screens, photos – must have!. Includes each page of hierarchical sheet)

- LAYOUT PCB
  (drawings, printed screens, photos – must have!. If the PCB is large - many photos enlarged.)

8. COMPARISON OF DIFFERENT VERSIONS

(what was changed – why?, why not?, made decisions between releases, which components was changed/removed? etc…)

9. 3D MODEL AND PLACEMENT ON THE CAR

(where and why the part is located, pictures, screens, drawings of assemblies, assumptions for location on the car)

There are two types of use this device in car. First, main in center of car, under steering rode to measure car vibrations and position. Second type is on all four wheels steering to measure vibrations and behavior of dumpers.

10. TESTS

(type of the test[current measurment, voltage measurment, switching time etc.], what is needed to do the tests, proces of the tests, PICTURES!)

11. IDEAS FOR THE NEXT SEASON