TLI4971 S2Go Getting Started

25.04.2019

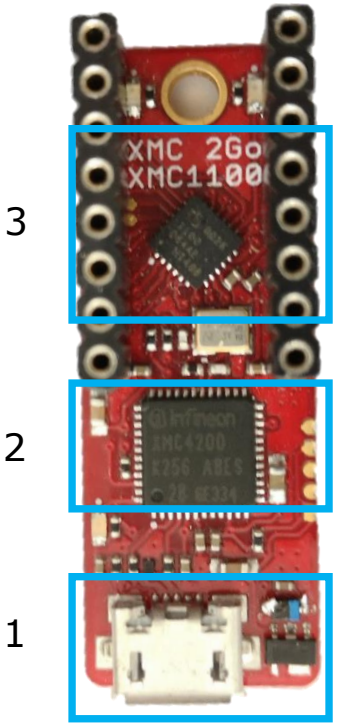
Content

- The TLI4971 Shield 2Go is a budget-priced evaluation kit enabling the possibility to evaluate the Infineon TLI4971 current sensor.
- The kit can be interfaced with a standard XMC 2Go board or alternatively with the Arduino adapter board.
- The Evaluation Kit includes a GUI software application that can be downloaded from the Evaluation Kit product page. The GUI is compatible with XMC2GO platform.

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General Description: XMC2go

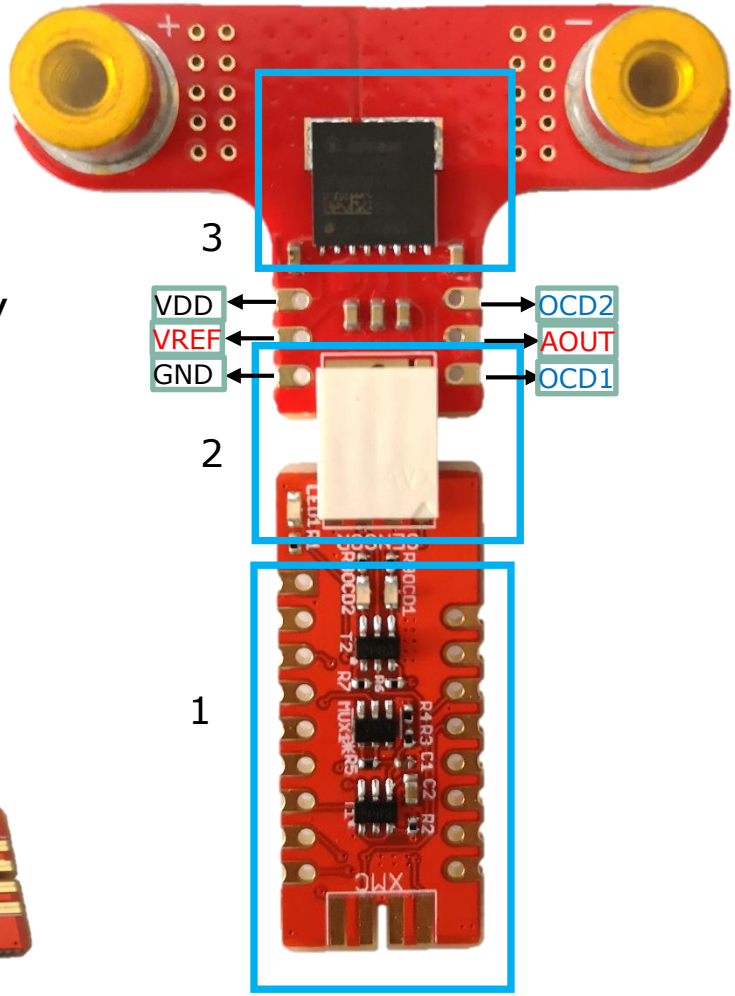
- The evaluation kit hardware is built around the XMC1100 Infineon target microcontroller(3), ARM M0 based. In addition, the hardware includes an on-board debugger microcontroller (2) implemented with the Infineon XMC4200 running a SEGGER Jlink debugger.
- To connect to the PC, a micro-USB (1) to USB cable is required – not provided inside the package.

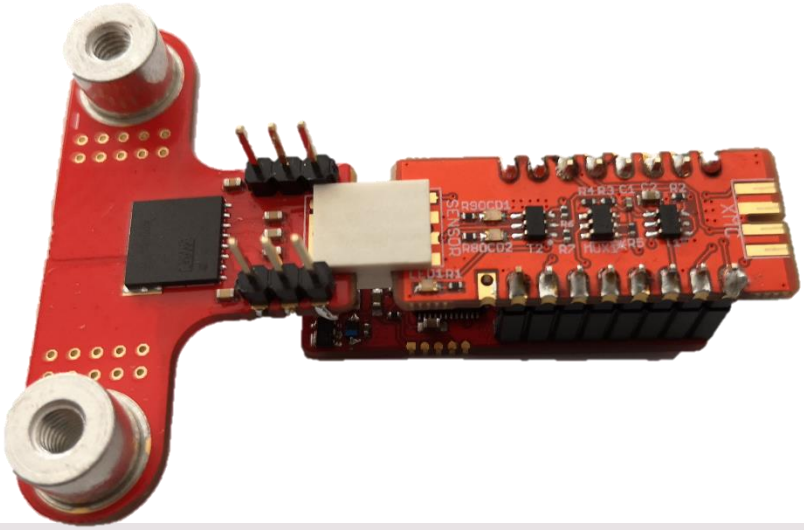


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General Description

- The sensor (3) is placed on a break-apart PCB so it can be removed an placed in a system when needed.
- The sensor board inputs/outputs are easily accessible (2) and to the sensor shield via a two layer edge connector connector.
- The sensor shield (1) can be stacked on top of the XMC 2Go kit or can be connected to on the XMC side.

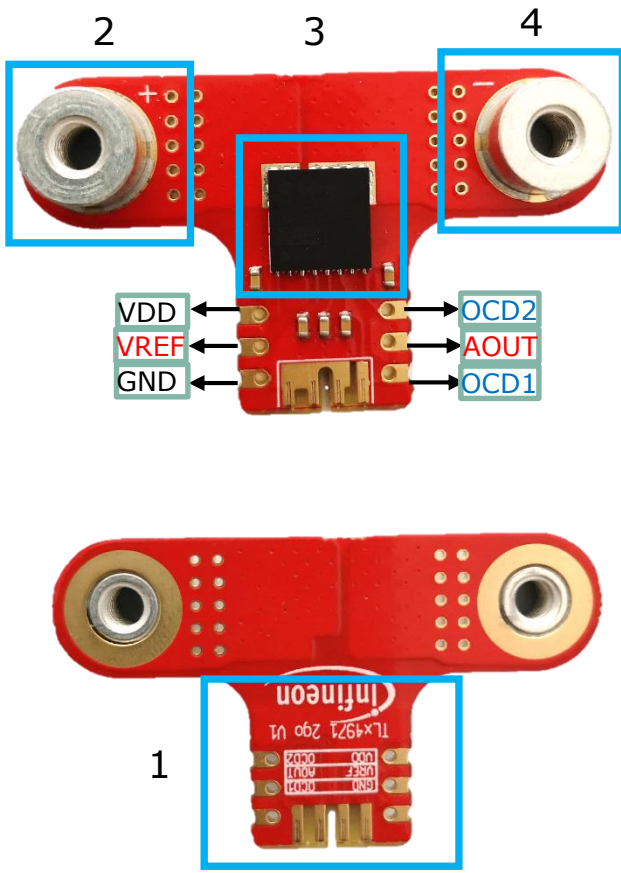




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Sensor Board

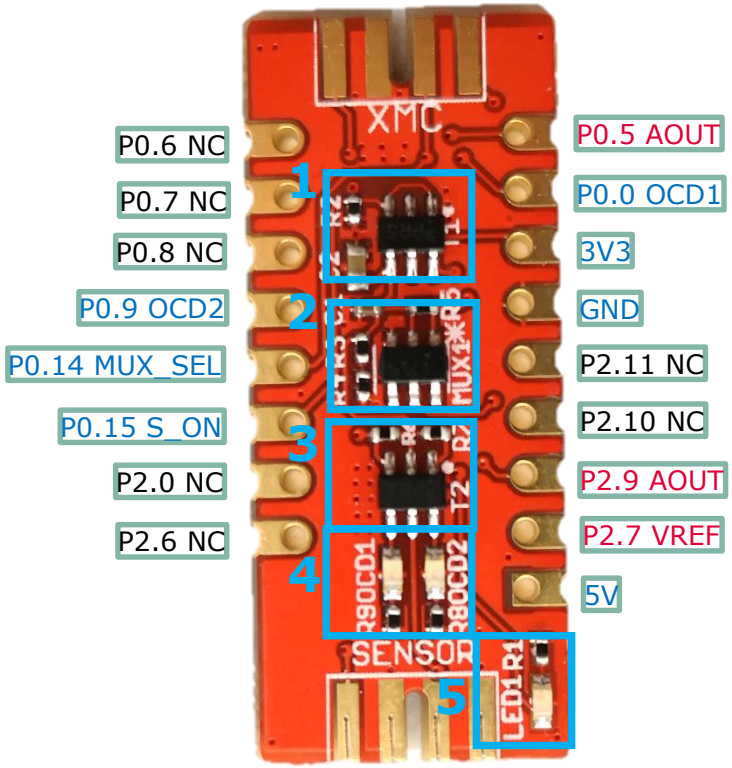
- The current sensor (3) is placed on a board with two M4 screw connectors for high current applications (2,4). The PCB is manufactured in 140 um copper technology and the sensor provides functional galvanic isolation.
- The sensor inputs/outputs are easily accessible via 2 x 3 pole pin headers (2.54mm pitch) (1).



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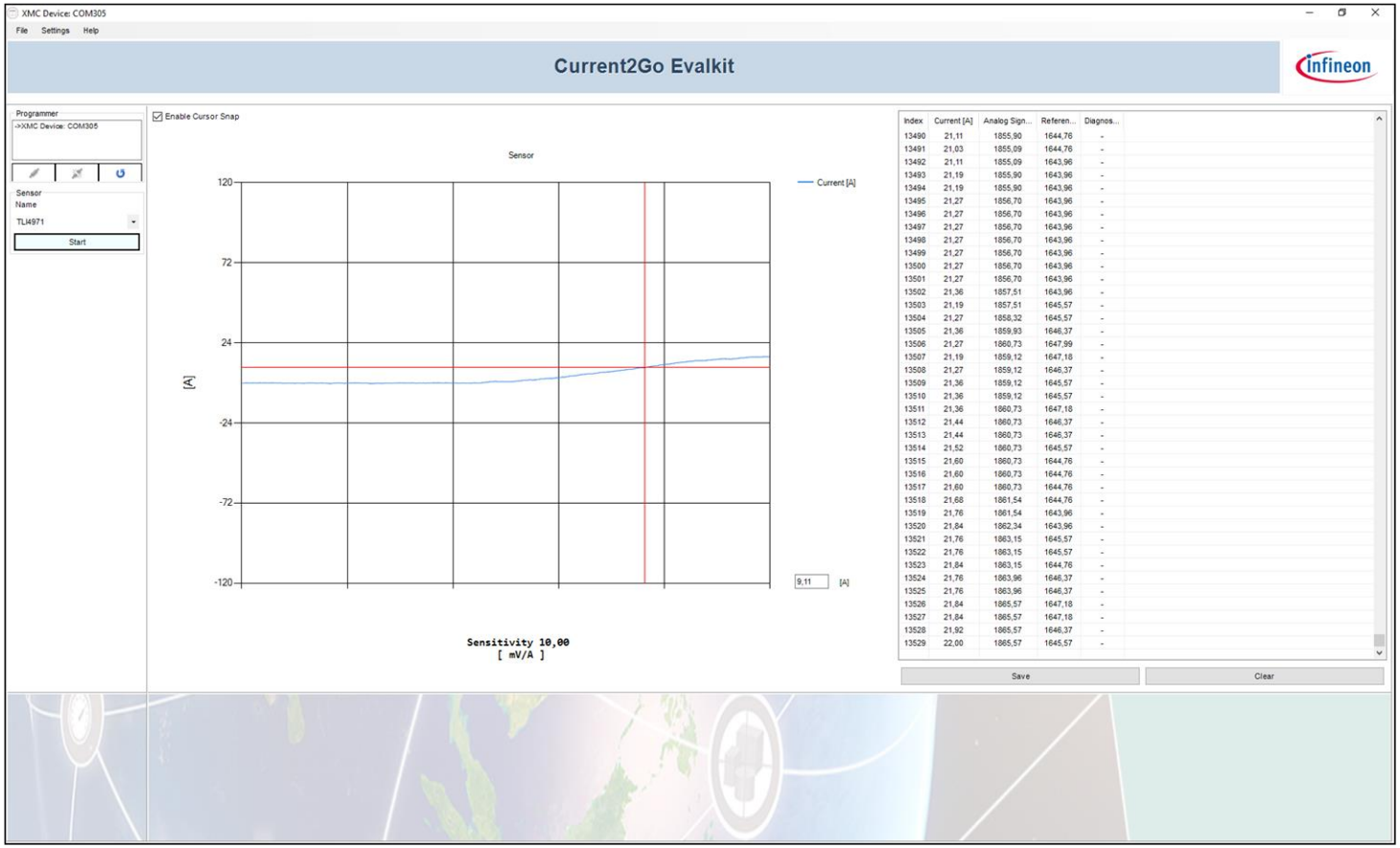
Sensor Shield

- The sensor shield will connect the sensor board to the XMC 2Go microcontroller board or later on to a dedicated readout board.
- The shield contains:
  - Two BSL308PE dual package PMOS transistors (1,3) used for:
    - switching ON/OFF the sensor supply,
    - switching ON/OFF the sensor supply LED (LED1) (5)
    - switching ON/OFF the overcurrent indicator LEDs (4).
  - MAX4624EUT / STG719STR Analog MUX (2) is used to select a external or internal sensor voltage reference.
- The sensor analog signal output / reference signal will be read by the microcontroller 12 bit ADC.



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Evaluation Kit Software

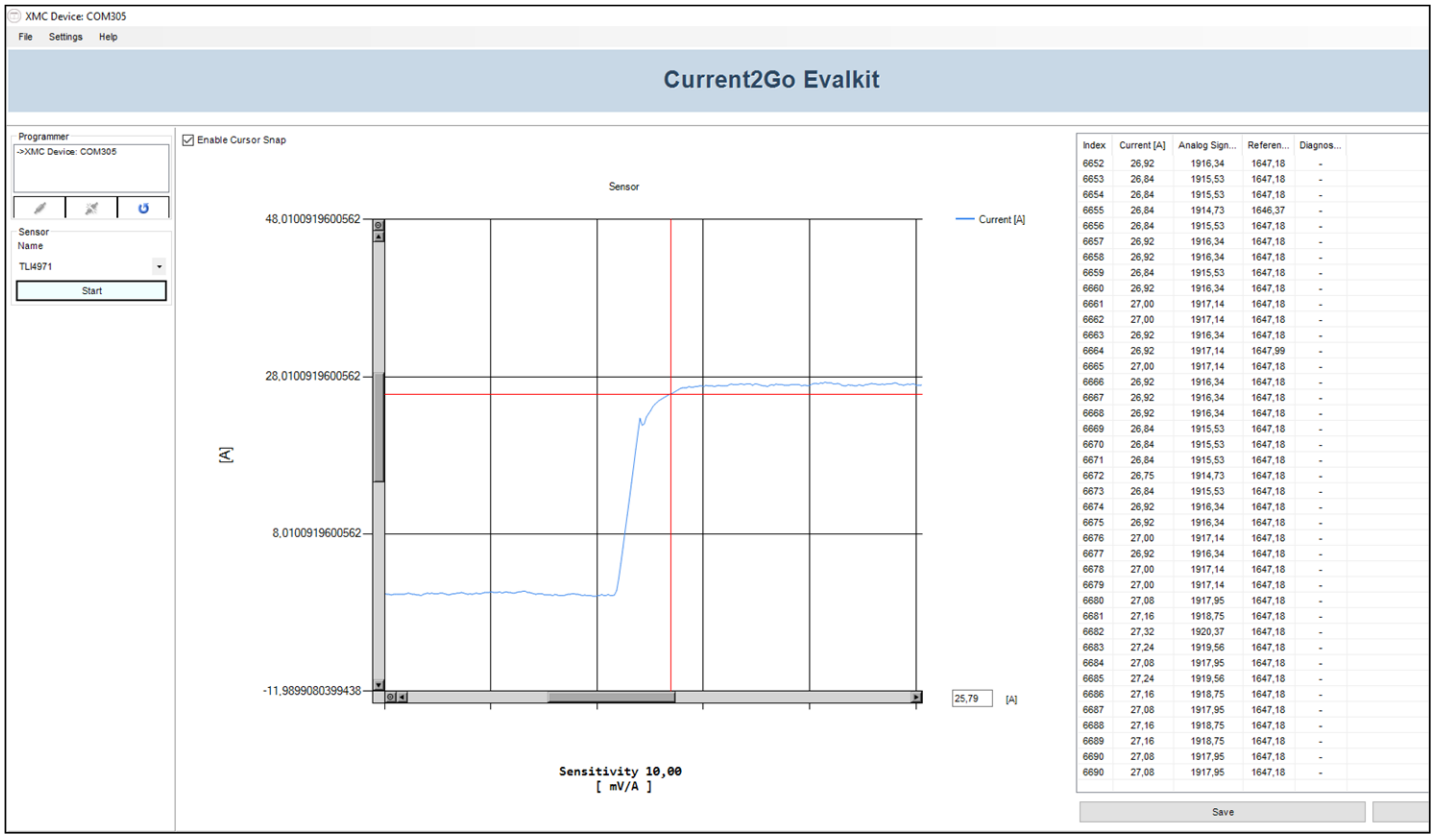


The GUI includes the following components:

- Real time graph for plotting the current value(in ampere scale)
- Acquisition log to display all data received from sensor (LSB and Ampere).
- Possibility to export the acquired data in CSV format. (save button)
- Possibility to access internal EEPROM of the sensor for readout (settings menu – see next page)

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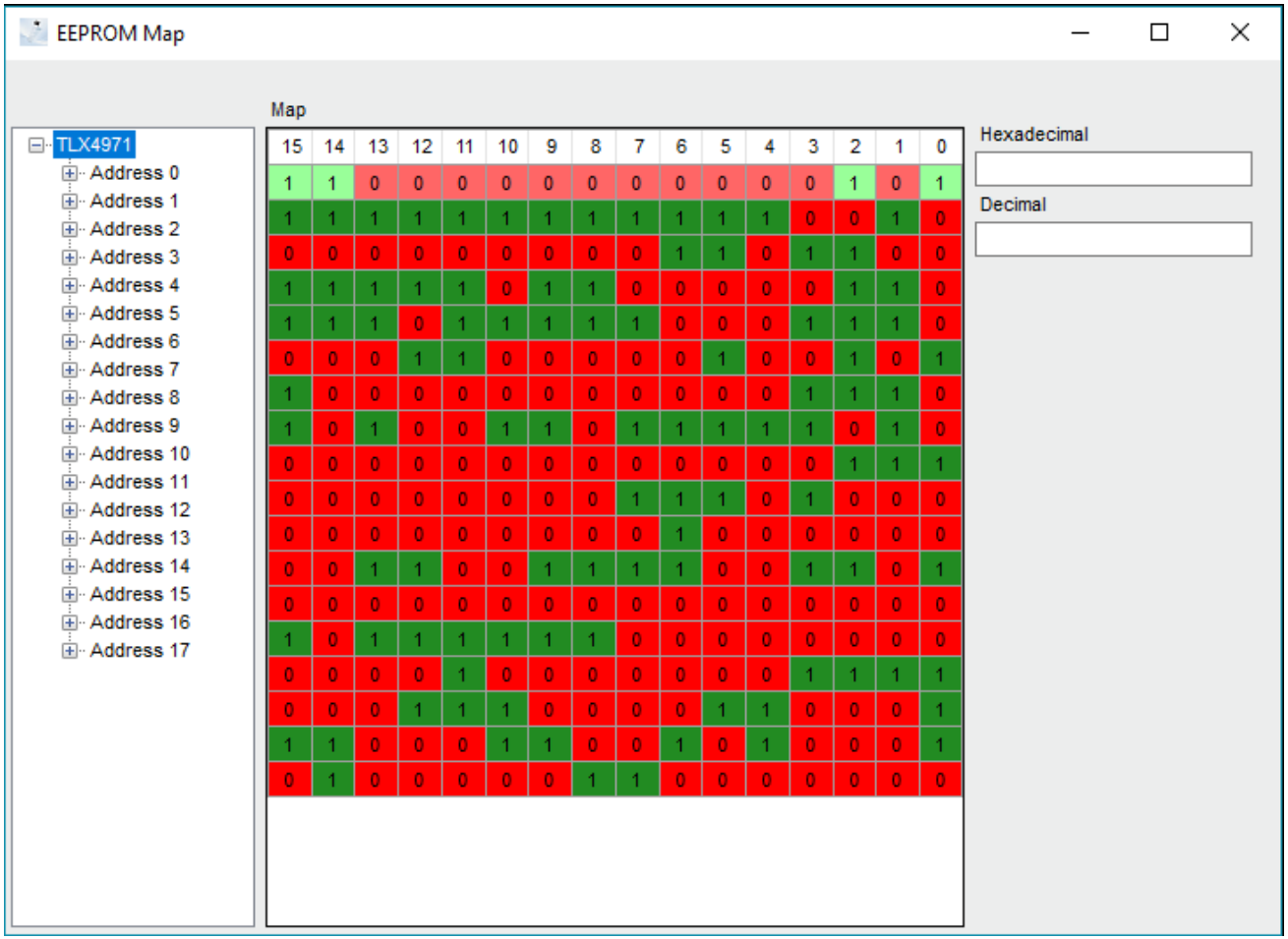
Evaluation Kit Software



When the data acquisition is stopped, the user can zoom on the chart using mouse scroll.

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Evaluation Kit Software



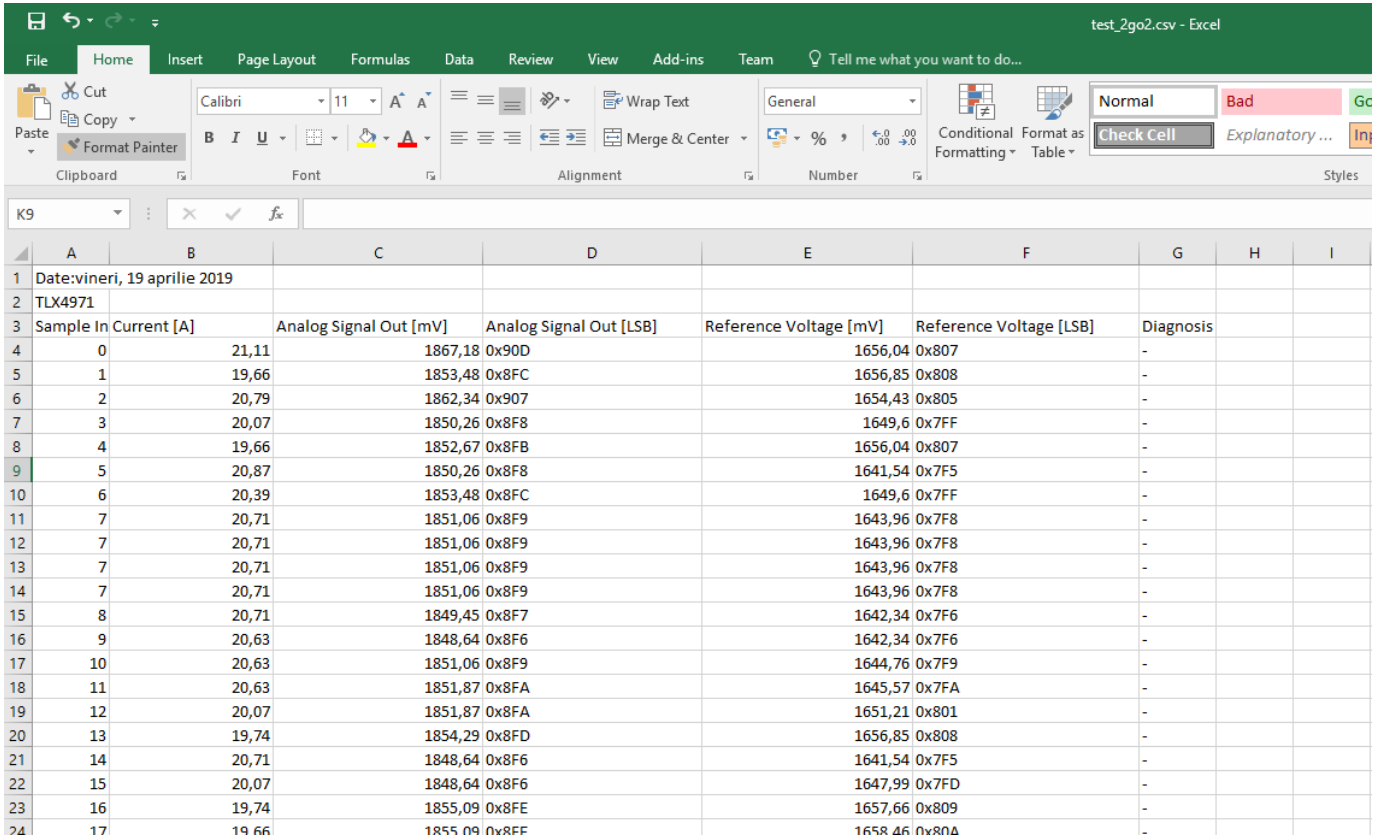
The EEPROM map panel is showing the EEPROM content per word / field.

No modifications can be done via this menu

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Evaluation Kit Software

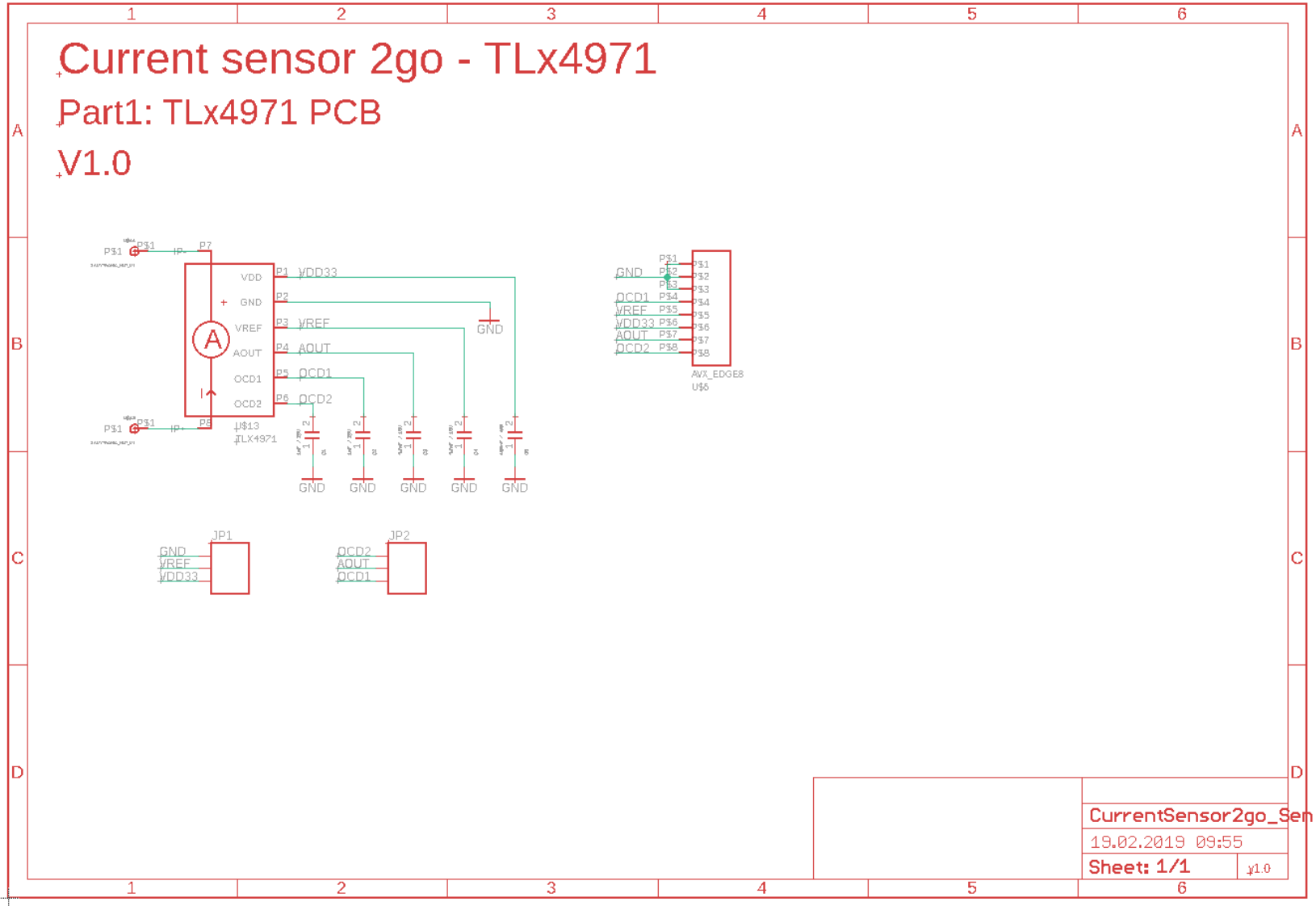
- The user has the option to save the acquired data by clicking the Save button in the sensor panel. A save menu will pop-up: enter the path & file name as .CSV and save your data. The .CSV file may be open in Microsoft Excel and post processing of data can be done.



	A	B	C	D	E	F	G	H	I
1	Date:vineri, 19 aprilie 2019								
2	TLX4971								
3	Sample In	Current [A]	Analog Signal Out [mV]	Analog Signal Out [LSB]	Reference Voltage [mV]	Reference Voltage [LSB]	Diagnosis		
4	0	21,11	1867,18	0x90D	1656,04	0x807	-		
5	1	19,66	1853,48	0x8FC	1656,85	0x808	-		
6	2	20,79	1862,34	0x907	1654,43	0x805	-		
7	3	20,07	1850,26	0x8F8	1649,6	0x7FF	-		
8	4	19,66	1852,67	0x8FB	1656,04	0x807	-		
9	5	20,87	1850,26	0x8F8	1641,54	0x7F5	-		
10	6	20,39	1853,48	0x8FC	1649,6	0x7FF	-		
11	7	20,71	1851,06	0x8F9	1643,96	0x7F8	-		
12	7	20,71	1851,06	0x8F9	1643,96	0x7F8	-		
13	7	20,71	1851,06	0x8F9	1643,96	0x7F8	-		
14	7	20,71	1851,06	0x8F9	1643,96	0x7F8	-		
15	8	20,71	1849,45	0x8F7	1642,34	0x7F6	-		
16	9	20,63	1848,64	0x8F6	1642,34	0x7F6	-		
17	10	20,63	1851,06	0x8F9	1644,76	0x7F9	-		
18	11	20,63	1851,87	0x8FA	1645,57	0x7FA	-		
19	12	20,07	1851,87	0x8FA	1651,21	0x801	-		
20	13	19,74	1854,29	0x8FD	1656,85	0x808	-		
21	14	20,71	1848,64	0x8F6	1641,54	0x7F5	-		
22	15	20,07	1848,64	0x8F6	1647,99	0x7FD	-		
23	16	19,74	1855,09	0x8FE	1657,66	0x809	-		
24	17	19,66	1855,09	0x8FE	1658,46	0x80A	-		

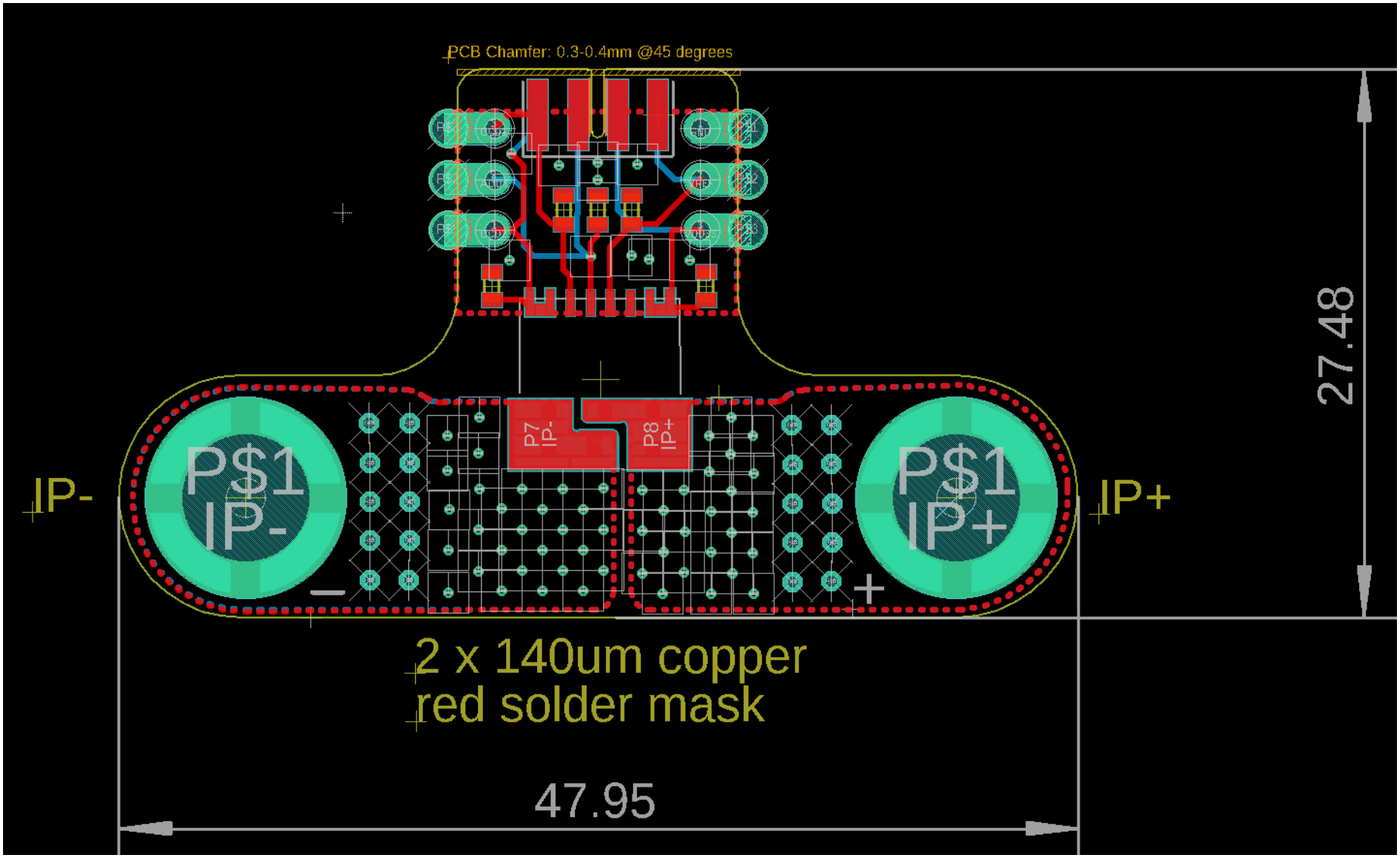
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Sensor Board – Hardware Schematic



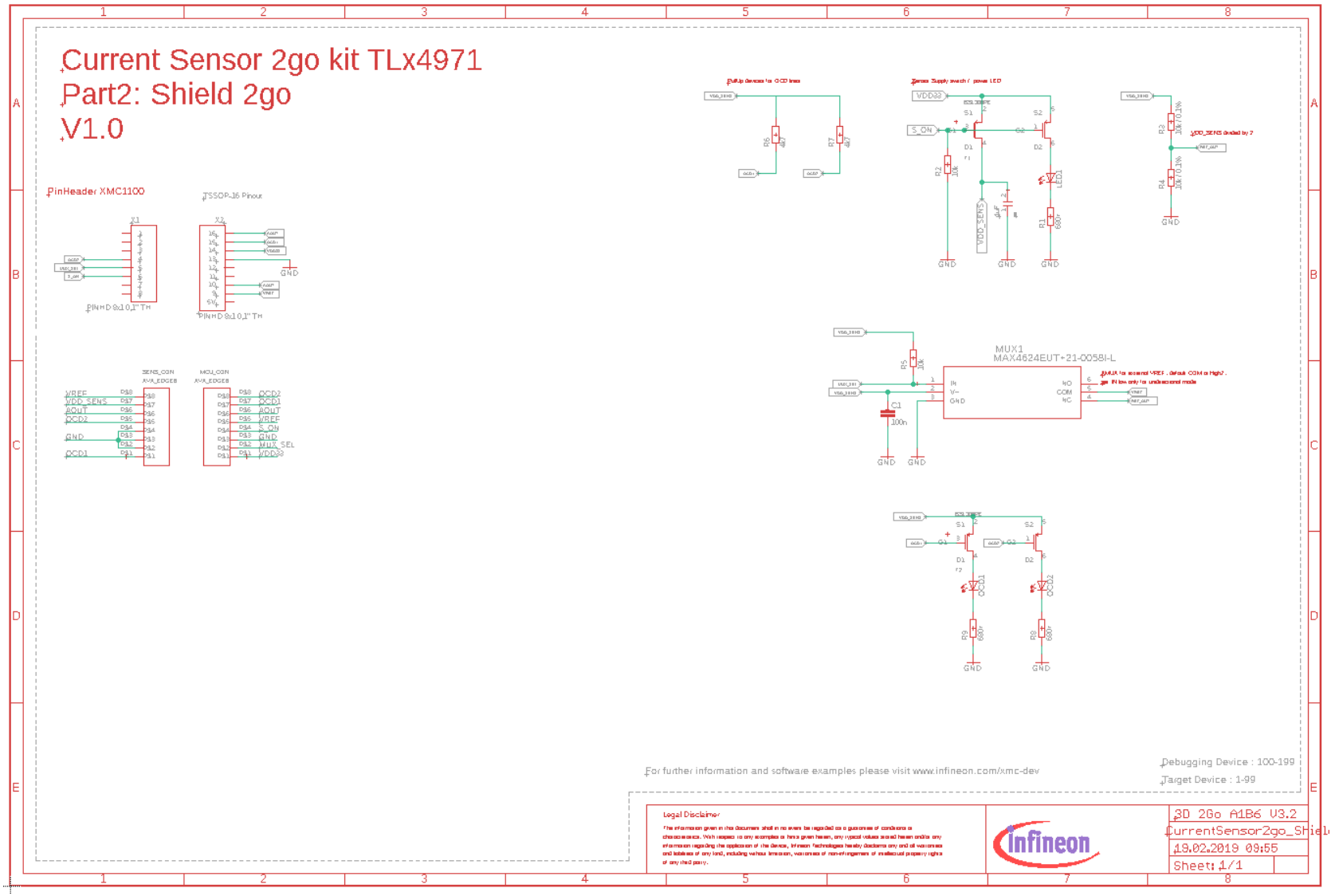
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Sensor Board – Hardware Layout



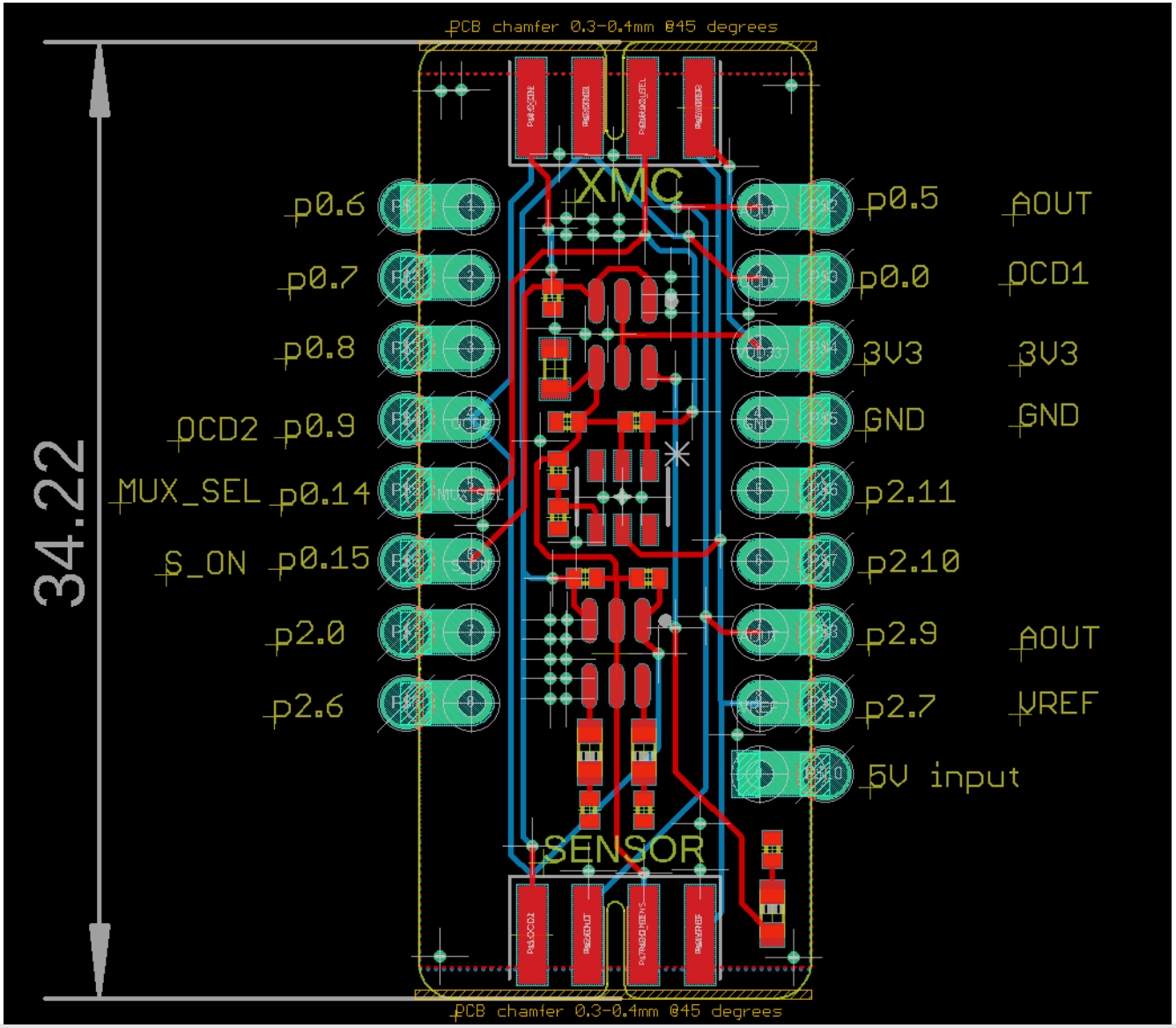
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Sensor Shield – Hardware Schematic



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Sensor Shield – Hardware Layout



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