



Department of Cybernetic and Biomedical Engineering



Educational and presentation module CO₂ for IQRF

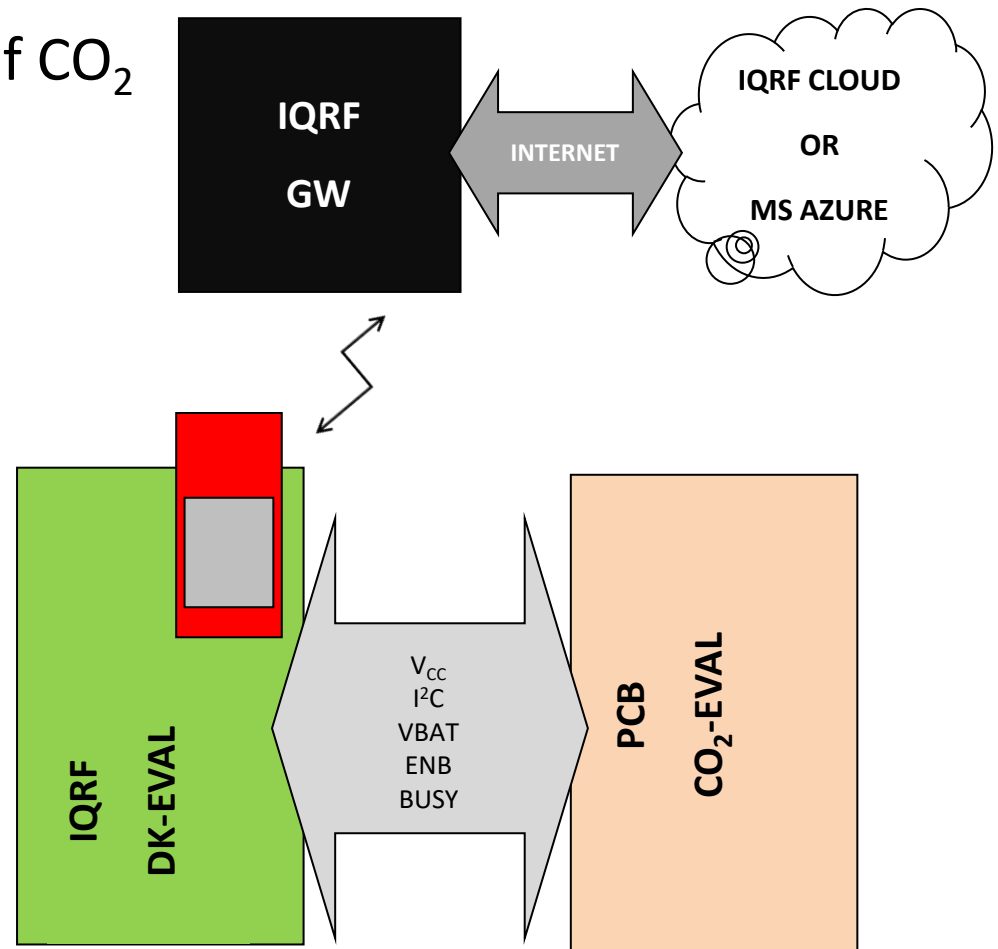
Bc. Jan Velička

MEASURE. ANALYSE. CONTROL.



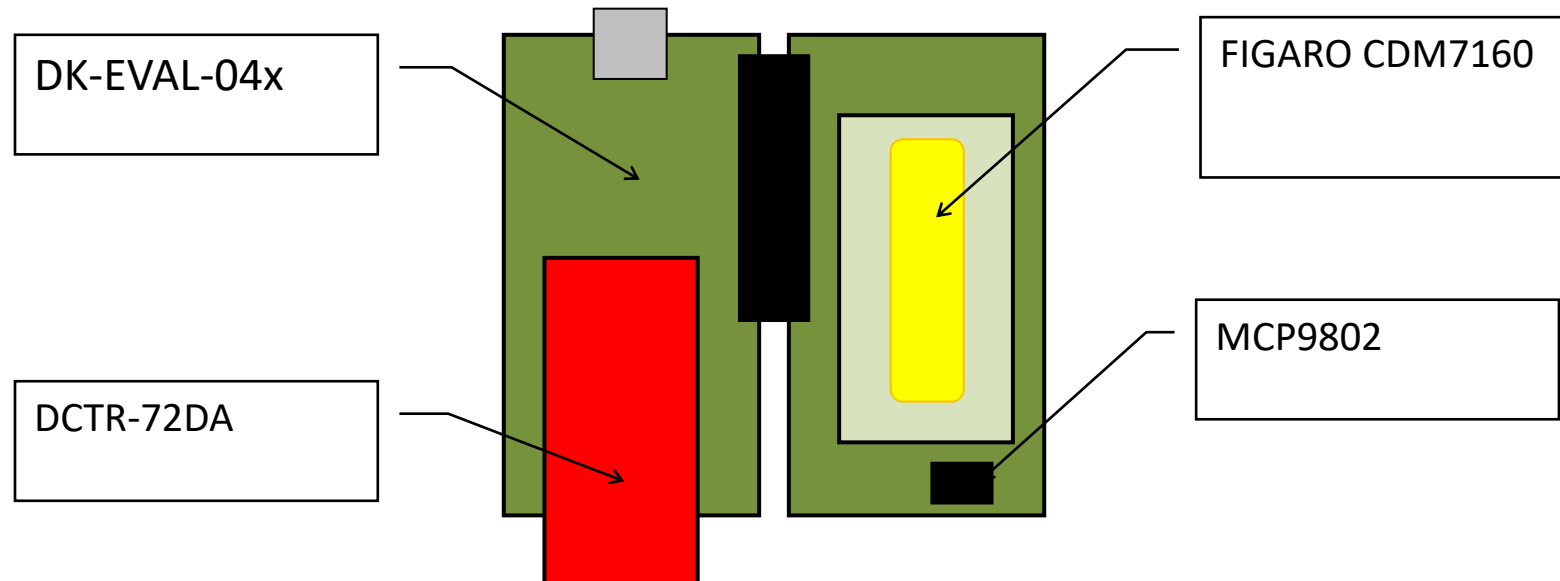
Specification

- Transfer data via IQRF
- Calibrated NDIR sensor of CO₂
- Communication via I²C
- Switching of sensors
- Device DDC



HW solution

- DDC connector
- Measure concentration of carbon-dioxide and temperature
- Test points for oscilloscope connection
- External power source 5V





HW solution

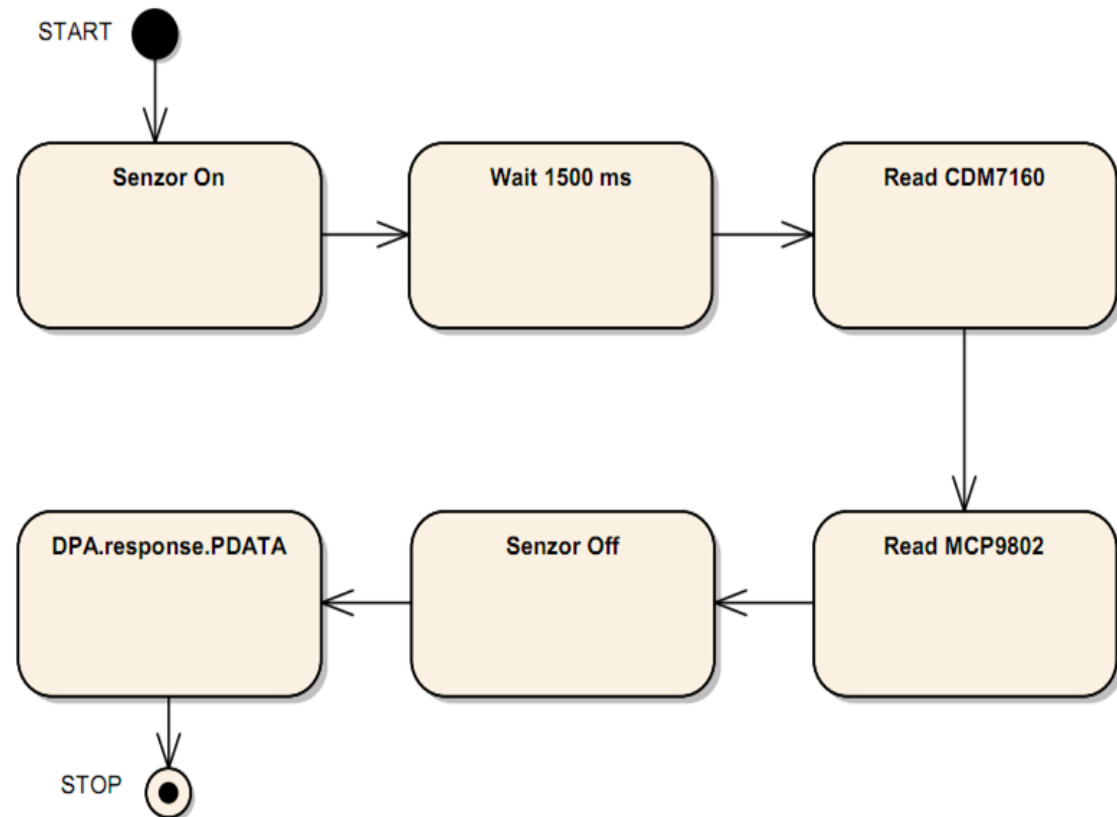
- Possibility to connect to DK-EVAL





SW solution

- DPA custom handler (0x20)
- Switching off the sensors
- 4 B PDATA





Data collection and visualization

- GW-ETH-02A (TR-72)
- IQRF Cloud + API
- enviro.vsb.cz - intended to R&D projects

The screenshot shows the 'enviro' website interface. The header includes the logo and the text 'monitorování fyzikálně-mechanických a environmentálních věcí'. A navigation menu contains links for 'ochranné sítě a bariéry', 'stabilita svahů a konstrukcí', 'iqrf', 'hedvika', 'nabízíme', and 'kontakt'. The 'iqrf' link is circled in red. The main content area displays the following information:

Zobrazení aktuálně zaslané koncentrace CO₂ a teploty na cloud.
Datum a čas dat obdržené bránou: 2017-05-18 16:04:16
Koncentrace CO₂ je: 749ppm
Teplota je: 28.0°C

| Datum/čas | Hodnota CO ₂ [ppm] | Teplota [°C] |
|---------------------|-------------------------------|--------------|
| 2017-05-18 16:04:16 | 749 | 28.0 |



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Thanks for your attention

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Thanks my supervisors Martin Pies and Radovan Hajovsky

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