Návrh zadání DP

jméno studenta

Ondřej Hruška

název práce česky a anglicky

Výuková a automatizační GPIO platforma

Learning and automation GPIO platform

jazyk práce:

angličtina

pokyny pro vypracování (v příslušném jazyce):

Design and implement a modular system consisting of a motherboard and additional modules for connecting sensors, actuators and general inputs via I2C, SPI, UART, 1-Wire or other interfaces to the central system via USB, UART, and wireless interfaces. Allow access to built-in processor peripherals such as ADC, DAC, and timers (PWM, frequency measurement). Design a comfortable way to set the configuration without firmware changes. For the designed system, create a service library in C, Python, and MATLAB.

doporučená literatura:

STMicroelectronics datasheets, http://www.st.com

Ganssle, J. The Art of Designing Embedded Systems, Elsevier Science, 2008.

Chi, Qingping & Yan, Hairong & Zhang, Chuan & Pang, Zhibo & Da Xu, Li. (2014). A Reconfigurable Smart Sensor Interface for Industrial WSN in IoT Environment. Industrial Informatics, IEEE Transactions on. 10. 1417-1425. 10.1109/TII.2014.2306798.

návrh oponenta práce

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