

Master's Thesis

Master's study program **Cybernetics, Control and Measurements**

Department of Control and Instrumentation

Student: Bc. Matouš Hýbl

ID: 191600

**Year of
study:** 2

Academic year: 2020/21

TITLE OF THESIS:

Two channel stepper motor controller

INSTRUCTION:

1. Explore and describe the stepper-motor controllers currently used in DCI for the BPC-PRP course. Describe their advantages and shortcomings.
2. Research and examine various stepper motor controller chips that may be used for the design. Select the best one after a discussion with the supervisor.
3. Design and develop a new stepper motor controller with I2C and CAN bus communication interfaces.
4. Develop software that demonstrates the controller's features.
5. Demonstrate the controller in a specific application, e.g. driving a small mobile robot with differential drive configuration.

RECOMMENDED LITERATURE:

Motors for Makers: A Guide to Steppers, Servos, and Other Electrical Machines 1st Edition, Scarpino Matthew, 2015, Que Publishing, ASIN : B018KYYDMI

**Date of project
specification:** 8.2.2021

Deadline for submission: 17.5.2021

Supervisor: prof. Ing. Luděk Žalud, Ph.D.

doc. Ing. Petr Fiedler, Ph.D.
Chair of study program board

WARNING:

The author of the Master's Thesis claims that by creating this thesis he/she did not infringe the rights of third persons and the personal and/or property rights of third persons were not subjected to derogatory treatment. The author is fully aware of the legal consequences of an infringement of provisions as per Section 11 and following of Act No 121/2000 Coll. on copyright and rights related to copyright and on amendments to some other laws (the Copyright Act) in the wording of subsequent directives including the possible criminal consequences as resulting from provisions of Part 2, Chapter VI, Article 4 of Criminal Code 40/2009 Coll.