

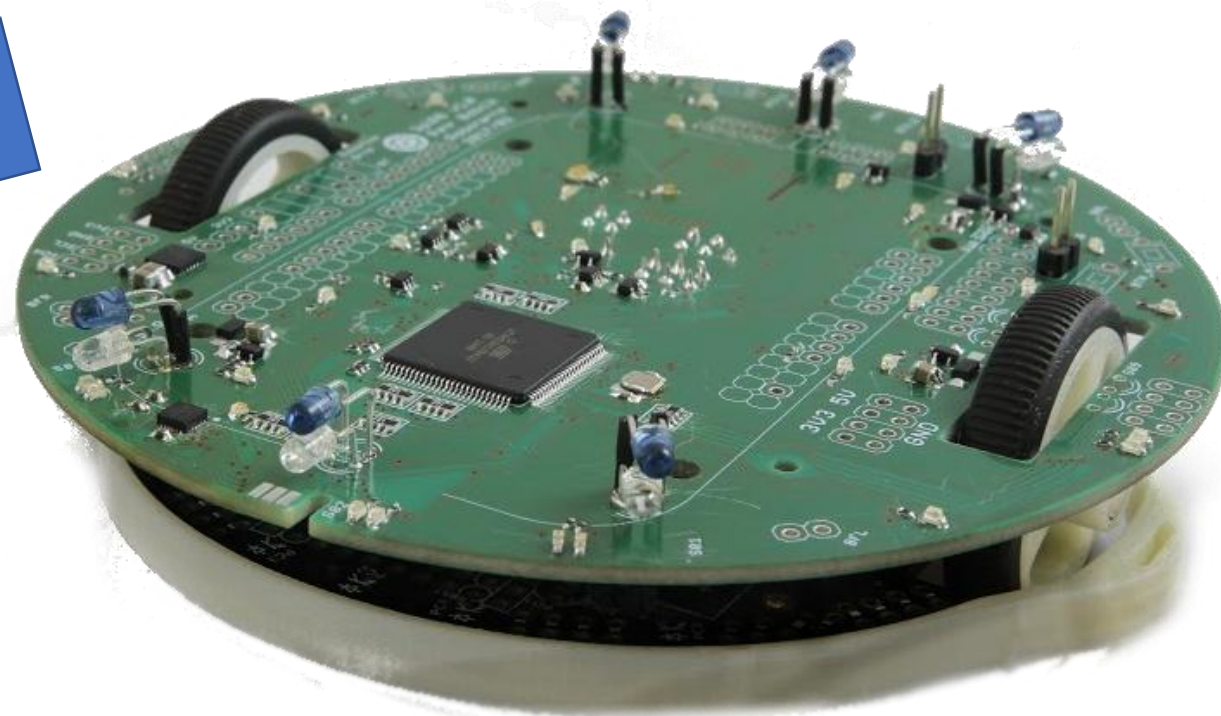
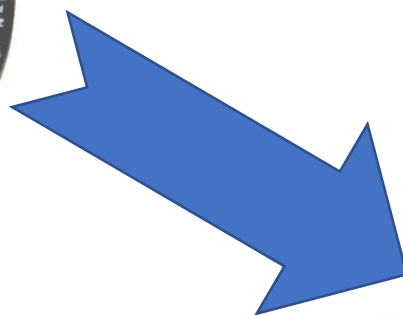
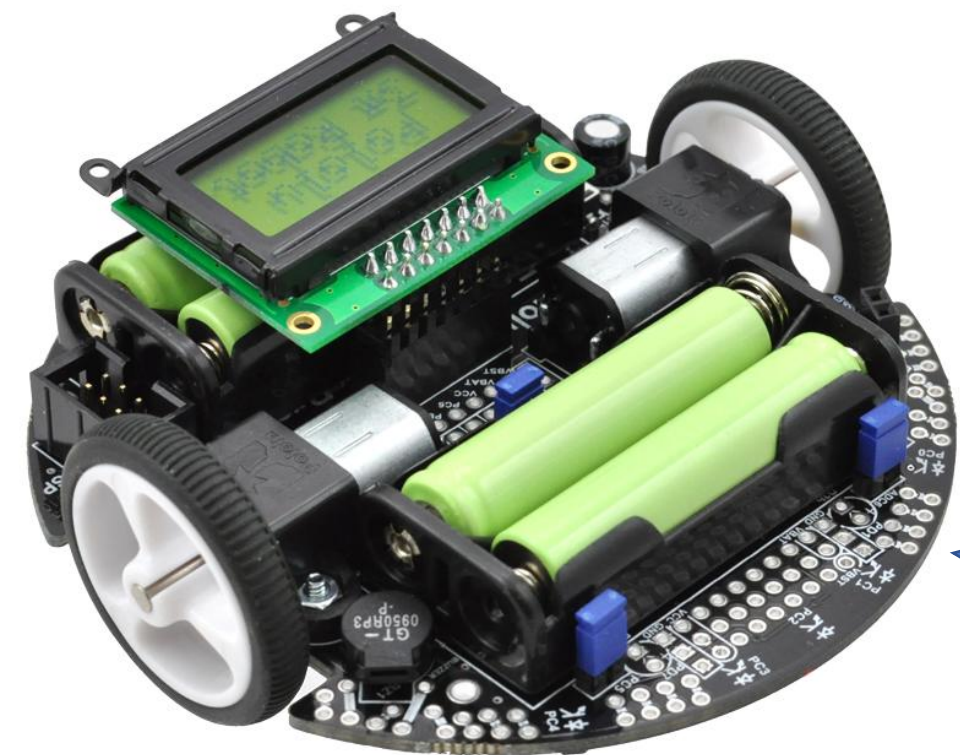
Středoškolská odborná činnost

Nadstavbová deska pro robota Pololu 3pi



Petr Bobčík
SPŠ a VOŠ Brno, Sokolská, p.o.

Cíl práce



Soutěžní disciplíny

Standardní varianta
=> jízda po čáře



Složitější varianta
=> hledání čáry

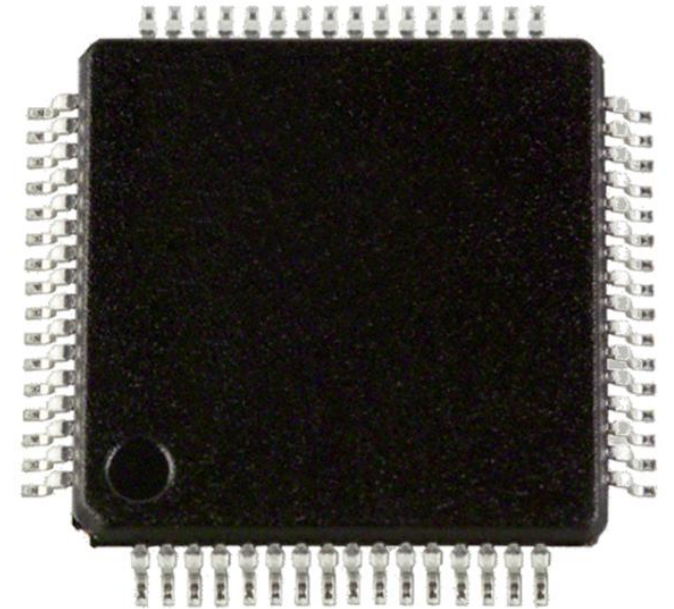
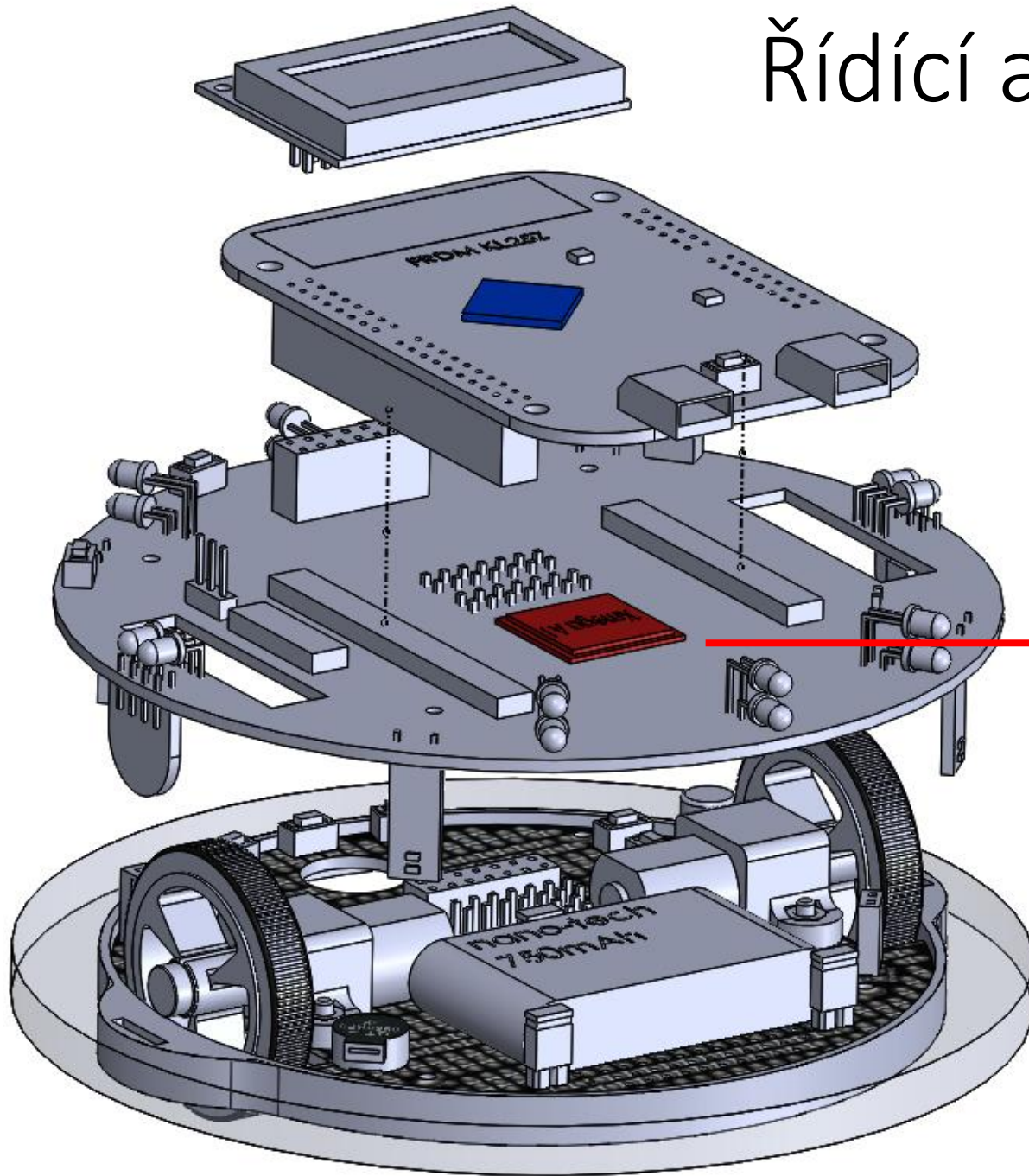


Požadavky

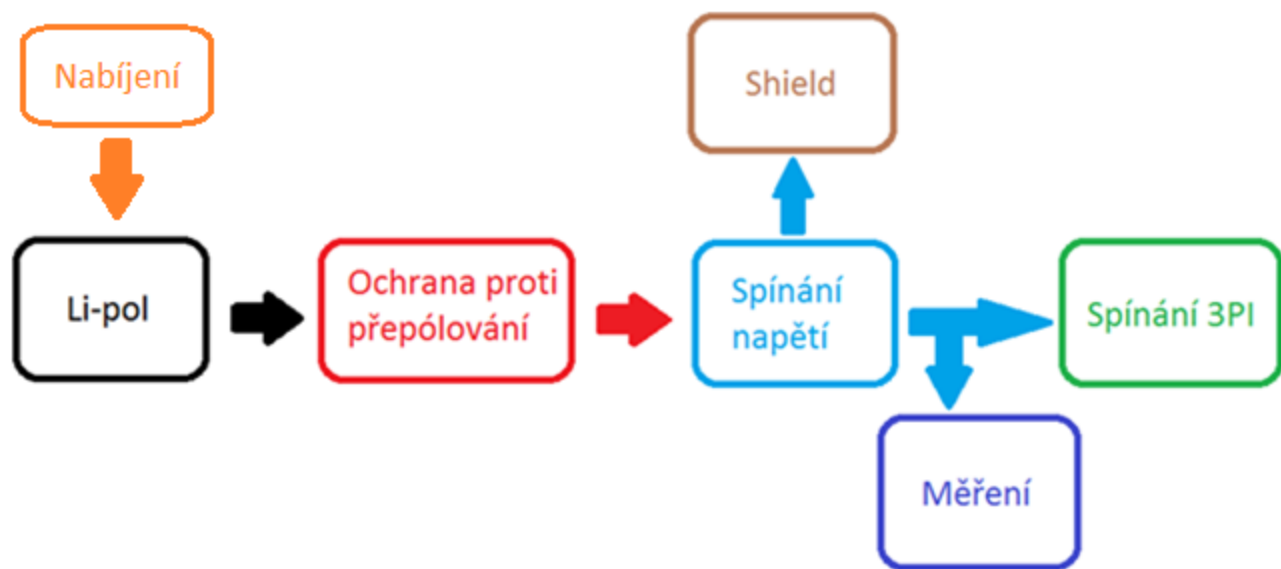
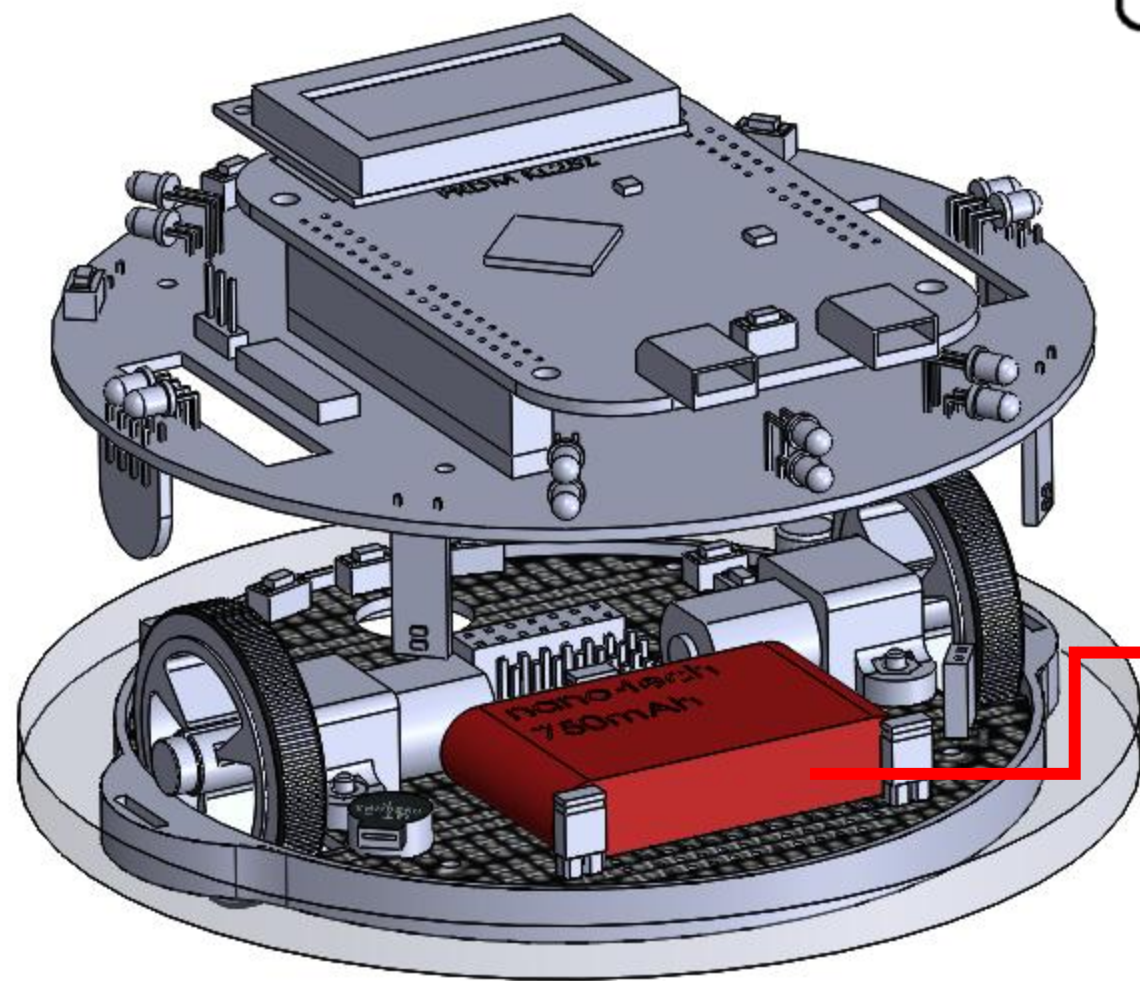
- detekce nárazu
- orientace v prostředí
- poloha robota
- snadné programování
- snížení hmotnosti
- správa napájení



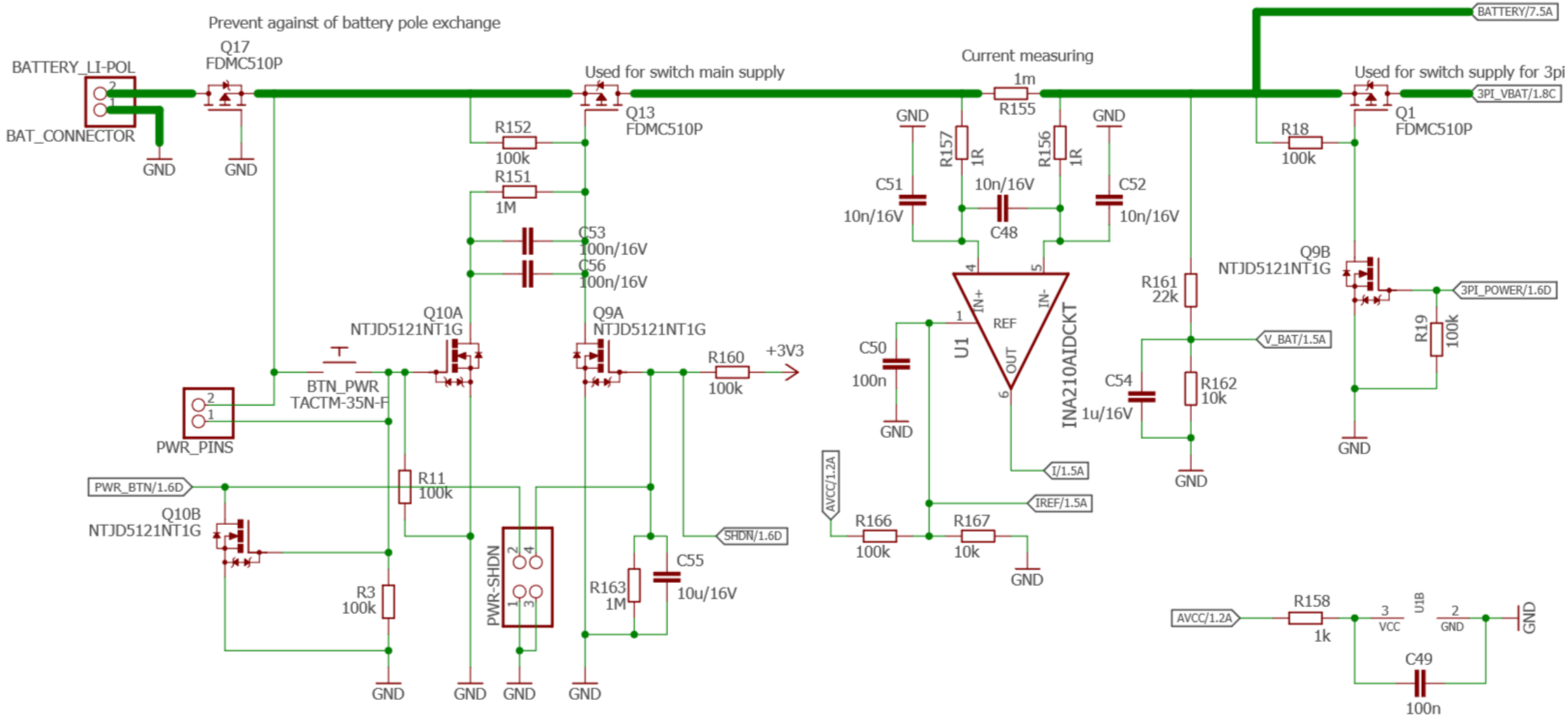
Řídící a uživatelský procesor



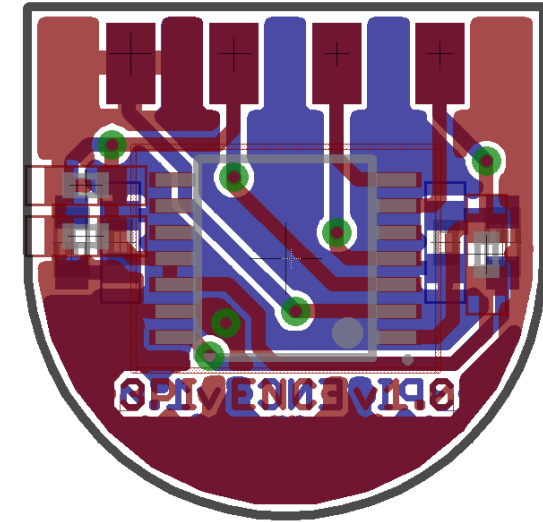
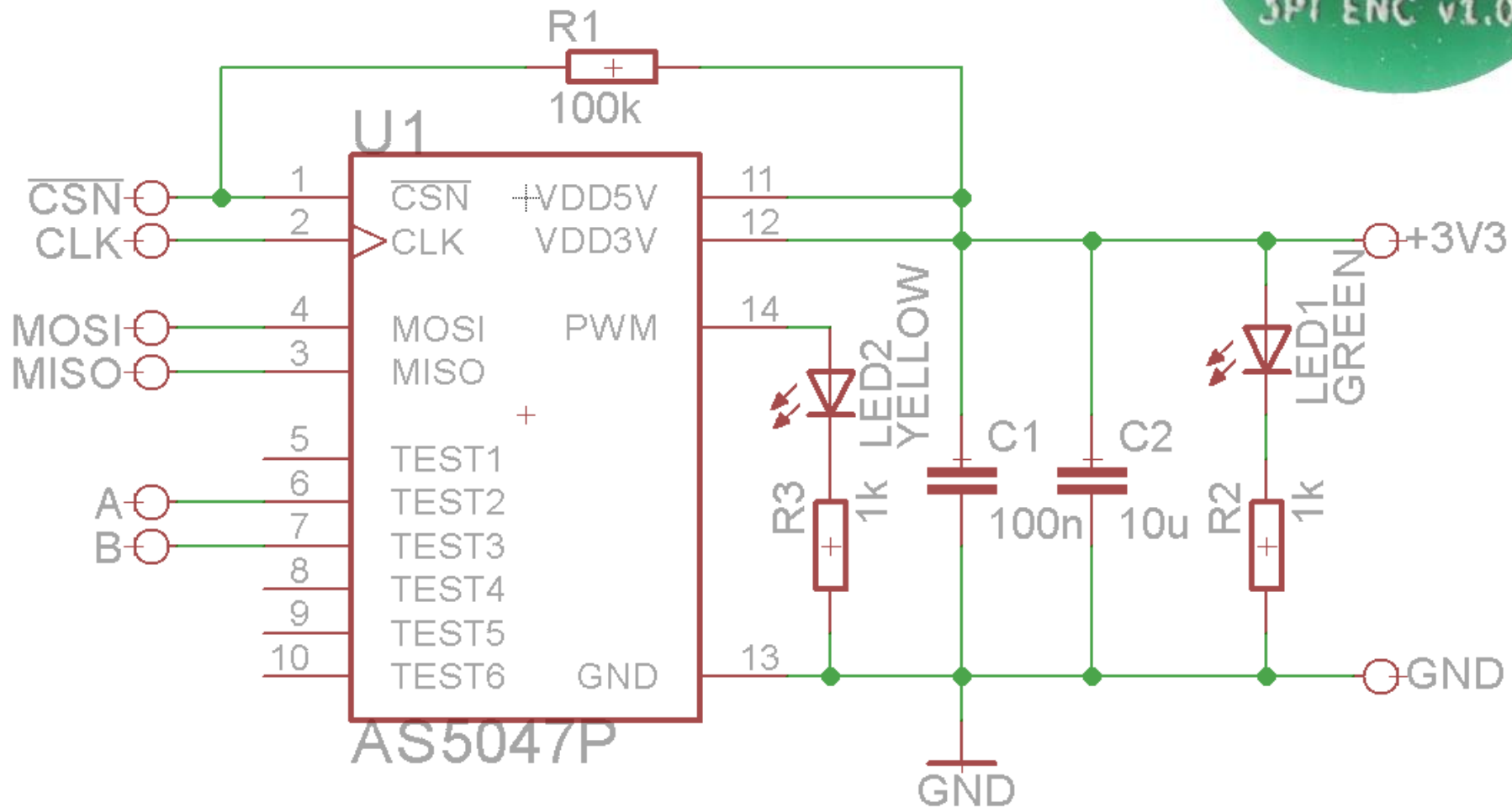
Napájení



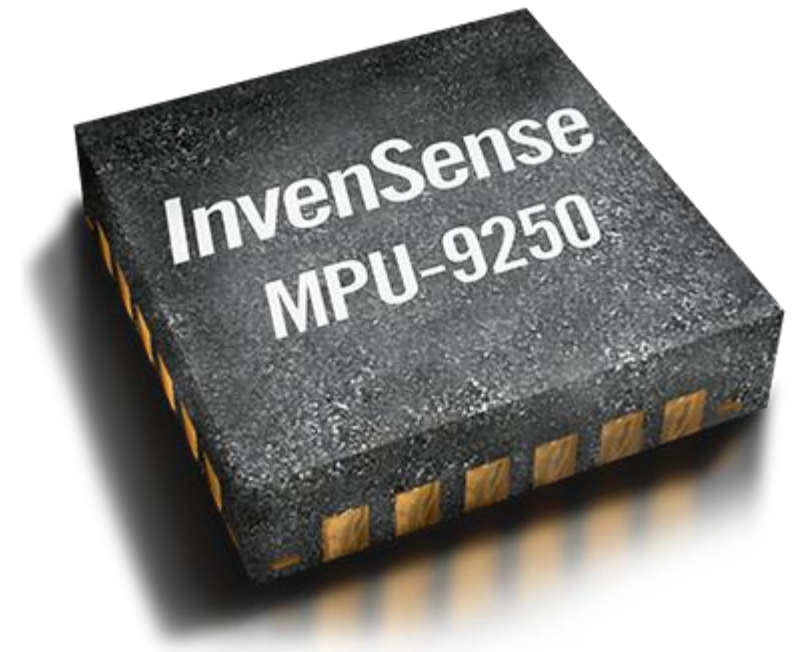
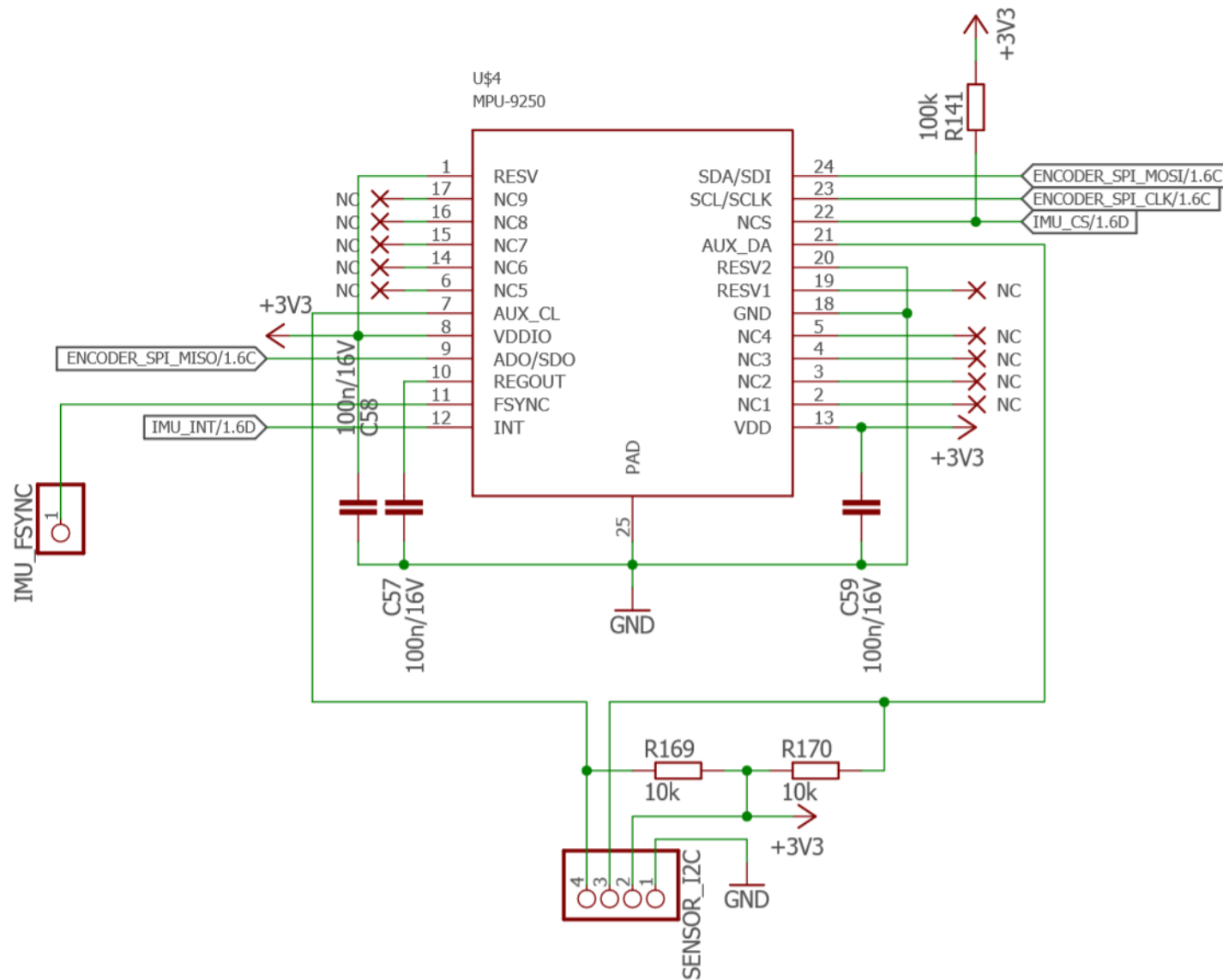
Napájení



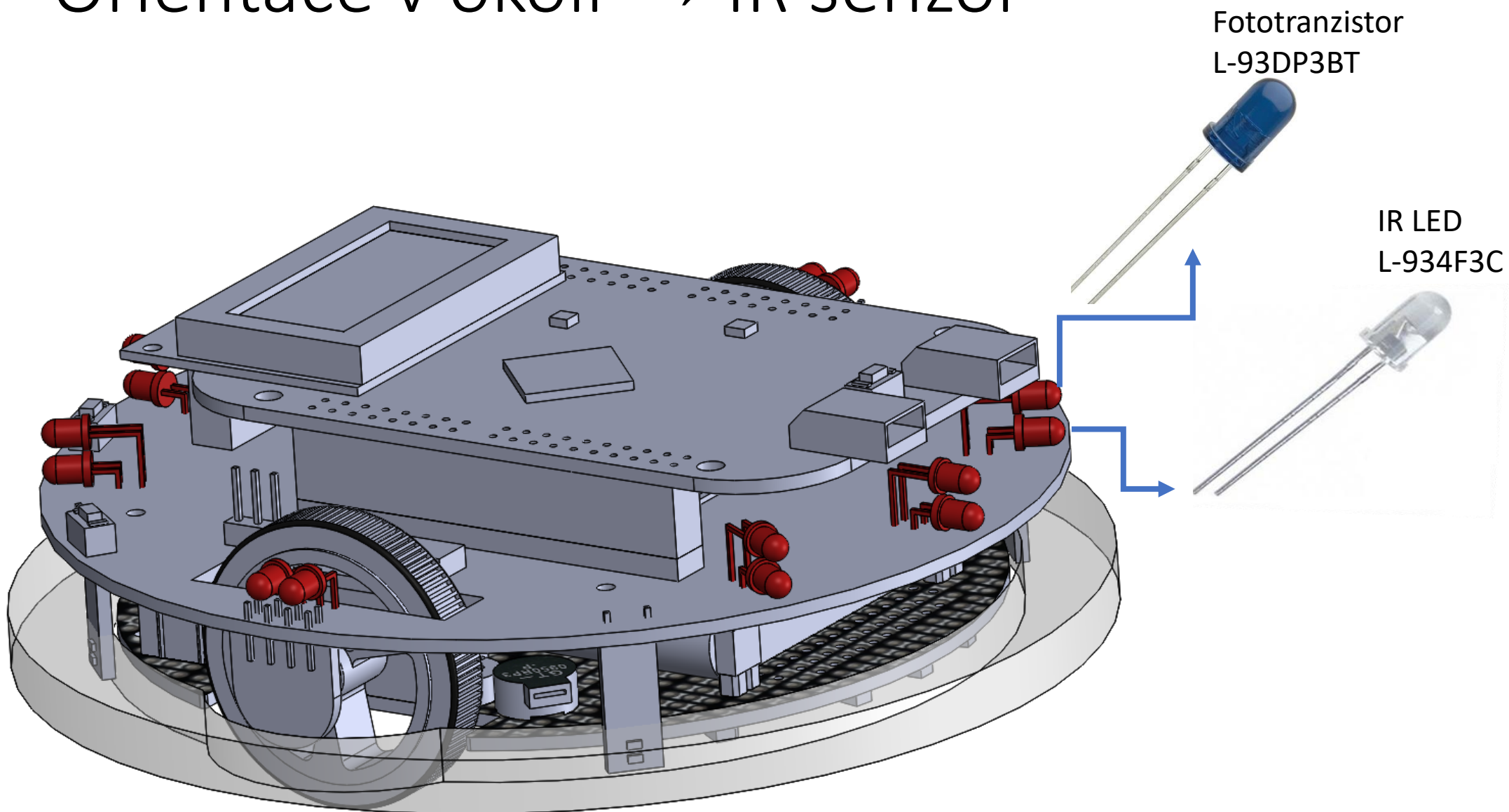
Určení polohy → Enkodér



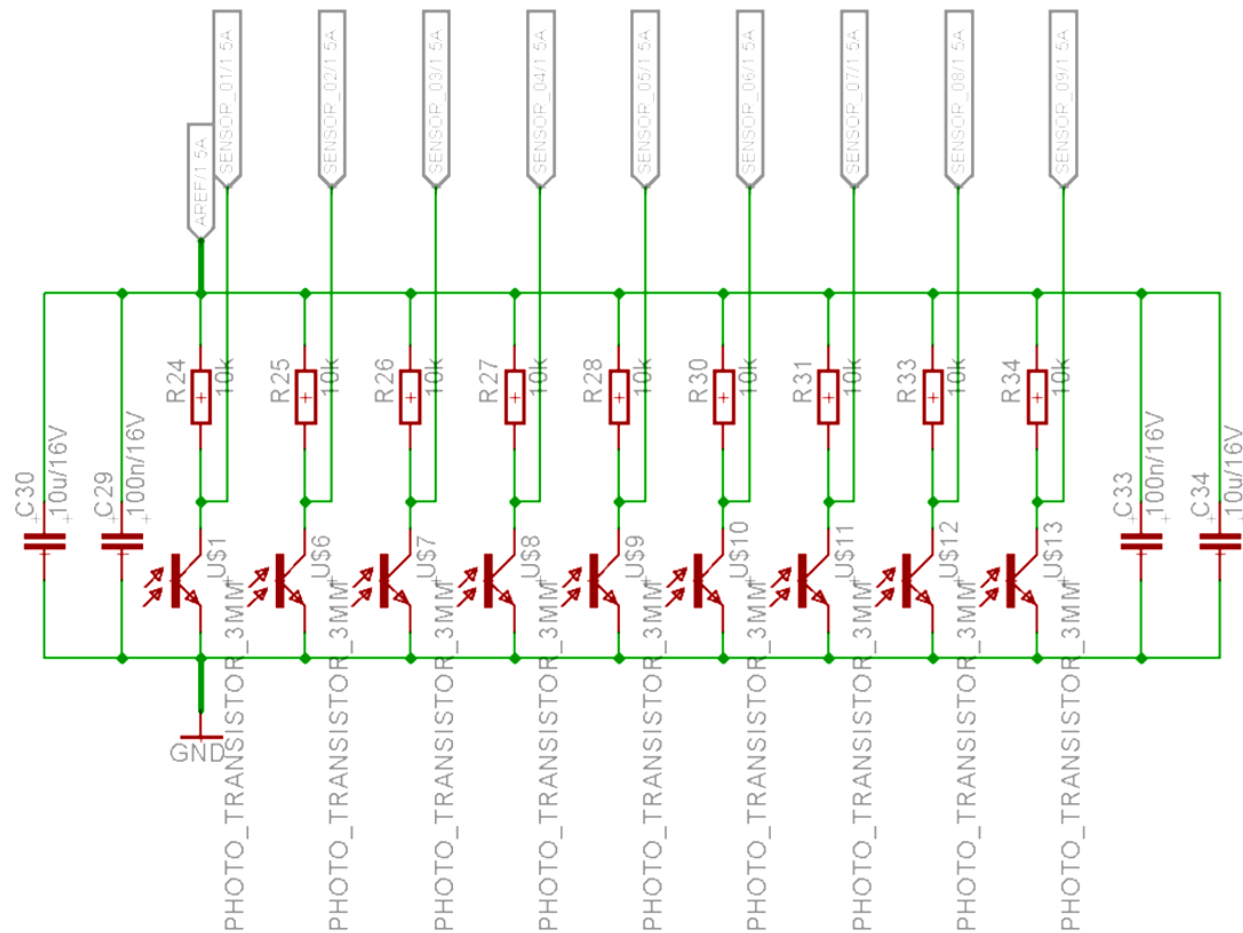
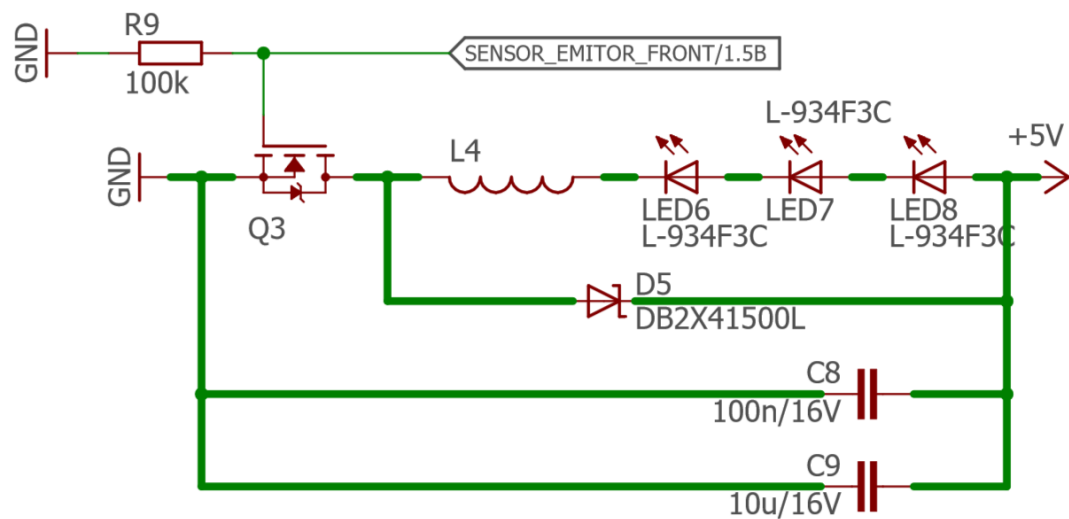
Určení polohy → IMU



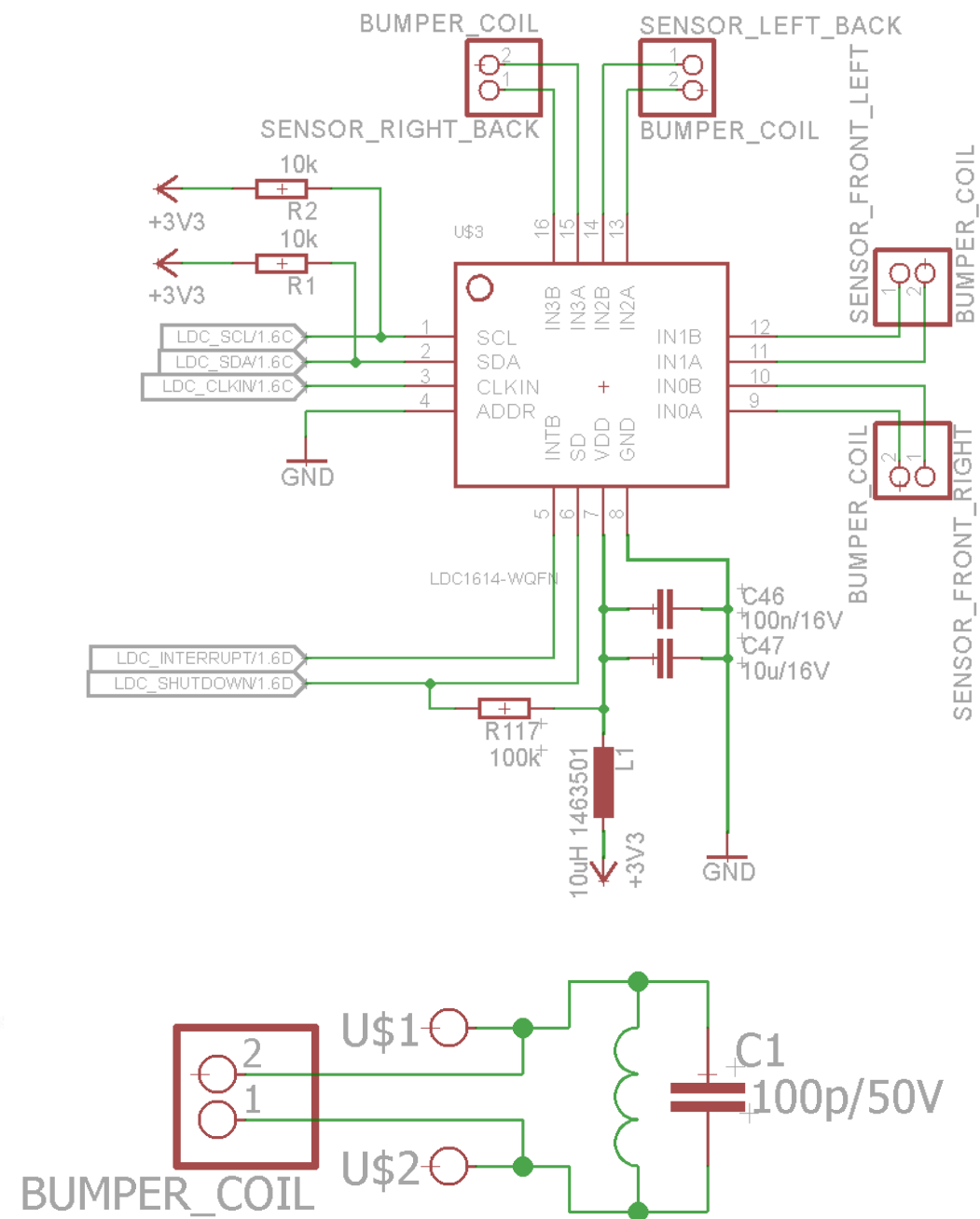
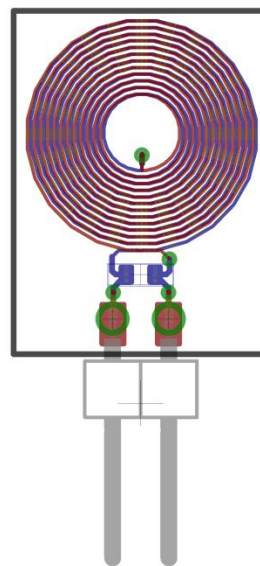
Orientace v okolí → IR senzor



IR sensor

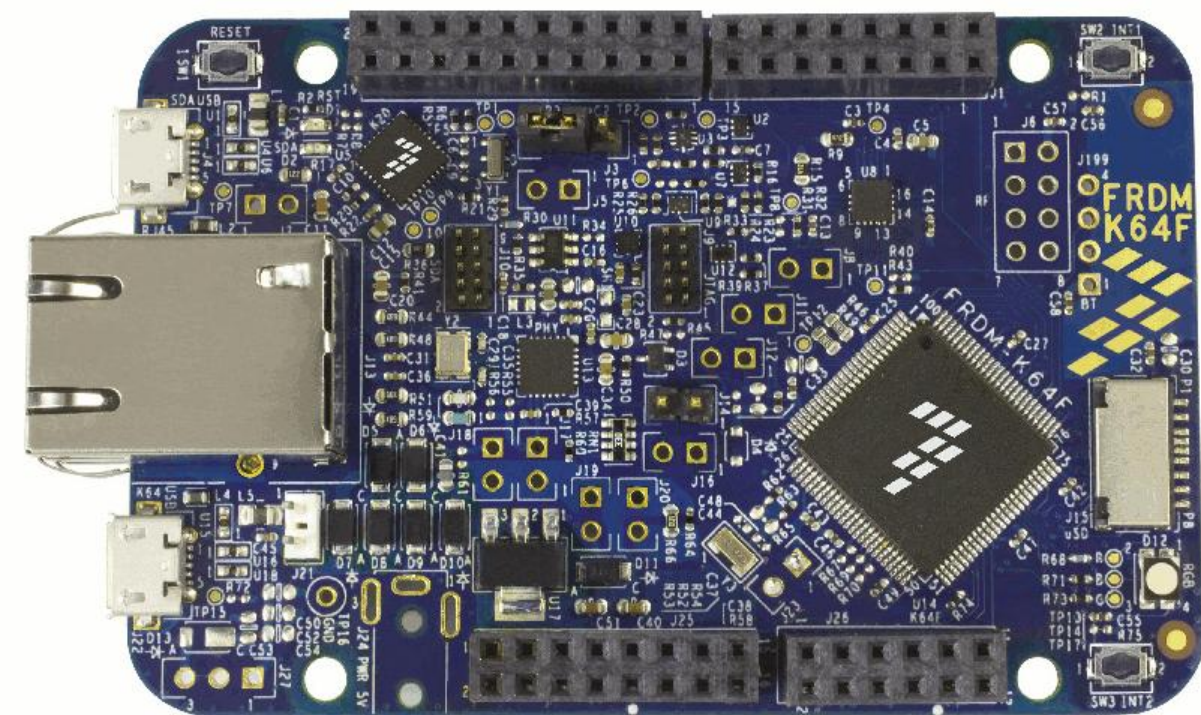


A detailed 3D CAD rendering of a custom electronic assembly. The assembly consists of a circular base plate with a central rectangular cutout. Mounted on the base are various components: a large rectangular module at the top, several smaller rectangular components, and numerous electronic components like resistors and capacitors. A large gear or flywheel is visible on the left side. The entire assembly is supported by a circular base with a textured surface.

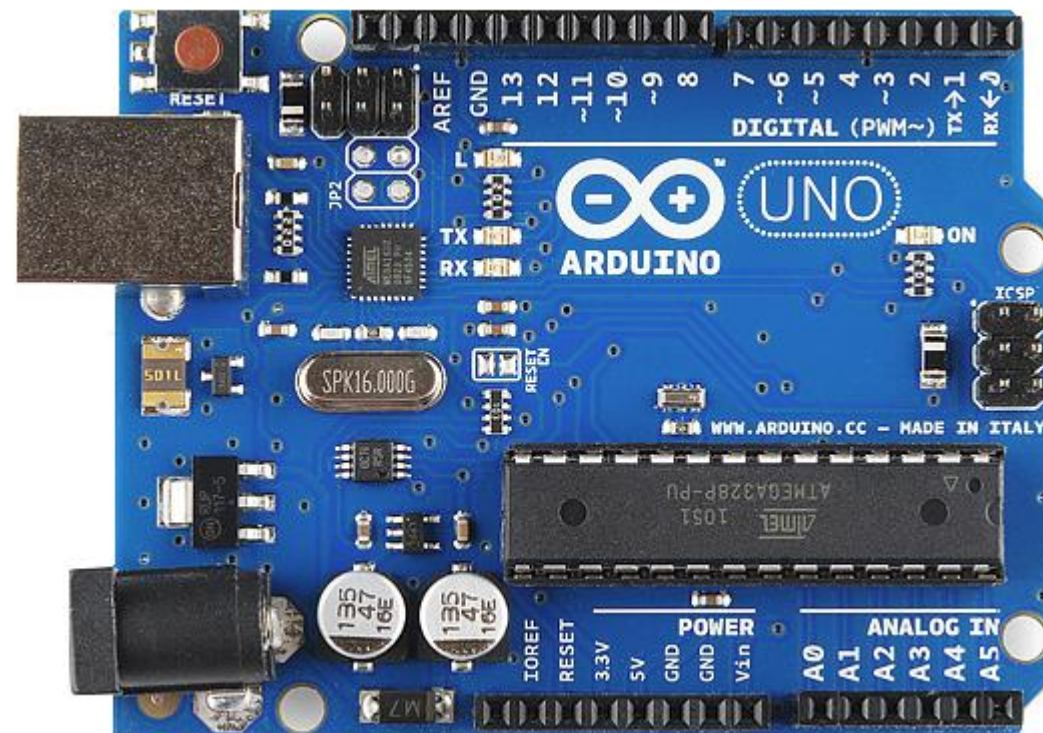


Přídavnné desky

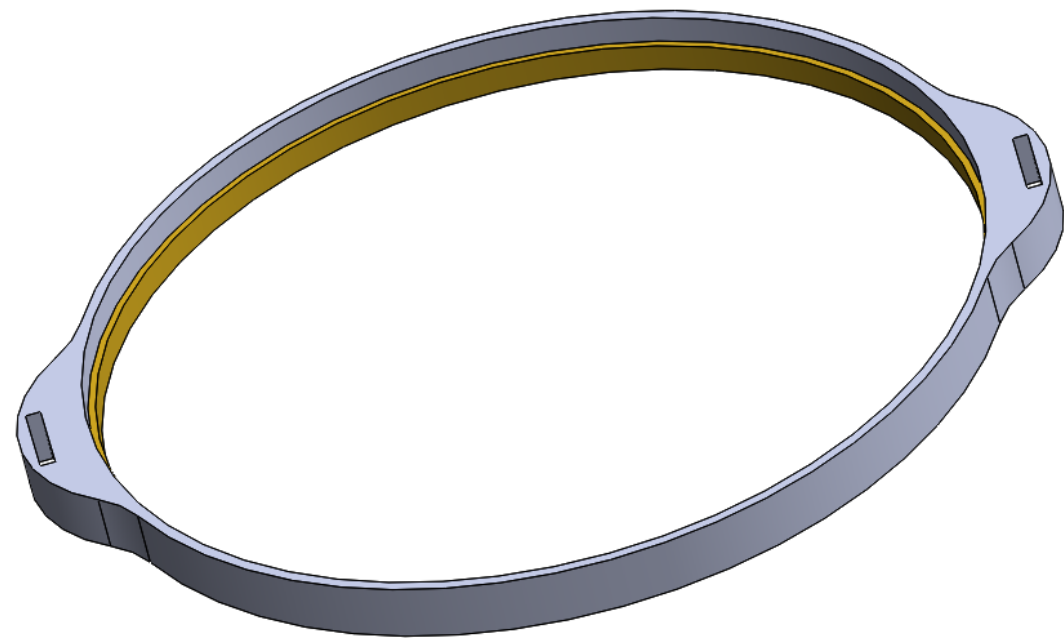
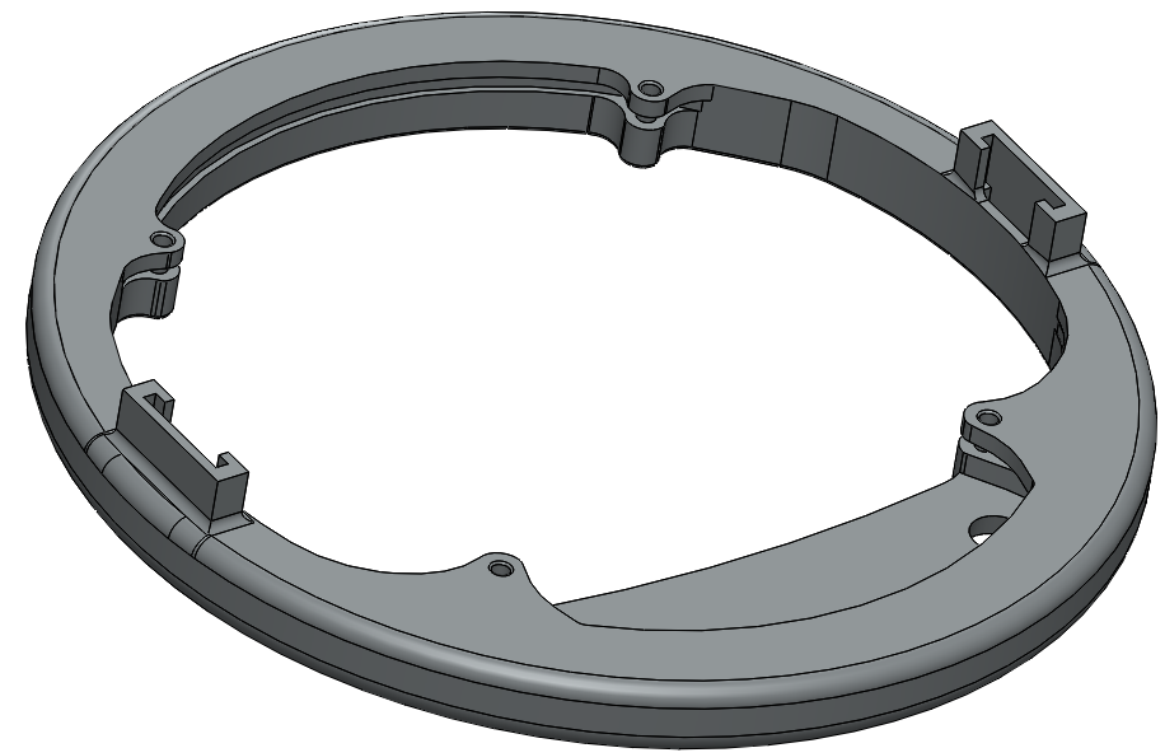
Freedom (FRDM)



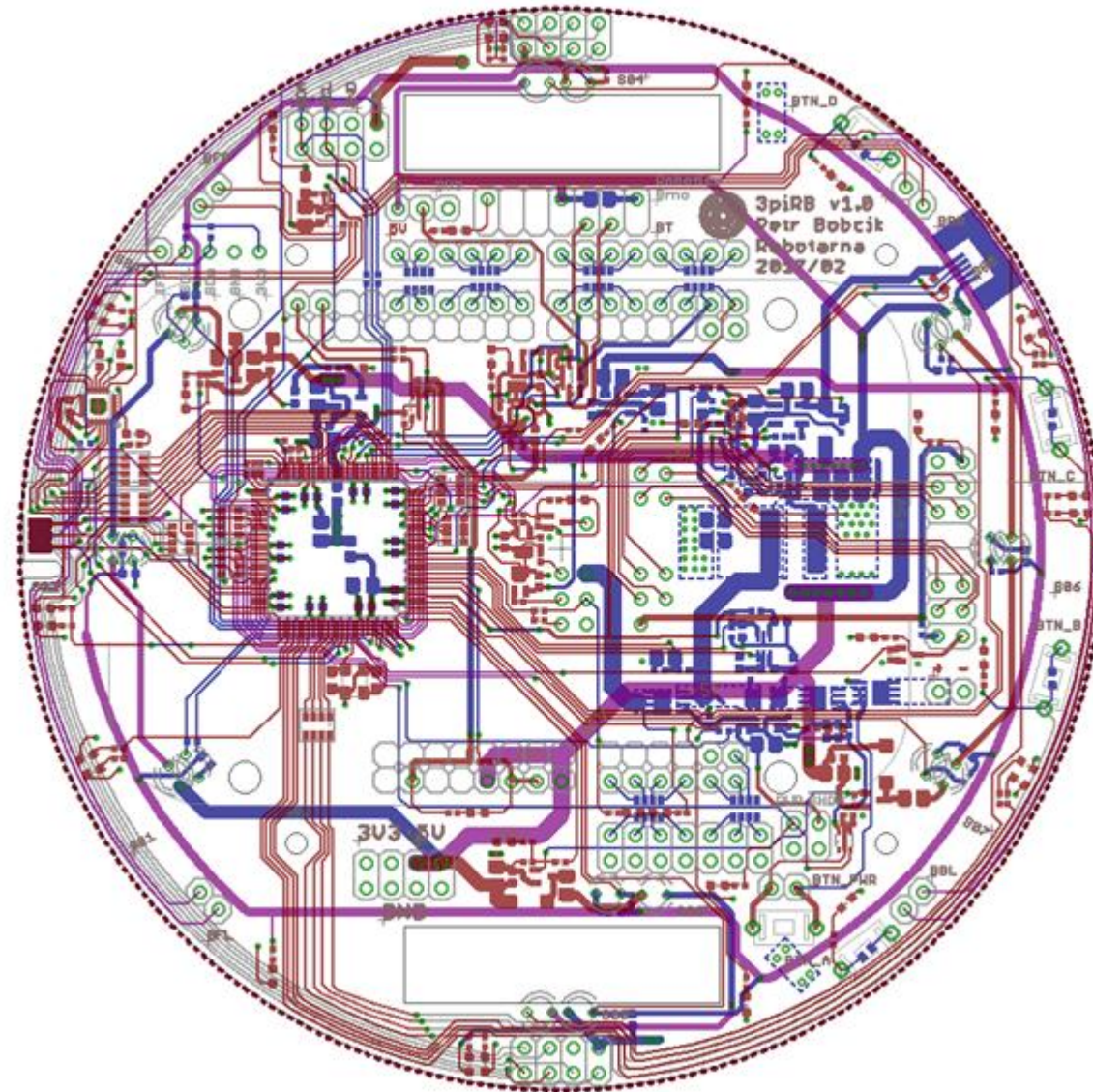
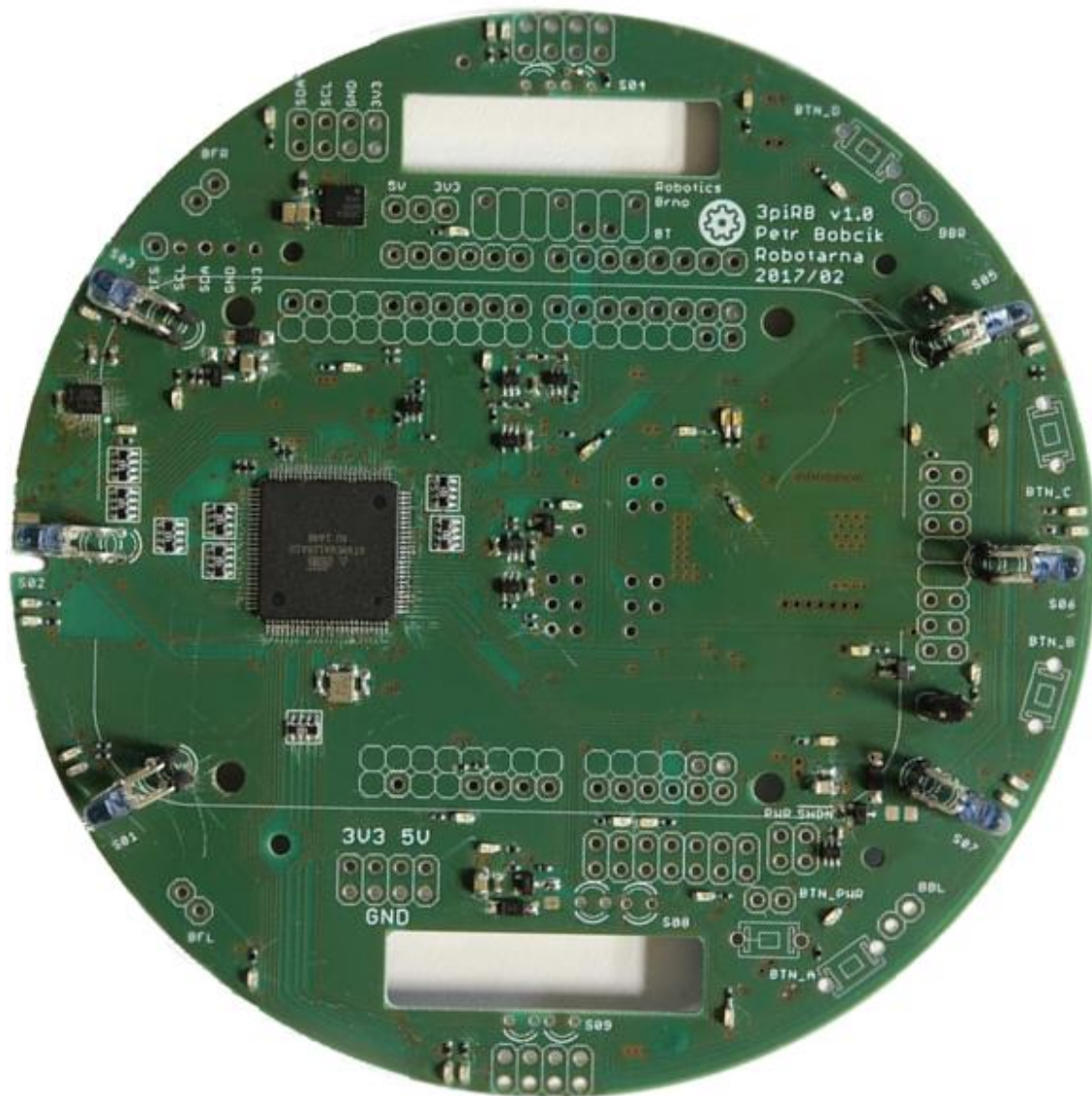
Arduino



Nárazník

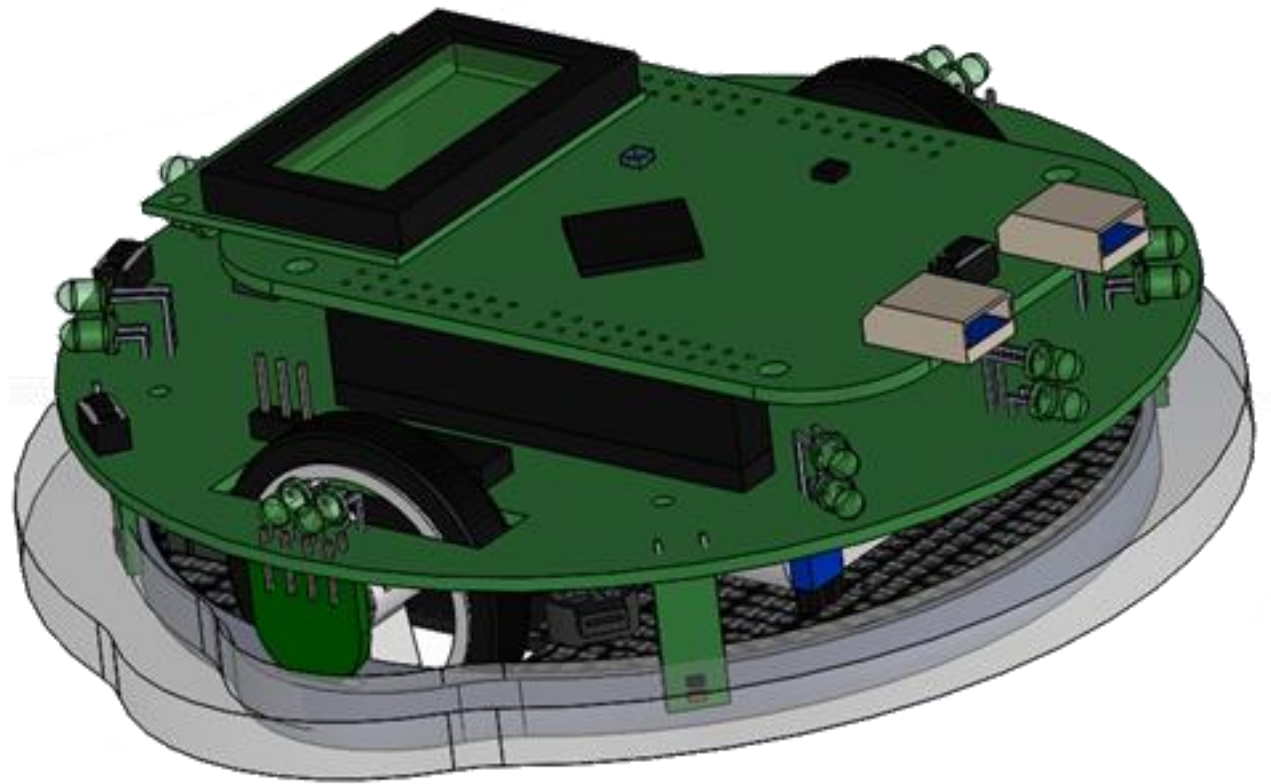


Realizace



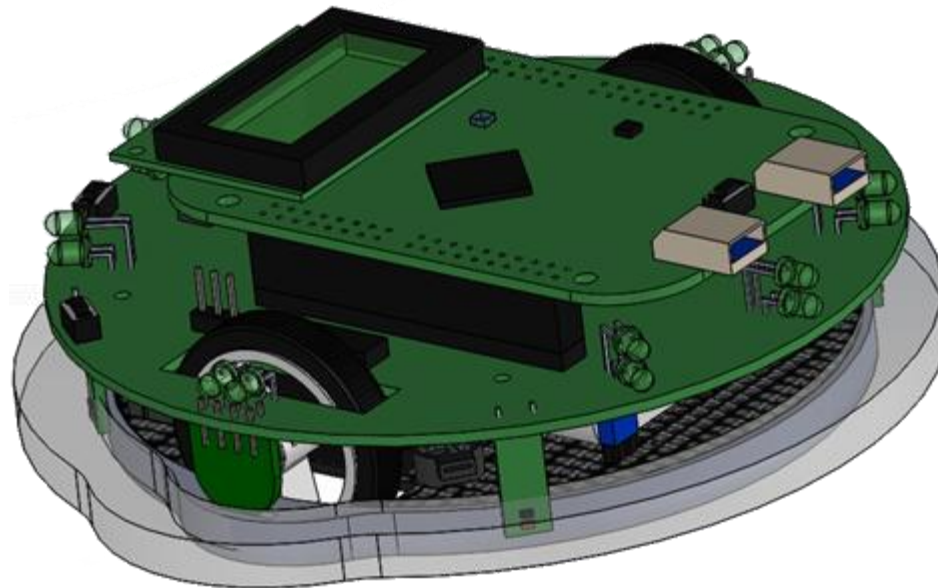
Závěr

- detekce nárazu
- indikace překážky
- orientace v prostředí
- oddělení uživatelského programu
- ochrana před nárazy
- účast na složitějších soutěžích
- open-source



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<https://goo.gl/Uqgpov>

Děkuji za pozornost



ROBOTÁRNA



Děkuji JCMM konzultantům Jaroslavu Páralovi, Jakubovi Streitovi a Jiřímu Váchovi.