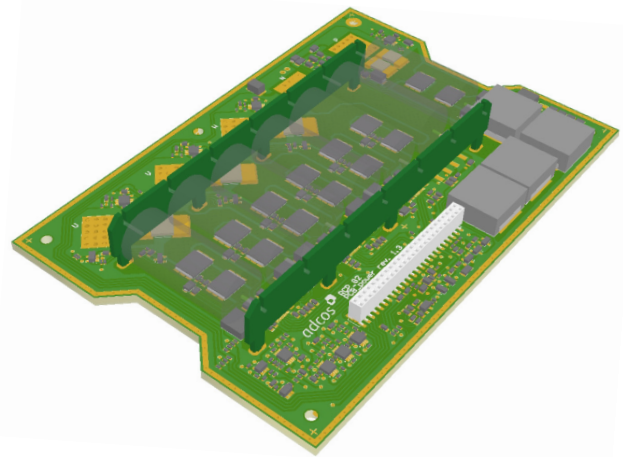
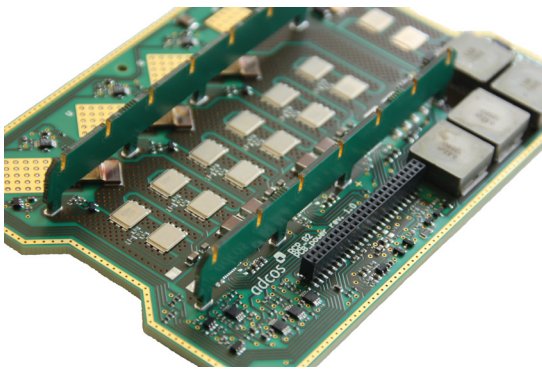


> Compact ECU's with integrated power stages

The demands for the compactness of electronic control units especially in Automotive applications are very high due to the usually small installation spaces. Additionally, the more and more powerful output stages have to be integrated into the ECU's, e.g. for the operation of electromechanical actuators. One focus of our hardware activities in this field is the development of highly integrated ECU's with power stages for rated voltages of 12V and 48V.

The integration of electronics into the available space can only be efficiently treated with the help of 3D-capable hardware development tools. Here we successfully use the program ALTIUM Designer for several years. For the integration of power stages within the ECU, we rely on new technologies in the field of PCB manufacturing such as combined boards of thick and fine copper.

Another focus in the area of our hardware development is on the thermal rating of the ECU. Here we perform thermal calculations and simulations, which we validate with application-specific experimental setups during the development phase. For this the calculated cooling profile is build up, the expected power loss is applied under defined flow conditions and the temperature rise and heat distribution is measured.



Our services at a glance:

- > Conceptual design of the hardware architecture
- > Modular circuit design and layout
- > SPICE circuit simulation
- > Power loss calculation and thermal simulation
- > Thermal preliminary investigation with application-specific experimental setup
- > 3D PCB design with an interface to CAD systems for optimal constructional integration
- > Prototype construction and small series production