



## BACKEND COMMUNICATION FOR ENERGY STORAGE

modual is a leading manufacturer of second-life battery solutions in Brunnen SZ, whose energy storage systems can optimize the self-consumption of a building and be used for peak shaving to reduce industry costs. The company procures its second-life cells from electric vehicles and other sources when their capacity is no longer sufficient for electromobility. The backend communication developed together by konplan and modual provides the customer with a flexible platform for future developments. One challenge is the ability to integrate batteries from various manufacturers which requires the modual system to handle multiple types of communication interfaces.

### Efficient collaboration for high-quality design

In close cooperation with the customer team, konplan developed the specifications and architecture for two electronic circuit boards and implemented the PCB designs. One board controls the entire battery including the internal and external communication interfaces while the second board is a sub-unit that coordinates the charging and discharging processes of several battery cells.

The communication path for exchanging information was kept short by combining the work at modual and the konplan offices. Simultaneously, this gave the employee quick access to information from the additional subject matter experts at konplan and enabled high-quality schematic and layout reviews.

### Greater flexibility, shorter time-to-market

The new electronics replace various existing solutions, and the generic communications platform shortens the integration time of new second-life cells. This means that modual can bring new cell types to market quickly and reduce its own maintenance effort.

### Result

- Communication boards for battery main controllers and cell networks
- Competitive advantage through high flexibility

### Methodology & Technologies

- Altium Designer
- CAN-FD, Ethernet, RS-485
- Microcontroller STM32

### Scope of Services

- Architecture and Design
- Commissioning of prototypes
- Technical documentation & manuals

 3 months

 1 employees – konplan  
2 employees – customer

 Conception,  
Development

### Customer

**modual**<sup>TM</sup>

