

Summary

The ECU development project for iseAuto resulted in a sophisticated PCB board design tailored to meet the demanding requirements of automotive applications. The board features eight controllable channels, each equipped with current measurement capabilities to monitor and manage power distribution effectively. To facilitate robust communication, the design includes two CAN interfaces: one dedicated to main communication and the other reserved for safety operations, ensuring a reliable and secure data exchange framework.

To enhance durability and resilience, the board incorporates several protection mechanisms, including surge protection, over-voltage protection, and reverse voltage protection. These features safeguard the ECU against common electrical disturbances in automotive environments, thereby enhancing reliability and longevity. As well as some Light Emitting Diodes (LED) were added to ease trouble shooting of the board.

A single standard automotive connector is used to streamline integration and reduce complexity in the vehicle's wiring harness. The heart of the system is powered by two STM32 microcontrollers, chosen for their versatility, processing power, and reliability. These microcontrollers handle both the main operations and safety functions, ensuring seamless and efficient performance.