



SuperPanther Next Generation High-Voltage Domain Controller

SuperPanther's next-generation High-Voltage (HV) Domain Controller re-architects the system by integrating key HV functions into a unified platform. The highly integrated architecture reduces system footprint, weight and connections while improving efficiency, reliability, safety and serviceability.

KEY TECHNOLOGY HIGHLIGHTS

- **Integrated HV Architecture:** an integrated layout consolidates key HV functions, reducing distributed components and connections while shortening cable routing and freeing space for the battery and other vehicle systems.
- **X-in-1 HV Integration:** more functions are integrated into one compact platform, reducing standalone components, connectors and cabling. The optimized architecture achieves 50+ kg weight reduction and approximately 1/3 footprint reduction.
- **Full-Stack In-House Development:** SuperPanther develops the hardware and software stack in-house. A highly integrated single-PCB design reduces internal connections and potential failure points, supporting system reliability and continuous software and hardware evolution.
- **Sandwich Liquid-Cooling Structure:** an innovative sandwich liquid-cooling structure provides effective and uniform cooling for critical HV components, supporting stable performance under high-power charging and discharging conditions.
- **MCS Megawatt Charging:** designed for next-generation megawatt charging, the system supports 1,300 A rated current and 2,000 A peak current, enabling high-power energy replenishment and supporting greater vehicle uptime.
- **Active HV Safety:** real-time monitoring continuously detects system conditions. Active protection and safety redundancy enable rapid response to abnormal conditions and enhance overall HV system safety.
- **Service-Oriented Design:** a tool-free service design enables faster and easier replacement of key components, reducing service time and vehicle downtime while lowering total lifecycle operating costs.