Solution from
Infineon - Tongji Automotive Electronics Laboratory

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Outline

- Door control module
- Anti-pinch solution to power window
- Dashboard based on XC2264N
- High-voltage PMSM Control
- Diversified cooperation
  - Electric seat module
  - CAN bootloader
  - others
- Summary
Door Control Module

- Based on XC886 and TLE8201
  - Short-circuit protection
  - Two pcs of BTS7960 were used to control window
  - Low cost
  - Open-load detection
Control Module for Driver’s Door

- have similar functionality as the previous door module
- Meet the requirements of specification given by FAW C302 platform
Control Module for the other three Doors

- Meet the requirements of specification given by FAW C302 platform
- Lowest cost solution to power window control
Anti-pinch solution

- Anti-pinch (Experimented in a real PASSAT door)
Dashboard based on XC2264N

- complicated power-saving mode was realized
- low-level drivers for stepper motor, LCD, pulse period measurement and external EEPROM have been developed
High-voltage PMSM Control

- torque & speed control / servo control
  - based on XC2785X and Hybridpack1 / 1ED020I12-FA (IGBT driver IC)
  - Complete Matlab/Simulink Modeling on the PMSM control system
High-voltage PMSM Control

- torque & speed control / servo control
  - Hand-written software code complies with MISRA standard
  - Realized the torque & speed closed-loop control
High-voltage PMSM Control

- torque & speed control / servo control
  - Realized the position closed-loop control
High-voltage PMSM Control

- torque & speed control / servo control
  - Realized flux weakening control and full load (20kW) control
Diversified cooperation

Electric Seat Module

- XC888, TLE6285G and IFX power devices
- All software was developed by our lab
- passed the EMI tests according to the standard GM W3097
- C samples are being tested
Diversified cooperation

- **XC16x On-chip Flash Programming via CAN Bus**
  - This tool (both PC software and low level driver) was completely developed by our lab. We can customize our software for each customer.
  - Suitable to all XC16x on-chip Flash.
  - This tool has been sold to some end customers.
Diversified cooperation

- Many other projects
  - Adaptive Front-lighting System
  - Low-level driver of XC2000 for EPS
  - Multifunctional switch
  - Hall sensor TLE4997 programmer
  - Light control module
  - ......
Summary

We dedicated ourselves to

- Infineon MCU application
- body control module
- PMSM motor control
- diversified cooperation possible

Contact information

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Thank You