

DASHBOARD MONITOR SYSTEM



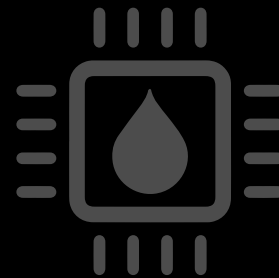
OVERVIEW

Customer wanted a milestone based and Agile project management in very short cycle time (spec to TO in ~6 months).

- ▶ Dashboard system monitor- concept to prototype development
- ▶ Agile project management; very short cycle time (spec to TO in ~6 months), milestone based project assessment
- ▶ Xilinx Spartan6 FPGA

DESIGN FEATURE CHALLENGES

- 1 End to end development of analog instrument cluster
- 2 6 motors design, sensors, ADCs, LEDs, flash support and board design



PROJECTS

- › Dashboard system monitor- prototype
- › Scope
 - Concept to prototype
 - System Design and component selection
 - RTL design, FPGA Implementation, Board bring up and debug
 - Functional Verification
 - Validation of the prototype
- › Meeting the schedule for final phase & Customer Recognition and getting the work in 6ghz

DESIGN

- › Design of tachometer, speedometer, oil, battery, temperature, fuel control units
- › 6 stepper motors, multi-function 7-segment multiplex LCD, indicators/lights
- › LCD functions: odometer, distance-to-empty
- › Xilinx Spartan-6 XC6SLX25T

EXECUTION

- › Requirement understanding of the dashboard system
- › Automotive domain study - supply voltage, environmental constraints etc
- › Sensor, LCD, stepper motor selection – requirements and cost main criteria
- › Coming up with a Macro and Micro design
- › Selection of FPGA
- › Synthesis and P&R, timing simulations
- › Board bring-up and debug
- › Product design – front fascia UI and printing