



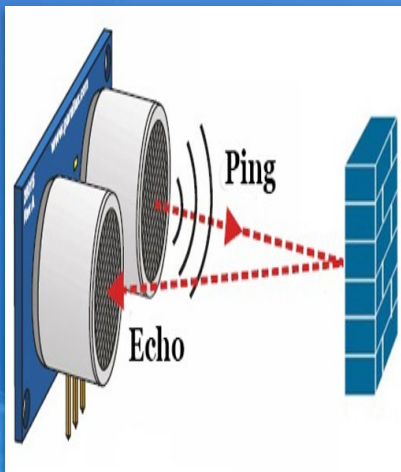
VIA Technology Summer Internship: LIN-RS232 Radar Transition Box

Winchester, Hardware Intern, VIA Technologies, Inc.

2023/08/15

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|----------------------|--------------------|
| 1. Introduction | 6. Future Work |
| 2. Objectives | 7. Site Visits |
| 3. Design Concept | 8. Acknowledgments |
| 4. Implementation | 9. Q&A |
| 5. Learning Outcomes | 10. Thank You! |

Background



Project Overview



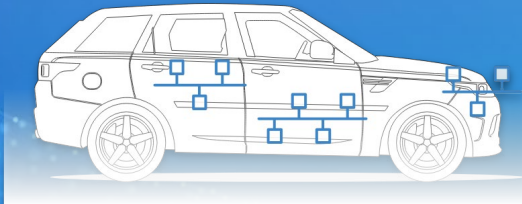
Why It Matters



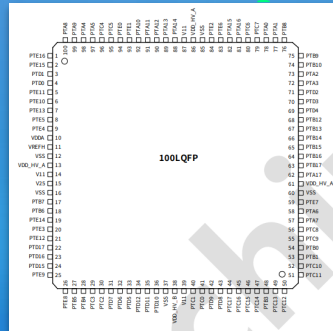
Objectives & Requirements

Convert LIN to RS232

LIN



MCU Chip



RS232 Serial Port



MCU Main Peripherals



SWD Debug
Serial Port

LED Module

LIN
Transceiver

RS232
Transceiver

Crystal
Circuit

DC/DC
Module

Schematic Design



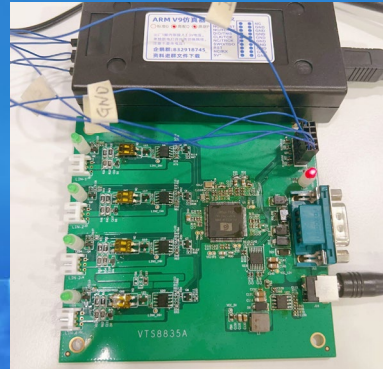
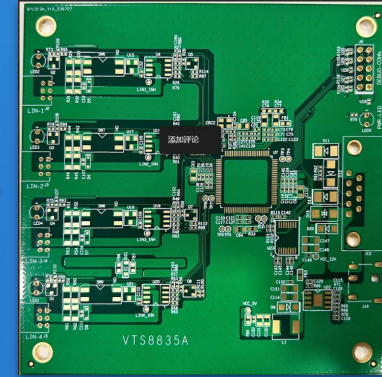
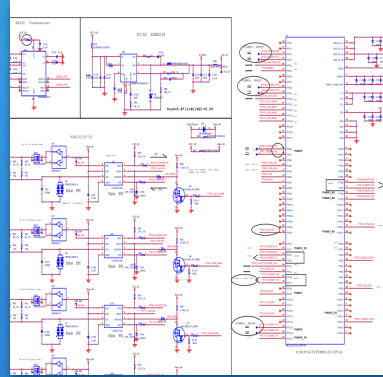
Layout Design



3D Shell Print



Prototype Testing



Radar Transition Box Development:

- Engineered a Radar Transition Box with a x4 LIN interface, UART protocols, and RS232 connectivity.
- Achieved seamless data communication, increasing system reliability.

PCB Layout & Design:

- Created an optimized PCB layout with DC/DC and LDO for voltage conversion.
- Developed a 3D-printed product shell.

Insights into Vehicle Electronics Industry:

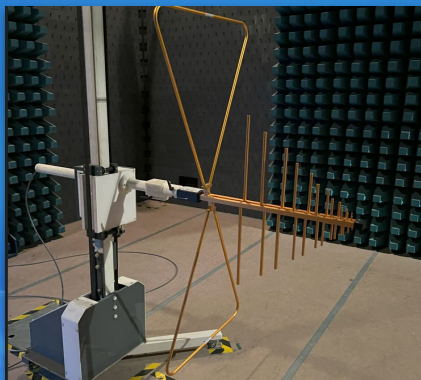
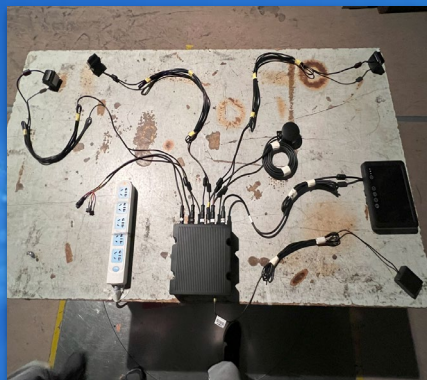
- Gained valuable insights into the vehicle electronics industry, including trends, technologies, and best practices.
- Understood the role of automotive electronics in enhancing vehicle performance and safety.

Project Management:

- Orchestrated the project lifecycle and led cross-functional teams.
- Boosted system optimization by an estimated 10%.

**LIN Ultrasonic
Probe**

**LIN Signal
Debugging**



Leadership & Guidance:

- Moto: Head of VIA Tech Shenzhen.
- Xindi: Hardware Dept. Leader, supervised progress.
- Jasper: Project Leader, guided design.
- Jepson: Guided SMT factory visit.

Technical Support:

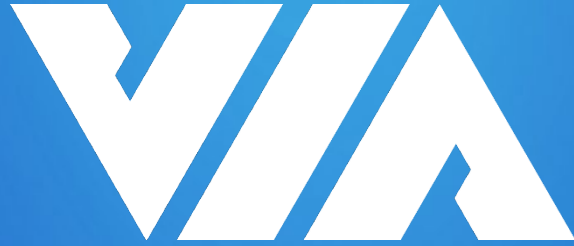
- Laura: Managed PCB layout.
- Ethan: Technical discussion partner.

Internship Experience & Support:

- Jason: Handled recruitment/onboarding.
- MIA: Organized intern activities.

Special Thanks:

- To all VIA Technologies staff who provided assistance and support!!!



Q&A Session

2023



Thank You