

Meruva Saikumar (2.9yrs, Silicon Validation Engineer)

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Career Goals:

To associate with an organization that provides me an opportunity to utilize my skills and improve my knowledge and be part of a team that works dynamically towards the growth of the organization.

Professional Summary:

- Having 2.9 years of experience with TCS worked as a Silicon Validation Engineer with having good knowledge of Embedded components such as Micro-processors & Micro-controllers.
- Worked on low speed communication peripherals such as I2C, UART on multiple derivatives of SOC's.
- Having Good knowledge and experience in programming & analyzing.
- Experience in debugging and development hardware tools (Multi meters, JTAG Debuggers, Oscilloscopes)
- Having Good understanding of serial communication protocol "SPI".
- Supported on Xilinx emulation during pre-silicon stage to validate I2C and UART functionalities.

Core Skill Set

Programming

- C
- Embedded C

Protocols

- IIC
- UART
- SPI

Emulation Platforms

- Xilinx – FPGA

Hardware

- J-link JTAG Debugger
- DMM
- Two channel DSO
- OpenOCD

Debug Tools

- Trace32
- FreedomStudio

Skills Summary

- Worked on Functional validation of various IP's on ARM SOC's .
- Worked on Functional validation methodologies.
- Good at handling tasks individually and able to analyze and debug issues.
- Having good listening skills to understand the use-cases during oral communication and can co-ordinate with necessary teams to collect the information needed.
- Involved on Test Plan preparation, Test case validation, Code Development in Embedded C for functional feature validation of SOC IPs.
- Work experience on **ARM** architecture based microcontrollers.
- Expertise in peripherals **IIC, SPI and UART**.
- Good at understanding of hardware interfaces and schematics.
- Work experience on GNU Tools like GCC and GDB.
- Hands on debugging experience with **JTAG, Logic analyzer and DSO**.
- Experienced in using bug tracking tools like **JIRA**.
- Quick learner and excellent team player with good communication skills and having ability to meet tight deadlines.

Academic Exposure

Bachelor of technology (B.Tech), Electrical and Electronics Engineering (2016 - 2020).

St Ann's College of Engineering and Technology, Chirala.

Professional Exposure

Worked as Embedded Software Engineer with Tata Consultancy Services Limited(TCS) (Feb 2022 to Nov 2024), Bangalore.

Project Roles and Responsibilities: (Pre and Post Silicon validation on I2C & UART IP at SoC level)

- Conducted functional validation of the Inter-Integrated Circuit (I2C) & UART interface at the system-on-chip (SoC) level.
- Utilized a suite of tools including JTAG, GNU, DMM, Oscilloscope, and Trace-32 for comprehensive testing.
- Understanding IP specification as per the customer requirements.
- Contributed to content development and crafted validation test scenarios at SoC level.
- worked on enhancing/updating test content from the legacy data to map with the specifications.
- Understanding the specifications and frame format of UART protocol.
- Executed functional test cases on Xilinx FPGA board as part of pre-silicon validation.
- Responsible to run regressions on each FPGA build release.

Features Validated on I2C:

- Scan
- I2C Command and Response operations
- Data transmission
 - Read
 - Writes
 - Combined operation
- Validated I2C interface with various Bus Frequencies:
 - 100 kHz
 - 400 kHz
 - 1 MHz

Features validated on UART:

- Support various baud rate for UART data transmission and reception
- Support data transmission and reception with multiple bit character length
 - 5-bit
 - 6-bit
 - 7-bit
 - 8-bit
- UART FIFO maximum size up to 64 bytes for accessing read/write
- UART peripheral register access test
- UART test with flow control
- Parity bit enable and disable test
- Data transmission with 1&2 stop bits.