

KOTTE ANJALI

Embedded Software Engineer

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Summary

Experienced Embedded Software Design Engineer with over 2 years of experience in designing, developing, and testing high performance embedded systems. Specialized in controlling stepper motors, and memory modules in medical and industrial domains. I am skilled in hardware design understanding, verification, debugging, and testing from prototyping to final product level. collaborating across teams and ensuring comprehensive project execution.

Professional Experience

Embedded Software Engineer, *Allied Medical Pvt Limited, Rajasthan (Tapukara)*

(Sep 2024 - Present)

- **Embedded Controllers:** Worked extensively with **STM32, ATXMEGA**, and Arduino Controllers (both 8bit and 32bit).
- **Tools & Debugging:** Proficient in **Microchip Studio**, KEIL, Arduino **IDE**, (**basic**) **STM32CUBE IDE**, **LCD** Vision and debugging tools like **YAT**, X-CTU, **Logic 2**, and Serial Plotter.
- **Display Technologies:** Hands-on experience with **LCD**.
- **Communication Protocols:** Expertise in **USART, SPI,CAN, and I2C** communication.
- **Stepper Motors:** Controlled **stepper motor** drivers (DRV8825, HW-354) and worked with shaft encoders.
- **ADC & DAC Expertise:** Used 12-bit **ADC** and **DAC** for precision measurement and performance.
- **Documentation:** **Worked** on Software Requirement Specifications (**SRS**), Software Architecture Details (**SAD**).
- **Hardware & Testing:** Extensive experience with **oscilloscopes**, **logic analyzers**, **TTL**, **Fluke analyzers**, flow analyzers, and digital multi meters.
- Worked with 32, 16, 8-bit Timers, External interrupts, PWM.
- Knowledge on RTOS,FreeRTOS.
- Knowledge Linux Device Drivers.

Key Projects

Baby Warmer – Temperature Data Logger

Designed and developed a multi-sensor temperature data logging system for medical monitoring applications using PT100 RTD and DS18B20 sensors. Integrated ADC-based temperature measurement for PT100 and 1-Wire communication for DS18B20. Implemented DS3231 RTC via I²C for accurate time-stamping and SD card data logging via SPI in CSV format. Developed push-button controls with software debouncing for reliable user interaction. The system enabled accurate, long-term temperature monitoring and strengthened expertise in embedded systems, sensor interfacing, and real-time data acquisition.

Anaesthesia Workstation (Jupiter+)

Developed SPI slave-based embedded firmware for a safety-critical medical ventilation system, enabling real-time monitoring and communication with the master controller using a command-response architecture. Integrated flow and pressure sensors to monitor inspiratory/expiratory flow rates and airway pressure for safe ventilation control. Implemented GPIO-based detection for patient circuit connection/disconnection and alarm or fault conditions. Supported ventilation logic by monitoring breathing cycles and enabling control decisions based on pressure and flow feedback. Contributed to reliable detection of abnormal conditions such as overpressure, low flow, and circuit disconnection, strengthening expertise in medical-grade embedded systems.

Education

Bachelor of Technology SSN Engineering College | Electronics and Communication Engineering Final Grade: 7.6 GPA

Intermediate Narayana Junior College Final Grade: 8.0

Secondary School Certification KGBV Chinna Orampadu | Final Grade: 9.0 CGPA

Technical Skills:

- **Programming:** C Language, Embedded C, C++ (basic).
- Knowledge of RTOS, Linux.
- **Embedded Controllers:** STM32, ATXMEGA, Arduino
- **Development Tools:** STM32Cube IDE, KEIL, Arduino IDE
- **Communication Protocols:** USART, SPI, I2C , CAN (Knowledge)
- **Debugging Tools:** YAT, X-CTU, Logic 2, Serial Plotter
- **Lab Equipment:** Oscilloscopes, Logic Analyzers, TTL, Function Generators, Digital Multi meters, **Fluke analyzers**,
flow analyzers.

Languages

Telugu | English | Hindi