
Yoganathan Venkatesan

Embedded Software Developer

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Technical Skills :

- ❖ Proficient to write the Linux Device Driver with handling Multiple Devices.
- ❖ Good understanding on Operating system internals, Multi threading, IPC.
- ❖ Familiar with STM32(L0,L4,F0,F3,F4,G0), Renesas(RL78,RX111,RH850), ESP32, ESP8266, PIC16, Raspberry PI.
- ❖ Extensive experience in LoRaWAN, FOTA, DHCP, ARP, TCP/IP.
- ❖ Working experience in AC voltage and current measurement using DSADC.
- ❖ Design, Develop and test the Embedded software using FreeRTOS.
- ❖ Excellent analytical, develop and debug code for peripherals such as DAC, TIMER, ADC, RTC, WDT, COMP, PWM, Low Power Modes.
- ❖ Strong Development and debugging device driver and application program for communications using UART, I2C, SPI and 1-Wire.
- ❖ Have good Knowledge about CAN protocol and its working functionality.
- ❖ Strong software development skills including device driver, design, development, testing, documentation and debugging.
- ❖ In depth experience of working with different kinds of memory.
- ❖ Proficient to understand the datasheet, design and develop Embedded Hardware Schematics.
- ❖ Ability to understand and debug the analog and digital Electronics Circuit design.
- ❖ Competency with GSM and GPS modules.
- ❖ High level hardware and software debugging using Oscilloscopes and Volt/Ohm meter and Function Generator.
- ❖ Programming Languages : C, C++

Key Skills:

- ❖ Microcontroller Device Driver Development.
- ❖ Developed Software for OCPP Protocol (standalone).
- ❖ FreeRTOS.
- ❖ Linux Device Driver Development.
- ❖ Bootloader.
- ❖ Understanding Data Structure and Hardware Schematics.

Projects:

1. EV-Charger for Car - (Single & Three Phase)

Ac chargers have a power output rating 7(Single Phase) to 22KW(three Phase) chargers with multiple connectors. Ev charger Integrated with WiFi, GSM, Ethernet and RFID. Charger has the ability to book the session via Mobile Application or instant charging using RFID or Mobile App.Charger stores the past one year data. OTA enabled.

OCPP protocol is the global application protocol for communication between EVSE and a Central Management system, similar to cell phones and cell phone networks.

Responsibilities:

- Complete Design, Development and testing OCPP Application Layer and Bootloader and storing ev-charger Data's.
- Complete application development for interfacing Ethernet, LTE, WiFi and RFID.
- Support Engineer as Energy(Voltage and Current) calibration.

2. THERMAL PRINTER - 3" & 2" (RX111)

Thermal printing is a digital printing process which produces a printed image by selectively heating coated thermochromic paper. Integrated WIFI, BLE and USB 2.0. Enabled Low Power for saving Battery power.

Printer has the ability to print ASCII characters, Images and barcodes.

Responsibilities:

- Developing API for integrating BLE, WiFi, Printer Head and stepper motor driver.
- Monitoring Battery voltage level and Enabling Low Power Mode.
- Complete application development for printing the received Bytes.

Current Consumption is 30uA when it's low power Mode.

3. OCCUPANCY SENSOR MODULE with FreeRTOS and LoRa

The Occupancy Sensor module is used by industries and Banks to detect humans and send notification to the Server. LoRa is a wireless technology that offers long range, low power and secure data transmission. BME680, Ambient Light Sensor, Gas gauge IC were integrated using I2C protocol. If humans detect data posted every 10 minutes, humans do not detect data posted every 1 hour.Enabled Low power.

Program developed using FreeRTOS. Data contains Air Quality, Temperature, Humidity, CO2, gas, pressure, Light density and Battery Voltage Level.

Responsibilities:

- Application design, development and testing using FreeRTOS stack.
- Application development to read the data from sensors.

Average Current Consumption: 12uA.

4. GAS & WATER METER with LoRaWAN

LoRa is a wireless technology that offers long range, low power and secure data transmission. Meter calibrates the reading using Wireless Sensors (LC or Magnetic Read Switch) and frequently posts the data to the server in the particular time interval.

- **Using LC Sensors**

When gas or water flows through the meter, the rotating plate inside the meter rotates according to the flow rate. LC sensors can detect the number of the plate's rotations without direct contact using an Electromagnetic field. **(OR)**

- **Using Magnetic Read Switch**

Magnet is connected with rotating wheels in meters. Two reed switches are used to detect rotational direction and count the readings.

Responsibilities:

- Application Development for calibrating meter value and enabling Low power.

Average Current Consumption is 5uA.

5. AIR & WATER PURIFIER

- **Air Purifier using STM32F0 MCU**

Air purifiers essentially work by sanitizing the air. Integrated Air Quality sensor, temperature and humidity sensor. Ability to control Air purifiers using mobile, laptop. Ability to switch the speed for sanitizing the air.

- **RO Water Purifier - Renesas RL78 MCU**

RO water purifier comes with a UV lamp that helps in disinfecting bacteria from the water by killing all the harmful pathogens present in the water. Generated AC from DC using power mosfet(Full bridge converter)

Responsibilities:

- Application design, development and testing.
- Component selection, Hardware design and development.

Personal Skills :

- Adaptive Person to challenging situations.
- Good analytical and problem solving skills.
- Willingness to take up higher responsibility.
- Languages Known : Tamil, Telugu, English, Kannada
- Flexible person for any situation.
- Home Address:
 - ❖ Padavanoor(vill), Uthangarai, Krishnagiri, Tamil Nadu -635304.

Experience :

- ★ Outdid unified LLP, Bangalore
January 2022 - Present
 - Senior Firmware Developer

- ★ Robert Bosch Engineering and Business Solutions, Coimbatore
July 2021 - January 2022 : 7 month
 - Automotive Software Developer

- ★ MS Tech Pvt.Ltd, Bangalore
June 2019 - July 2021 : 2 years 1 month
 - Embedded Developer

Education :

- ★ Karpagam Institute of Technology, Coimbatore
June 2015 - April 2019
 - B.E - ELECTRONICS AND COMMUNICATION ENGINEERING

- ★ Government Boys Higher Secondary School, Uthangarai
June 2014 - April 2015
 - HSC - Biology Mathematics

- ★ Government Boys Higher Secondary School, Uthangarai
June 2012 - April 2013
 - SSLC

Carrier :

To work in a challenging atmosphere by exhibiting my skills with utmost sincerity and dedicated smart work for the growth of your esteemed organization along with mine.