Firmware Developer

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Objective:

Seeking a challenging career in Embedded Systems – Software Development industry to utilize my skills and abilities that offers me a professional growth.

Experience Summary:

- Having 4+ years of experience in Embedded Systems Development, Firmware and DTV System with significant exposure in Software Development Life Cycle.
- Currently working as **Lead Engineer** in **HCL Technologies,** Bangalore.(From Mar 2010 to till date)
- Worked as **Software Engineer** in **Frisco Tech Institute, Bangalore** (From Nov 2008 to Mar 2010).

Area of Expertise:

- Having Exposure on various Micro controllers (**8bit, 16bit**) in 8051 Families, Atmel AT89 Series, and DSP processors (**MSP430**), ARM.
- Proficiency in C, Basic C++ programming language.
- Proficiency in JTAG Debugger tool, which is used for **MSP430FG4619** (**Texas Instruments)** and **Keil** for the Atmel Controllers.
- Having experience on DTV system software development in C.
- Having experience on Hardware Abstraction Layer in DTV system.
- Have knowledge of **Real Time Operating System**.

Educational Qualification:

Accomplish **B. E** in **Electronics and Communication Engineering** from **Anna University** in the year of **2008** with **76%.**

Skills Sets in Embedded Systems:

Micro controllers	8051(Intel) Families, **MSP430FG4619 (**DSP Processor**),** ARM, MIPS processor family.
Firmware	C & Assembly Language**.**
Language	C, Basic C++ knowledge.
IDEs	Code Composer Essential, Keil C Micro Vision.
Debugger	JTAG, Putty & Tera Term Emulator, Simulator.
Design Tool	Microsoft Visio, Enterprise Architect, Jude, Eagle software Rational

	Rose
Protocols	UART, SPI, I2C, CAN Basic Concepts.
Operating Systems	Windows XP, Linux
Other Software Tools	Perforce Visual Client, Beyond Compare, WinSCP, Source Insight

Project Assignment in HCL:
Digital Television Project (Phoenix):

Synopsis:
Sony High Definition Digital Television project which offers wide range of task in different modules. I have worked for HAL team in DTV development.

Modules Worked:

LED Control:

DTV has smart core LED module which includes 4 LED's. Two of them are multi color RGB LED which is controlled by PWM and remaining two is individual white & Orange color LED. Different LED color will be illuminated for different user operations. Also various timing & animation type will be provided to the LED for respective user action.

RF Remote:

DTV Japan Region has RF remote which offers the user to operate the TV from anywhere in the house. RF transmitter does not require line-of-sight. In fact, RF remotes can be operated from another room. Before starts working with RF remote, user has to pair RF remote with TV. Once RF remote is paired successfully, then user can perform any operation as they wish.

Felica RFID Smart Card:

FeliCa is a contactless RFID smart card system and it's primarily used in consumer electronics system to activate video-on-demand services, pay online games and read/write e-money cards.

Roles and Responsibilities:

- Understand the requirement, specification and create detailed functional requirement document.
- Making the design document which includes sequence diagram, detailed requirement and different use case from client point of view.
- Implementing the design, idea, and plan through programming language.
- Prepare Unit & Integration test cases for respective module which I owned.
- Execute Unit & Integration test cases for respective module which I owned.
- Analyze & resolving the bugs during Unit, Integration, Software Quality Analysis process.
- Perform the peer review of the Code.
- Attend the status meeting with on-site/ off-shore leads.
- Mentoring new employees of the team.

Award and Recognizing:

- Have received BEST PERFORMANCE award on Quality Delivery for RF Remote from Business Client.

Digital Television Project (Zeus):

Synopsis:
Sony High Definition Digital Television project which offers wide range of task in different modules. I have worked for HAL team in DTV development.

Modules Worked:

Sony Logo:
It is a kind LED strip which present at the bottom of the TV. During user power On/Off action, it glows the logo as SONY.

IR Remote:
Infra red remote control which is used to operate the TV. User can press different key from remote and perform different action like changing the channel or increase/decrease the volume etc…

Motion Sensor:
It is a device which contains a sensor that detects the presence of moving object. User can set different timing in the UI settings and if sensor does not detect human movement during the time period which set by user, then TV will change from normal mode to Video Mute mode and Video Mute mode to Standby Mode or Video Mute mode Normal mode.

Service Mode:
This screen mode contains some confidential information about software, firmware version of TV & its hardware. This mode is not easily accessible by user and it can be used by service engineer while diagnosing certain issue.

Roles and Responsibilities:
- Understand the requirement, specification and create detailed functional requirement document.
- Making the design document which includes sequence diagram, detailed requirement and different use case from client point of view.
- Implementing the design, idea, and plan through programming language.
- Prepare Unit & Integration test cases for respective module which I owned.
- Execute Unit & Integration test cases for respective module which I owned.
- Analyze & resolving the bugs during Unit, Integration, Software Quality Analysis process.
- Perform the peer review of the Code.
- Attend the status meeting with on-site/ off-shore leads on a weekly basis.

Award and Recognizing:
- Best performer of the Quarter for the Quality Delivery for IR Remote from Division Head from HCL Off-shore.

Medical Diagnostic Equipment:

Synopsis:

This electronics design is for a medical diagnostic instrument. The instrument has sensor module, valve module, pump module, sampler, reagent pack, display, and printer. The instrument has chemical sensors present in the sensor module, which measures the electrolytes such as K, Na, and Cl from the blood. The sampler aspirates the blood sample By means of peristaltic pump and positioned in front of chemical sensor by means of optical fluid sensor present in the sensor module. The pump motor has stepper motor, driven by the peristaltic pump for sample and reagent aspiration. The valve module has solenoid valve for switching and selecting appropriate reagent for measurement.

The sampler has UNI-SLIDER, which moves up and down driven by stepper motor by means of peristaltic pump (similar to pump module) the positioning controlled by the optical sensor. Reagent pack has the entire reagent with all the shelf-life technical information and dealer information present on RFID pasted to it. The instrument has the RFID reader with PCB antenna that reads the RFID label present on the reagent pack from a distance of 10-cm.the users selects the instrument operation by means of YES/NO button.

Personal Details:

Father's Name	: Selvaraj. S.
Date of birth	: 16th Jun 1986.
Marital Status	: Single
Nationality	: Indian.
Gender	: Male.
Languages Known	: English, Tamil.
Passport No	: H0915800.