**K.NITHIN KUMAR MADA**

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**Career Objective:** Aspiring for a challenging job in the field of embedded systems development and system software where I can use my talents and experience, for the growth of company and myself.

**Key Skills:** Firmware, ‘C’, Assembly, Hardware Design, Communication Protocols

**Job Objective:** Embedded systems, Product Development, Capacitive touch sense systems and device drivers.

**Desired Employment Status:** Full Time

**Total Years of Experience: 11.5** years

**Career profile:**

Currently working as a Project Manager at Kanha Tech Solutions, Bangalore (subsidiary of Reliance Industries) to develop a Point of Sale product since May 2012

Worked as Group Leader for PIC18F/PIC24F Product Group and Capacitive touch sense Applications group in Microchip Technology Inc from April 2008 – May 2012

Worked as a Senior Software engineer in Semiconductor Solutions Group in KPIT Cummins Infosystems, Pune from Sept 2007 to April 2008.

Worked as Team Leader in Robert Bosch in Automotive Domain for Diesel Engines division from Feb 2005 to Aug 2007

Worked as Design and Testing Engineer in Larsen & Toubro Limited, Mysore in the energy Meters and Protection systems Division from May 2004 to Feb 2005.

Worked as Research and Development (R&D) Engineer at Advanced Electronics Systems, Bangalore from July 2002 to May 2004.

**Qualification:** B.E (Electronics & communication) from NMAMIT, NITTE (M’LORE)

Percentage : 64%

Year of passing : June 2002

## Skill Set

# Programming Languages : C, Assembly

# Microcontroller : Freescale IMx.258(32 bit), PIC18F (8 bit)/PIC24F (16bit) , NEC V850 (32bit),TC1796(32 bit), 80C320(Dallas),AT89C2051(Atmel), 8051

Debugging Tools : **REAL ICE, ICD2, ICD3,PM+(NEC V850),WINICE, ROM Emulators**

RTOS **: ERCOS**

Hardware Design Tools **: ORCAD, Designworks (Schematic Design)**

Editor **:** **CodeWright, MPLAB,GHS,Eclipse**

Source Control **: ClearCase, CVS, SVN**

Serial Communication **: RS232, RS485, SPI, I2C, LIN**

Peripherals **: NFC, ADC, Interrupts, PWM, Timers, RTCC, Capacitive touch, Flash, RAM, EEPROM, EMMC**

Certification **: Hands on exp on EMI/EMC standards, ISI standards for**

**Energy Meters.**

**PCI-PTS certification standards for Point of Sale products**

**Professional Achievements:**

1. Speaker during **Microchip INDIA MASTERS** conference 2009, 2010 and 2011 at various locations and EDF conference 2011.

Presented topics on Capacitive touch sense technologies and PIC architecture.

1. Received numerous certificates of recognition from Microchip.
2. Developed **“Programming Specification guide”** for PIC24F256DA210 (16 bit) microcontroller which provides the complete information that is required for flashing the code onto the flash of the PIC microcontroller.
3. Published **Family Reference Manual** for the newly designed CTMU (Charge Time Measurement Unit) module which can be used to implement capacitive touch based keys for any product with minimal external components.
4. Written an article “**Capacitive touch sense applications using Minimal external Components**” which was published on the cover edition of EDN and ESD magazine (July 2011).
5. I had attended training on the EMI/EMC standards from the **ERDA** (Electrical Research and Development Association) lab in Vadodara (Gujarat).

I have hands on experience on EFT/ESD/Emission testing of the Energy Meters at Larsen & Toubro, Mysore.

# Experience:

**May 2012 – till date at Kanha Tech Solutions as Project Manager**

**Platform: Freescale IMx 258 ( 32-bit secure processor)**

**OS: Linux**

**Product: Point of Sale (standalone PoS and Dongles)**

**Peripherals: NFC, Magnetic swipe card, smart Card, Capacitive touch screen, SPI, UART, Wi-Fi, Keypad, GPS, GPRS, Fingerprint, Barcode.**

**Job Profile:**

* Leading the software team (10 members) for the Point of Sale (PoS) product to develop the firmware for the different modules like Magnetic Swipe Card (MSR), NFC (Near field Communications), LCD, Wi-Fi, Keypad for payment transactions between the PoS and Bank.
* Coordinating with the Hardware team and EMS vendor on assembling and fabrication of the hardware and delivering it to the software team for testing.
* Initiated the **certification (PCI-PA DSS)** for the product from EWA, CANADA.
* Involved in gathering the Business and functional requirements for the product.
* Creating the SRS document for the product
* Architect for the **Software Architecture** of the product (PoS) from scratch.
* Project Plan and risk mitigation for entire software development using Microsoft Project Planner.
* Responsible for monthly **PoC(Proof of Concept) of product** to the Board of Directors.
* Built a QA team of 7 members for testing and delivery of the product.
* Responsible for the code review and test case review for the product.
* Involved in the monthly Review meetings with the Board of Directors.
* Responsible for the demonstration of the status of the software development to the customer on a monthly basis.

**PRODUCT Description:**

The Point of Sale is a product that is developed for Financial transactions using Debit/ Credit , NFC, Barcode based cards. The product is completely designed and developed inhouse.

The Point of Sale (PoS) will allow the customer to make payments using Credit/Debit cards, NFC cards and Chip cards(EMV). The existing PoS in the market does not accept NFC based cards.

The device can also be used for microATM based applications in rural areas.

The product is PCI/PTS (Payment Card Industry) certified which will allow the device to accept all kinds of Credit/Debit cards (VISA, MasterCard, Maestro, AMEX etc).

The device can be customized for both touch and non-touch based displays.

**April 2008 – June 2012 at Microchip Technology Inc as Group Leader for PIC18F and Capacitive Touch Sense Applications.**

**Job Profile:**

* Leading **the mTouch Team** (Capacitive touch sense applications) in implementing the stack and software for the mTouch Evaluation Board for PIC18F (8 bit) and PIC24F (16 bit) using the internal CTMU (Charge Time Measurement Unit) peripheral.
* Implemented the capacitive touch sense library for the 8 bit and 16 bit PIC microcontrollers.
* Supporting the customers in migrating from mechanical keys to capacitive touch sense keys in their existing/new product.
* Leading the **validation team for validating (post silicon) the new PIC18F/24F(8/16 bit)** silicon before it is being released to the customers.
* Supporting the global customers in helping them to clarify the various issues related to the PIC18F microcontrollers.
* Visiting the customer locations for supporting them in building up the new products using PIC18F microcontrollers.
* Preparing the new datasheets for PIC18F/24F, Family reference manuals, writing articles.
* Travelled to US for knowledge transfer on Cap touch technology and build a capacitive touch team in India.

**PROJECT NAME mTouch (Microchip Capacitive touch sense) Capacitive Touch sense Evaluation kit for PIC18F and PIC24F using the inbilt CTMU peripheral**

**CUSTOMER Global Customers**

**TEAM SIZE 1**

**ROLE Senior Applications Engineer**

**Language C, Assembly**

**DESCRIPTION:**

The scope of the project was to implement the firmware for capacitive touch sensors using the internal CTMU module of PIC18F and PIC24F microcontrollers. The firmware supports the different types of sensors like the Direct key sensors, Matrix key sensors, 2 channel and 4 channel sliders.

I was involved in implementing the complete firmware for the above mentioned cap touch sensors.

I am actively involved in enhancing the existing firmware of the evaluation kit.

**PROJECT NAME Family Reference Manual for CTMU (Version 2) module**

**CUSTOMER Internal**

**TEAM SIZE 1**

**ROLE Team Leader**

**DESCRIPTION:**

The Family Reference Manual (FRM) is a document which will provide the detailed information of the particular module.

The FRM for the new CTMU Ver 2 module was prepared to provide the detailed information on the newly designed CTMU module which had new features compared to the earlier one.a

The document gives the detailed description on the different features which can be used for implementing a capacitive touch based product.

**PROJECT NAME mTouch Capacitive Touch sense Library for PIC18F and PIC24F using the CTMU peripheral**

**CUSTOMER Global Customers (GE Healthcare, Ingersoll-Rand, Honeywell, Ruvideo, Daimler Chrysler etc)**

**TEAM SIZE 3**

**ROLE Team Leader**

**Language C, Assembly**

**DESCRIPTION:**

The scope of the project was to implement the stack for capacitive touch sensors using the internal CTMU module of PIC18F and PIC24F microcontrollers. The stack supports 4 types of plug-in cap touch sensor boards. I was part of the team which was involved in creating the mTouch Library from scratch. The entire library was implemented as the layered architecture namely the Physical layer, Functional layer and the Application Layer.

This stack will help the customer in migrating from the mechanical keys to the cap touch keys with minimal effort.

**Responsibilties:**

* Written the entire Low level driver code of the stack
* Involved in creating the API’s for the mTouch Stack which can be used to integrate with the other peripherals during the development of any capacitive touch based product.
* Created the demos for Direct key sensor, Matrix key sensor, 2 channel and 4 channel slider and have tested it.
* I was involved in testing the mTouch library using the Microchip’s mTouch Capacitive Touch Sense Evaluation kit for 8/16 bit microcontrollers.
* I had the complete responsibility of maintaining the entire mTouch Stack release ever since the first release to web.

**PROJECT NAME Post Silicon validation of new PIC18F microcontrollers**

**CUSTOMER Internal**

**TEAM SIZE 13**

**ROLE Team Leader**

**Language C, Assembly**

**DESCRIPTION:**

The Post Silicon validation involves validating all the modules of the new PIC18F silicon’s before it is released to production.

It involved many application engineers from different geographic locations ( US, India, Philippines, Romania) who had to validate different modules of the microcontroller as per the Design objective Specification (DOS)

**Responsibilities:**

* Monitor the schedule of the Design and the stream out date for every newly designed microcontroller
* Prepare the Schedule of the validation and assign the various modules to the respective application engineer for validation.
* Coordinate with Indian Design Centre and US Design Centre for updating the daily status of the validation
* Coordinating with the Chip Designers (Indian/US) for any kind of issues that is found during the validation process in the microcontroller.
* Discussing with my US counterparts about the issues and its severity which will help us in updating the Designers with the data which will help them to decide whether to go ahead with the production or go for a new revision to fix the existing issues.

**PROJECT NAME Autoval for RTCC, BOR/POR,CTMU module**

**CUSTOMER Internal**

**TEAM SIZE 1**

**ROLE Senior Application Engineer**

**DESCRIPTION:**

This task involves implementing the firmware for automating the validation of the various peripherals of the newly designed PIC18/24F microcontrollers. This has helped in reducing the validation time of the peripherals before the new microcontroller is released to the market

**KPIT Cummins:**

**PROJECT NAME NEC Controller Technical Development (Driver Software)**

**CLIENT NEC, Japan**

**DURATION Sept 2007**

**TEAM SIZE 7**

**ROLE Senior Software Engineer**

**DESCRIPTION:**

The project mainly deals with providing Technical support to our Client(NEC) for their 32-bit V850 series and 8 bit NEC 78K series controllers by developing the driver software’s for all the modules of the modules like LIN,SPI,I2C,ADC etc. We have also developed a Technical website for NEC V850 series and 78K series controller which provides you necessary information, development support in the form of references, sample codes and FREE direct engineering support to your queries and requests for Automotive Application Developers. This website has been released by us globally so that anyone who wants to develop a system using V850 microcontroller can access this site by registering to this website. This website is useful for the NEC to improve their customer satisfaction by providing timely technical solutions for their queries

**PROJECT NAME Air System and EGT (Exhaust Gas Treatment)**

**CLIENT ROBERT BOSCH Austria (VW and AUDI)**

**DURATION February 2005 – Aug 2007**

**TEAM SIZE 4**

**ROLE Team Leader**

**ENVIRONMENT**

**H/W:** Infineon Tricore (TC1796), LabCar (simulated car from ETAS)

**S/W:** C programming

**TOOLS USED:** Universal Debugger, ETAS-INCA

**RESPONSIBILITY**

* Responsible for S/W development for Exhaust Gas functionality in India for VW and AUDI.
* Responsible for coordinating work between Exhaust Gas team in India and in Austria, in order to achieve better quality of s/w for VW and AUDI.
* Responsible for leading the team of 4 people in India.

**DESCRIPTION:**

In order to achieve more stringent emission norms and provide more comforts to people, the complexity of s/w, which goes to car, has increased more and more. Air, which is sucked inside the vehicle, is 14times more important than fuel for proper combustion. So it is very important to control the sucking of air, to achieve better efficiency, more stringent emission norms. So basically Air System deals with control of intake air, mixing of air with the fuel and recirculation of exhaust gas to intake path. EGT deals with the functionality like Oxidation Catalyst, Nox storage catalyst, Diesel Particulate Filter, SCR in order to remove harmful substances from Exhaust Gas and to achieve stringent Emission norms.

**MILESTONE**

I had been to Robert Bosch Austria (4 months) for coordination of the project and for customer interaction. It was very good exposure to work with international clients and culture.

**PROJECT NAME REMOTE CONTROLLED DIGITAL CLOCK**

**CLIENT : ISRO SATTELITE CENTRE,B’LORE**

**TEAM SIZE : 1**

**DURATION : 2 months**

**ROLE : Development and Implementation of Hardware and software**

**LANGUAGE : C, 8031**

**OS : DOS**

**HARDWARE : AT89C2051(FLASH Controller), DS1307(Real time clock),74LS248(BCD to seven segment),ULN2803(Darlington drivers),74LS138(decoders),74LS175(flip flop)**

**DESCRIPTION:** The unit will display the Hours and Minutes with an alternate blink which indicates a second. The remote control is used to program the Hours, Minutes, Seconds, Day, Date, Month and Year data. If the remote fails, there is a provision to change the data using a thumbwheels(only for Hours,Minutes,Seconds) which is connected to the unit externally through a cable which is connected to the 25 pin D type connector provided in the unit.

**PROJECT NAME AUTO CHANGE OVER UNIT**

**CLIENT : Bharat Electronics Limited, Bangalore**

**TEAM SIZE : Two**

**DURATION : 3 months**

**ROLE : Development and Implementation of Hardware and software**

**LANGUAGE : C,8031**

**OS : DOS**

**HARDWARE : 80C320 (Dual port Controller), 24C16 (EEROM),6264(RAM),**

**27C512 (ROM), RELAY (1 Changeover).**

**DESCRIPTION**

: This card was designed to receive data through 2 Ports (DATA and as for an application for Delhi Doordarshan. The card has 2 ports (DATA and CONTROL).

* The Data port can operate at 4 different baud rates (9600/4800/2400/1200) and the Control Port will operate at fixed Baud rate of 9600.The data port will receive data from the satellite encoder and will indicate whether the transmission is from Regional or it’s a National transmission. This is being indicated by either energizing the relay (Regional transmission) and de-energizing the relay(National transmission).
* The Control Port will provide the PROGRAM number and the PID from the data received from the decoder. this port will transmit the data only on the basis of the data transmitted from the decoder.

**PROJECT NAME :** **MACHINE MONITORING UNIT**

**TEAM SIZE : Two**

**DURATION : 4 months**

**ROLE : Implementation of software of Hardware and software**

**LANGUAGE : C,8031**

**OS : DOS**

**HARDWARE :89C52(8KFlashcontroller),89C2051(2KFlash),80C320(Dualport Controller),AD574(ADC),MCP3204(DAC),75176(RS-22Drivers),**

**DS1307(RTC).**

**DESCRIPTION**

This unit was designed for textile mill.

* This unit is used to monitor the machines and give the time, date, day, month, year, power factor of the motor, cummulative energy, doff length (Doff=The amount of thread wound around a bobbin), temperature of the motor, ambient temperature, voltage, current,RPM of the motor which will be displayed in the PC.
* The total set up has got 2 units. One unit is placed near the machines and the other unit(Remote unit) is placed near the host computer. The unit that is placed near the machines process the signals from the machines and sent it to the unit placed near the PC through RS-422 communication.
* The Remote unit will have 2 ports. One port is used to receive the data from the unit placed near the machine. The other Port will transmit the received data to the PC through RS-232 cable.

**PROJECT NAME :MOVING LCD DISPLAY**

**CLIENT : Bharat Electronics Limited,Bangalore**

**TEAMSIZE : Two**

**DURATION : 3 months**

**ROLE : Implementation of software of Hardware and software**

**OS : DOS**

**LANGUAGE : C,8031**

**DESCRITPTION:**

: The unit is used to display the characters entered by the user from a PC with each character having a matrix of 12x16 in a LED display board.

* There are different ways of displaying the characters. Some of them include Scrolling up and down, center to sides, sides to centre,still message, moving message.
* There is a small memory module which can be connected to both remote unit and main LED display board using a 25 pin D type connector.
* There is also a remote unit which receives the data from the PC and stores the data on to a small memory module which is then removed from the remote unit once the programming is complete. This memory module is then connected to the main display unit where the data is read and depending on the type of the display mode, it displays the message.
* The messages can be in any language.

**Personal Details:**

Father’s Name : B.Thimmappa Mada

Date of birth : 20th March 1981.

Marital status : Married

Permanent Address : D004 Veracious Sonesta

Ashoka Avenue, K R Garden

Wind Tunnel Road Murugeshplaya

Bangalore -560017

Nationality : Indian.

Languages known : English, Kannada, Hindi, German & Tulu

Date :

Place : Bangalore (K.NITHIN KUMAR MADA)