Carol Ma

Embedded System Engineer

Etobicoke, ON - Email me on Indeed: indeed.com/r/Carol-Ma/d919e944eb668707

A position as an Embedded Software Engineer
Highlight of Qualifications:
• Over 15 years experience as a embedded system design engineer including embedded software/firmware design and digital, analog and RF circuit hardware design. Significant experience in embedded system design and development
• Practical experience porting Real Time system such as VxWorks system, Embedded Linux System and uClinux on various 32 bit and 8 bit micro-controllers (MCU)
• Expert in BSP designing, programming embedded software, boot loader, device drivers and application in C language and Assembly language for various Microcontrollers
• Microcontrollers including 32 bit Freescale: MPC860, MCF5282, MCF5272, 8 bit MCS 51, Microchip and Mitsubishi micro-controllers
• Experienced with various porgraming languages including Assembly Language, C Language, Scripts, Project Manager Makefile
• Software development tools, including Tornado, vim, Eclipes, Source Insight, editor
• Hardware development software inc

WORK EXPERIENCE

Embedded System Engineer

TCC, Canada - September 2007 to February 2012

• Developed control devices for electrical monitoring and controlling system
• Supplied different keypad driver with uClinux operation system base on Freescale coldfire
• Designed data acquisition (analog to digital converting) driver with uClinux operation system base on Freescale coldfire
• Ported U-boot which support booting linux kernel base on Freescale PowerPC
• Developed flash driver, initialized the MCU for SDRAM and configured all the hardware according to the individual board for the product
• Designed, wrote code, completed programming and performed the testing/debugging the software and hardware.
• Developed applications for testing the keyboard drivers and data acquisition drivers
• Managed project with Makefile and Configuration file to debug, test and build the drivers in kernel
• Built and customized the uClinux kernel and ROMFS root file system and NFS file system according to the project requirement and debugging needs
• Layed out all the memory which were on board by writing Link descript file
• Modified linux kernel BSP configuration file to get uCbootloader support.
• Provides technical guidance for junior co-worker
MCU: Freescale's PowerPC 860 and coldfire MCF5282, MCF5272
Enviroment and Tools: uClinux-2.4.x, uClinux-2.6.29, Ubuntu, minicom, Cscope, GNU tool chains, GIT, C Language, Assembler Language, Makefile, Configration Language, Linux Scripts. Oscilloscope

Embedded System Engineer

Ingenico, Canada - October 2002 to September 2007

• Developed few BSP (Board Support Package) software for payment terminal(POS) which working with VxWorks operation system
• Ported U-boot for payment terminal which support tftp network downloading feature to enable other engineers to develop their drivers and application
• Initialized MCU to knowing state by romInit.S function, such as machine state, interrupt, cache, clock, SDRAM, mapping memorys
• Implemented hardware initialization by configuring parameters in sysLib.c according to the board requirement
• Configured MCU to support SDRAM for board supporting.
• Provided serial port for console supporting by sysSerial.c with sysSerialHwInit(), sysSerialHwInit2() and sysSerialChanGet(), sysSerialReset() functions
• Supplied system clock, system aux clock and system timestamp supporting the individule board requirement by modified configuration files and ppc860timer.c
• Implemented sysInit in sysALib.s for the software release version
• Tested BSP software and hardware performance with BSP Validation Test Suite
• Updated the BSP Validation Test Suite to support SDRAM stress testing
MCU: Freescale's PowerPC MPC860
Enviroment and Tools: VxWorks, Tonado, BSP Validation Test Suite, Ppc-linux-gdb and BDM debug tools, Ubuntu, minicom, Cscope, GNU cross tool chains, Assembler Language, C Language, Makefile, Linux Scripts. Oscilloscope

Hardware & Embedded System Engineer

Pan Billion Electronics - March 1999 to June 2002

China
• Designed consumer projects hardware and software such as home theater receiver, infrared remote controller with Renesas micro-controller, Audio ASIC, memories, Infrared component, VFD display, FM AM radio board with Microchip MCU
• Modified embedded software(drivers) of television with Assembly language and C language considering different client's requirement, such as different driver for the different client's individual board having special chips which they selected
• Focused on Renesas's MCU and Audio ASIC and memory technical support. Solved client's problem through the development phase
• Presented solution to clients, modified hardware and software of my demo board according to clients requirement and try to control the cost for customer
• Designed the concrete measure equipment with MCU, LCD, ultrasonic component, step-motor hardware and software with MCU
MCU: Renesas's MCU, Atmel AT89C51
Enviroment and Tools: Windows 98, Windows 2000, edit, Renesas's development IDE, Assembler Language, C Language. Protel. Oscilloscopes.

Hardware & Embedded System Engineer

Beijing Research Institute of Telemetry, China - August 1989 to March 1999

• Improved and developed various analog to digital converters(ADC) with different speed and different requirement used in data acquisition devices
• Developed encryption devices hardware and software with MCU
• Designed process center devices hardware and software with MCU
• Implemented GPS transponder with micro-strip circuit, discrete components, ICs
• Completed the prototype, coding, debugging, testing, schematic capture, and PCB layout
• Established and designed the test boards and completed
• Selected and purchased the software and debug equipment for the project

• Provided effective leadership to design teams and was responsible for product management process that required co-ordination with other engineers, technicians, departments and external companies
• Drew project plans and followed up with team members to ensure of milestone including development, coding, debugging, testing
• Ensured all the devices went through and passed Environmental stress procedures, such as Temperature testing, Humidity testing, Vibration testing, Vacuuming testing
MCU: Atmel MCU MCS 51
Enviroment and Tools: DOS, Windows 98, Assembler Language, Protel, ORCAD, AutoCAD, Spectrum, Oscilloscope.

EDUCATION

Bachelor of Science in Electrical Engineering

Beihang University - ###
1985 to 1989