

Stephen William McClure

Phone: (858) 837-2160

e-mail: steve_mcclure@cox.net

Web: www.QuantumBlueTechnology.com

RESIDENCY: US Citizen

UNIVERSITY: Bachelor of Science Degree - Computer Science Major

EXPERIENCE: I have over 30 years of software system design, development and management experience in real-time computer systems (embedded, PC and mainframe) in both engineering and medical environments. I can read and understand electronic circuit schematic diagrams, I can use software and hardware tools, I interface well with other departments when required to obtain or to provide information, I have excellent engineering writing skills and I fully document my work. I operate efficiently either as an individual or as part of a team and have been involved throughout the entire software lifecycle process from system design right through to coding, testing, production and maintenance phases of projects.

Interpersonal skills

In performing my work I am usually involved directly interfacing with other departments in order to obtain and provide systems information. Many times I receive limited information and when additional knowledge is required, I will seek out the relevant department(s) / person(s). This usually results in my being invited to their design reviews to share my knowledge.

Documentation skills

I have written the following types of documents: customer requirements, system specifications, system architecture, communication protocol interfaces, hardware interfaces (CPLD and FPGA interface register definitions and overall device operation), detailed design and unit / system test documents. I have also managed other engineers who have implemented code from my design documents. (As a side note, I have self-published my own book which is offered on Amazon and other websites and am near completing the publishing of two subsequent books).

Operating Systems

I have utilized ThreadX, VxWorks and pSOS operating systems. When required I have also modified the internal operation of the operating system to implement specific new features (eg. PowerPC data and instruction caching). I have implemented many embedded systems which did not utilize any operating system (ie. state machines and interrupt driver ISRs).

Coding skills

I believe in proper coding standards and the code I generate is well laid out, utilizes module and function headers, unambiguous understandable function and variable names, pseudo-code type comments, and results in code that is readable by others. I require little if any guidance when developing code and am often developing code ahead of the hardware platform / FPGA / CPLD, or other required modules becoming available.

I have experience in developing code in C, C++ and assembly languages mostly for embedded processors (eg. PowerPC) and micro-controllers (eg. PIC, Intel, Motorola, Zilog) interfacing with various on-board hardware devices (eg. EEPROM, CPLDs, FPGAs), using I²C, SPI or direct register/bit access.

In conclusion

I enjoy being involved in all aspects of project development right from the initial system design concept. Understanding an application's real-world environment and its associated interaction is what makes this line of work interesting.

Summary of Skills

The following list is a summary of the skills I have gained during my career:

- Mainframes: Burroughs B6800, B4800
And Minicomputers: DEC PDP11/73
Data General Nova IV
- Microprocessors: IBM PC,
PowerPC (MPC8349EA)
ARM7
- MicroControllers: Microchip PIC 18F67J50, 18C658, 18F8720, 16F877
Zilog eZ80F91 Acclaim! And Z8 Encore!
TI TMS320C6712
SGS Thomson ST20
Motorola 68EN360, 68302 and 68HC05JB4
Intel 8051
- Hardware Interfaces: I2C, SPI, NAND, LCD, Ethernet TCP/IP, ARINC, CAN,
RS232, USB, HDLC, GPIB (IEEE 488)
- Operating Systems: Microsoft Windows
VxWorks (BSP, Device Drivers)
ThreadX (BSP, Device Drivers), NetX
PSOS+ (BSP, Device Drivers)
Limited UNIX/Linux and QNX experience
- Protocols: MPEG-2, Open TV
ISDN BRI (Basic Rate Interface)
Developed USB Device State Machine
Developed IRIG-B, IRIG-E Time Code State Machines
Developed protocols for RS232, Ethernet Client/Server Interfaces
- Software Tools: Zilog IDE, C Compiler, ZPAK II Ethernet Emulator
Microchip MPLAB IDE, ICD2, ICE-2000 and C18 compiler; CCS C Compiler
Borland C++ Builder Professional Edition IDE, Pascal, Assembler
Texas Instruments Composer Studio IDE, Eclipse IDE
U-Boot, PowerPC C/C++ and Assembler
Microtec Research C and Assembler
Intel PL/M-51, ASM51; IAR C
Burroughs TSL, BPL, COBOL, and Symbolic Assembler
ClearCase, Visual Source Safe, CMS, PVCS, RCS Software Version Controls
IBM Rational ClearQuest to handle Change Requests
Microsoft Word, FrontPage, Visio; Data Flow Diagrams, Program Design Language
- Hardware Tools: Various In-Circuit Emulators (BDI3000, MPLAB ICD2 and ICE2000)
CanBus CanAnalyzer,
Condor ARINC,
USB Chief,
Various Serial, Logic and Spectrum Analyzers
Analog / Digital Oscilloscopes, Multi-Meters and Soldering Stations