Pascal SANDREZ psandrez@gmail.com
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Current Job

Since 2007 Senior analog and mixed mode integrated circuit designer for automotive business at NXP Semiconductor Toulouse (previously Freescale Semiconductor). Currently part of IP development group since 2011. Distinguished by Freescale diamond chip Award in 2011.

Educational Background

2004-2007: High school Engineering Diploma (five year degree of higher education equivalent to Master degree) specialized in microelectronics at ENSEIRB, Bordeaux.

2003-2004: University *License* in Electronics and Microelectronics with distinction (equivalent three years degree).

2001-2003: University Diploma of Technology in Electronics, Electrical Engineering and control engineering (two year course) at the University Institute of Technology, Bordeaux.

2000-2001: Technical *baccalaureate* specialized in Electronics with distinction.

Work Experience

Worked on buck converter with integrated switch and synchronous rectification, 3V to 40V input, 0.9V to 8V output, up to 3A. (130nm HV process). Defined digital control architecture, designed some analog blocks (current sense), led mixed mode verification.

Designed a charge pump with integrated cap, 5V on top of input (3V to 72V), 2mA output capability with low EMC emission.

Defined and developed a hybrid sigma delta and RSD ADC IP, configurable resolution from 8-b to 14-b (130nm HV process).

Worked with a 10-person team to define a virtual test software to simulate automatic test equipment program before tape-out. Conducted discussions, architecture directions and decisions.

Defined architecture of an IP test platform used to improve, characterize and validate various IP (CAN & LIN physical layer, ADC, linear regulators, buck, boost and GPIOs).

Defined and developed a web based (PHP/JavaScript) verification tool that stores IC specification and validation data (from simulation, automatic test and lab characterization). Tool has been widely deployed and support ISO 26262 functional safety standard application within the company.

Designed a current mode buck converter with integrated switch, 6-40V input, 1.2V/1A output for microcontroller core supply (0.25µm HV process).

Designed a low drop out linear regulator IP, 6-40V input, 2.5-5V output with 20mA to 300mA current capability. Used 10 times in same product in various configurations.

Designed/verified a 70mA general purpose output high side and low side compatible with protection and diagnostics.

Designed a 14MHz RC oscillator including frequency modulation and trim.

Developed dozens of tools and scripts to simplify, automate and accelerate daily job.

Educational experiences

2007: Set up a library containing small analog modules commonly used in automotive integrated circuits. Six months training at Freescale Semiconductor, Toulouse.

2006: Designed an electronic prototype in a laboratory (IXL – Bordeaux): electric car charger system including power line communication technology, for four months.

2003: Designed an electronic remote controller prototype including programming, Midi standard application and respecting production specifications in Allen & Heath, England for three months.

General Skills

Wide general electronics knowledge from analog to digital and software including power management and system architecture.

Team working and team management.

Think out of the box, innovate.

Methodology definition/improvement for better efficiency and quality.

Task automation through scripting.

Computer Skills

Operating Systems: Windows, UNIX and Linux.

Languages: C, C#, Assembler (68HC11 & PIC), PHP, HTML/CSS/JavaScript, MySql, Python, verilogams, Matlab.

Software: Cadence, Office, MATLAB, MPLAB IDE, Altium Designer.

Language Skills

French: Native language.

English: Very good (three-month experience in England, regular practice) with good technical knowledge (three-month experience in an English audio company, 10 years in international company with daily written/spoken communication).

Spanish: Working knowledge.

Extracurricular Activities & Interests

Hobbies: Electronics, computers, programming (developed various personal electronic projects, software, web pages…), photography.

Music: Music, guitar, piano.

Sport: Tennis, running, dancing.

Clean driving license.