

Roger Meier

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SUMMARY

Accomplished Electrical Engineering Professional with close to 20 years in active implantable medical device R&D as individual contributor and engineering leader.

- Decisive impact based manager that consistently drives team to hit milestones.
- Design Controls and Standard Development Process expert through all phases of the product development lifecycle.
- Hands-on functional unit leader experienced in digital and mixed-signal circuit design, RF systems, PCB design, fabrication and assembly, design for manufacturing, production documentation, process development, and test automation.
- Effective with all relevant compliance and safety standards such as IEC 60601-1, CISPR-11, EN 45502.
- Experience with quality and reliability requirements for long lifetime active implantable medical devices.
- Independent analytical problem solver with a passion for learning and growth.
- Highly multidisciplinary.

EXPERIENCE

Senior Manager, Electronics & RF Design

Aug. 2010 – Present

Advanced Bionics LLC., R&D Electrical Hardware, Valencia, CA.

Reporting to the VP R&D, I am responsible for leadership in the strategy development and implementation of programs for research and development activities related to electrical engineering, electrical interface to the human body, and electrical interface to embedded software. I directly manage and lead an engineering team operating in a matrix organization that researches, designs, develops, and tests electrical components, equipment, systems, and products for the medical device industry.

- Participated in the conception and development of current Sound Processors (such as Naida CI BTE and Chorus) as well as Implantable Cochlear Stimulators (such as HiRes Ultra and HiRes Ultra3D). My team was responsible for all aspects of the electrical design of the product and its accessories. Responsibilities included mixed signal and RF circuit design, development of high density rigid-flex PCBs, collaboration on a custom Li-Ion battery development, design verification and validation, as well as providing support for ATE development.
- Responsible for the electronic and RF design activities for next generation implantable Cochlear Stimulators.
- Participating in the development of requirements and system architecture for next generation Sound Processor platforms and accessories.

Principal Electrical Engineer, Digital Design

Jun. 2000 – Aug. 2010

Advanced Bionics LLC., R&D Electrical Hardware, Sylmar, CA.

- Served as electrical lead on the development project that lead to the successful launch of the Neptune Sound Processor in 2011. Responsibilities included the design of discrete mixed-signal electronic circuits, the integration of RF and power subsystem circuitry provided by fellow engineers, the design of the PCBs needed for both the Sound Processor and its accessories, as well as the execution of subsequent V&V and ATE development support activities.
- Served as electrical lead on the development project that lead to the successful launch of the Harmony BTE Sound Processor in 2006. Responsibilities included the integration of our custom chipset as well as discrete electronic subsystems designed by myself as well as fellow engineers, the design of a high density rigid-flex PCB, support of ATE test development, and design verification and validation.
- Participated in the design of a mixed signal custom ASIC for use in cochlear implant sound processors. Responsibilities include the design of various digital blocks, verification via simulation, prototyping via FPGA based hardware, as well as participation in the ASIC test development.

Teaching/Research Assistant **Jan. 1998 – May 2000**
University of Rhode Island, Dept. of Electrical and Computer Engineering, Kingston, RI.

- Taught electronics and microprocessor labs, corrected lab reports and lab quizzes.
- Developed various Printed Circuit Boards (PCB) for experimental and research purposes.
- Designed and implemented a digital decimation filter for a monolithic sonar receiver in digital VLSI. Process: HP 0.35 μ .

Project Manager and R&D Engineer **Dec. 1996 - Dec. 1997**
Soudronic AG, R&D Department, Bergdietikon, Switzerland.

- Managed the development of a new control panel for a CAN-Bus controlled welding machine, based on an industrial PC-System.
- Assisted in the development of a welding seam monitor that optically measures the temperature of a welding seam.

Full-time Teaching Assistant **Jan. 1994 - Dec. 1995**
Dept. of Electrical Engineering, University for Applied Sciences, Winterthur, Switzerland.

- Maintained the laboratory's PC Network regarding SW and HW.
- Provided assistance for courses in the field of analog and digital signal processing, high frequency techniques, and communications.
- Assisted students on various subjects during their final year and in their diploma thesis.
Projects:
 - Amplifier for weak bioelectrical signals to measure the propagation delay of nerve signals.
 - Digital equipment for the measurement of accelerations at the horse shoes of racing horses.

SPECIAL SKILLS **Operating Systems:** Unix/Linux, Windows, macOS. **Circuit Design and Simulation Tools:** Spice, Modelsim, Exemplar Leonardo. **Schematic and PCB design systems:** Altium, Mentor Boardstation. **FPGA Design Tools:** XILINX Foundation, Altera (Max plus II, Quartus II). **Mathematical Tools:** Matlab, Maple V, Mathematica. **Programming Languages:** C/C++, VisualBasic, Xojo, Python, Matlab, Borland Delphi.

EDUCATION **Master's of Science in Electrical Engineering, May 2000**
University of Rhode Island, Dept. of Electrical and Computer Engineering, Kingston, RI.
Emphasis: Digital Signal Processing, Digital Image Processing, VLSI Design.
MS Thesis: Digital Decimation Filter for a Monolithic Sonar Receiver; design (Matlab) and implementation (XILINX) of a 256-tap FIR decimation filter for single-bit Sigma-Delta modulated Signals.

Bachelor's of Science in Electrical Engineering, Jan 1994
University for Applied Sciences, Winterthur, Switzerland.
Emphasis: Control Systems, Communication, RF Systems.
BS final project: Digital controller with pulse-width modulated actuator.

Professional Diploma in Electronics, April 1990
4-year professional apprenticeship in electronics.
Company: Oerlikon Contraves AG, Zurich, Switzerland.

PATENTS Granted:

- US8750546 B2: Sound processors and implantable cochlear stimulation systems including the same.
- US9191751 B2: Modular adapter assembly for telecoil and auxiliary audio input device mixing.
- US9294852 B2: Sound processors and implantable cochlear stimulation systems including the same.
- US9596548 B2: Sound processor apparatuses that facilitate battery type detection and communication with a programming system.
- US9794696 B2: Sound processor apparatuses with a multipurpose interface assembly for use in an auditory prosthesis system Modular adapter assembly for telecoil and auxiliary audio input device mixing.
- US10277993 B2: Audio accessory for auditory prosthesis system that includes body-worn sound processor apparatus.

Pending:

- WO 2019/046133 A1: Systems and Methods for facilitating alignment of Cochlear Implant System Components.

LANGUAGE SKILLS Fluent in German and English.

LEGAL STATUS US citizen.

MEMBERSHIPS IEEE

REFERENCES Available upon request.