Mike Miles

BSE(Electrical Engineering), Graduate Study

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DESIGN ENGINEER, PROBLEM SOLVER, INVENTOR

SUMMARY

Highly-Respected Design Engineer with extensive knowledge and experience in power, analog, digital, sensor, and audio electronics circuits and systems.

Solid track record of creating dozens of successful innovative electronic products for companies in commercial, industrial, and consumer markets.

Recognized for achieving outstanding product performance and reduced cost by creatively implementing new technologies to meet ambitious design goals.

Proficient in research, product definitions, electronic design and analysis, mechanical design, engineering operations, documentation, production processes, and quality processes.

Core competencies include:

- High-performance electronic circuit design
- Analog and digital; sensors, audio, interfaces
- Linear and switch-mode power amplifiers, power supplies, PFC, and output drivers
- CAD/CAE; high-performance PCB design
- Documentation and production releases
- Design for usability, ergonomics, and aesthetics
- Engineering management and project management - on time and in budget
- Product definitions to meet customer needs
- Strategic planning, technology sourcing, and engineering sourcing to extend capability, improve quality, and reduce cost
- Lean engineering and lean manufacturing
- Collaboration and Mentoring

ACHIEVEMENTS

- **As principal engineer of Miles Design LC, provided clients with quick, cost-effective product designs**, test reports, reliability improvements, and research. Offered expertise in analog and audio equipment, class-D and linear amplifiers, interfaces, controls, LED lights, powered loudspeakers, PCBs, and prototyping. Achieved repeat business from a dozen clients.
- **Managed an engineering department** of eight people to successfully design and release products on time and within budget. Conducted critical improvements to existing products. Implemented assembly, QC, and repair with in-house operations and EMS/CMS/OD sourcing.
- **Defined, designed, and led a team to prototype, program, and demonstrate** in less than five months, a complex modular network control system with Ethernet and RS-485 interfaces, device intercommunications, analog and digital I/O, programmable algorithm control, accurate synchronized real-time clock, and data logging.
- **Invented and patented the Multisonic® stereo imaging system** for high-quality audio. Formed Miles Technology Inc. to manufacture and market the imaging system as well as power amplifiers, mixers, cable testers, and custom OEM products.
- **Designed the highly-successful Electro-Voice DeltaMax® Loudspeaker Controller** which allows large concert sound systems to safely operate at full output power.

WORK EXPERIENCE

Miles Design LC **Niles, Michigan**
President/Designer **2009** to **Present**
Electronics product design service for commercial and industrial controls, professional audio, military and marine audio, LED lighting, and consumer electronics.

- Created and delivered product designs including amplifiers, power supplies, electronic controls, audio equipment, sensor interfaces, LED lights, and powered loudspeakers.
- Delivered technology including linear and class-D amplifiers, power supplies, analog and mixed-signal interfaces, filters, battery chargers, controls, and energy conversion systems.

Environmental Technology Inc. **South Bend, Indiana**
Director of Engineering **2015** to **2018**

- Managed and mentored eight-man engineering team to define, develop, and release products, test hardware and software, cut costs, create and maintain controlled documents, specify production processes and equipment, operate QC and service, and maintain ISO documents.
- Supervised the team to define, design, prototype, and release the new GPT industrial trace-heat controllers for ETI and managed customer input for development. These provide RTD temperature sensing, power load switching with fault and load current monitoring, and a user-friendly graphic interface and display. Extremely well-received by long-time and new customers.
- Defined and designed pavement ice sensor with superior performance and reduced cost.
- Defined and developed technology for new generation of desiccant air dehydrators with improved performance and reduced cost. Designed and implemented precision testing, algorithm development, HALT; performed thermodynamic analyses, wrote application notes.
- Designed and constructed a powerful universal control system with ethernet, RS-485, precision RTC, and various interfaces; based on the Atmel SAM4E and Microchip PIC processors.

Vista Manufacturing Inc. **Elkhart, Indiana**
Senior Design Engineer **2012 to 2015**

- Created custom OEM product designs including electronic, mechanical, thermal design/analysis, and APQP/DFMEA/PPAP for lights, housings/lenses, controls, and transformers with UL Listings.
- Designed and qualified test and measurement fixtures for engineering, manufacturing, and quality control. Designed and 3D-printed plastic parts for housings, fixtures, and prototypes.
- Fully trained and qualified to provide electrical crimp analysis of wire terminations and process capability reports for larger customers including Whirlpool Corporation.
- Invented key technologies including gravity sockets, a current-monitor production test fixture, lamp-life extenders, and a balanced LED light strip design that prevents brightness drop-off.

Miles Technology Inc. **Niles, Michigan**
President **1993** to **2008**

- Invented, patented, designed, manufactured, and marketed the Multisonic® stereo imaging system. Also designed and manufactured linear and class-D power amplifiers, mixers, and cable testers.
- Designed and delivered custom versions of amplifiers for specific customers.
- Planned and implemented marketing strategies with trade shows, advertising, and sales reps. Created technical and sales literature, advertising designs, and web site (www.milestech.com).
- Operated corporation for six shareholders; supervised strategic planning, accounting, engineering, sales, and production; assured profitability of products and overall operations.

WORK EXPERIENCE (CONTD.)

Cytech Labs Ltd. **Elkhart, Indiana**
Chief Engineer **1990** to **1998**

- Designed the CSL2000 PWM high-power backup inverter system.
- Designed Crown Audio IQ products (circuits and packaging) including the SMX-6, SEQ-6, MRX-12/24, Drone, and PIP-IQ (computer/network controlled audio and control-system products).
- Provided creative and customer-based product definitions and designs, circuit designs, mechanical designs, documentation, and manufacturing support.
- Contributed significantly toward the expansion and profitability of company operations.

Electro-Voice, Inc. **Buchanan, Michigan**
Senior Project Engineer **1982** to **1989**

- Designed the highly-successful DeltaMax® Controllers, the first power-limiting loudspeaker controllers on the market which did not alter frequency response.
- Invented Constant-Range™ filter concept and designed it into the 2710 graphic equalizer product.
- Designed a four-channel compressor/noise gate with a special low-dynamic-distortion detector circuit.
- Designed an RF-immune audio mixer for remote broadcasting, two product ranges of console mixers, three different crossover/equalizer products, and a universal off-line switching power supply.
- Created market and technical analyses, product definitions, electronic designs, and packaging designs.
- Performed competitive product testing/comparison and cost analysis; obtained UL and CSA approvals.
- Utilized device modeling and circuit simulation on computer workstations for more efficient electronic design progress.
- Set up the electronics department's first CAD system for schematic capture and PCB layout, created custom component and package libraries, and trained other personnel in effective CAD use.

ADM Technology, Inc. **Roseville, Michigan**
Project Engineer **1980** to **1982**

- Designed audio processing modules used in high-performance custom mixing consoles for broadcast and film mixing, including hundreds of major-market TV stations, VOA, and Glen Glenn Sound.
- Designed various custom signal processors, amplifiers, display devices, and power-supplies.
- Saved the company about $30K per year by respecifying an audio transformer for optimum performance and economical design.

Dynamic Electric Controls Inc. **Madison Heights, Michigan**
Student Engineer **1977** to **1979 (4 mo. each summer)**

- Designed large industrial control panels and power distribution circuits.
- Created panel layouts, relay logic designs, and PLC programming.
- Wrote company software that calculated payroll and taxes, created reports, and printed all paychecks.
- Built large control panels in 1977, including extensive metal work, electrical component mounting, and all wiring (job shop work as Panel Builder).

PATENT AND PUBLICATIONS

- "Linear-Matrix Audio-Imaging System and Image Analyzer," U.S. Pat. 5,610,986, issued March 11, 1997.
- "Approaches To Live Surround - Looking at the Logical Evolution," LSI, March 2004.
- "Live Concerts In Surround? Despite the Obstacles, It Can Indeed Be Done," LSI, Dec. 2003.
- "An Optimum Linear-Matrix Stereo Imaging System," 101st AES Conv., L.A. CA, 1996 Nov., Prepr. 4364
- "Electronic Control of Loudspeaker Systems," presented at All Technical Engineered Sound Conference, Montreal, Quebec, Canada, 1988 October.
- "A Loudspeaker-Electronics System," presented at 84th AES Convention, Paris, 1988 March, and at AES 6th International Conference, Nashville TN, 1988 May, A.E.S. Preprint 2646.

EDUCATION

Graduate Study

College of Engineering, The University of Michigan — **Ann Arbor, Michigan**
College of Engineering, The University of Michigan - Dearborn — **Dearborn, Michigan**
Graduate courses in microprocessor software design, digital systems, MSI/LSI design, communications, transistor circuits, network analysis, mathematics, and acoustics projects.

Bachelor of Science in Engineering (Electrical Engineering)

College of Engineering, The University of Michigan — **Ann Arbor, Michigan**
Specialized in analog and digital circuit design, electroacoustics, microprocessor design, programming; independent projects involving acoustics, HF amplifiers, and digital audio.

Professional Training

Leadership Workshop, Purdue Manufacturing Extension Partnership — **Elkhart, IN**
LEAN training, Purdue Manufacturing Extension Partnership — **South Bend, IN**
Project Management, Grad. School of Bus. Admin., MSU — **Troy, MI**
Project Management, Fred Pryor Seminars — **South Bend, IN**

SKILLS

- PSpice analysis, tolerance and stability
- Thermodynamic analysis
- Product costing, BOM analysis
- Altium, Eagle, PADS, Cadstar, Viewmate
- AutoCAD, Inventor, 3D design and printing
- Electronic prototyping, TH/SMT, soldering
- Prototype construction, metalworking
- UL, NEMA, CE, FCC, EMC design
- Crimp analysis and process capability
- Creative ideas and problem solving
- Project management and collaboration
- Leadership and Teamwork
- LEAN training
- Mentoring, teaching, coaching
- Technical presentations, Toastmasters
- Hardware and software HMI
- Technical writing and editing
- Standard office software and graphics design

OTHER ACTIVITIES

- Member of Audio Engineering Society, two standards committees, and IEEE
- Presented stereo imaging theory for Chicago and Detroit AES Sections
- Experienced audio/mix/recording engineer and musician; recorded and produced several independent CD albums; currently play bass guitar, piano, keyboards, and sax
- Enjoy nature, water sports, tennis, photography, and video production
- Volunteer for local schools, performance productions, and BBBS Big Brother (youth mentor)