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EXPERIENCE SUMMARY:

Electrical engineering and system design of computer subsystems, PC peripherals, consumer electronics, professional digital audio, and telecommunications products.

- Engineering management.
- Systems engineering.
- Embedded systems design.
- High-speed board design for signal data rates exceeding 3GHz.
- Design for high-volume, low-cost manufacturability, EMI and safety compliance.

NOTABLE PRODUCTS DEVELOPED:

- Audio subsystems for Apple Macintosh computers.
- Audio systems and electrical design for the [Muse Research Receptor](#) synthesizer.
- Creative's [Nomad Jukebox](#) portable MP3 player. This was one of the first hard-disk based MP3 players on the market, and was a predecessor to Apple's iPod.
- E-mu's [Audio Production Studio](#) PCI Sound Card and Audio Drive.
- E-mu's [Mantis](#) 128-Channel Digital Mixer

POSITIONS HELD:

2/03 – Present: Apple Computer, Cupertino, CA

- 2/04 – Present: Manager of the Audio HW Department in the Mac Division, responsible for development of the audio electronics and acoustics subsystems for Apple's Mac computer line.
- 2/03 – 2/04: Design, implementation, integration and testing of audio subsystems for Apple's desktop computers.

8/02 – 2/03: Tau Networks, Inc., Saratoga, CA.

- Design and testing of the reference boards for Tau's communications switch-fabric chipset: Circuit design and schematic capture, management of PCB layout, fabrication and assembly, board bring up, and verification of signal integrity.

1/92 to 8/02: Creative Technologies, Inc.

At the Creative Advanced Technology Center:

- Proposed product and managed the hardware development for the [Nomad Jukebox](#), one of the first hard-disk based MP3 players on the market.
- Contributed to the design of the [SoundBlaster Extigy](#) USB soundcard product.
- Contributed to the systems design and technical documentation of custom ASICs that are used in Creative's products.
- Wrote hardware specifications and test plans, transitioned hardware designs to high-volume production in Singapore.

At Creative's subsidiary company E-mu Systems Inc.:

- Managed a team of five engineers, designed hardware and specified ASICs for the development of [Mantis](#), a 128-channel, 24-bit digital audio mixer product.

- Designed the hardware for E-mu's [Audio Production Studio](#), a 64-channel PCI audio card and audio expansion drive.
- Designed hardware for the [E-IV line of sampling synthesizers](#), and other digital audio products.
- Managed PCB layout, fabrication and assembly, drove board bring up and HW/SW integration efforts, and transitioned products to production.
- Contributed to the systems engineering of the ASICs that are the heart and brains of E-mu's synthesizer products.
- Designed several CPLDs and FPGAs, which were coded using VHDL, simulated in ModelSim, synthesized using Synplicity, and placed/routed using Altera Max+Plus II.
- Worked closely with Marketing to specify and propose new products.

1990 to 1992: Wangtek DAT Division, Scotts Valley, CA.

- Developed one of the first 3.5" form factor Digital Audio Tape drives for computer backup. Designed main board and servo board, managed PCB layout, fab and assembly and electromechanical integration, tested boards, managed technicians, and assisted with transaction of design to JVC, our design partner in Japan.

1989 to 1990: Mountain Computer, Scotts Valley, CA.

- Designed the hardware for Mountain's "Microchannel Mach-2" tape drive controller card, and worked on systems engineering of new ASICs for Mountain's future products.

1986 to 1989: Stanford Telecommunications, Santa Clara, CA.

- Designed, debugged and performed systems integration on several digital signal processing cards for a 3-channel QPSK satellite receiver for the Air Force.

1982 to 1985: Vanderbilt University Department of Anatomy, Nashville, TN

- College work/study: Worked in a research lab developing apparatus and electronics to support neurophysiology experiments on nerve growth and regeneration.
- Built electrophoresis systems, sold them to researchers at Vanderbilt and Stanford.

PATENTS

"System for managing power in a portable music player" ([US Patent Application 20020089774](#))

"Automated response to and sensing of user activity in portable devices" ([US Patent Application 20070075965](#))

"Method and System for Operating a Multi-Function Portable Electronic Device Using Voice-Activation" ([US Patent Application 20080248797](#))

"System and method for dynamic control of audio playback based on the position of a listener " ([US Patent Application 20080130923](#))

PUBLICATIONS

["Steady growth cone currents revealed by a novel circularly vibrating probe: a possible mechanism underlying neurite growth"](#) JA Freeman, PB Manis, GJ Snipes, BN Mayes, PC Samson, JP Wikswo, DB Freeman. Journal of Neuroscience Research, 1985.

TOOLS

Extensive use of or familiarity with the following software design tools:
Orcad, Viewlogic, Concept, Allegro, ModelSim, Synplicity, Altera Max+Plus II, Xilinx.

EDUCATION

BSEE with a double major in Electrical Engineering and Computer Science, Vanderbilt University, Nashville, TN, 1986.