

Wendi Allen
San Francisco, CA
Tel. (408) 204-2447

wendisf@yahoo.com

www.rawbw.com/~allen

DIGITAL DESIGN FROM CONCEPTION TO PRODUCTION

Over 20 years of experience in the development and design of video games, consumer electronics, and computers & peripherals.

Hardware And Software Together. -- As both a hardware engineer and a software engineer, I bring extraordinary skills and efficiency to your project. I can provide unbiased advice on tradeoffs between hardware and software. My ability to write test routines, and then monitor behavior using an oscilloscope or other equipment is invaluable when troubleshooting communication problems, system hangups, or other issues which normally require two individuals with complimentary skills.

Better - Cheaper - Faster! -- Whether you intend to sell millions of units of your product, or build only a few for your own internal use, I can make the tradeoffs necessary to minimize your development costs and maximize your profits. My experience with all phases of product development, including initial conception, prototype construction, debug, and support of manufacturing, ensures that I can do it better, cheaper, and faster!

WHY USE A CONSULTANT? -- By using a consultant to meet your engineering needs, you maximize flexibility while minimizing overhead, capital expenditures, and long-term commitments. I bring the specific skills and tools needed to complete your task quickly, competently, and professionally. My modern lab is immediately available for your project. Should your needs or plans change, our relationship can easily change too. When the design is completed, and successfully released to manufacturing, we can call the job "Done!" You are not burdened with continuing commitments to an employee, an office, or a piece of equipment.

AMONG THE SERVICES I CAN PROVIDE TO YOU ARE:

- | | |
|--------------------------------|-----------------------|
| * Product definition | * System design |
| * Firmware development | * Circuit design |
| * Prototype - wire-wrap or PCB | * FPGA implementation |
| * ASIC design | * Cost reduction |

PREVIOUS DESIGNS HAVE INCLUDED:

- | | |
|--|--------------------------------|
| * Embedded controllers | * Graphic LCDs & VFDs |
| * Complex state machines | * PC plug-in cards - ISA & PCI |
| * Numerous MPUs & MCUs, including 4, 8, 16, & 32 bit | |
| * Interfaces - RS232, USB, Bluetooth, & WiFi | |

SOME OF MY PREVIOUS PRODUCTS:

- * Coin Operated Video Games
 - o Midway Games, Inc., "MagicBus" USB I/O card for HydroThunder
 - o Bally Sente, The SAC I Programmable Arcade System
 - o Sente, Inc., Snake Pit
 - o Videa, Inc., Gridlee
 - o Atari Inc., Superbug; Lunar Lander; Asteroids
- * Other Products
 - o SHFF, Inc., SureShot HD, Home video game system
 - o Tamrac, Inc., MicroSync II, wireless photographic sync system

- o Secure Computing Inc., Alpine, Carabiner shaped security token
- o FacePlace Photo, Coin operated photo booth
- o Metrotel Corp., "MT FH3-1", telco lineman test set
- o Smart Matter, Inc., "Smart Plane", intelligent toy airplane
- o Secure Computing, "Thincard" credit card sized password token
- o Videomedia Inc., "M2X" JPEG Digital Video Editor
- o PF Magic, "Edge 16" Peripheral For Sega Genesis Game Player
- o Apple Computer, Prototype Computer, ("Fast Eddie")
- * Research & Development (Non-production oriented)
 - o Time Warner Interactive, Prototype of 3D Image Generator
 - o The 3DO Company, Breadboard of ASIC for 3DO Multimedia Player
 - o Apple Computer, Study of Custom RISC CPU & Memory Interface
 - o Epyx Inc., Breadboard of ASIC for "Lynx" Consumer Video Game

I BRING OVER 20 YEARS OF EXPERIENCE TO YOUR PROJECT:

Consultant

Among my recent designs is the Sure Shot HD Big Buck Hunter Video Game System. Big Buck Hunter was a successful arcade shooting game that my client wanted to bring into the home. My contribution was the hardware design of the gun electronics, as well as the firmware within the gun that determines where the gun is aiming. This project is a good example of how I can view a design from both hardware and software perspectives, and find the optimum balance between the two. A PIC micro-controller within the gun reads a CMOS video sensor in real time, and processes the collected data during the vertical blanking interval. The directional coordinates are then sent to a Texas Instruments micro-controller on the same PCB via SPI. Finally, the TI chip sends the data to the set-top box wirelessly via Bluetooth.

Another interesting project of which I was the principal designer is a key-fob size device for generating one-time use computer passwords. This battery operated product, developed for Secure Computing Corporation, utilizes data encryption techniques within an off-the-shelf ultra-low cost MCU. Due to the limited resources within the MCU, and the use of a non-replaceable battery, I wrote all of the firmware in assembly language, paying obsessive attention to memory utilization and power consumption.

Videa, Inc. -- Founder, Chief Financial Officer, Vice President of Engineering
 Sente Technologies, Inc.; Bally Sente, Inc. -- Vice President of Engineering

Videa, an electronic entertainment consulting firm, developed product for the coin-operated and consumer video game markets, as well as the first laser disc based point-of-purchase merchandiser. Besides my corporate role, I designed the hardware for the above mentioned products. Videa, with eight employees, was acquired by Pizza Time Theater to become their new Sente Technologies division. I personally designed the Sente "SAC I" convertible video game system - the first cartridge based arcade machine. I also supervised a staff of four engineers and three technicians, as well as sharing responsibility for the day to day operation of the division. Sente Technologies was acquired by Bally Manufacturing, and renamed Bally Sente. I continued in same roles, developing games and managing the department.

Atari, Inc. -- Engineer; Supervisor, electrical engineering

While at Atari, I developed the vector generator display system used in Lunar Lander and Asteroids, the most successful arcade video game ever developed in the United States. This system, and subsequent enhancements, were used by Atari in nine different games. I also programmed and developed hardware for four other video arcade games (Superbug, Canyon Bomber, Firetruck, & Smokey Joe).

EDUCATION:

Bachelor Of Science, Chemistry -- Rensselaer Polytechnic Institute
 Master Of Science, Scientific Instrumentation -- UC Santa Barbara