

## Eric Welch

### Curriculum Vitae

**May 2023**

I have over 49 years experience in Systems, Electrical and Software Engineering, Engineering Management and Expert Witness.

### Expert Experience

- 2022-2023 Served as testifying expert in patent infringement case involving consumer electronics devices
- 2021 Served as consulting Expert for two co-defendants in a patent infringement case involving Smart Phones and Bluetooth sensors
- 2020-2021 Served as testifying Expert Witness in Arbitration for a contract dispute involving engineering services. Gave deposition and testified at Arbitration hearing.
- 2020-2021 Served as testifying Expert Witness for patent owner in an infringement action and IPR involving USB Memory sticks.
- 2020 - Served as testifying Expert Witness for plaintiff in Microsoft v Dareltech, an IPR case involving “selfie sticks”. PTAB found for plaintiff.
- 2018-2020 - Served as testifying Expert Witness for plaintiff in SIMO Holdings v Ucloudlink a Patent Infringement case involving Mobile Cellular devices (phones and WiFi Hotspots). Gave Deposition. Court ruled for plaintiff.
- 2019 - Served as testifying Expert Witness for plaintiff in SZ DJI Technology v Dareltech, an IPR case involving “selfie sticks”. Case settled after PTAB institution but prior to completion of IPR process.
- 2018 - Served as consulting Expert for plaintiff in Toshiba and MSI v Wallelex Microelectronics, an IPR case involving USB ‘C’ technology.
- 2017-2018 - Served as testifying Expert Witness for plaintiff in American Security Products Co. v. AT Systems, Inc., an IPR involving smart electronic safes. Found prior art, wrote expert declaration. Case settled just days before filing deadline.
- 2017 - Served as consulting Expert for LG Electronics on Fundamental Innovation Sys v LG Electronics, a case involving USB charging technology. Worked on Claims Construction in support both of an IPR action and for the non-infringement case.
- 2017 — Served as consulting Expert for defendants on Pathway Innovations & Technologies, Inc vs Lumens Integration, Inc, et al., an infringement case involving USB web cameras.

Task was to perform tests and engineering analysis on various subject and prior-art devices to determine their USB behavior in support of non-infringement case.

- 2016-2017. served as testifying Expert Witness in VIA Technologies vs. Asmedia Inc., a case involving alleged misappropriation of semiconductor intellectual property. I consulted on numerous aspects of the case and wrote an Expert Report on certain key serial high speed bus testing done by the opposing side. Technology was a high speed USB adapter. I was hired for this case because of my experience with USB and other high speed bus technologies, their testing requirements and for my general engineering experience, both hardware and software, with USB adapters. Gave Deposition. Case settled in August, 2017.
- 2015-2016. Served as testifying Expert Witness retained by plaintiff in Microsoft vs Smart Skins, LLC, an IPR action. Analyzed numerous prior art patents and wrote preliminary and final Expert Reports demonstrating how key claims were anticipated in the pre-existing patents. Read all case documents including all expert reports and deposition transcriptions and helped attorneys finalize their argument. I was hired for this case because of my long experience with Smart Phone accessories, data communication technologies and peripheral interface schemes. Gave deposition on my Expert Report. In July 2017, the USPTO issued a Final Opinion.
- 2012. Served as Expert Witness retained by defendant in Universal Electronics vs Logitech. This case was patent infringement litigation involving programmable TV Remote Controls. In this project I analyzed several dozen patents, from both sides and considered their relative strengths and weaknesses. I also developed a detailed history of the programmable TV Remote and identified key patent and non-patent prior art. Case settled out of court.
- 1980. Served as Expert Witness in a contract dispute involving software intellectual property and the residual knowledge of a Software Programmer. Gave deposition.

## **Engineering Experience**

**2008 - Present.      President, Bramson Welch & Assoc., Inc.**

Bramson Welch is an Engineering Services consultancy specializing in embedded systems, USB, RF (BLE, WiFi, LTE), NFC, IR, Data Communications, mobile devices, iPhone accessories and litigation services including data analysis and Expert Witness. I serve as System Architect and Project Strategist on all BWA projects. I frequently work with multiple client groups to coordinate the design and architecture across many different technical and organizational domains.

### **Representative Projects:**

1. Invented a scheme for thread-safe memory and buffer pool management without the use of synchronization locks or disabled interrupts
2. Led team to create a hand-held Bluetooth Low Energy, battery powered medical device with multiple sensors for use in hospital and clinical settings.

3. Invented a scheme for high-speed bus communication and process coordination between standard microcontrollers with mitigation for matching different data rates
4. Designed and developed several novel portable wireless, battery powered, data capture devices for medical research. This included a Bluetooth Low Energy radio, NFC, microcontroller, Analog Front End and Smart Phone and PC support software.
5. Designed and developed a non-iBeacon Bluetooth Low Energy locating device.
6. Developed scheme for a custom USB device to deliver its own host software installer by temporarily emulating a Flash Drive. Device automatically senses if its software is already running bypasses flash drive if so.
7. Developed a scheme of running multiple firmware images on a Cortex-Mx processor to support field firmware update
8. Lead a multiple-team development for a cross-platform consumer medical informatics software product.
9. Designed and developed a general purpose, network connected, manufacturing fixture controller for a major consumer electronics manufacturer.
10. Lead a team development of a Bluetooth iPhone accessory that connects survey grade GPS radios to iPhone and Android smartphones.
11. Implemented a wireless, handheld game controller with NFC and a high resolution touch screen (for Video playback) that ran an embedded game programming language.
12. Designed and developed a specialized USB communication subsystem for a line of consumer medical devices.
13. Designed, evaluated, implemented, and certified numerous iPhone accessories
14. Developed a high-end music player and speaker-phone iPhone accessory
15. Developed software to help a major semiconductor company demonstrate a new face recognition image processing chip.
16. Designed and developed a custom, gesture recognition Human Interface USB peripheral that ran a custom embedded scripting programming language within a micro-VM
17. Advised clients and did development of RF designs, including antenna design, power management, range issues, and certification including 2.4 GHz RF Modems, WiFi, Bluetooth, Bluetooth Low Energy, Zig-Bee, etc.

**1995 - 2007. VP Engineering & CTO, Keyspan, a division of InnoSys Incorporated**

The Keyspan division of InnoSys develops and markets to the retail channel several lines of computer peripheral and communications devices such as USB adapters, computer remote control devices, USB and FireWire add on cards and related technology

Personally designed and developed core technology for the Keyspan business. Helped increase sales from less than \$1MM in 1997 to \$13MM in 1999.

**Representative Projects:**

1. For Microsoft, developed an iPhone adapter cable for the MS Sync Media Player Device.

2. A Network-attached USB Host Controller that allows USB devices to be shared over a network
3. A wireless LCD remote control for the iPod with an RF Doc.
4. Best-in-industry line of USB/Serial adapters
5. Several IR and RF Remote control products for controlling a PC or Mac

**1976 - 2007**

**VP Engineering & CTO InnoSys Incorporated**

- Co-founded InnoSys in 1976 and member of senior management team and board of directors
- Served as chief architect and designer for firm
- Managed Engineering Department with staff of ten including hardware, firmware, software and QA
- InnoSys is a computer hardware and software technology development and marketing company. The Airline Gateway division develops and markets a line of specialized communication gateway products that create telecommunication infrastructure for such systems as WEB based travel booking systems.

**Representative Projects:**

1. Managed a \$2MM project to design, develop and deploy a sophisticated store and forward message switch for a major airline reservation system. The system is still in use after 20 years.
2. Developed several PCI serial communication plug-in computer accessory boards, along with associated firmware and host device driver software.
3. Designed and developed a high performance scheduler and operating system for a line of embedded system protocol converters. The converters were used by Amtrak's ticket kiosks, by various airlines to pass flight plans, for inter-line traffic, etc.
4. Consulted with a high technology consumer electronics company in the design of an early (1980s) hand-held general purpose computer.
5. Developed a multi-line high-fidelity digital sound delivery system for an automated phone response system

**Publications**

Designing a short-range RF link into a consumer-electronics product, EDN Magazine 7/8/2008

[http://www.edn.com/article/472244-Designing\\_a\\_short\\_range\\_RF\\_link\\_into\\_a\\_consumer\\_electronics\\_product.php](http://www.edn.com/article/472244-Designing_a_short_range_RF_link_into_a_consumer_electronics_product.php)

Videotex: A Potent Weapon In Struggle with Nonbanks. ABA Banking Journal, Feb 1983

### Patent Pending

“Small Footprint Reference-Counting Buffer Pool Management Without Synchronization Locks”  
(Filed 2022)

### Provisional

“Electronic Digital Stethoscope and Uses Thereof” (Filed 2023)

### Patents Filed (these were shipping products)

“METHOD AND APPARATUS FOR HOST CONTROLLER OPERATIONS OVER A NETWORK” (filed 2003)

“APPARATUS AND METHOD FOR TWO-WAY  
REMOTE CONTROL AND CRADLE OR ADAPTOR  
TO CONTROL AN A/V MEDIA PLAYER” (filed 2006)

### Memberships

IEEE - Senior Member  
Microsoft Developer Network (MSDN)  
Apple Developer Program (iOS and MacOS)  
Apple Made for iPhone (MFi) Developer program

### Education

BA, Mathematics (with three years each Computer Science and Physics). UC Berkeley, 1977