

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HTC CORPORATION, HTC AMERICA, INC.,
LG ELECTRONICS, INC., SAMSUNG ELECTRONICS CO., LTD.,
and SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner,

v.

PARTHENON UNIFIED MEMORY ARCHITECTURE LLC,
Patent Owner.

Case IPR2015-01501
Patent 7,777,753

Affidavit of Mitchell A. Thornton, Ph. D., P.E.

Before me, the undersigned notary, on this day personally appeared Mitchell A. Thornton the affiant, a person whose identify is known to me. After I mentioned an oath to affiant, affiant testified:

1. I am over the age of eighteen (18) and otherwise competent to make this declaration.

2. I earned a Bachelor of Science degree in Electrical Engineering from Oklahoma State University in 1985. In 1990, I earned a Masters of Science degree in Electrical Engineering from the University of Texas at Arlington. In 1993, I earned a Masters of Science degree in Computer Science from Southern Methodist

University. I earned a Ph.D. in Computer Engineering from Southern Methodist University in 1995. I am a Licensed Professional Engineer in the states of Texas, Mississippi, and Arkansas. I also hold a Commercial General Radiotelephone Operator License (GROL) with Ship Radar endorsement issued by the Federal Communications Commission (FCC).

3. I am currently the Cecil H. Green Chair of Engineering and Professor in the Department of Computer Science and Engineering and in the Department of Electrical Engineering at Southern Methodist University. Prior to 2002, I served as a faculty member at Mississippi State University in the Department of Electrical and Computer Engineering from 1999 through 2002. I served as a faculty member at the University of Arkansas from 1995 through 1999 in the Department of Computer Systems Engineering. In my university positions, my responsibilities are research, teaching, and providing service in my profession. My teaching and research area of expertise is generally in the area of computer engineering where I specialize in hardware design for information processing systems.

4. In addition to my academic rank of professor, I am also the Associate and Technical Director of the Darwin Deason Institute for Cyber Security at Southern Methodist University. The Institute mission is to advance the science, policy, application and education of cyber security through basic and problem-driven, interdisciplinary research. As Associate and Technical Director, I am

responsible for the coordination and oversight of all research projects within the auspices of this multi-million dollar endowed research Institute that is comprised of 11 principal investigators and their associated research teams. In this role, I am routinely involved with several different state-of-the-art projects regarding the technical aspects of information processing system processes, methods, software, and hardware.

5. Prior to my academic career, I was employed in the commercial sector as an engineer. I was employed full-time at E-Systems, Inc. (now L3 Communications) in Greenville, Texas from 1986 through 1991 and resigned from my position as Senior Electronic Systems Engineer in 1991 to pursue full-time graduate studies in Computer Science and Computer Engineering. My duties at E-Systems involved the design, analysis, implementation, and test of a variety of different electronic systems including various information processing systems centered around signal processing, data transmission and processing, and communications systems. The communications systems I was involved with processed a variety of different types of signals including data, audio, and video systems. These systems were comprised of components such as receivers, transmitters, computers, and special purpose circuitry.

6. During the time I was in graduate school pursuing the Ph.D. degree, I also worked part-time and full-time during the summer of 1992 at a commercial

integrated circuit (IC) design company named the Cyrix Corporation. At Cyrix, I was a member of a design team that ultimately produced a microprocessor that is compatible with the Intel Pentium. My duties included the design of the bus controller and memory interface circuitry for this IC.

7. My practice and research covers a range of topics centered around hardware design and analysis including secure circuit and embedded system design, electronic design automation (EDA) methods, and algorithms for quantum, classical digital systems, and large systems design. I have also maintained an independent professional engineering practice since 1993 as a sole proprietor that is a registered engineering firm in the state of Texas.

8. I am a named inventor on three (3) issued patents and two (2) patent applications under consideration at the USPTO. I have authored or coauthored over 200 scholarly publications in the fields of electrical engineering and computer science.

9. My curriculum vitae is attached as Exhibit A to this declaration, which more fully sets forth my qualifications.

10. Exhibit 2005 is a document titled “Developer Note Macintosh Quadra 840AV and Macintosh Centris660AV Computers” which bears a copy right date of 1993. This document is also referenced as Exhibit 2005 in my declaration which

was submitted in the above referenced IPR in conjunction with the Patent Owner's Response.

11. Based on my analysis of this document, Exhibit 2005 is in a condition that creates no suspicion about its authenticity because: (1) it bears the Apple logo and a copy right date of 1993 which is consistent with the period during which the Quadra 840AV product was sold by Apple Computers, Inc.; (2) it was published by Apple's Developer Press which typically publishes such documents; (3) it bears the trademark information from Apple Computer, Inc.; (4) it states that it was published using the Apple Publishing System; and (5) it contains information that is typically included in such Developer Notes by manufacturers.

12. Additionally, I compared the functional diagram (Figure 2-1) of Exhibit 2005 with photographs which I was informed show the layout of components on the circuit board of a Quadra840AV product from 1993 purchased from Ebay. As shown in Exhibit B, the layout of components shown in the functional diagram of Figure 2-1 matches the layout of the components on the actual Quadra840AV product. This further confirms that Exhibit 2005 is in a condition that creates no suspicion about its authenticity.

13. Further, I found this document in a place where, if authentic, such a document would likely be. Specifically, I found this document on the HigherIntellect database which includes an archive of such documents, at the

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