

UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner,

v.

COMARCO WIRELESS TECHNOLOGIES, INC.,
Patent Owner.

Case No. IPR2015-01879
U.S. Patent No. 8,492,933

DECLARATION OF MASSOUD PEDRAM, Ph. D.,
IN SUPPORT OF PATENT OWNER'S RESPONSE

I, Massoud Pedram, have been retained by Comarco Wireless Technologies, Inc., to testify as an expert witness in this matter. To that end, I declare, pursuant to 28 U.S.C. § 1746, as follows:

I. Background

1. I am the Stephen and Etta Varra Professor in the Viteri School of Engineering of the University of Southern California. This is an endowed position that I have held since 2013. I was a Professor in the Department of Electrical Engineering at USC from 2000 to 2012, Associate Professor from 1996 to 2000, and an Assistant Professor from 1991 to 1996.

2. I graduated from the University of California at Berkeley with a Doctor of Philosophy in Electrical Engineering and Computer Science in 1991, and a Master of Science in Electrical Engineering and Computer Science in 1989. I received a Bachelor of Science in Electrical Engineering in 1986 from the California Institute of Technology.

3. I have continuously taught undergraduate and graduate courses in electrical engineering since 1991 concerning a variety of subjects, including Advanced Switching Theory and Logic Design, Metal-Oxide-Semiconductor Very-Large- Scale Integration (VLSI) Circuit Design, VLSI System Design I and II, Computer Aided Design of Digital Systems I and II.

4. I have authored or co-authored nearly 600 peer-reviewed conference and archival papers, 20 book chapters, and four books. A complete list of my publications, articles, reports, and invited lectures in the fields of electrical engineering and computer science is included in my resume, which is attached as Exhibit A.

5. I am a fellow of the Institute of Electrical and Electronics Engineers (IEEE), and a distinguished scientist of Advanced Computing Machinery (ACM). I was a Distinguished Lecturer/Speaker for the Association for Computing Machinery (ACM) (2007-2014), and the IEEE Solid State Circuits Society (2001-2007).

6. I have served as a member of research or technical advisory boards for a number of high technology companies, including Atrenta Inc. (2003-2015), Fulcrum Microsystems (2001-2004), Magma Design Automation Inc. (1997-2002), and EPIC Design Technology (1994-1997).

7. Among other awards and honors, I have received the following:
-- Charles A. Desoer Technical Achievement Award in 2015 from the IEEE Circuits and Systems Society " for contributions to modeling and design of low power VLSI circuits and systems, and energy efficient computing."

-- Frequent Author Award (Top Three Author Award) at the Asia and South Pacific Design Automation Conference 20th Anniversary Award (2015)

-- Bronze Cited Author at the 50th Anniversary of the Design Automation Conference (2013)

-- ACM SIGDA Distinguished Service Award (2014 and 2000)

-- Seven Best Paper Awards at seven major conferences and symposia in the field of microelectronic design and electronic design automation

-- Presidential Early Career Award for Scientists and Engineers (1996), and the National Science Foundation's Young Investigator Award (1994).

8. I served as the inaugural Editor-in-Chief of the IEEE Journal on Emerging and Selected Topics in Circuits and Systems (2010-2013), and as Editor-in-Chief of the ACM Transaction on Design Automation of Electronic Systems (2008-2014). I also co-founded the IEEE/ACM International Symposium on Low Power Electronics and Design in 1996, and have served as its General Chair, Technical Program Chair, and am currently Chair of its Executive Committee.

9. I am a co-inventor of ten United States Patents as listed on my resume.

10. A list of the matters in which I have provided expert testimony is attached as Exhibit B.

11. I am being compensated by Comarco at my normal consulting rate of \$750 per hour. I have no financial or other interest in Comarco, Apple, or the outcome of this matter.

II. The Basis of My Testimony and Materials Considered

12. I have reviewed the opinion of the Board instituting a trial to determine whether claims 1 and 2 of United States Patent No. 8,492,933 (the "'933 patent") are patentable, and understand that the question for resolution is whether claims 1 and 2 (the "challenged claims") are obvious in light of U.S. Patent No. 7,243,246 to Allen, *et al.* (Ex. 1003, "Allen"), in combination with U.S. Patent No. 7,296,164 to Breen, *et al.* (Ex. 1004, "Breen") and U.S. Patent No. 6,054,846 to Castleman, *et al.* (Ex. 1005, "Castleman").

13. In formulating my testimony I have reviewed and considered Apple's Petition for *Inter Partes* Review, the Declaration of Nathaniel J. Davis, IV, Ph. D., Dr. Davis's deposition testimony, as well as the '933 patent and the Allen, Breen, and Castleman patents.

14. In addition to my background and experience as summarized above, I believe that I am qualified to render testimony that may assist the Board in resolving the question presented for the following supplementary reasons.

15. The challenged claims cover power supply equipment comprised of an adapter containing circuitry for producing an analog data signal

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