

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

AQUILA INNOVATIONS, INC., a)
Delaware corporation,)
)
Plaintiffs,)
)
v.) No. 1:18-cv-00554-LY
ADVANCED MICRO DEVICES, INC., a)
Delaware corporation,)
)
Defendant.)
)

**DECLARATION OF DR. DOUGLAS HOLBERG
U.S. PATENT NO. 6,239,614**

AMD EX1015

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I. INTRODUCTION

1. I have been asked by Defendant Advanced Micro Devices, Inc. (“AMD”) to give expert opinions and testimony regarding the claim construction of certain terms for U.S. Patent 6,239,614 (“the ‘614 patent”). Unless otherwise noted, the statements made herein are based on my personal knowledge, and if called to testify, I could and would testify competently and truthfully with regards to this matter.

2. For my work in connection with this case, I am being compensated at my standard consulting rate of \$400 per hour. My compensation does not depend on my testimony rendered or on the outcome of this case.

3. My opinions regarding claim construction are based on my education, experience and training, my review of the materials considered (below), and my understanding of the parties’ proposed constructions as of the date of this declaration. If the parties alter those constructions after this declaration is submitted, I may, if appropriate and permitted, submit a supplemental declaration addressing any new constructions.

II. MATERIALS CONSIDERED

4. In connection with this declaration, I have read the ‘614 patent and the related file histories, and any other documents cited in this declaration. I have reviewed the proposed constructions and evidence disclosed in the parties’ Joint Claim Construction Statement in connection with these claim construction proceedings. I have also reviewed the following extrinsic evidence as part of my analysis:

- Weste, Neil H. E. et al., *Principles of CMOS VLSI Design* (2d ed. 1993);
- Laplante, P.A., *Comprehensive Dictionary of Electrical Engineering* (CRC Press 1999);
- Graf, R.F., *Modern Dictionary of Electronics* (7th ed. 1999);
- *Merriam-Webster’s Collegiate Dictionary* (10th ed. 2001);
- *Webster’s Third New International Dictionary* (2002).

III. EDUCATION AND EXPERIENCE

5. My qualifications are stated more fully in my curriculum vitae. *See* Ex. A, Curriculum Vitae of Dr. Douglas Holberg. As reflected in my curriculum vitae (and as explained in more detail below), I have experience with the technology described in the '614 Patent, including resistors, capacitors, inductors, transistors, transformers, oscillators, operational amplifiers, comparators, CMOS integrated-circuit technology, analog/digital mixed-signal circuits, floor-planning and layout of CMOS integrated circuits, standard cells, custom cells, gate arrays, I/O cells, embedded flash, and tools used to design, construct, and verify integrated circuits (CAD tools). The following paragraphs provide a brief summary of my qualifications.

6. I have over 40 years of experience in the electronics field. During that time, I have worked for several different electronics companies including: Mostek, Texas Micro Engineering (acquired by Crystal Semiconductor), Crystal Semiconductor, Cirrus Logic, Cygnal Integrated Products, and Silicon Laboratories. I joined Silicon Laboratories when they acquired Cygnal, which I co-founded in 1999. I am a named inventor on 39 U.S. granted patents. I have held a variety of engineering positions throughout my career, including circuit designer, design manager, Director of Engineering, Chief Technical Officer, V.P. of Engineering, and V.P. of Technology. In addition to my engineering experience, I also have served as an adjunct faculty member at the University of Texas, where I taught CMOS analog and mixed-signal design for six years, and I have taught a number of short courses in Germany and Ireland.

7. I earned the BSEE degree from Texas A&M University, the MSE and Ph.D. degrees from The University of Texas at Austin. A complete listing of my qualifications including a list of my patents is found in Ex. A.

8. Upon graduation from Texas A&M, I went to work for Mostek Corporation designing integrated circuits for telecommunications applications. I designed an integrated DTMF tone generator which was my first patented invention. I also designed telephone ringer

circuits and two-to-four-wire converters for central-office applications. After leaving Mostek, I joined a startup company, Texas Micro Engineering, as its second employee where I designed, among other things, a dual-channel (atrium-ventricle) pacemaker sense amplifier/filter using discrete-time switched capacitor technology, co-designed a gate-array that was used to implement an insulin-pump controller, and a metronome. While enrolled in the Masters/Ph.D. program at The University of Texas at Austin, I worked on the application of bipolar technology to DRAM sense-amplifier architectures and circuit-simulation algorithms. I also designed and laid out the mask set (The Holberg Mask Set) used by the fabrication class/lab for many years. Upon graduating with a Ph.D., I went to work for Crystal Semiconductor/Cirrus Logic where I designed high frequency synthesizers for hard-disk read-channel applications. I managed a group designing CCD interface circuits for digital camera applications as well as television encoder chips and CMOS imagers. Upon leaving Cirrus, I started a company called Cygnal developing mixed-signal microcontrollers. I was a founder/CTO/VP Engineering, as well as an individual contributor. While at Cygnal, I designed A/D converters, ΔV_{be} temp sensors, I/O cells/pads (both design and layout) as well as many additional miscellaneous circuits. Cygnal was purchased by Silicon Labs where I remained employed as a manager of the microcontroller group, followed by the position, VP of Technology.

9. In 2008 I began a consulting career in the area of patents and intellectual property. I have supported my clients in patent prosecution, licensing, and litigation in a variety of technologies, including analog/digital mixed signal circuits, RF circuits, oscillators, PLLs, A/D, D/A converters, switch-mode power supplies, motor drivers, and a variety of inventions from the circuit-level to system level. Based on my experience, both professional and educational, I believe I am more than qualified to give the opinions expressed herein.

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