UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Apple Inc., Samsung Electronics Co. Ltd., and Samsung Electronics America, Inc.,
Petitioners,

v.

Rosetta-Wireless Corporation,
Patent Owner.

Case IPR2016-00616
Patent 7,149,511

**DECLARATION OF WILLIAM H. MANGIONE-SMITH, PH.D.
IN RESPONSE TO PETITION FOR *INTER PARTES* REVIEW
OF UNITED STATES PATENT NO. 7,149,511**

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I. Introduction

A. Scope of Report

1.   My name is William Henry Mangione-Smith. Rosetta-Wireless Corporation (Rosetta) has retained me as a technical expert in regard to the above-captioned proceeding. The petitioners in this matter are Samsung Electronics Co. Ltd.; Samsung Electronics America, Inc.; and Apple Inc. (collectively, "Petitioners").

2.   I have been asked to provide my opinions regarding the Petitioners' Petition for *Inter Partes* Review of U.S. Patent No. 7,149,511.

3.   Unless otherwise noted, the statements made herein are based on my personal knowledge and if called to testify with regards to this declaration I could and would do so competently and truthfully.

4.   In reaching my opinions in this matter, I have reviewed the Petition, the '511 Patent, the file history of the '511 Patent, the Declaration of Dr. Nathaniel Polish, U. S. Patent No. 5,864,853 to Kimura, et al. ("Kimura"), and other materials cited or discussed herein. I also relied on my education and experience as a person of ordinary skill in the art.

B. Qualifications

5.   My curriculum vitae and testimony list are included in Appendix A to this Declaration. To summarize my qualifications, I hold three academic degrees in the field of Computer Engineering: a Bachelor of Science and Engineering, a Master of Science and Engineering, and a Doctorate of Philosophy degree. All of my

degrees were earned at the University of Michigan in Ann Arbor. I have been involved in the design of handheld communicating devices, image display devices, microprocessors, firmware and software for hardware and computer systems, and multimedia applications.

1. Education

6.   From 1984 until 1991 I attended the University of Michigan in Ann Arbor, Michigan. I was awarded the degrees of Bachelor of Science and Engineering, Master of Science and Engineering, and Doctorate of Philosophy. My doctoral research focused on high performance computing systems including computer architecture, applications and operating system software, and compiler technology. One of my responsibilities during my graduate studies included teaching senior undergraduate students who were about to enter the profession.

2. Professional Experience

7.   After graduating from the University of Michigan I was employed by Motorola in Schaumburg, Illinois. While at Motorola, I was part of a team designing and manufacturing the first commercial battery-powered product capable of delivering Internet email over a wireless (i.e., radio frequency) link and one of the first personal digital assistants. I also served as the lead architect on the second-generation of this device. Part of my responsibilities at Motorola involved the specification, design, and testing of system control Application-Specific Integrated Circuits ("ASICs"). I was responsible for quality control and maintenance of the device driver for a power management ASIC. I conducted the initial research and

advanced design that resulted in the Motorola M*Core embedded microprocessor. M*Core was designed to provide the high performance of desktop microprocessors with the low power of contemporaneous embedded processors. While at Motorola, I was the sole inventor on a U.S. patent.

8.   From 1995 until 2005 I was employed by the University of California at Los Angeles ("UCLA") as a professor of Electrical Engineering. I was the director of the laboratory for Compiler and Architecture Research in Embedded Systems ("CARES") and served as the field chair for Embedded Computing Systems. The CARES research team focused on research, engineering and design challenges in the context of battery-powered and multi-media mobile computing devices. One of the key developments of my lab was the Mediabench software tool, which is widely used to design and evaluate multi-media embedded devices. Key elements of Mediabench include software for coding and decoding still images and MPEG videos. My primary responsibility, in addition to classroom teaching, involved directing the research and training of graduate students. I was a tenured member of the faculty and had responsibilities for teaching as well as scholarly research. While at UCLA I was a named inventor on three U.S. patent applications, one of which issued as a patent. My colleagues at UCLA were some of the leading scientists and engineers in the world with a long list of innovations from computer network security devices to the nicotine patch. The graduate student researchers in my laboratory came from a diverse set of backgrounds, all with undergraduate degrees in computer engineering, electrical engineering or computer science, many with

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