UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SAMSUNG ELECTRONICS CO., LTD.
Petitioner

v.

UUSI, LLC d/b/a NARTRON
Patent Owner

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Case IPR2016-00908
Patent No. 5,796,183

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REBUTTAL DECLARATION OF DR. VIVEK SUBRAMANIAN

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I, Vivek Subramanian, declare as follows:

I. INTRODUCTION

1. I have been retained by Samsung Electronics Co., Ltd. ("Petitioner") as an independent expert consultant in this proceeding before the United States Patent and Trademark Office ("PTO"). I previously provided testimony in this proceeding. (*See* Ex. 1002; Ex. 2009.) As with my previous work, although I am being compensated at a rate of $600/hour for the time I spend on this matter, no part of my compensation is contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of this or any other proceeding. I have no other interest in this proceeding. Relevant aspects of my educational background, career history, and other qualifications were provided in my prior testimony. (*See* Ex. 1002 ¶¶ 5-15).

2. I have been asked to respond to certain opinions set forth by Dr. Darran Cairns, who I understand has been retained by the Patent Owner in this proceeding.[1] My rebuttal opinions are set forth below. All of my opinions are based on the documents I reviewed and my knowledge and professional judgment.

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[1] I only respond to selected opinions by Dr. Cairns relating to certain positions in his declaration. Doing so does not mean that I agree with any of Dr. Cairns' opinions that I do not respond to in this rebuttal declaration.

In forming the opinions in this rebuttal declaration, I considered the Declaration of Dr. Cairns (Ex. 2010), his deposition testimony (which I understand is being submitted as Exhibit 1017 by Petitioner), the exhibits cited in the Declaration of Dr. Cairns, and any other materials I refer to in this declaration in support of my opinions. In forming these opinions, I have also drawn on my knowledge and experience in designing, developing, researching, and teaching touch systems technology. My opinions are set forth below.

II. Response to Teaching Away Opinions

3. Dr. Cairns contends that "*Ingraham I* teaches away from using an oscillator and in fact eliminates it altogether." (Ex. 2010 at ¶ 93, citing Ex. 1007 at 1:28-48.) According to Dr. Cairns, "*Ingraham I* explains that oscillators can cause a 'no-pulse condition, to which the switching circuit may detrimentally respond.'" (*Id*. at ¶ 47.) I disagree.

4. The portion in *Ingraham I* referred to by Dr. Cairns does not support his analysis. As an initial matter, the portion of *Ingraham I* that Dr. Cairns refers to is not discussing a problem in capacitive responsive systems using oscillators, but rather, is referring to a problem in systems that are not truly capacitive responsive but require physical contact. (Ex. 1007 at 1:10-38). One of ordinary skill in the art would have understood from the portion referred to by Dr. Cairns that *Ingraham I*'s touch detection circuit would not suffer from the prior art

problems related to oscillator failure. *Ingraham I* states that the "circuits disclosed in **my patents** are not subject to the catastrophic failure of erroneous output switching caused by the failure of an oscillator." (Ex. 1007, 1:39-47 (emphasis added).) By "my patents," *Ingraham I* means "U.S. Pat. Nos. 4,731,548 and 4,758,735." (*Id.*) Therefore, one of ordinary skill in the art would have understood that *Ingraham I* acknowledges that the touch detection circuit in U.S. 4,758,735 (which is *Ingraham III*, Ex. 1010) is "**not** subject to the catastrophic failure of erroneous output switching caused by the failure of an oscillator." But, as I explained in my opening declaration (Ex. 1002), *Ingraham III* includes an "oscillator circuit 30" that is coupled to an identical touch detection circuit as in *Ingraham I* in a portable system. (Ex. 1010 at FIG. 1, 2:15-24; Ex. 1002 at ¶¶ 35, 36, 47, 48; Ex. 2010 at ¶ 59, "the detection circuit of *Ingraham III* is the same as that in *Ingraham I*"; *id.* at ¶ 112 (same).) Therefore, in my opinion, one of ordinary skill in the art would have recognized that *Ingraham I* does not teach away from using an oscillator because *Ingraham I*'s touch detection circuit is disclosed in *Ingraham III* (Ex. 1010, figure 1) coupled to an oscillator 30, and as acknowledged by *Ingraham I*, there is no "catastrophic failure of erroneous output switching caused by the failure of an oscillator" in *Ingraham III*.

5.   Dr. Cairns further contends that a person of skill in the art would not have looked to *Gerpheide* because "[c]ontemporaneous prior art disclose that a

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