EXHIBIT B

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TEXARKANA DIVISION

MAXELL, LTD.,

Plaintiff,

vs.

APPLE INC.,

Defendant.

Civil Action No. 5:19-cv-00036-RWS

DECLARATION OF DR. JOSEPH A. PARADISO IN SUPPORT OF APPLE INC.'S PROPOSED CLAIM CONSTRUCTIONS

I, Joseph A. Paradiso, declare and state as follows:

I. INTRODUCTION

1. My name is Dr. Joseph A. Paradiso. I am Professor and Associate Academic Head, Program in Media Arts and Sciences, at the Media Lab of the Massachusetts Institute of Technology. I am over the age of eighteen, and I am a citizen of the United States.

2. I have been retained by defendant Apple Inc. ("Apple" or "Defendant") in connection with civil action *Maxell, Ltd. v. Apple Inc.*, Case No. 5:19-cv-00036-RWS (E.D. Texas), to provide my opinions regarding technical background, level of ordinary skill in the art, and other subject-matter relevant to interpretation of certain disputed claim terms in the asserted claims of U.S. Patent Nos. 6,748,317 (the "'317 patent"), 6,580,999 (the "'999 patent"), 6,430,498 (the "'498 patent") (collectively, the "Asserted Navigation Patents").

3. I have been asked to provide my opinions on the following topics: (1) the technology relevant to the Asserted Navigation Patents; (2) the state of the art at the time the relevant patent applications were filed; (3) the level of ordinary skill in that field as of the filing date of the application that yielded the Asserted Navigation Patents; (4) how those of ordinary skill in the art at the time of the invention would have understood statements made by the patentee during prosecution of the applications; and (5) how those of ordinary skill in the art at the time of the invention would understand certain terms used in the claims of the Asserted Navigation Patents.

4. My opinions expressed in this declaration rely on my own personal knowledge and experience. However, where I also considered specific documents or other information in formulating the opinions expressed in this declaration, such items are referred to in this declaration. This includes, but is not limited to, the Asserted Navigation Patents, their prosecution histories (including, if applicable, *inter partes* review proceedings before the Patent

29. The goal of the Asserted Navigation Patents is to facilitate walking navigation, *i.e.*, providing location information to a walking user. *See* '498 Patent at 1:10-13. To achieve this, a POSITA would understand that the experience of the walking user would be improved by providing functional location determination for both open/outdoor areas and in obstructed/indoor areas. Especially at or around the time of the alleged invention, 1999, GPS/wireless signals worked well in outdoor or otherwise unobstructed areas, but were not ideal for providing location information indoors or in environments where signals are obstructed. *See, e.g.* Abowd, et al. "Cyberguide: A Mobile Context-Aware Tour Guide," Baltzer Journals (Sept. 23, 1996) ("Abowd") at 8 (APL-MAXELL_00713087) ("Indoors, however, GPS signals are weak or not available"); Starner, et al., "The Locust Swarm: An environmentally-powered, networkless location and messaging system," IEEE (1997) ("Starner") at 1 ("Unfortunately, the radio frequencies used [by GPS] prevent the system from being effective indoors.")

30. At around the time of the alleged invention, I am aware that combinations of infrared sensors and beacons were often used to provide location information in places where GPS was unavailable, such as indoors. For example, I have launched and run several projects in my own research team that leveraged and developed localization technology of various sorts, have put together classes at MIT involving indoor localization (e.g., MAS.S61, 'Emerging Technologies in Location-Aware Computing'), and have advised students in my own group and across the Media Lab and MIT in this area. Several of my projects have used IR and/or RF to locate users within a building or relative to one another. *See, e.g.*, UberBadge, a wearable computer platform with multiple processors, including RF and IR communication (https://resenv.media.mit.edu/#Projects#the-uberbadge).

31. Therefore, to achieve the goal of walking navigation, a POSITA would have understood, consistent with the disclosures in the specification, that a combination of GPS and

some means of indoor location determination, likely an infrared sensor, would be required to cover as many potential use scenarios as possible. Extrinsic evidence confirms that a POSITA at the time of the alleged invention would have known that an infrared ray sensor was commonly used, in conjunction with GPS, to obtain location information. Specifically, those skilled in the art understood that infrared ray sensors were especially adept at determining location when a walking user is indoors. *See, e.g.*:

- Starner at 1-2 (noting that radio frequencies used for GPS at that time prevented GPS from being effective indoors and proposing a solution that incorporates the use of a system of infrared receivers and transmitters);
- Abowd at 8-9 (noting the same problem and proposing as a solution the use of infrared receivers tuned to the same frequency as intermittently placed infrared beacons); and
- Marmasse, "comMotion: a context-aware communication system," Mass. Inst. of Tech. (Sept. 1999) (noting the use of infrared receivers and transmitters for "interior location sensing").

32. I have also been informed that the Patent Trial and Appeal Board adopted in IPR2019-00071 (*ASUSTek Computer Inc., et al. v. Maxell, Ltd.*) the construction that Apple now proposes. There, the Petitioner ASUSTek proposed the same construction offered by Apple here, and Maxell did not dispute it. The PTAB noted that the construction was "supported by the cited portions of the Specification of the '498 patent" (IPR2019-00071, Paper No. 7 at 9) which were also excerpted above.

33. I therefore agree with Apple's proposed construction because it reflects the understanding of a POSITA as of the priority date of the Asserted Navigation Patents: July 12, 1999.

34. I am further informed that Maxell agrees that this term should be construed in means-plus-function format, but contends that the function should be "getting location information denoting a present place of said portable terminal" and that the corresponding structure is "a wireless or cellular antenna, a GPS, a PHS, or the like; such a data receiver as an

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