UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE PATENT TRIAL AND APPEAL BOARD
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HTC Corporation and
HTC America, Inc.,
Petitioners

v.

INVT SPE LLC,
Patent Owner

_____

IPR Case No. IPR2018-01581
U.S. Patent No. 7,848,439

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**DECLARATION OF ZHI DING, PH.D. IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. § 311 *ET SEQ.* AND 37 C.F.R. § 42.100 *ET SEQ.*
(CLAIM 8 OF U.S. PATENT NO. 7,848,439)**

INTRODUCTION

1.   My name is Zhi Ding. I have been retained as a technical expert on behalf of HTC Corporation and HTC America, Inc. to provide assistance in the above-captioned matter. I understand that HTC Corporation and HTC America, Inc. are the Petitioners in this proceeding. I have no financial interest in or affiliation with the Petitioners or the Patent Owner, which I understand is INVT SPE LLC. My compensation does not depend upon the outcome of, or my testimony in, this *inter partes* review proceeding or any litigation proceedings.

2.   I have reviewed each of the following documents, which I am informed are also identified in the Petition.

EXHIBIT	DESCRIPTION
1001	U.S. Patent No. 7,848,439 to She et al. ("the '439 Patent")
1002	File History of U.S. Patent No. 7,848,439 to She et al.
1003	U.S. Patent No. 6,904,283 to Li et al. ("Li")
1004	U.S. Patent No. 7,221,680 to Vijayan et al. ("Vijayan")
1005	U.S. Patent No. 6,721,569 to Hashem et al. ("Hashem")
1006	U.S. Patent No. 5,596,604 to Cioffi et al. ("Cioffi")
1008	Curriculum Vitae of Zhi Ding, Ph.D.
1009	U.S. Patent No. 6,167,031 to Olofsson et al. ("Olofsson")

3.   I understand that the application leading to U.S. Patent No. 7,848,439

("the '439 Patent") was U.S. Application No. 11/719,611 filed on May 17, 2007.

This application was a national stage filing of PCT/JP2005/021246, filed on

November 18, 2005. The PCT application claimed priority to Chinese Application

No. 2004 1 0094967, filed on November 19, 2004, which I have been asked to treat

as the effective filing or priority date of the '439 Patent.

QUALIFICATIONS AND PROFESSIONAL EXPERIENCE

4.   I presently serve as a Professor in the Department of Electrical and

Computer Engineering at the University of California, Davis. I have held this

position since my appointment on July 1, 2000. I am also a private technical

consultant on various technologies related to information systems. I have more

than three decades of research experience on a wide range of topics related to data

communications and signal processing.

5.   I earned my Bachelor of Science degree in 1982 in wireless

engineering from the Nanjing Institute of Technology (later renamed as Southeast

University) in Nanjing, China. I earn my Master of Science degree in 1987 in

electrical engineering from the University of Toronto in Toronto, Canada. I earned

my Ph.D. in 1990 in electrical engineering from Cornell University in Ithaca, New

York.

6.   My responsibilities as a Professor at University of California, Davis, include classroom instruction on various topics of communication systems and signal analysis, as well as mentoring undergraduate students and supervising graduate students in their research and development efforts on various topics related to digital communications. I have directly supervised such research and development works ranging from signal detection to wireless networking. As the chief academic advisor, I have also directly supervised the completion of over 20 Masters theses and 25 Ph.D. dissertations on various topics related to digital communications. I have served full time as a faculty member at three major research universities in the United States over the past 28 years, including Auburn University from 1990 to 1998, University of Iowa from 1999 to 2000, and University of California, Davis, from 2000 to present.

7.   Since 1990, I have been selected as the principal investigator of multiple highly competitive federal and local research grants, including sixteen major research projects supported by the National Science Foundation and two research projects funded by the U.S. Army Research Office. These competitive research projects focused on developing more efficient and effective digital communication transceivers, networks, and signal processing tools. I have also participated in several large-scale projects supported by the Defense Advanced

Research Projects Agency (DARPA) with teams of researchers. I have applied for, and received support from, other federal, state, and industry sponsors.

8.   I have published over 170 peer-reviewed research articles in premier international journals, in addition to over 220 refereed technical articles at top international conferences on communications and information technologies. I also authored two books on communications technologies. My most recent book, co-authored with B.P. Lathi, is entitled, "Modern Digital and Analog Communication Systems," 5th edition, and was published by the Oxford University Press in 2018. The 4th edition of this book (published in 2009) had been widely adopted as an introductory textbook to communication systems.

9.   In addition to the 400 published technical papers that have been cited over 10,000 times according to Google Scholar, I am also co-inventor of 3 issued U.S. patents on communication technologies.

10.   I am a member of the Institute of Electrical and Electronics Engineers (IEEE) and was elevated to the grade of Fellow in January 2003 for contributions made in signal processing for communication. The IEEE is the world's largest professional society of engineers, with over 400,000 members in more than 160 countries. The IEEE has led the development of many standards for modern digital communications and networking, most notably, the IEEE 802 series of

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