

Filed on behalf of TQ Delta, LLC

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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CISCO SYSTEMS, INC.  
Petitioner

v.

TQ DELTA, LLC  
Patent Owner

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Case No. IPR2016-01020  
Patent No. 9,014,243

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**DECLARATION OF ROBERT SHORT, Ph.D.**

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I, Robert Short, do hereby declare as follows:

**I. INTRODUCTION AND SUMMARY OF OPINIONS**

1. I have been retained by TQ Delta, LLC (“Patent Owner” or “TQ Delta”) as an expert witness and have been asked to analyze U.S. Patent No. 9,014,243 (“’243 patent”).

2. I understand that Cisco Systems, Inc. (“Cisco” or “Petitioner”) filed a petition for *inter partes* review of the ’243 patent based on certain prior art references. I understand that the *inter partes* review proceeding has been docketed as IPR2016-01020.

3. I understand that the Patent Trial and Appeal Board (“PTAB” or “Board”) has initiated review of claims 1–25 of the ’243 patent based on the following references: (1) U.S. Patent No. 6,144,696 (“Shively”); (2) U.S. Patent No. 6,625,219 (“Stopler”); and (3) U.S. Patent No. 6,424,646 (“Gerszberg”).

**II. PROFESSIONAL BACKGROUND AND QUALIFICATIONS**

4. I am an expert in the field of digital communications, with a strong emphasis on the physical layer of communications systems.

5. I am a practicing electrical engineer with over 35 years of experience. I have attached as Exhibit A to this declaration a current copy of my *curriculum vitae*.

6. I received a Bachelor of Science degree in electrical engineering in 1975, graduating with honors. I worked for Motorola until late 1981, designing circuits, radar, and communication systems. I was employed by the Colorado Networks Operation of Hewlett-Packard from 1981 until 1984 designing computer networks, and for Sperry Corporation until 1989 designing military wireless networks.

7. I was awarded a Ph.D. in electrical engineering from the University of Utah in 1988 with a GPA of 3.95 out of a possible 4.00. My thesis involved physical layer techniques for sharing wireless channels in a wireless network environment using CDMA. I was invited, out a pool of over 800 applicants, to join the faculty of the University of Utah in 1989, where I taught courses at both the undergraduate and the graduate level, performed research into advanced wireless networks, and supervised a number of graduate students.

8. I left the University in 1995 to co-found a company. I have since been involved in a number of startup companies, all involving the design and development of communication systems and networks, including designing radios based various standards and assisting in the design of a wireline communications system. I was also employed with Alereon in Austin, Texas in 2003 and 2004, as Chief Engineer of a startup company focused on building integrated circuits for the multicarrier ultra-wideband personal area network environment. I have designed

or assisted in the design of a number of multicarrier systems, including several UWB systems, and a frequency hopping OFDM system based on the WiMAX standard. I have also designed or assisted in the design of various spread-spectrum and CDMA systems.

9. I am thoroughly conversant with communications standards and protocols and wrote a chapter in *WiMedia UWB* by Ghobad Heidari describing the ultra-wideband (UWB) physical layer. I am currently working with ViaSat in Carlsbad, California designing random-access communication systems for satellite networks using CDMA on the return link. I have published a number of seminal papers in refereed journals, have a number of patents, and am currently in high demand as a consultant.

### **III. COMPENSATION AND MATERIALS CONSIDERED**

10. I am being compensated for my time at a rate of \$340/hr. In addition, I am being reimbursed for my reasonable expenses incurred in connection with my work on this matter. My compensation is not dependent on the opinions that I offer or on the outcome of this *inter partes* review proceeding or any other proceeding.

11. I am not an employee of TQ Delta, or any of its affiliates, parents, or subsidiaries.

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