

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *inter partes* review of:

U.S. Patent 7,477,624 to Gan, *et al*

Atty. Docket: 3559.001IPR2

Filed: Herewith

For: **Approach for Managing the Use  
of Communications Channels  
Based on Performance**

**Declaration of Dr. Zhi Ding in Support of  
Petition for *Inter Partes* Review of U.S. Patent No. 7,477,624**

*Mail Stop Inter Partes Review*

**Attn: Patent Trial and Appeal Board**

Commissioner for Patents

PO Box 1450

Alexandria, VA 22313-1450

Commissioner:

I, Dr. Zhi Ding, declare as follows:

1. I have been retained on behalf of Marvell Semiconductor, Inc., MediaTek Inc., and MediaTek USA, Inc. for the above-captioned *inter partes* review proceeding. I understand that this proceeding involves U.S. Patent No. 7,477,624 to Gan, *et al.*, titled “Approach for Managing the Use of Communications Channels Based on Performance” (“the ’624 patent”) and that the ’624 patent is currently assigned to Bandspeed, Inc.

Marvell Semiconductor, Inc.  
MediaTek Inc.  
MediaTek USA, Inc.

2. I have reviewed and am familiar with the specification of the '624 patent filed on April 3, 2006. I will cite to the specification using the following format: ('624 patent, 1:1-10). This example citation points to the '624 patent specification at column 1, lines 1-10.

3. I have reviewed and am familiar with the file history of the '624 patent. I have also reviewed the reexamination of U.S. Patent No. 7,027,418 ("the '418 patent"). I understand that the '624 patent is a continuation of the '418 patent. I understand that the '624 patent and the '418 patent share a common specification.

4. I have reviewed and am familiar with the following prior art used in the Petition for *Inter Partes* Review of the '624 patent and/or referenced below:

**U.S. Patent No. 6,760,319** to Gerten, *et al.* ("Gerten"), titled "Fixed Frequency Interference Avoidance Enhancement." (Exhibit 1003.)

**U.S. Patent No. 6,418,317** to Cuffaro, *et al.* ("Cuffaro"), titled "Method and System for Managing Frequencies Allocated to a Base Station." (Exhibit 1004.)

**U.S. Patent No. 6,115,407** to Gendel, *et al.* ("Gendel"), titled "Frequency Hopping Communication Method and Apparatus for Modifying Frequency Hopping Sequence in Accordance with Counted Errors." (Exhibit 1005.)

**U.S. Patent No. 7,280,580** to Haartsen, *et al.* (“Haartsen”), titled “Hop Sequence Adaptation in a Frequency-Hopping Communication System.” (Exhibit 1006.)

**U.S. Patent No. 5,781,582** to Sage, *et al.* (“Sage”), titled “Frequency Agile Transceiver with Multiple Frequency Synthesizers Per Transceiver.” (Exhibit 1007.)

5. I have also reviewed the pages cited below from the Microsoft Press Computer Dictionary, Third Edition (Microsoft Press, 1997), provided as Exh. 1013.

6. The ’624 patent describes “managing the use of communications channels based on channel performance” in a communications network. (’624 patent, 1:46-48.) I am familiar with the technology described in the ’624 patent as of its earliest possible priority date of January 25, 2001.

7. I have been asked to provide my technical review, analysis, insights, and opinions regarding the ’624 patent and the above-noted references that form the basis for the grounds of rejection set forth in the Petition for *Inter Partes* Review of the ’624 Patent.

## **I. Qualifications**

8. I have 3 decades of experience in wireless communications and signal processing and have authored over 100 journal papers and 2 technical books on communication technologies.

9. I earned a Bachelor of Engineering degree from Nanjing Institute of Technology in Nanjing, China in 1982. I later received a Master of Applied Science degree from the University of Toronto in Toronto, Canada in 1987 and a Doctor of Philosophy degree from Cornell University in Ithaca, New York in 1990, both in Electrical Engineering.

10. I have been a professor of Electrical (and Computer) Engineering since 1990. For over two decades, I have taught classes that cover fundamentals of signal detection, communications, and systems. I am currently a professor in the Department of Electrical and Computer Engineering at University of California at Davis in Davis, California.

11. I have served as the steering committee chair of The Institute of Electrical and Electronics Engineers (IEEE) Transactions on Wireless Communications (1.2009 – 1.2011.). I was elevated to Fellow of IEEE in 2002 by the IEEE Signal Processing Society. I have also served as the Technical Program Chair of the IEEE Globecom 2006 (the flagship conference of the IEEE Communications Society). In 2013, I received the IEEE Communications Society Wireless Communications

Technical Committee Recognition Award. This annual award is presented to a person with a high degree of visibility and contribution in the field of “Wireless and Mobile Communications Theory, Systems, and Networks” according to the WTC Award website <http://bbcr.uwaterloo.ca/~wtc/awards.html>.

12. I am the co-author of the text book: B.P Lathi and Zhi Ding, “Modern Digital and Analog Communication Systems,” Fourth Edition, Oxford University Press, January 23, 2009. This textbook contains discussions on frequency hopping and its application in Bluetooth.

13. My Curriculum Vitae is provided as Exhibit 1014, which contains further details on my education, experience, publications, and other qualifications to render an expert opinion. My work on this case is being billed at a rate of \$475 per hour, with reimbursement for actual expenses. My compensation is not contingent upon the outcome of this *inter partes* review.

## **II. Level of Ordinary Skill in the Art**

14. I understand that the person of ordinary skill in the art is viewed at the time of invention. Based on the disclosure of the '624 patent, one of ordinary skill in the art would have a B.S. degree in Electrical and/or Computer Engineering, or an equivalent field, as well as at least 3-5 years of academic or industry experience in the communications field.

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.