

**UNITED STATES PATENT AND TRADEMARK OFFICE**

---

**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

---

HUAWEI DEVICE CO., LTD.,  
Petitioner

v.

FUNDAMENTAL INNOVATION SYSTEMS INTERNATIONAL LLC,  
Patent Owner

---

PETITION FOR *INTER PARTES* REVIEW  
OF U.S. PATENT NO. 7,834,586  
Case IPR No.: *To Be Assigned*

---

DECLARATION OF DR. JOHN LEVY.

---

## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
II.	QUALIFICATIONS .....	2
III.	SCOPE OF OPINION .....	6
IV.	MATERIALS REVIEWED AND CONSIDERED .....	7
V.	LEVEL OF ORDINARY SKILL IN THE ART .....	7
VI.	LEGAL PRINCIPLES OF VALIDITY .....	9
VII.	OVERVIEW OF U.S. PATENT NO. 7,834,586 (“586 patent”) (Ex. 1001) .....	12
	A. Prosecution History .....	15
	B. Priority Date .....	16
	C. Claim Construction.....	16
VIII.	OVERVIEW OF THE PRIOR ART REFERENCES .....	18
	A. Background and History of USB Technology .....	18
	B. USB 2.0 (Ex. 1007) .....	20
	C. Use of SE1 State in Various Contexts.....	26
	1. Shiga (Ex. 1009) .....	26
	2. Zyskowski (Ex. 1012).....	29
	3. Casebolt (Ex. 1013).....	29
	4. Cypress Semiconductor .....	30
	5. Kerai (Ex. 1015).....	31
	D. Theobald (Ex. 1006).....	32
	E. Dougherty (Ex. 1010).....	36

1.	“charged battery scenario” .....	38
2.	“dead battery scenario” .....	39
F.	TIA/EIA-644 (Ex. 1025) .....	40
IX.	SPECIFIC GROUNDS OF CHALLENGE.....	41
A.	Ground 1: Theobald, USB 2.0, and Shiga, in Combination, Renders Obvious Claims 1-3 and 8-13 .....	41
1.	Application of the Combination of Theobald, USB 2.0, and Shiga to Claims 1-3 and 8-13.....	42
2.	The Theobald/USB 2.0/Shiga Combination .....	55
B.	Ground 2: Dougherty and Shiga, in Combination, Renders Obvious Claims 1-2, 8-9, and 11-12 .....	63
1.	Application of the Combination of Dougherty and Shiga to Claims 1-2, 8-9, and 11-12 .....	63
2.	The Dougherty/Shiga Combination .....	72
C.	Ground 3: Dougherty, Shiga, and TIA/EIA-644 in Combination, Renders Obvious Claims 3, 10, and 13 .....	78
1.	The Combination of Dougherty, Shiga, and TIA/EIA-644 and its Application to Claims 3, 10, and 13.....	78
X.	CONCLUSION.....	83

## I. INTRODUCTION

1. My name is John Levy, and I have been retained by counsel for Huawei Device Co., Ltd. (“Huawei” or “Petitioner”) as an expert witness in support of Huawei’s petition for *Inter Partes* Review (“IPR”) and cancellation of claims 1–3 and 8–13 of U.S. Patent No. 7,834,586 (“586 patent”) (Ex. 1001), which I understand has been assigned to Fundamental Innovation Systems International LLC (“FISI” or “Patent Owner”).

2. My opinions are based on my years of education, research and experience, as well as my investigation and study of relevant materials. The materials that I studied for this declaration include all exhibits of the petition.

3. I may rely upon these materials, my knowledge and experience, and/or additional materials to rebut arguments raised by the patent owner. Further, I may also consider additional documents and information in forming any necessary opinions, including documents that may not yet have been provided to me.

4. My analysis of the materials produced in this investigation is ongoing and I will continue to review any new material as it is provided. This declaration represents only those opinions I have formed to date. I reserve the right to revise,

supplement, and/or amend my opinions stated herein based on new information and on my continuing analysis of the materials already provided.

5. I am being compensated \$575 per hour for my time spent working on issues in this case. I have no financial interest in, or affiliation with, the Petitioner, real parties-in-interest, or the Patent Owner. My compensation is not dependent upon the outcome of, or my testimony in, the present IPR or any litigation proceedings.

## II. QUALIFICATIONS

6. I am an expert in the field of computer systems and software, including computer bus design. I have studied, taught, practiced, and researched this field for over 40 years. I summarize in this section my educational background, work experience, and other relevant qualifications. A true and accurate copy of my curriculum vitae is attached as Ex. 1028.

7. I have a Bachelor of Engineering Physics degree from Cornell University, a Master of Science degree in Electrical Engineering from California Institute of Technology (“Caltech”), and a Ph.D. in Computer Science from Stanford University.

8. From 1965 to 1966 at Caltech, my field of study was information processing systems. My coursework included systems programming such as the

# 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.