UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HTC Corporation,
HTC America, Inc.,
LG Electronics, Inc.,
Samsung Electronics Co., Ltd., and
Samsung Electronics America, Inc.
Petitioners

V.

Parthenon Unified Memory Architecture LLC
Patent Owner

INTER PARTES REVIEW OF U.S. PATENT NO. 7,542,045 Case IPR No.: To Be Assigned

DECLARATION OF HAROLD S. STONE, PH.D., REGARDING U.S. PATENT NO. 7,542,045



TABLE OF CONTENTS

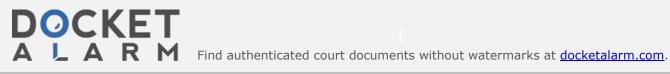
I.	INTRODUCTION					
	A.	Engagement	1			
	B.					
	C.	Compensation and Prior Testimony	4			
	D.	Information Considered				
II.	LEGAL STANDARDS FOR PATENTABILITY					
	A.	Anticipation	7			
	B.	Obviousness				
III.	TECHNOLOGY BACKGROUND					
	A.	A. Basics of Computer Architecture & Video Encoding/Decoding				
		1. Tom Shanley and Don Anderson, "PCI System				
		Architecture," Third Edition, Addison-Wesley Publishing				
		Company, Feb. 1995 ("Shanley") (Ex. 1019)	12			
		2. International Organization for Standardization, "ISO/IEC				
		11172-2:1993: Information technology—Coding of				
		moving pictures and associated audio for digital storage				
		media at up to about 1,5 Mbit/s—Part 2: Video," 1st ed.,				
		August 1, 1993 ("MPEG Standard") (Ex. 1004)	17			
	B. The Consolidation of MPEG and Other Multimedia Device's					
		Memory	22			
		1. Intel Corporation "Acceleration Graphics Port Interface				
		Specification," Revision 1.0 ("AGP") (Ex. 1024)	22			
		2. Video Electronics Standards Association published the				
		"VESA Unified Memory Architecture Hardware				
		Specifications Proposal," Version 1.0p ("VUMA") (Ex.				
		1025)	23			
		3. U.S. Patent No. 5,774,676 to Stearns ("Stearns") (Ex.				
		1007)	24			
		4. U.S. Patent No. 5,797,028 to Gulick ("Gulick 028") (Ex.				
		1023)	26			
IV.	1023)SUMMARY OF THE '045 PATENT					
	A.	Effective Filing Date of the '045 Patent	29			
	B.					
	C.	C. The Prosecution History of the '045 Patent				
	D.					
V.	LEV	EL OF ORDINARY SKILL IN THE ART	32			
VI.	OVERVIEW OF THE PRIOR ART REFERENCES					
	A.	U. S. Patent No. 5,546,547 ("Bowes") (Ex. 1003)	33			



	B.	MPEG Standard (Ex. 1004)				
	C.	S. Rathnam et al., "An Architectural Overview of the				
		Programmable Multimedia Processor, TM-1," IEEE				
		Proceedings of COMPCON '96, pp. 319-326 (1996)				
		("Rathnam") (Ex. 1005)	34			
	D.	Stearns (Ex. 1007)				
VII.	CON	OMPARISON OF THE PRIOR ART TO THE '045 PATENT				
	A.					
		1-2, 4-7, 9-10, 12-13, and 15-17	36			
		1. Claim 1	36			
		2. Claim 2	51			
		3. Claim 4	55			
		4. Claim 5	61			
		5. Claim 6	63			
		6. Claim 7	66			
		7. Claim 9	66			
		8. Claim 10	68			
		9. Claim 12	69			
		10. Claim 13	71			
		11. Claim 15	71			
		12. Claim 16	73			
		13. Claim 17	74			
	B. Ground B: Bowes, in view of MPEG Standard, renders					
		obvious, under 35 U.S.C. § 103, claims 1, 4-5, 7, 10, 12, and				
		16-17	74			
		1. Claim 1	77			
		2. Claim 4				
		3. Claim 5	91			
		4. Claim 7				
		5. Claim 10				
		6. Claim 12				
		7. Claim 16				
		8. Claim 17	96			
	C.	Ground C: Bowes, in view of MPEG Standard and Rathnam,				
		renders obvious, under 35 U.S.C. § 103, claims 9 and 15				
		1. Claim 9				
		2. Claim 15	100			
	D.	Ground D: Bowes, in view of MPEG Standard and Stearns,				
		renders obvious, under 35 U.S.C. § 103, claims 2, 6, and 13				
		1 Claim 2	102			



	2.	Claim 61	06
	3.	Claim 1310	07
VIII.	APPENDIX	A	1



I, Harold S. Stone, Ph.D., declare as follows:

I. INTRODUCTION

A. Engagement

1. I have been retained by counsel for the Petitioners to submit this declaration in connection with Petitioners' Petition for *Inter Partes* Review of claims 1-2, 4-7, 9-10, 12-13, and 15-17 of U.S. Patent No. 7,542,045 ("'045 Patent'') (Ex. 1001).

B. Background and Qualifications

- 2. I was awarded a Ph.D. and Master's Degree in Electrical Engineering from the University of California-Berkeley in 1963 and 1961, respectively. I received a Bachelor of Science degree in Electrical Engineering from Princeton University in 1960.
- 3. After my graduation from Berkeley in 1963, I served as a Research Engineer at Boeing and SRI International. I then held faculty positions at Stanford University and at the University of Massachusetts, where I served as a professor of computer science and electrical engineering.
- 4. In 1984, I started working for IBM as a Manager of Advanced Architecture Studies. In 1990, I became a Research Staff Member at IBM. During my time at IBM, I managed and conducted research in the area of memory systems and optical interconnections. I worked at IBM until 1994, when I became a Fellow at the NEC Research Institute, the highest technical position in the company. At



DOCKET

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.

