

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HTC CORPORATION, HTC AMERICA, INC., and LG ELECTRONICS, INC.,
Petitioners,

v.

PARTHENON UNIFIED MEMORY ARCHITECTURE LLC,
Patent Owner.

Case No. IPR2015-01502
U.S. Patent No. 7,542,045

PETITIONERS' REPLY

Table of Contents

I. INTRODUCTION1

II. *BOWES* AND MPEG DISCLOSE THE CLAIMED VIDEO DECODER1

 A. *Bowes* Discloses a Video Decoder.....1

 B. The *Bowes*/MPEG Combination Uses Shared Memory.7

 C. *Bowes* Can Retrieve The Data It Stores.11

III. *BOWES* AND MPEG DISCLOSE THE CLAIMED ARBITER.....12

IV. REASONS TO COMBINE *BOWES* AND MPEG15

V. CERTAIN DEPENDENT CLAIMS21

VI. CONCLUSION.....21

Exhibit List

Exhibit #	Reference Name
1001	U.S. Patent No. 7,542,045 (“the ’045 patent”)
1002	File History for U.S. Patent No. 7,542,045
1003	U. S. Patent No. 5,546,547 (“Bowes”)
1004	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”)
1005	S. Rathnam et al., “An Architectural Overview of the Programmable Multimedia Processor, TM-1,” IEEE Proceedings of COMPCON ’96, pp. 319-326 (1996) (“Rathnam”)
1006	R.J. Gove, “The MVP: A Highly-Integrated Video Compression Chip,” Proceedings of the IEEE Data Compression Conference (DCC ’94), pp. 215-224 (March 29-31, 1994) (“Gove”)
1007	U.S. Patent No. 5,774,676 (“Stearns”)
1008	Declaration of Dr. Santhana Chari (“Chari Decl.”)
1009	International Organization for Standardization, Website of ISO/IEC 11172-2
1010	WorldCat Entry for Rathnam
1011	Patent Owner Claim Construction Brief in Case No. 2:14-cv-690, April 7, 2015
1012	Patent Owner Claim Construction Brief in Case No. 2:14-cv-902, June 18, 2015
1013	District Court’s Preliminary Constructions in Case No. 2:14-cv-690
1014	Brad Hansen, The Dictionary of Multimedia, 1997
1015	U.S. Patent No. 8,681,164
1016	Excerpt of File History for U.S. Patent No. 8,681,164
1017	RESERVED
1018	RESERVED
1019	Shanley, et al., “PCI System Architecture,” Addison-Wesley

Exhibit #	Reference Name
	Publishing Company, 1995 (3rd ed.) (“Shanley”)
1020	Stone, H., “Microcomputer Interfacing,” Addison-Wesley Publishing Company, 1982
1021	RESERVED
1022	RESERVED
1023	U.S. Patent No. 5,797,028 (“Gulick 028”)
1024	“Accelerated Graphics Port Interface Specification,” Intel Corporation, July 31, 1996 (Revision 1.0) (“AGP”)
1025	VESA Unified Memory Architecture Hardware Specifications Proposal,” Version 1.0p (“VUMA”)
1026	U.S. Patent No. 5,712,664 (“Reddy”)
1027	U.S. Patent No. 5,442,748 (“Chang”)
1028	U.S. Patent No. 5,432,900 (“Rhodes”)
1029	Curriculum Vitae of Dr. Harold Stone
1030	Expert Declaration of Dr. Harold Stone (“Stone ’045 Decl.”)
1031	Settlement Agreement
1032 [NEW]	Reply Declaration of Dr. Harold Stone (“Stone Reply Decl.”)
1033 [NEW]	U.S. Patent No. 5,682,484 (“Lambrecht ’484”)
1034 [NEW]	U.S. Patent No. 5,375,068 (“Palmer”)
1035 [NEW]	U.S. Patent No. 5,557,538 (“Retter”)
1036 [NEW]	K. Konstantinides and V. Bhaskaran, “Recent Developments in the Design of Image and Video Processing ICs,” Chapter 2 - VLSI Signal Processing Technology, Kluwer Academic Press, 1994
1037 [NEW]	Deposition Transcript of Dr. Mitchell A. Thornton, Ph.D. (June 17, 2016)
1038	Information technology – Generic Coding of Moving Pictures and

Exhibit #	Reference Name
[NEW]	Associated Audio Information: Systems, ISO/IEC 13818-1:1996, ITU-T Rec. H.222.0 (1996) ("MPEG-2 Standard")
1039 [NEW]	Srinath V. Ramaswamy and Gerald D. Miller, "Efficient Implementation of the Two Dimensional Discrete Cosine Transform for Image Coding applications on the DSP96002 Processor," Proc. of the Midwest Conf. on Circuits and Systems, (IEEE 1993)
1040 [NEW]	U.S. Patent No. 6,081,750 ("Hoffberg")
1041	RESERVED
1042	RESERVED
1043 [NEW]	Curriculum Vitae of Dr. Harold Stone (Revised)

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.