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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HEWLETT-PACKARD COMPANY,
Petitioner

v.

MCM PORTFOLIO LLC,
Patent Owners

Case No. IPR2013-00217
Patent No. 7,162,549

Electronically Filed and served: Thursday, June 27, 2013

# Preliminary Response

## Contents

I. Lack of Standing – Patent Owners sued/served HP's privy Pandigital in 2011 for infringement of the '549 patent ..... 5

II. The Claims 7, 11, 19 and 21 ..... 10

III. Claim construction ..... 11

A. Agreed constructions ..... 11

1. "flash adapter" and "flash adapter section." ..... 11

2. Determining limitations ..... 11

B. Disputed Construction. ..... 11

1. "manage error correction … including bad block mapping" ..... 11

IV. The HP Petition improperly relies on alleged admissions, public use prior art, and confidential, unpublished materials ..... 12

A. An IPR petition may be based "only the basis of prior art consisting of patents or printed publications. 35 U.S.C. 311(b)(emphasis supplied) ..... 12

B. Multimedia cards specifications cannot be introduced as evidence by admitting that the cards themselves are known. ..... 13

C. HP relies on the multimedia specifications to prove critical claim elements in AwYong and Battaglia/Samsung Datasheet ..... 14

1. The claim charts cite the specifications to show Medium ID for both AwYong and the Battaglia/Samsung combination: ..... 15

2. The claim charts cite the specifications to show Bad Block Mapping for both AwYong and the Battaglia/Samsung combination. ..... 15

V. The claims of the '549 are entitled to a filing date of July 6, 2000; this antedates AwYong, Battaglia and the Samsung Datasheet. ..... 17

VI. The References do not show all claim limitations and/or are not prior art ..... 19

A. AwYong ..... 19

1. AwYong does not show bad block mapping ..... 19

2. AwYong does not disclose a medium ID. ..... 20

3. AwYong is not prior art. ..... 20

B. Battaglia and Kobayashi/Kikuchi do not show the claimed invention ..... 21

1. Battaglia's processor is NOT the claimed controller chip ..... 21

2. Battaglia/Samsung does not disclose a medium ID ..... 24

3. Battaglia does not disclose that its processor conducts bad block mapping. .. 24

4. Battaglia is not prior art. ..... 24

C. Kobayashi in view of Kikuchi ..... 25

1. The examiner repeatedly cited Kobayashi to show a detector or interface mechanism that determined whether a flash card had a controller ..... 25

2. HP incorrectly states that the Kobayashi ATA controller 124 uses "firmware" to conduct bad block mapping, and impermissibly attributes to two different controllers the combined functionality required by the claimed controller chip. ..... 26

3. Kicuchi is cumulative of Hasbun..... 30

4. Even if Kikuchi's "ATA" controller chip could be incorporated into Kobayashi's ATA controller 124, it would not yield the claimed invention that requires the controller chip be able to "selectively" conduct error correction, including bad block mapping. 32

VII. Summary ..... 34

Exhibit List

| | |
|---|---|
| MPL 2001 | Complaint, Technology Properties Limited LLC v. Pandigital, Inc., No. 2:11-cv-00372-TJW, (E.D. Tex. 2011), filed August 24, 2011 |
| MPL 2002 | Notice of Appearance of James P. Martin on behalf of Pandigital, Inc. dated 10/05/11 |
| MPL 2003 | HP Digital Photo Frame - User Guide DF730p1, DF940p1, df1010p1 |
| MPL 2004 | HP Digital Photo Frame - User Guide Metadata |
| MPL 2005 | df730p1_datasheet_030811 |
| MPL 2006 | 110824 MLD - Apotheker ITC PR |
| MPL 2007 | 080402 BES - Baca, Product Report v.5 - Addendum |
| MPL 2008 | 080829 BES - Light, Product Report v.6 |
| MPL 2009 | 081121 BES - Baca, 086 disc |
| MPL 2010 | 100511 MLD - Roeder, Mtg Follow Up |
| MPL 2011 | HP Picture Frame Product Support |
| MPL 2012 | Panditigal HP Picture frame on Amazon |
| MPL 2013 | 036-00 Order Granting 31 Mtn to Stay |
| MPL 2014 | 2013-03-18 F.R. Ntc of Issuance of a Lmtd Exclusion Order_Cease_Desist Orders_Term of Inv |
| MPL 2015 | HP Digital Picture Frame - DF1010P1 US'549 Claim Chart |
| MPL 2016 | Declaration of Douglas Lum |
| MPL 2019 | US Patent No. 6,438,638 |
| MPL 2020 | 549 Prosecution History Summary |
| MPL 2024 | Hasbun, US5740349 |

## I. Lack of Standing – Patent Owners sued/served HP's privy Pandigital in 2011 for infringement of the '549 patent.

Hewlett-Packard Company ("HP") lacks standing to bring this IPR. HP is a privy of Pandigital, Inc., a company the Patent Owners sued for infringement of the '549 patent more than a year prior to the filing of the instant IPR, a still pending action that HP failed to include in its mandatory notice of related cases despite having been notified of it by the Patent Owners in connection with Patent Owners prior notices of HPs own infringement. The relevant statute 35 U.S.C. 315(b), reads in material part,

> (b) PATENT OWNER'S ACTION.—An inter partes review may not be instituted if the petition requesting the proceeding is filed more than 1 year after the date on which the petitioner, real party in interest, or privy of the petitioner is served with a complaint alleging infringement of the patent

As Pandigital itself could not bring this IPR, HP, its privy, also cannot bring this IPR.

The instant IPR was filed on March 27, 2013. More than a year prior to the filing of the instant IPR, the Patent Owners sued Pandigital, Inc. for infringement of the US. Pat. No. 7,162,549, filed August 24, 2011, with respect to Digital Picture Frames ("DPFs"). *Technology Properties Limited LLC v. Pandigital, Inc.*, No. 2:11-cv-00372-TJW, (E.D. Tex. 2011), (hereinafter, the "Texas Action"). MPL 2001. The complaint alleges, at paragraph 47, infringement of Patent Number 7,162,549, including claims 7, 11, 17, 19 and 21, by virtue of direct, contributory and induced infringement, in connection with DPFs of which Pandigital's PI8004W01 is given as an example. MPL 2001; p. 12.

Since February, 2011, HP sells, and still sells, under its own name, infringing Digital Picture Frames ("DPFs") made by Pandigital, Inc.[1], that HP identifies as made by Pandigital and

[1] MPL has confirmed infringement of the DF1010pf, made by Pandigital and resold by HP. MPL 2016.

that are the subject of the Texas Action. MPL 2003; p.20[2] Those DPFs sold by HP were among the DPFs accused in the Texas Action. They were being sold on the date of filing of the Texas Action (August 24, 2011). They were being sold on the date of service of the Texas Action on Pandigital (October 5, 2011.) They were being sold continuously until the date of filing of the instant IPR.

The Pandigital sales to HP of these infringing Pandigital-made DPFs, and HP's re-sales, are within the scope of the Texas Action complaint. MPL 2001.

The Texas Action was co-filed with an ITC investigation against the same defendants. *Certain Digital Photo Frames and Image Display Devices and Components Thereof, Investigation,* No. 337-TA-807, instituted on Sept. 27, 2011. On motion, the Texas Action was stayed pending completion of the ITC investigation. MPL 2014. The ITC proceedings terminated on March 18, 2013, with a limited exclusion order. MPL 2082; 78 Fed. Reg. 16707-9 (March 18, 2013). The exclusion order, MPL 2014, stated at 16709:

> The Commission has determined that the appropriate form of relief includes a limited exclusion order prohibiting: (1) The unlicensed entry of digital photo frames and image display devices and components thereof that infringe one or more of … claims 1, 7, 11, 17, 19, and 21 of the '549 patent, which are manufactured abroad by or on behalf of, or are imported by or on behalf of, Pandigital.
>
> …
>
> Appropriate relief also includes cease and desist orders prohibiting: (1) Pandigital … from conducting any of the following activities in the United States: importing, selling, marketing, advertising, distributing, offering for sale, transferring (except for exportation), and soliciting U.S. agents or distributors for digital photo frames and image display

[2] HP Digital Photo Frame - User Guide DF730p1, DF940p1, DF1010p1, MPL 0003, identifies at page 20 the supplier of the DPFs as Pandigital Inc. The PDF metadata indicates the User Guide was created on 02/04/11. MPL 0004 The companion Datasheet, MPL 0005, bears a date of 02/08/11. HPs included product support literature refers customers to Pandigital for e-mail product support. MPL 0011 at p.2. HP's relevant warranty, MPL 0003 at p. 19, includes a telephone number that refers on to Pandigital. As well, as of April 23, 2013, Amazon identifies HP DPFs as the Products of both Pandigital and HP. MPL 0012.

devices and components thereof that infringe one or more of … claims 1, 7, 11, 17, 19, and 21 of the '549 patent…

HP was fully aware of this Pandigital ITC investigation and the Texas Action because the Patent Owners informed HP of both after having previously notified HP of *their* infringement of the '549 patent by selling DPFs.[3] On information and belief, HP was also aware of the ITC exclusion order because their supplier, Pandigital was ordered to stop selling covered DPFs, and that would have included sales to HP. Yet in its filing, having been so-notified and informed, and further in view of the prior notices of infringement of the '549 patent for selling covered DPFs, HP failed to notify the PTAB of the pendency of the Texas Action in its mandatory notices which required it to identify such litigation.

Under controlling law, *infra,* HP is in privity with Pandigital in that action by virtue of its sale of infringing Pandigital DPFs which are subject to the Texas Action. As a privy, HP is barred from filing the instant IPR petition.

Privies include successive owners of the same property. *Taylor v. Sturgell*, 553 U.S. 880 (2008), 18A Charles Alan Wright & Arthur R. Miller, *Federal Practice & Procedure*.[4] Thus where two parties are in privity, a judgment against a first owner of property is binding on a

[3] Ltr. Dated Aug. 24, 2011, to HP CEO Leo Apotheker. MPL0006. HP was previously directly notified of its infringement of the '549 in connection with its DPF products in a series of communications that began with a letter dated April 2, 2008. MPL 0007. That letter identifies HPs 7" and 8" DPF products as exemplary. The letter indicates it attached a Product Report v.5 – Addendum detailing how the HP 7" DPF and the HP 8" DPF infringed the '549 patent. Reminders were sent with a letter dated August 29, 2008, MPL 0008, and communicated in meetings, with letter confirmations, on November 20, 2008, MPL 0009 and May 10, 2010, MPL 0010. Finally, the MPL notified HP of The ITC investigation and the Texas Action, regarding DPFs. MPL 0006. Pandigital is identified as a respondent/defendant in that communication. .

[4] "Qualifying relationships include, but are not limited to, preceding and succeeding owners of property, bailee and bailor, and assignee and assignor." *Sturgell*, 553 U.S. at 894. "The term privity denotes mutual succession or relationship to the same rights of property." 18A Wright & Miller §4449, n32.

second successive owner of the property on material adjudicated issues.[5] A right holder does not have to sue, successively, each and every owner of the property to prove issues already decided.

The issue is not control of litigation or a right to control litigation one finds in many sale of goods cases. These cases normally involve a suit against a customer where the issue is whether the seller/manufacturer is or should be bound by the outcome. Rather, the law has long recognized that successive owners of the same property are privies and are bound by prior judgments that affect the property. *Sturgell* and *Synopsis,* respectively*; supra*.

Consider what would happen were there no privity in cases such as this where Pandigital is the manufacturer and HP is the customer, a re-brander as here, who itself has been accused of infringement and has a potentially large infringement exposure. A manufacturer may be expected to have one or more such customers. If one, or successive ones, of such customers, having themselves been accused of infringement with respect to the same products, and having been notified of the action against the supplying manufacturer, could bring IPRs after its supplying manufacturer was sued for infringement, and at any time, years after the manufacturer suit was filed, a fundamental purpose for 315(b), the prevention of harassment of the patent owner by parties having a common interest in an actual lawsuit, will have been frustrated.[6] Future patent owners will be forced to name or to sue all possible customers in the lawsuit against manufacturers simply to avoid such harassment.

[5] The Office evaluates privity by determining whether parties are "sufficiently close" enough to justify binding the parties to the statutory estoppel provisions in a manner akin to collateral estoppel. Fed. Reg., Vol. 77 No. 157 (Aug. 14, 2012), at 48759 Paragraph 5. *See also,* Statement of Senator Kyl, Legislative History, 154 Cong. Rec. S9987 (daily ed. Sept. 27, 2008)("Privity is essentially a shorthand statement that collateral estoppel is to be applied in a given case. . . .).

[6] The privity requirement is included to assure proper application of the statutory estoppel provisions; in turn, to protect patent owners from harassment via successive petitions by the same or related parties, and to prevent parties from having a "second bite at the apple". Fed. Reg., Vol. 77 No. 157 (Aug.14, 2012), at 48759 Paragraph 2.

Recently, in *Synopsys v. Mentor Graphics Corporation*, IPR2012-00042, Decision, February 22, 2013, the PTAB denied a request under 35 U.S.C. 315(b) because *Mentor Graphics* had not demonstrated that the petitioning party was dealing in the very products that were subject to the infringement action against the alleged privy on the dates in question.[7]

> "[W]hen one party is a successor in interest to another with respect to a particular property, the parties are in privity only with respect to an adjudication of rights in the property that was transferred; they are not in privity for other purposes, such as an adjudication of rights in other property that was never transferred between the two. Put another way, the transfer of a particular piece of property does not have the effect of limiting rights of the transferee that are unrelated to the transferred property."

*Id.* at 17 (citing *International Nutrition Co. v. Horphag Research, Ltd.*, 220 F.3d 1315, 1329 (Fed. Cir. 2000)).

*Synopsys* underscores that there is privity here because the very products involved in the Texas Action are the products HP rebrands and resells. They are Pandigital products. They are accused of infringement of the '549 patent in the Texas Action, an action filed more than a year prior to the instant petition.

As a privy, HP lacks standing to bring the instant request.

While not controlling on the issue of privity, the patent owners urge the Board to give weight the fact that HP failed to include the Texas Action in their mandatory notices even though HP was made aware of the Texas Action at least due to the Patent Owners concurrent notification thereof, particularly in view of the fact that patent owners had repeatedly notified HP of its own infringement of the '549 patent by selling covered DPFs.

[7] Mentor Graphics had contended that that petitioner Synopsis, Inc. was in privity with EVE-USA, Inc. ("EVE"), a company that Mentor Graphics had sued for infringement 2006. The basis for the allegation of privity was the acquisition by Synopsis of Eve on October 4, 2012, just after Synopsis had filed its IPR petition (Sept. 26, 2012). The products being made and sold by Eve in 2012 were not the subject of the 2006 lawsuit. This lack of identity of products with the 2006 suit was critical to the finding that there was no privity.

## II. The Claims 7, 11, 19 and 21

7. A method comprising:

using a controller chip to interface a flash storage system with or without a controller to a computing device, the controller chip comprising a flash adapter, wherein the flash storage system comprises a flash section and at least a medium ID;

determining whether the flash storage system includes a controller for error correction; and

in an event where the flash storage system does not have a controller for error correction, using firmware in the flash adapter to perform operations to manage error correction of the flash section, including bad block mapping of the flash section in the flash storage system that is coupled to the flash adapter section.

11. A system comprising:

a computing device;

a flash storage system comprising a flash section and at least a portion of a medium ID; and

a controller chip coupled between the computing device and the flash storage system to interface the flash storage system to the computing device, the controller chip comprising an interface mechanism capable of receiving flash storage systems with controller and controllerless flash storage systems, a detector to determine whether the flash storage system includes a controller for error correction and a flash adapter which comprises firmware to perform, in an event where the flash storage system does not have a controller for error correction, operations to manage error correction of the flash section, including bad block mapping of the flash section in the flash storage system that is coupled to the flash adapter section.

19. The method of claim 7, wherein the flash adapter further comprises a plurality of interfaces for receiving a plurality of flash storage systems.

21. The system of claim 11, wherein the flash adapter further comprises a plurality of interfaces for receiving a plurality of flash storage systems.

(The underlining indicates the limitations added in the amendment dated June 2, 2006. A notice of allowance followed. HP 1015, at 520-521.)

# III. Claim construction

## A. Agreed constructions

### 1. "flash adapter" and "flash adapter section."

The ITC construed both "flash adapter" and "flash adapter section" to mean "a section of the controller chip that enables communication with the flash storage system." HP 1030, pages 71-77.[8]

### 2. Determining limitations

#### *a) "determining whether the flash storage system includes a controller for error correction"*

#### *b) "a detector to determine whether the flash storage system includes a controller for error correction"*

The Patent Owners agree with Dr. Banerjee that the identification of card type is one way of determining whether they contain a controller for error correction. *Id.* HP 1008 at 21, ¶ 72.

## B. Disputed Construction.

### 1. "manage error correction … including bad block mapping"

During the original examination, "bad block mapping" was deemed to be a particular form of "error correction." Prior art that conducted bad block mapping conducted error correction. MPL 2013, Action Dated 2005-06-03, HP 1015, 411, at 415, lines 7-8. (Examiner: "As a type of error correction is not specified by the claims, the claimed "bad block mapping" is not set forth.")

However, HP would make bad block mapping distinct from error correction. For example, the expert report of Banerjee , at ¶ 28, page 7 (HP 1008), states that error correction is a well-established concept. He specifically identifies the parity bit scheme described in the specification of the SmartMedia card as an example of correction schemes that were well

[8] While agreeing with the construction, HP consistently applies it in a manner that reads "chip" out of "controller chip."

known.[9] *Id*. Whether this is true or not, the claims do not require and are not limited to such error correction.

By defining error correction in the manner it suggests, it appears that HP might be attempting to erect a non infringement position by suggesting that proof of bad block mapping does not prove "error correction;" or that one must also prove, in addition to bad block mapping, some kind of error correction they state is "well known." It may also be their purpose to suggest their references are more pertinent than the references relied upon by the examiner in the original prosecution. Regardless, HP's definition is much narrower that that used in the underlying prosecution and must be rejected. By rule, 42.100(b), the standard of claim construction in an IPR is "broadest reasonable." The examiner's construction of the term given in the original prosecution is not unreasonable: bad block mapping is a form of error correction and if that is found in the prior art (or in an accused device), together with the other limitations of the claim element, the limitation "manage error correction … including bad block mapping" is met.

## IV. The HP Petition improperly relies on alleged admissions, public use prior art, and confidential, unpublished materials

### A. An IPR petition may be based "only the basis of prior art consisting of patents or printed publications. 35 U.S.C. 311(b)(emphasis supplied)

By statute, 35 U.S.C. 311(b), the scope of an IPR petition may be based "only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications." An IPR may not be ordered except on those grounds and evidence. Cf., *Ex parte McGaughey*, 6 USPQ2d 1334, 1337 (Bd. Pat. App. & Inter. 1988). In particular, the evidence cannot consist of admissions. *Id.* at 3. Perforce, the evidence cannot be

[9] MPL does not agree that the SmartMedia specifications are printed publications or admitted prior art.

based on public use, personal knowledge of the inventor (102(f)), prior invention 102(g), or public knowledge. The evidence must consist only of patents and printed publications.

**B. Multimedia cards specifications cannot be introduced as evidence by admitting that the cards themselves are known.**

The HP petition and supporting expert report relies on allegedly admitted public use prior art, namely specific flash memory card types, and uses these admissions as a justification to extend the scope of the alleged admissions to include the associated flash memory card type specifications.[10]

> 37. Because these types of flash memory cards were disclosed in the '549 Patent, *see id.* at 2:27-54, the cards themselves and their specifications, which define their properties, are admitted prior art.

HP 1008, pp. 9-10.

The attempt to introduce these specifications via alleged admission rather than as printed publications is glaring. HP all but admits that the specifications are not printed publications. It is worthy of note that the MemoryStick, HP 1021, the SD specification, HP 1019, are both marked, on every page, confidential. These are not, by any stretch, printed publications. And, even if admissions could be considered in an IPR petition, the scope of the alleged admission (at most, only the cards themselves are admitted) is far more limited that HP alleges, and certainly would not extend in any case to non public specifications. By analogy, if one admits that Coke is

[10] The specifications introduced as part of the so-called admission consist of each and every specification between HP 1017 and HP 1025, namely the CompactFlash Specification Revision 1.4, the MultimediaCard Product Manual)(2000), the SD memory card specifications, part 1, physical layer specification, version 1.00 (March 2000), MMC System Specification Version 2.11, MemoryStick Specification Version 1.2, SmartMedia Software Algorithm Guidelines Version 1.00, SmartMedia ECC Reference Manual Version 2.1, the SMIL (SmartMedia Interface Library) Hardware Edition Version 1.00, Toshiba Corporation, 2000-07-01, and the SmartMedia Electrical Specifications Web-online V. 1.00 (1999-05-19)

known, HP would assert that the specifications of the coke formula were incorporated in that admission so as to be competent prior art against an independent inventor of a formula that might be the same.

In order to be competent evidence HP is required to establish that the cited specifications were available to the public without confidentiality restrictions prior to the effective date. *Dey, L.P. v. Sunovion Pharmaceuticals, Inc.*, slip opinion 12-1428 (Fed. Cir. May 16, 2013)(Third party use must be non confidential to be a public use). Merely because an openly sold product is in public use, the confidential specifications used to make it are not. *Metallizing Engineering Co. v. Kenyon Bearing & AP Co.*, 153 F. 2d 516 (2nd Cir. 1946)(L. Hand),

In Gillman v. Stern, supra, 2 Cir., 114 F.2d 28, it was not the inventor, but a third person who used the machine secretly and sold the product openly, and there was therefore no question either of abandonment or forfeiture by the inventor. The only issue was whether a prior use which did not disclose the invention to the art was within the statute; and it is well settled that it is not. *Id.*, at 520.

**C. HP relies on the multimedia specifications to prove critical claim elements in AwYong and Battaglia/Samsung Datasheet**

With the manifestly incorrect assumption that the specifications are competent evidence, HP then leverages this "public use" evidence into their proofs of critical elements not otherwise shown, or even asserted to be shown by HP, in several of the references they do rely on:

> 38. Because the prior art references that anticipate and render obvious the challenged claims of the '549 Patent likewise disclose systems capable of accepting and interfacing with these types of memory cards (and, specifically, both controllerless cards and cards having a controller), the cards themselves and the card specifications are incorporated and disclosed in the prior art references.

HP 1008 at 10. HP's petition relies on the confidential multimedia specifications to establish the following limitations of claims 7 and 11 with respect to AwYong and Battaglia/Samsung:

**1. The claim charts cite the specifications to show Medium ID[11] for both AwYong and the Battaglia/Samsung combination:**

HP's AwYong claim chart, Pet. at 26 (claim 7) and 27 (claim 11), cites the specifications of the MMC, CF and SmartMedia support for the Medium ID limitation. HP does the same thing for the Battaglia/Samsung claim charts: Pet. At 39 (claim 7) and 41 (claim 11).

**2. The claim charts cite the specifications to show Bad Block Mapping for both AwYong and the Battaglia/Samsung combination.**

***a) AwYong:***

HP's claim chart for claims 7 and 11 for AwYong, Pet. at 27 and 28, at pp. 33-55, cites the SmartMedia specifications to show bad block mapping. As well, the supporting Banerjee declaration, HP 1008, ¶ 83, p. 26, relies on the SmartMedia specifications to show bad block mapping:

> AwYong likewise discloses bad block mapping for the SmartMedia card. As noted previously, bad block mapping is required under the SmartMedia specifications. Thus, by virtue of its ability to accept and interface with SmartMedia cards, AwYong's controller performs bad block mapping.

[11] Claims 7 and 11 both require that the "flash storage systems" comprise a "Medium ID.

***b) Battaglia/Samsung:***

HP's claim Battaglia/Samsung claim chart, claim 7 and 11, Pet. at 40 and 42, relies on the SmartMedia specifications to show bad block mapping:

> "The skilled artisan would have been motivated to do so by the SmartMedia Specifications, which mandate that a host controller is needed to perform these actions."

Likewise, Banerjee, HP 1008, at ¶ 95, p. 32:

> "Because the system disclosed in Battaglia interfaces with SmartMedia cards – Battaglia's disclosure suggests error correction and bad block mapping. … This result is dictated by the SmartMedia specifications…."

***c) Support for cards with controllers <u>for error correction</u>.***[12]

The Petition's AwYong claim chart (Pet. at 26, 28) cites to AwYong pp. 48-49 and to "infra" to show that MMC and CF cards have controllers for error correction comprising bad block mapping. The cited pages reference a storage card-interface register that identifies bits for SM, CF and MMC card detect pins. The referenced "infra" shows that the AwYong controller has an ECC (here the type of error correction is not specified, the claimed "bad block mapping" is not set forth) circuit for SmartMedia but not for MMC. The Banerjee declaration states, at ¶ 81, HP 1008 at 25, that the

> "CompactFlash and MMC cards … have a controller for error correction."

The Petition cites no support in AwYong. The claim chart instead cites the CompactFlash and MMC card specifications.

*Id.* at ¶¶ 48-50, and 55-57.

AwYong and Battaglia/Samsung do not establish by themselves the critical claim limitations identified above. The support for these limitations (and the Banerjee opinion given)

[12] Both claims 7 and 8 require that the controller chip determine whether the flash storage system "includes a controller for error correction."

is alleged to be established instead by the so-called admitted multimedia card specifications. Without this inadmissible evidence, the Petition's reliance on AwYong and Battaglia/Samsung fails.

## V. The claims of the '549 are entitled to a filing date of July 6, 2000; this antedates AwYong, Battaglia and the Samsung Datasheet.

The HP Petition misstates '549's benefit claim. The Banerjee declaration states the '549 patent claims the benefit of three non provisional applications[13] and one provisional[14]. HP 1008 at 9. However, the 549 patent includes a certificate of correction dated 2007-03-13.

> In Column 1,
> Line 17, add the following text: -- Ser. No. 10/039,685 and Ser. No. 10/063,021 are continuations-in-part of Ser. No. 09/610,904, filed on Jul. 6, 2000, now U.S. Pat. No. 6,438,638 entitled "Flashtoaster for Reading Several Types of Flash-Memory Cards With or Without a PC." --

HP 1001, at 54. This certificate corrects the patent's a benefit to additionally refer to application number 09/610,904, filed on 2000-07-06, now US Pat No. 6,438,638 (hereinafter, collectively "'638") MPL 2019.

The entire disclosure of the '638 (e.g., Figs. 1-10 and description) is carried forward into 10/039,685, now US patent 6,832,281 (Figs. 1-10 and description), which in turn is carried forward into the '549 (Figs. 1-10 and description). The chain of benefit extends through the '685 application to its parent, the '904 application (the '638 patent), and the disclosure is carried forward from the '904 application, to the '685 application to the '549 patent.

[13] Application numbers 10/063,021;10/002,567; and10/039,685.
[14] 60/386, 986

The Banerjee declaration states that the claims of the '549 patent are not supported in its parent applications because the earlier applications did not include "concepts of interfacing with "intelligent" and "dumb" flash cards, and that that disclosure only appears in the last two columns of the '549 patent. HP 1008 at 9.[15] But it should also be noted that HP contends that AwYong anticipates and that Battaglia/Samsung Datasheet render obvious the claims of the '549. Both the '549 and its parent, the '638 contain the same disclosure as is asserted in AwYong. They (the '549 and '638 patents) disclose a reader having a single-chip controller that reads SmartMedia, MMC, SD, MemoryStick and CompactFlash flashcards. See, e.g., Figs. 6, 7, 9 and 10. This is more than what Battaglia shows, as Battaglia does not even show a single-chip controller for reading the multiple flash card types. See below more on the failings of Battaglia.

The effective filing date of the claims of US '549 is July 6, 2000, the filing date of 09/610,904, now the '638 patent. This date antedates the following references: AwYong (December 22, 2000); Battaglia (July 13, 2000)[16]; and the Samsung Datasheet (Nov. 20, 2000).

[15] Dr. Banerjee misstates the teaching contained in the columns 28-29 of the '549 patent. The multimode controller there discussed extends the teaching of the rest of the specification to the case of a single card type which may or may not have a controller: "Fig. 30 illustrates a system that is adaptable to a single media type." 28:9-10. The Fig. 30 card has a controller for error correction comprising bad block mapping. 28:37-41. The improved card shown in Fig. 31, and described at 28:42-29:9; is also of a single type, but it has no controller. One of the problems identified was how to determine a medium ID when the flash medium had no controller that normally provided such information. 28:42-52. An exemplary medium ID means (4030 (Fi.g 32) was described 29:10-36. It is important to note here that the independent claims in the '549 are not limited to single-card types, but actually cover the embodiments described earlier in the specification, and in the '638. Some of the dependent claims are specific, however, to the medium ID means described at 29:10-36. E.g., claims 4-7, 9, 10; 14-18; 20 and 22.

[16] The Banerjee expert report observes, at ¶ 87, that Battaglia claims priority to provisional application number 60/200,470, filed 2000-04-28. They do not claim however that Battaglia is entitled to a prior art date as of this date. To do so, they should at least submit a copy of the provisional application, demonstrate that the disclosure they rely in the non-provisional on is disclosed in the provisional, and per *In re Wertheim*, 646 F.2d 527 (C.C.P.A. 1981), demonstrate support for the claims of the non-provisional in the provisional. Since they do none of these things, should be presumed that the effective prior art date is not the date of the provisional.

## VI. The References do not show all claim limitations and/or are not prior art

### A. AwYong

#### 1. AwYong does not show bad block mapping

As discussed above, see section IV(C)(2)(a), the Petition and Dr. Banerjee's expert opinion both rely on the SmartMedia specification to assert that AwYong supports bad block mapping because in their view the SmartMedia specifications require any controller that interfaces with SmartMedia must support bad block mapping. AwYong itself does not describe what it actually does with bad blocks. It describes, in detail, however, how it supports error correction for SmartMedia. But not one word on bad block management. That is entirely inferred because SmartMedia is supported.

For example, Dr. Banerjee's expert report at ¶ 76, quotes AwYong for the following:

> It [the single-chip controller] must have the memory management capability. It is troublesome to deal with the Smart Media storage card, because there is no processor for managing the memory inside the Smart Media storage card, and it is managed by an external system. The solve the problems of compatibility and universality, the Solid State Floppy Disk Card (SSFDC) Association rigidly defines a set of memory management specifications (SSFDC Physical Format Specification Version 1.11), and all external systems that need to access data from Smart Media storage cards must observe these management specifications to correctly access Smart Media storage cards. Therefore, the single-chip controller must be capable of enforcing these management specifications to manage the memory inside SmartMedia storage cards.

HP 1008, at 23, quoting HP 1002, at 17. This passage does not actually say that the single-chip controller conducts bad block mapping, only that the controller must "enforce" these "management specifications" without actually saying is saying what "enforce" means. Furthermore the cited specification, the SSFDC Physical Format Specification Version 1.11 has not been submitted in this IPR to determine what exactly the author AwYong meant by "management specifications," instead we are left entirely to conjecture.

The Banerjee expert opinion goes on to say, at ¶ 79, that "AwYong describes that the controller performs error correction and bad block mapping upon the assertion of the SmartMedia card…." Paragraph 80 then discusses that AwYong has support for error correction, namely SM_ECC depicted in figure 5-4, but states in ¶ 83 that "AwYong likewise discloses bad block mapping for the SmartMedia card. As previously noted, bad block mapping is required under the SmartMedia specifications. Thus, by virtue of its ability to accept an interface for SmartMedia cards, AwYong's controller performs bad block mapping." HP 1008, at 26. However again, here the type of error correction is not specified, therefore the claimed "bad block mapping" is not set forth.

The same paragraph of Banerjee's expert opinion goes on to quote from AwYong for its description of the block status field of the redundant area of every SmartMedia sector. But the cited passage contains no description that the single-chip controller does anything with the block status field.

**2. AwYong does not disclose a medium ID.**

Neither Doctor Banerjee's expert opinion nor the Petition cite AwYong for any disclosure of a medium ID. Rather, as discussed above, both cite to the multimedia card specifications for this disclosure. See e.g., Banerjee report at paragraphs 45 (SmartMedia), 52 (CompactFlash), 59 (MMC), 65 (SD), and 70 (MemoryStick).

**3. AwYong is not prior art.**

AwYong was allegedly published on December 22, 2000. This date is after the effective filing date of the '549 patent, July 6, 2000.

### B. Battaglia and Kobayashi/Kikuchi do not show the claimed invention

#### 1. Battaglia's processor is NOT the claimed controller chip

The Petition cites Battaglia's processor 320 as the "controller chip" of claims 7 and 11. Pet. at 29 and 37. However, this processor "chip" does not include the claimed functionality of a "flash adapter" as will be discussed below. It therefor cannot be the controller chip of the independent claims.

Battaglia, HP 1004, discloses a digital interface device as illustrated in Fig. 1 as comprising a housing 10, flash memory ports (27, 24), a disc drive 20, a battery 26, serial/parallel ports 30 and a circuit board 28. The printed circuit board "supports the electronic components." 4:46-47

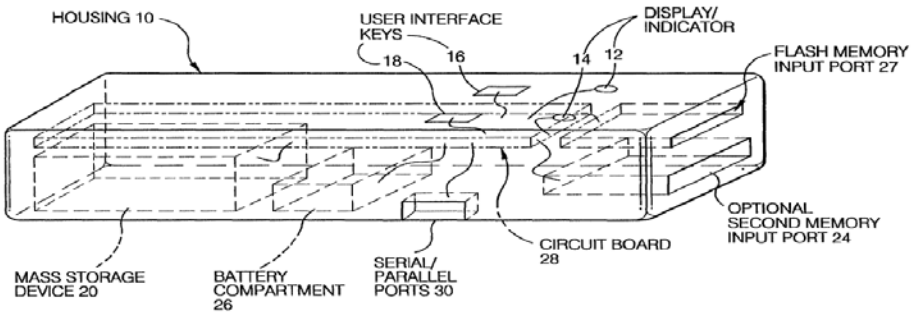


***Fig. 1***

Figure 8 illustrates "a block diagram of an exemplary embodiment." *Id.* at 3:12-13. Fig. 9 illustrates "a block diagram of the media interface shown in Fig. 8." *Id.* at 3:14-15.

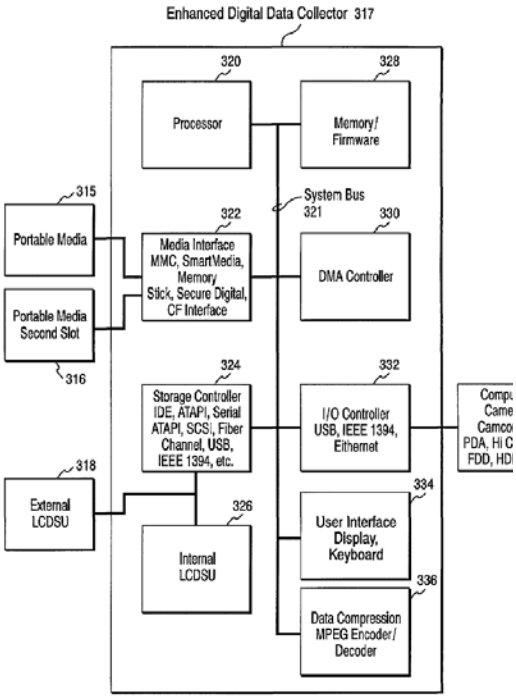


Fig. 8

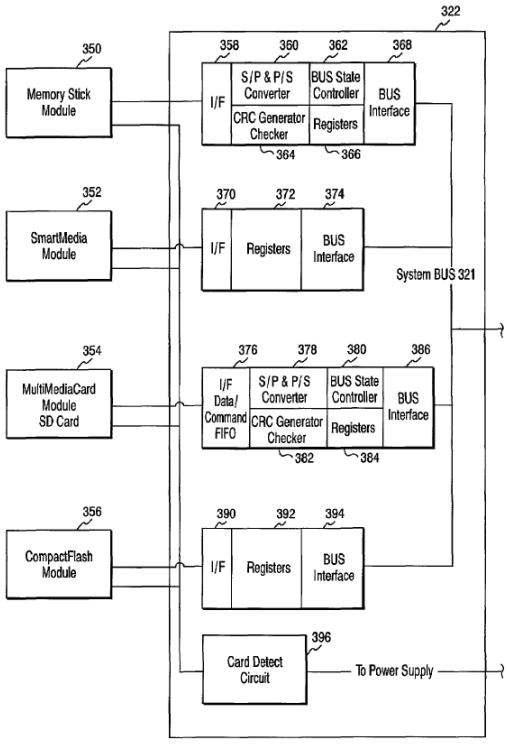


Fig. 9

Battaglia describes processor 320 as a "RISC processor such as an Atmel AVR microcontroller." 14:48-49. This means the process 320 is a separate chip. Processor 320 controls "interfacing to bus 321." 14:53. The system bus is located on the printed circuit board 28 shown in Fig. 1 because the system bus 321 is shown in Fig. 8, supra, connected to DMA controller 320, I/O controller 322, user display and keyboard 334, MPEG encoder/decoder 326, storage controller 324, and media interface 322.

The media interface 322 is illustrated in Fig. 9, *supra*. The media interface 322 is described as including "the electronics necessary to interface each particular media to local system bus 321.[17]" 14:45-47. The ITC construed both "flash adapter" and "flash adapter section" to mean "a section of the controller chip that enables communication with the flash storage system." HP 1030, pages 71-77. The circuitry of Battaglia that performs this interface/communication function with the flash storage media is media interface 322. The expert report of Banerjee, HP 1008, at ¶ 91, p. 30, agrees that the media interface 322 is the "flash adapter section" of the controller."

Media interface 322 is connected to bus 321. This means is that it is not, and it cannot be, part of processor 320. While the media interface 322 may be part of the Digital Data Collector 317 system, is it not part of processor 320. It is a separate component(s).

The HP petition cites Battaglia's processor 320 as the "controller chip" of claims 7 and 11. Pet. at 29 and 37. It then cites media interface 322, a separate component from controller chip 32, as the "'flash adapter' section of controller" [sic] in a brief section entitled "the controller **chip** comprising a flash adapter," Pet. at 29. Emphasis supplied to illustrate that HP intentionally omits the word "chip." By this omission, HP conflates "controller-chip" with "controller" to hide the fact that processor 320 and media interface are different components and do not meet the claim limitation. The petition intends to create in the mind of the reader the

[17] Fig. 9 shows, for each flash card type, a separate interface I/F (358, 370, 376, 390), separate converters (360, 372, 378,392), and separate bus controllers and bus interfaces (363, 368; 374; 380, 386; 394). The plural bus interfaces alone make it clear that this apparatus is separate from the processor 320 and not part of Battaglia's so-called "controller chip" 320.

impression processor 320 contains the circuitry or the functionality of a separate component, media interface 322, when it does not.

Regardless of the functionality HP imputes to processor 320 from the Samsung Datasheet, Battaglia does not disclose a controller chip that has a flash adapter (section) within the meaning of the claim because the cited chip for the controller-chip limitation, processor 320, does not a flash adapter, that even HP admits is media interface 322, a separate component.

**2. Battaglia/Samsung does not disclose a medium ID.**

Neither Doctor Banerjee's expert opinion nor the Petition cite Battaglia/Samsung for any disclosure of a medium ID. Rather, as discussed above, both cite to the multimedia card specifications for this disclosure. See e.g., Banerjee report at paragraphs 45 (SmartMedia), 52 (CompactFlash), 59 (MMC), 65 (SD), and 70 (MemoryStick).

**3. Battaglia does not disclose that its processor conducts bad block mapping.**

As described above in the discussion of the multimedia card specifications, Battaglia/Samsung does not describe that a controller that supports SmartMedia must provide for bad block mapping. HP instead relies on the SmartMedia specification to claim that the controller MUST perform bad block mapping. *Supra*, at IV(C)(2).

**4. Battaglia is not prior art.**

Battaglia has a prior art date of July 13, 2000. This date is after the effective filing date of the '549 patent, July 6, 2000.

### C. Kobayashi in view of Kikuchi

#### 1. The examiner repeatedly cited Kobayashi to show a detector or interface mechanism that determined whether a flash card had a controller

Kobayashi, HP 1005, was a reference of record in the original prosecution. See, MPL 2020, a brief summary of the prosecution history. It was cited to show a reader/writer that could determine whether a flash card had a controller. MPL 2020, actions dated 2004-05-04, 2005-06-03, 2006-01-27 (HP 1015 at 316, 411 and 499). Dr. Banerjee's expert report spends a great deal of time, ¶¶ 108-113 arguing that Kobayashi discloses what the examiner repeatedly cited it for (a detector), not once, but on three different occasions. The first occasion was in the action dated 2004-05-04, MPL 2020, HP 1015 at 316, in connection with the claims as filed which were directed to a "an interface mechanism for determining whether the flash storage system had a controller." MPL 2020, HP 1015 at 61.

The applicant responded to the rejection over Kobayashi by filing new claims that claimed a different invention: a *controller **chip*** that conducted error correction comprising bad block mapping, in firmware. In response, the examiner cited Hasbun, US 5,740,349, to show a flash card controller that conducted bad block mapping in firmware (again bad block mapping being consider a form of error correction.) MPL 2020 at 2, HP 1015, at 411, Final Action dated 2005-06-03. In order to obtain allowance, the applicant added into application claim 38 and 43, that became patent claims 7 and 11, the limitations underlined, *supra*, section II, regarding determining whether the flash storage system had a controller," and in the event it did not, then conducting bad block mapping, with a controller-chip using firmware. MPL 2020, at 4-5, HP

1015, 532, 518, 538 (Examiner interview (2006-05-30), final amendment (2006-06-02), and notice of allowance (2006-09-05)).

**2. HP incorrectly states that the Kobayashi ATA controller 124 uses "firmware" to conduct bad block mapping, and impermissibly attributes to two different controllers the combined functionality required by the claimed controller chip.**

As illustrated below, and as Dr. Banerjee discusses, in one embodiment Kobayashi discloses a reader 12 that detects (133) whether a flash card 13, has an ATA controller (the presence or absence of a notch in the card is the indicator); and when the card does not, selectively (134) employing an ATA controller 124 to read the card. HP also agrees that the

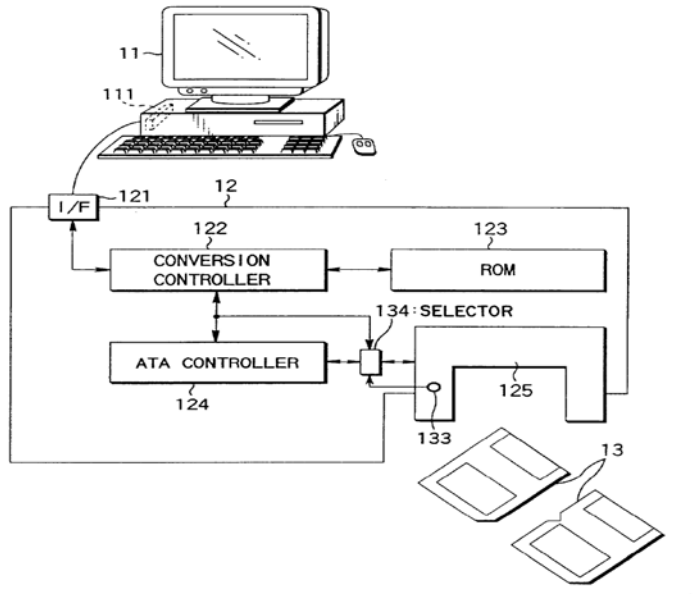


FIG. 11

ATA controller 124 on the reader is the same ATA controller that appears on the flash card when the flash card has a controller. See, 12:43-56. This provides the reader with full compatibility with flash card 13 whether it has a controller or not.

Because the ATA controller 124 is the same controller that is employed by the flash card, Kobayashi deals with a single flash card type, e.g., MMC, SD, MS, xD or Compact flash. Each flash card type must have a unique controller because each has a unique internal architecture.

This means that if the teaching of Kobayashi were to be extended to different flash card types, e.g., MMC, SD, MS, xD or Compact flash, it would employ a unique ATA controller for each.

Battaglia supports this construction of Kobayashi. Battaglia's media interface 322 discloses a plurality of different interfaces and conversion controllers, one for each card type: SmartMedia, MMC, MemoryStick and CompactFlash. See, Battaglia Fig. 9, below:

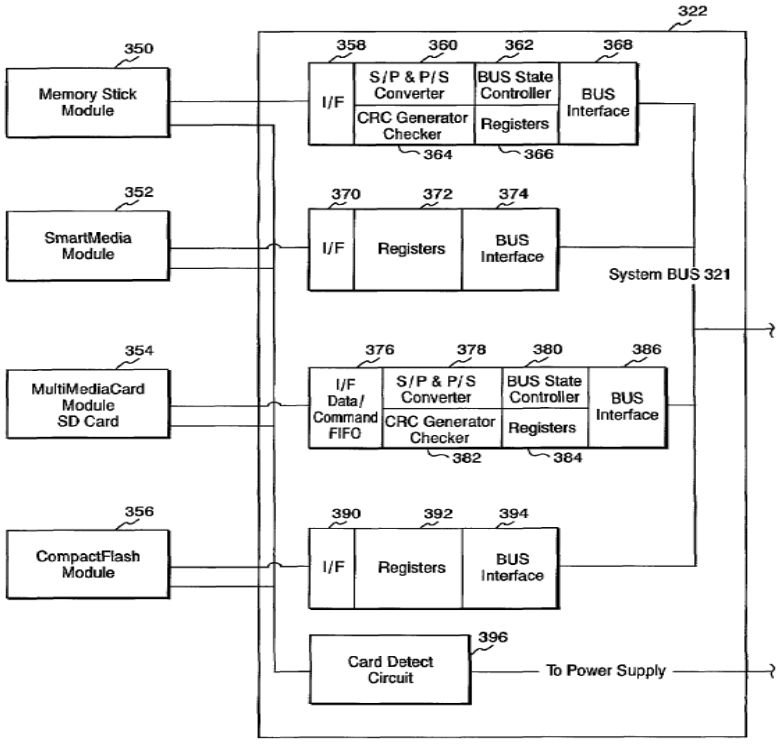


*Fig. 9*

The figure shows that the MemoryStick card 350 connects to interface 356 that in turn is coupled to a plurality of converters/controllers (358, 360, 362, 364, 366, and 368) that eventually connect to system bus 321. The SmartMedia card 352 connect to interface 370 that in turn connects to registers 372 and bus interface 374 that connects to system bus 321. The MultiMediaCard 354 connects to interface 376 that in turn connects to a plurality of conversion controllers (378, 380, 382, 384, and bus interface 386) that eventually connect to system bus 321. The CompactFlash card connects to interface 390 that in turn connects to registers 392 and to bus interface 394 that eventually connects to system bus 321.

Kobayashi discloses that the ATA controller 124 is the same controller as in the flash card. It must be a separate chip because the conversion controller is described as a "one-chip" microprocessor.

> The conversion controller 122 is configured of a one-chip microprocessor or the like and operates in accordance with program stored in ROM 123.
>
> 6:12-14

Thus Kobayashi teaches placing into its reader the very same ATA controller chip used in the respective cards to which it interfaces. If one were to multiply the card types supported, Kobayashi would teach multiplying the number of ATA controller chips correspondingly.

But, even if one were to place all those separate card-type controllers into a single ATA chip, what Kobayashi does not disclose or suggest is to modify its conversion controller chip 122 to use firmware 123 to support the functionality of the ATA controller 124, not for one card type, and certainly not for the multiple card types. That is the invention disclosed in both the '549 patent and its great grandparent, the '638 patent, as illustrated in Figs. 6, 7, 9 and 10.

Knowing that Kobayashi discloses, as does Battaglia, a multi-chip, multi-controller solution, HP attributes the functionality required of a single controller chip to the combination of controller-chip 122 and ATA controller 124. For example, Dr. Banerjee incorrectly states at paragraph 137 that "Kobayashi teaches that the ATA controller 124 … uses firmware for correction error correction and other memory management operations. ID at 11:37-46." HP

1008, ¶ 113, p. 40. The passage Dr. Banerjee cites, 11:37-46, however, does not support the proposition. It reads

> The conversion controller 122 and the ATA controller 124 check the various parts in the system and collect the sense key data indicating the state of each part. The contents of the data thus sensed include whether or not an error exists in the memory, whether or not the memory is accessible, whether or not there exists an irreparable error, whether or not there exists a hardware error, and whether or not the data are protected. The ATA controller 124 supplies the collected sense key data to the conversion controller 122.

Kobayashi, 11:37-46, HP 1005.

The functionality by Dr. Banerjee attributes to the ATA controller 124 is a functionality of both the conversion controller 122 and ATA controller 124. Moreover, the figures and the specification show that it is only the conversion controller 122 that employs firmware ROM 123. Kobayashi does not disclose that the ATA controller 124 uses firmware 123 at all. That would frankly be inconsistent with the disclosure that the ATA controller 124 is the same controller used by the flash cards 13 themselves.

The specification confirms that firmware 123 is associated exclusively with conversion controller 122:

> The conversion controller 122 is configured of a one-chip microprocessor or the like and operates in accordance with program stored in ROM 123.
>
> 6:12-14

**3. Kicuchi is cumulative of Hasbun**

HP's petition and Dr. Banerjee's summary of the prosecution history fails to discuss Hasbun, but raises instead Kukuchi, which contains essentially the same disclosure: a controller

in a card reader that has a microprocessor that conducts bad block mapping in firmware. As discussed in the prosecution history summary MPL 2020, when the applicant shifted the focus of the claimed invention from determining whether the flash storage system included a controller to a controller chip that used firmware to conduct bad block mapping, the examiner also shifted to Hasbun. MPL 2024. Hasbun was cited as showing a controller that include bad block mapping in firmware. MPL 2020 2005-06-03, 2006-01-27 (HP 1015 at 411 and 499). [18] The examiner relied on Fig. 6:

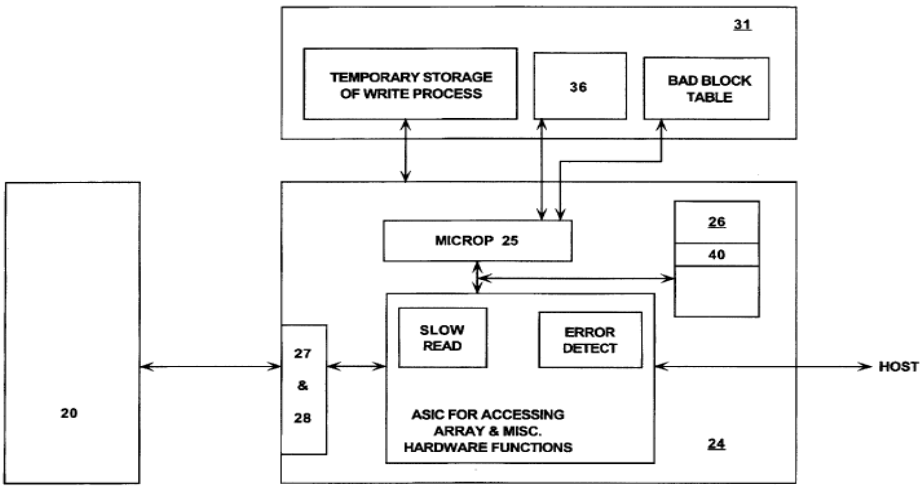


**FIGURE 6**

Instead of Hasbun, HP cites Kikuchi for the same showing: a controller chip that conducts error correction, including bad block mapping, in firmware.: Kikuchi discloses an embodiment, Fig. 15A, where the flash memory controller may, like Kobayashi, be selectively

[18] Hasbun comprised a controller 24 that had an ASIC that included error detection and slow read functions, a separate microprocessor 25, firmware 26, and external bad block table 31, and interface circuitry 27 and 28 to flash memory 20.

located on a separate reader from the flash memory 121. Hasbun moreover discloses that its controller conducts bad block mapping in firmware.

In trying to distinguish Hasbun, the applicant argued that the Hasbun controller was not on the reader, but instead on the flash cards. The examiner rejected this argument. MPL 2020, Action dated 2006-01-27, HP 1015, 499, at 501 (ref: Applicant's argument 2), 502, second paragraph-503. The examiner reasoned that the Hasbun controller could not be incorporated into the flash memory chips because the Hasbun controller 24 was an ASIC (citing Fig. 6), HP 1015, at 502, that "could not fit … on the small footprint flash memory card disclosed in Kobayashi." *Id.*, at 503. In addition to not being on the flash card, the examiner clearly asserted that the Hasbun controller 24 was an ASIC, which is a type of "chip."

**4. Even if Kikuchi's "ATA" controller chip could be incorporated into Kobayashi's ATA controller 124, it would not yield the claimed invention that requires the controller chip be able to "selectively" conduct error correction, including bad block mapping.**

The examiner, in rejecting the independent claims, combined Hasbun with Kobayashi's conversion controller 122. MPL 2020 at 3, HP 1015, at 417, lines 10-14,

> The combination would suggest the placing of the functionality of Hasbun into the reader/writer (12) of Kobayashi, as the reader/writer (12) contains the "one-chip microprocessor" conversion controller (122-similar to Hasbun 25) under the control of programs in the ROM (123-similar to the firmware ROM 26 of Hasbun).

HP's argument instead places the Kikuchi/Hasbun functionality into Kobayashi's ATA controller 124.

> "[I]t would have been obvious to one of ordinary skill in the art at the time of the effective filing date of the '549 patent to incorporate Kikuchi's error correction and bad block mapping … into ATA controller 124 of Kobayashi.… As a result of the combination, the modified controller's 124 flash adapter section in the reader writer 12th of figures 11 and 12 in Kobayashi would perform Kikuchi's taught error correction, including bad block mapping, using firmware flash memory cards that do not have on-card controllers built therein."
>
> HP 1008 at ¶ 121, page 44

The central problem with HP's argument is that the "ATA" controller of both Kikuchi and of Kobayashi are adapted to interface with single card type, and moreover, a card of that type that has no controller. In Kobayashi, it is the conversion controller 122 that interfaces with cards that have controllers through selector 134, and that selectively employs the ATA controller 124 in the event that it does not.

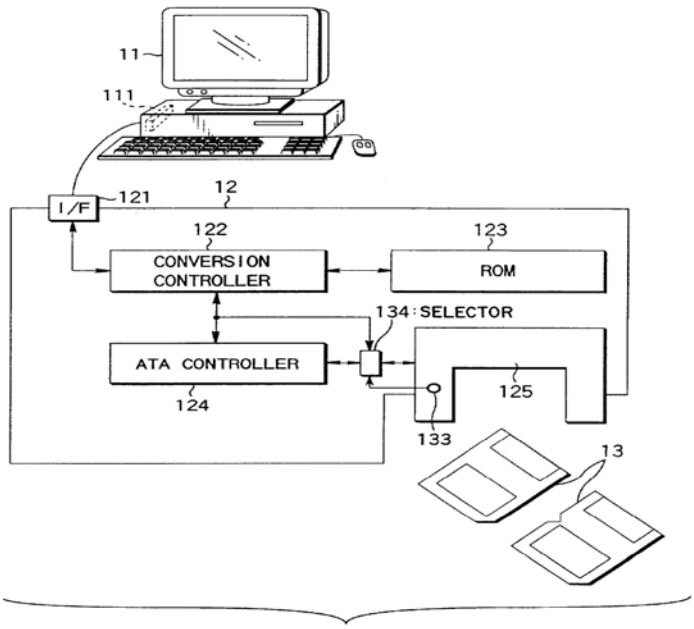


FIG. 11

But Kobayashi discloses two controllers: a conversion controller 122 combined with a card-specific ATA controller 124. Kobayashi, in combination with Kukuchi or Hasbun, does not disclose or suggest one controller chip that has all of the required functionality as claimed. Moreover, as discussed above, if the combination of Kobayashi and Kikuchi were to be extended to multiple different types of flash cards, the number of card-type-specific ATA controllers 124 would correspondingly multiply as actually illustrated in Battaglia's Fig. 9. This simply would not yield the claimed controller chip having all the required functionality.

## VII. Summary

HP's petition must be rejected because HP has no standing. HP is in privity with Pandigital with respect to accused DPFs. Pandigital was sued for infringement by the Patent Owners more than a year prior to the filing of the instant petition.

HP's petition must further be rejected because it impermissibly relies on confidential specification for a number of different multimedia cards, without any showing whatsoever that they are printed publications, to support its unpatentability contentions with respect to AwYong and Battaglia. Without this support, these references do not disclose critical claim limitations.

Further, the claims of the '549 are entitled to the benefit of the filing date of its parent '638 patent, filed on 2000-07-06. This removes AwYong, Battaglia and the Samsung datasheet as prior art.

HP's petition must be rejected because Battaglia does not have a "controller chip" that has a flash adapter. Battaglia rather discloses multiple controllers that communicate through a system bus for interfacing with the several multimedia cards.

HP's petition must be rejected because the combination of Kobayashi and Kikuchi is no different then the combination of Kobayashi and Hasbun was already considered and found lacking, and further, Kobayashi and Kikuchi simply does not yield the claimed invention, in particular, a controller chip having all the required functionality.

CERTIFICATE OF SERVICE

The undersigned hereby confirms that the foregoing Preliminary Response was served on June 27, 2013, via email upon HP549IPR@kenyon.com.

/Edward P. Heller III/
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Reg. No. 29,075

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