

In the Matter of

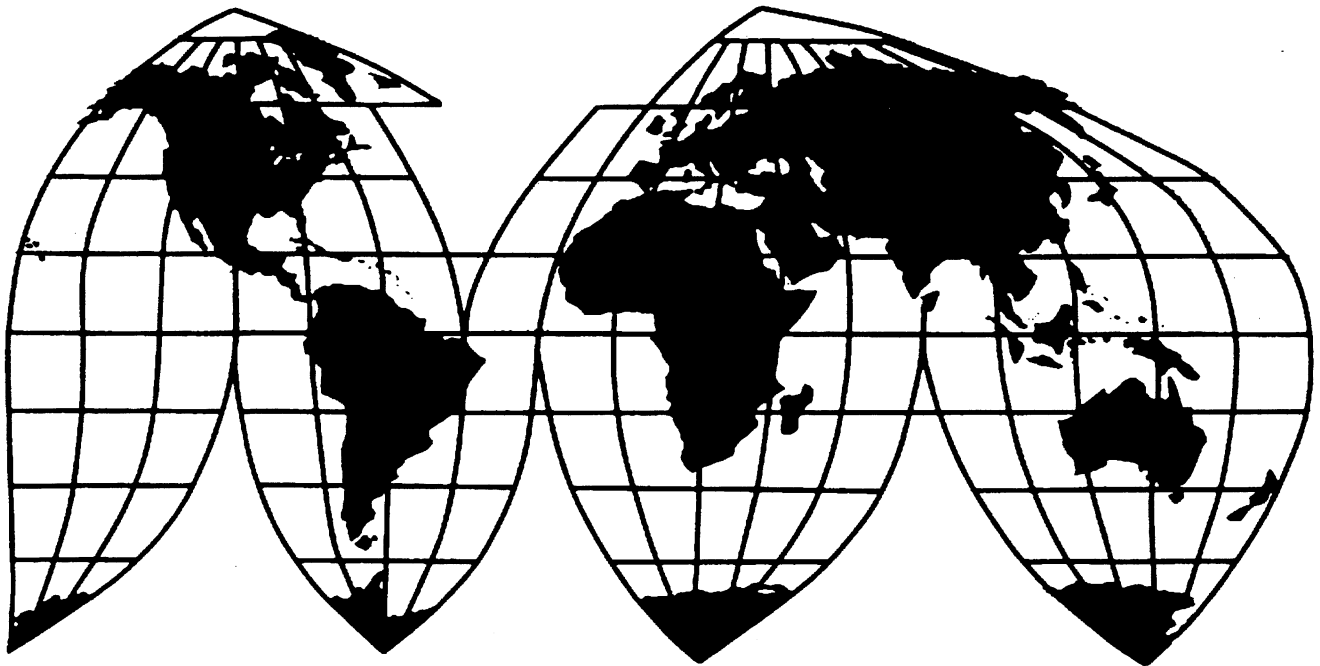
**Certain Optical Disk Controller Chips
and Chipsets and Products
Containing Same, Including DVD
Players and PC Optical Storage Devices**

Investigation No. 337-TA-506

Publication 3935

July 2007

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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Washington, DC 20436

U.S. International Trade Commission

Washington, DC 20436
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In the Matter of

Certain Optical Disk Controller Chips and Chipsets and Products Containing Same, Including DVD Players and PC Optical Storage Devices

Investigation No. 337-TA-506



UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

In the Matter of)
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CERTAIN OPTICAL DISK CONTROLLER CHIPS)
AND CHIPSETS AND PRODUCTS CONTAINING)
SAME, INCLUDING DVD PLAYERS AND PC OPTICAL)
STORAGE DEVICES)
)

Inv. No. 337-TA-506

NOTICE OF COMMISSION DETERMINATION TO RESCIND REMEDIAL ORDERS

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined to rescind the remedial orders issued in the above-captioned investigation.

FOR FURTHER INFORMATION CONTACT: Clara Kuehn, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 205-3012. Copies of the Commission orders, the Commission opinion in support thereof, and all other nonconfidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-2000.

General information concerning the Commission may also be obtained by accessing its Internet server (<http://www.usitc.gov>). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS-ON-LINE) at <http://edis.usitc.gov>. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-205-1810.

SUPPLEMENTARY INFORMATION:

The Commission instituted this investigation on April 14, 2004, based on a complaint filed on behalf of Zoran Corporation ("Zoran") and Oak Technology, Inc. ("Oak") both of Sunnyvale, California (collectively "complainants"). 69 *Fed. Reg.* 19876. The complaint, as supplemented, alleged violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain optical disk controller chips and chipsets and products containing same, including DVD players and PC optical storage devices, by reason of infringement of

claims 1–12 of U.S. Patent No. 6,466,736 (“the ‘736 patent”), claims 1–3 of U.S. Patent No. 6,584,527 (“the ‘527 patent”), and claims 1–35 of U.S. Patent No. 6,546,440 (“the ‘440 patent”). *Id.*

The notice of investigation identified 12 respondents. 69 *Fed. Reg.* 19876. On June 7, 2004, the presiding administrative law judge (“ALJ”) issued an initial determination (“ID”) (Order No. 5) terminating the investigation as to two respondents on the basis of a consent order and settlement agreement. On June 22, 2004, the ALJ issued an ID (Order No. 7) granting complainants’ motion to amend the complaint and notice of investigation to add nine additional respondents. Those IDs were not reviewed by the Commission.

On December 22, 2004, the ALJ issued an ID (Order No. 33) granting complainants’ motion to terminate the investigation in part with respect to claims 2–6 and 8–11 of the ‘736 patent and claims 2–4, 6, 9, 11, 12, 15–18, 20, and 22–35 of the ‘440 patent. On January 28, 2005, the ALJ issued an ID (Order No. 37) granting complainants’ motion to terminate the investigation in part with respect to claim 12 of the ‘736 patent. Neither ID was reviewed by the Commission. Thus, at the time that Order No. 37 issued, the claims remaining for determination on the merits were claims 1 and 7 of the ‘736 patent; claims 1, 5, 7, 8, 10, 13, 14, 19, and 21 of the ‘440 patent; and claims 1–3 of the ‘527 patent.

An eight-day evidentiary hearing was held on February 7–12, and 14–15, 2005.

On May 16, 2005, the ALJ issued his final ID, findings of fact and conclusions of law, and recommended determination on remedy and bonding. The ALJ concluded that there was a violation of section 337 based on his findings that: (a) the accused products infringe claim 3 of the ‘527 patent, (b) the ‘527 patent is not unenforceable, (c) claim 3 of the ‘527 patent is not invalid, and (d) complainants have satisfied the domestic industry requirement with respect to the ‘527 patent. Although the ALJ found that the other asserted claims of the ‘527 patent (claims 1 and 2) are not invalid, he found that the accused products do not infringe those claims. The ALJ found no violation with respect to the other patents in issue. He found that the accused products do not infringe any asserted claim of the ‘440 or ‘736 patents and that complainants have not satisfied the domestic industry requirement with respect to those patents. He also found that the asserted claims of the ‘440 and ‘736 patents are not invalid and that those patents are not unenforceable.

On May 27, 2005, complainants and nineteen respondents each petitioned for review of portions of the final ID. On July 19, 2005, the Commission determined to review the ID in part. 70 *Fed. Reg.* 42589-91. Specifically, the Commission determined to review the ID’s findings of fact and conclusions of law with respect to the ‘527 and ‘440 patents. *Id.* The Commission determined not to review the ID’s findings of fact and conclusions of law with respect to the ‘736 patent, thereby adopting them. *Id.* Accordingly, the Commission found no violation of section 337 with respect to the ‘736 patent. *Id.* The Commission also determined to review and modify the ID to clarify that respondents accused of infringing only the asserted claims of the ‘736 patent (*viz.*, respondents Audiovox Corporation; Initial Technology, Inc.; Mintek Digital, Inc.; Shinco International AV Co., Ltd.; Changzhou Shinco Digital Technology Co., Ltd.; Jiangsu Shinco Electronic Group Co., Ltd.; Terapin Technology Pte., Ltd. [formerly known as Teraoptix d/b/a

Terapin Technology] of Singapore; and Terapin Technology U.S. [formerly also known as Teraoptix]) are not in violation of section 337. *Id.*

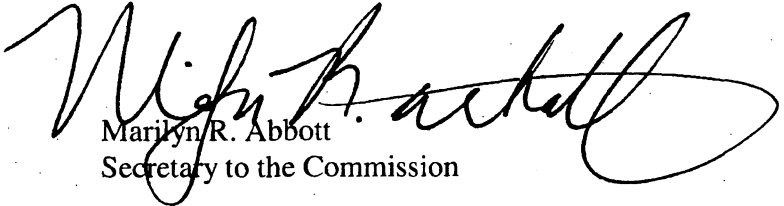
On review, the Commission determined that there was a violation of section 337 as to claim 3 of the '527 patent, but no violation of the statute as to the remaining claims in issue of the '527 patent (*viz.*, claims 1 and 2) and no violation as to the claims in issue of the '440 patent (*viz.*, claims 1, 5, 7, 8, 10, 13, 14, 19, and 21). 70 *Fed. Reg.* 57620. On September 28, 2005, the Commission determined that the appropriate form of relief is a limited exclusion order prohibiting the unlicensed entry of chips or chipsets covered by claim 3 of the '527 patent manufactured abroad or imported by or on behalf of MediaTek, Inc. of Hsin-Chu City, Taiwan, and optical storage devices containing such covered chips or chipsets that are manufactured abroad or imported by or on behalf of Artronix Technology, Inc. of Brea, California; ASUSTek Computer, Inc. of Taipei, Taiwan; ASUS Computer International of Fremont, California; MSI Computer Corporation of City of Industry, California; TEAC America Inc. of Montebello, California; EPO Science and Technology, Inc. of Taipei, Taiwan; LITE-ON Information Technology Corp. of Taipei, Taiwan; Micro-Star International Co., Ltd. of Taipei Hsien, Taiwan; TEAC Corp. of Tokyo, Japan; or Ultima Electronics Corp. of Taipei Hsien, Taiwan (collectively, with MediaTek, Inc. "respondents"). *Id.* The Commission also determined to issue cease and desist orders directed to Artronix Technology, Inc.; ASUSTek Computer, Inc.; ASUS Computer International; MSI Computer Corporation; TEAC America Inc.; EPO Science and Technology, Inc.; and LITE-ON Information Technology Corp. *Id.*

On February 10, 2006, complainants Zoran and Oak and respondent MediaTek filed, pursuant to 19 U.S.C. § 1337(k) and Commission rule 210.76(a) (19 C.F.R. § 210.76(a)), a joint petition for rescission of the limited exclusion order and the cease and desist orders issued in the investigation based on a settlement agreement that resolves the underlying dispute between all of the parties, including all of the other respondents. On February 22, 2006, the Commission investigative attorney filed a response supporting the joint petition.

Having reviewed the parties' submissions, the Commission has determined that the settlement agreement satisfies the requirement of Commission rule 210.76(a)(1), 19 C.F.R. § 210.76(a)(1), for changed conditions of fact or law. The Commission therefore has issued an order rescinding the remedial orders previously issued in this investigation.

This action is taken under the authority of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) and section 210.76(a)(1) of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.76(a)(1)).

By order of the Commission.


Marilyn R. Abbott
Secretary to the Commission

Issued: March 17, 2006

**UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436**

In the Matter of

**CERTAIN OPTICAL DISK CONTROLLER CHIPS
AND CHIPSETS AND PRODUCTS CONTAINING
SAME, INCLUDING DVD PLAYERS AND PC OPTICAL
STORAGE DEVICES**

Inv. No. 337-TA-506

ORDER

The Commission instituted this investigation on April 14, 2004, based on a complaint filed on behalf of Zoran Corporation (“Zoran”) and Oak Technology, Inc. (“Oak”) both of Sunnyvale, California (collectively “complainants”). 69 *Fed. Reg.* 19876. The complaint, as supplemented, alleged violations of section 337 of the Tariff Act of 1930 in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain optical disk controller chips and chipsets and products containing same, including DVD players and PC optical storage devices, by reason of infringement of certain claims of U.S. Patent Nos. 6,466,736 (“the ‘736 patent”); 6,584,527 (“the ‘527 patent”); and 6,546,440 (“the ‘440 patent”). *Id.*

On May 16, 2005, the presiding administrative law judge (“ALJ”) issued his final initial determination (“ID”) finding a violation of section 337 with respect to the ‘527 patent, but no violation with respect to the ‘736 and ‘440 patents.

On July 19, 2005, the Commission determined to review the ID’s findings of fact and conclusions of law with respect to the ‘527 and ‘440 patents. 70 *Fed. Reg.* 42589-91. The

Commission determined not to review the ID's findings of fact and conclusions of law with respect to the '736 patent, thereby adopting them. *Id.* Accordingly, the Commission found no violation of section 337 with respect to the '736 patent. *Id.*

On review, the Commission determined that there is a violation of section 337 as to claim 3 of the '527 patent, but no violation of the statute as to the remaining claims in issue of the '527 patent (*viz.*, claims 1 and 2) and no violation as to the claims in issue of the '440 patent (*viz.*, claims 1, 5, 7, 8, 10, 13, 14, 19, and 21). *70 Fed. Reg. 57620.* On September 28, 2005, the Commission issued a limited exclusion order prohibiting the unlicensed entry of chips or chipsets covered by claim 3 of the '527 patent manufactured abroad or imported by or on behalf of respondent MediaTek, Inc., and optical storage devices containing such covered chips or chipsets that are manufactured abroad or imported by or on behalf of respondents Artronix Technology, Inc.; ASUSTek Computer, Inc.; ASUS Computer International; MSI Computer Corporation; TEAC America Inc.; EPO Science and Technology, Inc.; LITE-ON Information Technology Corp.; Micro-Star International Co., Ltd.; TEAC Corp.; or Ultima Electronics Corp (collectively, with MediaTek, Inc. "respondents"). *Id.* The Commission also determined to issue cease and desist orders directed to Artronix Technology, Inc.; ASUSTek Computer, Inc.; ASUS Computer International; MSI Computer Corporation; TEAC America Inc.; EPO Science and Technology, Inc.; and LITE-ON Information Technology Corp. *Id.*

On February 10, 2006, complainants Zoran and Oak and respondent MediaTek filed, pursuant to 19 U.S.C. § 1337(k) and Commission rule 210.76(a) (19 C.F.R. § 210.76(a)), a joint petition for rescission of the limited exclusion order and the cease and desist orders issued in the investigation on the basis of a settlement agreement that resolves the underlying dispute between

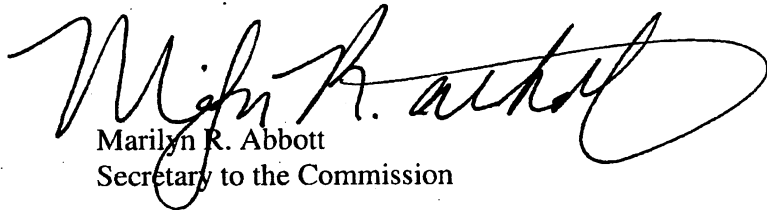
all of the parties, including all of the other respondents. On February 22, 2006, the Commission investigative attorney filed a response supporting the joint petition.

Having reviewed the parties' submissions, the Commission has determined that the settlement agreement satisfies the requirement of Commission rule 210.76(a)(1), 19 C.F.R. § 210.76(a)(1), for changed conditions of fact or law. The Commission therefore has determined to rescind the remedial orders previously issued in this investigation.

Accordingly, the Commission hereby **ORDERS** that:

1. The joint petition for rescission of the limited exclusion order and the cease and desist orders previously issued in this investigation is *granted*.
2. The Secretary shall serve copies of this Order upon each party of record in this investigation and the Secretary of the Treasury.

By Order of the Commission.


Marilyn R. Abbott
Secretary to the Commission

Issued: March 17, 2006

**CERTAIN OPTICAL DISK CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME, INCLUDING DVD PLAYERS
AND OPTICAL STORAGE DEVICES**

337-TA-506

CONFIDENTIAL CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **NOTICE OF COMMISSION DETERMINATION TO RESCIND REMEDIAL ORDERS** was served upon the Commission Investigative Attorney, Karen Norton, Esq., and all parties via first class mail and air mail on March 17, 2006.



Marilyn R. Abbott, Secretary
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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

In the Matter of)
)
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CERTAIN OPTICAL DISK CONTROLLER CHIPS)
AND CHIPSETS AND PRODUCTS CONTAINING)
SAME, INCLUDING DVD PLAYERS AND PC OPTICAL)
STORAGE DEVICES)
)

Inv. No. 337-TA-506

**NOTICE OF FINAL DETERMINATION; ISSUANCE OF LIMITED EXCLUSION
ORDER AND CEASE AND DESIST ORDERS; TERMINATION OF INVESTIGATION**

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has found a violation of section 337 of the Tariff Act of 1930 (19 U.S.C. § 337) based on the infringement of one asserted claim of one asserted patent and has issued a limited exclusion order and cease and desist orders in the above-captioned investigation.

FOR FURTHER INFORMATION CONTACT: Clara Kuehn, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 205-3012. Copies of the Commission orders, the Commission opinion in support thereof, and all other nonconfidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-2000.

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SUPPLEMENTARY INFORMATION:

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importation, and the sale within the United States after importation of certain optical disk controller chips and chipsets and products containing same, including DVD players and PC optical storage devices, by reason of infringement of claims 1–12 of U.S. Patent No. 6,466,736 (the ‘736 patent), claims 1–3 of U.S. Patent No. 6,584,527 (the ‘527 patent), and claims 1–35 of U.S. Patent No. 6,546,440 (the ‘440 patent). *Id.*

The notice of investigation identified 12 respondents. 69 *Fed. Reg.* 19876. On June 7, 2004, the ALJ issued an ID (Order No. 5) terminating the investigation as to two respondents on the basis of a consent order and settlement agreement. On June 22, 2004, the ALJ issued an ID (Order No. 7) granting complainants’ motion to amend the complaint and notice of investigation to add nine additional respondents. Those IDs were not reviewed by the Commission.

On December 22, 2004, the ALJ issued an ID (Order No. 33) granting complainants’ motion to terminate the investigation in part with respect to claims 2–6, 8–10, and 11 of the ‘736 patent and claims 2–4, 6, 9, 11, 12, 15–18, 20, 22–34, and 35 of the ‘440 patent. On January 28, 2005, the ALJ issued an ID (Order No. 37) granting complainants’ motion to terminate the investigation in part with respect to claim 12 of the ‘736 patent. Neither ID was reviewed by the Commission. Thus, at the time that Order No. 37 issued, the claims remaining for determination on the merits were claims 1 and 7 of the ‘736 patent; claims 1, 5, 7, 8, 10, 13, 14, 19, and 21 of the ‘440 patent; and claims 1, 2, and 3 of the ‘527 patent.

An eight-day evidentiary hearing was held on February 7–12, and 14–15, 2005.

On May 16, 2005, the ALJ issued his final ID, findings of fact and conclusions of law, and recommended determination on remedy and bonding. The ALJ concluded that there was a violation of section 337 based on his findings that (a) the accused products infringe claim 3 of the ‘527 patent, (b) the ‘527 patent is not unenforceable, (c) claim 3 of the ‘527 patent is not invalid, and (d) complainants have satisfied the domestic industry requirement with respect to the ‘527 patent. Although the ALJ found that the other asserted claims of the ‘527 patent (claims 1 and 2) are not invalid, he found that the accused products do not infringe those claims. The ALJ found no violation with respect to the other patents in issue. He found that the accused products do not infringe any asserted claim of the ‘440 or ‘736 patents and that complainants have not satisfied the domestic industry requirement with respect to those patents. He also found that the asserted claims of the ‘440 and ‘736 patents are not invalid and that those patents are not unenforceable.

On May 27, 2005, complainants and respondents each petitioned for review of portions of the final ID. On June 6, 2005, complainants, respondents, and the IA filed responses to the petitions for review.

On July 19, 2005, the Commission determined to review the ID in part. 70 *Fed. Reg.* 42589–91. Specifically, the Commission determined to review the ID’s findings of fact and conclusions of law with respect to the ‘527 and ‘440 patents. *Id.* The Commission determined not to review the ID’s findings of fact and conclusions of law with respect to the ‘736 patent, thereby adopting them. *Id.* Accordingly, the Commission found no violation of section 337 with respect to the ‘736 patent. *Id.* The Commission also determined to review and modify the ID to

clarify that respondents accused of infringing only the asserted claims of the '736 patent (*viz.*, respondents Audiovox Corporation; Initial Technology, Inc.; Mintek Digital, Inc.; Shinco International AV Co., Ltd.; Changzhou Shinco Digital Technology Co., Ltd.; Jiangsu Shinco Electronic Group Co., Ltd.; Terapin Technology Pte., Ltd. [formerly known as Teraoptix d/b/a Terapin Technology] of Singapore; and Terapin Technology U.S. [formerly also known as Teraoptix]) are not in violation of Section 337. *Id.*

In its notice of review, the Commission invited the parties to file written submissions on the issues under review, posed briefing questions for the parties to answer, and invited interested persons to file written submissions on the issues of remedy, the public interest, and bonding. *Id.*

All parties filed initial submissions on August 1, 2005. Also on August 1, 2005, respondents filed a letter requesting clarification of the scope of briefing question 3(a) in the Commission's notice of review, and permission to brief new issues not previously raised. On August 8, 2005, all parties filed reply submissions.

The Commission has determined to deny respondents' August 1, 2005, letter request for permission to brief new issues that were not previously raised, and respondents' August 8, 2005, request under 19 C.F.R. § 210.45(a).

Having examined the record in this investigation, including the submissions and responses thereto, the Commission has determined that there is a violation of section 337 as to claim 3 of the '527 patent, but no violation of the statute as to the remaining claims in issue of the '527 patent (*viz.*, claims 1 and 2) and no violation as to the claims in issue of the '440 patent (*viz.*, claims 1, 5, 7, 8, 10, 13, 14, 19, and 21).

The Commission has determined that respondents *waived* their arguments (1) that the asserted claims are invalid under 35 U.S.C. § 102(f) for non-joinder of Western Digital engineers other than Shishir Shah and (2) concerning the respective dates of reduction to practice for Western Digital's HISIDE chip and the claims of the '440 and '527 patents.

The Commission has determined to *adopt* the ID with the following modifications and exceptions. The Commission has determined to *modify* the ID's construction of "controller" to reflect that, although the limitation "optical drive controller" means "a device or group of devices to control data communications between a host computer and the optical disk drive electronics" (ID at 80), configurations wherein a "controller requires a translator card or other intervening circuitry between the controller and the IDE bus to translate or manipulate command data" were disclaimed during prosecution. The Commission has determined to *affirm* the balance of the ID's claim construction.

The Commission has determined to *vacate* the ID's finding that there is a conception date of the asserted claims of the '527 and '440 patents at least by April 21, 1993, (*see* ID at 129 n.45, 142), and has further determined to *vacate* the statement (ID at 142) that expressly relies on the April 21, 1993, conception date to make an alternate finding, *viz.*, "[e]ven assuming that conception of a transport mechanism that attached a CD-ROM drive to an IDE/ATA bus was relevant, there is no contemporaneous documentation showing conception in December 1992 or a

conception even before the April 1993 conception of the claimed inventions in issue.”

The Commission has determined to *vacate* the ALJ’s infringement findings with respect to the MT1528, MT1558, and MT1668 because the record does not support such findings.

The Commission has determined to *clarify* that complainants met the economic prong of the domestic industry requirement based on “substantial investment” in “engineering, research and development,” rather than through licensing. The Commission has also determined to correct certain typographical errors on pages 75-76, 129, and 156 of the ID.

The Commission also made determinations on the issues of remedy, the public interest, and bonding. The Commission determined that the appropriate form of relief is a limited exclusion order prohibiting the unlicensed entry of chips or chipsets covered by claim 3 of U.S. Patent No. 6,584,527 manufactured abroad or imported by or on behalf of Mediatek, Inc. of Hsin-Chu City, Taiwan, and optical storage devices containing such covered chips or chipsets that are manufactured abroad or imported by or on behalf of Artronix Technology, Inc. of Brea, CA; ASUSTek Computer, Inc. of Taipei, Taiwan; ASUS Computer International of Fremont, CA; MSI Computer Corporation of City of Industry, CA; TEAC America Inc. of Montebello, CA; EPO Science and Technology, Inc. of Taipei, Taiwan; LITE-ON Information Technology Corp. of Taipei, Taiwan; Micro-Star International Co., Ltd. of Taipei Hsien, Taiwan; TEAC Corp. of Tokyo, Japan; or Ultima Electronics Corp. of Taipei Hsien, Taiwan. The Commission has also determined to issue cease and desist orders directed to Artronix Technology, Inc.; ASUSTek Computer, Inc.; ASUS Computer International; MSI Computer Corporation; TEAC America Inc.; EPO Science and Technology, Inc.; and LITE-ON Information Technology Corp.

The Commission also determined that the public interest factors enumerated in 19 U.S.C. § 1337(d) and (f) do not preclude issuance of the remedial orders, and that the bond during the Presidential period of review shall be set at 100 percent of the entered value for any covered chips or chipsets and \$4.43 per unit for any optical storage device containing covered chips or chipsets.

The authority for the Commission's determinations is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), and in sections 210.45 - 210.51 of the Commission’s Rules of Practice and Procedure (19 C.F.R. §§ 210.45 - 210.51).

By order of the Commission.



Marilyn R. Abbott
Secretary to the Commission

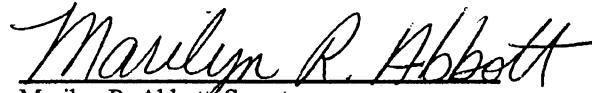
Issued: September 28, 2005

**CERTAIN OPTICAL DISK CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME, INCLUDING DVD PLAYERS
AND OPTICAL STORAGE DEVICES**

337-TA-506

PUBLIC CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **NOTICE OF FINAL DETERMINATION; ISSUANCE OF LIMITED EXCLUSION ORDER AND CEASE AND DESIST ORDERS; TERMINATION OF INVESTIGATION** was served upon the Commission Investigative Attorney, Karen Norton, Esq., and all parties via first class mail and air mail on September 28, 2005.



Marilyn R. Abbott, Secretary
U.S. International Trade Commission
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**OPTICAL DISK CONTROLLERS AND
CHIPSETS
337-TA-506**

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Audiovox Corporation
150 Marcus Boulevard
Hauppauge, New York 11788

EPO Science & Technology, Inc.
4F. 310 Chukwang Road
Taipei, Taiwan

Initial Technology, Inc.
1839 Yeager Avenue
LaVerne, CA 91750

Micro-star International Co., Ltd.
No. 69, Li-De Street
Jung-He City
Taipei Hsein, Taiwan

MSI Computer Corp.
901 Canada Court
City of Industry, CA 91748

Shinco Digital Technology, Ltd.
No. 1, Gufang (E) Road
Hutang Town
Changzhou, Jiangsu China 213104

Ultima Electronics Corp.
9F. 18 Alley 1, Lane 768, Sec. 4
Pa Te Road
Taipei, Taiwan

**UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436**

In the Matter of

**CERTAIN OPTICAL DISK CONTROLLER CHIPS
AND CHIPSETS AND PRODUCTS CONTAINING
SAME, INCLUDING DVD PLAYERS AND PC OPTICAL
STORAGE DEVICES**

Inv. No. 337-TA-506

LIMITED EXCLUSION ORDER

The Commission has determined that there is a violation of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) in the unlawful importation, sale for importation, and sale after importation by MediaTek, Inc. of optical disk controller chips and chipsets that infringe claim 3 of U.S. Patent No. 6,584,527 (“the ‘527 patent”). In addition, the Commission has determined that there is a violation of Section 337 in the unlawful importation, sale for importation and sale after importation of optical storage devices incorporating optical disk controller chips and chipsets that infringe claim 3 of the ‘527 patent by Artronix Technology Inc.; ASUSTek Computer Inc.; ASUS Computer International; EPO Science & Technology, Inc.; LITE-ON Information Technology Corp.; Micro-Star International Co., Ltd.; MSI Computer Corp.; TEAC America, Inc.; TEAC Corp.; and Ultima Electronics Corp. (collectively, “Respondents”).

Having reviewed the record in this investigation, including the written submissions of the parties, the Commission has made its determination on the issues of remedy, the public interest, and bonding. The Commission has determined that the appropriate form of relief is a limited

exclusion order prohibiting the unlicensed entry of covered chips and chipsets manufactured by or on behalf of MediaTek and covered optical storage devices manufactured by or on behalf of any of the Respondents. The Commission has also determined to issue cease and desist orders directed to Artronix Technology Inc.; ASUSTek Computer, Inc.; ASUS Computer International; EPO Science & Technology, Inc.; LITE-ON Information Technology Corp.; MSI Computer Corp.; and TEAC America, Inc.

The Commission has determined that the public interest factors enumerated in 19 U.S.C. § 1337 (d) and (f) do not preclude issuance of the limited exclusion order or the cease and desist orders, and that the bond during the Presidential review period shall be in the amount of 100% of the entered value for any covered chips or chipsets imported separately or within circuit board modules or carriers and \$4.43 per unit for any optical storage device containing covered chips or chipsets.

Accordingly, the Commission hereby ORDERS that:

1. Chips or chipsets, including chips or chipsets incorporated into circuit board modules and carriers, that are covered by claim 3 of U.S. Patent No. 6,584,527 and are manufactured abroad or imported by or on behalf of Mediatek, Inc. or any of its affiliated companies, parents, subsidiaries, contractors, or other related business entities, or their successors or assigns, and optical storage devices containing same that are manufactured abroad or imported by or on behalf of Respondents or any of their affiliated companies, parents, subsidiaries, contractors, or other related business entities, or their successors or assigns, are excluded from entry for consumption into the United States, entry for consumption from a foreign-trade zone, or withdrawal from a warehouse for consumption, for the remaining term of the patent except under license of the

patent owner or as provided by law.

2. Chips and chipsets, including chips or chipsets incorporated into circuit board modules and carriers, and optical storage devices containing covered chips or chipsets described in paragraph 1 of this Order are entitled to entry for consumption into the United States, entry for consumption from a foreign-trade zone, or withdrawal from a warehouse for consumption, under bond in the amount of one hundred (100) percent of entered value for covered chips or chipsets imported separately or within circuit board modules or carriers, or \$4.43 per optical storage device containing covered chips or chipsets, pursuant to subsection (j) of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337(j), and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (70 *Fed. Reg.* 43251), from the day after this Order is received by the United States Trade Representative until such time as the United States Trade Representative notifies the Commission that he approves or disapproves this action but, in any event, not later than sixty (60) days after the date of receipt of this action.

3. When the U.S. Bureau of Customs and Border Protection (Customs) is unable to determine by inspection whether chips or chipsets, including chips or chipsets incorporated into circuit board modules and carriers, or optical storage devices fall within the scope of this Order, it may, in its discretion, accept a certification, pursuant to procedures specified and deemed necessary by Customs, from persons seeking to import said chips or chipsets, including chips or chipsets incorporated into circuit board modules and carriers, or optical storage devices that they are familiar with the terms of this Order, that they have made appropriate inquiry, and thereupon state that, to the best of their knowledge and belief, the products being imported are not excluded from entry under paragraph 1 of this Order. At its discretion, Customs may require persons who

have provided the certification described in this paragraph to furnish such records or analyses as are necessary to substantiate the certification.

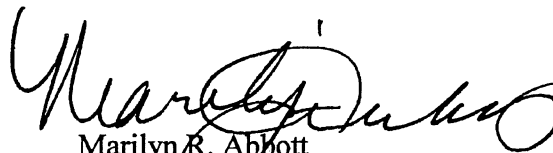
4. In accordance with 19 U.S.C. § 1337(l), the provisions of this Order shall not apply to chips or chipsets, including chips or chipsets incorporated into circuit board modules and carriers, or optical storage products containing same that are imported by and for the use of the United States, imported for, and to be used for, the United States with the authorization or consent of the Government.

5. The Commission may modify this Order in accordance with the procedures described in Rule 210.76 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.76.

6. The Secretary shall serve copies of this Order upon each party of record in this investigation and upon the Department of Health and Human Services, the Department of Justice, the Federal Trade Commission, and Customs.

7. Notice of this Order shall be published in the *Federal Register*.

By Order of the Commission.


Marilyn R. Abbott
Secretary to the Commission

Issued: September 28, 2005

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN OPTICAL DISK
CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME,
INCLUDING DVD PLAYERS AND PC
OPTICAL STORAGE DEVICES**

Investigation No. 337-TA-506

ORDER TO CEASE AND DESIST

IT IS HEREBY ORDERED THAT Artronix Technology, Inc., 350 Ranger Avenue, Unit C, Brea, California, (“Respondent” or “Artronix”), cease and desist from conducting any of the following activities in the United States: importing, selling, distributing, marketing, consigning, transferring (except for exportation), offering for sale in the United States and soliciting U.S. agents or distributors for optical storage devices containing certain optical disk controller chips and chipsets in violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337.

I.

Definitions

As used in this Order:

- (A) “Commission” shall mean the United States International Trade Commission.
- (B) “Zoran” shall mean Zoran Corporation, 1390 Kifer Road, Sunnyvale, California.
- (C) “Oak” shall mean Oak Technology, Inc., 1390 Kifer Road, Sunnyvale, California.
- (D) “Complainants” shall mean Zoran and Oak.

(E) "Respondent" and "Artronix" shall mean Artronix Technology, Inc., 350 Ranger Avenue, Unit C, Brea, California.

(F) "Person" shall mean an individual, or any nongovernmental partnership, firm, association, corporation, or other legal or business entity other than the Respondent or its majority owned or controlled subsidiaries, their successors, or assigns.

(G) "United States" shall mean the fifty States, the District of Columbia, and Puerto Rico.

(H) The terms "import" and "importation" refer to importation for entry for consumption, entry for consumption from a foreign-trade zone, and withdrawal from warehouse for consumption under the Customs laws of the United States.

(I) The term "covered product" shall include, without limitation, optical storage devices incorporating optical disk controller chips and chipsets that are covered by claim 3 of U.S. Patent No. 6,584,527.

II.

Applicability

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, licensees, contractors, distributors, controlled (whether by stock ownership or otherwise) and majority owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by Section III, *infra*, for, with, or otherwise on behalf of Respondent.

III.

Conduct Prohibited

The following conduct of Respondent in the United States is prohibited by the Order. For the remaining term of U.S. Patent No. 6,584,527, Respondent shall not:

(A) import or sell for importation into the United States covered product except under license of the patent owner;

(B) market, distribute, offer for sale, sell, consign, or otherwise transfer (except for exportation) in the United States imported covered product except under license of the patent owner;

(C) solicit U.S. agents or distributors for covered product except under license of the patent owner; or

(D) aid or abet other entities in the importation, sale for importation, sale after importation, transfer, or distribution of covered product in the United States except under license of the patent owner.

IV.

Conduct Permitted

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if, in a written instrument, the owner of U.S. Patent No. 6,584,527 licenses or authorizes such specific conduct, or such specific conduct is related to the importation or sale of covered product by or for the United States.

V.

Reporting

For purposes of this reporting requirement, the yearly reporting periods shall commence on July 1 of each year and shall end on the subsequent June 30. However, the first yearly report required under this section shall cover the period from the date of issuance of this Order through June 30, 2006.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission the quantity in units and the value in dollars of covered product that Respondent has imported or sold in the United States after importation during the reporting period and the quantity in units and value in dollars of reported covered product that remain in inventory in the United States at the end of the reporting period. This reporting requirement shall continue in force until such time as Respondent will have truthfully reported, in two consecutive timely filed yearly reports, that it has no inventory of covered product in the United States.

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI.

Record-keeping and Inspection

(A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the exportation to and importation into the United States and the sale, offer for sale, marketing, or distribution in the United States of covered product, made and

received in the usual and ordinary course of business, whether in detail or in summary form, for a period of two (2) years from the close of the fiscal year to which they pertain.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, and subject to any privilege recognized by the federal courts of the United States, duly authorized representatives of the Commission, upon reasonable written notice by the Commission or its staff, shall be permitted access and the right to inspect and copy in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, both in detail and in summary form as are required to be retained by subparagraph VI(A) of this Order.

VII.

Service of Cease and Desist Order

Respondent is ordered and directed to:

(A) Serve, within fifteen (15) days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered product in the United States;

(B) Serve, within fifteen (15) days after the succession of any persons referred to in subparagraph VII (A) of this Order, a copy of the Order upon each successor; and

(C) Maintain such records as will show the name, title, and address of each person upon whom the Order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until June 22, 2014, the date of expiration of U.S. Patent No. 6,584,527.

VIII.

Confidentiality

Any request for confidential treatment of information obtained by the Commission pursuant to Sections V and VI of the Order should be in accordance with section 201.6 of the Commission Rules of Practice and Procedure. 19 C.F.R. § 201.6. For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX.

Enforcement

Violation of this Order may result in any of the actions specified in section 210.75 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.75, including an action for civil penalties in accordance with section 337(f) of the Tariff Act of 1930, 19 U.S.C. § 1337(f), and any other action as the Commission may deem appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if Respondent fails to provide adequate or timely information.

X.

Modification

The Commission may amend this Order on its own motion or in accordance with the procedure described in section 210.76 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.76.

XI.

Bonding

The conduct prohibited by Section III of this Order may be continued during the sixty (60) day period in which this Order is under review by the United States Trade Representative pursuant to section 337(j) of the Tariff Act of 1930, 19 U.S.C. § 1337(j), and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (*70 Fed. Reg.* 43251), subject to Respondent posting a bond of \$4.43 per unit for covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered product imported on or after the date of issuance of this order is subject to the entry bond as set forth in the limited exclusion order issued by the Commission, and is not subject to this bond provision.

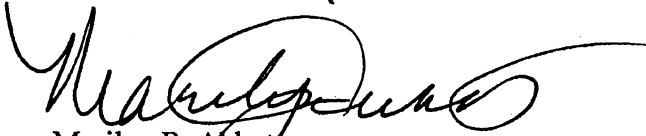
The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by complainants in connection with the issuance of temporary exclusion orders. *See* 19 C.F.R. § 210.68. The bond and any accompanying documentation is to be provided to and approved by the Commission prior to the commencement of conduct which is otherwise prohibited by Section III of this Order.

The bond is to be forfeited in the event that the United States Trade Representative

approves, or does not disapprove within the Presidential review period, this Order, unless the U.S. Court of Appeals for the Federal Circuit, in a final judgment, reverses any Commission final determination and order as to Respondent on appeal, or unless Respondent exports the products subject to this bond or destroys them and provides certification to that effect satisfactory to the Commission.

The bond is to be released in the event the United States Trade Representative disapproves this Order and no subsequent order is issued by the Commission and approved, or not disapproved, by the United States Trade Representative, upon service on Respondent of an order issued by the Commission based upon application therefore made by Respondent to the Commission.

By Order of the Commission.



Marilyn R. Abbott
Secretary to the Commission

Issued: September 28, 2005

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN OPTICAL DISK
CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME,
INCLUDING DVD PLAYERS AND PC
OPTICAL STORAGE DEVICES**

Investigation No. 337-TA-506

ORDER TO CEASE AND DESIST

IT IS HEREBY ORDERED THAT ASUSTek Computer, Inc., 150 Li-Te Road, Peitou, Taipei, Taiwan 112 ("Respondent" or "ASUSTek"), cease and desist from conducting any of the following activities in the United States: importing, selling, distributing, marketing, consigning, transferring (except for exportation), offering for sale in the United States and soliciting U.S. agents or distributors for optical storage devices containing certain optical disk controller chips and chipsets in violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337.

I.

Definitions

As used in this Order:

- (A) "Commission" shall mean the United States International Trade Commission.
- (B) "Zoran" shall mean Zoran Corporation, 1390 Kifer Road, Sunnyvale, California.
- (C) "Oak" shall mean Oak Technology, Inc., 1390 Kifer Road, Sunnyvale, California.
- (D) "Complainants" shall mean Zoran and Oak.

(E) "Respondent" and "ASUSTek" shall mean ASUSTek Computer, Inc., 150 Li-Te Road, Peitou, Taipei, Taiwan 112.

(F) "Person" shall mean an individual, or any nongovernmental partnership, firm, association, corporation, or other legal or business entity other than the Respondent or its majority owned or controlled subsidiaries, their successors, or assigns.

(G) "United States" shall mean the fifty States, the District of Columbia, and Puerto Rico.

(H) The terms "import" and "importation" refer to importation for entry for consumption, entry for consumption from a foreign-trade zone, and withdrawal from warehouse for consumption under the Customs laws of the United States.

(I) The term "covered product" shall include, without limitation, optical storage devices incorporating optical disk controller chips and chipsets that are covered by claim 3 of U.S. Patent No. 6,584,527.

II.

Applicability

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, licensees, contractors, distributors, controlled (whether by stock ownership or otherwise) and majority owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by Section III, *infra*, for, with, or otherwise on behalf of Respondent.

III.

Conduct Prohibited

The following conduct of Respondent in the United States is prohibited by the Order. For the remaining term of U.S. Patent No. 6,584,527, Respondent shall not:

(A) import or sell for importation into the United States covered product except under license of the patent owner;

(B) market, distribute, offer for sale, sell, consign, or otherwise transfer (except for exportation) in the United States imported covered product except under license of the patent owner;

(C) solicit U.S. agents or distributors for covered product except under license of the patent owner; or

(D) aid or abet other entities in the importation, sale for importation, sale after importation, transfer, or distribution of covered product in the United States except under license of the patent owner.

IV.

Conduct Permitted

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if, in a written instrument, the owner of U.S. Patent No. 6,584,527 licenses or authorizes such specific conduct, or such specific conduct is related to the importation or sale of covered product by or for the United States.

V.

Reporting

For purposes of this reporting requirement, the yearly reporting periods shall commence on July 1 of each year and shall end on the subsequent June 30. However, the first yearly report required under this section shall cover the period from the date of issuance of this Order through June 30, 2006.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission the quantity in units and the value in dollars of covered product that Respondent has imported or sold in the United States after importation during the reporting period and the quantity in units and value in dollars of reported covered product that remain in inventory in the United States at the end of the reporting period. This reporting requirement shall continue in force until such time as Respondent will have truthfully reported, in two consecutive timely filed yearly reports, that it has no inventory of covered product in the United States.

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI.

Record-keeping and Inspection

(A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the exportation to and importation into the United States and the sale, offer for sale, marketing, or distribution in the United States of covered product, made and

received in the usual and ordinary course of business, whether in detail or in summary form, for a period of two (2) years from the close of the fiscal year to which they pertain.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, and subject to any privilege recognized by the federal courts of the United States, duly authorized representatives of the Commission, upon reasonable written notice by the Commission or its staff, shall be permitted access and the right to inspect and copy in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, both in detail and in summary form as are required to be retained by subparagraph VI(A) of this Order.

VII.

Service of Cease and Desist Order

Respondent is ordered and directed to:

(A) Serve, within fifteen (15) days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered product in the United States;

(B) Serve, within fifteen (15) days after the succession of any persons referred to in subparagraph VII (A) of this Order, a copy of the Order upon each successor; and

(C) Maintain such records as will show the name, title, and address of each person upon whom the Order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until June 22, 2014, the date of expiration of U.S. Patent No. 6,584,527.

VIII.

Confidentiality

Any request for confidential treatment of information obtained by the Commission pursuant to Sections V and VI of the Order should be in accordance with section 201.6 of the Commission Rules of Practice and Procedure. 19 C.F.R. § 201.6. For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX.

Enforcement

Violation of this Order may result in any of the actions specified in section 210.75 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.75, including an action for civil penalties in accordance with section 337(f) of the Tariff Act of 1930, 19 U.S.C. § 1337(f), and any other action as the Commission may deem appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if Respondent fails to provide adequate or timely information.

X.

Modification

The Commission may amend this Order on its own motion or in accordance with the procedure described in section 210.76 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.76.

XI.

Bonding

The conduct prohibited by Section III of this Order may be continued during the sixty (60) day period in which this Order is under review by the United States Trade Representative pursuant to section 337(j) of the Tariff Act of 1930, 19 U.S.C. § 1337(j), and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (70 *Fed. Reg.* 43251), subject to Respondent posting a bond of \$4.43 per unit for covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered product imported on or after the date of issuance of this order is subject to the entry bond as set forth in the limited exclusion order issued by the Commission, and is not subject to this bond provision.

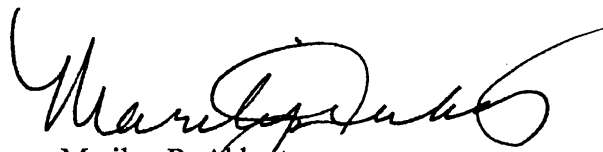
The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by complainants in connection with the issuance of temporary exclusion orders. *See* 19 C.F.R. § 210.68. The bond and any accompanying documentation is to be provided to and approved by the Commission prior to the commencement of conduct which is otherwise prohibited by Section III of this Order.

The bond is to be forfeited in the event that the United States Trade Representative

approves, or does not disapprove within the Presidential review period, this Order, unless the U.S. Court of Appeals for the Federal Circuit, in a final judgment, reverses any Commission final determination and order as to Respondent on appeal, or unless Respondent exports the products subject to this bond or destroys them and provides certification to that effect satisfactory to the Commission.

The bond is to be released in the event the United States Trade Representative disapproves this Order and no subsequent order is issued by the Commission and approved, or not disapproved, by the United States Trade Representative, upon service on Respondent of an order issued by the Commission based upon application therefore made by Respondent to the Commission.

By Order of the Commission.



Marilyn R. Abbott
Secretary to the Commission

Issued: September 28, 2005

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN OPTICAL DISK
CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME,
INCLUDING DVD PLAYERS AND PC
OPTICAL STORAGE DEVICES**

Investigation No. 337-TA-506

ORDER TO CEASE AND DESIST

IT IS HEREBY ORDERED THAT EPO Science & Technology, Inc., 4F, 310 Chukwang Road, Taipei, Taiwan (“Respondent” or “EPO”), cease and desist from conducting any of the following activities in the United States: importing, selling, distributing, marketing, consigning, transferring (except for exportation), offering for sale in the United States and soliciting U.S. agents or distributors for optical storage devices containing certain optical disk controller chips and chipsets in violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337.

I.

Definitions

As used in this Order:

- (A) “Commission” shall mean the United States International Trade Commission.
- (B) “Zoran” shall mean Zoran Corporation, 1390 Kifer Road, Sunnyvale, California.
- (C) “Oak” shall mean Oak Technology, Inc., 1390 Kifer Road, Sunnyvale, California.
- (D) “Complainants” shall mean Zoran and Oak.
- (E) “Respondent” and “EPO” shall mean EPO Science & Technology, Inc., 4F, 310

Chukwang Road, Taipei, Taiwan.

(F) "Person" shall mean an individual, or any nongovernmental partnership, firm, association, corporation, or other legal or business entity other than the Respondent or its majority owned or controlled subsidiaries, their successors, or assigns.

(G) "United States" shall mean the fifty States, the District of Columbia, and Puerto Rico.

(H) The terms "import" and "importation" refer to importation for entry for consumption, entry for consumption from a foreign-trade zone, and withdrawal from warehouse for consumption under the Customs laws of the United States.

(I) The term "covered product" shall include, without limitation, optical storage devices incorporating optical disk controller chips and chipsets that are covered by claim 3 of U.S. Patent No. 6,584,527.

II.

Applicability

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, licensees, contractors, distributors, controlled (whether by stock ownership or otherwise) and majority owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by Section III, *infra*, for, with, or otherwise on behalf of Respondent.

III.

Conduct Prohibited

The following conduct of Respondent in the United States is prohibited by the Order. For the remaining term of U.S. Patent No. 6,584,527, Respondent shall not:

(A) import or sell for importation into the United States covered product except under license of the patent owner;

(B) market, distribute, offer for sale, sell, consign, or otherwise transfer (except for exportation) in the United States imported covered product except under license of the patent owner;

(C) solicit U.S. agents or distributors for covered product except under license of the patent owner; or

(D) aid or abet other entities in the importation, sale for importation, sale after importation, transfer, or distribution of covered product in the United States except under license of the patent owner.

IV.

Conduct Permitted

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if, in a written instrument, the owner of U.S. Patent No. 6,584,527 licenses or authorizes such specific conduct, or such specific conduct is related to the importation or sale of covered product by or for the United States.

V.

Reporting

For purposes of this reporting requirement, the yearly reporting periods shall commence on July 1 of each year and shall end on the subsequent June 30. However, the first yearly report required under this section shall cover the period from the date of issuance of this Order through June 30, 2006.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission the quantity in units and the value in dollars of covered product that Respondent has imported or sold in the United States after importation during the reporting period and the quantity in units and value in dollars of reported covered product that remain in inventory in the United States at the end of the reporting period. This reporting requirement shall continue in force until such time as Respondent will have truthfully reported, in two consecutive timely filed yearly reports, that it has no inventory of covered product in the United States.

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI.

Record-keeping and Inspection

(A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the exportation to and importation into the United States and the sale, offer for sale, marketing, or distribution in the United States of covered product, made and

received in the usual and ordinary course of business, whether in detail or in summary form, for a period of two (2) years from the close of the fiscal year to which they pertain.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, and subject to any privilege recognized by the federal courts of the United States, duly authorized representatives of the Commission, upon reasonable written notice by the Commission or its staff, shall be permitted access and the right to inspect and copy in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, both in detail and in summary form as are required to be retained by subparagraph VI(A) of this Order.

VII.

Service of Cease and Desist Order

Respondent is ordered and directed to:

(A) Serve, within fifteen (15) days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered product in the United States;

(B) Serve, within fifteen (15) days after the succession of any persons referred to in subparagraph VII (A) of this Order, a copy of the Order upon each successor; and

(C) Maintain such records as will show the name, title, and address of each person upon whom the Order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until June 22, 2014, the date of expiration of U.S. Patent No. 6,584,527.

VIII.

Confidentiality

Any request for confidential treatment of information obtained by the Commission pursuant to Sections V and VI of the Order should be in accordance with section 201.6 of the Commission Rules of Practice and Procedure, 19 C.F.R. § 201.6. For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX.

Enforcement

Violation of this Order may result in any of the actions specified in section 210.75 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.75, including an action for civil penalties in accordance with section 337(f) of the Tariff Act of 1930, 19 U.S.C. § 1337(f), and any other action as the Commission may deem appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if Respondent fails to provide adequate or timely information.

X.

Modification

The Commission may amend this Order on its own motion or in accordance with the procedure described in section 210.76 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.76.

XI.

Bonding

The conduct prohibited by Section III of this Order may be continued during the sixty (60) day period in which this Order is under review by the United States Trade Representative pursuant to section 337(j) of the Tariff Act of 1930, 19 U.S.C. § 1337(j), and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (70 *Fed. Reg.* 43251), subject to Respondent posting a bond of \$4.43 per unit for covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered product imported on or after the date of issuance of this order is subject to the entry bond as set forth in the limited exclusion order issued by the Commission, and is not subject to this bond provision.

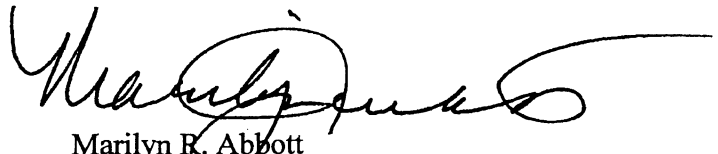
The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by complainants in connection with the issuance of temporary exclusion orders. *See* 19 C.F.R. § 210.68. The bond and any accompanying documentation is to be provided to and approved by the Commission prior to the commencement of conduct which is otherwise prohibited by Section III of this Order.

The bond is to be forfeited in the event that the United States Trade Representative

approves, or does not disapprove within the Presidential review period, this Order, unless the U.S. Court of Appeals for the Federal Circuit, in a final judgment, reverses any Commission final determination and order as to Respondent on appeal, or unless Respondent exports the products subject to this bond or destroys them and provides certification to that effect satisfactory to the Commission.

The bond is to be released in the event the United States Trade Representative disapproves this Order and no subsequent order is issued by the Commission and approved, or not disapproved, by the United States Trade Representative, upon service on Respondent of an order issued by the Commission based upon application therefore made by Respondent to the Commission.

By Order of the Commission.



Marilyn R. Abbott
Secretary to the Commission

Issued: September 28, 2005

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN OPTICAL DISK
CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME,
INCLUDING DVD PLAYERS AND PC
OPTICAL STORAGE DEVICES**

Investigation No. 337-TA-506

ORDER TO CEASE AND DESIST

IT IS HEREBY ORDERED THAT LITE-ON Information Technology Corp., 14F, No. 392, Ruey Kuang Road, Neihu, Taipei 114, Taiwan, ("Respondent" or "LITE-ON"), cease and desist from conducting any of the following activities in the United States: importing, selling, distributing, marketing, consigning, transferring (except for exportation), offering for sale in the United States and soliciting U.S. agents or distributors for optical storage devices containing certain optical disk controller chips and chipsets in violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337.

I.

Definitions

As used in this Order:

- (A) "Commission" shall mean the United States International Trade Commission.
- (B) "Zoran" shall mean Zoran Corporation, 1390 Kifer Road, Sunnyvale, California.
- (C) "Oak" shall mean Oak Technology, Inc., 1390 Kifer Road, Sunnyvale, California.
- (D) "Complainants" shall mean Zoran and Oak.

(E) "Respondent" and "LITE-ON" shall mean LITE-ON Information Technology Corp., 14F, No. 392, Ruey Kuang Road, Neihu, Taipei 114, Taiwan.

(F) "Person" shall mean an individual, or any nongovernmental partnership, firm, association, corporation, or other legal or business entity other than the Respondent or its majority owned or controlled subsidiaries, their successors, or assigns.

(G) "United States" shall mean the fifty States, the District of Columbia, and Puerto Rico.

(H) The terms "import" and "importation" refer to importation for entry for consumption, entry for consumption from a foreign-trade zone, and withdrawal from warehouse for consumption under the Customs laws of the United States.

(I) The term "covered product" shall include, without limitation, optical storage devices incorporating optical disk controller chips and chipsets that are covered by claim 3 of U.S. Patent No. 6,584,527.

II.

Applicability

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, licensees, contractors, distributors, controlled (whether by stock ownership or otherwise) and majority owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by Section III, *infra*, for, with, or otherwise on behalf of Respondent.

III.

Conduct Prohibited

The following conduct of Respondent in the United States is prohibited by the Order. For the remaining term of U.S. Patent No. 6,584,527, Respondent shall not:

(A) import or sell for importation into the United States covered product except under license of the patent owner;

(B) market, distribute, offer for sale, sell, consign, or otherwise transfer (except for exportation) in the United States imported covered product except under license of the patent owner;

(C) solicit U.S. agents or distributors for covered product except under license of the patent owner; or

(D) aid or abet other entities in the importation, sale for importation, sale after importation, transfer, or distribution of covered product in the United States except under license of the patent owner.

IV.

Conduct Permitted

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if, in a written instrument, the owner of U.S. Patent No. 6,584,527 licenses or authorizes such specific conduct, or such specific conduct is related to the importation or sale of covered product by or for the United States.

V.

Reporting

For purposes of this reporting requirement, the yearly reporting periods shall commence on July 1 of each year and shall end on the subsequent June 30. However, the first yearly report required under this section shall cover the period from the date of issuance of this Order through June 30, 2006.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission the quantity in units and the value in dollars of covered product that Respondent has imported or sold in the United States after importation during the reporting period and the quantity in units and value in dollars of reported covered product that remain in inventory in the United States at the end of the reporting period. This reporting requirement shall continue in force until such time as Respondent will have truthfully reported, in two consecutive timely filed yearly reports, that it has no inventory of covered product in the United States.

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI.

Record-keeping and Inspection

(A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the exportation to and importation into the United States and the sale, offer for sale, marketing, or distribution in the United States of covered product, made and

received in the usual and ordinary course of business, whether in detail or in summary form, for a period of two (2) years from the close of the fiscal year to which they pertain.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, and subject to any privilege recognized by the federal courts of the United States, duly authorized representatives of the Commission, upon reasonable written notice by the Commission or its staff, shall be permitted access and the right to inspect and copy in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, both in detail and in summary form as are required to be retained by subparagraph VI(A) of this Order.

VII.

Service of Cease and Desist Order

Respondent is ordered and directed to:

(A) Serve, within fifteen (15) days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered product in the United States;

(B) Serve, within fifteen (15) days after the succession of any persons referred to in subparagraph VII (A) of this Order, a copy of the Order upon each successor; and

(C) Maintain such records as will show the name, title, and address of each person upon whom the Order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until June 22, 2014, the date of expiration of U.S. Patent No. 6,584,527.

VIII.

Confidentiality

Any request for confidential treatment of information obtained by the Commission pursuant to Sections V and VI of the Order should be in accordance with section 201.6 of the Commission Rules of Practice and Procedure. 19 C.F.R. § 201.6. For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX.

Enforcement

Violation of this Order may result in any of the actions specified in section 210.75 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.75, including an action for civil penalties in accordance with section 337(f) of the Tariff Act of 1930, 19 U.S.C. § 1337(f), and any other action as the Commission may deem appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if Respondent fails to provide adequate or timely information.

X.

Modification

The Commission may amend this Order on its own motion or in accordance with the procedure described in section 210.76 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.76.

XI.

Bonding

The conduct prohibited by Section III of this Order may be continued during the sixty (60) day period in which this Order is under review by the United States Trade Representative pursuant to section 337(j) of the Tariff Act of 1930, 19 U.S.C. § 1337(j), and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (*70 Fed. Reg.* 43251), subject to Respondent posting a bond of \$4.43 per unit for covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered product imported on or after the date of issuance of this order is subject to the entry bond as set forth in the limited exclusion order issued by the Commission, and is not subject to this bond provision.

The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by complainants in connection with the issuance of temporary exclusion orders. *See* 19 C.F.R. § 210.68. The bond and any accompanying documentation is to be provided to and approved by the Commission prior to the commencement of conduct which is otherwise prohibited by Section III of this Order.

The bond is to be forfeited in the event that the United States Trade Representative

approves, or does not disapprove within the Presidential review period, this Order, unless the U.S. Court of Appeals for the Federal Circuit, in a final judgment, reverses any Commission final determination and order as to Respondent on appeal, or unless Respondent exports the products subject to this bond or destroys them and provides certification to that effect satisfactory to the Commission.

The bond is to be released in the event the United States Trade Representative disapproves this Order and no subsequent order is issued by the Commission and approved, or not disapproved, by the United States Trade Representative, upon service on Respondent of an order issued by the Commission based upon application therefore made by Respondent to the Commission.

By Order of the Commission.

A handwritten signature in black ink, appearing to read 'Marilyn R. Abbott', written in a cursive style.

Marilyn R. Abbott
Secretary to the Commission

Issued: September 28, 2005

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN OPTICAL DISK
CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME,
INCLUDING DVD PLAYERS AND PC
OPTICAL STORAGE DEVICES**

Investigation No. 337-TA-506

ORDER TO CEASE AND DESIST

IT IS HEREBY ORDERED THAT ASUS Computer International, 44370 Nobel Drive, Fremont, California, (“Respondent” or “ASUS Computer”), cease and desist from conducting any of the following activities in the United States: importing, selling, distributing, marketing, consigning, transferring (except for exportation), offering for sale in the United States and soliciting U.S. agents or distributors for optical storage devices containing certain optical disk controller chips and chipsets in violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337.

I.

Definitions

As used in this Order:

- (A) “Commission” shall mean the United States International Trade Commission.
- (B) “Zoran” shall mean Zoran Corporation, 1390 Kifer Road, Sunnyvale, California.
- (C) “Oak” shall mean Oak Technology, Inc., 1390 Kifer Road, Sunnyvale, California.

(D) "Complainants" shall mean Zoran and Oak.

(E) "Respondent" and "ASUS Computer" shall mean ASUS Computer International, 44370 Nobel Drive, Fremont, California.

(F) "Person" shall mean an individual, or any nongovernmental partnership, firm, association, corporation, or other legal or business entity other than the Respondent or its majority owned or controlled subsidiaries, their successors, or assigns.

(G) "United States" shall mean the fifty States, the District of Columbia, and Puerto Rico.

(H) The terms "import" and "importation" refer to importation for entry for consumption, entry for consumption from a foreign-trade zone, and withdrawal from warehouse for consumption under the Customs laws of the United States.

(I) The term "covered product" shall include, without limitation, optical storage devices incorporating optical disk controller chips and chipsets that are covered by claim 3 of U.S. Patent No. 6,584,527.

II.

Applicability

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, licensees, contractors, distributors, controlled (whether by stock ownership or otherwise) and majority owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by Section III, *infra*, for, with, or otherwise on behalf of Respondent.

III.

Conduct Prohibited

The following conduct of Respondent in the United States is prohibited by the Order. For the remaining term of U.S. Patent No. 6,584,527, Respondent shall not:

(A) import or sell for importation into the United States covered product except under license of the patent owner;

(B) market, distribute, offer for sale, sell, consign, or otherwise transfer (except for exportation) in the United States imported covered product except under license of the patent owner;

(C) solicit U.S. agents or distributors for covered product except under license of the patent owner; or

(D) aid or abet other entities in the importation, sale for importation, sale after importation, transfer, or distribution of covered product in the United States except under license of the patent owner.

IV.

Conduct Permitted

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if, in a written instrument, the owner of U.S. Patent No. 6,584,527 licenses or authorizes such specific conduct, or such specific conduct is related to the importation or sale of covered product by or for the United States.

V.

Reporting

For purposes of this reporting requirement, the yearly reporting periods shall commence on July 1 of each year and shall end on the subsequent June 30. However, the first yearly report required under this section shall cover the period from the date of issuance of this Order through June 30, 2006.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission the quantity in units and the value in dollars of covered product that Respondent has imported or sold in the United States after importation during the reporting period and the quantity in units and value in dollars of reported covered product that remain in inventory in the United States at the end of the reporting period. This reporting requirement shall continue in force until such time as Respondent will have truthfully reported, in two consecutive timely filed yearly reports, that it has no inventory of covered product in the United States.

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI.

Record-keeping and Inspection

(A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the exportation to and importation into the United States and the sale, offer for sale, marketing, or distribution in the United States of covered product, made and

received in the usual and ordinary course of business, whether in detail or in summary form, for a period of two (2) years from the close of the fiscal year to which they pertain.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, and subject to any privilege recognized by the federal courts of the United States, duly authorized representatives of the Commission, upon reasonable written notice by the Commission or its staff, shall be permitted access and the right to inspect and copy in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, both in detail and in summary form as are required to be retained by subparagraph VI(A) of this Order.

VII.

Service of Cease and Desist Order

Respondent is ordered and directed to:

(A) Serve, within fifteen (15) days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered product in the United States;

(B) Serve, within fifteen (15) days after the succession of any persons referred to in subparagraph VII (A) of this Order, a copy of the Order upon each successor; and

(C) Maintain such records as will show the name, title, and address of each person upon whom the Order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until June 22, 2014, the date of expiration of U.S. Patent No. 6,584,527.

VIII.

Confidentiality

Any request for confidential treatment of information obtained by the Commission pursuant to Sections V and VI of the Order should be in accordance with section 201.6 of the Commission Rules of Practice and Procedure. 19 C.F.R. § 201.6. For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX.

Enforcement

Violation of this Order may result in any of the actions specified in section 210.75 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.75, including an action for civil penalties in accordance with section 337(f) of the Tariff Act of 1930, 19 U.S.C. § 1337(f), and any other action as the Commission may deem appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if Respondent fails to provide adequate or timely information.

X.

Modification

The Commission may amend this Order on its own motion or in accordance with the procedure described in section 210.76 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.76.

XI.

Bonding

The conduct prohibited by Section III of this Order may be continued during the sixty (60) day period in which this Order is under review by the United States Trade Representative pursuant to section 337(j) of the Tariff Act of 1930, 19 U.S.C. § 1337(j), and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (70 *Fed. Reg.* 43251), subject to Respondent posting a bond of \$4.43 per unit for covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered product imported on or after the date of issuance of this order is subject to the entry bond as set forth in the limited exclusion order issued by the Commission, and is not subject to this bond provision.

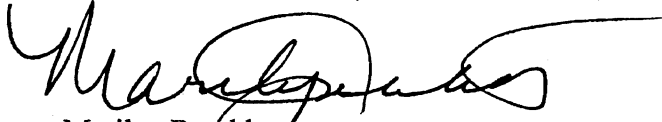
The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by complainants in connection with the issuance of temporary exclusion orders. *See* 19 C.F.R. § 210.68. The bond and any accompanying documentation is to be provided to and approved by the Commission prior to the commencement of conduct which is otherwise prohibited by Section III of this Order.

The bond is to be forfeited in the event that the United States Trade Representative

approves, or does not disapprove within the Presidential review period, this Order, unless the U.S. Court of Appeals for the Federal Circuit, in a final judgment, reverses any Commission final determination and order as to Respondent on appeal, or unless Respondent exports the products subject to this bond or destroys them and provides certification to that effect satisfactory to the Commission.

The bond is to be released in the event the United States Trade Representative disapproves this Order and no subsequent order is issued by the Commission and approved, or not disapproved, by the United States Trade Representative, upon service on Respondent of an order issued by the Commission based upon application therefore made by Respondent to the Commission.

By Order of the Commission.



Marilyn R. Abbott
Secretary to the Commission

Issued: September 28, 2005

**UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.**

In the Matter of

**CERTAIN OPTICAL DISK
CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME,
INCLUDING DVD PLAYERS AND PC
OPTICAL STORAGE DEVICES**

Investigation No. 337-TA-506

ORDER TO CEASE AND DESIST

IT IS HEREBY ORDERED THAT MSI Computer Corporation, 901 Canada Court, City of Industry, California, ("Respondent" or "MSI"), cease and desist from conducting any of the following activities in the United States: importing, selling, distributing, marketing, consigning, transferring (except for exportation), offering for sale in the United States and soliciting U.S. agents or distributors for optical storage devices containing certain optical disk controller chips and chipsets in violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337.

I.

Definitions

As used in this Order:

- (A) "Commission" shall mean the United States International Trade Commission.
- (B) "Zoran" shall mean Zoran Corporation, 1390 Kifer Road, Sunnyvale, California.
- (C) "Oak" shall mean Oak Technology, Inc., 1390 Kifer Road, Sunnyvale, California.
- (D) "Complainants" shall mean Zoran and Oak.

(E) "Respondent" and "MSI" shall mean MSI Computer Corporation, 901 Canada Court, City of Industry, California.

(F) "Person" shall mean an individual, or any nongovernmental partnership, firm, association, corporation, or other legal or business entity other than the Respondent or its majority owned or controlled subsidiaries, their successors, or assigns.

(G) "United States" shall mean the fifty States, the District of Columbia, and Puerto Rico.

(H) The terms "import" and "importation" refer to importation for entry for consumption, entry for consumption from a foreign-trade zone, and withdrawal from warehouse for consumption under the Customs laws of the United States.

(I) The term "covered product" shall include, without limitation, optical storage devices incorporating optical disk controller chips and chipsets that are covered by claim 3 of U.S. Patent No. 6,584,527.

II.

Applicability

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, licensees, contractors, distributors, controlled (whether by stock ownership or otherwise) and majority owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by Section III, *infra*, for, with, or otherwise on behalf of Respondent.

III.

Conduct Prohibited

The following conduct of Respondent in the United States is prohibited by the Order. For the remaining term of U.S. Patent No. 6,584,527, Respondent shall not:

(A) import or sell for importation into the United States covered product except under license of the patent owner;

(B) market, distribute, offer for sale, sell, consign, or otherwise transfer (except for exportation) in the United States imported covered product except under license of the patent owner;

(C) solicit U.S. agents or distributors for covered product except under license of the patent owner; or

(D) aid or abet other entities in the importation, sale for importation, sale after importation, transfer, or distribution of covered product in the United States except under license of the patent owner.

IV.

Conduct Permitted

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if, in a written instrument, the owner of U.S. Patent No. 6,584,527 licenses or authorizes such specific conduct, or such specific conduct is related to the importation or sale of covered product by or for the United States.

V.

Reporting

For purposes of this reporting requirement, the yearly reporting periods shall commence on July 1 of each year and shall end on the subsequent June 30. However, the first yearly report required under this section shall cover the period from the date of issuance of this Order through June 30, 2006.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission the quantity in units and the value in dollars of covered product that Respondent has imported or sold in the United States after importation during the reporting period and the quantity in units and value in dollars of reported covered product that remain in inventory in the United States at the end of the reporting period. This reporting requirement shall continue in force until such time as Respondent will have truthfully reported, in two consecutive timely filed yearly reports, that it has no inventory of covered product in the United States.

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI.

Record-keeping and Inspection

(A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the exportation to and importation into the United States and the sale, offer for sale, marketing, or distribution in the United States of covered product, made and

received in the usual and ordinary course of business, whether in detail or in summary form, for a period of two (2) years from the close of the fiscal year to which they pertain.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, and subject to any privilege recognized by the federal courts of the United States, duly authorized representatives of the Commission, upon reasonable written notice by the Commission or its staff, shall be permitted access and the right to inspect and copy in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, both in detail and in summary form as are required to be retained by subparagraph VI(A) of this Order.

VII.

Service of Cease and Desist Order

Respondent is ordered and directed to:

(A) Serve, within fifteen (15) days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered product in the United States;

(B) Serve, within fifteen (15) days after the succession of any persons referred to in subparagraph VII (A) of this Order, a copy of the Order upon each successor; and

(C) Maintain such records as will show the name, title, and address of each person upon whom the Order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until June 22, 2014, the date of expiration of U.S. Patent No. 6,584,527.

VIII.

Confidentiality

Any request for confidential treatment of information obtained by the Commission pursuant to Sections V and VI of the Order should be in accordance with section 201.6 of the Commission Rules of Practice and Procedure. 19 C.F.R. § 201.6. For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX.

Enforcement

Violation of this Order may result in any of the actions specified in section 210.75 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.75, including an action for civil penalties in accordance with section 337(f) of the Tariff Act of 1930, 19 U.S.C. § 1337(f), and any other action as the Commission may deem appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if Respondent fails to provide adequate or timely information.

X.

Modification

The Commission may amend this Order on its own motion or in accordance with the procedure described in section 210.76 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.76.

XI.

Bonding

The conduct prohibited by Section III of this Order may be continued during the sixty (60) day period in which this Order is under review by the United States Trade Representative pursuant to section 337(j) of the Tariff Act of 1930, 19 U.S.C. § 1337(j), and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (70 *Fed. Reg.* 43251), subject to Respondent posting a bond of \$4.43 per unit for covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered product imported on or after the date of issuance of this order is subject to the entry bond as set forth in the limited exclusion order issued by the Commission, and is not subject to this bond provision.

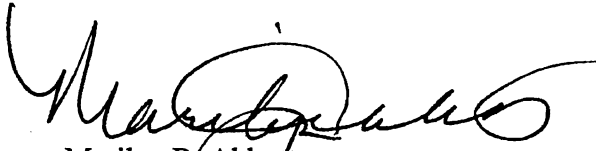
The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by complainants in connection with the issuance of temporary exclusion orders. *See* 19 C.F.R. § 210.68. The bond and any accompanying documentation is to be provided to and approved by the Commission prior to the commencement of conduct which is otherwise prohibited by Section III of this Order.

The bond is to be forfeited in the event that the United States Trade Representative

approves, or does not disapprove within the Presidential review period, this Order, unless the U.S. Court of Appeals for the Federal Circuit, in a final judgment, reverses any Commission final determination and order as to Respondent on appeal, or unless Respondent exports the products subject to this bond or destroys them and provides certification to that effect satisfactory to the Commission.

The bond is to be released in the event the United States Trade Representative disapproves this Order and no subsequent order is issued by the Commission and approved, or not disapproved, by the United States Trade Representative, upon service on Respondent of an order issued by the Commission based upon application therefore made by Respondent to the Commission.

By Order of the Commission.



Marilyn R. Abbott
Secretary to the Commission

Issued: September 28, 2005

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN OPTICAL DISK
CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME,
INCLUDING DVD PLAYERS AND PC
OPTICAL STORAGE DEVICES**

Investigation No. 337-TA-506

ORDER TO CEASE AND DESIST

IT IS HEREBY ORDERED THAT TEAC America Inc., 7733 Telegraph Road, Montebello, California ("Respondent" or "TEAC"), cease and desist from conducting any of the following activities in the United States: importing, selling, distributing, marketing, consigning, transferring (except for exportation), offering for sale in the United States and soliciting U.S. agents or distributors for optical storage devices containing certain optical disk controller chips and chipsets in violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337.

I.

Definitions

As used in this Order:

- (A) "Commission" shall mean the United States International Trade Commission.
- (B) "Zoran" shall mean Zoran Corporation, 1390 Kifer Road, Sunnyvale, California.
- (C) "Oak" shall mean Oak Technology, Inc., 1390 Kifer Road, Sunnyvale, California.
- (D) "Complainants" shall mean Zoran and Oak.

(E) "Respondent" and "TEAC" shall mean TEAC America, Inc., 7733 Telegraph Road, Montebello, California.

(F) "Person" shall mean an individual, or any nongovernmental partnership, firm, association, corporation, or other legal or business entity other than the Respondent or its majority owned or controlled subsidiaries, their successors, or assigns.

(G) "United States" shall mean the fifty States, the District of Columbia, and Puerto Rico.

(H) The terms "import" and "importation" refer to importation for entry for consumption, entry for consumption from a foreign-trade zone, and withdrawal from warehouse for consumption under the Customs laws of the United States.

(I) The term "covered product" shall include, without limitation, optical storage devices incorporating optical disk controller chips and chipsets that are covered by claim 3 of U.S. Patent No. 6,584,527.

II.

Applicability

The provisions of this Cease and Desist Order shall apply to Respondent and to any of its principals, stockholders, officers, directors, employees, agents, licensees, contractors, distributors, controlled (whether by stock ownership or otherwise) and majority owned business entities, successors, and assigns, and to each of them, insofar as they are engaging in conduct prohibited by Section III, *infra*, for, with, or otherwise on behalf of Respondent.

III.

Conduct Prohibited

The following conduct of Respondent in the United States is prohibited by the Order. For the remaining term of U.S. Patent No. 6,584,527, Respondent shall not:

(A) import or sell for importation into the United States covered product except under license of the patent owner;

(B) market, distribute, offer for sale, sell, consign, or otherwise transfer (except for exportation) in the United States imported covered product except under license of the patent owner;

(C) solicit U.S. agents or distributors for covered product except under license of the patent owner; or

(D) aid or abet other entities in the importation, sale for importation, sale after importation, transfer, or distribution of covered product in the United States except under license of the patent owner.

IV.

Conduct Permitted

Notwithstanding any other provision of this Order, specific conduct otherwise prohibited by the terms of this Order shall be permitted if, in a written instrument, the owner of U.S. Patent No. 6,584,527 licenses or authorizes such specific conduct, or such specific conduct is related to the importation or sale of covered product by or for the United States.

V.

Reporting

For purposes of this reporting requirement, the yearly reporting periods shall commence on July 1 of each year and shall end on the subsequent June 30. However, the first yearly report required under this section shall cover the period from the date of issuance of this Order through June 30, 2006.

Within thirty (30) days of the last day of the reporting period, Respondent shall report to the Commission the quantity in units and the value in dollars of covered product that Respondent has imported or sold in the United States after importation during the reporting period and the quantity in units and value in dollars of reported covered product that remain in inventory in the United States at the end of the reporting period. This reporting requirement shall continue in force until such time as Respondent will have truthfully reported, in two consecutive timely filed yearly reports, that it has no inventory of covered product in the United States.

Any failure to make the required report or the filing of any false or inaccurate report shall constitute a violation of this Order, and the submission of a false or inaccurate report may be referred to the U.S. Department of Justice as a possible criminal violation of 18 U.S.C. § 1001.

VI.

Record-keeping and Inspection

(A) For the purpose of securing compliance with this Order, Respondent shall retain any and all records relating to the exportation to and importation into the United States and the sale, offer for sale, marketing, or distribution in the United States of covered product, made and

received in the usual and ordinary course of business, whether in detail or in summary form, for a period of two (2) years from the close of the fiscal year to which they pertain.

(B) For the purposes of determining or securing compliance with this Order and for no other purpose, and subject to any privilege recognized by the federal courts of the United States, duly authorized representatives of the Commission, upon reasonable written notice by the Commission or its staff, shall be permitted access and the right to inspect and copy in Respondent's principal offices during office hours, and in the presence of counsel or other representatives if Respondent so chooses, all books, ledgers, accounts, correspondence, memoranda, and other records and documents, both in detail and in summary form as are required to be retained by subparagraph VI(A) of this Order.

VII.

Service of Cease and Desist Order

Respondent is ordered and directed to:

(A) Serve, within fifteen (15) days after the effective date of this Order, a copy of this Order upon each of its respective officers, directors, managing agents, agents, and employees who have any responsibility for the importation, marketing, distribution, or sale of imported covered product in the United States;

(B) Serve, within fifteen (15) days after the succession of any persons referred to in subparagraph VII (A) of this Order, a copy of the Order upon each successor; and

(C) Maintain such records as will show the name, title, and address of each person upon whom the Order has been served, as described in subparagraphs VII(A) and VII(B) of this Order, together with the date on which service was made.

The obligations set forth in subparagraphs VII(B) and VII(C) shall remain in effect until June 22, 2014, the date of expiration of U.S. Patent No. 6,584,527.

VIII.

Confidentiality

Any request for confidential treatment of information obtained by the Commission pursuant to Sections V and VI of the Order should be in accordance with section 201.6 of the Commission Rules of Practice and Procedure. 19 C.F.R. § 201.6. For all reports for which confidential treatment is sought, Respondent must provide a public version of such report with confidential information redacted.

IX.

Enforcement

Violation of this Order may result in any of the actions specified in section 210.75 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.75, including an action for civil penalties in accordance with section 337(f) of the Tariff Act of 1930, 19 U.S.C. § 1337(f), and any other action as the Commission may deem appropriate. In determining whether Respondent is in violation of this Order, the Commission may infer facts adverse to Respondent if Respondent fails to provide adequate or timely information.

X.

Modification

The Commission may amend this Order on its own motion or in accordance with the procedure described in section 210.76 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.76.

XI.

Bonding

The conduct prohibited by Section III of this Order may be continued during the sixty (60) day period in which this Order is under review by the United States Trade Representative pursuant to section 337(j) of the Tariff Act of 1930, 19 U.S.C. § 1337(j), and the Presidential Memorandum for the United States Trade Representative of July 21, 2005 (70 *Fed. Reg.* 43251), subject to Respondent posting a bond of \$4.43 per unit for covered products. This bond provision does not apply to conduct that is otherwise permitted by Section IV of this Order. Covered product imported on or after the date of issuance of this order is subject to the entry bond as set forth in the limited exclusion order issued by the Commission, and is not subject to this bond provision.

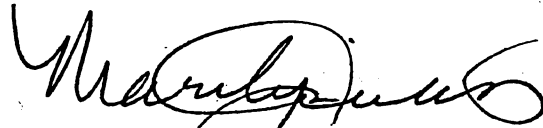
The bond is to be posted in accordance with the procedures established by the Commission for the posting of bonds by complainants in connection with the issuance of temporary exclusion orders. *See* 19 C.F.R. § 210.68. The bond and any accompanying documentation is to be provided to and approved by the Commission prior to the commencement of conduct which is otherwise prohibited by Section III of this Order.

The bond is to be forfeited in the event that the United States Trade Representative

approves, or does not disapprove within the Presidential review period, this Order, unless the U.S. Court of Appeals for the Federal Circuit, in a final judgment, reverses any Commission final determination and order as to Respondent on appeal, or unless Respondent exports the products subject to this bond or destroys them and provides certification to that effect satisfactory to the Commission.

The bond is to be released in the event the United States Trade Representative disapproves this Order and no subsequent order is issued by the Commission and approved, or not disapproved, by the United States Trade Representative, upon service on Respondent of an order issued by the Commission based upon application therefore made by Respondent to the Commission.

By Order of the Commission.



Marilyn R. Abbott
Secretary to the Commission

Issued: September 28, 2005

PUBLIC VERSION

CONFIDENTIAL INFORMATION
DELETED

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

In the Matter of

CERTAIN OPTICAL DISK CONTROLLER CHIPS
AND CHIPSETS AND PRODUCTS CONTAINING
SAME, INCLUDING DVD PLAYERS AND PC OPTICAL
STORAGE DEVICES

Inv. No. 337-TA-506

COMMISSION OPINION

This section 337 investigation is before the Commission for final disposition of the issues under review and, if necessary, for determinations on remedy, the public interest, and bonding. We have determined that there is a violation of section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) as to claim 3 of U.S. Patent No. 6,584,527 (“the ‘527 patent”), but no violation of the statute as to the remaining claims in issue of the ‘527 patent (*viz.*, claims 1 and 2) and no violation as to the claims in issue of U.S. Patent No. 6,546,440 (“the ‘440 patent”) (*viz.*, claims 1, 5, 7, 8, 10, 13, 14, 19, and 21).¹

We have determined that the appropriate form of relief is a limited exclusion order prohibiting the unlicensed entry of covered chips and chipsets manufactured by or on behalf of respondent MediaTek, Inc. and covered optical storage devices manufactured by or on behalf of any of respondents Artronix Technology Inc.; ASUSTek Computer Inc.; ASUS

¹The Commission previously found no violation of section 337 with respect to U.S. Patent No. 6,466,736. 70 Fed. Reg. 42589-91.

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Computer International; EPO Science and Technology, Inc.; LITE-ON Information Technology Corp.; Micro-Star International Co., Ltd.; MSI Computer Corp.; TEAC America, Inc.; TEAC Corp.; and Ultima Electronics Corp. We have also determined to issue cease and desist orders directed to Artronix Technology Inc.; ASUSTek Computer, Inc.; ASUS Computer International; EPO Science and Technology, Inc.; LITE-ON Information Technology Corp.; MSI Computer Corp.; and TEAC America, Inc. We have determined that the public interest factors enumerated in 19 U.S.C. § 1337 (d) and (f) do not preclude issuance of the limited exclusion order or the cease and desist orders, and that the bond during the Presidential review period shall be in the amount of 100% of the entered value for any covered chips or chipsets imported separately or within circuit board modules or carriers and \$4.43 per unit for any optical storage device containing covered chips or chipsets.

PROCEDURAL HISTORY

On May 16, 2005, the presiding administrative law judge (“ALJ”) issued his final initial determination (“ID”) in this investigation. The procedural history up to that time is summarized in the ID at pages 1–4.

The ALJ concluded that there was a violation of section 337 based on his findings that (a) the accused products infringe claim 3 of the ‘527 patent, (b) the ‘527 patent is not unenforceable, (c) the claim at issue is not invalid, and (d) complainants have satisfied the domestic industry requirement with respect to the ‘527 patent. Although the ALJ found that the other asserted claims of the ‘527 patent (claims 1 and 2) are not invalid, he found that the accused products do not infringe those claims. The ALJ found no violation with respect to the other patents in issue.

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He found that the accused products do not infringe any asserted claim of the '440 patent or any asserted claim of U.S. Patent No. 6,466,736 (the '736 patent), and that complainants had not satisfied the domestic industry requirement of section 337 with respect to those patents. He also found that the asserted claims of the '440 and '736 patents are not invalid and that those patents are not unenforceable.

On May 27, 2005, complainants and respondents each petitioned for review of portions of the ID. On June 6, 2005, complainants, respondents, and the Commission investigative attorney ("IA") filed responses to the petitions for review. On June 27, 2005, respondents filed a letter replying to an argument raised in the IA's response. The IA and complainants each filed responsive letters on June 28 and 29, 2005, respectively.

On July 19, 2005, the Commission determined to review the ID in part. *70 Fed. Reg.* 42589-91. Specifically, the Commission determined to review the ID's findings of fact and conclusions of law with respect to the '527 and '440 patents. *Id.* However, the Commission determined not to review the ID's findings of fact and conclusions of law with respect to the '736 patent, thereby adopting those findings and conclusions. *Id.* Thus, the Commission has already found no violation of section 337 with respect to the '736 patent. *Id.* The Commission further determined to review and modify the ID to clarify that respondents accused of infringing only the asserted claims of the '736 patent (*viz.*, respondents Audiovox Corporation; Initial Technology, Inc.; Mintek Digital, Inc.; Shinco International AV Co., Ltd.; Changzhou Shinco Digital Technology Co., Ltd.; Jiangsu Shinco Electronic Group Co., Ltd.; Terapin Technology Pte., Ltd. [formerly known as Teraoptix d/b/a Terapin Technology] of Singapore; and Terapin Technology

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U.S. [formerly also known as Teraoptix]) are not in violation of Section 337. *Id.*

In its notice of review, the Commission invited the parties to file written submissions on the issues under review, and invited interested persons to file written submissions on the issues of remedy, the public interest, and bonding. *Id.* The Commission also requested briefing from the parties on six questions directed to the issues under review. *Id.*

Initial submissions in response to the Commission's notice of review were filed on August 1, 2005.² Also on August 1, 2005, respondents filed a letter requesting clarification of the scope of briefing question 3(a) in the Commission's notice of review and requesting permission to brief new issues not previously raised. On August 8, 2005, all parties filed reply submissions.³

Having examined the record in this investigation, including the submissions and the replies thereto, we have determined that there is a violation of section 337 in the unlawful importation, sale for importation, and sale after importation by MediaTek, Inc. of optical disk controller chips and chipsets that infringe claim 3 of the '527 patent, but no violation of the

²The IA's submission ("IA's submission") addressed the issues under review and remedy, the public interest, and bonding. Complainants filed a submission addressing the issues under review ("complainants' submission") and a separate submission concerning remedy, the public interest, and bonding ("complainants' remedy submission"). Respondents filed a single joint submission ("respondents' submission") that addressed the issues under review and remedy, the public interest, and bonding.

³Complainants filed two reply submissions, one addressing the issues under review ("complainants' reply" and another addressing remedy, the public interest, and bonding ("complainants' remedy reply"). Respondents filed two joint reply submissions, one addressing the issues under review ("respondents' reply") and another addressing remedy, the public interest, and bonding ("respondents' remedy reply"). The IA filed a single reply submission ("IA's reply") addressing the issues under review and remedy, the public interest, and bonding.

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statute as to the remaining claims in issue of the '527 patent (*viz.*, claims 1 and 2) and no violation as to the claims in issue of the '440 patent (*viz.*, claims 1, 5, 7, 8, 10, 13, 14, 19, and 21). In addition, we have determined that there is a violation of Section 337 in the unlawful importation, sale for importation and sale after importation of optical storage devices incorporating optical disk controller chips and chipsets that infringe claim 3 of the '527 patent by Artronix Technology Inc.; ASUSTek Computer Inc.; ASUS Computer International; EPO Science and Technology, Inc.; LITE-ON Information Technology Corp.; Micro-Star International Co., Ltd.; MSI Computer Corp.; TEAC America, Inc.; TEAC Corp.; and Ultima Electronics Corp., but no violation of the statute as to the remaining claims in issue of the '527 patent (*viz.*, claims 1 and 2) and no violation as to the claims in issue of the '440 patent (*viz.*, claims 1, 5, 7, 8, 10, 13, 14, 19, and 21).

STANDARDS ON REVIEW

This investigation is before us on review of the ALJ's final ID on violation, which issued on May 16, 2005. Commission rule 210.45(c), 19 C.F.R. § 210.45(c) states:

On review, the Commission may affirm, reverse, modify, set aside or remand for further proceedings, in whole or in part, the initial determination of the administrative law judge. The Commission also may make any findings or conclusions that in its judgment are proper based on the record in the proceeding.

Once the Commission determines to review an ID, it reviews the determination under a *de novo* standard. *Certain Acid-Washed Denim Garments and Accessories*, Inv. No. 337-TA-324, Commission Opinion at 4-5 (August 28, 1992) (the Commission examines for itself the record on the issues under review); *accord*, *Certain Flash Memory Circuits and Products Containing Same*, Inv. No. 337-TA-382, Commission Opinion at 14 (January 9, 1997). Commission practice

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is consistent with the Administrative Procedure Act, 5 U.S.C. § 1 et seq. (APA). The APA provides that once an initial agency decision is taken up for review, “the agency has all the powers which it would have in making the initial decision except as it may limit the issues on notice or by rule.” 5 U.S.C. §557(b). This statutory provision and Commission rule 210.45(c) reflect the fact that the Commission is not an appellate court, but the body responsible for making the final agency decision. On appeal, only the Commission’s final decision is at issue. *Fischer & Porter Co. v. United States Int’l Trade Comm’n*, 831 F.2d 1574, 1576-77 (Fed. Cir. 1987).

As stated in the Commission's notice of review, the Commission determined to review in part the ALJ's final ID. The Commission thereby adopted as its own the unreviewed portions of the ID. With respect to the portions of the ID that are under review, the ALJ's findings, conclusions, and supporting analysis that are inconsistent with this opinion are not adopted by the Commission. Any findings, conclusions, and supporting analysis by the ALJ that are not inconsistent with this opinion are adopted by the Commission.

ISSUES UNDER REVIEW

I. Respondents’ Joint Letter Request for Permission to Brief New Issues Not Previously Raised

On August 1, 2005, counsel for respondents filed a letter seeking clarification from the Commission as to the scope of the briefing question 3(a) in the Commission’s notice of review. Specifically, they requested clarification from the Commission as to whether they were permitted to brief two new claim construction issues that were not previously raised. The IA and complainants oppose allowing respondents to brief new claim construction issues.

Respondents seek permission to brief two claim construction issues that were not

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previously raised. First, respondents “request that they be permitted to argue in briefing to the Commission that claim 3 of the ‘527 patent should be limited to a controller for CD-ROM (optical) media that encodes data in compliance with the Yellow Book,” and therefore the claim “must be limited to a controller that must first perform error correction followed by error detection.” Respondents’ August 1, 2005, letter at 2. Respondents’ argument on this issue relies on *Oak Tech., Inc. v. United States Int’l Trade Comm’n*, 248 F.3d 1316, 1319-20 (Fed. Cir. 2001), and the specifications of the ‘527 and ‘440 patents. Respondents also seek to raise the issue that “the claimed IDE/ATA drive controller *must* return the contents of the ATA status register whenever the host computer attempts to read any of the ATA command block registers when the BSY bit is set.” Respondents’ August 1, 2005, letter at 2. Respondents’ argument on this second issue relies on the ‘527 and ‘440 patent specifications. Respondents state that they “did not raise these issues earlier because they appeared precluded based on the earlier-applied claim construction framework” and “feel compelled, in light of the change in claim construction law represented by the *Phillips* decision as well as the Commission’s Question No. 3.A, to raise these issues with the Commission.” Respondents’ August 1, 2005, letter at 3 (referencing *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005)).

The Commission’s July 19, 2005, notice of review included briefing question 3(a), which reads as follows: “What is the impact, if any, of the July 12, 2005, en banc decision of the U.S. Court of Appeals for the Federal Circuit in *Phillips v. AWH Corporation* on the ID’s construction of the asserted claims of the ‘527 and ‘440 patents?” 79 *Fed. Reg.* 42589-91 (question 3(a)). Claim construction issues that were never presented to the ALJ are not part of the ID’s

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construction of the asserted claims. Thus, arguments concerning such issues are not within the scope of this question. Although respondents assert that “[t]he *Phillips* court placed fundamental importance on the patent specification for purposes of claim construction, which is a fundamentally different legal framework than that used to date in this Investigation” (Respondents’ August 1, 2005, letter at 2), the *Phillips* court stated that “[t]his court and its predecessors have long emphasized the importance of the specification in claim construction.” *Phillips*, 415 F.3d at 1315. Respondents have not explained why they “appeared precluded” from previously raising either of the claim construction issues. Accordingly, respondents’ request for permission to brief two claim construction issues that were not previously raised is denied.

II. Claim Construction and Related Issues

As stated above, we determined to review all of the ID’s findings of fact and conclusions of law with respect to the ‘527 and ‘440 patents. The ALJ’s resolution of claim construction issues raised by the parties concerning the asserted claims of the ‘527 and ‘440 patents is found in the ID at 77-110.

As discussed below, we have determined to modify the ALJ’s construction of the claim term “controller” to reflect that, although the limitation “optical drive controller” means “a device or group of devices to control data communications between a host computer and the optical disk drive electronics” (ID at 80), configurations wherein a “controller requires a translator card or other intervening circuitry between the controller and the IDE bus to translate or manipulate command data” were disclaimed during prosecution. We affirm the balance of the

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ALJ's claim constructions concerning the asserted claims of the '440 and '527 patents.

A. The ID's Construction of the Claimed Phrases "Optical Drive Device," "Optical Drive Controller," and "Directly"

Each of the three claims at issue of the '527 patent includes the terms "optical drive device" and "optical drive controller." The latter phrase, "optical drive controller," is found in each of asserted independent claims 1 and 14 of the '440 patent. The ALJ's construction of these terms is presented in the ID at 77-80. The ALJ's construction of the term "directly" is presented in the ID at 108-09.

Respondents petitioned for review of the ALJ's interpretation of the claim term "optical drive," and the IA and complainants opposed review. Complainants petitioned for review of the ALJ's construction of the claim term "controller," and the IA and respondents opposed review. Respondents petitioned for review of the ALJ's construction of the "directly" limitation, and the IA and complainants opposed review.

1. The Phrase "Optical Drive"

The ALJ construed the phrase "optical drive device" as "a device for operating a disk that is written and read by laser light, and is not limited to compact disks," and adopted a consistent interpretation of "optical drive" in the phrase "optical drive controller." ID at 78-79. He reasoned as follows:

There is expert testimony that in the 1993-94 time frame, "optical," as that term is used in "optical drive device" and "optical drive controller," would refer to the usage of light as a mechanism for reading stored data, and that "optical drive device" would refer to a device operating a disk that is written and read by laser light. (Samuels, Tr. at 222-25; Buscaino, Tr. at 2583-84.) It is undisputed that DVD technology did not exist at the time of the inventions of the '527 and '440 patents. (Samuels, Tr. at 506-97; Buscaino, Tr. at 2583.) However, there is no express

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limitation in the claims to restrict optical drives to devices for CD-ROMs. Moreover, at the time of the invention, optical disks other than CD-ROMs were known in the art. (See SX-3, *The Computer Glossary* (5th ed. 1991) at 423.) Thus, the administrative law judge finds that optical disc (and correspondingly optical drive) had an ordinary and accustomed meaning in the art that was broader than just a CD-ROM. Accordingly, the administrative law judge finds that the proper interpretation of “optical drive device” is a device for operating a disk that is written and read by laser light, and is not limited to compact disks.

ID at 78-79.

a. Positions of the Parties

Relying on *Phillips*, respondents argue that the ALJ’s construction of ‘optical drive device’ is erroneous because he inappropriately relied on extrinsic evidence, *viz.*, a dictionary’s list of types of optical disks. They assert that the ‘440 and ‘527 patent specification defines the term “optical disk drive” to mean CD-ROM drive. They argue that the ALJ erred in relying on only extrinsic evidence that contradicted the clear definition found in the patent specification. Respondents also contend that the claim term cannot encompass technology developed after the effective filing date of the asserted patents.

Complainants and the IA support the ALJ’s construction. Complainants argue that the ALJ’s construction is supported by the claim language, the specification, and the prosecution history. The IA states that *Phillips* does not prohibit use of a technical dictionary to understand the meaning of a claim term, and argues that the ALJ’s construction is supported by the ‘527 patent specification.

b. Analysis

We affirm the ALJ’s construction of the term “optical drive device.”

In its recent en banc *Phillips* decision, the Federal Circuit stated that the claim

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construction methodology adopted in *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002), “placed too much reliance on extrinsic sources such as dictionaries . . . and too little on intrinsic sources, in particular the specification and prosecution history.”

Phillips, 415 F.3d at 1320. The Federal Circuit stated, however, that —

we do not intend to preclude the appropriate use of dictionaries. Dictionaries or comparable sources are often useful to assist in understanding the commonly understood meaning of words and have been used both by our court and the Supreme Court in claim interpretation. See *Exhibit Supply Co. v. Ace Patents Corp.*, 315 U.S. 126, 134, 62 S.Ct. 513, 86 L.Ed. 736 (1942) (relying on dictionaries to construe the claim term “embedded”); *Weber Elec. Co. v. E.H. Freeman Elec. Co.*, 256 U.S. 668, 678, 41 S.Ct. 600, 65 L.Ed. 1162 (1921) (approving circuit court’s use of dictionary definitions to define claim terms); *Renishaw [PLC v. Marposs Societa’ per Azioni]*, 158 F.3d 1243, 1247-53 (Fed. Cir. 1998)] (approving the use of dictionaries with proper respect for the role of intrinsic evidence). A dictionary definition has the value of being an unbiased source “accessible to the public in advance of litigation.” *Vitronics [Corp. v. Conceptoronic, Inc.]*, 90 F.3d 1576, 1585 (Fed. Cir. 1996)]. As we said in *Vitronics*, judges are free to consult dictionaries and technical treatises

at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.

Id. at 1584 n. 6.

Phillips, 415 F.3d at 1322-23. We disagree with respondents’ contention that the ALJ relied on an extrinsic dictionary definition to contradict the clear definition provided by the specification of the ‘440 and ‘527 patents. Contrary to respondents’ argument, the specification supports the ALJ’s construction.

The claims refer to “optical drive” and “optical disk drive” rather than the more restrictive term “CD,” “CD-ROM,” or “CD drive.” The ‘527 patent specification states that —

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[t]his invention relates generally to the access of digital data from optical storage media by a personal computer. Optical storage methods allow information to be recorded and recovered from a given material by using light.

'527 patent, col. 1:12-15. It is only after this broad description of "optical storage" as recording and recovering information using light that the specification acknowledges that CDs are the particular optical storage media "currently used in optical recording." '527 patent, col.1:15-18 (emphasis added). By referring to different types of disks, including "CD-ROMs" (*see, e.g.*, '527 patent, col. 1:45-48) and recordable CDs (*see, e.g.*, '527 patent, col. 1:53-55 ("CD drives which are capable of writing information to the CD")), the specification demonstrates that the inventors were aware of the different scope of the terms "optical," "CD," and "CD-ROM." Thus, the specification supports the ALJ's construction of "optical drive device" as "a device for operating a disk that is written and read by laser light, and is not limited to compact disks" (ID at 79).

2. The Claim Terms "Controller" and "Directly"

The ALJ construed the phrase "optical drive controller" as "a device or group of devices to control data communications between a host computer and the optical disk drive electronics." ID at 80. He construed the term "directly" as meaning "without intervention," reasoning as follows:

Complainants' expert Samuels in testifying about the prosecution history of the '527 patent made reference to the statements of the applicants' attorney to the effect that the directly limitation cannot be met when there is a translator card or some other intervening circuitry between the controller and the IDE bus that translates or manipulates the data in order to cause the controller to properly handle ATA commands. Samuels agreed that those statements support Samuels' plain and ordinary meaning of the word "directly" as it is used in the claims of the '527 patent. (Tr. at 275-76.) According to respondents' expert Buscaino, the claimed phrase "directly" means that the controller has the ability to directly drive and receive signals on the IDE/ATA bus. Based on the testimony of the experts, the

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administrative law judge finds that a person of ordinary skill in the pertinent art would interpret “directly” as used in the claims of the ‘527 patent as “without intervention.”

ID at 109.

In its notice of review, the Commission included several briefing questions relating to claim construction. These questions included: “How should the terms ‘controller’ and ‘directly’ be construed?” 70 *Fed. Reg.* 42589-91 (question 3(d)). The Commission requested that, in their answers, the parties “identify any finding of fact or conclusion of law with respect to infringement, the technical prong of the domestic industry requirement, unenforceability, or invalidity in the ID rendered clearly erroneous or legally erroneous under [their] proposed claim construction,” and further requested that parties provide supporting citations to the record. 70 *Fed. Reg.* 42589-91 (question 3).

a. Submissions of the Parties

Controller. In their submissions to the Commission, the IA and respondents supported the ALJ’s construction of the claimed “controller” as “a device or group of devices to control data communications between a host computer and the optical disk drive electronics” (ID at 80).

Although complainants agree that “a controller may consist of a device or group of devices to control data communications between a host computer and the optical disk drive electronics,” they contend that the claim language, the specification, and the prosecution history compel construing the claimed “controller” to mean “a device or group of devices, *apart from intervening translation circuitry*, to control data communications between a host computer and the optical drive electronics.” Complainants’ submission at 56, 58-59 (emphasis added).

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Complainants assert that “[t]he specification teaches that the controller is a single chip device.” *Id.* at 57 (citing ‘527 patent, Figs. 1-3, col 1, ll. 56-60; col. 2, ll. 37-58; col. 2, l. 61-col. 3, l. 14; col. 5, ll. 39-56; col. 5, l. 57-col.6, l. 14; col. 6, ll. 15-63; col. 7, ll. 24-32). They also argue that “the specification unambiguously confirms that the controller is *distinct from* intermediary translation circuitry, such as an adapter card.” *Id.* at 57 (citing ‘527 patent, col. 2, ll. 38-43; col. 5, ll. 42-50).

Relying on *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1326 (Fed. Cir. 2003), complainants argue that the prosecution history “precludes a construction of a ‘controller’ that encompasses both a controller and separate translation circuitry.” *Id.* at 58. They assert that “in the February 28, 2002, Response, the patent attorney overcame a prior art rejection by arguing that the claim language could not be met by the prior art (the Kikinis patent and the Mitsumi prototype) ‘where a controller requires a translator card or other intervening circuitry between the controller and the IDE bus to translate or manipulate command data.’” *Id.* at 58 (citing CX-10 at ZC001816-1817).

Directly. In their initial submissions, the IA and complainants supported the ALJ’s construction of “directly” as meaning “without intervention” (ID at 109). Respondents argued that the term “directly” means that “the host interface of the controller has the ability to directly drive and receive signals on the IDE/ATA bus.” Respondents’ submission at 81. They contend that this construction is confirmed by statements in the patent specification, and is consistent with expert testimony.

The IA asserts that the “parties’ experts agreed with the ID’s construction of ‘directly’ as

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‘without intervention.’” IA’s reply at 29.

Complainants contend that the experts of the private parties “agree that the plain meaning, ‘nothing intervening,’ controls.” Complainants’ submission at 59. Complainants further state that this plain meaning is “confirmed by numerous dictionaries.” *Id.* (citing CX-282 (*Merriam-Webster’s Collegiate Dictionary* at 328 (10th ed. 1993)) (defining “directly” as “in a direct manner” and “in immediate physical contact”), CX-283 (*New Riverside University Dictionary* (1988)) (defining “directly” as “without intervention”), CX-284 (*Webster’s II New College Dictionary* at 321 (1995)) (defining “directly” as “without intervention”), CX-285 (*The American Heritage Dictionary of the English Language* at 527 (3d ed. 1992)) (defining “directly” as “without . . . anything intervening”). Complainants go on to argue that the ALJ’s construction is supported by the specification and the prosecution history, reasoning that —

[t]he lack of intervening devices, such as a translator board, as suggested by those definitions, is also consistent with the description of the invention in the patent specification. Specifically, the specification notes that “[t]he output buffers of the invention can directly drive an IDE/ATA bus” ([‘527 patent], col. 6, ll. 56-58; [‘440 patent], col. 6, ll. 58-60), and that “[t]he drive controller can drive IDE interface signal lines directly” ([‘527 patent], col. 7, ll. 47-48; [‘440 patent], col. 7, ll. 48-49). Those statements confirm that the inventive controller could communicate over the IDE/ATA bus without needing to translate or manipulate those signals from one type to another. In other words the controller chip could send and receive native IDE signals. Of course, like all controllers some level of internal signal manipulation is necessary, and the inventors were not suggesting by their word choice that a controller could not perform any translation. To the contrary, the inventors intended only to exclude *intervening translation circuitry* between the controller chip itself and the host computer. This intent is evidenced by statements in both the “Background of the Invention” and “Detailed Description of the Invention” sections of the specification . . . that the advantage of this direct connection is that it “would obviate the need for *an additional host adapter card and associated electronics*” and reduce the cost of a CD drive by “*eliminating the need for a host adaptor and/or additional ISA bus interface electronics.*” ([‘527 patent], col. 2, ll. 41-43, col. 5, ll. 45-48; [‘440 patent], col. 2, ll. 43-45, col. 5, ll. 48-50 (emphasis added).) Thus, the

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specification confirms that the controller communicate directly with the host computer over the IDE bus without any intervening translation circuitry.

On this point the file history is directly relevant. Thus, it is an important and compelling source to consider for claim construction. *Ballard Medical Products v. Allegiance Healthcare Corp.*, 268 F.3d 1352, 1358-1359 (Fed. Cir. 2001) (prosecution history is an important aid to claim construction, especially where patentee disclaimed a particular claim interpretation). In the prosecution history, the prosecuting attorney highlighted the advantage of the direct connection stating:

[T]he limitations cannot be met where a controller requires a translator card or other intervening circuitry between the controller and the IDE bus to translate or manipulate command data due to the inability of the controller to properly handle native ATA commands.

(CX-10, at ZC001817 (emphasis in original).)

That distinction is inescapable. The plain meaning of the words used, the specification, and the file history all support complainants' interpretation that this claim term covers *only* a direct connection to the IDE/ATA data bus without any translation or other intervening circuitry to translate or manipulate information over the IDE/ATA bus.

Complainants' submission at 60-61.

Respondents contend that the specification does not support construing "directly" to "exclude a controller that uses 'translation' circuitry." Respondents' submission at 82. They argue that the statements in the specification concerning elimination of a "host adapter card" or "additional ISA bus interface electronics" does not relate to translation circuitry. *Id.*

Respondents further argue that the prosecution history "demonstrates that the exclusion of 'translation' circuitry cannot possibly be a proper limitation of the claim term 'directly'" because the patent examiner *rejected* the "Applicant[']s attempt[] to overcome a rejection by arguing that the cited prior art, Kikinis, did not meet the requirements of a direct connection due to its use of translation circuitry." *Id.* at 82.

Respondents contend that under their proposed construction of the terms "directly" and

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“controller,” the Mitsumi prototype anticipates the asserted claims of the ‘527 patent. They argue that the Mitsumi prototype combination of the OTI-012 chip and daughterboard satisfies the “directly” limitation, when that limitation is construed as “requir[ing] a host interface that can directly drive and receive signals on the IDE/ATA bus.” *Id.* at 85. According to respondents —

the Mitsumi prototype, consisting of a Mitsumi drive with an OTI-012 chip that was connected to a daughterboard with IDE host interface circuitry, controlled communication with the host computer over the IDE/ATA bus. This function was accomplished by the combination of the front-end host interface circuitry on the daughterboard and the OTI-012 chip located in the drive itself. Although the prototype implemented this functionality in two separate devices, the fact remains that the combination of the daughterboard and the OTI-012 performed the function of an optical drive controller that could directly communicate over the IDE bus.

Complainants’ assertion that the Mitsumi prototype did not have a direct connection hinges on a construction of “controller” that is limited to the OTI-012 portion of the prototype — excluding the front-end host interface on the daughterboard. *This position is based on a flawed interpretation of the term “controller.”* As stated above, all parties agree that the “drive controller” is the group of devices that controls the communication between the drive electronics and the host computer. There is no legitimate reason for restricting the type of devices that could be combined to accomplish function. There is absolutely no basis for excluding the daughterboard as one of the devices that combines to perform the function of an IDE/ATA controller.

Id. at 86-87 (internal citations and footnote omitted) (emphasis added).

b. Reply Submissions

In their reply submission, respondents take issue with complainants’ analysis of the specification and prosecution history. Respondents argue that the claimed controller is not limited to a single device or a single chip. They reiterate that, contrary to complainants’ assertions, the statements in the specification concerning eliminating the “additional host adapter card” or “additional ISA bus interface electronics” are unrelated to translation or translation circuitry. Respondents’ reply at 42–43. Respondents argue that complainants’ interpretation of

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the prosecution history is incorrect because, after the argument was made by the patent attorney, the Examiner reaffirmed his rejection of the claims over the Kikinis prior art. They also argue that “the Mitsumi prior art was never cited by the Examiner as a basis for rejection and thus could not be ‘overcome’ by the applicant.” *Id.* at 40.

The IA supported complainants’ view of the prosecution history, but criticized complainants’ proposed claim construction as vague.

c. Analysis

We have determined to modify the ALJ’s construction of the claim term “controller” to reflect that, although the claim phrase “optical drive controller” means “a device or group of devices to control data communications between a host computer and the optical disk drive electronics” (ID at 80), configurations wherein a “controller requires a translator card or other intervening circuitry between the controller and the IDE bus to translate or manipulate command data” were disclaimed during prosecution. We affirm the ALJ’s construction of the claim term “directly.”

Respondents and the IA agree that the preferred embodiment is a single chip device. The portions of the ‘527 patent cited by complainants in support of their assertion that the specification teaches a single chip controller do not discuss, however, whether a controller is limited to a single chip device. We see nothing in the specification that suggests that controller is restricted to a single chip device. However, we agree with complainants and the IA that during prosecution, the applicants disclaimed a “controller [that] requires a translator card or other intervening circuitry between the controller and the IDE bus to translate or manipulate command

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data.” (CX-10, at ZX001816-1817).

In determining that complainants satisfied the domestic industry requirement, the ALJ found that the OTI-9510 and SC-2120B chips practice claim 3 of the ‘527 patent. ID at 162. The record demonstrates that these chips practice claim 3 of the ‘527 patent using the Commission’s modified construction of the term controller. The OTI-9510 and SC-2120B chips are optical storage controller chips that contain a host interface that connects directly to the IDE bus of a host computer. Trans. (Samuels) at 564; CX-1260C at SUN00511, SUN00513, SUN00541-3; CX-241C at SUN01454, SUN01456, SUN01481. The ALJ also found it “undisputed that the MediaTek chips accused of infringing the ‘527 patent are designed to control the communication of data between an optical drive and a host computer over the IDE bus of a personal computer; and that said accused chips contain host interface logic with output pins that connect the controller and the host directly via an IDE/ATA bus.” ID at 122 (citing Staff proposed findings 310, 312 (undisputed)).⁴ Thus, the record demonstrates that these chips⁵

⁴The undisputed proposed findings read as follows:

The MediaTek chips accused of infringing the ‘527 patent are designed to control the communication of data between an optical drive and a host computer over the IDE bus of a personal computer. Staff proposed finding 310 (citing Trans. (Samuels) at 450).

The accused MediaTek chips contain host interface logic with output pins that connect the controller and the host directly via an IDE/ATA bus. Staff proposed finding 312 (citing Trans. (Samuels) at 510-12; *see, e.g.*, CX-806C at MTK-ITC-108942-3).

⁵As discussed further below, however, the Commission has determined to vacate the ID’s infringement findings as to the MT1528, MT1558, and MT1668 chips because the record does not support such findings as to these three chips.

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infringe claim 3 of the '527 patent using the Commission's modified construction of the term controller. *See also* Trans. (Samuels) at 742:25 – 743:2 (“the elements that infringe the claims [of the '527 patent] are contained within the MediaTek chip itself”), 742:3 – 743:17; CDX-22.

The ALJ's findings in his ID at 149-50 demonstrate that the Mitsumi prototype does not anticipate any claim of the '527 patent. He found that the daughterboard, which “sat between the OTI-012 controller and the IDE/ATA bus,” “translated information coming from the IDE/ATA bus so that it could be understood by the Mitsumi interface, and translated Mitsumi proprietary signals into signal that could be used by the ATA/IDE bus.” ID at 149, 150. The applicants, however, disclaimed intervening translator cards during prosecution, and therefore, the Mitsumi prototype does not anticipate any claim of the '527 patent.

Respondents also argue that, even under complainants' construction of the limitations “controller” and “directly,” the Mitsumi prototype renders the claims of the '527 patent obvious. They assert that “integrating the daughterboard and OTI-012 chip would certainly be obvious to one of ordinary skill in the art.” Respondents' reply at 46. They argue that “[t]he evidence demonstrated that Mitsumi's intent in developing the prototype from the very beginning was to have the functionality of the prototype integrated onto a single chip.” *Id.* at 46. However, respondents presented their argument that the Mitsumi prototype by itself renders the claims of the '527 patent obvious in their reply submission to the submissions on review, and respondents had never before raised this obviousness issue in this investigation. Respondents did not raise this obviousness issue in their petition for review, and never presented it to the ALJ. *See* Respondents' petition for review at 130-38; respondents' amended pre-hearing statement at 51-

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53, 58-60; respondents' post-hearing brief at 120-26. By failing to raise this issue before the ALJ, respondents have waived it. *Hazani v. U.S. Int'l Trade Comm'n*, 126 F.3d 1473, 1476-77 (Fed. Cir. 1997).

Even if the obviousness issue were properly before the Commission, respondents' argument is not persuasive. Obviousness is a legal conclusion based on underlying factual inquiries including: (1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art, and (4) secondary considerations, if any, of nonobviousness. *Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1335-36 (Fed. Cir. 2004). Although a patent claim may be rendered obvious by a single prior art reference, "there must be a showing of a suggestion or motivation to modify the teachings of that reference to the claimed invention in order to support the obviousness conclusion." *SIBIA Neurosciences, Inc. v. Cadus Pharm. Corp.*, 225 F.3d 1349, 1356 (Fed. Cir. 2000). Because a patent is presumed valid, obviousness must be demonstrated with clear and convincing evidence. *Catalina Lighting Inc. v. Lamps Plus, Inc.*, 295 F.3d 1277, 1287 (Fed. Cir. 2002).

Respondents argue that integrating the daughterboard and the OTI-012 chip would have been obvious to one of ordinary skill in the art who reviewed the Mitsumi prototype because Mitsumi developed the prototype with the intention of integrating the functionality of the prototype onto a single chip. While respondents support this argument with the deposition testimony of Sugie, who was at one time chief engineer for Mitsumi (ID at 147), and citations to documentary exhibits (*e.g.*, CX-540C, CX-1525C, CX-567C), the question is not what Mitsumi intended in developing the prototype but whether there is a suggestion, motivation, or teaching in

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the prior art that would lead one of ordinary skill in the art to modify the prototype to make the claimed invention. *See Golight*, 355 F.3d at 1336; *SIBIA Neurosciences*, 225 F.3d at 1356.

Although the suggestion, motivation, or teaching need not be express in the prior art reference, and ““may come from the prior art, as filtered through the knowledge of one skilled in the art,”” the showing must be “clear and particular.” *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1125 (Fed. Cir. 2000) (quoting *Motorola, Inc. v. Interdigital Tech. Corp.*, 121 F.3d 1461, 1472 (Fed. Cir. 1997)). Respondents have failed to make such a showing here. Furthermore, the ALJ found objective indicia of nonobviousness including the failure of others to offer for sale an optical drive controller that could directly connect to the host computer via the IDE/ATA data bus; the commercial success of the Oak OTI-011, which embodied the claimed invention; and Oak’s ability to leverage the value of its invention through the licensing of its patent portfolio, which included its patents relating to the OTI-011. ID at 151.

Consequently, even if this argument were properly before us, respondents have not established by clear and convincing evidence, that the asserted claims of the ‘527 patents are obvious under 35 U.S.C. § 103 in view of the Mitsumi prototype.

B. The ID’s Construction of Other Claim Terms: “Data Error Detection and Correction Circuitry,” “Precluded from Accessing,” “Access . . . Is Precluded,” “ATA Transfer Protocol,” and “An ATA Command Block Register Address at Which to Store Sequentially Contiguous Bytes of Command Data, That Are Part of the Same Command, Transmitted From the Host Computer in a Single Command Transfer”

In their petition for review, complainants requested review of the ALJ’s construction of the following claim language: “data error detection and correction circuitry” (*see* ID at 86-99), “precluded from accessing” and “access . . . is precluded” (*see* ID at 104-08). The IA and

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respondents opposed review. We affirm the ALJ's construction of this claim language.

In their petition for review, respondents requested review of the ALJ's construction of the following claim language: "ATA transfer protocol" (*see* ID at 109-10) and "sequentially contiguous bytes" (*see* ID at 83-85). The IA and complainants opposed review. We affirm the ALJ's construction of this claim language.

III. Invalidity

In an earlier Commission investigation involving the '715 patent, the Commission concluded that the named inventors of the '715 patent had conceived of their invention no later than April 1993. *Certain CD-ROM Controllers and Products Containing the Same-II*, Inv. No. 337-TA-409, Commission Opinion at 65, USITC Pub. No. 3251 (Oct. 1999) ("the '409 investigation"). In their petition for review, respondents asserted that the ALJ erred in relying on the 1993 conception date as the conception date for the inventions of the '527 and '440 patents, and argued that the Commission must independently address the issue of the conception date of the asserted claims. Respondents contend that they established a *prima facie* case of invalidity of the asserted claims of the '527 and '440 patents based on Western Digital's June 10, 1993, ATAPI document,⁶ and therefore that complainants were required to prove an earlier conception date. Respondents contend that the June 10, 1993, ATAPI document presents a *prima facie* case of invalidity because it is either a fully anticipatory derivation reference or an obviousness reference under 35 U.S.C. §§ 102(f),103. Respondents also argue that they presented a *prima*

⁶The ATAPI specification "defines a standard method for interfacing to a CD-ROM Drive utilizing the existing ATA host computer hardware and cabling." (CX-1249 at ¶ 1.1).

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facie case of invalidity under 35 U.S.C. § 102(f) for non-joinder of “engineers at Western Digital, primarily Shishir Shah,” who “contributed key elements of the ‘527 and ‘440 claims.”

Respondents’ submission at 104.

As discussed below in part A, we determine to vacate (1) the ALJ’s finding that the conception date of the asserted claims of the ‘527 and ‘440 patents is at least as early as April 21, 1993 (*see* ID at 129 n.45, 142) and (2) the statement in the ID at 142, where the ALJ relies on the April 21, 1993, conception date to make an alternate finding, *viz.*, “[e]ven assuming that conception of a transport mechanism that attached a CD-ROM drive to an IDE/ATA bus was relevant, there is no contemporaneous documentation showing conception in December 1992 or a conception even before the April 1993 conception of the claimed inventions in issue.”

In his ID, the ALJ rejected respondents’ invalidity and unenforceability contentions with respect to the ‘527 and ‘440 patents (*see* ID at 128-156), and, with the exception of the conception findings previously identified as vacated, we affirm. As discussed below in part B, we find respondents’ argument that ATAPI presents a *prima facie* case of invalidity unpersuasive because the ALJ correctly found that the June 10, 1993, ATAPI document did not disclose every element of the claimed invention and because respondents’ obviousness argument is insufficient as a matter of law. As discussed below in part C, we have determined that respondents waived their argument that the ‘527 and ‘440 patents are invalid under 35 U.S.C. § 102(f) for non-joinder of any Western Digital engineers other than Shishir Shah by failing properly to present the argument to the ALJ at the appropriate time. Consequently, we reject respondents’ argument that it is necessary to determine the conception date of the asserted claims of the ‘527 and ‘440

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patents in order to resolve the issues that are properly before us.

In part D, we address respondents' challenge to the ALJ's rejection of their contention that the asserted claims are invalid under 35 U.S.C. § 102(g)(2) (*see* ID at 139-42).

A. The ID's Conception Date Finding

In its notice of review, the Commission asked the parties to brief the following question: "Should the asserted claims of the '440 and '527 patents be accorded the conception date found by the Commission in the 409 investigation for the claims of the '715 patent? Why or why not?

In your answer, address any relevant admission(s) by respondents. (See ID at 129 n.45)." 70

Fed. Reg. 42589-91 (question 6). The ID's footnote 45 begins on page 129, and reads as follows:

Respondents have admitted that the Commission in its opinion in CD-ROM Controllers II found that the named inventors on the '527 and '440 patents had completed conception of their invention, at least by April 21, 1993. ([Respondents' post-hearing reply brief] at 3.) Complainants' position is that the inventors conceived the claimed inventions of the '557 [sic] and '440 patents in January 1993 or at least in March 1993 or in April 1993 as the Commission has found. ([Complainants' post-hearing brief] at 87; [complainants' post-hearing reply brief] at 78.) Respondents in this investigation appear to take the position that the inventors on the '440 and '527 patents conceived the claimed inventions on June 14, 1993.

Respondents' position is that the conception date found by [the] Commission is "manifestly false." Respondents refer to the following portion of the Commission opinion in CD-ROM Controllers II:

The ATAPI specification is dated June 10, 1993, and describes a detailed command set that enables communication between a CD-ROM drive and a host PC over an IDE bus. It also provides detailed information for the reduction to practice of such a controller. The '715 patent discusses the ATAPI commands in considerable detail and many of those commands are essential to the functioning of the claimed host interface means.

(CX-513C [*Certain CD-ROM Controllers and Products Containing the Same (II)*, Inv. No. 337-TA-409, Commission Opinion (confidential version Oct. 4, 1999)] at 60-61 (emphasis added by respondents).) Respondents then concluded that the

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Commission's use of the word "essential" meant that "many of those commands" must be part of the conception of the invention and hence the Commission's statement that the named inventors had completed conception of their invention at least by April 21, 1993, which is prior to the date of the ATAPI specification, is "manifestly false." ([Respondents' post-hearing reply brief] at 4.) The administrative law judge, however, finds that the Commission's statement that there is a conception date at least by April 21, 1993 is not "manifestly false."

ID at 129 n.45.

1. Positions of the Parties

Respondents argue that the doctrines of collateral estoppel and *res judicata* are inapplicable. They also state that the only "admission" referred to in footnote 45 of the ID is the ALJ's statement that "[r]espondents have admitted that the Commission in its opinion in CD-ROM Controllers II found that the named inventors on the '527 and '440 patents had completed conception of their invention, at least by April 21, 1993. ([Respondents' post-hearing reply brief] at 3)." Respondents' submission at 102-03. Respondents state that they "merely acknowledged that the *Commission had found* a particular conception date" for the claims of the '715 patent at issue in the 409 investigation. *Id.* at 102.

The IA agreed that collateral estoppel is inapplicable, and argued that the Commission's determination as to conception date of the '715 patent claims in the '409 investigation should therefore be given no deference. However, the IA also took the position that there was no reason for the ALJ to determine the conception date of the asserted claims in this investigation. In her submission on review, the IA reiterated her view that it is unnecessary to determine the conception date of the asserted claims.

Complainants acknowledge that the Commission's conception date finding in the

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previous 409 investigation is not binding under theories of collateral estoppel or *res judicata*, and represent that they have never so argued. Complainants further argued that the ALJ did not have to reach the conception issue because respondents failed to make a *prima facie* case of invalidity.

However, complainants also characterized the ID as having concluded, after consideration of the evidence in the present record, that the named inventors conceived the inventions of the '527 and '440 patents no later than April 1993 — the same conception date that the Commission found with respect to the '715 patent in issue in the '409 investigation.

2. Analysis

We have determined to vacate the ALJ's finding that the conception date of the asserted claims of the '527 and '440 patents is at least as early as April 21, 1993, because that finding lacks a sufficiently articulated basis in fact. *See* ID at 129 n.45, 142.

Complainants contend, relying on the ALJ's footnote (ID at 129 n.45), that the ALJ considered the conception evidence in the present record in finding that the inventors conceived of their invention at least by April 21, 1993. We disagree with complainants' characterization of the evidentiary basis for the ALJ's conception date finding because the footnote makes no reference to such evidence.

The Commission's briefing question concerning the conception date issue also directed the parties to address in their responses "any relevant admission(s) by respondents." 79 *Fed. Reg.* 42589-91 (question 6). Complainants contend that —

respondents concede that the claims of the '527 and '440 patents are either essentially the same in scope as the means-plus-function claims in the '715 patent, or are broader. (*See* [respondents' post-hearing reply brief at 4 n.3]) In their post-hearing reply brief, respondents conceded that "any conclusions concerning conception of the

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'715 [patent] would apply equally to one or more claims of the '440 and '527 patents." *Id.* But conception of the '715 patent is not at issue here. That finding was made many years ago, supported by contemporaneous corroborating documentation, and its accuracy was never challenged. Based on respondents' unmistakable concession, the inquiry should end there.

Complainants' submission at 72.

Before the ALJ, respondents took the position that there could be no *res judicata* or collateral estoppel based on the Commission's opinion in the 409 investigation and therefore that the opinion had no application to the instant investigation. After reiterating that position before the ALJ in their post-hearing reply brief, respondents alternatively argued that the Commission's 409 opinion supported their position on inventorship.⁷ In the course of that argument, respondents noted that —

[t]he potential argument that the prior Commission Opinion concerned the '715 patent, not the continuation patents at issue here is of no consequence. . . . [T]he Commission's construction of the '715 host interface . . . shows that it is identical to the '440 claim 1, and that all claims of the '527 patent are a broader subset. Thus, any conclusions concerning conception of the '715 would apply equally to one or more claims of the '440 and '527 patents.

Respondents' post-hearing reply at 4 n.3. However, the parties agree that collateral estoppel and *res judicata* are inapplicable, and the ID did not rely on these doctrines.

Notwithstanding the statements of respondents concerning the respective scope of the claims of the '715, '440, and '527 patents, we decline to apply our previous findings and conclusions concerning conception of the '715 patent claims from the 409 investigation to the instant investigation. Thus, we vacate the ALJ's finding that there is a conception date at least by

⁷In footnote 45, the ALJ rejects respondents' argument.

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April 21, 1993, of the asserted claims of the '527 and '440 patents (*e.g.*, ID at 129 n.45, 142), because that finding lacks a sufficiently articulated basis in fact. We also *vacate* the statement in the ID at 142, where the ALJ relies on the April 21, 1993, conception date to make an alternate finding, *viz.*, “[e]ven assuming that conception of a transport mechanism that attached a CD-ROM drive to an IDE/ATA bus was relevant, there is no contemporaneous documentation showing conception in December 1992 or a conception even before the April 1993 conception of the claimed inventions in issue.”⁸

B. Western Digital’s June 10, 1993, ATAPI Document

1. The ID

The ALJ found that respondents have not established by clear and convincing evidence that the June 10, 1993, draft ATAPI specification was a printed publication under 35 U.S.C. § 102(b) before the June 22, 1993, critical date. ID at 128-33. He further found that, even assuming *arguendo* that respondents had established that the draft ATAPI specification was a printed publication under section 102(b), respondents have not established by clear and convincing evidence that the draft ATAPI specification anticipates the asserted claims of the '527 and '440 patents. ID at 133-35.

2. Submissions of the Parties

Respondents argue that the June 10, 1993, ATAPI document presents a *prima facie* case

⁸This statement is found in part VI.D.3 of the ID. In part VI.D.3 the ID discusses respondents’ argument that the asserted claims of the '527 and '440 patents are invalid under 35 U.S.C. § 102(g)(2). ID at 139-42. Respondents’ argument that the ALJ applied the wrong legal analysis to the section 102(g)(2) issues is discussed below in part D.

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of invalidity because it is either a fully anticipatory derivation reference or renders the patent obvious under 35 U.S.C. §§ 102(f),103. They assert that “[t]he only allegedly novel element” of the claims in issue “is the IDE/ATA host interface for a CD-ROM device” and “ATAPI discloses each and every limitation of the claimed host interface, thus rendering the claims invalid.”

Respondents’ submission at 66. They contend that the ALJ erred by “ignor[ing] the overwhelming evidence of anticipation.” *Id.* at 66, 66-73. They further argue that “to the extent any particular claim limitation [of the asserted claims of the ‘440 or ‘527 patents] is found to be missing from ATAPI, it still renders the claims obvious by itself.” *Id.* at 71 (citing *Trans. (Buscaino)* at 2776:20-2777:2), 73 (citing *Trans. (Buscaino)* at 2779:10-15).

2. Reply Submissions

In response, the IA argues that the ALJ correctly found that the ATAPI specification did not anticipate any asserted claim because it “is directed to a method for interfacing to a CD-ROM drive rather than an optical drive controller.” IA’s response to petitions for review at 38–39 (citing ID at 133-35); IA’s reply at 26-27 (cross-referencing IA’s response to petitions for review).

Complainants argue that the ATAPI specification does not anticipate the asserted claims. They contend that the ID did not err in finding that ATAPI was “only a ‘protocol,’” and respond in detail to respondents’ argument on this point. Complainants’ reply at 53. With respect to obviousness, complainants state that —

[r]espondents’ entire showing on this issue consists, as to each of the [‘440 and ‘527] patents, of Mr. Buscaino’s single affirmative response to a single question as to whether the ATAPI specification renders the asserted claims obvious. Mr. Buscaino was not asked for, and did not give, any further explanation. Such a conclusory

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showing fails as a matter of law.

Id. at 61. Complainants also argue that evidence of secondary considerations establishes that the claimed invention is not obvious.

3. Analysis

We see no error in the ID's finding that respondents did not establish, by clear and convincing evidence, that the ATAPI specification anticipates the asserted claims. *See* ID at 128-35. The ALJ found that the ATAPI specification is directed to a method for interfacing to a CD-ROM drive, and does not describe the claimed optical disk controller. ID at 133-35. The ALJ's finding is supported by substantial evidence. For the same reason, respondents' derivation argument also fails. Under *Eaton Corp. v. Rockwell Int'l Corp.*, 323 F.3d 1332, 1344-45 (Fed. Cir. 2003), derivation requires prior conception of the invention by another, and an enabling communication of the conception to the patentee. Although respondents argue that ATAPI was communicated to the inventor Verinsky, the ALJ found that ATAPI did not disclose every element of the claimed invention.

We determine that respondents' argument that the ATAPI specification renders the asserted claims obvious also fails. Respondents' evidentiary showing on this issue is limited to the affirmative response of respondents' expert (Buscaino) to the question as to whether the ATAPI specification renders the asserted claims of each of the two patents obvious. *See* Respondents' submission at 71 (citing *Trans. (Buscaino)* at 2776:20-2777:2), at 73 (citing *Trans. (Buscaino)* at 2779:10-15). This showing is legally insufficient. *Upjohn Co. v. Mova Pharm. Corp.*, 225 F.3d 1306, 1311 (Fed. Cir. 2000).

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As discussed above, the ALJ correctly found that ATAPI did not disclose every element of the claimed invention and respondents' obviousness argument is insufficient as a matter of law. Consequently, we find respondents' argument that ATAPI presents a *prima facie* case of invalidity unpersuasive.

C. Non-Joinder of Inventors

Respondents argue that they presented a *prima facie* case of invalidity for non-joinder of "engineers at Western Digital, primarily Shishir Shah," who "contributed key elements of the '527 and '440 claims." Respondents' submission at 104. However, as we explain below, respondents waived their argument that the '527 and '440 patents are invalid under 35 U.S.C. § 102(f) for non-joinder of Western Digital engineers, other than Shishir Shah, by failing to raise the argument properly before the ALJ.

In its notice of review, the Commission requested briefing on the following question:

Have respondents waived the argument that the '527 and '440 patents are invalid under 35 U.S.C. § 102(f) for non-joinder of unidentified "Western Digital engineers" as co-inventors by failing to present it to the ALJ? (*See* respondents' petition for review at 51.) Identify with citations to previous briefing where this specific argument and any supporting evidence was presented to the ALJ.

70 *Fed. Reg.* 42589-91 (question 1). Respondents contend that they raised the issue of invalidity under section 102(f) for non-joinder of one or more Western Digital inventors. The IA and complainants argue that respondents waived the issue of invalidity under section 102(f) for non-joinder of Western Digital inventors other than Shishir Shah.

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1. Submissions of the Parties

a. IA's Submission

Relying on *Hazani v. United States International Trade Commission*, 126 F.3d 1473, 1476-77 (Fed. Cir. 1997), the IA states that the Federal Circuit has upheld the Commission's long-standing practice of declining to consider on review arguments that were not timely raised before the ALJ. She states that "[t]he standard for properly raising an issue before the Judge is whether the issue has been 'raised with sufficient specificity and clarity that the [Judge] is aware that [he or she] must decide the issue.'" IA's submission at 3 (quoting *Wallace v. Dept. of the Air Force*, 879 F.2d 829, 832 (Fed. Cir. 1989)).

The IA concedes that respondents stated in their pre-hearing brief that "the authors of ATAPI at Western Digital" "who conceived and developed the ATAPI IDE CD-ROM specification are rightfully joint inventors." *Id.* at 3-4 (quoting respondents' pre-hearing brief at 43, 45). She argues that respondents waived that argument, however, because in their post-hearing brief respondents argued only that the patents were invalid for non-joinder under 35 U.S.C. 102(f) for failure to name Shah as an inventor. She acknowledges in a footnote that respondents' proposed conclusions of law included the following: "The '527 and '440 patents failed to name the correct inventors, including Shishir Shah and/or others from Western Digital. Therefore, they are invalid under 35 U.S.C. § 102(f)." *Id.* at 5 n.3 (quoting respondents' proposed conclusions of law at 5).

The IA argues, however, that while respondents did state in their post-hearing brief that "[t]here was one final change which Mr. Verinsky and Mr. Case made which proves that Mr.

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Shah and Western Digital are the true inventors,” respondents went on to “conclude and summarize their argument as relating to co-inventorship solely with respect to Mr. Shah.” *Id.* at 4–5 (quoting respondents’ post-hearing brief at 77 (emphasis added by IA) and citing respondents’ post-hearing brief at 78). She contends that —

[a]t no point in the Posthearing Brief did Respondents argue that the authors of the ATAPI CD-ROM specification or anyone other than Mr. Shah were joint inventors of the invention claimed in the ‘527 and ‘440 patents. Rather, Respondents argued that the ATAPI specification anticipates the ‘527 and ‘440 claims “under 35 U.S.C. §§ 102(f) and/or (b)” inasmuch as the ATAPI specification is a prior conception of the complete invention from which Oak *derived* its embodiment.

Id. at 5 (footnote omitted) (citing Respondents’ post-hearing brief at 78-84). The IA contends that “in their Posthearing Reply Brief, Respondents argue for the first time that the ATAPI specification should be considered independently and that ‘the Western Digital disclosures have created a *prima facie* case of invalidity due to improper inventorship under 35 U.S.C. § 102(f).” *Id.* at 6 (quoting respondents’ post-hearing reply brief at 8 and citing generally respondents’ post-hearing reply brief at 6-30).

The IA argues that, notwithstanding respondents’ argument in their post-hearing reply brief concerning the Western Digital disclosures, respondents waived the issue because (1) “it is not proper to raise an argument for the first time in a reply brief” and (2) “[e]ven in their Posthearing Reply Brief, Respondents continue to confound the issues of Mr. Shah’s co-inventor status with Western Digital more generally.” *Id.* at 7.

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b. Complainants' Submission

Complainants assert that “[a]rguments that are not raised in a timely fashion are waived.”⁹ Complainants argue that respondents “either waived the non-joinder issue altogether, or, at a minimum, waived the argument that Shishir Shah *and* other unnamed Western Digital inventors should have been joined as inventors.” Complainants’ submission at 7. Complainants state that the ALJ’s ground rules provide that contentions not set forth in detail in a party’s pre-hearing statement are waived. They also note that in ALJ Order No. 35 (requiring submissions from the parties), the ALJ stated that while a party’s position with respect to a required submission may change, absent notification to the ALJ and the other parties “in a timely manner, by letter” “the party is committed to the position stated in its original submission.” *Id.* at 4 (quoting ALJ Order No. 35 at 1-2). According to complainants, while “[r]espondents asserted generally in Respondents’ Written Submission Pursuant To Order 35 — Item 6 (‘Respondents’ Item 6 Brief’), filed on January 21, 2005, and their amended prehearing statement, filed on January 24, 2005, that one or more Western Digital employees invented some or all of the asserted claims of the ‘527 and ‘440 patents,” respondents did not identify Shah or any other alleged Western

⁹Complainants’ submission at 2 (citing 19 C.F.R. 210.43(a)(2); *Kinik Co. v. United States International Trade Comm’n*, 362 F.3d 1359, 1367 (Fed. Cir. 2004); *Hazani v. United States International Trade Comm’n*, 126 F.3d 1473, 1479 (Fed. Cir. 1997); *Certain Gel-Filled Wrist Rests and Products Containing Same*, 337-TA-456, Commission Opinion at 32 (Jan. 23, 2003); *Certain Display Controllers with Upscaling Functionality and Products Containing Same* and *Certain Display Controllers and Products Containing Same*, consolidated Inv. Nos. 337-TA-481 and 337-TA-491, Commission Opinion at 36 (Feb. 4, 2005)).

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Digital employee as an unnamed inventor.¹⁰ Complainants argue that since respondents could have, but did not, specifically identify Shishir Shah as the alleged inventor in their pre-hearing papers, they waived the section 102(f) issue in its entirety under ALJ ground rule 9(e).

Complainants characterize respondents' post-hearing brief as presenting the argument "that the '527 and '440 patents are invalid for failure to name Shishir Shah — *and only Shishir Shah* — as an inventor." Complainants' submission at 5. They assert that Respondents "never argued in their post-hearing brief that other unnamed Western Digital employees also were omitted." *Id.* Complainants argue that because respondents did not present, in their post-hearing brief or proposed findings of fact, their argument that Western Digital employees other than Shah were not joined as inventors, as a practical matter it was "impossible for complainants and [the IA] to address" any such argument in their post-hearing reply briefs and rebuttal findings of fact. *Id.* at 6.

According to complainants, "[i]t was not until respondents' post-hearing *reply* brief that they changed course again and argued that some other unnamed Western Digital employees *and* Shishir Shah also should have been named as inventors." *Id.* at 6. They characterize respondents' post-hearing reply brief as referring, for example, to "Mr. Shah's and Western Digital's critical inventive ideas" and "Shishir Shah and Western Digital were omitted inventors." *Id.* (citing respondents' post-hearing reply brief at 6, 8, 28, 29). Complainants argue

¹⁰*Id.* at 4-5 (citing Respondents' Item 6 Brief, at 10, 12; Respondents' Amended Pre-Hearing Statement, at 41-43). In their reply, respondents note that in the outline of witness testimony presented in their pre-hearing statement at 129-40, they stated that "Mr. Shah is expected to testify about his conception of an IDE/ATA interface for CD-ROM." Respondents' reply at 6.

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that because respondents never submitted a letter explaining their various new positions, “specifically, that unnamed Western Digital employees *and* Shishir Shah should have been named as an inventor,” they never complied with Order No. 35. *Id.* at 6. Thus, complainants argue that respondents “waived the argument that Shishir Shah *and* other unnamed Western Digital inventors should have been joined as inventors.” *Id.* at 7.

c. Respondents’ Submission

Respondents argue that they raised the defense that the ‘527 and ‘440 patents are invalid for improper inventorship under section 102(f) in their pre-hearing statement, introduced evidence relating to the defense at the hearing, and argued the defense in their post-trial briefing. They argue that, because they “thoroughly address[] the issue of non-joinder of the proper inventors in both their pre-hearing statement and post-trial briefing,” the issue was not waived. Respondents’ submission at 15. Respondents also argue that there was no waiver because their pre-hearing statement and post-trial briefing complied with the ground rules for the investigation. Respondents further state that they raised their improper inventorship defense in their pre-hearing statement.

In response to the Commission’s second briefing question,¹¹ respondents state that “the Western Digital co-inventors were not ‘unidentified,’ as contended by Complainants.” *Id.* at 21

¹¹The Commission’s second briefing question reads as follows: “May a patent be held invalid for non-joinder of an unidentified co-inventor under 35 U.S.C. § 102(f)? If so, did respondents present to the ALJ the required clear and convincing evidence to support a *prima facie* case? In addition to supporting your answer with citations to the evidentiary record and legal authority, address *Gemstar v. Int’l Trade Comm’n*, 383 F.3d 1352, 1382-83 (Fed. Cir. 2004), and *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1381-82 (Fed. Cir. 2000).” 70 *Fed. Reg.* 42589-91.

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("Oak failed to join at least one Western Digital co-inventor (Shishir Shah) and perhaps others (Rutledge and Worrell)"); *see also* respondents' reply at 10 ("Contrary to Complainants' dishonest characterization of the evidence, *there are no 'unidentified co-inventors' in this case.* All of the possible contributors to Western Digital's invention either testified at trial (Messrs. Shah, Worrell and Hanan) or by deposition (Mr. Rutledge). The only other related trial witness, Ramezani, was clearly only a corroborating non-inventor. In addition, Messrs. Rutledge and Hanan essentially disavowed any claim to inventorship, but corroborated the contributions of Shah and Worrell").

2. Replies

The IA characterizes respondents' submission as largely unresponsive to the Commission's briefing questions. She states that the question was not "whether Respondents waived 'improper inventorship' under 35 U.S.C. § 102(f), but whether Respondents waived the argument of non-joinder of unidentified Western Digital engineers under 35 U.S.C. § 102(f)." IA's reply at 3-4.

The IA states that —

[i]n contrast to Respondents' extensive post-hearing briefing that Mr. Shah was an unnamed co-inventor of the '527 and '440 patents, the only portion of their Post-hearing Brief that Respondents have cited to support their position that they did not waive non-joinder of "unidentified Western Digital engineers" is:

In the present case, as will be demonstrated below, the evidence is clear and convincing that, *at a minimum*, Shishir Shah contributed critical ideas that became part of the invention of the '527 and '440 patents as claimed. He was thus an inventor and the failure to name him invalidates the '527 and '440 patents.

Id. at 2–3 (quoting Respondents' submission at 19 (quoting Respondents' post-hearing brief at

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67) (italics added by respondents in respondents' submission)) (underlining added by IA). The

IA argues that this language does not support respondents' position. She contends that —

the “at a minimum” language is ambiguous and may reasonably be read as referring to Mr. Shah’s contributions. Respondents’ subsequent sentence limited to Mr. Shah supports that interpretation. This cited portion did not clearly and specifically give notice that Respondents were arguing that Western Digital employees other than Mr. Shah were co-inventors and that the patent is invalid for failure to name these unidentified persons.

Id. at 3.

In their reply, complainants reiterate the IA’s argument that respondents waived their argument for non-joinder of unidentified Western Digital engineers as co-inventors because they presented it for the first time in their post-hearing reply brief. They point out that respondents failed to discuss ALJ Order No. 35 and the cases concerning waiver that were cited by the IA and complainants.

In their reply submission, respondents do not respond to the IA’s submission. They argue that, contrary to complainants’ contention, “[r]espondents’ pre-hearing statement provide[s] a detailed description of Mr Shah’s conception of critical aspects of the ‘527 and ‘440 invention.” Respondents’ reply at 4. They reiterate their previous argument that because they complied with the ground rules for the investigation, their argument was not waived.

3. Analysis

We have determined that respondents waived their argument that the ‘527 and ‘440 patents are invalid under 35 U.S.C. § 102(f) for non-joinder of any “Western Digital engineers” other than Shishir Shah. Although respondents raised a broader non-joinder argument in their pre-hearing statement, their post-hearing brief argued only that Shah was improperly not joined

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as an inventor. It was not until their post-hearing reply brief that respondents argued non-joinder of any alleged co-inventors other than Shishir Shah.

We have consistently declined to consider on review arguments that were not timely raised before the ALJ.¹² In *Integrated Circuits*, Commission Opinion at 44-45, we specifically declined to consider on review an issue that had been raised for the first time in a post-hearing reply brief on the ground that the issue had not been properly raised before the ALJ. In finding waiver in that investigation, we noted that “[t]his is not a new rule.” *Id.* at 45 (quoting *Above-Ground Swimming Pools*, Inv. No. 337-TA-25, Recommended Determination, 1977 WL 52319 (Feb. 10, 1977)). Allowing a party to raise an issue in a reply brief is unfair because such action denies the party’s opponent an opportunity to respond. Furthermore, requiring the ALJ to address issues not raised until the reply brief would threaten the integrity of Commission proceedings in that such a practice would require the ALJ to decide issues that were not fully briefed.

Thus, we determine that respondents waived their argument that the ‘527 and ‘440 patents are invalid under 35 U.S.C. § 102(f) for non-joinder of any “Western Digital engineers” other than Shishir Shah by failing properly to present the argument to the ALJ at the appropriate time.

¹²See, e.g., *Certain Display Controllers with Upscaling Functionality and Products Containing Same* and *Certain Display Controllers and Products Containing Same*, consolidated Inv. Nos. 337-TA-481 and 337-TA-491, Commission Opinion at 36 (Public Version, Feb. 4, 2005); *Certain Integrated Circuits, Processes for Making Same, and Products Containing Same*, Inv. No. 337-TA-450, USITC Pub. No. 3624, Commission Opinion at 32, 44-45, 54-55 (Public Version, July 24, 2003)) (“*Integrated Circuits*”).

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D. The ID's Section 102(g)(2) Analysis

1. The ID

The ALJ found (ID at 139-42) that respondents failed to establish by clear and convincing evidence that the asserted claims of the '527 and '440 patents are invalid under 35 U.S.C. § 102(g)(2), which provides that a patent is invalid if "before [the patent applicant's] invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it." He stated that "[r]espondents argued that the '527 and '440 patents are anticipated by Western Digital's HISIDE chip, which has the benefit of an earlier conception date and hence the asserted claims are invalid under 35 U.S.C. § 102(g)(2). ([Respondents' post-hearing brief] at 85-104)." ID at 139. He stated that "[a]ccording to respondents, Shah of Western Digital in December 1992 conceived a transport mechanism that attached a CD-ROM drive to an IDE/ATA bus. ([Respondents' post-hearing brief] at 89.)" ID at 140. The ALJ found, however that "the claims of the '527 and '440 patents are directed to an optical drive controller and Shah himself testified that he did not conceive an optical drive controller." ID at 140-42 (citing *Trans. (Shah)* at 2522-23, 2326-27).

2. Respondents' Petition for Review

In their petition for review, respondents argued that the ALJ applied the wrong legal analysis to the issues concerning section 102(g)(2). Relying on *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996), respondents assert that "[t]he threshold issue in determining priority of invention is identifying the earliest reduction to practice." Respondents' petition at 112. They contend that the ALJ legally erred by failing to determine the respective dates of

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reduction to practice for Western Digital's HISIDE chip and the invention claimed in the asserted claims of the '440 and '527 patents.

According to respondents, "the earliest reduction to practice date that should be accorded any claim of the '440 and '527 patents is [the] June 22, 1994, actual filing date" of the parent '715 patent application, because complainants "did not allege, argue or offer evidence" in support of an earlier date. *Id.* at 113. Respondents argue that because the record demonstrates that the HISIDE product was actually reduced to practice in the United States by May 1994, the asserted claims of the '527 and '440 patents are invalid over the HISIDE prior art.

3. Submissions of the Parties in Response to the Commission's Notice of Review

In its notice of review, the Commission requested briefing on the following question:

Have respondents waived their argument that the ALJ erred in failing to make a determination concerning the date of actual reduction to practice of the HISIDE product by failing to raise that argument before him? (*See* respondents' petition for review at 112-13: "there is no initial determination of the date of reduction to practice for any claim of the '440 and '527 patents and there is no initial determination of the date of actual reduction to practice of [Western Digital's] HISIDE product that Respondents showed anticipates the claims of the '440 and '527 patent [sic].") Identify with citations to previous briefing where this specific argument and any supporting evidence was presented to the ALJ.

70 *Fed. Reg.* 42589-91 (question 4).

Respondents argue that because they "have consistently set out a case of prior invention under 35 U.S.C. § 102(g)(2), [they] have not waived their argument that the claims of the '527 and '440 patent[s] are invalid over Western Digital's prior art HISIDE. The administrative law judge consequently erred in not determining the date of actual reduction to practice of Western Digital's HISIDE and the respective priority of invention between Western Digital's HISIDE and

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the '527 and '440 patents.” Respondents’ submission at 89-90. Respondents contend that the issue of reduction to practice of the HISIDE product, and conception and diligence in reduction to practice, was raised in their amended pre-hearing statement at 53-57, in their February 1, 2005, identification of witnesses, in their post-hearing brief at 16-20, 85-104, and in their proposed findings of fact RFF716-852 and RFF920-922.

The IA replies that “[r]espondents cite to no previous argument that there was any prior reduction to practice by Western Digital.” IA’s reply at 32. The IA asserts that respondents alleged that “the evidence of record consequently establishes that Mr. Shah and Western Digital had reduced the inventions of the '527 and '440 patents to practice earlier than [the named inventors] Messrs. Verinsky and Case” for the first time in their petition for review. IA’s submission at 18 (quoting respondents’ petition for review at 113). She characterizes that contention as contradicting the argument respondents previously made in their post-hearing brief. *Id.* at 18 (citing respondents’ post-hearing brief at 96 (“Where, *as is the case between Western Digital and Oak*, the first to conceive party is second to reduce to practice, the first to conceive party need only show diligence from slightly before the second to conceive party’s date of conception”) (emphasis added)). The IA states that “[r]ather than presenting evidence of prior reduction to practice, Respondents argued that the later reduction to practice of the HISIDE chip showed diligence on the part of Western Digital.” *Id.* at 19 (citing respondents’ post-hearing brief at 97; RFF 952, 1642).

Complainants argue that respondents waived their argument by failing to identify a potential dispute over reduction to practice in their submission in response to ALJ Order No. 35.

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They further argue that the issue is waived under ALJ ground rule 9(e) because respondents alleged only prior conception by Mr. Shah, but did not allege prior reduction to practice.

Complainants argue that given respondents' silence on the issue and respondents' admission (in connection with respondents' own argument that it was diligent in reduction to practice) that Oak reduced the OTI-011 to practice in August 1993, "complainants and [the IA] had no reason to believe that respondents were challenging Oak's reduction to practice of the claims of the '527 and '440 patents." Complainants' submission at 63.

Complainants argue that respondents raised their "legal argument regarding the role of reduction to practice in the [section] 102(g)(2) analysis for the first time in their reply post-hearing brief." *Id.* at 63. They argue that, by raising the issue in the reply brief, "respondents made it, as a practical matter, impossible for complainants or [the IA] to respond to this new argument. Respondents thus waived the argument." *Id.* at 63. In their reply submission, complainants argue that —

[w]hile respondents alleged HISIDE was reduced to practice by as early as May 1994 in their posthearing reply briefing, they never explain why the OTI-011 is not a reduction to practice of the '527 or '440 patents in any of their submissions to the ALJ or the Commission. Even in their posthearing reply brief, where they raised this issue for the first time, respondents did not argue that the OTI-011 was not a reduction to practice of the '527 and '440 patents, but rather relied upon general allegations of failure of proof by complainants.

Complainants' reply at 79.

4. Analysis

We determine that respondents have waived their argument concerning the respective dates of reduction to practice for Western Digital's HISIDE chip and the inventions claimed in

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the '440 and '527 patents by failing to raise the issue properly before the ALJ.

Respondents argue that they “unambiguously raised the issue of the reduction to practice of the HISIDE product in their prehearing and post-hearing briefing and in their identification of witnesses for the hearing.” Respondents’ submission at 92. In support, respondents cite to their amended pre-hearing statement at 53-57 (section III.E); their February 1, 2005, list of witnesses and outline of witness testimony; their post-hearing brief at 16-20, 85-104; and their proposed findings of fact RFF 716-852 and RFF 920-922. We have examined the portions of the documents cited by respondents, and find no support for their position.

ALJ ground rule 9 states that the pre-hearing statement contains, *inter alia*, “[a] statement of the issues to be considered at the hearing that sets forth with particularity a party’s contentions on each of the proposed issues Any contentions not set forth in detail as required herein shall be deemed abandoned, or withdrawn, except for contentions of which a party is not aware and could not be aware in the exercise of reasonable diligence at the time of filing the pre-hearing statements.” ALJ ground rule 9(e) (Notice Relating To Ground Rules (June 15, 2004)). In their pre-hearing statement, and in their post-hearing brief, respondents presented their section 102(g)(2) defense based on a theory of prior conception by Shishir Shah and diligent reduction to practice.¹³

In their post-hearing brief, respondents stated that “[i]n light of the relative timing of the Western Digital and Oak activities, it is important to note that a party who first conceives of an

¹³See respondents’ amended pre-hearing statement at 53-57; respondents’ post-hearing brief at 85-104. As noted above, the ID correctly found that Shah did not conceive the claimed invention (ID at 140-42).

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invention and diligently reduces the invention to practice is the first inventor under section 102(g), *even if that party reduces the invention to practice later than the other inventor.*” Respondents’ post-hearing brief at 87 (emphasis added). In arguing in their post-hearing brief that Shah’s allegedly prior conception of the inventions of the ‘440 and ‘527 patents was diligently reduced to practice, respondents stated that “[w]here, *as is the case between Western Digital and Oak, the first to conceive party is second to reduce to practice*, the first to conceive party need only show diligence from slightly before the second to conceive party’s date of conception.” *Id.* at 96 (emphasis added). Consequently, we find that respondents’ argument that they raised the issue of relative reduction to practice dates in the cited material to be unpersuasive.

In their submission on review, complainants state that respondents —

changed course in their reply post-hearing brief and asserted for the first time that complainants had not “allege[d], argue[d] or offer[ed] evidence of reduction to practice of the alleged inventions of the ‘527 and ‘440 patents that predates the constructive reduction to practice of the June 22, 1994 filing date” of the parent ‘715 patent application. ([Respondents’ post-hearing reply brief] at 74.) Respondents also made the (incorrect) legal argument regarding the role of reduction to practice in the [35 U.S.C. §] 102(g)(2) analysis for the first time in their reply post-hearing brief. (*Id.*, quoting *Chisum* and *Mahurkar*.) Just as with the non-joinder issue . . . respondents made it, as a practical matter, impossible for complainants or [the IA] to respond to this new argument. Respondents thus waived the argument.

Complainants’ submission at 63. We agree that it is improper for parties to raise new issues in a post-hearing reply brief because opposing parties are denied the opportunity to respond. *See Certain Integrated Circuits, Processes for Making Same, and Products Containing Same, Inv. No. 337-TA-450, Commission Opinion at 44-45 (Oct. 7, 2002).*

Respondents argue that “‘fairness considerations’ should ultimately govern, and may

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sometimes require that arguments be considered even if not previously raised, *e.g.*, if a party lacked the practical opportunity to raise an argument earlier.” Respondents’ reply at 47 (citing *Commission Action on an Initial Determination Designating Investigation More Complicated*, USITC GC-83-139, 1983 WL 206917 (Sept. 12, 1983)). Respondents, however, offer no explanation for their failure to raise this argument earlier than their post-hearing reply brief.

For the reasons discussed above, we believe that this argument was not properly raised before the ALJ, and consequently, that respondents have waived it.

IV. Infringement

As discussed below, we have determined to vacate the ALJ’s infringement findings with respect to the MT1528, MT1558, and MT1668 chips. We affirm the balance of the ALJ’s infringement findings with respect to the asserted claims of the ‘527 and ‘440 patents.

A. The MT1528, MT1558, and MT1668 Chips

The MT1528, MT1558, and MT1668 chips were among the accused chips identified in complainants’ pre-hearing statement. *See* Complainants’ pre-hearing statement at 127-28 and 218-19. Respondents and the IA contend, however, that the record does not support a finding of infringement with respect to these three chips. Complainants have represented to the Commission that these chips “were not among the chips that Zoran and Oak accused by the time the trial came about. As a result, there was no effort to prove they infringed.” Complainants’ submission at 71. We agree that the record does not support a finding of infringement as to these chips. Accordingly, we have determined to *vacate* the ID’s infringement findings with respect to the MT1528, MT1558, and MT1668 chips.

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B. The MT1189 Chip

1. Positions of the Parties

Complainants contend that —

the ALJ erred in omitting the MT1189 from the list of accused MediaTek chips. And since the ALJ's conclusion of law stated merely that "Respondents' accused products infringe the asserted claim 3 of the '27 patent" (ID at 187, [conclusion of law] 4), the result is that the MT1189 was not among the chips found to have been infringed. The Commission should correct that error, which complainants submit is most likely the result of confusion or a typographical error in light of the large number of products.

Complainants' submission at 64–65.

Complainants contend that they identified the MT1189 chip as an accused product in their pre-hearing statement. They also contend that the chip was listed as an accused product in their post-hearing submissions. Complainants further argue that, at the hearing, counsel for respondents "made it clear that the MT1189 was among the accused chips," as did counsel for complainants. *Id.* at 65.

Complainants state that their expert (Samuels) testified that he analyzed the products listed on demonstrative exhibit CDX-19, which included the MT1189. They argue that their expert "testified generally about the accused products," and that while his "testimony focused in more detail on several specific chips, including the MT1199, he never testified that the MT1189 was not among the chips on which he was opining." *Id.* at 66.

Complainants assert that "[t]he only place where the MT1189 was omitted from a list of accused products is in [the IA's] posthearing brief." *Id.* (citing IA's post-hearing brief at 55).

They speculate that the ID copied the paragraph containing the list from the IA's post-hearing

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brief, and thus, that the ALJ's omission of the MT1189 chip from the list of accused products was inadvertent. Complainants argue that since the MT1189 chip was among the accused products, and for infringement purposes, the accused products "have been treated the same by both complainants and respondents," the MT1189 chip should have also been found to be infringing. *Id.* at 67. They assert that "[t]here is nothing in the record suggesting a relevant difference between the MT1189 and any of the other chips found to have infringed, and respondents made no effort either at the trial or during briefing to differentiate between any of their accused optical storage chips or argue that some lacked certain features or required a different infringement analysis." *Id.*

Complainants concede, however, that "the precise evidence in the record regarding the MT1189 . . . is . . . less robust than the evidence concerning chips with other product designations." *Id.* at 69. They go on to state that —

[i]n this record, there is no technical documentation about the MT1189. Instead, all that is known about the MT1189 is that according to MediaTek's own interrogatory answers, MediaTek uses that product designation to describe [confidential business information deleted] (CX-972 at 7-8). It appears, in fact, that MediaTek uses a number of different model numbers to describe the MT1199 controller, two of which are [confidential business information deleted] (CX-972C at 8.)

There is abundant evidence describing the MT1199, including schematics (CX-135C and CX-1194C), data sheets (CX-387C – CX-389C, and CX-891C), register maps (CX136C), and servo controller descriptions (CX-138C and CX-386C). (*See also* CX-355, CX-1791C through CX-1797, CPX-65C, and RDX-203 – RDX205, all of which address the MT1199.) Mr. Samuels' infringement testimony concerning the MT1199 was summarized in a demonstrative exhibit—CDX-21 (*see* Samuels, Tr. 451)—and he relied expressly on CX-1195C (an MT1199 data sheet) and CX-1196C (an MT1199 register map). (*See* Samuels, Tr. 446, 452, and 482-84.)

Id. at 70.

Complainants argue that the evidence of infringement by the MT1189 chip is the same as

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the evidence of infringement by the MT1199 chip because “the MT1189 is an MT1199 chip.” Complainants’ reply at 84 (emphasis omitted). They state that respondents did not object to complainants’ proposed finding of fact CFF52, which reads “ [

confidential

business information deleted

] (CX-972C, at p. 8.)” *Id.* at 83

(emphasis added by complainants). Citing a passage in respondents’ post-hearing brief to the ALJ, they contend that “[h]aving argued to the Judge that all the accused chips, including the MT1189, have ‘almost identical structure and operation,’ and having identified the MT1189 as one type of MT1199, respondents can hardly cry foul if the MT1189 is found to infringe along with all the other accused chips.” *Id.* at 84 (citing respondents’ post-hearing brief at 56).

Respondents and the IA contend that the ALJ did not err in omitting the MT1189 chip from the list of chips accused of infringing the asserted claims of the ‘440 and ‘527 patents. They assert that there is no evidence in the record to support an infringement analysis of the MT1189 chip.

2. Analysis

We have determined to affirm the ID with respect to the MT1189 chip. We disagree with complainants’ contention that they identified the MT1189 as an accused chip in their pre-hearing statement. Although the MT1189 chip is included in a list of allegedly infringing chips found in an appendix (Appendix D), the MT1189 chip is not identified as an allegedly infringing chip in the body of the pre-hearing statement (*e.g.*, complainants’ pre-hearing statement at 127-28, 218-19, 135-213). While the parties’ post-hearing papers indicate that all parties recognized that the

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MT1189 chip was accused of infringing the asserted claims of the '440 and '527 patents, the ID includes no infringement findings as to the MT1189 chip.

Complainants have not identified evidence in the record to support a finding of infringement as to this chip. Although complainants' expert testified that he reviewed the MT1189 chip, he did not identify any documentary exhibits or material specific to the MT1189 chip, nor have complainants cited to an infringement claim chart for the MT1189 chip. *See* Trans. (Samuels) at 438-39, 445-48. Indeed complainants concede that "[i]n this record, there is no technical documentation about the MT1189." Complainants' submission at 70. Rather, complainants assert that "the evidence of infringement by the MT1189 is the same evidence as the evidence of infringement by the MT1199 because, according to MediaTek, *the MT1189 is an MT1199 chip.*" Complainants' reply at 84 (emphasis by complainants). Although respondents indicated in an interrogatory response that [

confidential business information deleted

] (*see also* respondents'

proposed rebuttal findings of fact at 9 ("no objection" to complainants' proposed finding of fact CFF52)), complainants have not identified anything in the record that [

confidential business information deleted

] We therefore affirm the ID with respect to the MT1189 chip because complainants have not identified evidence in the record to support a finding of infringement as to this chip.

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V. Domestic Industry

To satisfy the economic prong of the domestic industry requirement, the complainant in a patent-based 337 investigation must show that an industry exists or is being established. *See* 19 U.S.C. § 1337(a)(1)(B), (a)(2). The criteria for meeting the economic prong are set out in the statute, which reads in relevant part as follows:

[A]n industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent . . . concerned —
(A) significant investment in plant and equipment;
(B) significant employment of labor or capital; or
(C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3).

The ALJ found that “[a]lthough Sunext Design has [

confidential business information deleted

]¹⁴ ID at 160. He further

found that “[f]rom April to the end of 2003, Sunext through Sunext Design performed research and development and commercialization on the next generation OTI-9510 optical disk controller chip, the SC-2120B-2.” ID at 160. The ALJ identified evidence in the record concerning Sunext Design’s employment in Sunnyvale, California of individuals and independent contractors in research and development and technical support relating to those chips, and evidence of Sunext’s

¹⁴*See* ID at 158-60 (discussing relationship between these corporations). Sunext Design is a wholly-owned subsidiary of Sunext Technology Co., Ltd. (Sunext), which is a wholly-owned subsidiary of Oak’s licensee SunPlus Technology Co., Ltd (SunPlus). ID at 158. Sunext was founded in March 2003 as a wholly-owned subsidiary of SunPlus for the purpose of operating the optical storage business acquired by SunPlus from complainant Oak Technology, Inc. ID at 159.

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investments in “engineering, research and development, design, testing and support activities” related to the chips through invoices from Sunext Design to Sunext. ID at 161. Before the ALJ, respondents argued that complainants could not rely on the activities of Sunext Design to establish the economic prong of the domestic industry requirement. The ALJ rejected respondents’ argument and went on to state that —

[s]ection 337(a)(3)(C) specifically provides that a domestic industry can be established through licensing. Hence, the administrative law judge finds that complainants have satisfied the economic prong of the domestic industry requirement with respect to the ‘557 and ‘440 patents.

ID at 161-62.

Respondents contend that the record does not support a finding of substantial investment in the exploitation of the ‘527 patent through licensing because complainants did not present evidence concerning a licensing program. In response, complainants state that they never argued that a domestic industry was based on a licensing program. The IA characterizes the ID as “somewhat ambiguous with respect to the basis for finding the economic prong of [the] domestic industry.” IA’s response to petitions for review at 49. She agrees with respondents that “the record cannot support a domestic industry based solely on a licensing program.” *Id.* at 48–49.

We clarify that complainants met the economic prong of the domestic industry requirement based on “substantial investment” in “engineering, research and development,” rather than through licensing, and affirm the ID’s conclusion that complainants have satisfied the domestic industry requirement under section 337(a)(3)(C) with respect to the ‘527 patent. The evidence of record demonstrates substantial investments in the United States by Sunext Design in “engineering, research and development, design, and testing and support activities” relating to

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two chips (OTI 9510 and SC-2120B) that practice claim 3 of the '527 patent.¹⁵ ID at 161-62.

The ALJ found that “[a]lthough Sunext Design has [

confidential business information deleted

]” ID at 160. Sunext Design is a wholly-owned subsidiary of Sunext, and Sunext is a wholly-owned subsidiary of Oak’s licensee SunPlus. ID at 158-60. Thus, the evidence supports finding the existence of a domestic industry based on “substantial investment” in “engineering, research and development,” rather than on licensing.

VI. Other Issues

We have identified three typographical errors in the ID, and we correct them as set forth below.

The third sentence in the block quotation from *Oak Technology Inc. v. United States International Trade Commission*, 248 F.3d 1316, 1318-19 (Fed. Cir. 2001), which begins on page 75 of the ID and continues to page 76 is corrected to read: “A host computer in the context of this case contains a CD-ROM drive, which manages the communication of data between the CD-ROM disk and the host computer.”

In the ID, in line 3 on page 129, the phrase “June 22, 1993 filing date” is corrected to read “June 22, 1993 critical date”.

In the ID, in lines 3, 4, and 5 on page 156, the concluding sentence of section VII is corrected to read: “Hence, he finds that respondents have not established, by clear and

¹⁵We affirm the ALJ’s finding that the OTI-9510 and SC-2120B do not practice claim 14 of the '440 patent and that complainants therefore have not established the technical prong of the domestic industry requirement as it relates to the '440 patent. *See* ID at 163-64.

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convincing evidence, that the '527 and '440 patents are unenforceable.”

VII. Remedy, the Public Interest, and Bonding

Having found a violation of section 337, we must consider the issues of remedy, the public interest, and bonding. 19 U.S.C. §§ 1337(d), (f), and (j). The ALJ issued his recommended determination (“RD”) on remedy and bonding, along with his final ID in this investigation, on May 16, 2005.¹⁶

A. Remedy

1. The Limited Exclusion Order.

In the event that the Commission found a violation of section 337, the ALJ recommended issuance of a limited exclusion order under section 337(d) “directed to respondent MediaTek’s infringing optical disk controller chips” (and “circuit board modules and carriers containing said chips”), and “further directed to the infringing products of the remaining respondents that contain those infringing MediaTek chips, including DVD players and PC optical storage devices, as well as circuit board modules and carriers.” ID at 168. Complainants did not seek a general exclusion order in this investigation.

Upon considering the record in this investigation including the submissions by the parties, we determine to adopt the ALJ’s recommendation that we issue a limited exclusion order prohibiting the entry for consumption into the United States of “[c]hips or chipsets, including chips or chipsets incorporated into circuit board modules and carriers, that are covered by claim 3

¹⁶The RD is found in the ID at pages 165-70. The ALJ did not address the issue of the public interest in accordance with Commission rule 210.50(b)(1).

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of U.S. Patent No. 6,584,527 and are manufactured abroad or imported by or on behalf of MediaTek, Inc.” and “optical storage devices containing same that are manufactured abroad or imported by or on behalf” of the remaining respondents. Limited Exclusion Order, paragraph 1. The record does not support a finding that Media-Tek imports optical storage devices or that the other respondents import the chips or chipsets including chips and ship sets incorporated into circuit board modules and carriers. However, if a respondent attempts to import infringing chips on behalf of MediaTek, such chips would be covered by paragraph 1. Thus, paragraph 1 of the limited exclusion order provides complainants with full relief while balancing the burden on the U.S. Bureau of Customs and Border Protection (Customs) of administering the order.

Respondents sought an exemption from any limited exclusion order for the MT1888 chip because complainants withdrew their infringement allegations as to that chip. ID at 110 n.35. Moreover, respondents assert that the MT1888 chip was “designed so as not to infringe Complainants’ patents.” Respondents’ submission at 125. However, neither the ALJ nor the Commission found that the MT1888 chip does not infringe or, in fact, made any infringement determination as to the MT1888 chip. Consequently, we find no basis for specifically exempting this chip from the limited exclusion order. “The Commission’s long-standing practice is to direct its remedial orders to all products covered by the patent claims as to which a violation has been found, rather than limiting its orders only to those specific models selected for the infringement analysis. . . . [W]hile individual models may be evaluated to determine importation and infringement, the Commission’s jurisdiction extends to all models of infringing products that are imported at the time of the Commission’s determination and to all such products that will be

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imported during the life of the remedial orders.” *Certain Hardware Logic Emulation Systems and Components Thereof*, Inv. No. 337-TA-383, Commission Opinion at 16 (Public Version) (March 31, 1998). Moreover, the Commission’s long-standing practice has been to avoid using model numbers in its exclusion orders because such model numbers can be changed, and the exclusion order circumvented. *Certain Cellular Radiotelephones and Subassemblies and Component Parts Thereof*, Inv. No. 337-TA-297, Commission Opinion on Remedy, the Public Interest, and Respondent’s Bonding at 5 (issued Aug. 29, 1989), USITC Pub. No. 2361 (Feb. 1991).

We also determine that the record does not support an exemption for chips used in service and repair, as respondents requested. The record does not contain evidence regarding the burdens or expenses that would be imposed on third parties in the absence of such an exemption. We note that none of respondents’ customers filed comments concerning any anticipated adverse effect of the ALJ’s recommended limited exclusion order on the public interest. Unlike the expensive machines at issue in *Certain Sortation Systems, Parts Thereof, and Product Containing Same*, Inv. No. 337-TA-460, where such an exemption was provided, the products at issue here are relatively inexpensive optical disc drives. Further, unlike *Certain Automated Mechanical Transmissions for Medium and Heavy Duty Trucks*, Inv. No. 337-TA-503, where the Commission’s exclusion order exempted replacement parts used in the repair of transmissions, there are no significant safety issues involved in the use of optical disk drives.

We have included a certification provision in the Limited Exclusion Order. Limited Exclusion Order, paragraph 3. The IA points out that “[t]he patent claim at issue relates to the

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internal structure and functioning of computer chips, which is not possible to ascertain by an inspection of the product.” IA’s submission at 31 n.26. The IA submits that “it is impossible to distinguish an infringing chip from a non-infringing chip without reverse engineering the chip and examining the physical circuit.” IA’s reply at 35. Neither Complainants nor respondents disputed these statements. In the IA’s view, a certification provision is necessary because Customs cannot determine by inspection whether a product falls within the limited exclusion order and requiring Customs to reverse engineer MediaTek chips that might be imported into the United States would be overly burdensome. We agree, and accordingly, have included the following certification provision in the Limited Exclusion Order:

3. When the U.S. Bureau of Customs and Border Protection (Customs) is unable to determine by inspection whether chips or chipsets, including chips or chipsets incorporated into circuit board modules and carriers, or optical storage devices fall within the scope of this Order, it may, in its discretion, accept a certification, pursuant to procedures specified and deemed necessary by Customs, from persons seeking to import said chips or chipsets, including chips or chipsets incorporated into circuit board modules and carriers, or optical storage devices that they are familiar with the terms of this Order, that they have made appropriate inquiry, and thereupon state that, to the best of their knowledge and belief, the products being imported are not excluded from entry under paragraph 1 of this Order. At its discretion, Customs may require persons who have provided the certification described in this paragraph to furnish such records or analyses as are necessary to substantiate the certification.

This certification provision differs from past Commission certification provisions¹⁷ in that it

¹⁷ Cf., *Certain Display Controllers with Upscaling Functionality and Products Containing Same* and *Certain Display Controllers and Products Containing Same*, Inv. Nos. 337-TA-481, 337-TA-491 (consolidated), Limited Exclusion Order (Aug. 20, 2004); *Certain Integrated Circuits, Processes for Making Same, and Products Containing Same*, Inv. No. 337-TA-450, Limited Exclusion Order (Oct. 7, 2002); *Certain Integrated Repeaters, Switches, Transceivers and Products Containing Same*, Inv. No. 337-TA-435, Limited Exclusion Order (Oct. 24, 2001); *Certain EPROM, EEPROM, Flash Memory, and Flash Microcontroller*

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gives Customs more discretion in determining whether it will allow importation based on certifications from importers. Should Customs be inclined to reverse engineer potentially infringing MediaTek chips, rather than accept a certification from an importer, the provision will allow Customs to do so. This provision also puts importers on notice that certification alone may not be sufficient to support the importation of goods that are potentially covered by the Limited Exclusion Order.

2. Cease and Desist Order

Under Commission precedent, cease and desist orders are warranted against respondents with significant inventories of infringing goods in the U.S. *See e.g. Certain Crystalline Cefadroxil Monohydrate*, Inv. No. 337-TA-293, Comm'n Opinion at 6 (January 19, 1990). The ALJ found that [

confidential business information deleted

]See ID at 168, 182-85 (FF55-72). No party has challenged these findings. Accordingly, we determine to issue cease and desist orders against these respondents prohibiting them from importing, selling, distributing, marketing, consigning, transferring (except for exportation), offering for sale in the United States and soliciting U.S.

Semiconductor Devices and Products Containing Same, Inv. No. 337-TA-395, Limited Exclusion Order (Oct. 16, 2000).

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agents or distributors of the goods found to be in violation of section 337. Cease and Desist Order, paragraph III.

Respondents argue that any cease and desist order should exclude the MT1888 chip. We find no basis for excluding this chip from the scope of the Commission's cease and desist orders for the same reason that we did not include such an exemption in the Limited Exclusion Order.

Respondents request that they be allowed to export existing inventory under any cease and desist order, the IA agrees, and Complainants do not oppose such a provision. Accordingly, the cease and desist orders allow exportation of existing inventory to other countries. Cease and Desist Order, paragraph III.B.

The cease and desist orders contain a reporting requirement that continues in force only "until such time as [the subject] Respondent will have truthfully reported, in two consecutive timely filed yearly reports, that it has no inventory of covered product in the United States." Cease and Desist Order, paragraph V.

B. The Public Interest

Sections 337(d) and (f) direct the Commission to consider public interest factors before issuing remedial orders, including the effect of any such remedial order on the "public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers." 19 U.S.C. §§ 1337(d) and (f). In this investigation, we determine that there is no evidence that the entry of permanent relief would adversely affect the public interest factors enumerated in the statute.

Respondents argue that the public interest favors a remedy that promotes legitimate

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marketplace competition by maintaining customer choice and competitive conditions. They argue that the public interest favors a remedy that does not affect chips containing the “design around circuitry” of the MT1888 by “depriv[ing] consumers of the choice of competitive and popular products.” Respondents’ submission at 129. They argue that a service and repair exemption in the remedial orders is in the public interest because it protects the investments of existing customers, and therefore protects the interests of consumers. Complainants submit that “the public interest favors the protection of U.S. intellectual property rights by excluding infringing imports.” Complainants’ remedy submission at 11.

We find that the limited exclusion order and cease and desist orders recommended by the ALJ do not raise any statutory public interest concerns. The subject products are not the type of product that raise any particular public interest concerns. There is also nothing in the record regarding whether respondents’ customers will incur undue burdens if they are denied continued access to infringing products. Moreover, there is no evidence that the U.S. demand for the covered products cannot be met by other entities, including the Complainants. Thus, we are aware of no public interest concerns in this investigation that would prevent issuance of remedial orders.

C. Bonding

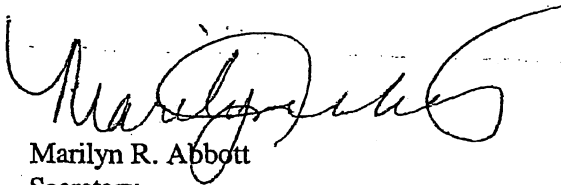
Pursuant to section 337(j)(3), the bond during the 60-day period of Presidential review is to be set “in an amount determined by the Commission to be sufficient to protect the complainant from any injury.” 19 U.S.C. § 1337(j)(3). The President has delegated his functions under section 337 to the United States Trade Representative. *70 Fed. Reg.* 43251 (July 26, 2005).

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The ALJ recommended that, in the event that a violation of section 337 is found, the Commission impose a bond during the period of Presidential review in the amount of 100 percent of the entered value of the imported chips based on the disparate pricing of the accused chips,¹⁸ and a per unit bond of \$4.43 for all of the remaining respondents' products containing covered chips based upon the average selling price of the MediaTek chips. ID at 170. The IA, complainants, and respondents supported the ALJ's recommended determination on bonding, and we see no reason to reject his recommendation.

We determine that the bond during the period of Presidential review be set in the amount of 100 percent of the entered value of covered MediaTek chips and chipsets including those incorporated in circuit board modules and carriers, and a bond of \$4.43 for all of the remaining respondents' optical storage devices that incorporate said chips.

By Order of the Commission.



Marilyn R. Abbott
Secretary

Issued: September 28, 2005

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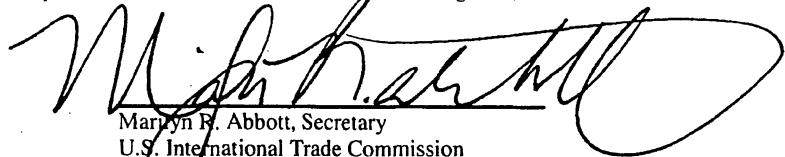
¹⁸ See *Certain Oscillating Sprinklers, Sprinkler Components, and Nozzles*, Inv. No. 337-TA-448, Limited Exclusion Order at 4 (March 2002)(where disparate pricing exists, the Commission will set a bond of 100 percent during the period of Presidential review).

**CERTAIN OPTICAL DISK CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME, INCLUDING DVD PLAYERS
AND OPTICAL STORAGE DEVICES**

337-TA-506

PUBLIC CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **COMMISSION OPINION** was served upon the Commission Investigative Attorney, Karen Norton, Esq., and all parties via first class mail and air mail on August 7, 2006.



Marilyn R. Abbott, Secretary
U.S. International Trade Commission
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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C. 20436

In the Matter of)
)
)

CERTAIN OPTICAL DISK CONTROLLER CHIPS)
AND CHIPSETS AND PRODUCTS CONTAINING)
SAME, INCLUDING DVD PLAYERS AND PC OPTICAL)
STORAGE DEVICES)
)

Inv. No. 337-TA-506

NOTICE OF COMMISSION DECISION TO REVIEW PORTIONS
OF AN INITIAL DETERMINATION FINDING A VIOLATION OF
SECTION 337 OF THE TARIFF ACT OF 1930

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined to review certain portions of a final initial determination ("ID") of the presiding administrative law judge ("ALJ") finding a violation of section 337 of the Tariff Act of 1930, as amended, in the above-captioned investigation.

FOR FURTHER INFORMATION CONTACT: Clara Kuehn, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 205-3012. Copies of the public version of the ALJ's ID and all other nonconfidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-2000.

General information concerning the Commission may also be obtained by accessing its Internet server (<http://www.usitc.gov>). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS-ON-LINE) at <http://edis.usitc.gov>. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-205-1810.

SUPPLEMENTARY INFORMATION:

The Commission instituted this investigation on April 14, 2004, based on a complaint filed on behalf of Zoran Corporation and Oak Technology, Inc. both of Sunnyvale, CA (collectively

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“complainants”). 69 *Fed. Reg.* 19876. The complaint, as supplemented, alleged violations of section 337 of the Tariff Act of 1930 in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain optical disk controller chips and chipsets and products containing same, including DVD players and PC optical storage devices, by reason of infringement of claims 1–12 of U.S. Patent No. 6,466,736 (the ‘736 patent), claims 1–3 of U.S. Patent No. 6,584,527, and claims 1–35 of U.S. Patent No. 6,546,440 (the ‘440 patent). *Id.*

The notice of investigation identified 12 respondents. 69 *Fed. Reg.* 19876. On June 7, 2004, the ALJ issued an ID (Order No. 5) terminating the investigation as to two respondents on the basis of a consent order and settlement agreement. On June 22, 2004, the ALJ issued an ID (Order No. 7) granting complainants’ motion to amend the complaint and notice of investigation to add nine additional respondents. Those IDs were not reviewed by the Commission.

On December 22, 2004, the ALJ issued an ID (Order No. 33) granting complainants’ motion to terminate the investigation in part with respect to claims 2–6, 8–10, and 11 of the ‘736 patent and claims 2–4, 6, 9, 11, 12, 15–18, 20, 22–34, and 35 of the ‘440 patent. On January 28, 2005, the ALJ issued an ID (Order No. 37) granting complainants’ motion to terminate the investigation in part with respect to claim 12 of the ‘736 patent. Neither ID was reviewed by the Commission. The claims remaining in issue are claims 1 and 7 of the ‘736 patent; claims 1, 5, 7, 8, 10, 13, 14, 19, and 21 of the ‘440 patent; and claims 1, 2, and 3 of the ‘527 patent.

An eight-day evidentiary hearing was held on February 7–12, and 14–15, 2005.

On May 16, 2005, the ALJ issued his final ID, findings of fact and conclusions of law, and recommended determination on remedy and bonding. The ALJ concluded that there was a violation of section 337 based on his findings that (a) the accused products infringe claim 3 of the ‘527 patent, (b) the ‘527 patent is not unenforceable, (c) claim 3 is not invalid, and (d) complainants have satisfied the domestic industry requirement with respect to the ‘527 patent. Although the ALJ found that the other asserted claims of the ‘527 patent (claims 1 and 2) are not invalid, he found that the accused products do not infringe those claims. The ALJ found no violation with respect to the other patents in issue. He found that the accused products do not infringe any asserted claim of the ‘440 or ‘736 patents and that complainants have not satisfied the domestic industry requirement with respect to those patents. He also found that the asserted claims of the ‘440 and ‘736 patents are not invalid and that those patents are not unenforceable.

On May 27, 2005, complainants and respondents each petitioned for review of portions of the final ID. On June 6, 2005, complainants, respondents, and the IA filed responses to the petitions for review.

Having examined the record in this investigation, including the ID, the petitions for review, and the responses thereto, the Commission has determined (1) to review the ID’s findings of fact and conclusions of law with respect to the ‘527 and ‘440 patents and (2) not to review the ID’s findings of fact and conclusions of law with respect to the ‘736 patent. Thus, the Commission finds no violation of section 337 with respect to the ‘736 patent. The Commission has further determined to review and modify the ID to clarify that respondents accused only of infringing asserted claims of the ‘736 patent (*viz.*, respondents Audiovox Corporation; Initial Technology, Inc.; Mintek Digital, Inc.; Shinco International AV Co., Ltd.; Changzhou Shinco

Digital Technology Co., Ltd.; Jiangsu Shinco Electronic Group Co., Ltd.; Terapin Technology Pte., Ltd. [formerly known as Teraoptix d/b/a Terapin Technology] of Singapore; and Terapin Technology U.S. [formerly also known as Teraoptix]) are not in violation of Section 337.

In connection with its review, the Commission is particularly interested in responses to the following questions, with all answers supported by citations to legal authority and the evidentiary record:

1. Have respondents waived the argument that the '527 and '440 patents are invalid under 35 U.S.C. § 102(f) for nonjoinder of unidentified "Western Digital engineers" as co-inventors by failing to present it to the ALJ? (*See* respondents' petition for review at 51.) Identify with citations to previous briefing where this specific argument and any supporting evidence was presented to the ALJ.
2. May a patent be held invalid for nonjoinder of an unidentified co-inventor under 35 U.S.C. § 102(f)? If so, did respondents present to the ALJ the required clear and convincing evidence to support a *prima facie* case? In addition to supporting your answer with citations to the evidentiary record and legal authority, address *Gemstar v. Int'l Trade Comm'n*, 383 F.3d 1352, 1382-83 (Fed. Cir. 2004), and *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1381-82 (Fed. Cir. 2000).
3. The following questions relate to claim construction. In your answers, identify any finding of fact or conclusion of law with respect to infringement, the technical prong of the domestic industry requirement, unenforceability, or invalidity in the ID rendered clearly erroneous or legally erroneous under your proposed claim interpretation. Provide supporting citations to the record.
 - (a) What is the impact, if any, of the July 12, 2005, en banc decision of the U.S. Court of Appeals for the Federal Circuit in *Phillips v. AWH Corporation* on the ID's construction of the asserted claims of the '527 and '440 patents?
 - (b) Did respondents waive their argument that the host interface limitations of the asserted claims should be construed to require support for eight ATA command block registers plus a separate multi-byte command buffer at the same time by failing to raise this argument before the ALJ? Identify where this specific argument was presented to the ALJ with citations to previous briefing.
 - (c) Assume that the description of the digital signal processor interface in the summary of the invention section of the '527 patent (*e.g.*, '527 patent, col. 3, ll. 15 - 28) is understood as a description of the "storage medium interface" (claims 1 and 2 of the '527 patent). Does the summary of the invention section ('527 patent, col. 3, ll. 20-28) demonstrate a clear intention to limit the scope of the data error detection and correction circuitry limitations of claims 1 and 2? Why, or why not? In your answer, address the following claim language: "data error detection and correction circuitry including . . . error correction circuitry for performing error correction on data *received from* said interface" (claim 1) and "data error detection and correction circuitry *coupled to* said storage medium interface" (claim 2).

(d) How should the terms “controller” and “directly” be construed?

4. Have respondents waived their argument that the ALJ erred in failing to make a determination concerning the date of actual reduction to practice of the HISIDE product by failing to raise that argument before him? (See respondents’ petition for review at 112-13: “there is no initial determination of the date of reduction to practice for any claim of the ‘440 and ‘527 patents and there is no initial determination of the date of actual reduction to practice of [Western Digital’s] HISIDE product that Respondents showed anticipates the claims of the ‘440 and ‘527 patent [sic].”) Identify with citations to previous briefing where this specific argument and any supporting evidence was presented to the ALJ.

5. Did the ALJ err in omitting the MT1189 from the list of MediaTek OSC chips accused of infringing the asserted claims of the ‘440 and ‘527 patents (ID at 110) or err in including the MT1528, MT1558, or MT1668 in that list? Why or why not? Identify with specificity evidence in the record that would support a finding that the MT1189, MT1528, MT1558, or MT1668 infringe any asserted claim of the ‘527 or ‘440 patents.

6. Should the asserted claims of the ‘440 and ‘527 patents be accorded the conception date found by the Commission in the 409 investigation for the claims of the ‘715 patent? Why or why not? In your answer, address any relevant admission(s) by respondents. (See ID at 129 n.45.)

In connection with the final disposition of this investigation, the Commission may issue (1) an order that could result in the exclusion of the subject articles from entry into the United States, and/or (2) cease and desist orders that could result in respondents being required to cease and desist from engaging in unfair acts in the importation and sale of such articles. Accordingly, the Commission is interested in receiving written submissions that address the form of remedy, if any, that should be ordered. If a party seeks exclusion of an article from entry into the United States for purposes other than entry for consumption, the party should so indicate and provide information establishing that activities involving other types of entry either are adversely affecting it or are likely to do so. For background information, see the Commission Opinion, *In the Matter of Certain Devices for Connecting Computers via Telephone Lines*, Inv. No. 337-TA-360.

If the Commission contemplates some form of remedy, it must consider the effects of that remedy upon the public interest. The factors the Commission will consider include the effect that an exclusion order and/or cease and desist orders would have on (1) the public health and welfare, (2) competitive conditions in the U.S. economy, (3) U.S. production of articles that are like or directly competitive with those that are subject to investigation, and (4) U.S. consumers. The Commission is therefore interested in receiving written submissions that address the aforementioned public interest factors in the context of this investigation.

If the Commission orders some form of remedy, the President has 60 days to approve or disapprove the Commission’s action. During this period, the subject articles would be entitled to enter the United States under a bond, in an amount to be determined by the Commission and prescribed by the Secretary of the Treasury. The Commission is therefore interested in receiving

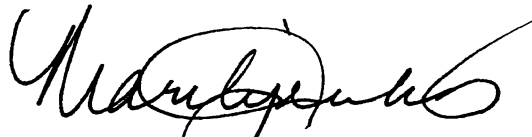
submissions concerning the amount of the bond that should be imposed.

WRITTEN SUBMISSIONS: The parties to the investigation are requested to file written submissions on the issues under review. The submission should be concise and thoroughly referenced to the record in this investigation, including references to exhibits and testimony. Additionally, the parties to the investigation, interested government agencies, and any other interested persons are encouraged to file written submissions on the issues of remedy, the public interest, and bonding. Such submissions should address the ALJ's May 16, 2005, recommended determination on remedy and bonding. Complainants and the Commission investigative attorney are also requested to submit proposed remedial orders for the Commission's consideration. Complainants are requested to supply the expiration dates of the patents at issue and the HTSUS numbers under which the accused products are imported. The written submissions and proposed remedial orders must be filed no later than the close of business on August 1, 2005. Reply submissions must be filed no later than the close of business on August 8, 2005. No further submissions will be permitted unless otherwise ordered by the Commission.

Persons filing written submissions must file with the Office of the Secretary the original and 12 true copies thereof on or before the deadlines stated above. Any person desiring to submit a document (or portion thereof) to the Commission in confidence must request confidential treatment unless the information has already been granted such treatment during the proceedings. All such requests should be directed to the Secretary of the Commission and must include a full statement of the reasons why the Commission should grant such treatment. *See* 19 C.F.R. § 201.6. Documents for which confidential treatment is granted by the Commission will be treated accordingly. All nonconfidential written submissions will be available for public inspection at the Office of the Secretary.

This action is taken under the authority of section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), and in sections 210.42 - .46 of the Commission's Rules of Practice and Procedure (19 C.F.R. § 210.42 - .46).

By order of the Commission.



Marilyn R. Abbott
Secretary to the Commission

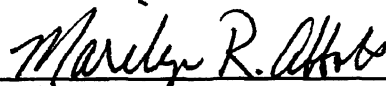
Issued: July 19, 2005

**CERTAIN OPTICAL DISK CONTROLLER CHIPS AND CHIPSETS
AND PRODUCTS CONTAINING SAME, INCLUDING DVD PLAYERS
AND OPTICAL STORAGE DEVICES**

337-TA-506

PUBLIC CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **NOTICE OF COMMISSION DECISION TO REVIEW PORTIONS OF AN INITIAL DETERMINATION FINDING A VIOLATION OF SECTION 337 OF THE TARIFF ACT OF 1930** was served upon the Commission Investigative Attorney, Karin Norton, Esq., and all parties via first class mail or air mail on July 19, 2005.



Marilyn R. Abbott, Secretary
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**OPTICAL DISK CONTROLLERS AND
CHIPSETS
337-TA-506**

Page 2

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PUBLIC VERSION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of)
)
CERTAIN OPTICAL DISK CONTROLLER)
CHIPS AND CHIPSETS AND PRODUCTS)
CONTAINING SAME, INCLUDING DVD)
PLAYERS AND PC OPTICAL STORAGE)
DEVICES)

Investigation No. 337-TA-506

2005 JUL 26 AM 10:11
OFFICE OF THE SECRETARY
US INTERNATIONAL TRADE COMMISSION

Final Initial and Recommended Determinations

This is the administrative law judge's Final Initial Determination under Commission rule 210.42. The administrative law judge, after a review of the record developed, finds that claim 3 of U.S. Patent No. 6,584,527 is not invalid; that said patent is enforceable; and that said claim 3 is infringed. Thus, he finds that a violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, has occurred. As for claims 1 and 2 of U.S. Patent No. 6,584,527 and the asserted claims of U.S. Patent Nos. 6,466,736 and 6,546,440, while he finds that the asserted claims are not invalid and that said patents are enforceable, he finds that the asserted claims of said patents are not infringed. Moreover, he finds that complainant has not established a domestic industry with respect to U.S. Patent Nos. 6,466,736 and 6,546,440.

This is also the administrative law judge's Recommended Determination on remedy and bonding, pursuant to Commission rules 210.36(a) and 210.42(a)(1)(ii). The administrative law judge recommends that the Commission issue limited exclusion orders and cease and desist orders. He further recommends that any bond, during the Presidential review period, be in the amount of 100 percent of the entered value for any importation involving infringing products.

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ABBREVIATIONS

CBr	Complainants' Post-hearing Brief
CORPFF	Complainants' Objection to Respondents' Proposed Finding
COSPFF	Complainants' Objection to Staff's Proposed Finding
CPFF	Complainants' Proposed Finding
CPHS	Complainants' Pre-hearing Statement
CRBr	Complainants' Post-hearing Reply Brief
CRRPFF	Complainants' Proposed Rebuttal Finding to Respondents' Proposed Finding
CX	Complainants' Exhibit
RBr	Respondents' Post-hearing Brief
RPHS	Respondents' Pre-hearing Statement
RRBr	Respondents' Post-hearing Reply Brief
RRX	Respondents' Rebuttal Exhibit
ROCPFF	Respondents' Objection to Complainants' Proposed Finding
ROSPFF	Respondents' Objection to Staff's Proposed Finding
RPFF	Respondents' Proposed Finding
RRCPFF	Respondents' Proposed Rebuttal Finding to Complainants' Proposed Finding
RRSPFF	Respondents' Proposed Rebuttal Finding to Staff's Proposed Finding
RX	Respondents' Exhibit
SPBr	Staff's Pre-hearing Brief
SBr	Staff's Post-hearing Brief
SPFF	Staff's Proposed Finding

SRBr Staff's Post-hearing Reply Brief

SRCPPF Staff's Proposed Rebuttal Finding to Complainants' Proposed Finding

Tr. Transcript of Pre-hearing Conference and Hearing

I. Procedural History

By notice, which issued on April 8, 2004, the Commission instituted an investigation, pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended, to determine whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation into the United States, or the sale within the United States after importation of certain optical disk controller chips and chipsets and products containing same, including DVD players and PC optical storage devices, by reason of infringement of claims 1-12 of U.S. Patent No. 6,466,736 (the '736 patent), claims 1-3 of U.S. Patent No. 6,584,527 (the '527 patent), or claims 1-35 of U.S. Patent No. 6,546,440 (the '440 patent), and whether an industry in the United States exists as required by subsection (a)(2) of section 337.

The complaint was filed with the Commission on March 11, 2004, under section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, on behalf of Zoran Corporation (Zoran) and Oak Technology, Inc. (Oak), both of Sunnyvale, California. Three letters supplementing the complaint were filed on March 29 and March 30, 2004. The complainants requested that the Commission institute an investigation and, after the investigation, issue a permanent exclusion order and permanent cease and desist orders.

The following were named in the April 8, 2004 notice as respondents and were served with the complaint:

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Order No. 4, which issued on May 11, 2004, set a target date of July 14, 2005, fifteen months after the notice of investigation was published in the Federal Register. Order No. 5, which issued on June 7, 2004, terminated the investigation as to respondents Creative Technology, Ltd. and Creative Labs, Inc. The Commission determined not to review said order in a notice dated July 7.

Order No. 7, which issued on June 22, 2004, granted complainants' Motion No. 506-3 to add the following respondents: (1) Artronix Technology, Inc. (Artronix); (2) ASUS Computer International (ASUS); (3) Audiovox Corporation (Audiovox); (4) EPO Science & Technology, Inc. (EPO); (5) Initial Technology, Inc. (Initial Technology); (6) Micro-Star International Co., Ltd. (Micro-Star); (7) MSI Computer Corp. (MSI); (8) Shinco Digital Technology, Ltd. (Shinco Digital); and (9) Ultima Electronics Corporation (Ultima). In a notice dated July 13, 2004, the Commission determined not to review said order.

Order No. 21, which issued on October 28, 2004, extended the target date to September 14, 2005. In a notice dated November 16, 2004 the Commission determined not to review Order No. 21.

Order No. 33, which issued on December 22, 2004, granted complainants' Motion No. 506-29 to terminate the investigation as to claims 2-6 and 8-11 of the '736 patent, and claims 2-4, 6, 9, 11, 12, 15-18, 20 and 22-35 of the '440 patent. The Commission determined not to review said order in a notice dated January 11, 2005. Order No. 37, which issued on January 28, 2005, granted complainants' Motion No. 506-44 to terminate the investigation as to claim 12 of the '736 patent. The Commission, in a notice dated February 16, determined not to review Order No. 37. As a result of Order Nos. 33 and 37, the claims in issue are claims 1, 5, 7, 8, 10, 13, 14,

19 and 21 of the '440 patent, claims 1, 2 and 3 of the '527 patent and claims 1 and 7 of the '736 patent.

Order No. 35, which issued on December 22, 2004, ordered the parties to state their positions with supporting documentation as to issues in the investigation.

An evidentiary hearing was conducted on February 7 through February 15, 2005. Order No. 42, which issued on March 10, reopened the record, admitted into evidence certain exhibits and struck certain other exhibits already admitted into evidence. Post-hearing submissions have been filed. On March 22, complainants moved for leave to file amended responses to the staff's proposed findings. (Motion Docket No. 506-58.) Motion No. 506-58 is granted.

These final initial and recommended determinations are based on the record compiled at the hearing and the exhibits admitted into evidence. The administrative law judge has also taken into account his observation of the witnesses who appeared before him during the hearing. Proposed findings of fact submitted by the parties not herein adopted, in the form submitted or in substance, are rejected as either not supported by the evidence or as involving immaterial matters and/or as irrelevant. Certain findings of fact included herein have references to supporting evidence in the record. Such references are intended to serve as guides to the testimony and exhibits supporting said findings. They do not necessarily represent complete summaries of the evidence supporting said findings.

II. Parties

See FF 1-12.

III. Jurisdiction

The Commission has personal jurisdiction over the respondents since respondents

through counsel have appeared in the investigation.

On December 6, 2004, the private parties filed a Stipulation with the Secretary (CX-467C). In said Stipulation, each of the respondents stipulated that at least some of the accused products that are the subject of this investigation have been imported, sold for importation, or sold after importation into the United States.¹ Based upon the Stipulation, the administrative law judge finds that in rem jurisdiction has been established and that the importation requirement of section 337 has been satisfied. See Certain Steel Rod Treating Apparatus and Components Thereof, Inv. No. 337-TA-97, Comm'n Op. at 4, 11.

IV. Products In Issue

See FF 32-35.

V. The '736 Patent

The '736 patent, titled "Integrated DVD/CD Controller," issued on October 15, 2002 based on an application no. 09/224,138 filed on December 31, 1998. (CX-1.) The named inventors of the '736 patent, Kong-Chen Chen, Wen Hsu and Chris Tsu, assigned all rights in

¹ Specifically, the accused products of respondents Artronix, ASUS, ASUSTek, Audiovox, EPO Science & Technology, Initial Technology, LITE-ON, Micro-Star, Mintek, MSI, Changzhou Shinco, Terapin Technology, Teraoptix and Ultima have been imported, sold for importation, or sold after importation into the United States. (Stipulation at ¶6.) Jiangsu Shinco Electronic Group Co. Ltd. does not contest jurisdiction and stipulated that the accused products manufactured by its subsidiary Changzhou Shinco have been imported, sold for importation, or sold after importation into the United States. (Stipulation at ¶2.) In addition, Shinco International has imported or sold for importation some of the accused products. (Stipulation at ¶4.) MediaTek does not contest jurisdiction and stipulated that it has imported, sold for importation, or sold after importation into the United States the MT1189 chip. (Stipulation at ¶3.) TEAC Corporation sells the accused products to TEAC America Inc. after importation into the United States by third parties and TEAC America then sells the accused products. (Stipulation at ¶5.) TEAC Corporation does not contest jurisdiction. (Id.)

their patent to Oak. (CX-1; CX-4.) Following the merger between Zoran and Oak, Oak assigned a 50-percent interest in the '736 patent to Zoran. (Complaint, Ex. 1.)

Application no. 09/224,138 incorporates by reference for all purposes the disclosure of U.S. patent application Ser. No. 09/224,452 filed Dec. 31, 1998, now U.S. Patent No. 6,177,892 entitled "EFM/DVD DEMODULATOR." (CX-1, col. 1.) The '736 patent is subject to the twenty year patent term provisions of 35 U.S.C. §154(a)(2). (CX-1.) It issued with 12 claims. Only independent claim 1 and independent claim 7 are in issue.

The invention of the '736 patent relates generally to systems for reproducing information stored on storage media such as optical discs and more particularly to an integrated apparatus and method for facilitating the reproduction of information read from optical storage discs of different types such as digital video discs (DVDs) and compact discs (CDs). (CX-1, col. 1, lns. 12-18.) Independent claim 1 in issue reads:

In a playback system for processing information stored on a disc, wherein the information stored on the disc is in a first format or a second format, a controller coupled with a MPEG decoder for facilitating the processing of the information, the controller comprising:

a read channel subsystem configured to receive an input signal corresponding to the information, the read channel subsystem configured to generate digital signals corresponding [sic: corresponding] to the input signal;

a first signal processor coupled to the read channel subsystem and configured to receive the digital signals if the information is in the first format, the first [sic: first] signal processor configured to perform demodulation on the [sic: the] digital signals [sic: signals] to produce first format processed data; and

a second signal processor coupled to the read channel subsystem and configured to receive the digital signals if the

information is in the second format, the second signal processor configured to perform demodulation on the digital signals to produce a second format processed data;

an error code correction and detection subsystem configured to receive the first format processed data if the information is in the first format and configured to receive the second format processed data if the information is in the second format, the error code correction and detection subsystem further configured to perform error detection and correction on the first format processed data and the second format processed data to produce corrected data;

a memory subsystem that includes a read first-in-first-out buffer coupled to a memory data input register and the error code correction and detection subsystem, a write first-in-first-out buffer coupled to a memory data output register, and a single memory cell coupled to the memory data output register and the memory data input register; and

a parallel interface that receives the corrected data on a parallel bus interface and comprises a plurality of parallel data lines for transferring the corrected data to the MPEG decoder when the information stored on the disc is in the first format and when the information stored on the disc is in the second format.

(CX-1.) Independent claim 7 in issue reads:

7. In a player for reproducing information stored on a disc, wherein the disc is selectable from a group of discs comprising CDs and DVDs, a controller coupled with a MPEG decoder, the controller comprising:

a read channel subsystem configured to receive an input signal corresponding to information read from the disc, the read channel subsystem configured to generate digital signals corresponding to the input signal;

a signal processor coupled to the read channel subsystem[,] configured to receive the digital signals, the signal processor configured to process the digital signals to produce processed data at a parallel bus when the input signals are [sic] read from a CD or a DVD;

an error code correction and detection subsystem configured to perform error detection and correction on the processed data to produce corrected data;

a memory subsystem that includes a single memory cell coupled to the signal processor, a write first-in-first-out (FIFO) buffer, a read first-in-first-out (FIFO) buffer, and an MPEG first-in-first-out (FIFO) interface, the single memory cell receiving data via the write FIFO buffer and providing data to the error code correction and detection subsystem via the read FIFO buffer; and

a parallel interface coupled to the MPEG FIFO interface comprising a plurality of parallel data lines for transferring the corrected data to the MPEG decoder when the disc from which the information is read is a CD and when the disc from which the information is read is a DVD.

(CX-1.)

A. Person Of Ordinary Skill In The Pertinent Art

The administrative law judge finds that one of ordinary skill in the art of the '736 patent is an individual who, as of 1998, had a Bachelor's degree in electrical engineering or an equivalent degree and approximately three years of experience with digital systems architecture and design, including some experience with optical disk technology. (DiEullis, Tr. at 1809; Rhyne, Tr. at 1134.²)

B. Claim Interpretation

Claim interpretation, as to the asserted claims, is a question of law. Markman v.

² DiEullis was qualified as respondents' expert in computer engineering, integrated circuit design prior to tape-out, computer hardware design, hardware design, hardware description languages, and digital system architecture and design as it relates to optical disk technology. (DiEullis, Tr. at 1807.) The parties stipulated that Rhyne is qualified as complainants' expert in computer engineering, integrated circuit and computer hardware design, and computer description languages. (Rhyne, Tr. at 1053, 1055.) See also FF 23, 25.

Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996); see Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455 (Fed. Cir. 1998). In construing claims, the court should first look to intrinsic evidence consisting of the language of the claims, the specification and the prosecution history as it “is the most significant source of the legally operative meaning of disputed claim language.” Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996); see Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001). Claim construction analysis begins with words of the claim. Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1201 (Fed. Cir. 2002). The ordinary and customary meaning of a claim term may be determined by reviewing a variety of sources, which may include the claims themselves, dictionaries and treatises, and the written description, the drawings and the prosecution history. Ferguson Beauregard/Logic Controls v. Mega Sys., LLC, 350 F.3d 1327, 1338 (Fed. Cir. 2003). The presumption of ordinary meaning will be “rebutted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.” ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1091 (Fed. Cir. 2003).

In addition to the intrinsic evidence, the administrative law judge may, but need not, consider extrinsic evidence when interpreting the claims. Extrinsic evidence consists of all evidence external to the patent and the prosecution history, including inventor testimony, expert testimony and learned treatises.³ This extrinsic evidence may be helpful in explaining scientific principles, the meaning of technical terms, and terms of art. See Vitronics Corp., 90 F.3d at 1583;

³ Although dictionaries are technically extrinsic evidence, it is proper to consult a dictionary to determine the ordinary and accustomed meaning of a claim term. See, e.g., Kopykake Enters., Inc. v. Lucks Co., 264 F.3d 1377, 1382 (Fed. Cir. 2001).

Markman, 52 F.3d at 980. However, “[e]xtrinsic evidence is to be used for the court’s understanding of the patent, not for the purpose of varying or contradicting the terms of the claims.” Markman, 52 F.3d at 981. Indeed, in all cases, “a construing court does not accord the specification, prosecution history, and other relevant evidence the same weight as the claims themselves, but consults these sources to give the necessary context to the claim language.” Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1552 (Fed. Cir. 1997).

Patent claims should be construed so as to maintain their validity; if more than one reasonable interpretation is possible, the construction that preserves the claim’s validity should be chosen. See Modine Mfg. Co. v. United States Int’l Trade Comm’n, 75 F.3d 1545, 1557 (Fed. Cir. 1996), cert. denied, 518 U.S. 1005 (1996). However, if the only reasonable interpretation renders the claim invalid, then the claim should be found invalid. See, e.g., Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999).

1. The Claimed Preamble

Only the preambles of claims 1 and 7 have the word “controller” and further refer to “a controller coupled with a MPEG decoder.” (CX-1.) Complainants argued that because the word “controller” (1) is included in the preamble, (2) does not appear in any of the subject claim language, and (3) does not identify any requirement of the invention, other than providing a label or name for the invention recited in the remainder of the claims, it is not a claim limitation and therefore needs no construction; that the controller is simply the name given to the article defined in the paragraphs following the word “comprising”; and that if a construction is required, the proper interpretation is “a system or subsystem that controls the operation of another system or subsystem.” (CBr at 110-11.)

Respondents argued that the preamble is a claim limitation. (RBr at 138.)

The staff argued that the preamble describes the relationship between the controller and the MPEG decoder, indicating that the two entities are separate and distinct⁴; and that the preamble sets forth the antecedent basis for “controller,” “information,” “first format,” “second format,” and/or “MPEG decoder.” (SBr at 33.) It is argued that one technical dictionary defines “controller,” which appears only in the preamble of claims 1 and 7, as:

A subsystem that governs the functions of attached devices but generally does not change the meaning of the data that may pass through it. The attached devices are usually peripherals or communication channels. One of the functions of the controller may involve processing the data stream in order to format it for transmission or recording.

(SX-5, Dictionary of Computing (4th ed. 1996) at 106.) The staff argued that said definition is “broadly consistent” with the definition given by inventor Chen who testified that the controller of the '736 patent takes information read from a CD or DVD, demodulates it, corrects the errors and outputs to the MPEG interface, i.e., processes the data stream to format it for transmission to the MPEG decoder. (Chen, Tr. at 808.) The staff further argued that there in nothing is the specification or prosecution history that indicates that the patentees gave this term any specific meaning other than the ordinary and customary meaning of the term such as that provided by the technical dictionaries. Hence, the staff concluded that a person of ordinary skill would interpret “controller” as a system or subsystem that controls the functions or operation of an attached playback system used for reproducing information stored on optical discs. (SBr at 34.) The staff

⁴ Respondents agree that the MPEG decoder and the controller are distinct and separate entities (RBr at 139.) Complainants agree that coupled means “two things being connected.” (CBr at 109 (emphasis added).)

also argued that the following portion of the specification supports such a construction:

The present invention relates to a controller architecture optimized for processing audio and video information in playback systems used for reproducing information stored on optical discs of different formats such as CDs and DVDs.

(CX-1, col. 3, lns. 62-65.) In addition, the staff argued that "controller" denotes no particular structure but only requires the interconnection of the functional areas defined by the other elements of the claim. (SBr at 34, citing DiEuliis, Tr. at 2300; Rhyne, Tr. at 1432.)

A preamble can be a claim limitation. See Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997); Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989.) The administrative law judge finds that the plain language of the preambles of claims 1 and 7 would indicate to a person of ordinary skill in the art that the claimed recitation "controller coupled with a MPEG decoder" facilitates the processing of information and indicates that the controller and MPEG decoder are separate and distinct entities. (See also DiEuliis, Tr. at 1811-12.) He also finds that said person would understand that said preambles set forth the antecedent basis for "information," "first format," "second format," and "MPEG decoder," as recited in claims 1 and/or 7. In addition, in view of the use of the word "comprising" in the preambles, the administrative law judge finds that a person of ordinary skill in the art would understand that the controller has the elements recited in the language that follows "comprising," although the controller is not limited to having said elements.

As to the word "controller" found only in the preambles of claims 1 and 7, complainants' expert Rhyne testified:

Q. So, in other words, does the word controller require any specific structure or is it merely any structure that performs the function of controlling the operation of another system?

A. I don't think it carries a structural connotation. There is so many different ways to implement controllers, hardware, software, blends of hardware and software, that I feel like just the word controller just as you said, in my opinion is it is something that controls something else.

Q. In claims 1 and claim 7 of the '736 patent, could the word controller be replaced with the word device or thing?

A. Yes. The way that the claim is written, it says in a playback system, it says there is a controller coupled with an MPEG decoder and then it goes on to say the controller comprising and lists very specific elements that must be present. And if it were replaced with apparatus or something of that type, I think it would be just fine.

(Rhyne, Tr. at 1432 (emphasis added).) Respondents' expert DiEuliis testified:

Q. Does the term controller in claims 1 and 7 of the -- does the term controller as used in claims 1 and 7 of the '736 patent require any structure in your opinion?

A. I believe that the preambles indicate that there is a structure called a controller which is separate from an MPEG decoder, and that the -- and just from a technical -- reading it as a technical guy here, I am seeing that the elements which the controller must comprise according to these claims indicate functional areas which are interconnected with each other, so I would say there is some structure there.

Q. Were you present for Dr. Rhyne's testimony?

A. Yes, I was.

Q. Do you agree that the word controller could be replaced in the claims with the word apparatus or thing, without changing the meaning of the claim?

A. I think it would be okay if the term apparatus had been used in the claim, I mean, an electrical engineer would use the term apparatus. And the term controller is commonly used in the field to indicate such an apparatus as is subscribed in this patent.

So the controller is perhaps a little bit more of a specific word, but I don't know that calling it an apparatus that had all this structure would be substantially different, at least in terms of a technical person's interpretation.

(DiEuliis, Tr. at 2300-01 (emphasis added).)

In addition to testimony of Rhyne and DiEuliis, the administrative law judge further finds nothing in the specification or prosecution history that gives any special meaning to controller.

Based on testimony in the record, the dictionary definition of controller cited by the staff, the plain meaning of the language of claims 1 and 7 and the specification of the '736 patent, the administrative law judge finds that the "controller" found in the preamble of claims 1 and 7 is separate and distinct from the MPEG decoder recited in claims 1 and 7; that the controller has the elements recited in claims 1 and 7 following "comprising"; and that the controller can be a system or subsystem that controls the functions or operation of an attached playback system used for reproducing information stored on optical discs.

2. The Claimed Term "MPEG Decoder"

The term "MPEG decoder"⁵ appears not only in the preambles of claim 1 and 7, but also in the language following "comprising." (CX-1.) Complainants argued that said claimed term means hardware and/or software that can decode compressed data in accordance with any of the

⁵ The term "MPEG" is defined as:

Acronym for Moving Pictures Experts Group. A set of standards for audio and video compression established by the Joint ISO/IEC Technical Committee on Information Technology. The MPEG standard has different types that have been designed to work in different situations. Compare Motion JPEG. 2. A video/audio file in the MPEG format. Such files generally have the extension .mpg.

(CX-1765.)

standards established by the Moving Pictures Experts Group (MPEG). (CBr at 111.)

Complainants further argued that there is no reason to impose any additional limitations on said term. (Id.)

Respondents argued that the claimed MPEG decoder refers to an integrated circuit that decompresses, separates, and further processes the corrected audio and video data that is received from an external controller according to the MPEG specifications. (RBr at 139.) It is argued that the MPEG decoder has “three primary functional blocks: a demultiplexing, a MPEG audio decoder, and a MPEG video decoder.” (RBr at 139-40.)

The staff argued that a person of ordinary skill would understand “MPEG decoder” as hardware or software that decompresses and separates audio and video data received from the controller according to an MPEG specification. (SBr at 34.)

In December 1998, when the application for the ‘736 patent was filed, one of ordinary skill in the art would not have been able to incorporate an MPEG decoder function onto an integrated DVD/CD controller. Thus inventor Chen testified:

Q. And in December of 1998, one of ordinary skill would not have been able to have incorporated an MPEG decoder functional block onto an integrated CD and DVD controller, correct?

A. At the time no one have a CD/DVD controller and MPEG decoder put in a single chip. No one has it.

Q. And no one would have been able to -- well, during your deposition, did you not testify that back in December of 1998 that one of ordinary skill would not have been able to have incorporated an MPEG decoder functional block onto an integrated CD and DVD controller?

A. As I mentioned, no one has it.

* * *

Q. So Mr. Chen, one of skill in the art reading the '736 patent and not acting as an inventor, but just using routine experimentation, couldn't have built an integrated CD/DVD controller MPEG controller chip back in December of 1998, correct?

A. Correct.

(Chen, Tr. at 826, 831-32 (emphasis added).) Consequently, the administrative law judge finds that the MPEG functionality, as recited in claims 1 and 7, would have had to reside on a separate integrated circuit, viz. a separate chip. The administrative law judge further finds that this distinct structural relationship is affirmed in the specification of the '736 patent. Thus, the '736 patent specification references the MPEG decoder as an "external subsystem" from the controller. (CX-1, col. 3, lns. 25-35; see DiEuliis, Tr. at 1813.)

Complainants argued that the '736 patent specification states that "[d]ue to the simplified parallel MPEG interface, DVD/CD controller 62 may also be easily integrated into MPEG decoder 40." (CBr at 112; see CX-1, col. 5, lns. 58-60.) However, according to inventor Chen, it would not be easy to integrate DVD/CD controller 62 into MPEG decoder 40. Thus, inventor Chen testified that one of ordinary skill in the art reading the '736 patent and just using routine experimentation, could not have built an integrated CD/DVD controller and MPEG decoder chip back in December 1998. (Chen, Tr. at 826, 830-32.)

The administrative law judge also finds that the '736 patent specification further teaches that the controller transfers data to a MPEG decoder, which decodes according to the MPEG standards and thus the controller and the MPEG decoder are separate and distinct. (DiEuliis, Tr. at 1812, 2320; CX-1, Abstract, col. 4, lns. 19-21, col. 8 ln. 41-43.) The MPEG decoder shown in

Figure 1 of the '736 patent was a separate chip. (JX-12C (Tsu Depo.) at 64; CX-1, Figure 1.) Also, Figure 4 of the '736 patent shows that the MPEG decoder is separate from the controller. (DiEuliis, Tr. at 1813-14; CX-1, Figure 4.) Figures 2, 5 and 6 similarly show that the controller is separate from the MPEG decoder. (CX-1, Figures 2, 5, 6; DiEuliis, Tr. at 1812.) In addition, applicants' arguments throughout the prosecution history noted that data was transferred from the controller to an MPEG decoder and thus applicants distinguished between the controller and the MPEG decoder. (CX-9 at ZC 000229-230, ZC 000246-247, ZC 000338-339; DiEuliis, Tr. at 1812.)

Under BACKGROUND OF THE INVENTION, the '736 patent specification discloses that the MPEG decoder decompresses and separates compressed audio and video data. (DiEuliis, Tr. at 1822-23; CX-1, col. 2, lns. 44-51.) Also a MPEG2 Specification dated April 15, 1996, which was before the December 31, 1998 filing date of the '736 patent, shows a "prototypical decoder" in the Figure Intro 5 that includes the following functional blocks: a program stream decoder, an audio decoder, a video decoder, and a clock control. Those are three "decoders" within the prototypical MPEG decoder. (DiEuliis, Tr. at 1816 -17; RX-369 at MTK-ITC 396254.) The program stream decoder of the prototypical MPEG2 decoder receives a program stream with several types of data interspersed, including video data, audio data and control data. The program stream decoder separates the program stream into audio, video and control data and distributes the data for further processing. (DiEuliis, Tr. at 1817-18; RX-369 at MTK-ITC 396254.) The MPEG2 Specification also notes that "[t]he prototypical decoder for Program Streams shown in Figure Intro. 5 is composed of System, Video, and Audio decoders[.]" (RX-369 at MTK-ITC-396255). It further notes that "[t]he prototypical decoder accepts as input a

Program Stream and relies on a Program Stream Decoder to extract timing information from the stream. The Program Stream Decoder demultiplexes the stream, and the elementary streams so produced serve as inputs to Video and Audio decoders, whose outputs are decoded video and audio signals.” (RX-369 at MTK-ITC-396255; DiEuliis, Tr. at 1816-17.) A 1993 MPEG1 Specification shows a “prototypical decoder” with the same functional blocks as the “prototypical decoder” depicted in the MPEG2 Specification. (DiEuliis, Tr. at 1821-22; RX-339C at MTK-ITC-396582). Said MPEG1 Specification notes that “[t]he prototypical IS/IEC 11172 decoder shown in figure 1 is composed of System, Video, and Audio decoders[.]” (RX-339C at MTK-ITC-396582). It also notes that “[t]he prototypical decoder accepts as input an ISO/IEC 11172 multiplexed stream and relies on a System Decoder to extract timing information from the stream. The System Decoder demultiplexes the stream, and the elementary streams so produced serve as inputs to Video and Audio decoders, whose outputs are decoded video and audio signals.” (RX-339C at MTK-ITC-396582; DiEuliis, Tr. at 1821-22.)

Based on the foregoing, the administrative law judge finds that a person of ordinary skill in the art would interpret the claimed MPEG decoder as hardware or software separate and distinct from the controller and which decompresses and separates audio and video data received from the controller according to an MPEG specification.

3. The Claimed Term “Subsystem”

Claims 1 and 7 recite, inter alia, “a read channel subsystem” and “a memory subsystem.” The New IEEE Standard Dictionary of Electrical and Electronics Terms, at 1307 (5th ed. 1993) defines “subsystem” in the context of software to mean “[a] secondary or subordinate system within a larger system.” (CX-1766.) The McGraw-Hill Dictionary of Scientific and Technical

Terms, at 1577 (3rd ed. 1984) defines subsystem as “[a] major part of a system which itself has the characteristics of a system, usually considering of several components.” (CX-1762.) Hence, the administrative law judge finds that a person of ordinary skill in the art would interpret the claimed term “subsystem” as a portion of a larger system.

4. The Claimed Term “Read Channel Subsystem”

The term in issue appears in claims 1 and 7 of the ‘736 patent within the clauses “a read channel subsystem configured to receive an input signal corresponding to the information” (claim 1) and “a read channel subsystem configured to receive an input signal corresponding to information read from the disc” (claim 7). (CX-1.)

Complainants argued that the term in issue should be construed to mean a subsystem that receives input signals in either first format or second format and that generates digital signals corresponding to the input signals. (CBr at 114; see CFFF 4169-70.) Respondents in their post-hearing brief did not construe said term. The staff argued that a plain reading of the claim language supports a construction that the “read channel subsystem” means DVD/CD controller circuitry that receives the initial input corresponding to the information read from the optical disk. (SBr at 36.) The administrative law judge finds, based on the plain reading of the claim language, that a person of ordinary skill would interpret the term in issue as circuitry that receives the initial input corresponding to information read from a disc.

5. The Claimed Terms “First Signal Processor,” “Second Signal Processor” And “A Signal Processor”

Claim 1 requires a controller comprising “a first signal processor coupled to the read channel subsystem and configured to receive the digital signals if the information is in the first

format . . . and a second signal processor coupled to the read channel subsystem and configured to receive the digital signals if the information is in the second format.” (CX-1, col. 10, lns. 50-58.) Claim 7 requires “a signal processor coupled to the read channel subsystem[,] configured to receive the digital signals, . . . when the input signals arc [sic] read from a CD or a DVD.” (CX-1, col 13, lns. 9-13.)

Complainants argued that the signal processors of the claims are simply subsystems that demodulate data to produce what the claims refer to as “processed data,” and that there should be no requirement that the first and second signal processors be distinct. (CBr at 114-15.)

Respondents argued that claim 1 of the ‘736 patent requires two separate signal processors: one that demodulates data in a first format, e.g., CD, and one that demodulates data in a second format, e.g., DVD; that claim 7 expressly requires a single signal processor for both CD and DVD data; and that the signal processors of claims 1 and 7 must produce as their output processed data which has been demodulated. (RBr at 143.)

The staff argued that the first and second signal processor elements of claim 1 should be construed to require two separate and distinct signal processors, one configured to receive information from a first format of data and the other configured to receive information from a different second format of data; and that the signal processor element of claim 7 should be construed to require “a single signal processor that is configured to receive information from both CD and DVD data.” (SBr at 37.)

Webster’s Seventh New Collegiate Dictionary (1965) at 314, 779 defines “first” as -- preceding all others in time, order, or importation -- and the word “second” as -- one that is next after the first in rank, position, or other serial orders--. Thus, the ordinary usage of the words can

connote two things. Complainants argued that the words “first” and “second” simply establish the proper antecedent basis for the signal processing circuitry that performs one function or the other. (CBr at 114-15.) However, referring to the specification of the ‘736 patent, inventor Chen admitted that the first and second signal processors, as shown on Figure 4, are the CD-DSP and DVD-DSP preprocessors, which preprocessors are two separate and distinct processors. (Chen, Tr. at 846-47; see also CX-1, col. 7, lns. 55-60 (describing processing by CD-DSP preprocessor 92 and DVD-DSP preprocessor 94).) Hence, the administrative law judge finds that a person of ordinary skill in the art would interpret the first and second signal processor elements of claim 1 as requiring two separate and distinct processors, one that demodulates data in a first format and one that demodulates data in second format. He finds that such a person would interpret the signal processor element of claim 7 as a single signal processor that is configured to receive information from both CD and DVD formats.

6. The Claimed Term “Error Code Correction And Detection Subsystem”

The claimed term “error code correction and detection subsystem” appears in claims 1 and 7 of the ‘736 patent. (CX-1, col. 10, ln. 62, col. 13, ln. 14.) Specifically, claim 1 reads:

[A]n error code correction and detection subsystem configured to receive the first format processed data if the information is in the first format and configured to receive the second format processed data if the information is in the second format, the error code correction and detection subsystem further configured to perform error correction and detection on the first format processed data and the second format processed data to produce corrected data;

(CX-1, col. 10, ln. 62 - col. 11, ln. 3.) Claim 7 reads:

[A]n error code correction and detection subsystem configured to perform error detection and correction on the processed data to produce corrected data;

(CX-1, col. 13, lns. 14-16.)

Complainants argued that as it appears in claims 1 and 7, “error code correction and detection” is used in its plain and ordinary meaning as understood in the art, namely detecting and correcting errors in data; that the result of the error code correction and detection step in the claims is what the claims refer to as “corrected data”; and that the claims are not limited to any specific method of error detection and correction, nor does any particular standard or specification govern that step. (CBr at 117.)

Respondents argued that the invention includes three key features to reduce the size and complexity of DVD/CD playback systems and that one of those features is a centralized “error code correction and detection (ECC) subsystem,” which “is responsible for performing error detection and correction for both CD and DVD data.” (RBr at 135-36.)

The staff argued that the error code correction and detection subsystem means one subsystem that performs all error correction and detection performed by the controller on two different formats of data for claim 1 and on CD and DVD data for claim 7. (SBr at 40.)

The administrative law judge finds that the plain language of claim 1 requires that the claimed subsystem be “configured to receive the first format processed data if the information is in the first format and configured to receive the second format processed data if the information is in the second format, the error code correction and detection subsystem further configured to perform error detection and correction on the first format processed data and the second format processed data to produce corrected data.” (CX-1, col. 10, ln. 62 - col. 1, ln. 3 (emphasis added).) Thus, the administrative law judge finds that the claim language itself would indicate to one of ordinary skill that the proper construction of the claim element in issue requires the subsystem to receive and process both first format and second format processed data.

Also the administrative law judge finds that the plain language of claim 7 taken with the preamble of claim 7 requires that the error code correction and detection subsystem receive processed data to be derived by the signal processor from input signals from a CD or DVD. Thus, the administrative law judge finds that the claim language itself would indicate to one of ordinary skill that the proper construction of this claim element in claim 7 requires this subsystem to receive both CD and DVD processed data.

The administrative law judge's construction requiring processing for two types of data is found to be consistent with overcoming the perceived problems in the prior art disclosed in the '736 patent. For example, the specification of the '736 patent identifies one of the problems in the prior art as the "use of separate subsystems for information processing . . . [which] results in inefficient use of system processing and memory resources and hinders efficient sharing of distributed resources." (CX-1, col. 3, lns. 16-20.) Inventor Chen confirmed that a key aspect of the invention was to have one error code correction and detection subsystem that would perform error correction and detection on both CD and DVD data. (Tr. at 838, 847.) Moreover, the following description of the actual error correction and detection subsystem described in the preferred embodiment is found to be consistent with such construction:

ECC subsystem 96 is responsible for performing error detection and correction for both CD and DVD data.

(CX-1, col. 7, lns. 38-39 (emphasis added).)

In addition, the administrative law judge finds that the plain language of claims 1 and 7 would indicate to one of ordinary skill that the error code detection and correction subsystem performs all of the error correction and detection. Thus, according to the claims, the error

correction and detection subsystem receives “processed data” produced by the signal processors and outputs “corrected data” to the MPEG decoder for playback. (CX-1, col. 10, ln. 50 - col. 11, ln. 3, col. 13, lns. 9-16.) “Corrected data” as used in the claims of the ‘736 patent includes all data that has been subjected to the error code correction and detection system, including both the data that has been corrected, as well as data that did not have any errors. (Chen, Tr. at 849.) Hence, the administrative law judge finds that the error code correction and detection subsystem must perform final error correction and detection processes so that its output, “corrected data,” can subsequently be transferred to the MPEG decoder.

Based on the foregoing, the administrative law judge finds that the proper construction of “error code correction and detection subsystem” in claim 1 means a single subsystem that performs all error detection and correction on two different formats of data (i.e., first format and second format data) and in claim 7 means a single subsystem that performs all error detection and correction on CD and DVD data.

7. The Claimed Term “Memory Subsystem”

Referring to the claimed term “memory subsystem” claim 1 recites:

[A] memory subsystem that includes a read first-in-first-out buffer coupled to a memory data input register and the error code correction and detection subsystem, a write first-in-first-out buffer coupled to a memory data output register, and a single memory cell coupled to the memory data output register and the memory data input register;

(CX-1, col. 11, lns. 4-10 (emphasis added).) Claim 7 recites:

[A] memory subsystem that includes a single memory cell coupled to the signal processor, a write first-in first-out (FIFO) buffer, a read first-in first-out (FIFO) buffer, and an MPEG first-in first-out (FIFO) interface, the single memory cell receiving data via the write FIFO buffer and providing data to the error code correction and detection subsystem via the read FIFO buffer;

(CX-1, col. 13, Ins. 17-23 (emphasis added).) The memory subsystem element of claims 1 and 7 recites a “single memory cell.” Neither claim 1 nor claim 7 defines the term “single memory cell” and said term does not appear in the ‘736 patent specification.

Complainants argued that the proper interpretation of the recited “single memory cell” in the claimed language for “memory subsystem” is a “shared memory” where the “single memory cell” is shared between the decoders called for in the respective claims and further is not limited to one bit. (CBr at 124-26.)

Respondents argued that memory subsystem in the context of the ‘736 patent should be construed to mean “one subsystem that provides all of the memory resources for the subsystems of the controller, including the signal processor and the error code correction and detection subsystem”; that the memory subsystem is contained within the controller; that the memory subsystem was added during the ‘736 prosecution to distinguish over the prior art; that “single memory cell” means “a single storage element of a memory, namely, one bit, together with associated circuits for inserting and removing one bit of information”; that the “read first in first out buffer” – abbreviated as read FIFO buffer – means “a buffer used to temporarily store data that has been read from memory to resolve access timing constraints from which data is removed in the same order in which it is added”; and that the read first-in, first-out buffer is different and distinct from the write first-in, first-out buffer and the MPEG first-in, first-out buffer, and is not a register; and that the modifiers “memory data input” and “memory data output” are used to describe data flow and distinguish the various registers. (RBr at 145-49.)

The staff argued that a person of ordinary skill in the art would understand the claimed term “single memory cell” as a single integrated unit of memory (housing multiple 1-bit storage

elements) for receiving and storing both CD and DVD data within a memory subsystem used by both the signal processors and the error correction and detection subsystems for all data processing. (SBr at 45-46.) The staff further argued that the evidence supports a construction of the memory subsystem as residing within the controller and excluding a memory chip external to the controller. (SBr at 47.)

While the term “single memory cell” is not found in the specification of the ‘736 patent, said specification in describing the prior art CD and DVD playback systems, discloses that said prior art systems would typically include separate memories for CD and DVD processing operations. “Traditional [prior art] playback system 1 typically includes... a CD digital signal processor (CD-DSP) 22 along with its associated memory 22 ... [and] a DVD DSP 26 along with its associated memory 28...”⁶ (CX-1, col. 1, lns. 37-44 (emphasis added).) Figure 1 of the ‘736 patent, depicting the “typical prior art playback system 1,” shows two separate memory blocks, memory 24 associated with the CD digital signal processor and memory 28 associated with the DVD digital signal processor. (CX-1, col. 1, ln. 35; see FIG. 1.) Addressing the drawbacks associated with the separate subsystems of the prior art playback systems, including separate

⁶ Further describing the separate memory 24 and memory 28 of the typical prior art playback system, the ‘736 specification discloses that:

Memory 24 coupled to CD-DSP 22 facilitates de-interleaving operation, and error detection and correction operations. [] Memory 28 coupled to DVD-DSP 26 facilitates the demodulation, error detection and correction, and data sector formatting operations.

(CX-1, col. 2, lns. 24-26, 38-40.)

memory subsystems, the '736 patent discloses:

The various subsystems are generally incorporated into separate chips, each dedicated to processing information of a particular format. The separate subsystems occupy valuable real estate in the playback system and as a whole make the playback system bulky and expensive. Use of separate subsystems for information processing also results in inefficient use of system processing and memory resources and hinders efficient sharing of distributed resources. Further, an increased number of chips also increases the total pin count of [prior art] playback system 1 making it bulky and complex. All of the above mentioned factors eventually translate to increased manufacturing costs for the playback system.

(CX-1, col. 3, lns. 8-23.) Significantly, the '736 specification further discloses that “[i]t is desired that the processing subsystems of the playback system be less complex, occupy less real estate [], have a smaller pin count, [and] make efficient use of memory and processing resources....” (CX-1, col. 2, lns. 51-55 (emphasis added).)

As to the claimed memory subsystem of asserted claims 1 and 7, the '736 specification discloses:

According to another aspect of the present invention, the memory subsystem within the DVD/CD controller provides a common memory resource for the subsystems of the DVD/CD controller such as CD-DSP, DVD-DSP, and error code correction and detection subsystem. The memory subsystem thus provides efficient sharing of memory resources among the subsystems and as a result reduces the number of memory chips required for audio and video processing. This reduces the costs of the playback system.

(CX-1, col. 4, lns. 30-38 (emphasis added).) Figure 4 of the '736 patent, which “depicts a detailed block diagram of the various subsystems of a DVD/CD controller according to an embodiment of the present invention,” contains a single block 102 labeled “memory subsystem.”

(CX-1, col. 4, lns. 62-64; see FIG 4.) Distinguishing said memory subsystem 102 from the prior art playback systems' memory resources, the '736 patent states that:

Memory subsystem 102 provides memory resources for internal operations of

DVD/CD controller 62. Unlike conventional playback systems which include redundant memory resources depicted in FIG. 1, memory subsystem 102 provides memory resources for storing data processed by preprocessors 92 and 94. This data is read by ECC subsystem 96 for error detection and correction purposes. The corrected data is written back to memory subsystem 102 and then read out from memory subsystem 102 by MPEG interface (MPEG I/F) 104 for further processing. By allowing sharing of memory resources between preprocessors 92 and 94, and ECC subsystem 96, DVD/CD controller 62 reduces the total number of memory chips required for audio and video processing, thus reducing playback system complexity and cost of the playback system.

(CX-1, col. 7, ln. 52 to col. 8, ln. 2 (emphasis added).) The '736 specification, describing a specific embodiment of memory subsystem 102, discloses that:

[M]emory subsystem 102 includes a write first-in-first-out [FIFO] buffer^[7] (wFIFO) buffer 108, a read first-in-first-out (rFIFO) buffer 110, a memory data output register^[8] (MDRO) 112, a memory data input register (MDRI) 114, a

⁷ Technical dictionaries published around the time the '736 patent application was filed define the term "buffer" as:

A region of memory reserved for use as an intermediate repository in which data is temporarily held while waiting to be transferred between two locations, as between an application's data area and an input/output device. A device or its adapter may in turn use a buffer to store data awaiting transfer to the computer or processing device.

A storage device used to compensate for a difference in the rate of flow of information or the time or the occurrence of events when transmitting information from one device to another.

(CX-275; RX-561.)

⁸ The Modern Dictionary of Electronics (7th ed. 1999) defines "register" as "[a] short-term, fast-access circuit used to store bits or words in a CPU; its capacity is usually one computer word." (CPFF 4249 (undisputed).) The McGraw-Hill Dictionary of Scientific and Technical Terms, at 448 (5th ed. 1994) defines register to mean "[a] circuit that holds information in binary format to be processed or transferred. A flip-flop circuit is the simplest form of register as well as the simplest form of memory. Registers are important circuits in computers and are capable of holding one or more words." (CPFF 4250 (undisputed).)

Referring to the embodiment depicted in Figure 5 of the '736 patent, inventor Chen

dynamic random access memory (DRAM) 116 providing memory resources, and a MPEG FIFO 118.

(CX-1, col. 8, lns. 8-13.)

Referring to the prosecution history of the '736 patent, said history does contain the claim term "single memory cell." Thus when originally filed, the '736 patent application contained 18 claims. (CX-9 at ZC 000157.) In the first Office Action in the prosecution of the '736 patent application, the Examiner rejected all 18 claims under 35 U.S.C. § 103(a) based in part on the prior art disclosure of "a subsystem memory (24, 28) for storing the signals of the first and second formats," which "memory (24, 28)" refers to the separate memory subsystems of the typical prior art playback system depicted in FIG. 1 of the '736 patent discussed supra. (CX-9 at ZC000193 (mailed 6/21/00); compare CX-1, FIG. 1 with CX-9 at ZC 000161.) Thereafter, the applicants traversed the Examiner's rejection based on the characteristics of the claimed parallel interface, but the Examiner again rejected the claims based in part on the same prior art disclosure. (See CX-9 at ZC000206-207 (amendment and argument mailed 9/14/00), ZC000213 (Examiner's rejection).) In response to the applicants' request for a Continued Prosecution Application, which included a preliminary amendment, the Examiner again rejected claims 1-18 based on the prior art disclosure of, inter alia, "a subsystem memory (24, 28) for storing the signals of the first and second format." (CX-9 at ZC000259; see id. at ZC000237 (request for CPA).) Applicants responded with a September 21, 2001 amendment where the claim term "a

testified that the modifiers "memory data input" and "memory data output" are used to describe the data flow in the memory subsystem via the various registers; and that the memory data input register refers to a register in which data is stored as it is read from memory and that the memory data output register is a register in which data is stored to be written to memory. (See RPF 1915-17 (undisputed only as Chen's testimony relates to figure 5).)

single memory cell” was first introduced and the applicants stated:

With respect to amended claims 5⁹ [sic], prior art playback system 1 does not disclose a single memory cell for storing processed data received from a CD and a DVD. Playback system 1 has separate memory 24 and 28 for storing processed CD and DVD data.

(CX-9 at ZC000339 (emphasis added); see id. at ZC 000335, ZC000341 (amending claim 5 to include single memory cell).) The Examiner again rejected the claims, based in part, on the prior art disclosure of “a subsystem memory (24, 28) for storing the signals of the first and second formats.” (CX-9 at ZC000347.) In an amendment sent January 4, 2002, the applicants amended pending claims 1 and 10 (which ultimately issued as asserted claims 1 and 7, respectively) to reflect the presently asserted memory subsystem elements including the single memory cell limitations of claims 1 and 7. (CX-9 at ZC000363-64 (amending original claim 1), ZC000367-68 (amending original claim 10).) Subsequently, the claims were granted.¹⁰ (CX-9 at ZC000413.)

Complainants argued that claims 1 and 7 “do not limit the single memory cell to a memory that is physically internal to or embedded within a controller chip, as apparently urged

⁹ With respect to original claim 1 which ultimately issued as asserted claim 1, original dependent claim 5 added a memory subsystem limitation, which, as originally filed, stated: “[t]he controller of claim 1 further comprising a memory subsystem coupled with the first signal processor and the second signal processor[,] the memory subsystem configured to store the first format processed data if the information is in the first format and to store second format processed data if the information is in the second format.” (CX-9 at ZC 000152; see CX-9 at ZC 000223 (amending claim 5 to insert comma after “second signal processor”).)

¹⁰ The prosecution history indicates that after applicants’ amendment sent January 4, 2002, the Examiner sent an Advisory Action on January 15, 2002 rejecting said January 4th amendment on grounds, inter alia, that it raised new issues requiring “further consideration and/or search.” (CX-9 at ZC 000373.) Applicants then submitted a Request for Continued Examination (RCE) on February 26, 2002 requesting the Examiner to consider the previously submitted January 4th amendment. (CX-9 at ZC000375.) The Notice of Allowability indicates that the Examiner responded to, inter alia, the applicants’ January 4th amendment and the February 26th RCE. (CX-9 at ZC 000413.)

by the staff.” (CRBr at 87.) Claims 1 and 7, however, both claim a “controller comprising ... a memory subsystem....” The Summary of the Invention section of the ‘736 patent specification indicates that the memory subsystem is “within the DVD/CD controller....” (CX-1, col. 4, ln. 31 (emphasis added).) Describing an embodiment of the DVD/CD controller, the ‘736 specification indicates that said DVD/CD controller “includes” memory subsystem 102. (See CX-1, col. 6, lns 41-49.) Figure 4 of the ‘736 patent, which “depicts a detailed block diagram of the various subsystems of a DVD/CD controller according to an embodiment of the present invention,” shows memory subsystem 102 residing within DVD/CD controller 62. (CX-1, col. 4, lns. 62-64; see FIG. 1.) Moreover, the administrative law judge has construed “subsystem” as a portion of a larger system. Accordingly, the administrative law judge finds that the memory subsystem and single memory cell are a portion of the claimed DVD/CD controller and therefore, a memory external to said controller would not meet the memory subsystem limitation of claims 1 and 7 of the ‘736 patent.

Respondents argued that the “single memory cell” of the memory subsystem should be construed as a single bit of memory storage, i.e., a 1-bit memory. (See RBr at 146; RRBr at 102.) The term “single memory cell” is not defined in the claim language, the ‘736 patent specification or the ‘736 file history. As to respondents’ proposed 1-bit construction for single memory cell, respondents’ expert DiEuliis admitted that such construction would not cover the preferred embodiment of the claimed memory subsystem 102. (DiEuliis, Tr. at 2252-55.) Thus, limiting the claimed single memory cell to a storage element for a single bit of information would run contrary to the maxim that a “claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct.” On-Line Techs., Inc. v. Bodenseweerk Perkin-Elmer

GmbH, 386 F.3d 1133, 1138 (Fed. Cir. 2004) (citations omitted) (vacating non-infringement finding based on improper claim construction). In fact, the specification describes an embodiment of the memory subsystem where the DRAM, which DiEuliis admitted relates to the “single memory cell” limitation, receives information via a 16-bit bus interface. (CX-1 at col. 8, lns. 20-21 (“The information is then stored in DRAM 116 via MDRO using a 16-bit bus interface.”); see DiEuliis, Tr. at 2253-56.) Accordingly, the administrative law judge finds that the “single memory cell” of the claimed memory subsystem is not limited to a 1-bit storage element, but rather, encompasses multiple 1-bit storage elements.

Based on the foregoing, the administrative law judge finds that the memory subsystem of claim 1 is a portion within the claimed controller consisting of a common memory resource for storing processed and corrected data in a first or second format that includes: (1) a read FIFO buffer coupled to a memory data input register and the error code correction and detection subsystem; (2) a write FIFO buffer coupled to a memory data output register; and (3) a single memory cell, comprised of multiple 1-bit storage elements and thus not limited to one-bit only, coupled to the memory data output register and the memory data input register. As to asserted claim 7, the administrative law judge finds that the memory subsystem is a portion within the claimed controller consisting of a common memory resource for storing processed and corrected data from a CD or DVD that includes: (1) a single memory cell, comprised of multiple 1-bit storage elements, coupled to the signal processor; (2) a write FIFO buffer; (3) a read FIFO buffer; (4) and an MPEG FIFO interface.

8. The Claimed Term “Parallel Interface”

Referring to the claimed term “parallel interface” claim 1 requires the parallel interface to

comprise:

[A] plurality of parallel data lines for transferring the corrected data to the MPEG decoder when the information stored on the disc is in the first format and when the information stored on the disc is in the second format.

(CX-1, col. 11, lns. 12-17.) Claim 7 requires the “parallel interface” to comprise:

[A] plurality of parallel data lines for transferring the corrected data to the MPEG decoder when the disc from which the information is read is a CD and when the disc from which the information is read is a DVD.

(CX-1, col. 13, lns. 25-29.)

Complainants argued that a “parallel interface” would be understood by those of ordinary skill in the art to mean a plurality of parallel data lines, and in the particular context of claims 1 and 7, the interface is used to transfer corrected data to the MPEG decoder; that the claims require that the interface must transmit both formats of information to the MPEG decoder; and that in light of particular statements in the specification and file history of the ‘736 patent, certain types of interfaces, including an ATAPI interface, are disclaimed or outside the scope of the claims. (CBr at 128-30.)

Respondents argued that the claimed term “parallel interface” means “a single parallel interface for transferring corrected data in parallel from the controller to the MPEG decoder when the data is in the first format and when the data is in the second format which requires a transfer protocol and/or proper handshaking between the controller and the MPEG decoder”; and that an ATAPI interface or a parallel bus attached to an ATAPI interface is not outside the scope of the claimed parallel interface. (RBr at 149-50.)

The staff argued that claim 1 of the ‘736 patent requires the parallel interface to transmit, over multiple lines simultaneously, corrected data to the MPEG decoder where the original data

was in either a first or a second format; that both types of data must be transmitted over the same multiple lines in this manner; and that based on the fact that the '736 specification does not state that an ATAPI interface could not be used for claimed parallel interface, "the staff does not support complainants' attempt to exclude an ATAPI interface from satisfying the parallel interface limitation." (SBr at 49-50; SRBr at 30.) The staff further argued that claim 7 requires the parallel interface to transmit corrected data from either a CD or a DVD over multiple lines simultaneously to the MPEG decoder; and that claim 7 requires there to be an MPEG FIFO interface between the parallel interface of claim 1 and the MPEG decoder. (SBr at 49-50.)

The parties do not dispute that the "parallel interface" of claims 1 and 7 is used to transfer corrected data to the MPEG decoder and that said claims 1 and 7 require that the parallel interface transmit both formats of information (i.e., first and second format information as to claim 1 and CD and DVD information as to claim 7) to said MPEG decoder. (CPFF 4297-98 (undisputed).) In addition, the parties do not dispute that the claimed parallel interface eliminates the need for a configuration requiring an ATAPI interface and host CPU for transferring data to the MPEG decoder. (See RRCPPF 4315 (noting that proposed finding refers to the only embodiment described in specification); SRCPPF 4314-16 (no objection by staff); see also RBr at 149-50; SRBr at 30.) With respect to the use of the word "parallel" in the disputed claim phrase, the plain meaning of "parallel" to one of ordinary skill in the art at the time of the invention can be gleaned from technical dictionaries. One technical dictionary published prior to the filing date for the '736 patent defines "parallel" as:

A connection point that comprises a set of individual electric connections, each having a specified function, usually either data or control. The transfer of data across the interface is achieved by one connection per bit of a data word or byte;

for example for 8 bits there would be 8 connections in parallel. The control signals are also carried on individual electric connections in parallel with the data connections.

(SX-5, Dictionary of Computing (4th ed., 1996) at 355.) Another technical dictionary of the period defines “parallel” as:

1. A multiline channel that transfers 8 parallel bits.
2. A port that sends or receives the 8 bits in each byte all at one time. . . .
3. A link between two devices in which all the information transferred between them is transmitted simultaneously over separate conductors.

(SX-6, Modern Dictionary of Electronics (7th ed. 1999) at 538.)

Under the heading “Background of the Invention,” the ‘736 patent specification discloses that the prior art DVD/CD playback systems typically required an MPEG decoder compatible with separate serial and parallel interfaces¹¹ relating to the transfer of processed CD and DVD data. Thus it states:

Therefore, in conventional DVD/CD playback systems, the MPEG decoder normally has to support an 8-bit parallel interface for DVD and a serial interface for CD. The 8-bit parallel to serial conversion at CD controller and the serial to parallel conversion at MPEG decoder not only pose an unnecessary overhead in hardware for the playback system, but also requires an 8-times higher transfer rate for the serial interface. Thus, a new transfer protocol which eliminates the serial interface associated with traditional CD-DSP controllers is desired.

(CX-1, col. 3, lns. 38-47 (emphasis added).) As to the claimed parallel interface in issue, the

¹¹ Figure 6 of the ‘736 patent shows parallel data lines, viz. DVD data line 7 through DVD data line 0 used for transferring DVD data. (See CPFF 4319 (undisputed).) Transferring data via a parallel interface to a MPEG decoder permits the transfer of multiple bits of digital data over multiple data lines at one instant in time, while such a transfer via a serial interface uses one data line and each bit is sent one after the other (i.e., in serial fashion), requiring the MPEG decoder to wait after receiving each bit for the next bit. (See CPFF 4324-25 (undisputed).) Moreover, “[t]ransmitting data in serial uses only one wire, but it either takes much longer or one must run the clock rate faster [as compared to parallel transfer], requiring circuitry that can operate faster.” (CPFF 4326 (undisputed).)

'736 specification discloses the advantages to using said parallel interface over the use of separate serial and parallel interfaces as in prior art playback systems in the following:

By integrating the CD and DVD interfaces into one parallel interface, the present invention eliminates the parallel-to-serial and serial-to-parallel conversion overhead problems associated with prior art DVD/CD players. The present invention thus reduces the time required to process audio and video information as compared to conventional playback systems. The parallel CD interface also obviates the need to transfer information at a higher rate as in conventional serial interface systems. The slower transfer rate eases system design constraints, improves system performance and reliability, and decreases power consumption of playback system 60. Thus, by providing a parallel interface for CD and DVD data, the present invention simplifies the transfer of data from the front-end DSPs to MPEG decoder 40.

(CX-1, col. 8, ln. 60 to col. 9, ln. 7 (emphasis added).) In addition, the '736 patent specification indicates that the claimed parallel interface allows for direct transfer of corrected DVD and CD data to the MPEG decoder, whereas prior art playback systems typically required DVD data¹² to be transferred to the host computer CPU via an ATAPI¹³ interface and then from the host CPU to the MPEG decoder. Thus it states:

Unlike conventional playback systems which require an ATAPI interface or a host CPU for transfer of data to the MPEG decoder, MPEG interface 104 is implemented such that the data is directly transferred to MPEG decoder 40. By eliminating the need for an ATAPI interface or a host CPU for transfer of data to the MPEG decoder, the present invention reduces the number of subsystems required for processing audio and video information.

(CX-1, col. 8, lns. 43-50 (emphasis added); see id. at col. 5, lns. 42-49 ("DVD/CD controller 62 ... provides a novel parallel interface for transferring processed CD and DVD data directly to

¹² The '736 specification makes an identical disclosure as to CD-ROM and DVD-ROM data. (See CX-1, col.2, lns. 52-54.)

¹³ ATAPI is an acronym for Advanced Technology Attachment Packet Interface. (CX-1, col. 1, lns. 45-46.)

MPEG decoder 40,”); id. at col. 5, lns. 52-56 (“By allowing a direct transfer of CD or DVD data to MPEG decoder 40, DVD/CD controller 62 eliminates the need to have ATAPI interface 36 and host CPU 30, as depicted in FIG. 1 for transferring data to MPEG decoder 40.”); id. at col. 8, lns. 57-60 (distinguishing MPEG interface 104 from prior playback systems providing only a serial interface to decoder); see also id. at col. 2, lns. 42-62 (discussing ATAPI interface and host CPU of prior art playback systems.)

The applicants’ remarks in the prosecution history of the ‘736 patent are found by the administrative law judge to be consistent with the disclosures in the ‘736 patent relating to the use of a parallel interface for the transfer of CD and DVD data in the claimed controller as compared to the prior art playback systems employing both serial and parallel transfer mechanisms. In response to the June 21, 2000 Office Action where the Examiner rejected all pending claims on grounds that it would have been obvious to modify the ‘736 patent application’s Figure 1 (which was labeled “prior art”) with U.S. Patent No. 5,926,606 to Wang “to provide a parallel interface for providing the corrected data to the MPEG decoder...,” applicants amended, inter alia, original claim 1 and distinguished Wang as follows:

Claim 1 has a parallel interface, comprising a plurality of parallel data lines to transfer corrected data. An example is give [sic] in Fig 6. of the [‘736] specification. Wang has one serial line to transfer the digital data. Thus Wang neither suggests nor teaches the parallel interface of claim 1.

(CX-9 at ZC-000207 (emphasis in original).) Applicants, in support of the March 5, 2001 Amendment After Final, again distinguished the combination of the cited Wang reference with the admitted prior art of Figure 1 and stated that “the resultant combination would not teach or suggest the feature of providing a parallel interface for transferring CD or DVD data to the

MPEG decoder.”¹⁴ (CPFF 4310 (undisputed); see CX-9 at ZC000230.) Subsequently, in response to the Examiner’s rejection under 35 U.S.C. 103(a) based on the admitted prior art of Figure 1 of the ‘736 specification in view of U.S. Patent No. 6,026,088 to Rostoker et al., applicants argued:

As discussed in Applicants’ specification on page 4 lines 16-30, conventional CD controllers use a serial interface to communicate with an MPEG decoder, and DVD controllers use a parallel interface for data transfer to the MPEG decoder. Accordingly, in conventional CD/DVD playback systems, the MPEG decoder has to support two interfaces for data transfer--a parallel interface for data read from a DVD and a serial interface for data read from a CD. Applicants submit that this is substantially different from the present invention wherein a single parallel interface is used for transferring both CD and DVD data to the MPEG decoder.

(CX-9 at ZC 000338 (emphasis in original); see id. at ZC 000339 (describing advantages of claimed parallel interface 104 over prior art playback systems).)

Respondents argued that the claimed parallel interface requires a single parallel interface consisting of a plurality of data lines used to transfer corrected data to the MPEG decoder. (RBr at 149-50.) Respondents base their argument on remarks that the applicants made during prosecution that the claimed invention uses “a single parallel interface” for transferring both formats of data while the prior art used separate serial and parallel interfaces. However, the claim language calls for “a parallel interface,” not a “single parallel interface.” Moreover,

¹⁴ In the same amendment, applicants made the following remarks regarding the cited Wang reference:

Wang also fails to disclose a parallel interface for transferring both CD and DVD data to the MPEG decoder. In Wang, data read from the disc is communicated to the MPEG decoder via a PCM serial digital data line (PCMDATA) (See Wang, col. 1 lines 50-52, col. 3, lines 61-63). Applicants submit that Wang does not disclose any parallel interface for data transfer to the MPEG decoder.

(CX-9 at ZC 000230 (first emphasis in original) (second emphasis added).)

applicants' remarks during prosecution distinguished the claimed parallel interface from prior art playback systems (i.e., the interface in the claimed invention for both formats of data replacing two different types of interfaces in the prior art for both formats of data). Accordingly, the administrative law judge finds that the claimed parallel interface is not limited to a single set of a plurality of data lines used in the transfer of data to the MPEG decoder.

Based on the plain language of claims 1 and 7, the disclosures in the '736 specification and applicants' remarks made during the prosecution of the '736 patent application, the administrative law judge finds that a person of ordinary skill in the art at the time the '736 patent application was filed would understand the claim term parallel interface to mean a plurality of data lines, not limited to a single set of a plurality of data lines, used to transfer corrected data simultaneously over said data lines (i.e., in parallel) to the MPEG decoder, said parallel interface capable of transferring data in a first or second format (claim 1) or data from a DVD or CD (claim 7). As to claim 7, the administrative law judge also finds that said person of ordinary skill in the art would understand that the parallel interface "is coupled to the MPEG FIFO interface." (CX-1, col. 13, ln. 26.)

C. Infringement

Complainants alleged that the accused MediaTek MT1369, MT1379 and MT1389 controllers chips infringe claims 1 and 7 of the '736 patent.¹⁵

Respondents argued that complainants have not met their burden in establishing

¹⁵ The differences between the MT1369, MT1379, and MT1389 devices are not significant to the issues of infringement. (Rhyne, Tr. at 1176, 1195.) Essentially the same blocks and same structure shown in DiEuliis Exh. 24 are found in the MT1369, MT1379, and MT1389. (Rhyne, Tr. at 1172, 1195; DiEuliis, Tr. at 1824-26.)

infringement of claims 1 and 7 in issue. (RBr at 155-64.)¹⁶

The staff argued that the accused chips do not infringe claims 1 and 7. (SBr at 57-60.)

Under the provisions of 35 U.S.C. § 271, liability for infringement arises if “whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor.” 35 U.S.C. § 271(a). This infringement of a patented invention is the usual meaning of the expression “direct infringement.” See Joy Techs., Inc. v. Flakt, Inc., 6 F.3d 770, 773 (Fed. Cir. 1993).

A determination of infringement requires a two-step analysis. First, the patent claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process. Zelinski v. Brunswick Corp., 185

¹⁶ The respondents have stipulated that incorporation of the accused chips into the player products of respondents do not materially change the structure and/or function of the accused chips so as to make a theretofore infringing chip non-infringing; that the accused chips are designed to operate in a DVD player, and MediaTek actually intends for its customers to use the accused chips; that the accused chips are specifically made and adapted for use in DVD players, and are not staple articles of commerce suitable for uses other than as described; and that accused chips means any optical disk controller chip or chipset manufactured by or on behalf of MediaTek, regardless of whether labeled as a product of MediaTek or a product of some other company. (CX-465, CX-466.) Thus, in the August 9 and August 18, 2004 Stipulations Regarding Products Containing Optical Disk Controller Chips and Chipsets Including DVD Players and PC Optical Storage Devices, each of the respondents other than MediaTek stipulated that “the structure and function of [any MediaTek chip accused of infringing the ‘527, ‘440 or ‘736 patents] is not materially changed when it is placed in any product [manufactured or sold] by ASUSTek, Jiangsu Shinco, Lite-On I.T., Mintek, Shinco International, TEAC, TEAC America, Terapin, Terapin Technology, ASUS Computer, International, Audiovox Corporation, EPO Science & Technology Corp., Initial Technology, Inc., Micro-Star International Co., Ltd., MSI Computer Corp., Changzhou Shinco Digital Technology, Artronix Technology, Inc. and Ultima Electronics Corp. (collectively ‘the Manufacturer/Distributor Respondents’).” (CX-465, CX-466.) Accordingly, if any of the MediaTek chips are found to infringe the asserted patents, the products which contain accused MediaTek chips which are imported, sold for importation or sold after importation by any of the respondents would also infringe the asserted patents. (Id.)

F.3d 1311, 1315 (Fed. Cir. 1999), citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995). Whereas claim construction is a matter of law and, therefore, the exclusive province of the court, “whether a claim encompasses an accused device, either literally or under the doctrine of equivalents, is a question of fact.” Zelinski, 185 F.3d at 1315, citing N. Am. Vaccine, Inc. v. Am. Cyanamid Co., 7 F.3d 1571, 1574 (Fed. Cir. 1993).

To prove literal infringement, the patentee must show that the accused device contains every limitation in the asserted claims. WMS Gaming Inc. v. Int’l Game Tech., 184 F.3d 1339, 1350 (Fed. Cir. 1999), citing Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1211 (Fed. Cir. 1998). An accused device that does not literally infringe a claim may nonetheless infringe under the doctrine of equivalents if differences between the accused device and the claimed invention are “insubstantial.” Desper Prods. Inc. v. QSound Labs, Inc., 157 F.3d 1325, 1338 (Fed. Cir. 1998). Equivalency of a claimed element to an element of an accused device is determined on an element-by-element basis at the time of infringement. Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 40 (1997).

The explicit language of claims 1 and 7 requires that the controller comprise (include) a memory subsystem. (CX-1, col. 10, ln. 41 - col. 11, ln. 37 (“the controller comprising . . . a memory subsystem”); col. 13, lns. 1-30 (“the controller comprising . . . a memory subsystem”). The administrative law judge has found supra that the claimed memory subsystem is a portion within the claimed controller consisting of a common memory resource for storing processed and corrected data that includes, inter alia, a single memory cell comprised of multiple 1-bit storage elements (and thus not limited to one-bit only) coupled to the memory data output register and the memory data input register (claim 1) or coupled to the signal processor (claim 7).

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Based on the foregoing, the administrative law judge finds that the accused chips do not have a single memory cell within the controller that is used for performing error correction and detection on CD and DVD data but rather utilize a combination of an{

}to store the CD and DVD data during processing. Hence, he finds that complainants have not established that the accused chips literally infringe the '736 patent.

Complainants also argued that the accused chips infringe claims 1 and 7 under the doctrine of equivalents. (CBR at 147-48.)

The staff argued that the memory subsystem element was added to claims 1 and 7 to overcome a rejection by the Examiner to secure issuance of the claims. Hence, it argued that complainants are estopped from making a doctrine of equivalents argument for this claim element. (SBr at 59-60.)

Respondents argued that complainants cannot assert the doctrine of equivalents to

establish infringement with respect to the following claim elements: “single memory cell,” “a memory subsystem,” “memory data input and output registers” and “coupled,” because the entire memory subsystem limitation of claims 1 and 7 was added during prosecution in response to a prior art rejection to gain allowance of the asserted claims. (RBr at 164-66.)

The Supreme Court has held that, while a patentee has the right to appeal an Examiner’s rejection of claims, the patentee’s decision to forego an appeal and submit amended claims is taken as a concession that the invention as patented does not encompass the original claim. Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722 (2002). In a Final Office Action on November 30, 2001 involving the prosecution of the ‘736 patent, the Examiner did reject all pending eighteen claims in the application that would become the ‘736 patent as obvious over the admitted prior art in combination with U.S. Patent No. 6,263,023 to Ngai stating that “Ngai teaches a decoding apparatus having a parallel interface for receiving coded data from a CD and a DVD and for transmitting the coded data to a MPEG decoder through a plurality of parallel data lines,” and that “[i]t would have been obvious to one of ordinary skill in the art to modify the admitted prior art with Ngai by using the parallel interface taught by Ngai ... for providing ... data format from CD ... through parallel date to the MPEG decoder.” (RX-210 at ZC 000345-3490.) Rather than appeal the rejection, the applicants filed an amendment on January 4, 2002, canceling claims 5-7 and 13-15, and amending claims 1, 8-10 and 16-18. Each of amended claims 1, 8 and 10 included “a memory subsystem” claim limitation requiring “a single memory cell” element similar to the limitation added to claims 5 and 9 in the preceding amendment of September 21, 2001. Furthermore, the “memory subsystem” in each of amended claims 1, 8, 9 and 10 was limited to require read and write first-in-first-out (FIFO) buffers

coupled in a specific manner. Amended claims 1, 8 and 10 were further limited to a “require error code correction and detection subsystem,” coupled in a specific manner. Also, amended claims 1 and 9 were limited by requiring both “memory data input registers” and “memory data output registers” coupled in a particular manner. In addition, amended claims 8 and 10 were further limited by requiring that an MPEG (FIFO) buffer/interface be coupled to the parallel interface claim element. The applicants did not explain what they meant by the added claim limitations. (RX-210 at ZC 000353-371). Thus pending claim 1 was amended to add the entire memory subsystem found in issued claim 1. Pending claim 10 (which issued as claim 7) was also amended to add the entire memory subsystem found in issued claim 7. Significantly applicants stated in their response to the Final Office Action that pending “[c]laims 1, 8-11, and 16-18 [issued claims 1, 5-8 and 10-12] have been amended to incorporate language that the Applicant believes distinguishes the claims over the cited prior art references under § 102 and § 103.” (RX-210 at ZC000362.) No other explanation was provided.

A narrowing claim amendment made to avoid prior art creates a presumption that the patentee surrendered the territory between the original claims and the amended claims. Festo, 535 U.S. at 741. The administrative law judge finds that the addition of the entirely new groups of elements to the claims, including a single memory cell, narrowed them. Moreover, applicants acknowledged that the amendments were made for the purpose of distinguishing over the prior art. (See RX-210 at ZC 000362.) Thus, the administrative law judge finds that complainants are estopped from asserting the doctrine of equivalents to establish infringement.

D. Validity

1. Prior Art

35 U.S.C. § 102 provides that a person is entitled to a patent unless, inter alia:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in the public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or...

* * *

(e) The invention was described in- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, ... or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, ... ; or

(f) he did not himself invent the subject matter sought to be patented; or ...

(g)(2) before such person's invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Patent claims are entitled to a strong presumption of validity and each claim of a patent is presumed valid independently from the validity of other claims. 35 U.S.C. § 282; see Robotic Vision Sys., Inc. v. View Eng'g, Inc., 189 F.3d 1370, 1377 (Fed. Cir. 1999); Continental Can Co. v. Monsanto Co., 948 F.2d 1264,1266-67 (Fed. Cir. 1991).

As issued patents are afforded a strong presumption of validity, a respondent seeking to invalidate a patent with anticipatory prior art per section 102(a), or 102 (g) must do so by clear

and convincing evidence. See, e.g., Innovative Scuba Concepts, Inc. v. Feder Indus., Inc., 26 F.3d 1112, 1115 (Fed. Cir. 1994). Moreover,

While a patentee may have the burden of going forward with rebuttal evidence once a challenger has presented a prima facie case of invalidity, the presumption of validity remains intact and the ultimate burden of proving invalidity remains with the challenger throughout the litigation. The role of the trial court is to determine whether the challenger has carried its burden, and it requires full consideration of all relevant evidence, including that presented in rebuttal.

Id. (citations omitted); see Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1375 (Fed. Cir. 1986). For example, if a respondent established that a section 102(a) prior art reference was known before the filing date and that the reference disclosed each and every limitation of the claimed invention, the patentee would have the opportunity to present rebuttal evidence that the inventor invented the subject matter of the invention before the reference pursuant to the priority of invention rules in Section 102(g). See Markurkar v. C.R. Bard, Inc., 79 F3d 1572, 1576-77 (Fed. Cir. 1996).

To prove anticipation under section 102 (a), a respondent must establish that the prior art involved each and every limitation of the claim in issue. Glaxo Inc. v. Novopharm Ltd., 52 F.3d 1043, 1047 (Fed. Cir. 1995). With respect to inherent disclosures of a prior art reference, the Federal Circuit has commented:

To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.

* * *

This modest flexibility in the rule that ‘anticipation’ requires that every element of the claims appear in a single prior art reference accommodates situations where the common knowledge of technologists is not recorded in the reference; that is where technological facts are known to those in the field of the invention, albeit

not known to judges.

Continental Can, 948 F.2d at 1268-69 (citations omitted); see Scripps, 927 F.2d at 1576.

Section 102(g) of the patent statute defines the “prior invention” category of prior art. A prior art device can anticipate a claimed invention “if it was conceived and reduced to practice prior to the filing date of the patent.” Sandt Tech., Ltd. v. Resco Metal and Plastics Corp., 264 F.3d 1344, 1350 (Fed. Cir. 2001). As with Section 102(a) prior art references, the prior invention must include “all elements of a claimed invention arranged as in that [asserted] claim.” Id.

With respect to witness testimony of priority under § 102(a), or a prior invention under § 102(g), courts require that such testimony be corroborated by other evidence, such as physical or documentary exhibits. See, e.g., Juicy Whip v. Orange Bang, Inc., 292 F.3d 728, 743 (Fed. Cir. 2002) (concluding testimony of six “inter-connected” witnesses corroborated by single document did not constitute clear and convincing evidence to invalidate for prior public knowledge); Finnigan Corp. v. Int’l Trade Comm’n, 180 F.3d 1354, 1367 (Fed. Cir. 1999) (reversing invalidity determination and finding oral testimony of uninterested witness, by itself, insufficient to establish prior public use under § 102(b)); Woodland Trust v. Flowertree Nursery, 148 F.3d 1368, 1373 (Fed. Cir. 1998) (determining uncorroborated testimony of four witnesses insufficient to invalidate patent for prior public knowledge and use per 102(a)). Documentary or physical evidence “that is made contemporaneously with the inventive process provide the most reliable proof that the inventor’s testimony has been corroborated.” Sandt Tech., Ltd., 264 F.3d at 1350-51, citing Woodland Trust, 148 F.3d at 1373. Aside from the corroboration requirement, the Federal Circuit has endorsed a list of factors to consider when assessing the credibility of oral testimony regarding potentially invalidating prior art. Juicy Whip, 292 F.3d at 741, citing In re

Reuter, 670 F.2d 1015, 1021 n.9 (C.C.P.A. 1981). Said factors include:

(1) delay between event and trial, (2) interest of witness, (3) contradiction or impeachment, (4) corroboration, (5) witnesses' familiarity with details of alleged prior structure, (6) improbability of prior use considering state of the art, (7) impact of the invention on the industry, and (8) relationship between witness and alleged prior user.

Juicy Whip, 292 F.3d at 741.

Obviousness under 35 U.S.C. § 103 is evaluated under the so-called Graham factors: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness.

Graham v. John Deere Co., 383 U.S. 1, 17 (1966). When combining references in an attempt to show obviousness, the accused infringer must make "a showing of a suggestion, teaching, or motivation to combine the prior art references." Brown & Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1124-25 (Fed. Cir. 2000).

To prove obviousness, a respondent must establish that "there is a reason, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the references, and that would also suggest a reasonable likelihood of success." Smiths Indus. Medical Sys., Inc. v. Vital Signs, Inc. 183 F.3d 1347, 1356 (Fed. Cir.); see also United States Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1564 (Fed. Cir. 1997). The "references in combination must suggest the invention as a whole." In the Matter of Certain ERPROM, EEPROM, Flash Memory, and Flash Microcontroller Semiconductor Devices and Products Containing Same, Inv. No. 395, Final, Init. and Recommended Determinations, (Mar. 19, 1998). In the absence of a suggestion to combine references," one can do no more than piece the invention together using the patented invention as a template; such hindsight reasoning is

impermissible.” Id. at 140-41 (citations omitted). Furthermore, the Federal Circuit has held that not only must a motivation to combine the references exist but the motivation must be directed toward combining prior art references in the particular manner claimed. See In re Kotzab, 217 F.3d 1365, 1371 (Fed. Cir. 2000); In re Rouffet, 149 F.3d 1350, 1357 (Fed. Cir. 1998). The patent challenger “must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the invention, would select elements from the cited prior art references for combination in the manner claimed.” Rouffet at 1357. (emphasis added).

Respondents argued that claims 1 and 7 of the ‘736 patent are invalid as anticipated or obvious in view of “numerous prior art references.” The numerous prior art references are U.S. Patent No. 6,167,551 to Nguyen (the ‘551 patent), Cirrus Logic’s CR3700/CR3710, chips, and Sony’s C600D players. (RBr at 170-184.)

Complainants argued that respondents failed to meet their burden of establishing, by clear and convincing evidence, invalidity. It is argued that the ‘551 patent does not disclose the memory subsystem or parallel interface of claims 1 and 7; that the Cirrus Logic (CL) CR3700 and 3710 do not anticipate the asserted claims of the ‘736 patent because there is no evidence showing an actual reduction to practice, but rather the evidence proves near complete inaction in bringing the supposedly complete invention to the public and because respondents completely ignore the significant gaps in the evidence on which their anticipation case rests; and that the evidence failed to show that Sony’s C600D player was publicly available in the United States as required by 35 U.S.C. § 102(b) and/or that it would be obvious to use{ }with the Sony C600D. (CRBr at 104-113.)

The staff argued that under the “proper construction” of the claims in issue, the references

relied on by respondents do not anticipate or make obvious the asserted claims. (SRBr at 57-58.)

It is a fact that respondents admitted that the '551 patent does not disclose a single error correction and detection subsystem. (See RX-784.) Thus, respondents' RPF 2115 reads:

The Nguyen '551 patent discloses both CD and DVD error correction but does not disclose that these are performed by a single subsystem. (DiEuliis Tr. 1962-1963; RDX-91; RX-784 at Abstract, col. 1, lns. 29-30, Figure 1, col. 2, lns. 43-59, Figure 3, col. 3, lns. 25-32, col. 3, lns. 35-49, col. 5, lns. 23-25, Figure 4, col. 8, lns. 8-10, Figure 6, col. 8, lns. 15-24, col. 8, lns. 37-40, col. 9, lns. 3-8, col. 9, lns. 44-50, Figure 8, col. 10, lns. 29-11, Figure 9, col. 12, lns. 12-14, col. 12, lns. 47-52, Claims 1, 14-16).

The administrative law judge has found, supra, that the proper construction of "error code correction and detection subsystem" in claim 1 means a single subsystem that performs all error correction and detection on two different formats of data (i.e., in a first format and in a second format) and in claim 7 means single subsystem that performs all error correction and detection on CD and DVD data. Hence, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that the '551 patent anticipates or makes obvious asserted claims 1 and 7.

Respondents' expert DiEuliis testified regarding the CL CR3700/3710 chips and specifically CX-1592C, which was identified as the "Cirrus Logic CR3700 Rembrandt - Product Overview."{

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{ } Thus, assuming arguendo it has been established that the invention involving said chips had been conceived and reduced to practiced in the United

States, as required by 35 U.S.C. § 102(g)(2), and assuming arguendo that there was evidence that the MPEG interface worked,¹⁷{

} (See Section V.B.7., supra (construing memory subsystem limitation of claims 1 and 7). Hence, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that said chip anticipates or makes obvious asserted claims 1 and 7.

Referring to the Sony C600D players relied on by respondents, respondents' expert DiEuliis testified:

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¹⁸ Hsu is a named inventor on the '736 patent. (CX-1.)

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{ } The administrative law judge finds the above testimony of DiEuliis establishes that the Sony C600 D player does not{

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In addition, while DiEuliis testified that complainants' expert Rhyne believed that the Sony C600D player could be combined with another reference to create the claimed element, Rhyne's testimony indicates that it would not have been obvious:

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} Hence, the administrative law judge finds that respondents have not established, by clear and convincing evidence, and assuming arguendo that Sony's C600D player was publicly available in the United States as required by 35 U.S.C. §102(a), that the claimed subject matter in issue would be anticipated and/or made obvious by Sony's C600D player.

2. 35 U.S.C. §112

Respondents argued that the asserted claims of the '736 patent are invalid because (1) the '736 patent fails to comply with the best mode requirement of 35 U.S.C. §112 and (2) the asserted claims are indefinite and/or not supported or enabled by the specification of the '736 patent. (RBr at 185-86.)

Each of complainants and the staff argued that respondents have not shown, by clear and convincing evidence, that the '736 patent is invalid under 35 U.S.C. § 112. (CRBr at 115-16; SBr

at 77-78.)

“A patent specification shall contain a written description of the invention.” 35 U.S.C. § 112. This includes “the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same.” Id.

The Federal Circuit has explained this requirement as follows:

The purpose of the ‘written description’ requirement is broader than to merely explain how to ‘make and use’; the applicant must also convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the ‘written description’ inquiry, whatever is now claimed.

Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991) (emphasis in original).

In addition the second paragraph of 35 U.S.C. §112 reads:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The primary purpose of the definiteness requirement is “to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent . . .” Oakley, Inc. v. Sunglass Hut Int’l, 316 F.3d. 1331, 1340 (Fed. Cir. 2003). A decision as to whether a claim is invalid under this provision requires “a determination whether those skilled in the art would understand what is claimed.” Amgen, Inc. v. Chugai Pharm, Co., 927 F.2d 1200, 1217 (Fed. Cir. 1991). It is well-settled law that “claimed subject matter ‘need not be described in haec verba’ in the specification to satisfy the written description requirement.” University of Rochester v. G.D. Searle & Co., 375 F.3d 1303, 1326 (Fed. Cir. 2004), quoting In re Smith, 481 F.2d 910, 914 (CCPA 1973). Written description is a question of fact, namely, whether the disclosure allows “one skilled in the art to visualize or recognize the

identity of the subject matter purportedly described.” Rochester, 358 F.3d 916, 923, quoting Enzo Biochem Inc. v. Gen-Probe, Inc., 323 F.3d 956, 968 (Fed. Cir. 2002).

The purpose of the enablement requirement of 35 U.S.C. § 112, first paragraph, is to ensure that the inventor provides sufficient information about the claimed invention so that a person of ordinary skill in the art at the time could make and use the invention without undue experimentation. PPG Indus., Inc. v. Guardian Indus. Corp., 75 F.3d 1558, 1563-65 (Fed. Cir. 1996). A specification must enable a person skilled in the art to practice the invention as broadly as it is claimed. In re Goodman, 11 F.3d 1046, 1050 (Fed. Cir. 1993). The enablement requirement does not forbid all experimentation in order for a person to practice the claimed invention, but it does forbid “undue experimentation.” National Recovery Technologies, Inc. v. Magnetic Separation Systems, Inc., 166 F.3d 1190, 1197 (Fed. Cir. 1999). Whether certain experimentation is undue is a legal question that depends on the underlying facts of each case. Id.

An enabling specification must provide the novel aspects of the invention, but does not have to describe information that was well known to one skilled in the art. Genentech, Inc. v. Novo Nordisk A/S, 108 F.3d 1361, 1366 (Fed. Cir. 1997). A person of ordinary skill in the art is deemed to have at least the basic knowledge of the art pertaining to the invention, knowledge of well-known English text books, and knowledge of U.S. patents. In re Howarth, 654 F.2d 103, 106 (CCPA 1981). Every patent has a presumption of validity, including the presumption that the patent complies with the requirements of §112. National Recovery Technologies, 166 F.3d at 1195. The challenger must prove invalidity for lack of enablement by clear and convincing evidence. Id.

A patentee must disclose in the specification his or her best mode contemplated for practicing the invention. See 35 U.S.C. §112, ¶1. The best mode requirement “creates a statutory bargained-for exchange by which a patentee obtains the right to exclude others from practicing the claimed invention for a certain time period, and the public receives knowledge of the preferred embodiments for practicing the claimed invention.” Teleflex, Inc. v. Ficosa N.A. Corp., 299 F.3d 1313, 1330 (Fed. Cir. 2002), citing Eli Lilly & Co. v. Barr Labs., Inc., 251 F.3d 955, 963 (Fed. Cir. 2001). To prove that a patent is invalid for failure to disclose the best mode, a respondent must establish, by clear and convincing evidence, that at the time the patent application was filed an inventor knew of yet concealed a better mode for carrying out the claimed invention than what is disclosed in the specification. Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d at 1313, 1330 (Fed. Cir. 2002).

Determining whether a patentee satisfied the best mode requirement is a two-pronged inquiry. Teleflex, 299 F.3d at 1330; Bayer AG v. Schein Pharmaceuticals, 301 F.3d 1306, 1320 (Fed. Cir. 2002). The first prong is subjective, focusing on the inventor’s state of mind at the time the application was filed and considers whether the inventor then possessed a best mode for practicing the invention. Teleflex, 299 F.3d at 1330; Bayer, 301 F.3d at 1320, quoting Eli Lilly & Co., 251 F.3d at 963. The second prong is objective and considers whether the inventor adequately disclosed his best mode, which is dependent on the scope of the invention and the level of skill in the art. Bayer, 301 F.3d at 1320, quoting N. Telecom Ltd v. Samsung Elec. Co., 215 F.3d 1281, 1286 (Fed. Cir. 2000). The Federal Circuit has cautioned that an “analysis of compliance with the best mode requirement must begin and remain focused on the language of the claim.” Teleflex, 299 F.3d at 1329-30 (emphasis added); see Bayer, 301 F.3d at 1319

(concluding that Federal Circuit precedent finding best mode violation centers on a failure to disclose a preference for carrying out the claimed invention).

Respondents, in support of their best mode allegation, argued that according to inventor Tsu, who was responsible for the ECC subsystem of the '736 patent, his best mode for implementing the claimed error code correction and detection subsystem was to use the Chien algorithm for performing error correction and detection on MPEG2 encoded (or DVD) data; that neither the Chien algorithm nor any other details relating to the implementation of the claimed error correction and detection subsystem are disclosed in the '736 patent; that the '736 patent does not include any description of Tsu's best mode, much less a description that is sufficient to enable a person skilled in the art to practice that best mode; and that in addition, none of the articles or CD, CD-ROM, or DVD specifications that Inventor Tsu reviewed describe how to implement the single ECC subsystem that Inventor Tsu described.

The record establishes that Tsu designed shared circuitry for CD error code correction and DVD error correction (JX-12C (Tsu Depo.) at 186; CX-1, col. 7, lns. 38–54, Figure 4); and that the specification of the '736 patent discloses the concept Tsu developed related to combining the error code correction and detection system for CD data and DVD data. (JX-12C at 103, 209.) Thus, in the invention of the '736 patent, the controller chip integrates read channel functions, servo system, CD-DSP preprocessor, DVD-DSP preprocessor, ECC function, and an interface to the optical disc. (Chen, Tr. at 798; see CX-1.) Also in claim 1, the memory data input register is coupled to a read first-in-first-out buffer that is coupled to the error code correction and detection system. (CX-1.) In claim 7, the single memory cell is coupled to the error code correction and detection system, which must participate in the processing of both CD and DVD data. (CX-1.)

The '736 patent is not a patent on ECC. (Chen, Tr. at 857.) One could go to a standard bookstore and find all the relevant books on ECC. (Chen, Tr. at 854.)

To determine which algorithm to use for the ECC, Tsu testified that one must calculate the performance after creating a prototype. (JX-12C at 247–50; Chen, Tr. at 857; RX-784.) The record indicates that Tsu never determined whether or not to use the Chien algorithm for the ECC (JX-12C at 247–50; Chen, Tr. at 857; RX 784); that as of the time Tsu finished his project, he had not decided which was the approach: the “brutal” force approach, or the Chien algorithm approach (JX-12C at 247–50); and that the detailed algorithm had not been confirmed. (Chen, Tr. at 854.)

Based on the foregoing the administrative law judge finds that respondents have not established, by clear and convincing evidence, that the '736 patent is invalid for failure to disclose the best mode.

Respondents, in support of their indefiniteness/enablement allegation, argued that the '736 specification does not use the term “single memory cell,” “memory cell,” or even “cell” and thus does not provide a unique meaning for “single memory cell”; that the '736 patent does not teach how to make an operative device within the scope of claims 1 and 7 employing a single memory cell; that the parallel interface element of claim 1 claims a “parallel interface that receives corrected data on a parallel bus interface”; and that the reference to a “parallel interface” that receives data on a “parallel bus interface” is confusing and would not make sense to a person skilled in the art of the '736 patent. (RBr at 185-86.)

The administrative law judge finds that the record establishes that respondents' expert DiEuliis testified that construing “single memory cell” to mean “shared memory” would read on

Figure 5 of the '736 patent and that the system would work. (DiEuliis, Tr. at 2255–56; see CX-1, Figure 5.) Complainants' expert Rhyne testified that "single memory cell" means "shared memory," which is consistent with Fig. 4 of the '736 patent and which in application to the claims means that if memory is used in processing both CD and DVD data, it is "shared memory" and meets the limitation of "single memory cell." (Rhyne, Tr. at 1169-70, 1444-46; see also Chen, Tr. at 802 (testifying that Figure 4 depicts a "single memory block").) Moreover, the '736 patent specification discloses sharing memory. Thus, it discloses that the controller performs servo control operations, data processing and error detection and correction operations for CD data and DVD data, and provides shared memory resources for internal operations of the controller; that "the memory subsystem within the DVD/CD controller provides a common memory resource for the subsystems of the DVD/CD controller such as CD-DSP, DVD-DSP, and error code correction and detection subsystem and the memory subsystem thus provides sharing of memory resources among the subsystems and as a result reduces the number of memory chips required for audio and video processing"; and "that unlike conventional playback systems which include redundant memory resources as depicted in FIG. 1, memory subsystem 102 provides a common memory resource for processing performed by CD-DSP preprocessor 92, DVD-DSP preprocessor 94 and ECC subsystem 96, and that by allowing sharing of memory resources between preprocessors 92 and 94, and ECC subsystem 96, DVD/CD controller 62 reduces the number of memory chips required for audio and video processing." (Rhyne, Tr. at 1098–1100; CX-1, abstract, col. 4, lns. 31–38, col. 7, lns. 53–64, col. 8, lns. 1, Figure 4; CDX-41.) The administrative law judge finds further that in describing the invention and the preferred embodiment, the '736 patent specification describes the use of a shared memory for

processing CD and DVD data. (CX-1; CDX-41; Rhyne, Tr. at 1121-24.)

As for the terms “parallel interface” and “parallel bus interface,” claim 1 contains the term “parallel bus interface” and the parallel interface of claim 1 receives the corrected data on a parallel bus interface. (CX-1.) With the “parallel interface” of claims 1 and 7, the interface is used to transfer corrected data to the MPEG decoder. (CX-1.) The administrative law finds that the record establishes that the inventors on the ‘736 patent provided a pathway to the MPEG decoder that is used in parallel for both CD and DVD data (CDX-40; CDX-51; Rhyne, Tr. at 1099, 1120–21; Chen, Tr. at 804–05); that this parallel interface is referred to in the specification of the ‘736 patent which indicates that CD data is transmitted in parallel along the path (CDX-42; CX-1, col. 4, lns. 2–6, col. 9, ln. 66 - col. 10, ln. 5; Rhyne, Tr. at 1100–02); that the parallel interface actually is one of the improvements in the ‘736 patent which interface uses parallel bus, parallel data line for DVD data, and also uses parallel data line for CD data (Chen, Tr. at 804); and that the ‘736 patent specification discloses: “MPEG interface 104 reads CD or DVD data directly from memory subsystem 102 on to a single parallel bus and forwards the data via the parallel bus to MPEG decoder 40 using proper handshaking. In a specific embodiment, MPEG interface 104 provides a 8-bit parallel interface to MPEG decoder 40.” (CX-1, col. 9, lns. 11–16.)

Based on the foregoing, the administrative law judge finds that DiEuliis’s conclusionary testimony that the ‘736 patent specification does not provide any description of the single memory cell elements of claims 1 and 7 and that the reference to the parallel interface element is confusing is not supported by the record. Hence, he finds that respondents have not established, by clear and convincing evidence, their indefiniteness and/or enablement allegations.

E. Enforceability

Respondents argued that Oak's prosecuting attorneys in the prosecution of the application that matured into the '736 patent intentionally withheld three material references, viz. the Cirrus CR3700 Integrated DVD/CD Controller Chip (CX-1592C, RX-619C¹⁹), a data sheet related to ZiVA MPEG decoders (CX-1593), and an excerpt related to ZiVA MPEG decoders (CX-1594).

Complainants argued that respondents failed to meet their heavy burden of establishing all three prongs of the relevant test for establishing unenforceability: (1) that the inventor(s) or attorney(s) knew of the cited references; (2) appreciated their materiality; and (3) intended to deceive the Patent Office by withholding those references during prosecution of the '736 patent. (CBr at 163-169.)

The staff argued that while respondents alleged that the '736 patent is unenforceable due to the patentee's allegedly intentional withholding of high-level documentation for Cirrus Logic's CL3700 product, and the ZiVA-DS and ZiVA-D6t products, which documentation was produced in this investigation by the law firm that prosecuted the '736 patent, the prosecuting attorneys credibly testified that they had never seen said documentation in the prosecution file. The staff also argued that while inventors Hsu and Chen were aware of the ZiVa decoder chips, inventor Chen testified at trial that he viewed the ZiVa interface to be the same type of serial interface that is disclosed in the '736 patent at col. 3, lns. 38-40 and that there is no evidence that any of the inventors ever knew about the Cirrus Logic chip. Hence, the staff argued that respondents have not shown, by clear and convincing evidence, that the '736 patent should be

¹⁹ Each of CX-619C and CX-1592C consists of the same four presentation slides relating to the Cirrus Logic CR3700 Rembrandt, which bear the production numbers OTI 011473-76. (See CX-619C; CX-1592C.)

held unenforceable for inequitable conduct. (SRBr at 58-60.)

To establish unenforceability due to inequitable conduct, a respondent must prove, by clear and convincing evidence, that a patentee failed to disclose material information during prosecution of the patent with an intent to mislead the PTO. Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc., 326 F.3d 1226, 1233 (Fed. Cir. 2003). Within the context of an inequitable conduct analysis, “[i]nformation is deemed material if there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a part.” Brasseler, U.S.A. I.L.P. v. Stryker Sales Corp., 267 F.3d 1370, 1380 (Fed. Cir. 2001); accord Baxter Int’l Inc. v. McGaw, Inc. 149 F.3d 1321, 1327, (Fed. Cir. 1998). In a case involving an omission of a material reference to the PTO, there must be clear and convincing evidence that the applicant made a deliberate decision to withhold a known material reference.” Baxter Int’l, Inc., 149 F.3d at 1329, citing Molins PLC v Textron, Inc., 48 F.3d 1172, 1181 (Fed. Cir. 1995).

The ‘736 patent discloses that a distinction over the prior art was that the invention included a unique parallel interface for transferring both CD and DVD data from the CD/DVD controller to an external MPEG decoder. (See, e.g., CX-1, col. 4, lns. 2-6.) The administrative law judge has found that a proper construction of the claimed term “parallel interface” means a plurality of data lines, not limited to a single set of a plurality of data lines, used to transfer corrected data simultaneously over said data lines (i.e., in parallel) to the MPEG decoder, said parallel interface capable of transferring data in a first or second format (claim 1) or data from a DVD or CD (claim 7). In contrast, the ZiVA references depict the transmission of CD data in serial and not the parallel transfer of CD data (Chen, Tr. at 809-11; Rhyne, Tr. at 3365-70; JX-

12C at 305-06, 356-57; see CX-1593; CX-1594.) Thus, the administrative law judge finds that the ZiVA references were not material to the prosecution of the '736 patent.

Referring to the Cirrus CR3700 Integrated DVD/CD Controller Chip, the administrative law judge has already found that the reference, assuming it was properly cited as a 35 U.S.C. §102 reference, did not anticipate or make obvious the asserted claims. Thus, he finds that said reference was not material to the prosecution of the '736 patent.

In addition, there is testimony of the inventors on the '736 patent that none of them even recalled seeing the{

} Also as inventor Chen credibly testified,

{

}

(Chen, Tr. at 885.)

Respondents argued that the prosecuting attorneys made contradicting statements in the prosecution and intentionally withheld the references in issue, from the Patent Office. However, the administrative law judge finds that the respondents have not established, by clear and convincing evidence, that the prosecuting attorneys were aware of the cited references at the time any alleged contradictory statements were made. Thus, there is sworn credible hearing testimony that prosecuting attorney Steven Cahill began working on the application that matured into the '736 patent in the spring or summer of 2001 (Cahill, Tr. at 1503); that after receiving the '736 prosecution file in the fall of 2001, he reviewed the file and did not locate any undisclosed

references (Cahill, Tr. at 1527); that he had not seen CX-1592C (CX-619C) prior to his deposition in this investigation (Cahill, Tr. at 1514; CX-1592C); that he had not seen CX-1594 prior to his deposition (Cahill, Tr. 1518; CX-1594); and that he had not seen CX-1593 prior to his deposition (Cahill, Tr. at 1518-19; CX-1593). The administrative law judge further finds sworn credible testimony that prosecuting attorney Kotwal did not recall whether he had received CX-1592C (CX-619C), the Cirrus Logic Product Overview, at the time he was working on the '736 patent application or at any time prior to his deposition (Kotwall, Tr. at 1566-67, 1578, 1599; CX-1592C), and that he did not recall whether he had received CX-1593 or CX-1594 at the time he was working on the '736 patent application or prosecuting prior to his deposition (Kotwall, Tr. at 1566-1567, 1583, 1589, 1590, 1591; CX-1593; CX-1594.) The administrative law judge finds the testimony of Cahill and Kotwal credible and further finds no indication in the testimony of an intent to deceive the Patent Office. In addition, there is deposition testimony of prosecuting attorney Kanzaki who, in the prosecution of the '736 patent, wrote a response to an office action. (JX-9C (Kanzaki Depo.) at 20-23.) Prosecuting attorney Kanzaki did not recall seeing or not seeing CX-1592C, CX-1593 or CX-1594 in connection with the prosecution of the '736 patent information (JX-9C at 73-80.)

This administrative law judge recently found that inventors of a '928 patent committed inequitable conduct in withholding material prior art from the Patent Office with an intent to deceive. See Certain Audio Digital-To-Analog Converters And Products Containing Same, Inv. No. 337-TA-499, Final Initial Determination at 47-48 (November 15, 2004). The Commission, in its notice filed December 30, 2004, did not review the finding. The administrative law judge finds the underlying facts in Inv. No. 337-TA-499 in stark contrast to the underlying facts in this

investigation. Thus, while he found the withheld art material in Inv. No. 337-TA-499, he has found, supra, that the ZiVA art lacks the required parallel interface and that the {

} Moreover, he finds the record devoid of any evidence of an intent to deceive the Patent Office.

Based on the foregoing, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that the '736 patent is not enforceable.

IV. The '527 And '440 Patents

The '527 patent titled "Optical Drive Controller With A Host Interface For Direct Connection To An IDE/ATA Data Bus" (CX-2), a continuation of the application that issued as U.S. Patent No. 5,581,715 (the '715 patent), resulted from application no. 08/673,327 filed June 23, 1996. The '527 patent claims priority to the June 22, 1994 filing date of the '715 patent application. (CX-2.) The named inventors on the '527 patent are Phil Verinsky and Mike Case. (CX-2.) Said patent is assigned to complainant Oak. The claims at issue are independent claims 1-3, which are all the claims of the '527 patent.

The '440 patent resulted from application no. 09/442,866 which is a continuation of the '527 patent and also claims priority to the June 22, 1994 filing date of the '715 patent application. (CX-3.) It issued with 35 claims. The claims at issue are independent claims 1 and 14 and dependent claims 5, 7-8, 10, 19 and 21.²⁰

²⁰ Because the '527 and '440 patents are direct continuations of the '715 patent, the specifications of the '527 and '440 patents are essentially identical to the specification of the '715 patent. The '715 patent was the subject of In re CD-ROM Controllers and Products Containing the Same II, ITC Inv. No. 337-TA-409 (CD-ROM Controllers II). CD-ROM Controllers II, which involved complainant Oak and respondent MediaTek as the principal parties, proceeded to a full evidentiary hearing, an Initial Determination, and a final Commission Opinion (Publication No. 3251, October 1999). Ultimately, the Federal Circuit affirmed the

The art to which the '527 and '440 patents pertain is communication between mass storage devices and personal or host computers. (Buscaino, Tr. at 2572-73.²¹)

With respect to the '527 patent, claims 1, 2 and 3 in issue read:

1. An optical drive controller to control the communication of data between a storage medium in an optical drive device and a host computer via an IDE/ATA data bus, said data bus for receiving and transmitting data between said controller and said host computer, said optical drive device having drive electronics, said optical drive controller comprising:

a storage medium interface for receiving data from said storage medium;
data error detection and correction circuitry, said detection and correction circuitry including:
error correction circuitry for performing error correction on data received from said interface and generating corrected data, and
error detection circuitry for detecting errors in data prior to transmission to said host computer; and

a host interface connecting said host computer and said optical drive controller directly via an IDE/ATA data bus, said host interface operable to receive data addresses and commands from said host computer and transmit data to said host computer, and including an ATA command block register address at which to store sequentially contiguous bytes of command data, that are part of the same command, transmitted from the host computer in a single command transfer.

2. An optical drive controller to control the communica-

Commission's finding of no violation, based on noninfringement of the '715 patent. See Oak Technology, Inv. v. Int'l Trade Comm'n, 248 F.3d 1316 (Fed. Cir. 2001) (Oak Technology).

²¹ Dale Buscaino was qualified as an expert for respondents in the design and architecture of computer systems, including hardware, software, system architecture, as well as computer interfaces, including interfaces between peripheral and mass storage devices and personal computers. (FF 29.)

tion of data between a storage medium in an optical drive device and a host computer via an IDE/ATA data bus, said data bus for receiving and transmitting data between said controller and said host computer, said optical drive device having drive electronics, said optical drive controller comprising:

- a storage medium interface to receive data from said storage medium;

- data error detection and correction circuitry coupled to said storage medium interface, to provide error free data for transmission to said host computer; and

- a host interface connecting said host computer and said optical drive controller directly via an IDE/ATA data bus, said host interface including a data port operable to receive data addresses and commands from said host computer and transmit data to said host computer, a multibyte command packet buffer operable, per command, to store sequentially contiguous bytes of command information received through the data port in a single command transfer.

3. An optical drive controller to control the communication of data between an optical storage medium in an optical drive device and a host computer via an IDE/ATA data bus, said data bus operable to receive and transmit data between said optical drive controller and said host computer, wherein the improvement comprises:

- a host interface to connect said host computer and said optical drive controller directly via said IDE/ATA data bus, said host interface including an ATA register address at which to receive data addresses and commands from said host computer and transmit data to said host computer, and a multibyte command packet buffer operable to sequentially store a packet of contiguous bytes of command information received through the ATA register address in a single command transfer.

(CX-2.)

Referring to the '440 patent, claims 1, 5, 7, 8, 10, 13, 14, 19 and 21 in issue read:

1. An apparatus comprising:

a host interface in an optical drive controller, said host interface operable to be directly connection to a host computer via an IDE/ATA bus, said host interface including,

a multi-byte command buffer operable, per command, to store sequentially contiguous multiple command bytes received from said host computer in a single command transfer, the multi-byte command buffer addressed by one of a plurality of ATA command block register addresses,

a drive/head register addressed by another of said plurality of ATA command block register addresses, said drive/head register including a DRV bit, wherein said host interface uses said DRV bit to determine whether to store commands in said multi-byte command buffer,

a status register addressed by yet another of said plurality of ATA command block register addresses, said status register including a BSY bit, circuitry operable to alter said BSY bit, responsive to command events initiated by the host computer, to indicate said host computer is precluded from accessing said plurality of ATA command block register addresses,

circuitry operable to carry out initial signal transitions on DASP, PDIAG, and HIRQ lines of said IDE/ATA bus in response to soft reset and execute drive diagnostic command events, and

circuitry operation to clear the signal on the HIRQ line responsive to said host computer reading said status register; and

a path in said optical drive controller operable to allow a microcontroller, which controls reading of information

from optical media, to read from said multi-byte command buffer, to cause said BSY bit to be altered, to read said DRV bit, and to cause certain transitions of signals on said DASP, PDIAG, and HIRQ lines of said IDE/ATA bus.

5. The apparatus of claim 1, wherein said host interface supports all of the signals required by the ATA transfer protocol.

7. The apparatus of claim 1, wherein the one of said plurality of ATA command block register addresses that can be used to address the multi-byte command buffer is the address of a data port in the ATA transfer protocol.

8. The apparatus of claim 1, wherein said host interface also includes a multi-byte data buffer, addressed by the one of said plurality of ATA command block register addresses that can be used to address the multi-byte command buffer, operable to store data to be transmitted to said host computer.

10. The apparatus of claim 1, wherein said multi-byte command buffer is a queue or FIFO.

13. The apparatus of claim 1, wherein said host interface is also operable to assert signals on said DASP and PDIAG lines of said IDE/ATA bus responsive to power on reset or execute diagnostic commands received from said host computer.

14. An optical disk drive controller for an optical disk drive to control the communication of digital information between an optical disk inserted in the optical disk drive and a host computer, said optical disk drive including drive electronics comprising a digital signal processor, a random access memory, and a microcontroller, said host computer operable to communicate with the optical disk drive controller directly via an IDE/ATA bus according to the ATA transfer protocol, the ATA transfer protocol including a plurality of ATA command block register addresses, the optical disk drive controller comprising:

a host interface operable to be coupled to said IDE/ATA

bus and including,

a multi-byte command buffer, addressed by one of said plurality of ATA command block register addresses, operable, per command, to sequentially store multiple command bytes received contiguously from said host computer in a single command transfer.

a status register addressed by another of said plurality of ATA command block register addresses, said status register including a BSY bit that indicates when access by said host computer to said ATA command block register addresses is precluded, and

a multi-byte data buffer, addressed by the one of said plurality of ATA command block register addresses that can be used to address the multi-byte command buffer, operable to ensure an uninterrupted flow of data from said optical disk drive controller to said host computer; and

a path operable to allow said microcontroller to read said multi-byte command buffer and alter said BSY bit.

19. The apparatus of claim 14, wherein the one of said plurality of ATA command block register addresses that can be used to address the multi-byte command buffer is the address of a data port in the ATA transfer protocol.

21. The apparatus of claim 14, wherein said multi-byte command buffer is a queue or FIFO.

(CX-3.)

As indicated supra, the specifications of the '527 and '440 patents are essentially identical to the specification of the '715 patent. The Federal Circuit in Oak Technology described the technology involved with the '715 patent as follows:

The technology in this case concerns the transfer of information stored on a CD-ROM disk to a host computer, such as a typical personal computer. The acronym "CD-ROM" stands for "compact disk, read only memory." A host computer in the context of this case contains a CD-ROM drive itself contains a device known as a CD-ROM drive, which manages the communication of data

between the CD-ROM disk and the host computer. The CD-ROM drive itself contains a device known as a CD-ROM drive controller, typically implemented as a semiconductor integrated circuit ("IC" or "chip"). The invention described and claimed in the '715 patent relates to an improved CD-ROM drive controller which provides faster and simplified data communication.

As noted in the written description, before the invention claimed in the '715 patent, "[c]onventional CD drive designs support[ed] the Industry Standard Architecture (ISA) bus convention and require[d] the insertion of an interface card or host adapter card into an ISA input/output bus slot of the host personal computer." '715 patent, col. 1, ll. 60-63. By 1994, the filing date of the application that matured into the '715 patent, an alternative and improved bus structure known as the IDE/ATA interface (which stands for "integrated drive electronics with an AT attachment interface"), was widely available. '715 patent, col. 2, ll. 20-26. As noted in '715 patent, prior art CD-ROM drives had thus far failed to take advantage of the improved and widely available IDE/ATA standard bus structure:

Conventional CD drives in the prior art failed to make use of the IDE/ATA bus. However, now that the [IDE/ATA] standard has become widely used in many personal computer, it would be desirable to provide a CD drive with built-in controller functionality and a standard connector. This would obviate the need for an additional host adapter card and associated electronics.

'715 patent, col. 2, ll. 35-41. Accordingly, the '715 patent describes and claims such an improved CD-ROM controller which incorporates the IDE/ATA bus structure.

Oak Technology, 248 F.3d at 1318-19. As seen from the claims in issue of the '527 and '440 patents, said claims involve a controller providing a connection to an IDE/ATA bus structure.

A. Person Of Ordinary Skill In The Pertinent Art

The person of ordinary skill at the time of the claimed invention of the '527 and '440 patents would have had a bachelor's degree in either computer science or electrical engineering

or some related field. The person would also have 2-3 years of experience working with mass storage devices or other peripherals and their connection to personal computers. (Buscaino, Tr. at 2573.)

B. Claim Interpretation

In issue are several claimed phrases of the '527 and/or '440 patents.

1. The Claimed Phrases "Optical Drive Device" And "Optical Drive Controller"

The phrase "optical drive device" appears in each claim in issue of the '527 patent. The phrase "optical drive controller" appears not only in said claims of the '527 patent, but also in claims 1 and 14 of the '440 patent.

The staff argued that "optical drive device" should be given its plain meaning as a device for operating a disk that is written and read by laser light, and should not be limited to compact disks. (SBr at 13.) It is argued that "optical drive controller" is a device or group of devices to control data communications between a host computer and the optical disk drive electronics. (SBr at 15.)

Respondents argued that the correct interpretation of "optical drive controller," as found in claim 1 of the '527 patent, is a device or a group of devices to control data communications between a host computer and the optical disk drive electronics. (RBr at 24.) Respondents also argued that the term "controller" in the claims is defined by the limitations of the claims and that it is not dependent on whether all of the elements and limitations of a "controller" are in a single integrated chip. (RRCPPFF463.) It is further argued that the term "optical" would refer to CD or CD-ROM drives, but not DVD drives or other types of optical drives. (RRCPPFF440.) With respect to the '440 patent, it was argued that phrases in claim 1 of the '440 patent, such as

“optical” in the “preamble” of claim 1, should have the same construction as certain terms in the ‘527 patent.²² (RBr at 42.)

Complainants argued that the construction of “optical drive controller” concerns (1) whether the term “optical” necessarily limits the controller to the preferred embodiment and whether the “controller” can consist of a “group of devices” that includes both a controller and a translation device or translation circuitry external to the controller. (CBr at 15.) It is argued that the language of the asserted claims places no restriction on the type of “optical” controller or disc drive claimed. Complainants agreed with the staff’s proposed construction for “optical drive controller.” (CBr at 18.)

There is expert testimony that in the 1993-94 time frame, “optical,” as that term is used in “optical drive device” and “optical drive controller,” would refer to the usage of light as a mechanism for reading stored data, and that “optical drive device” would refer to a device operating a disk that is written and read by laser light. (Samuels, Tr. at 222-25; Buscaino, Tr. at 2583-84.) It is undisputed that DVD technology did not exist at the time of the inventions of the ‘527 and ‘440 patents. (Samuels, Tr. at 506-97; Buscaino, Tr. at 2583.) However, there is no express limitation in the claims to restrict optical drives to devices for CD-ROMs. Moreover, at the time of the invention, optical disks other than CD-ROMs were known in the art. (See SX-3, The Computer Glossary (5th ed. 1991) at 423.) Thus, the administrative law judge finds that optical disc (and correspondingly optical drive) had an ordinary and accustomed meaning in the art that was broader than just a CD-ROM. Accordingly, the administrative law judge finds that

²² The introductory portion of claim 1 of the ‘440 patent merely states: “[a]n apparatus comprising.” It thus appears that respondents are referring to language following the word “comprising.”

the proper interpretation of “optical drive device” is a device for operating a disk that is written and read by laser light, and is not limited to compact disks.

Referring to the term “optical drive controller,” the administrative law judge is interpreting “optical drive” consistent with the meaning given to “optical drive device,” supra. As for the word “controller,” the specification describes the invention as relating to a controller “to control the communication of digital information between a compact disk to a host computer.” (CX-2, col. 2, lns. 61-84; see also CX-2, col.1, lns 56-61 (disclosing that “all CD drive designs include a CD load mechanism, a spindle, drive electronics and a controller with the drive electronics recovering data from the CD as directed by the controller” and with the controller managing “the flow of commands, status flags and data between the host personal computer and the CD drive electronics”).) In addition, the preambles of claims 1 and 2 of the ‘527 patent use the term “drive electronics” as distinct from “optical drive controller.” Also Figures 1 and 2 of the ‘527 patent and the associated description distinguish between the CD drive controller and the drive electronics including RAM, DSP and microcontroller. (CX-2, col. 2, lns. 64-68, Figs. 1-2.) Hence, the administrative law judge finds that the proper construction for the claimed “controller” should include the function of controlling communications between a host personal computer and the drive electronics. The administrative law judge further finds that a person of ordinary skill in the art would not construe controller as restricted to a single device since there is nothing in the claim language, the specification, or the prosecution history that suggests the claimed controller must be a single device. Moreover, the common usage of “controller” at the time of the invention was not restricted to a single device. (See SX-3 at 138-39.) In view of the foregoing, the administrative law judge finds that the proper construction of

the claimed phrase “optical drive controller” is a device or group of devices to control data communications between a host computer and the optical disk drive electronics.

2. The Claimed Phrase “Storage Medium Interface”

Each of the preambles of claims 1 and 2 of the ‘527 patent recites: “[a]n optical drive controller to control the communication of data between a storage medium in an optical drive device and a host computer. . . .” (CX-2.) The claimed phrase “storage medium interface” appears in said claim 1 in the phrase “storage medium interface for receiving data from said storage medium” and in said claim 2 in the phrase “storage medium interface to receive data from said storage medium.” (Id.)

Complainants argued that the language of “storage medium interface” is understood by one of ordinary skill in the art to mean “circuitry within the controller for receiving data from the storage medium.” (CBr at 5.) Respondents argued that the claimed phrase “storage medium interface” is the DSP interface, which the ‘527 patent discloses as the structure that receives the digital drive data from the drive electronics. (RBr at 25.) The staff argued that the claimed phrase in issue should be construed as circuitry within the optical drive controller that initially receives a digital signal representing the information being read from the optical drive medium. (SBr at 16.)

The language of claims 1 and 2 of the ‘527 patent requires the controller comprise the storage medium interface. Hence, the storage medium interface has to be associated with the claimed controller. The patentees under the heading SUMMARY OF THE INVENTION specifically disclose that the invention relates to a compact disk drive controller for a compact disk drive to control the communication of digital information between a compact disk to a host

computer and that the compact disk drive would generally have its own drive electronics comprising a digital signal processor, a microcontroller, a random access memory and a system controller. (CX-2, col. 2, lns. 60-67.) Under the same heading, which is a summary of the invention, the patentees disclose that “[t]he compact disk drive controller is comprised of a host interface, connecting the host computer via the IDE data bus with the compact disc drive controller, in order to receive data addresses and commands from the host computer and transmit digital information to the host computer” and that “[a] path for communicating data addresses and commands from the host interface to the microcontroller of the drive electronics is employed and a digital signal processor (DSP) interface connecting the host interface and the digital signal processor of the drive electronics, receives digital information from the compact disk and transmits the digital information to said host interface.” (CX-2, col. 3, lns. 3-14 (emphasis added).) Thus, the administrative law judge finds that the proper construction of “storage medium interface” is circuitry within the optical drive controller that initially receives a digital signal representing the information being read from the optical drive medium with the storage medium interface being the DSP interface.

Complainants argued that the Examiner, during the prosecution of the ‘527 patent “considered the ‘storage medium interface’ in pending claim 25 to be broader” than a DSP interface. (CBr at 6.) However, as complainants acknowledged, the Examiner merely stated that “obviously, in order for the controller [to] communicates [sic] with [the] storage medium, the controller must have a storage medium interface.” (Id.) The Examiner, in indicating that for communicating there must be a storage medium interface, did not find that the claimed invention can be broader than what was specifically disclosed by the inventors when summarizing their

invention in the specification. To have found otherwise would have involved the addition of new matter. See Chiron Corp. v. Genentech, Inc. 363 F.3d 1247, 1253 (Fed. Cir. 2004).

3. The Claimed Phrase “Operable”

The claimed phrase “operable” is used in claim 1 of the ‘527 patent in the language “said host interface operable to receive data addresses and commands from said host computer and transmit data to said host computer.” In claim 2 of the ‘527 patent there is the recitation “a data port operable to receive data addresses and commands from said host computer and transmit data to said host computer.” Claim 3 of the ‘527 patent has the language “a multibyte command packet buffer operable to sequentially store a packet of contiguous bytes of command information received” from the host.

The staff argued that the proper construction of “operable” in the claims in issue involves having the ability to comply with minimum ATA requirements for communication on the IDE/ATA bus, i.e. support for all 8 task file registers, the signals CS1FX, CS3FX, DAO-2, DDO-7, DIOW, and DIOR, and the BSY and DRV bits. (SBr at 21.) Respondents argued that “operable” in the “host interface” element of claim 1 and all of the asserted claims of the ‘527 and ‘440 patents means “having the ability to.” (RBr at 33.) Complainants argued that the correct interpretation of “operable” is capable of being put into practice. (CRBr at 20.)

The plain meaning of “operable” is capable of being put into use, operation or practice or having the ability. (Samuels, Tr. at 248, 597; see also The American Heritage Dictionary, Second College Edition (1976) at 871 (defining “operable” as “[c]apable of being used or operated”).) Hence, the administrative law judge finds that a person of ordinary skill would interpret “operable” as capable of being used.

4. The Claimed Phrase “An ATA Command Block Register Address At Which To Store Sequentially Contiguous Bytes Of Command Data, That Are Part Of The Same Command, Transmitted From The Host Computer In A Single Command Transfer”

The claimed phrase in issue is found in claim 1 of the ‘527 patent. The staff argued that said phrase requires that the host interface include an ATA command block register address between 1F0 and 1F7 at which to receive a multibyte command packet. (SBr at 23.)

Respondents argued that the claimed phrase means that the host interface must have some structure to store multi-byte commands, like a multibyte command buffer or FIFO; that the host interface must store multiple command bytes in a sequentially contiguous manner as in a FIFO; and that there is involved the receipt of a multi-byte command packet from the host computer. (RBr at 35-37.) Complainants argued that the language in issue merely requires an address in the host interface to which command data is transmitted from the host computer. (CRBr at 21.)

The claimed phrase in issue refers to an ATA command block register address through which bytes of command data are stored in the corresponding command block registers. (Buscaino, Tr. at 2628, 2630-31; Samuels, Tr. at 683.) The command block registers are addressed at 1F0 to 1F7. (Hanan, Tr. at 2363.) The term "single command transfer" indicates the transfer of a multibyte command packet including, e.g., a SCSI packet or the prior art ATA 8-byte command packet. (Buscaino, Tr. at 2628-29.)

When using an IDE task file, every operation begins with writing an “op code” where the host tells the peripheral that the parameters are set up. (Shah, Tr. at 2472.) For example, in the ATAPI protocol, to transfer a multibyte command packet, an ATA op code is first written into the ATA command register at register address 1F7 to indicate that the next data transfer on the IDE bus shall be run through the data port, i.e., ATA command block register address 1F0. (See

Shah, Tr. at 2468, 2471-73.) The IDE transport mechanism then pushes the next 12 bytes through the data port and into the buffer associated with the data port in a single command transfer. (See Shah, Tr. at 2473, 2501.) In the ATAPI protocol, these 12 bytes of data are command information. (See Samuels, Tr. at 207-09; CDX-11.)

The plain meaning of “sequentially” is “forming or marked by a sequence” in which “sequence” means “a following of one thing after another.” (Websters II New Riverside University Dictionary (1984) at 1064.) The plain meaning of “contiguous” is:

1. sharing a boundary or edge: touching.
2. nearby: adjacent.
3. immediately preceding or following in time.

(Id. at 304.) Moreover, under the most typical application, the transfer of an ATAPI command packet, the 12 bytes of command data enter through the command block register address in a sequential and contiguous manner and are stored in the multibyte command FIFO in a sequential and contiguous manner. (Buscaino, Tr. at 2634; Samuels, Tr. at 207-08, 714-15; JX-6C at 293-95; CX-1308C at 35, step 5; CDX-10.)

The language of claim 3 of the ‘527 patent specifically recites that the buffer must be “operable to sequentially store a packet of contiguous bytes of command information.” (CX-2, col. 30, lns. 10-11, (emphasis added).) In contrast, claims 1 and 2 of the ‘527 patent and claim 1 of the ‘440 patent only require the controller to store sequentially contiguous bytes of command data received from the host. (Samuels, Tr. at 716-17.) Hence, in view of this juxtaposition of claim language the administrative law judge finds that a person of ordinary skill in the art would conclude that if the applicants meant “sequentially contiguous” to refer to the storage technique, those words would have appeared before the word “store” rather than “bytes.”

transmitted without error. (Samuels, Tr. at 618.)

Hence, the administrative law judge finds that a person of ordinary skill at the time of the invention in issue would interpret “error free data,” in the context of the ‘527 patent, as data that contains no detectable errors.

6. The Claimed Phrase “Data Error Detection And Correction Circuitry”

Each of claims 1 and 2 of the ‘527 patent has the language “data error detection and correction circuitry.” Complainant argued that the claimed language in issue means “any error detection and correction circuitry”; that there is no requirement that error correction be performed prior to error detection; and that the claimed data error detection and correction circuitry is not limited to the use of Reed-Solomon error correction codes or a cyclic redundancy checker for error detection. (CBr at 7-9; see CRBr at 8-10.)

Respondents argued that to one of ordinary skill in the art in 1993-94, the plain meaning of “data error detection and correction circuitry” for CD-ROM data is the following: circuitry that would first perform error correction, followed by error detection with a cyclic redundancy checker, which was implemented in hardware as a linear feedback shift register; that one of ordinary skill in the art would understand that the only type of error detection and correction mentioned in the ‘527 patent is for CD-ROM data according to the Yellow Book; that the ‘527 patent does not even hint that CIRC or Red Book error correction is part of the invention; that the ‘527 patent does not even suggest that future error correction schemes, such as for DVD, would be included within its definition of “data error detection and correction circuitry”; and that because respondents’ interpretation of the claimed phrase in issue would have been the plain and ordinary meaning to one of ordinary skill at the time of the invention, the claim should be limited

Based on the foregoing, the administrative law judge finds that the limitation in issue requires that the host interface include an ATA command block register address between 1F0 and 1F7 at which to receive a multibyte command packet.

5. The Claimed Phrase “Error Free Data”

The claimed phrase “error free data” appears in claim 2 of the ‘527 patent within the phrase “to provide error free data for transmission to said host computer.” Complainants argued that one of ordinary skill in the art would understand that this term references data that has had all of its detectable errors corrected. (CRBr at 14.) Respondents argued that the claimed phrase should be construed to mean data that is free of errors. (RPFF453.) The staff argued that the claimed phrase, in the context of the ‘527 patent, should be construed as data that contains no detectable errors. (SBr at 23.)

The phrase “error free data” does not appear in the ‘527 patent specification. (CX-2.) However, there is expert testimony that the plain and ordinary meaning of the English words “error free data” would be data without errors. (Samuels, Tr. at 212-13; Buscaino, Tr. at 2636.) However, there is also expert testimony that (i) not all errors in data can always be corrected; (ii) some errors may be uncorrectable by the error correction and detection processes, e.g., a scratch across the surface of a disk; and (iii) no error correction and detection system can guarantee that there are no errors in the data but can only reflect that there are no detectable errors in the data. (Samuels, Tr. at 214-15.) In addition the ATAPI specification provides for a check bit and sense key to indicate to the host that there were errors in the data that have been corrected or errors in the data that could not be corrected. (Samuels, Tr. at 616-18; CX-1308C at 40, 157.) When the check bit is off, the drive senses that the operation has been completed and that the data was

to respondents' interpretation of "data error detection and correction circuitry." (RBr at 26-27.)

The staff argued that the claimed phrase "data error detection and correction circuitry" is one of the elements comprising the controller of claims 1 and 2 of the '527 patent; and that unlike the claims of the '715 patent at issue in CD-ROM Controllers II, the '527 patent claims do not use means-plus-function language and do not expressly recite a "temporal" limitation on the order of error correction and detection. The staff further argued that a person of ordinary skill in the art, understanding the claims in the 1993-94 time frame, would interpret "data error detection and correction circuitry" to occur within the controller and consist of error correction using Reed-Solomon codes followed by error detection using a cyclic redundancy checker that performs the division of a CRC generator binary polynomial into a 16,000-bit EDC code word to produce a CRC remainder.²³ (SBr at 16-19.)

With respect to the "data error detection and correction circuitry" limitation in issue, the '527 patent specification makes certain disclosures relating to a sequential requirement for performing error correction with Reed-Solomon error correction codes before error detection using a cyclic redundancy checker. Thus the abstract of the '527 patent states that "an error correction code (ECC) data corrector, an error detection and correction (EDC) device employing cyclical redundancy checking techniques (EDC/CRC) ... are described." (CX-2, Abstract (emphasis added).) Under the heading Summary of the Invention, the '527 patent specification discloses that:

²³ The staff noted that while in its SPBr, it did not support limiting error correction to Reed-Solomon codes based on the suggestion in the specification that other techniques could be used, the testimony at the hearing made it clear that one of ordinary skill in the art at the time of the invention would not have known of any other error correction techniques. (SBr at 19, n.5; see CX-2, col. 3, lns. 20-24.)

[t]he digital signal processor interface of the CDDC [compact disk drive controller] further comprises an error correction code circuit to perform error correction on said digital information. That error correction circuit could employ Reed-Solomon codes. The digital signal processor interface of the CDDC further comprises a cyclic redundancy checker for detecting errors in the digital information after correction of the digital information by the error code correction circuit.

(CX-2, col. 3, lns. 20-28 (emphasis added).) Referring to the FIG. 2 “block diagram of an implementation of the drive controller 10 of the present 30 invention,” the ‘527 patent specification, under the heading Description of a Preferred Embodiment, further discloses that:

[t]he error correction circuitry would first perform Reed-Solomon error correction on each block of data. Reed-Solomon codes are random single- or multiple-symbol error correcting codes operation on symbols which are elements of a finite field. All encoding, decoding, and correction computations are performed in the field. [] Then, a cyclic redundancy check of the corrected data would be performed. Since each codeword contains two parity bytes the drive controller of this invention can correct one error in each codeword. These ECC and EDC-CRC circuits are commonly available as hardware used in many other applications. The host control allows the corrected data to be transferred from the RAM to the host.

(CX-2, col. 6, lns. 26-41 (emphasis added); see id. at col. 6, ln. 16.) The Federal Circuit in Oak Technology relied on portions of the aforementioned passage that appear in the ‘715 patent specification in its opinion affirming the Commission Opinion in CD-ROM Controllers II that claim 1 of the ‘715 patent included the temporal limitation in issue. See Oak Technology, 248 F.3d at 1328. However, the Federal Circuit did state that “[t]he sequential limitation is imposed by the claim language [of the ‘715 patent] itself, and the written description simply confirms this understanding.” Id. at 1328-29. In contrast to the “sequential limitation” appearing in the language of claim 1 of the ‘715 patent at issue before the Federal Circuit, asserted claims 1 and 2

of the '527 patent do not contain such express limitation.²⁴

The '527 patent specification also makes the following disclosure relating to the disputed error detection and correction circuitry limitation:

E01RQ-bit-Error Detect and Correct Request "1" enables the error correction and detection (ECC and EDC) logic to process the following CD-ROM blocks, according to the settings of QRQ and PRQ. "0" disables the ECC and EDC logic. Changes to E01RQ control the CAROM blocks following the next data sync. If both QRQ and PRQ are enabled, the ECC/EDC sequence is Q-codewords, P-codewords, EDC-codeword. If QRQ is enabled but PRQ is disabled, the sequence is Q-codeword, EDC-codeword. If QRQ is disabled but PRQ is enabled, the sequence is P-codeword, EDC-codeword. If both QRQ and PRQ are disabled, only the EDC-codeword is checked. Normally, QRQ and PRQ are enabled whenever E01RQ is enabled in order to provide maximum correction capability.

(CX-1, col. 12, lns. 27-40.) Interpreting the aforementioned passage of the '527 patent specification which also appears in the '715 patent specification, the Federal Circuit in Oak Technology concluded that:

As mentioned earlier, according to the Yellow Book,^[25] 'P-codewords' and 'Q-

²⁴ The relevant portion of claim 1 of the '715 patent at issue in Oak Technology reads as follows:

data error detection and correction means for correcting said assembled, said detection and correction means including error correction circuitry for performing error correction on said assembled data and a cyclic redundancy checker for detecting errors in said assembled data after correction of said data by said correction circuitry for providing corrected data

(CX-12, col. 29, lns. 10-16 (emphasis added).) Moreover, "Oak readily admit[ted] that 'Oak's ['715] patent contemplates Yellow Book compliance" in Oak Technology and the Federal Circuit found that a person of ordinary skill in the art would understand that certain Yellow Book disclosures "strongly impl[y]" that Reed-Solomon error correction should occur prior to CRC error detection. 248 F.3d at 1320, 1322-23.

²⁵ The Yellow Book is the public standard for how computer information is stored on a CD-ROM device and was well-known to persons skilled in the art in the 1993-94 time frame.

codewords' are associated with Reed-Solomon error correction, while the 'EDC-codeword' is associated with error detection using a cyclic redundancy checker. With this in mind, the written description [of the '715 patent] goes on to confirm the exact order of operations in the only embodiment disclosed in the '715 patent: [] As the above passage plainly indicates, the only embodiment described in the '715 patent always performs error correction before performing CRC [cyclic redundancy checker] error detection. There is no mention in the '715 patent of any embodiments where the sequence of operations is reversed, or where error detections before error correction has been completed.

248 F.3d at 1328 (emphasis in original) (quoted portion of '715 patent specification omitted); compare '715 patent, col. 12, lns. 44-55 with CX-2, col. 12, lns. 27-40.) As for the cyclic redundancy checker limitation at issue in Oak Technology, the Federal Circuit commented that "[t]he '715 patent document does not provide much guidance on the meaning of 'cyclic redundancy checker,' and only states that '[t]hese ECC and EDC CRC circuits are commonly available as hardware used in many other applications.'" Oak Technology, 248 F.3d at 1329, quoting '715 patent, col. 6, lns. 41-43. The '527 patent specification contains an identical disclosure. (See CX-2, col. 6, lns. 38-40.) Ultimately, the Federal Circuit affirmed the Commission's interpretation of cyclic redundancy check as "hardware, commonly available in June 1994, that performs the division of a CRC generator binary polynomial into a 16,000 bit EDC code word to produce a CRC remainder." Oak Technology, 248 F.3d at 1329.

Portions of the prosecution history of the '527 patent contain comments made by the applicants and the Examiner relating to whether the claimed "data error detection and correction circuitry" requires that error correction occur before error detection in asserted claims 1 and 2 of the '527 patent, as well as remarks relating to the use of Reed-Solomon error correction codes and the use of a cyclic redundancy checker for error detection. After a Notice of Allowance

(CPFF 384 (undisputed); SPFF 49 (undisputed).)

issued on December 10, 1997, applicants filed a continuation application “under 37 C.F.R. 1.62 (File Wrapper Continuing Procedure),” which included a preliminary amendment adding original claim 25 that ultimately issued as the presently asserted claim 1 of the ‘527 patent.²⁶ (See CX-10 at ZC 001116, ZC 001193, ZC 002032.) When submitted with the applicants’ preliminary amendment, the data error detection and correction circuitry element of claim 25 read as follows:

data error detection and correction circuitry, said detection and correction circuitry including error correction circuitry for performing error correction on said data received from said interface and generating corrected data therefrom, and a cyclic redundancy checker for detecting errors in said data or in said corrected data; and...

(CX-10 at ZC 001200.) The preliminary amendment also added dependent claim 30 that depended from the newly submitted claim 25 and read “[t]he drive controller of claim 25, wherein said error correction circuitry performs Reed-Solomon error correction on said data received from said interface.”²⁷ (CX-10 at ZC 001201.)

On June 13, 2000 the prosecuting attorney submitted, *inter alia*, an amended claim 25 in response to an Office Action dated January 13, 2000, which amendment removed the express cyclic redundancy checker limitation from claim 25. Thus a pertinent portion of claim 25 was amended as follows:

data error detection and correction circuitry, said detection and correction circuitry including: error correction circuitry for performing error correction on [said] data

²⁶ The current Manual of Patent Examining Procedure (MPEP) states as to the former 37 C.F.R. 1.62 File Wrapper Continuing Procedure that 37 C.F.R. 1.62 was deleted effective December 1, 1997. (MPEP § 201.6(b) (2004).)

²⁷ The Reed-Solomon error correction code limitation of dependent claim 30 was maintained throughout the prosecution of the ‘527 patent application until said claim 30 was cancelled in an August 2, 2001 amendment. (See CX-10 at ZC 001741; CPFF 364 (undisputed).)

received from said interface and generating corrected data [therefrom], and error detection circuitry [a cyclic redundancy checker] for detecting errors in [said] data [or in said corrected data] prior to transmission to said host computer; and

(CX-10 at ZC001502 (bracketed portions deleted, underlined portions added).) Commenting on the amended claim 25, the prosecuting attorney included the following remarks with the amendment submitted to the Examiner:

Applicant has also amended claim 25 to further clarify that with regard to the timing of error detection operations, it is only required that data errors be detected before the data is transferred to the host computer. Moreover, any kind of error detection circuitry may be employed, regardless of whether or not it uses a cyclical redundancy code or error detection codes other than a cyclical redundancy check code.

(CX-10 at ZC 001505 (emphasis added).)

When the Examiner issued the Notice of Allowability in late 2000, the claim language of the data error detection and correction circuitry element of claim 25 was identical to the data error detection and correction circuitry element of issued claim 1 of the '527 patent. (Compare CX-10 at ZC 001501-02 with CX-2, col. 28, lns. 39-45.) In the Examiner's Statement of Reasons for Allowance, the Examiner made reference to the Commission Opinion in Inv. No. 337-TA-409 and took official notice that the claimed invention requires that:

[E]rror correction must occur *before* the data error detection. The Official position is that the scope of all the independent claims, namely, claims 12, 22, 23, 25 and 33, are interpreted in view of the embodiment disclosed in the specification.

(CX-10 at ZC 001511 (underlined and italicized emphasis in original), quoting CX-2, col. 6, lns. 26-28, 34-35 ("The error correction circuitry would first perform Reed-Solomon error correction on each block of data ... Then, a cyclic redundancy check of the corrected data would be performed") (emphasis added by Examiner).) The Examiner also took official notice with

respect to the claimed error detection circuitry and stated:

With regard to error detection circuitry, Applicant stated in the Remarks that ‘any kind of error detection circuitry may be employed, regardless of whether or not it uses a cyclical redundancy code or error detection codes other than a cyclical redundancy check.’ Official notice is taken that the only kind of error detection circuitry disclosed in the Specification is a cyclical redundancy check (CRC) circuitry. [] Official notice is taken that, at the time of the invention, the only one specific type of EDC-CRC *commonly available* as hardware used in many other applications was a linear feedback shift register. Accordingly, the error detection and correction circuitry claimed in all the independent claims, namely, claims 12, 22, 23, 25 and 33, are interpreted in view of the embodiment disclosed in the specification, i.e., ‘a Reed-Solomon error correction is first performed on an entire sector of CD-ROM assembled data (approximately 16,000 bits), followed by a cyclic redundancy check on the entire CD-ROM sector of assembled data. The cyclic redundancy checker is hardware, commonly available in June 1994, that performs the division of a CRC generator polynomial into a 16,000-bit EDC code word to produce a CRC remainder.’ See also, *In the matter of CERTAIN CD-ROM CONTROLLERS AND PRODUCTS CONTAINING THE SAME II*, U.S. International Trade Commission, Inv. No. 337-TA-409, page 20, lines 18-22, Publication 3251, October 1999.

(CX-10 at ZC 001512 (underlined and italicized emphasis in original).)

Thereafter, on March 2, 2001, applicants filed a Continued Prosecution Application that included, inter alia, “Comments on Statement of Reasons for Allowance,” wherein the applicants “respectfully disagree[d] with the ‘Statement of Reasons for Allowance.’”²⁸ (CX-10 at ZC 001621; see id. at ZC 001515, ZC 001534.) In said Comments, the applicants stated:

The ‘Statement of Reasons for Allowance’ relies upon a decision of the ITC (In the Matter of CERTAIN CD-ROM CONTROLLERS AND PRODUCTS CONTAINING THE SAME II, Inv. No. 337-TA-409, U.S. International Trade

²⁸ At the time, an applicant was permitted to file a Continued Prosecution Application for the ‘527 patent application after the Notice of Allowability issued, yet prior to payment of the issue fee, pursuant to 37 C.F.R. 1.53(d). However, “[e]ffective July 14, 2003, continued prosecution application (CPA) practice has been eliminated as to utility and plant applications. Applicants who wish to continue examination of the same claimed invention after prosecution of a utility or plant application is closed should consider filing a request for continued examination (RCE) under 37 CFR 1.114.” MPEP § 201.6(d) (May 2004).

Commission) that Applicant is currently appealing (Appeal No. 00-1078; Oak Technology, Incorporated, Appellant v. International Trade Commission, Appellee and MediaTek, Inc., United Microelectronics Corp., Lite-On Technology Corp. and AOpen, Inc., Intervenors). For the same reasons asserted by Applicant in this appeal, the Applicant respectfully disagrees with the 'Statement of Reasons for Allowance.'

(CX-10 at ZC 001621.)

In a Preliminary Amendment received August 7, 2001, the applicants added claim 35 which ultimately issued as asserted claim 2. (CX-10 at ZC 001739.) The claim language relating to the error detection and correction circuitry limitation of said claim 35 is identical to the error detection and correction circuitry limitation of issued claim 2 of the '527 patent. (Compare CX-10 at ZC 001739 with CX-2, col. 28, lns. 65-67.) Also in said preliminary amendment, the prosecuting attorney addressed the Examiner's official notice in the December 4, 2000 Notice of Allowance relating to the claimed error detection and correction circuitry and stated:

The 'Statement for Reasons of Allowance' dated December 4, 2000 relied on In the Matter of CERTAIN CD-ROM CONTROLLERS AND PRODUCTS CONTAINING THE SAME II, U.S. International Trade Commission, Inc. [sic] No. 337-TZ-409 [sic], page 20 lines 18-22, Publication 2351, October 1999. This decision was appealed to the Federal Circuit and the attached IDS includes the Federal Circuit's decision. See Oak Technology, Inc. v. International Trade Commission, 248 F.3d 1316; 2001 U.S. App. LEXIS 7985 (Fed. Cir. 2001.) Although the Federal Circuit affirmed the finding of non-infringement, the Federal Circuit clarified the appropriate manner of construing the claims of U.S. Patent 5,581,715. In particular, the Federal Circuit relied on particular language[] in the claims ('the plain language of the claim') in performing its claim construction that resulted in the determination of non-infringement. The claim language relied upon by the Federal Circuit is not present in the now pending claims and there is no basis for restricting these claims in the same manner.

Thus, Applicant respectfully submits that the 'Statement of Reasons for Allowance' dated December 4, 2000 is not applicable to the now pending claims. For instance, Applicant traverses paragraph 3 of the 'Statement of Reasons for Allowance' because it inappropriately takes Official notice that 'the claimed invention requires that the data errors must be detected and corrected before the data is transferred to the host computer and that the error correction must occur

before the data error detection.’ Applicant traverses this official notice because this limitation was not and is not found in claim 25 (it is also not found in the newly added claims). In addition, Applicant traverses the “Official Position” taken in paragraph 3 of the “Statement of Reasons for Allowance” because it reads limitations of the specification into claim 25. Similarly, Applicant traverses paragraph 4 of the ‘Statement of Reasons for Allowance’ because it also reads limitations of the specification into claim 25. In this regard, the Federal Circuit decision clearly based its decision on the language in the claims of U.S. Patent 5,581,715, which language clearly is not present in the now pending claims of this application. As such, Applicant respectfully requests withdrawal of the ‘Statement of Reasons for Allowance’ and reconsideration of the now pending claims.

(CX-10 at ZC 001741-43 (footnote quoting Oak Technology, 248 F.3d at 1325 omitted).)

In a July 8, 2002 Office Action, the Examiner rejected, inter alia, pending claims 25 and 35 under 35 U.S.C. 103(a) based in part on the Yellow Book disclosure and referenced the Federal Circuit’s decision in Oak Technology:

Yellow Book discloses a data error detection and correction circuitry used to [sic] correcting and/or detecting data transfer form an optical disk drive to a host computer [Federal Circuit, page 6]. Based on “Yellow Book” specification [Federal Circuit, pages 6-11], one of ordinary skill in the art would recognize that the error correction process is performed before the error detection process.

(CX-10 at ZC 001827 (emphasis added).) In response to said Office Action, applicants addressed the rejection by the Examiner in light of the Yellow Book and stated that “[w]ith regard to claims 25 and 35, there is no limitation that ‘the error correction process is performed before the error detection process’” (CX-10 at ZC001938.)

Significantly, however, the patentees described “the invention” in the specification under the heading Summary of the Invention as comprising “a cyclic redundancy checker for detecting errors... after correction ... by the error code correction circuit.” (CX-2, col. 3, lns. 24-27 (emphasis added).) The disclosures in the remainder of the ‘527 patent specification are

consistent with this sequential limitation as the '527 specification does not describe any embodiments where error correction does not occur before error detection, which disclosures the Federal Circuit recognized in Oak Technology 248 F.3d at 1328. See Alloc, Inc. v. Int'l Trade Comm'n, 342 F.3d 1361, 1371 (Fed. Cir. 2003) (finding specification indicated that invention was "exclusively directed" to flooring products including "play" despite the fact that said limitation was not expressly stated in claim language); Watts v. XL Systems, Inc., 232 F.3d 877, 883 (Fed. Cir. 2000) (concluding specification limited the invention to embodiments with misaligned taper angles).

Complainants relied on Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898 (Fed. Cir. 2004) and Tate Access Floors, Inc. v. Maxcess Techs., Inc., 222 F.3d 958 (Fed. Cir. 2000) in support of their argument that the sequential limitation disclosed in the '527 patent specification should not be read into asserted claims 1 and 2, contrary to the plain language of the claims. In Liebel-Flarsheim and Tate, the Federal Circuit concluded that the district court impermissibly narrowed the claims in issue to an embodiment disclosed in the specification in the absence of an express limitation in the claims. Liebel-Flarsheim, 358 F.3d at 903; Tate, 222 F.3d at 966-67. Tate, however, is distinguishable from the present case because the specification at issue in Tate, contrary to the '527 patent specification, suggested alternatives to an embodiment that the specification described as "desirable." See Tate, 222 F.3d at 966. As for Liebel-Flarsheim, the Federal Circuit based its decision in part on the fact that the applicant added broader claims during prosecution, thereby replacing claims that previously included the disputed limitation, and commented that the addition of such broader claims represented "a strong indication that the applicants intended those claims to reach [devices not containing the limitation in issue]." Liebel-

Flarsheim, 358 F.3d at 909-10. Moreover, while the Summary of the Invention claimed in the '527 patent expressly limits the data error detection and correction circuitry such that error correction occurs prior to error detection using a cyclic redundancy checker, the patentee in Liebel-Flarsheim did not “demonstrate a clear intention to limit the claim scope using ‘words of manifest exclusion or restriction.’” Id. at 906, quoting Teleflex, 299 F.3d at, 1327.

Complainants further relied on the fact that the prosecuting attorney argued against any sequential limitation in the claimed data error detection and correction circuitry throughout prosecution of the '527 patent application to support its broad construction of the disputed claim term. Despite said attorney arguments, the Examiner took official notice that the claimed invention requires that “error correction must occur *before* the data error detection.” (CX-10 at ZC 001511 (emphasis in original).) Notwithstanding the prosecuting attorney’s arguments traversing the Examiner’s official notice relating to the claimed error detection and correction circuitry, the Examiner never retracted said official notice or otherwise changed his position on the sequential limitation relating to the claimed error detection and correction circuitry disclosed in the '527 patent specification. As indicated supra, the '527 patent specification teaches that “the invention” performs error correction prior to error detection using a cyclic redundancy checker. (See CX-2, col. 3, lns. 24-27.)

Complainants argued that the proper construction requires “any error detection and correction circuitry,” which would not limit the claimed error correction circuitry to Reed-Solomon error correction codes. Referring to the prosecution of the '527 patent, complainants relied on the fact that original dependent claim 30 contained a limitation specifically requiring that the error correction circuitry perform Reed-Solomon error correction. Complainants argued

that the presence of original claim 30 “during prosecution evidences that applicants intended the broader error correction circuitry limitation than Reed-Solomon in claim 30,” citing Liebel, 358 F.3d at 910. Original claim 30, however, was cancelled from the ‘527 patent application in an August 2, 2001 amendment, nearly two years before the ‘527 patent issued. Moreover, Liebel involved the scenario where the doctrine of claim differentiation was “at its strongest” due to the presence of an independent claim and its dependent claim that included the limitation in dispute. Id. In the present case, however, the 527 patent contains only three independent claims and no dependent claim that includes an express Reed-Solomon error correction code limitation.

Complainants, in support of their argument that error correction circuitry should not be limited to the use of Reed-Solomon error correction codes, further relied on the following disclosure of the ‘527 patent specification under the heading Summary of the Invention:

The digital signal processor interface of the CDDC [compact disk drive controller] comprises an error correction code circuit to perform error correction on said digital information. That error correction circuit could employ Reed-Solomon codes.

(CX-2, col. 3, lns. 20-24 (emphasis added).) However, the ‘527 patent does not disclose any alternatives. Moreover, complainants’ expert Samuels acknowledged that a person of ordinary skill in the art in during the 1994 time frame would only be familiar with using Reed-Solomon error correction techniques. (Samuels, Tr. at 738.) Thus the administrative law judge finds that the claimed “error detection and correction circuitry” is limited to Reed-Solomon error correction codes.

With respect to the claimed error detection circuitry, complainants argued that the proper construction requires “any error ... detection circuitry,” and thus should not be limited to a cyclic

redundancy checker. In support, complainants pointed to the fact that the cyclic redundancy checker limitation was dropped from the claim language during prosecution. (See CX-10 at ZC 00152.) However, even after the applicants removed the cyclic redundancy checker phrase from the claim language, the Examiner took official notice that the only type of error detection circuitry disclosed in the specification is “cyclical redundancy check (CRC) circuitry” and that the “cyclic redundancy checker is hardware, commonly available in June 1994, that performs the division of a CRC generator polynomial into a 16,000-bit EDC code word to produce a CRC remainder.” (CX-10 at ZC 001512.) Moreover, as with the requirement of the ‘527 patent that error correction occur prior to error detection, the applicant described “the invention” as “compris[ing] a cyclic redundancy checker for detecting errors....” (CX-2, col. 3, ln. 25.) In addition, the abstract of the ‘527 patent indicates error detection is accomplished by “employing cyclical redundancy checking techniques.” (CX-2, Abstract.) Hence, the administrative law judge finds that claimed error detection circuitry uses a cyclic redundancy checker that performs the division of a CRC generator polynomial into a 16,000-bit EDC code word to produce a CRC remainder.

Based on the foregoing, the administrative law judge finds that a person of ordinary skill in the art as of 1994 would understand that the claimed data error detection and correction circuitry includes a sequential limitation such that error correction is performed before error detection and that the claimed invention utilizes Reed-Solomon error correction codes and a cyclic redundancy checker that performs the division of a CRC generator polynomial into a 16,000-bit EDC code word to produce a CRC remainder.

7. The Claimed Phrase “An ATA Register Address At Which To Receive Data Addresses And Commands From Said Host Computer And Transmit Data To Said Host Computer, And A Multibyte Command Packet Buffer Operable, To Sequentially Store A Packet Of Contiguous Bytes Of Command Information Received Through The ATA Register Address In A Single Command Transfer”

The claimed phrase in issue is found in claim 3 of the '527 patent. Respondents argued that the host interface of claim 3 requires: (i) a multibyte command packet buffer, (ii) support for all eight ATA command block registers, (iii) storage of command information in a sequentially contiguous manner, and (iv) a single ATA register address that receives data addresses and commands and command information from the host and that transmits data to the host. (RBr at 40-42.)

The staff agreed with respondents to the extent that this limitation requires (i) a structure within the host interface to store multibyte commands, i.e., a multibyte command packet buffer, (ii) support for all eight ATA command block registers,²⁹ (iii) storage of command information in a sequential but not necessarily contiguous manner,³⁰ and (iv) a single ATA register address that receives data addresses and commands and command information from the host and that transmits data to the host. However, the staff did not agree with respondents that this single ATA register address must perform all command and data communication functions and argued that respondents admit that their proposed construction is not supported in the specification.

²⁹ The staff noted that while the requirement of support for all eight registers arises from the structures necessary to be able to receive data addresses and commands from the host computer and to transmit data to the host computer, the staff did not agree with respondents that the multibyte command packet buffer and the command registers must be operable at the same time. (SRBr at 13, n.9.)

³⁰ The staff noted that pursuant to the plain language of the claim, "contiguous" refers to the bytes of command information received through the ATA register address, not the manner of storage of those bytes. (SRBr at 13, n.10.)

(SRBr at 12-13.)

Complainants argued that while the private parties agree that this claim language requires one of the ATA register addresses to (1) receive data addresses and commands, (2) transmit data and (3) receive command information, respondents' proposed construction goes beyond this by requiring all such activities in the host interface be handled through only that one ATA register address. It was argued that respondents' construction is erroneous because the express claim language does not include the words "all" or "only," or any other language that forecloses another ATA register address from also being the location of any of these activities; that respondents acknowledge that their narrow construction would exclude the preferred embodiment in the specification from the scope of the claims; and that nothing in the '527 patent specification supports their construction. (CBr at 15.)

As seen from the foregoing, the parties agree that the claim language requires "an ATA register address" to: (1) receive data addresses, commands and command information from the host computer; and (2) transmit data to the host. (See CBr at 15; SRBr at 13; RRBr at 64.) The key dispute regarding the proper interpretation of the claim language in issue is whether all command information, viz. one-byte and multi-byte commands, must be received at the same ATA register address. (Compare RBr at 41 (arguing that receipt of data addresses and commands from host, transmission of data to host and receipt of "a packet of continuous bytes of command information from the host computer" "must be performed through the same ATA register address") with SRBr at 13 (arguing that specification does not support requirement that single ATA register address perform all command and data communication functions); and CRBr at 3 ("all that the plain language of the claim requires is that a multibyte command is received at a

single ATA register address”).)

The language of claim 3 indicates that the host interface of the claimed optical drive controller includes “an ATA register address” and “a multibyte command packet buffer.” (CX-2, col. 30, lns. 5-6, 8-9 (emphasis added).) Claim 3 further requires that said ATA register address “receive[s] data addresses and commands from said host computer and transmit[s] data to said host computer....” (CX-2, col. 30, lns. 6-8 (emphasis added).) Claim 3 also requires a multibyte command packet buffer “operable to sequentially store a packet of contiguous bytes of command information received through the ATA register address in a single command transfer.” (CX-2, col. 30, lns. 9-12.) The plain meaning of “sequentially” is “forming or marked by a sequence” in which “sequence” means “a following of one thing after another.” (Websters II New Riverside University Dictionary (1984) at 1064.) The plain meaning of “contiguous” is: 1. sharing a boundary or edge: touching. 2. nearby: adjacent. 3. immediately preceding or following in time. (*Id.* at 304.) According to the ATA specification, the address in the task file used to transmit data to the host computer is the data port, 1F0. (SPFF 164 (undisputed).) It is also undisputed that the claimed multibyte command packet buffer is the structure within the controller that stores the multibyte commands received through the data port, i.e., ATA register address 1F0. (See SPFF 164 (undisputed).) Hence, the administrative law judge finds that a person of ordinary skill in the art would understand that the ATA register address 1F0, i.e., the data port, is the claimed ATA register address that “receive[s] data addresses and commands from said host computer and transmit[s] data to said host computer...” as required by claim 3. The administrative law judge further finds that claim 3 requires a multibyte command packet buffer operable to sequentially, i.e., in order from first to last, store a packet of contiguous bytes,

i.e., touching or connected, of command information received through the ATA register address 1F0, which address also transmits data to the host computer and receives data addresses and commands from the host computer.

Respondents argued that the claimed ATA register address of claim 3 requires that all command information from the host computer, including single-byte and multi-byte commands, be received at said ATA register address.³¹ The claim language, however, makes no reference to single-byte commands and instead requires only an ATA register “at which ... commands” are received and “through” which “contiguous bytes of command information” are received. (CX-2, col. 30, lns. 5-7, 9-11 (emphasis added).) As to respondents’ construction requiring that all command information (i.e., single-byte and multi-byte commands) be received at a single ATA register address, respondents acknowledged that “[i]t is worth noting that the ‘527 specification does not identify any optical drive controller with an ATA register address that performs all of those functions.” (RPHS (Amended) at 21 (emphasis added).) Thus, respondents admit that there is no disclosed embodiment in the ‘527 patent that includes an ATA register address that receives single-byte and multibyte commands from the host computer and transmits data to said host computer. However, “[a] patent claim should be construed to encompass at least one disclosed embodiment in the written description portion of the patent specification.” Johns Hopkins University v. Cellpro, Inc., 152 F.3d 1342, 1355 (Fed. Cir. 1998). Accordingly, the administrative law judge finds that the ATA register address of claim 3, i.e. 1F0, is not required

³¹ In accordance with the ATAPI protocol, a single-byte command will be written to the command register at address 1F7 before the multibyte command packet is written to the multibyte command packet buffer through the data port of ATA address 1F0. (See Shah, Tr. at 2468, 2471-73, 2501; Samuels, Tr. at 207-09.)

to receive both single-byte and multibyte commands from the host computer.

8. The Claimed Phrases “Circuitry Operable to Alter Said BSY Bit, Responsive To Command Events Initiated By The Host Computer, To Indicate Said Host Computer Is Precluded From Accessing Said Plurality of ATA Command Block Register Addresses” And “Status Register Including A BSY Bit That Indicates When Access By Said Host Computer To Said ATA Command Block Register Addresses Is Precluded”

In issue are the claimed phrases “circuitry operable to alter said BSY bit, responsive to command events initiated by the host computer, to indicate said host computer is precluded from accessing said plurality of ATA command block register addresses” (independent claim 1 of the ‘440 patent) and “status register including a BSY bit that indicates when access by said host computer to said ATA command block register addresses is precluded” (independent claim 14 of the ‘440 patent).

Complainants argued that “the BSY bit [in the claimed phrases] indicates whether the host computer is permitted to access the command block registers”; and that the plain meaning of the claim term “precluded” in the claimed phrases, “as understood by those skilled in the art, and as supported by the specification is that the BSY bit indicates whether the host computer should be permitted to access the command block registers.” (CBr at 21, 22 (emphasis in original).) Complainants, in support of their construction that the disputed phrases mean “that the BSY bit indicates whether the host computer is permitted to address the command block registers,” viz. that “the host computer should not access the command block registers, but ... is not prevented from doing so,” argued that such construction is consistent with the stated role of the BSY bit in the ATA specification and the cited prior art to the ‘440 patent, i.e. U.S. Patent No. 5,446,877 (the ‘877 patent), as understood by a person of ordinary skill in the art. (See CBr at 21-22 (first emphasis added); CRBr at 29-30, n.19 (second emphasis in original).)

The staff argued that the disputed claim phrases require circuitry with the ability to alter the BSY bit to indicate that the host is prevented from accessing the ATA command block registers (claim 1) and that the BSY bit indicates that the host is prevented from accessing the ATA command block registers (claim 14). (See SBr at 30.)

Respondents argued that the disputed limitations require that “the BSY bit indicates when it is impossible for the host computer to access - i.e., read or write - the ATA command block registers.” (RBr at 43-44 (emphasis in original).)

The claimed phrases in issue, as indicated supra, appear in claims 1 and 14 of the ‘440 patent. (CX-3, col. 28, lns. 53-57; col. 29, ln. 65 to col. 30, ln. 2.) The “circuitry operable to alter said BSY bit ... to indicate ...” is one element comprising the host interface of an optical drive controller claimed in asserted claim 1. (CX-3, col. 28, lns. 34-37.) Similarly, the “status register including a BSY bit that indicates...” is one element comprising the host interface of the claimed optical disk drive controller of claim 14. (CX-3, col. 29, lns. 55-59.) Although the claims require a BSY bit to indicate that the host computer is precluded from accessing the “ATA command block register addresses,” it is undisputed that said “precluded” limitations would not make technical sense to the person of ordinary skill in the art.³² (See SPFF 172 (undisputed).) Thus, the parties agree that one of ordinary skill in the art at the time of the invention would understand

³² Respondents’ expert Buscaino explained that an optical disk drive controller:

cannot preclude access to an ATA command block register address. An address, the ATA command block register addresses come from the host computer. And a drive controller has no way of precluding access to the addresses. What it can preclude access to is the register itself. [] [I]t does make sense to preclude the host computer from access to the ATA command block registers.

(Buscaino, Tr. at 2938 (emphasis added).)

said precluded limitations to refer to precluding the host computer from accessing command block registers and not command block register addresses. (See CBr at 21 (arguing that preclusion limitations relate to whether “the host computer is permitted to access the command block registers”) (emphasis added); RBr at 44, n.8 (“One of ordinary skill in the art would understand that it is impossible for a peripheral device, like an optical drive controller, to prevent the host computer from attempting to read or write from any address.”) (emphasis added); SPFF 172 (undisputed).)

As for the disclosure in the cited prior art ‘877 patent, said reference provides a description of the role of the BSY bit in managing the task file registers and teaches that “[t]he BUSY bit 521 remains set until completion of an operation. During the time period when the BUSY bit 521 is set, the host computer is not allowed access to the remaining registers in the task file 500.”³³ (CPFF 497 (undisputed) (emphasis added).)

Asserted claims 1 and 14 require that the BSY bit indicate that the host computer is “precluded” from accessing the command block registers. Applicants have not assigned any special meaning to the term “precluded,” nor does the term appear in the ‘440 patent specification, aside from its usage in claims 1 and 14.³⁴ (See CX-3.) The ordinary meaning of

³³ It is undisputed that the reference to “BUSY bit” in the ‘877 patent is equivalent to the “BSY bit” in the asserted claims.

³⁴ Dependent claim 23 of the ‘440 patent uses the term “precludes.” Said claim 23 states:

The apparatus of claim 14, wherein said host interface includes circuitry operable to alter said BSY bit, responsive to command events initiated by the host computer, to a state that precludes said host computer from accessing said ATA command block register addresses.

“preclude” is “to make impossible or impracticable by previous action; prevent.” The American Heritage Dictionary, Second College Edition (1982) at 975 (emphasis added). Thus, in the context of asserted claims 1 and 14, the administrative law judge finds that a person of ordinary skill in the art at the time of the invention would understand that the use of the term “precluded” in the claimed phrases “said BSY bit ... to indicate said host computer is precluded” and “a BSY bit that indicates when access by said host computer ... is precluded” means the BSY bit indicates that host computer is prevented from accessing the ATA command block registers. The administrative law judge further finds that a person of ordinary skill would understand that claim 1 also requires circuitry with the ability to alter said BSY bit to indicate that the host computer is prevented from accessing the command block registers. Said constructions are found to be consistent with the disclosure of the cited prior art ‘877 patent which teaches that “when the BUSY bit 521 is set, the host computer is not allowed access to the remaining registers in the task file 500,” contrary to complainant’s construction that the BSY indicates that “the host computer should not access the command block registers, but [that] the host computer is not prevented from doing so.” (CPFF 497 (undisputed) (emphasis added); CRBr at 29-30, n.19.)

Both complainants’ expert Samuels and respondents’ expert Buscaino agree that the BSY bit referenced in the ‘440 patent specification is consistent with the BSY bit as described in the ATA specification. (See CPFF 489 (undisputed).) Complainants, in support of their proposed construction, relied on, inter alia, the February 10, 1992 ATA specification, which discloses the following with respect to the status register and the role of the BSY bit:

This register contains the drive status. [] BSY (Busy) is set whenever the drive

(CX-3, col. 30, lns. 38-42 (emphasis added).)

has access to the Command Block Registers. The host [computer] should not access the Command Block Register when BSY = 1. When BSY=1, a read of any Command Block Register shall return the contents of the Status Register.

(CX-1294 at 1039DCO00015 (emphasis added).) Conversely, when BSY=0, the BSY bit indicates that the drive is not busy and that the host computer is allowed to alter the task file registers. (See CPFF 491 (undisputed).) Unlike the ATA specification, however, claims 1 and 14 do not actually state that the host computer “should not” access the command block registers. Rather, said claims state that the host computer is “precluded” from accessing the command block registers. The administrative law judge, supra, has found that the term “precluded,” as used in claims 1 and 14, would be understood by a person of ordinary skill in the art to mean that the host computer is prevented from accessing the command block registers and not that “the host computer should not access the command block registers, but ... is not prevented from doing so.”

Based on the foregoing, the administrative law judge finds that a person of ordinary skill in the art at the time of the invention would understand that claim 1 of the ‘440 patent requires circuitry with the ability to alter the BSY bit to indicate that the host computer is prevented from accessing the ATA command block registers. As to claim 14 of the ‘440 patent, the administrative law judge finds that said person of ordinary skill would understand that the claim requires a BSY bit that indicates when access by the host computer to the command block registers is prevented.

9. The Claimed Phrase “Directly”

The claimed term “directly” is found in each of claims 1 and 2 of the ‘527 patent in the phrase “a host interface connecting said host computer and said optical drive controller directly

via an IDE/ATA data bus” and in claim 3 of the ‘527 patent in the phrase “a host interface to connect said host computer and said optical drive directly via said IDE/ATA data bus.”

Complainants’ expert Samuels in testifying about the prosecution history of the ‘527 patent made reference to the statements of the applicants’ attorney to the effect that the directly limitation cannot be met when there is a translator card or some other intervening circuitry between the controller and the IDE bus that translates or manipulates the data in order to cause the controller to properly handle ATA commands. Samuels agreed that those statements support Samuels’ plain and ordinary meaning of the word “directly” as it is used in the claims of the ‘527 patent. (Tr. at 275-76.) According to respondents’ expert Buscaino, the claimed phrase “directly” means that the controller has the ability to directly drive and receive signals on the IDE/ATA bus. Based on the testimony of the experts, the administrative law judge finds that a person of ordinary skill in the pertinent art would interpret “directly” as used in the claims of the ‘527 patent as “without intervention.”

10. The Claimed Phrase “ATA Transfer Protocol”

The claimed phrase in issue appears in claims 5, 7, 14 and 19 of the ‘440 patent. It does not appear in the specification. (CX-3.)

Complainants argued that those skilled in the art would understand that the term “ATA transfer protocol” means the requirements for communication over the IDE/ATA bus. (CBr at 23.) Respondents argued that at the time of the inventions in issue, the phrase “ATA transfer protocol” was not a term of art and that it only had meaning with respect to communication protocols between a host computer and a hard disk drive over the IDE/ATA bus. (ROCPFF506.) The staff argued that the claimed phrase in issue should be construed to require all of the signals

listed in section 6 of the ATA specification that are not marked optional, all of the command block registers, and the BSY, DRV, DRDY and DRQ bits. (SBr at 31.)

All parties have agreed that the phrase “ATA transfer protocol” includes at least the following: (1) the task files registers, (2) the data signals DD0-DD7, CS1FX, CS3 FX, DA0-DA2, DASP, PDIAG, DIOR, DIOW and RESET, (3) the drive select register and (4) status register. (RPF 514 (undisputed).) Accordingly, the administrative law judge finds that a person of ordinary skill at the time of the inventions in issue would so construe the phrase “ATA transfer protocol.”

11. The Claimed Phrase “A Path Operable To Allow Said Microcontroller To Read Said Multi-byte Command Buffer And Alter Said BSY Bit.”

The claimed phrase in issue is the last element of claim 14 of the '440 patent. The administrative law judge finds that one of ordinary skill in the art would understand that a microcontroller would normally have access to be able to read multi-byte commands from the multi-byte command buffer. (RPF 543 (undisputed).)

C. Infringement

1. Accused Products

Complainants allege that the accused MediaTek chips and products containing such chips infringe claims 1, 5, 7, 8, 10, 13, 14, 19, and 21 of the '440 patent. The accused chips are MediaTek's MT-1199, 1318, 1328, 1329, 1338, 1358, 1368, 1388, 1508, 1518, 1528, 1558, 1588, 1618, 1628, 1668, 1688, 1818 and 1828.³⁵

³⁵ While an MT1888 was included in a list of accused products, respondents' counsel, in a letter dated April 22, 2005, to the administrative law judge stated that complainants “dropped this product [MT1888] from the investigation on the first day of the evidentiary hearing in the investigation.” Complainants' counsel did withdraw their infringement allegation as to MT1888

2. '527 Patent (Claims 1 And 2)

Complainants argued that the accused MediaTek optical storage controller (OSC) chips literally infringe asserted claims 1 and 2 of the '527 patent because said accused chips, inter alia, satisfy the “data error detection and correction circuitry” limitation of the claims under complainants’ proposed interpretation of said claimed term, viz. any error detection and correction circuitry, without regard to any sequential requirement for error detection and correction operations or limitations relating to the use of Reed-Solomon error correction codes or a cyclic redundancy checker for error detection. (CBr at 26.) Complainants further argued that if the administrative law judge adopts respondents’ proposed claim construction then the accused OSC chips meet the data error detection and correction circuitry limitation under the doctrine of equivalents; that the error detection and correction circuitry in MediaTek’s C3 decoder “performs the ‘function’ of performing error correction and error detection operations on the data” (CPFF 644); that “the C3 decoder produces the same ‘result’ identified in the claim, i.e., corrected data for transmission to the host computer” (CPFF 645); that while “the only potential area of dispute between the parties is whether the ‘way’ in which the C3 decoder performs is substantially the same as that described in the patent,” “the way in which the C3 decoder operates is equivalent to what is described in the patents” (CPFF 646); and that “the claims are entitled to a broad range or liberal range of equivalents” because the inventions claimed in the '527 and '440 patents are pioneering inventions. (CBr at 26-27; see also CRBr at 35.)

The staff argued that the accused MediaTek chips utilize the same error correction and

(Tr. at 29 (pre-hearing conference).) In a letter to the administrative law judge dated May 5 the staff agreed that the MT1888 product is no longer in issue in this investigation.

detection circuitry that was at issue in the prior Commission Opinion in Investigation No. 337-TA-409 (CD-ROM Controllers II) and subsequent Federal Circuit appeal in Oak Technology; that “for the same reasons as in the prior Commission investigation, the accused MediaTek chips do not infringe claims 1 and 2 of the ‘527 patent”; and that because the accused chips perform a cyclic redundancy check before error correction and never after error correction, said accused chips cannot satisfy the data error detection and correction circuitry limitation of asserted claims 1 and 2 of the ‘527 patent. (SBr at 52-53.) The staff further argued that for the same reason that the Commission determined that MediaTek accused chips did not infringe under the doctrine of equivalents in CD-ROM Controllers II, namely that the error detection process described in the accused controller chips was substantially different than the cyclic redundancy check described in the patent specification, the accused MediaTek OSC chips in this investigation do not infringe claims 1 and 2 under the doctrine of equivalents. (SBr at 54-55; see SRBr at 31-32.)

Respondents argued that the accused MediaTek chips perform error detection with a cyclic redundancy checker before performing error correction; that said accused chips “never perform a cyclic redundancy check operation after error correction” (RPFF 550); and that therefore, the accused MediaTek OSC chips do not satisfy the error detection and correction circuitry limitation of claims 1 and 2. (RBr at 57-58; RRBr at 60-61.) In response to complainants’ argument that the accused chips satisfy the error detection and correction circuitry limitation under the doctrine of equivalents, respondents argued that complainants are bound by the explicit claim construction set forth by the Examiner during prosecution of the ‘527 patent and therefore, no equivalents should be considered because the “Examiner clearly intended the term to be defined narrowly.” (RRBr at 62.)

It is undisputed that the MediaTek OSC chips accused of infringing the '527 and '440 patents employ the same error detection and error correction processes at issue in CD-ROM Controllers II.³⁶ (CPFF 590 (undisputed); accord SPFF 305.) In CD-ROM Controllers II, the Commission described the MediaTek error detection and correction processes as follows:

As to the accused product, the MediaTek device first performs an error detection by a cyclic redundancy check [CRC] on the entire CD-ROM block of data (generating an original CRC remainder), followed by Reed-Solomon error correction, followed by a second error detection. This second error detection is an update to the original CRC remainder with 20 bits of error location and error pattern data from the Reed-Solomon error correction operations. In this second error detection operation, the original CRC remainder is decremented until it equals zero, indicating that all errors have now been corrected.

(CX-513 at 40 (emphasis added); see id. at 43-44.) Thus, the Commission determined that the MediaTek controllers performed an error detection via a cyclic redundancy check prior to Reed-Solomon error correction. Considering whether the second error detection operation of the accused MediaTek controllers was the same as the cyclic redundancy check after error correction as required by the '715 patent, the Commission concluded that the "generation of a CRC remainder before error correction and the updating of that remainder after error correction is not the same as the '715 patent's cyclic redundancy check on the entire CD-ROM sector of data after error correction." (Id. at 40-41 (emphasis in original).)

At the hearing in this investigation, respondents' expert Buscaino confirmed that the accused MediaTek OSC chips employ the same error detection and correction processes at issue

³⁶ In a July 20, 2004 declaration submitted to the administrative law judge in this investigation, Ming-Kai Tsai, President of MediaTek, stated that "[a]ll of MediaTek's current OS [optical storage] chips use the same old error detection and correction circuitry" that was incorporated into the MediaTek chips accused in Investigation No. 337-TA-409. (CPFF 591 (undisputed).)

in CD-ROM Controllers II. (See also CPFF 590 (undisputed).) Thus, Buscaino testified that the accused MediaTek OSC chips, after receiving data from the CD-ROM, first perform a cyclic redundancy check on an entire sector of data, approximately 16,000 bits, to produce an EDC syndrome; that the cyclic redundancy check operation is analogous to a long-division problem; and that the EDC syndrome is analogous to the remainder of said long-division problem. (Buscaino, Tr. at 2681-82, 2692-93, 2695; see CX-513 at 43.) In the event that the EDC syndrome equals zero, the sector of data subjected to the cyclic redundancy check contains no detected errors that need to be corrected. (Buscaino, Tr. at 2692-93, 2697-98.) The next step that the accused MediaTek OSC chips employ in the error detection and correction process comprises the error correction phase where the approximately 16,000-bit block of data is verified and corrected. (Tr. at 2695; see CX-513 at 43-44.) Buscaino further testified that after the errors have been corrected, the EDC value is updated to reflect any changes to the data that were made during the error correction process; and that the error detection processor does not repeat a cyclic redundancy check to recalculate an EDC syndrome for the entire 16,000-bit block of data at this step, but merely adjusts the EDC value based on the corrected data. (Tr. at 2696; see CX-513 at 44.) Thereafter, the corrected data is transferred to the host computer. (Id.)

Based on the foregoing, the administrative law judge finds that complainants have failed to establish that the accused MediaTek OSC chips infringe claims 1 and 2 of the '527 patent because said accused chips do not satisfy the data error detection and correction circuitry limitation of claims 1 and 2. Said limitation includes a sequential requirement such that error correction using Reed-Solomon error correction codes occurs before error detection using a cyclic redundancy checker. However, the accused MediaTek OSC chips first detect errors with a

cyclic redundancy check and then perform Reed-Solomon error correction. Accordingly, the accused MediaTek OSC chips do not satisfy said sequential requirement of the error detection and correction circuitry limitation of claims 1 and 2. The administrative law judge further finds, as the Commission determined in CD-ROM Controllers II, that the generation of a cyclic redundancy check remainder before error correction and the updating of that remainder after error correction does not satisfy the requirement of asserted claims 1 and 2 that errors must be corrected before error detection using a cyclic redundancy checker.

Complainants, in support of their argument that the accused MediaTek OSC chips satisfy the error detection and correction circuitry limitation of claims 1 and 2 under the doctrine of equivalents and relying on testimony of their expert Samuels, argued that “the only potential area of dispute between the parties is whether the ‘way’ in which the C3 decoder [of the accused MediaTek OSC chips] performs [error correction and detection operations] is substantially the same as that described in the patent,” and that “the way in which the C3 decoder operates is equivalent to what is described in the patents.” (CBr at 26-27; see CPFF 644-46, citing Samuels, Tr. at 503-07.) However, the administrative law judge finds that the testimony of Samuels that forms the basis for complainants’ proposed findings of fact supporting their doctrine of equivalents infringement allegations contains no such analysis and merely involves conclusory statements. Thus Samuels testified:

Q Is Exhibit CDX-34C a demonstrative that you prepared to illustrate that?

A Yes.

Q And can you please explain, with reference to the various items that are shown here in Exhibit

CDX-34C, what you are intending to illustrate.

A These demonstrative shows the various steps in the error correction and detection process that is performed by the MediaTek devices.

Q Now, with regard to step 2, what you see there at the top center, can you please explain what occurs in that step with regard to the processing of data in the MediaTek devices?

A Yes. In step 2, the data that has been recognized coming in off of the CD-ROM drive is simultaneously sent to the DRAM for storage. And this demonstrative is shown going into the memory controller, then being directed to the external DRAM.

And while that is going on, in parallel with that, a cyclic redundancy checker is operated to detect whether or not or not errors are present in that data.

And the final result of that is what's called an EDC syndrome. When, after all of the data has been passed through, that syndrome is also sent out into the memory.

Q Now, with regard to block 3 that's shown in this demonstrative, can you please explain what's occurring in that step.

A Yes. When the -- when the data is determined to have errors, the -- and they have to be corrected, the relevant portions of the data are read in from the external DRAM and are fed into the Reed-Solomon correction circuitry, which is labeled R-S error controller on this demonstrative.

And while that process is going on, the -- the other unit that's labeled here, the error detection processor uses the -- I should say updates the EDC syndrome value that was generated in step 2 based on the correction process that is done by the

Reed-Solomon error controller.

Q And what happens in the MediaTek controller chips if there are still additional errors in data after they've been subjected to this R-S error controller portion?

A Well, if there are still errors remaining, there will be multiple passes made over the data where data is fetched out of the memory. It is corrected by the Reed-Solomon error correction logic. And the EDC syndrome is updated based on that correction.

And that process will repeat either until the system determines that it is no longer able to correct more errors or until all of the errors have been corrected.

Q And once the process is complete, is data then passed over the IDE interface to the host computer?

A Eventually, yes.

Q So with regard to the operation of the error correction and detection circuitry in the MediaTek devices that we've been referring to, is it your opinion that this sequence of operations infringes claim 1 limitation of the '527 patent?

A Yes.

Q Have you prepared a demonstrative to illustrate your opinion in that regard?

A Yes.

Q Is this a demonstrative that you created in order to illustrate your opinion?

A Yes. It is.

* * *

BY MR. GOLDMAN:

Q Mr. Samuels, can you please explain, with reference to this demonstrative, how the error detection and correction circuitry in the MediaTek controller chips that we have been discussing infringes or meets the limitations of the data error detection and correction circuitry limitation in claim 1 of the '527 patent?

A Yes. The language of the claim is shown in the far left. And the various claim elements are highlighted in different colors.

The -- on the right-hand side of the demonstrative is the steps that were present in the previous demonstrative that are the steps performed by the MediaTek devices for the error detection and correction.

And the elements of that that correspond to the claim language are shown in corresponding colors.

Q And so with reference to Exhibit CDX-35C, the blue highlighted portion of the claim language that says: Performing error correction on data received. Is that what you're showing in block 3 of this demonstrative?

A Correct.

Q Okay. And with regard to the green portion in the claim language that is highlighted at the bottom where it says: Detecting errors in data prior to transmission. Is that what you're illustrating in sections 2 and sections 4?

A Yes.

Q Okay. And in your opinion, does it matter whether error detection occurs before error correction in order to meet this limitation of claim 1 of the '527 patent?

A No.^[37]

Q Is it also your opinion that in claim 2 of the '527 patent, which uses the common language data error detection and correction circuitry that your analysis that you just provided with reference to CDX-35C would meet that limitation of -- in claim 2 of the '527 patent?

A Yes.

(Samuels, Tr. at 503-08 (emphasis added).) As seen from the foregoing Samuels testified: (1) regarding the accused MediaTek OSC chips' error detection and correction processes, which he acknowledged operate in the same manner as determined by the Commission in CD-ROM Controllers II; and (2) that the accused MediaTek OSC chips satisfy the error detection and correction circuitry limitation of claims 1 and 2 under complainants' proposed construction of said claim term, which the administrative law judge rejected, supra. (See CPFF 590 (undisputed), citing Samuels, Tr. at 443-44.)

In CD-ROM Controllers II, the Commission determined that the second error detection operation performed by the accused MediaTek chips was substantially different from the cyclic redundancy check performed after error correction as set forth in the '715 patent specification. (CX-513 at 47.)

The MediaTek controller's updates of the CRC [cyclic redundancy check] remainder after error correction is not an equivalent mathematical operation to the CRC remainder generation on an entire CR-ROM [sic] data block of the '715 patent. The MediaTek controller computes a CRC from the error pattern of the previous Reed-Solomon error correction operation and updates the original CRC remainder with this CRC in a binary *addition* operation. This is substantially

³⁷ Complainants argued that the claimed data error detection and correction circuitry limitation does not include a sequential requirement such that error correction occurs prior to error detection as Samuels so testified. (CBr at 7-9.)

different from the binary *long division* operation carried out on an entire block of CD-ROM data of the '715 patent's cyclic redundancy checker. Using the output of a division in an addition operation, as is done in the MediaTek controller, is not equivalent to performing the long division on an entire block of data, as is done in the '715 patent.

(CX-513 at 47-48 (italicized emphasis in original) (underlined emphasis added).) The Federal Circuit affirmed this holding and noted that “substantial evidence supports the Commission’s finding that there are substantial differences between the binary mathematics performed by the accused devices and the mathematics in the claimed controller.” Oak Technology, 248 F.3d at 1332 (emphasis added).³⁸

The parties do not dispute that the MediaTek OSC chips accused of infringing the ‘527 patent employ the same error detection processes at issue in CD-ROM Controllers II. Moreover, claims 1 and 2 of the ‘527 patent require that error detection is performed using a cyclic redundancy checker after error correction, as determined by the Commission and affirmed by the Federal Circuit in interpreting the claims of the ‘715 patent at issue in CD-ROM Controllers II. Hence, the administrative law judge finds that the accused MediaTek OSC chips perform error detection operations in a substantially different way compared to the requirements of the error

³⁸ The Federal Circuit, considering the Commission’s finding of no infringement under the doctrine of equivalents, also stated that:

[S]ubstantial evidence supports the Commission’s finding that the interrelationship between the error correction and detection operations in the respective devices is substantially different. The claimed controller performs a cyclic redundancy check after error correction. By contrast, MediaTek’s device performs a cyclic redundancy check before error correction, and then updates the EDC remainder during and after error correction in a way that is dependent upon data obtained from the error correction process.

Oak Technology, 248 F.3d at 1332.

detection and correction circuitry limitation of asserted claims 1 and 2 and therefore, do not infringe said claims 1 and 2 of the '527 patent under the doctrine of equivalents.

3. '527 Patent (Claim 3)

Complainants argued that each accused MediaTek OSC chip satisfies the host interface limitations of claim 3; that each of said accused chips employs one ATA register address to receive data addresses and commands, transmit data and receive command information; and that therefore, each accused chip literally meets the limitations of asserted claim 3. (CBr at 30; see CPFF 536, 651, 785, 787, 789-94.) Complainants further argued that each of the accused MediaTek OSC chips receives "multibyte command packets from the host computer in the form of an ATAPI command packet at ATA register address 1F0" (CPFF 789-91); that "the command information contained within these multibyte command packets includes parameters such as data addresses, as well as commands to be executed by the device" (CPFF 715); and that each accused chip "also incorporates a multibyte command FIFO buffer to sequentially store the multiple bytes of the command packet that are received contiguously in a single command transfer from the host computer." (CRBr at 36; CPFF 792.)

The staff argued that the accused chips connect the controller to the host computer directly via an IDE/ATA data bus; that said accused chips contain a data register associated with ATA command block register address 1F0 at which data addresses and commands are received from the host computer and at which data is transmitted to the host computer; that said accused chips contain an ATAPI packet FIFO buffer that stores multibyte command packets received via the data port at 1F0; that the multiple bytes of the command packet are received at said data port as part of the same command; and that thus, the accused MediaTek OSC chips meet every

limitation of claim 3 of the '527 patent. (SBr at 54; see SRBr at 32-33.)

Respondents argued that according to the ATAPI protocol “at least two ATA register addresses are needed to perform the functions recited in claim 3”; that the accused MediaTek chips follow said ATAPI protocol to the extent that two ATA register addresses, namely 1F0 and 1F7, are used to receive data addresses and commands from the host computer and transmit data to the host computer; and that none of the accused MediaTek chips infringe claim 3 of the '527 patent because none of said chips have a “host interface that receives data addresses and commands and transmits data at a single ATA register address.” (RBr at 59; see RPF 555-58.)

It is undisputed that the MediaTek chips accused of infringing the '527 patent are designed to control the communication of data between an optical drive and a host computer over the IDE bus of a personal computer; and that said accused chips contain host interface logic with output pins that connect the controller and the host directly via an IDE/ATA bus. (SPFF 310, 312 (undisputed).) It is further undisputed that said chips include an ATAPI packet FIFO buffer that receives multibyte command packets through the data port associated with 1F0; and that the multiple bytes of the command packet are received as part of the same command. (SPFF 314 (undisputed).) Describing the operation of the MediaTek OSC chips, respondents' expert Buscaino testified that writing of the ATAPI command packet to the 1F0 address is the process whereby commands and addresses are transmitted to ATA command block register addresses.³⁹ (Buscaino, Tr. at 2742.) Buscaino further testified that data is transmitted from the optical drive controller to the host computer via said 1F0 address. (Tr. at 2742-43.)

³⁹ Respondents admit that the “command information” referenced in claim 3 of the '527 patent is a reference to the “data addresses and commands” that are part of the multibyte command packet received from the host computer. (RRCPF 793.)

Respondents argued that complainants' proposed construction of the host interface limitation of claim 3 requires that the "host [computer] transmit (and as a result the device [controller] receive) multiple command bytes sequentially and contiguously to the device" and that "[n]o evidence establishes that transmission from the host is sequential or contiguous." (RRBr at 62-63.) The administrative law judge, however, has found that claim 3 in issue requires a multibyte command packet buffer operable to sequentially (from first to last) store a packet of contiguous bytes (touching or connected) received through ATA register address 1F0. Thus, as properly construed, claim 3 places no limitation on the manner in which the host computer transmits information to the claimed controller, but rather, on the manner in which the multibyte command packet buffer stores such information. It is not disputed that the accused MediaTek OSC chips contain an ATAPI packet FIFO buffer that receives multibyte command packets; and that FIFO stands for first in, first out, which means the first item received is stored in the buffer and is also the first item transmitted out of the buffer. (SPFF 314 (undisputed); CPFF 722 (undisputed), citing Buscaino, Tr. at 2634, 2657.) Significantly, Buscaino testified that if a structure is being used as a FIFO, then it would be storing bytes in a sequentially contiguous manner. (CPFF 723 (undisputed), citing Buscaino, Tr. at 2634.) Thus, the administrative law judge finds that complainants have established that the accused MediaTek OSC chips contain a multibyte command packet buffer operable to sequentially store a packet of contiguous bytes of command information received through the ATA register address 1F0, which address is also used to transmit data to the host computer and receives data addresses and commands from the host computer, and therefore infringe claim 3 of the '527 patent.

Based on the foregoing, the administrative law judge finds that complainants have

established that the accused MediaTek OSC chips infringe claim 3 of the '527 patent.⁴⁰

4. '440 Patent (Claims 1, 5, 7, 8, 10, 13, 14, 19 And 21)

Complainants argued that respondents' expert conceded that each of the accused MediaTek OSC chips includes each limitation of each of independent claims 1 and 14 of the '440 patent, with the exception of the "circuitry operable to alter the BSY bit to indicate that the host computer is precluded from accessing the command block registers" (claim 1) and a "BSY bit that indicates when access by said host computer to said ATA command block register address is precluded" (claim 14) limitations; that respondents do not dispute that the accused chips include circuitry for altering the BSY bit (CPFF 869);{

} and that therefore, each of the accused MediaTek OSC chips satisfy the claim 1 and 14 limitations relating to the BSY bit indicating that the host computer is precluded from accessing the command block registers. (CBr at 32-33, 36-37; see CRBr at 37.⁴¹)

The staff argued that the accused MediaTek OSC chips do not meet the "BSY bit requirement of claims 1 and 14 of the '440 patent"; that all of the accused chips work in the same

⁴⁰ While complainants included allegations of contributory and induced infringement in their CPHS, see CPHS at 128, n.27, 218, complainants did not provide any analysis in their post-hearing submissions in support of their contributory and induced infringement allegations. However "[e]ach of the Respondents has stipulated that if a MediaTek OSC chip is found to infringe the claims of the '527 and '440 patents, each of Respondents' downstream products in which that chip is incorporated also infringes." See CPFF523-28 which repeat the provisions of the August 6, 2004 and August 18, 2004 stipulations reflected in CX-465 and CX-466, respectively.

⁴¹ Complainants have waived any assertion of infringement under the doctrine of equivalents in connection with the '440 patent. (SPFF 322 (undisputed).)

manner with respect to the BSY bit being set while the host computer has read and write access to command block registers; that, as an example, the MediaTek MT1328 chip allows the host computer to{

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and that, as the host computer is never precluded from accessing the command block registers, the accused MediaTek chips do not have a BSY bit that indicates that the host computer is precluded from accessing said registers. (SBr at 56-57; see also SRBr at 33.)

Respondents argued that all of the accused MediaTek chips have the same Verilog code in relation “to how the BSY bit is set and the host computer having access to command block registers”; that setting the BSY bit in the accused chips does not prevent the host computer from accessing the ATA command block registers; that the{

}and that therefore, the

accused MediaTek chips do not satisfy “the limitation of claims 1 and 14 relating to preclusion of host access to command block registers.” (RBr at 60-61; see also RRBr at 65-66.)

All of the accused MediaTek OSC chips work in the same manner with respect to the BSY being set and the host computer having read and write access to the command block registers. (See SPFF 320 (undisputed).) The parties do not dispute that said accused chips include circuitry for altering the BSY bit. (CPFF 869 (undisputed).) It is further undisputed that the{

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(CPFF 872 (undisputed); see CPFF 873-85 (undisputed) (describing register maps for the MediaTek MT1199, MT1318, MT1328, MT1329, MT1338, MT1358, MT1508, MT1588, MT1618, MT1628, MT1688, MT1818, MT1828).)

Although the register maps for the accused chips indicate that{
}asserted claims 1 and 14 require a
BSY bit to indicate that the host computer is prevented from accessing the ATA command block
registers, not a BSY bit to indicate that the host computer “shall not” access said registers.
Moreover, respondents’ expert Buscaino testified that the accused OSC chips are{

} Buscaino further testified that the host computer can read the command block
registers when the BSY bit is set in the accused MediaTek OSC chips. Buscaino, specifically
describing the process when the host computer accesses the command block registers when the
BSY is set, testified:

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⁴² Buscaino reviewed data sheets, specifications, diagrams and Verilog code for many of the MediaTek chips. (SPFF 308 (undisputed).)

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{ } Accordingly, the administrative law judge finds that complainants have not established that the accused MediaTek OSC chips contain a BSY bit that indicates that the host computer is prevented from accessing the ATA command block registers and therefore, further finds that said accused chips do not infringe asserted claims 1 and 14 of the '440 patent. In addition, as complainants have failed to establish infringement of independent claims 1 and 14, the administrative law judge finds that complainants have not established that the accused MediaTek OSC chips infringe asserted dependent claims 5, 7, 8, 10, 13, 19 and 21 of the '440 patent.

D. Validity

1. ATAPI Specification

Respondents argued that the IDE CD-ROM proposal describing Western Digital's draft ATAPI specification constitutes a prior printed publication under 35 U.S.C. §102(b) that anticipates the asserted claims of the '527 and the '440 patents.⁴³ (RBr at 78-85.) Complainants

⁴³ With regard to the alleged anticipation of '440 claims in issue, respondents rely on the disclosure of the ATAPI specification as well as an ATA specification which is alleged to be

argued that the ATAPI specification remained confidential past both June 14, 1993, the date on which respondents “incorrectly” contend that inventors Verinsky and Case conceived the claimed inventions, and the June 22, 1993 filing date and hence does not satisfy the printed publication requirement of 35 U.S.C. §102(b). (CBr at 53-56.) It was further argued that the ATAPI specification does not anticipate any claims of the ‘527 and ‘440 patents. (CBr at 56-57.) The staff argued that respondents have not presented any evidence sufficient to meet the clear and convincing standard required to invalidate a patent. (SBr at 69-71.)

The Federal Circuit has stated:

The statutory phrase ‘printed publication’ has been interpreted to mean that before the critical date the reference must have been sufficiently accessible to the public interested in the art; dissemination and public accessibility are the keys to the legal determination whether a prior art reference was ‘published.’

In re Klopfenstein, 380 F.3d 1345, 1348 (Fed. Cir. 2004) (citations omitted). This determination requires a case-by-case inquiry into the facts and circumstances surrounding the reference’s disclosure to the public, including whether the creator of the document has taken reasonable steps to protect the information. Klopfenstein, 380 F.3d at 1350.

The draft ATAPI specification is dated June 10, 1993⁴⁴, just twelve days before the June 22, 1993 critical date.⁴⁵ (See CX-1249.) { }

incorporated into the ATAPI specification. (See RBr at 82; RPF 1285-86.)

⁴⁴ The ‘736 patent defines ATAPI as an Advanced Technology Attachment Packet Institute. See fn. 13.

⁴⁵ Respondents have admitted that the Commission in its opinion in CD-ROM Controllers II found that the named inventors on the ‘527 and ‘440 patents had completed conception of their invention, at least by April 21, 1993. (RRBr at 3.) Complainants’ position is that the inventors conceived the claimed inventions of the ‘557 and ‘440 patents in January 1993 or at least in March 1993 or in April 1993 as the Commission has found. (CBr at 87; CRBr at

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} The private parties are in agreement that a public meeting concerning the ATAPI specification was held on July 16, 1993. However, while complainants allege that that was the first public meeting concerning the ATAPI specification, respondents contend that there was at least one prior meeting where the ATAPI specification was distributed without a confidentiality obligation, i.e., a meeting with IBM on June 16, 1993. (See CPFF1159; ROCPPF 1159.) It is further argued by respondents that the ATAPI specification was distributed publicly to IBM and Mitsumi prior to June 23, 1993. (See ROCPPF 158.)

The administrative law judge finds that the evidence indicates that Mitsumi did not

78.) Respondents in this investigation appear to take the position that the inventors on the '440 and '527 patents conceived the claimed inventions on June 14, 1993.

Respondents' position is that the conception date found by Commission is "manifestly false." Respondents refer to the following portion of the Commission opinion in CD-ROM Controllers II:

The ATAPI specification is dated June 10, 1993, and describes a detailed command set that enables communication between a CD-ROM drive and a host PC over an IDE bus. It also provides detailed information for the reduction to practice of such a controller. The '715 patent discusses the ATAPI commands in considerable detail and many of those commands are essential to the functioning of the claimed host interface means.

(CX-513C at 60-61 (emphasis added by respondents).) Respondents then concluded that the Commission's use of the word "essential" meant that "many of those commands" must be part of the conception of the invention and hence the Commission's statement that the named inventors had completed conception of their invention at least by April 21, 1993, which is prior to the date of the ATAPI specification, is "manifestly false." (RRBr at 4.) The administrative law judge, however, finds that the Commission's statement that there is a conception date at least by April 21, 1993 is not "manifestly false."

receive a copy of the ATAPI specification before the June 22, 1993 critical date. (FF 36-40.)

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The administrative law judge further finds that the evidence indicates that Western Digital provided the ATAPI specification to IBM on a confidential basis. (FF 42-50.){

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Anthony Edward Pione is a former IBM employee who attended the June 16, 1993, meeting at which Western Digital provided the ATAPI specification to IBM. During the hearing, Pione testified{

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Hence, the administrative law judge finds that the substantial weight of evidence establishes that Western Digital provided the June 10, 1993 ATAPI specification to IBM on a confidential basis. However, the issue of whether the ATAPI specification was "publicly accessible" before June 22, 1993 is determined by whether interested members of the relevant public could have obtained the ATAPI specification before June 22, 1993 by using reasonable diligence. See Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1569 (Fed. Cir. 1988) ("Accessibility goes to the issue of whether interested members of the relevant public could obtain the information in they wanted to."). The administrative law judge finds that the ATAPI specification was not "publicly accessible." There is no evidence that IBM distributed the specification outside the company, nor is there any evidence that it would have done so even if it had been asked to do so. Moreover, there is no evidence that anyone in the interested public knew, or could have learned, that IBM had the specification (or even that the specification existed). The administrative law judge finds no basis to conclude that an interested member of the public using reasonable

diligence within the six day period between the June 16 meeting and the June 22 critical date could have: (1) determined that ATAPI the specification existed; (2) determined that IBM had a copy of the specification; and (3) obtained a copy from IBM. Thus, he finds that respondents have not established, by clear and convincing evidence, that the ATAPI specification was a printed publication under Section 102(b) before the critical date of June 22, 1993.

Moreover, assuming arguendo that respondents had established that the draft ATAPI specification was a printed publication under 35 U.S.C. §102(b), the administrative law judge finds that respondents have not established, by clear and convincing evidence, that said specification anticipates the claims in issue. The ATAPI specification “defines a standard method for interfacing to a CD-ROM Drive, utilizing the existing ATA host computer hardware and cabling.” (CX-931C at §1.1 (emphasis added).) Although ATAPI methods were adopted for use in the OTI-011 controller chip, the ATAPI specification does not describe the claimed optical disk controller in issue. For example, in order to implement the ATAPI protocol, the ATAPI specification does not require the CD-ROM drive to have data error detection and correction circuitry as required in claims 1-2 of the '527 patent. Respondents, moreover, have admitted that the ATAPI specification is directed to a method, but argued that the specification inherently discloses “an optical drive device with electives.” Respondents’ proposed finding of fact 1239 in support states:

The ATAPI Specification defines a method of connecting an optical drive device to a host computer using the IDE/ATA bus. The ATAPI Specification inherently discloses an optical drive device with drive electronics.

(RPF 1239, citing CX-931 at Section 1.1; RDX-207.⁴⁶) The ATAPI specification describes a protocol, not a controller. As Western Digital's Rutledge testified:

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⁴⁶ The Federal Circuit has held that a feature that is usually present or desirably present is not an inherent disclosure:

[I]t must be necessarily present and a person of ordinary skill in the art would recognize its presence. In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999); Continental Can, 948 F.2d at 1268, 20 USPQ2d at 1749. Inherency "may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." Id. at 1269, 20 USPQ2d at 1749 (quoting In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981)).

Crown Operations Int'l, Ltd. v. Solutia, Inc., 289 F.3d 1367, 1377 (Fed. Cir. 2002).

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2. 35 U.S.C. § 102(f)

Respondents argued that the '527 and '440 patents are invalid under 35 U.S.C. §102(f)

for failure to name the true inventors. (RRBr at 66-78.) Failure to name an inventor under section 102(f) renders a patent invalid if there exists clear and convincing proof that the alleged unnamed inventor was in fact a co-inventor. Pannu v. Iolab Corp., 155 F.3d 1344, 1349 (Fed. Cir. 1998). Respondents, in support of their argument for non-joinder, contend that “Shishir Shah of Western Digital supplied Oak with the ideas that became claim limitations encompassing: (i) using the data port (1F0) for receiving multibyte commands; and (ii) support for all eight ATA command block registers and a separate multibyte command buffer for receiving multibyte commands.” (RRBr at 66-78 (emphasis in original).)

Complainants argued that respondents’ section 102(f) defense is “groundless.” (CBr at 87.)

The staff argued that the defense has not been established by clear and convincing evidence. (SBr at 69-70.)

An issued patent enjoys a presumption that the named inventors are the true inventors. Hess v. Advanced Cardiovascular Systems Inc., 106 F.3d 976, 980 (Fed. Cir. 1997), quoting Amax Fly Ash Corp. v. United States, 514 F.2d 1041, 1047 (Ct. Cl. 1975). Any challenge to inventorship, including non-joinder of a co-inventor, must be proven by clear and convincing evidence and the alleged joint inventor’s conception must be corroborated because “the temptation for even honest witnesses to reconstruct, in a manner favorable to their own position, what their state of mind may have been years earlier, is simply too great to permit a lower standard.” Hess, 106 F.3d at 980, quoting Amax, 514 F.2d at 1047. The Federal Circuit further stated:

[W]here, as here, the patent has been outstanding for a considerable time and the

patented device has been successful . . . there is an equally strong temptation for persons who consulted with the inventor and provided him with materials and advice, to reconstruct, so as to further their own position, the extent of their contribution to the conception of the invention. In these circumstances, it would be inappropriate to permit a lower standard than clear and convincing evidence.

Hess, 106 F.3d at 980. In this investigation, the specifications of the '527 and '440 patents in issue, through the issuance of the '715 patent, have been outstanding for sometime and the administrative law judge has found evidence of commercial success. (See Section VI.D.6., infra.)

In this investigation there are no documents from the fourth quarter of 1992 through May 7, 1993 in the record that memorialize any ideas of Shah for connecting a CD-ROM to a host computer, for using packetized commands, or for mapping to the ATA task file registers at 1F0 to 1F7. (Hanan, Tr. at 2384-89; Shah, Tr. at 2523-24.) The only corroboration of said ideas constitutes testimonial recollections from twelve to thirteen years ago involving former colleagues at Western Digital and a friend of Shah. (See, e.g., Hanan, Tr. at 2396-97, 2401; Ramezani, Tr. at 2553-56.⁴⁷) {

} Respondents, citing Thomson, S.A. v. Quixote Corp., 166 F.3d 1172, 1176 (Fed. Cir. 1999), argued that the testimony of "disinterested third parties" Hanan, Ramezani, Rutledge, Shah and Worrell does not need corroboration. (RBr at 92-93.) The Federal Circuit however has subsequently made clear that Thomson did not eliminate the need for

⁴⁷ Unlike Western Digital's Rutledge, Shah, Hanan and Ramezani were paid consultants of respondents in this investigation. (See FF 24, 27, 28.)

corroboration, but rather addressed the sufficiency of the corroboration:

Moreover, the need for corroboration exists regardless whether the party testifying concerning the invalidating activity is interested in the outcome of the litigation (e.g., because that party is the accused infringer) or is uninterested but testifying on behalf of an interested party The Thomson court did opine on the necessity of corroboration, stating that 'corroboration is required only when the testifying inventor is asserting a claim of derivation or priority of his or her invention and is a named party, an employee of or assignor to a named party, or otherwise is in a position where he or she stands to directly and substantially gain by his or her invention being found to have priority over the patent claims at issue.' Thomson, 166 F.3d at 1176, 49 U.S.P.Q.2d at 1533. However, Thomson did not involve uncorroborated testimony of a single witness. . . . [T]he facts of Thomson did not present the question of the necessity of corroboration vel non, but rather the sufficiency of the corroborating evidence, a distinct inquiry involving an assessment of the totality of the circumstances, including consideration of 'the interest of the corroborating witness in the subject matter of the suit.' See Woodland Trust, 148 F.3d at 1371, 47 U.S.P.Q.2d at 1366 (citing In re Reuter, 670 F.2d 1015, 1021 n. 9, 210 U.S.P.Q. 249, 255 n. 9 (CCPA 1981)); see also id. at 1373, 47 U.S.P.Q.2d at 1368 ("The relationship of the witnesses and the fact that the asserted prior uses ended twenty years before the trial, and were abandoned until the defendant reportedly learned of the patentee's practices, underscore the failure of this oral evidence to provide clear and convincing evidence of prior knowledge and use."). Cases like Thomson and Woodland Trust correctly recognized that the level of interest of the testifying witness is an important consideration when such testimony is offered to corroborate another witness's testimony. Those cases, however, do not stand for the proposition that only an interested witness's testimony requires corroboration. In any event, corroboration is required of any witness whose testimony alone is asserted to invalidate a patent, regardless of his or her level of interest. Cf. Price, 988 F.2d at 1194 & 1195 n. 3, 26 U.S.P.Q.2d at 1036 & 1037 n. 3.

Finnigan Corp. v. Int'l Trade Comm'n, 180 F.3d 1354, 1368-69 (Fed. Cir. 1999) (footnote

omitted) (emphasis added). Subsequent to Finnigan, the Federal Circuit in Gemstar v. Int'l Trade

Comm'n, concluded:

Alleged co-inventors must establish their co-inventorship by facts supported by convincing evidence. Ethicon, 135 F.3d at 1461. To meet the burden of clear and convincing evidence, the alleged co-inventors must prove their contribution to the conception of the invention with more than their own testimony concerning the

relevant facts. Trovan, 299 F.3d at 1302 (citing Price v. Synsek, 988 F.2d 1187, 1194 (Fed. Cir. 1993)). Whether the co-inventor's testimony has been sufficiently corroborated is evaluated under a "rule of reason analysis," which requires that an "evaluation of all pertinent evidence must be made so that a sound determination of the credibility of the inventor's story may be reached." Price, 988 F.2d at 1195. Corroborating evidence may take many forms. Reliable corroboration preferably comes in the form of records made contemporaneously with the invention process. Sandt Tech. Ltd. v. Resco Metal & Plastics Corp., 264 F.3d 1344, 1350-51 (Fed. Cir. 2001). Circumstantial evidence of an independent nature may also corroborate. Trovan 299 F.3d at 1303. Additionally, oral testimony from someone other than the alleged inventor may corroborate. Id.

Gemstar, 383 F.3d 1352, 1382 (Fed. Cir. 2004) (emphasis original). In Gemstar, the Court found a failure to present facts by clear and convincing evidence of any co-inventorship of one Neil, even though it was acknowledged that there were two contemporaneous product disclosure documents listing Neil by name. Id. at 1382-83. Here the only corroboration of Shah's ideas is oral testimony from former colleagues at Western Digital and a good friend of Shah recalling events that occurred some twelve to thirteen years ago. The administrative law judge finds no contemporaneous documents that memorialize Shah's alleged ideas. Accordingly, the administrative law judge finds that respondents' assertion that Shah is a co-inventor of the asserted claims of the '527 and '440 patents has not been proven by clear and convincing evidence.

3. 35 U.S.C. §102(g)(2)

Respondents argued that the '527 and '440 patents are anticipated by Western Digital's HISIDE chip, which has the benefit of an earlier conception date and hence the asserted claims are invalid under 35 U.S.C. § 102(g)(2). (RBr at 85-104.) Complainants argued that Western

Digital's HISIDE chip does not anticipate the '527 and '440 patents in issue under section 102(g)(2); and that respondents' section 102(g)(2) defense fails to meet the Federal Circuit's corroboration requirement. (CBr at 74-83.) The staff argued that there is no evidence that meets the clear and convincing standard required to invalidate the '527 and '440 patents under section 102(g)(2). (SBr at 69-71.)

A patent is invalid under 35 U.S.C. §102(g)(2) if "before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it." 35 U.S.C. §102(g)(2). "Priority of invention and its constituent issues of conception and reduction to practice are questions of law predicated on subsidiary factual findings." Singh v. Brake, 317 F.3d 1334, 1340 (Fed. Cir. 2003), citing Brown v. Barbacid, 276 F3d at 1317, 1332 (Fed. Cir. 2002); Hitzeman v. Rutter, 243 F.3d 1345, 1353 (Fed. Cir. 2001).

According to respondents, Shah of Western Digital in December 1992 conceived a transport mechanism that attached a CD-ROM drive to an IDE/ATA bus. (RBr at 89.) In contrast, however, the claims of the '527 and '440 patents are directed to an optical drive controller and Shah himself testified that he did not conceive an optical drive controller. Thus, at the hearing Shah testified:

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{ } Even assuming that conception of a transport mechanism that attached a CD-ROM drive to an IDE/ATA bus was relevant, there is no contemporaneous documentation showing conception in December 1992 or a conception even before the April 1993 conception of the claimed inventions in issue. Hence, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that the asserted claims are invalid under 35 U.S.C. §102(g)(2).

4. On Sale Bar Of 35 U.S.C. § 102(b)

Respondents argued that they have proved by clear and convincing evidence that the '527 and '440 patents are invalid because the OTI-011 was "on sale" and was "ready for patenting" before June 22, 1993.⁴⁸ (RBr at 104.) Complainants argued that the '527 and '440 patents are not invalid under the on-sale bar of 35 U.S.C. § 102(b). (CRBr at 50.) The staff argued that respondents have not met their heavy evidentiary burden of clear and convincing evidence in showing that the invention was "ready for patenting" by June 22, 1993. (SBr at 66-68.)

A person is not entitled to a patent when "the invention was ... on sale in this country, more than one year prior to the date of the application for patent in the United States." 35 U.S.C. § 102(b). The Supreme Court has held that two conditions are necessary for a patent to be invalid for being "on sale" under § 102(b). Pfaff v. Wells Electronics, Inc., 525 U.S. 55, 57 (1998). "First, the product must be the subject of a commercial offer for sale." Id. "Second, the invention must be ready for patenting." Id.

⁴⁸ The '527 and '440 patents claim priority based on the '715 patent filed for on June 22, 1994.

As for the type of evidence that courts rely on to invalidate a patent under 35 U.S.C. § 102(b) on the ground that the invention is ready for patenting, in Pfaff, the inventor received a request from Texas Instruments to develop a device for mounting and removing semiconductor chip carriers. In response, the inventor “prepared detailed engineering drawings that described the design, the dimensions and the materials to be used” in the product, and sent the drawings to a manufacturer. Pfaff, 525 U.S. at 58. Subsequently, but before the critical date, Texas Instruments placed an order for the design. The Court found this discrete set of drawings, prepared by the inventor in a narrow time frame, to represent an enabling conception of the claimed invention. Similarly, in Robotic Vision Sys., Inc. v. View Eng’g, Inc., 249 F.3d 1307, 1313 (Fed. Cir. 2001), the enabling conception consisted of a single disclosure of the entire invention by the inventor that was sufficiently specific to enable the recipient to in fact implement the invention. Robotic, 249 F.3d at 1310-11. Likewise, in Weatherchem Corp. v. J.L. Clark, Inc., 163 F.3d 1326 (Fed. Cir. 1998), the Court relied upon a single set of drawings produced on a single day to find the existence of an enabling conception of the claimed invention. Id. at 1330, 1333-34.

In STX LLC v. Brine Inc., 211 F.3d 588, 591 (Fed. Cir. 2000), more than one year before the filing date, the inventor had made a model of the complete invention and submitted it both to a standards committee and to a manufacturer to produce samples to be used in a trade show. In Minton v. Nat’l Ass’n of Securities Dealers, 226 F. Supp. 2d 845, 854-56 (E.D. Tex. 2002), aff’d, 336 F.3d 1373 (Fed. Cir. 2003), the inventor leased his complete electronic trading system to a customer prior to the critical date. The Court found that the screen outputs of the actual leased system in combination with its software user guide embodied every limitation of the claims and,

hence, the invention was "ready for patenting" before the critical date. Minton, 226 F. Supp. 2d at 859-73. In Certain Integrated Repeaters, Switches, Transceivers, and Products Containing Same, Inv. No. 337-TA-435, Initial Determination at 97 (February 1, 2002), the claimed chip package was found ready for patenting before the critical date based upon drawings, essentially identical to those in the patent, depicting the entire footprint and cross-section of the chip, including the claimed outer and inner arrays of contact pads and solder balls.

Respondents, to show that the inventions claimed in the '527 and '440 patents were enabled and ready for patenting more than one year before the critical date, rely upon a combination of evidence, including the ATA specification, the ATAPI specification, the OTI-012 engineering specification, the OTI-011 preliminary engineering specification, the OTI-011 register definitions, certain schematics from the OTI-012 chip, and a partial set of schematics and the recollections of one of the inventors as to the existence of other schematics. (RBr at 111-19.) The administrative law judge, however, finds that this hindsight reconstruction using the claims of the issued '527 and '440 patents and relying on numerous distinct documents separately created over several months by various people coupled with testimony subsequent to the issuance of the '527 and '440 patents is not the type of evidence that courts rely on to invalidate a patent under 35 U.S.C. §102(b) as indicated by the cases cited supra.

Respondents argued that Hwang of Crest was able to create the HISIDE chip with functional specifications having much less detail than circuit schematics. (RBr at 108-110.) Crest, however, was not working on the inventions claimed in the '527 and '440 patents.

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{ Hwang further testified that Crest took the Western Digital design specification and had discussions with the customer, Western Digital, about the specification to try to get the design for the HISIDE project to work correctly. (Hwang, Tr. at 2708.) {

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Based on the foregoing, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that the '527 and '440 patents are invalid because the claimed inventions were ready for patenting prior to the critical date of June 22, 1993. Hence, he finds that the '527 and '440 patents are not invalid under 35 U.S.C. §102(b) in view of the OTI-011.

5. Mitsumi IDE CD-ROM

Respondents argued that claims 1, 2 and 3 of the '527 patent are anticipated by the IDE CD-ROM prototype of Mitsumi Electric Corporation of Japan (Mitsumi) and are thus invalid under 35 U.S.C. § 102 (b)/(f). (RBr at 120-23.)

Complainants argued that the '527 patent is not anticipated by the Mitsumi prototype; that respondents do not dispute that the OTI-012 controller (and its constituent host interface) was not directly connected to the IDE bus in the Mitsumi prototype; and in fact admit that the OTI-012 chip in the CD-ROM drive portions of the Mitsumi prototype was not directly connected to the IDE bus in said prototype. (CRBr at 39-41.)

The staff argued that respondents have failed to meet their burden to show, by clear and convincing evidence, that the Mitsumi prototype contained every limitation of the claims of the '527 patent. (SBr at 68-69.) The staff, in support, argued that each of the claims of the '527 patent requires "a host interface connecting said host computer and said optical drive controller directly via an IDE/ATA data bus," citing CX-2, col. 28, lns. 47-49; col. 29, lns. 1-3; col. 30, lns. 3-5; that in each claim, the language expressly requires the host interface to be part of the optical drive controller; and that it is only by construing the term "optical drive controller" to include both the OTI-012 controller chip and Mitsumi daughterboard that respondents can contend that this element of the claims is met. The staff further argued that while an optical disk controller may consist of one or more devices that control the communications between a host computer and the drive electronics of the optical disk drive, the OTI-012 was a controller that had a host interface; that the OTI-012 host interface did not connect to the host computer directly via an IDE/ATA data bus, but rather, the Mitsumi prototype supplied an additional host interface on a separate daughterboard that used (i) an IDE/ATA data bus to connect to the host computer, and (ii) a proprietary bus to connect to the drive controller; that while the Mitsumi daughterboard directly connected to the IDE/ATA data bus, there was no direct connection between the optical drive controller and the host computer using the IDE/ATA data bus. Hence, the staff concluded that the Mitsumi prototype did not use or disclose a controller including the claimed limitation "a host interface connecting said host computer and said optical drive controller directly via an IDE/ATA data bus" and thus, did not anticipate the claims of the '527 patent. (SRBr at 45.)

Anticipation by the Mitsumi prototype was an issue in CD-ROM Controllers II involving the parent '715 patent. The Commission held that the Mitsumi prototype did not have a "direct"

connection to the IDE/ATA bus and therefore did not include every limitation of the claims at issue. (CX-513 at 58.) The Mitsumi prototype was also cited to the Patent Office during the prosecution of the '527 patent in the February 28, 2000 Information Disclosure Statement. (CX-10 at ZC 001240-1245.)

As for the relationship between Oak and Mitsumi and the contacts Mitsumi had with inventor Verinsky, Oak and Mitsumi had a vendor/customer relationship. (Verinsky, Tr. at 14, 920, 1030; JX-13C (Sugie Depo.) at 134, 825-826; Case, Tr. at 320.) Sugie, chief engineer at the time for Mitsumi, was the primary interface for Mitsumi on the OTI-012 project. Other Mitsumi engineers that worked on the OTI-12 project were Messrs. Yoshikawa and Ogawa. (JX-13C at 730-31.) Sugie also was the lead engineer responsible for the development of the IDE CD-ROM drive. Weigung Wang also worked on the project for Mitsumi and reported to Sugie. (JX-13C at 746-47.)

Mitsumi provided Verinsky with Sanyo LC8950 controller information to help him understand how the Sanyo LC8950 operated. Mitsumi also provided Verinsky with a copy of the Sanyo LC8950 application note, portions of the LC8950 firmware necessary for communicating with the CD-ROM controller, circuit schematics for the printed circuit board of the CD-ROM drive and a complete drive containing the Sanyo LC8950. (JX-13C at 732-36.) Mitsumi further provided Verinsky with portions of the firmware for the Sanyo LC8950 controller so he could understand how the microcontroller in the drive could access information stored in registers on a CD-ROM controller. (JX-13C at 735.) Mitsumi began placing OTI-012 controllers in its CD-ROM drives by 1992 at the latest. (JX-13C at 729-30, 737.) The Sanyo LC8950 controller communicated over a proprietary interface, which interface was a Mitsumi proprietary interface

meaning that Mitsumi had designed the interface and protocol. (JX-13C at 737; JX-20C (Sugie 12/7/04 Depo.) at 32.) The OTI-012 controller communicated over a proprietary Mitsumi interface. (JX-13C at 737; CX-1305C; JX-20C at 32.) The Mitsumi CD-ROM drives that used either the Sanyo LC8950 or the OTI-012 chips connected to a computer via a host adapter card plugged into an ISA slot on the computer motherboard. (JX-13C at 738-39; JX-20C at 23.)

Oak provided Mitsumi with copies of the OTI-012 specification, which were likely provided to Mitsumi by Verinsky. The specifications included block diagrams, register descriptions, and pin descriptions. (JX-13C at 739-41, 744; CX-1305C.) The OTI-012 controller chip had a microcontroller interface. (JX-13C at 741-42; CX-1305C.) The OTI-012 controller chip had a DSP interface. (JX-13C at 743; CX-1305C.) The OTI-012 controller chip had a memory interface. (Id.) The OTI-012 controller chip had a host interface. (Id.) The OTI-012 controller chip performed error detection and error correction on data received from the compact disk. (JX-13C at 739; CX-1305C.)

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} Verinsky saw Mitsumi's prototype display CD-ROM data on a computer monitor a number of times. (Verinsky, Tr. at 934.) He characterized the Mitsumi prototype as “a translator board that would allow their proprietary bus to be used over an IDE bus.” (Verinsky, Tr. at 1037.)

With respect to any direct connection to the bus in the Mitsumi prototype,

Mitsumi's first task in the creation of an IDE CD-ROM drive was to verify that a CD-ROM drive could interface to an IDE interface. (JX-13C at 748.) To verify the concept, Mitsumi began work on an IDE CD-ROM prototype. Significantly, the prototype consisted of a Mitsumi proprietary CD-ROM drive with interface circuitry to allow the drive to connect to the IDE interface in a computer with the interface circuitry referred to as a "daughterboard," and said daughterboard residing between the Mitsumi proprietary interface and the IDE interface. (JX-13C at 748-49.) The Mitsumi 40-pin cable that connected the OTI-012 to the Mitsumi bus on the daughterboard was not pin compatible with the 40-pin cable that connected the daughterboard to the IDE bus on the host computer. (JX-20C at 94-95; JX-13C at 851.) Thus, the Mitsumi 40-pin cable could not be plugged into the IDE bus directly. (JX-20C at 94-95; JX-13C at 851.) In the Mitsumi 40-pin cable that connected the OTI-012 to the daughter board, twenty of the pins were grounded and, thus, not all forty of the pins were active. (JX-13C at 968-69; CX-1532C.)

The administrative law judge finds that the Mitsumi CD-ROM drive was a CD-ROM optical drive all by itself that had a CD-ROM controller built into it. (Samuels, Tr. at 3154.) The CD-ROM drive was connected to one end of a Mitsumi proprietary bus. (Samuels, Tr. at 3153-54; CX-513C at 64; CDX-93C; CDX-134; CX-1709.) The other end of the Mitsumi proprietary bus was connected to a translator board, or "daughterboard." (JX-20C at 92-93; CX-1527C at AP00934; Samuels, Tr. at 3153-54; CX-513C at 64; CDX-93C; CDX-134; CX-1709.) The daughterboard was in turn connected to the IDE/ATA bus of the host computer. (JX-20C at 92-93; CX-1527C at AP00934; Samuels, Tr. at 3153-54; CX-513C at 64; CDX-93C; CDX-134; CX-1709.) Thus, the daughterboard sat between the OTI-012 controller and the IDE/ATA bus. (JX-20C at 92-93; CX-1527C at AP00934; Samuels, Tr. at 3153-54; CX-513C at 64; CDX-93C;

CDX-134; CX-1709.) The daughterboard translated information coming from the IDE/ATA bus so that it could be understood by the Mitsumi interface, and translated Mitsumi proprietary signals into signal that could be used by the ATA/IDE bus. (JX-20C at 95-96; JX-13C at 748, 763, 870-72; JX-13C at 76-77; Samuels, Tr. at 3155-58; CX-513C at 57-58, 64; CDX-93C; CDX-134.) Moreover, the Mitsumi CD-ROM drive was itself fully functional and could be used without connection to the IDE/ATA bus. (Samuels, Tr. at 3154-55.)

Based on the foregoing, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that claims 1, 2 and 3 of the '527 patent are anticipated by the Mitsumi IDE CD-ROM prototype because said prototype did not directly connect the controller to the IDE/ATA bus.

6. 35 U.S.C. §103

Respondents argued that the asserted claims of the '527 and '440 patents are obvious in view of: (I) the Mitsumi prototype and the ATA specification; or (ii) the OTI-012, the ATA specification and U.S. Patent No. 5,805,921 (the Kikinis patent). (RBr at 124-29.) Complainants argued that the '527 and '440 patents are valid under Section 103 and further argued that the evidence of secondary considerations calls for a finding of non-obviousness. (CRBr at 47-50.) In the staff's view, respondents have not met the clear and convincing evidentiary standard necessary to invalidate an issued patent under 35 U.S.C. §103. (SRBr at 53-57.)

The administrative law judge finds that respondents' support for their invalidity argument under 35 U.S.C. §103 are conclusory claim charts indicating where respondents' expert Buscanio believes each element of the claims appear in the prior art references. (See RBr at 124-29.) Lacking, however, in the conclusory claims charts is a suggestion or motivation in the references

to combine them. Respondents argued that the Kikinis patent provides the “suggestion” to combine the OTI-012 CD-ROM controller with the ATA specification to create a CD-ROM controller that communicated over the IDE/ATA bus. (See RRCPPF 1252B). The administrative law judge finds no suggestion in the Kikinis patent, the Oak OTI-012 CD ROM controller or the ATA specification to combine the three. (Samuels, Tr. at 3150-51; CX-513C at 63; CX-131; CX-1305; CX-1249; CDX-116.) Respondents argued that the Kikinis patent discloses the connection of a CD-ROM drive to the IDE/ATA bus. (RPPF 1520.) The Kikinis patent, however, teaches away from the use of a multibyte command buffer. (See Samuels, Tr. at 3150-51; CX-131; CDX-118.) Also, the Kikinis patent teaches “command set translation.” (Samuels, Tr. at 3144; CX-131; CDX-118.)

The administrative law judge further finds objective indicia of nonobviousness. Thus prior to the claimed inventions in issue, there is nothing in the record that establishes that a company had offered for sale an optical drive controller that could directly connect to the host computer via the IDE/ATA data bus. Moreover, the Oak OTI-011, which embodied the claimed invention, was a commercial success. (Verinsky, Tr. at 143-44; CDX-5; CX-1847; Samuels, Tr. at 3112-14; CX-608; CX-1847C; CX-404; CX-420C; CX-408 at OTI 036707-710.) Thus the sales volume of the OTI-011 chips in the first few years they were offered for sale was in the millions. (Verinsky, Tr. at 143; CX-1847; CDX-5.) Also, complainant Oak was able to leverage the value of its patented invention through the licensing of its patent portfolio, which included its patents relating to the OTI-011,{

}Based on the foregoing, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that the asserted claims of the ‘527 and

'440 patents are obvious under 35 U.S.C. §103.

7. 35 U.S.C. § 112

Respondents argued that certain claims of the '527 and '440 patents are invalid under 35 U.S.C. § 112, second paragraph, because they include an indefinite term "ATA transfer protocol." (RBr at 129-30.) Complainants argued that the asserted claims are valid under 35 U.S.C. § 112. (CBr at 79.) The staff argued that respondents have not established that the asserted claims of the '527 and '440 patents are invalid under 35 U.S.C. §112. (SBr at 71-74.)

Complainants (and their expert), respondents (and their expert) and the staff agreed that each claim limitation at issue can be construed. (RPHS at 8-38; CPHS at 22-57; SPBr at 4-27; Samuels, Tr. at 174-437; Buscaino, Tr. at 2563-79; CFF1720 (undisputed).) In addition, respondents' expert Buscaino did not opine at the hearing that any claim term was indefinite. (Buscaino, Tr. at 2769-2881; see CFFF 1721 (undisputed).) Hence, the administrative law judge finds that respondents have not established, by clear and convincing evidence, that any asserted claims of the '527 and '440 patents is invalid under 35 U.S.C. §112, second paragraph.

VII. Enforceability Of The '527 And '440 Patents

Respondents argued that the '527 and '440 patents are unenforceable due to complainant Oak's inequitable conduct during the prosecution of the application that led to the issuance of the parent '715 patent; and that Oak employee Peter Brown and inventor Phil Verinsky failed to provide three "highly material references" to the Patent Office, viz. (a) the Mitsumi prototype; (b) the June 10, 1993 ATAPI document; and (c) Oak's early sales activity regarding the OTI-011. (RBr at 130.) Complainants and the staff argued that the '527 and '440 patents are not unenforceable. (CBr at 92-101.)

It is a fact that Brown played a role in Oak's application procedure for the '715 patent. For example, Brown retained Shahani, Oak's patent attorney, to work on the application for the '715 patent. In addition, Brown created essentially all 83 of the figures that were submitted for the '715 patent application. Brown also met with Shahani on two or three occasions to discuss the application for the '715 patent. (Brown, Tr. at 2148, 2191.) At some point, Brown put Shahani in touch with Verinsky or other engineers from Oak. (Brown, Tr. at 2191.) To aid in Shahani's preparation of the application for the '715 patent, Brown provided Shahani with an OTI-011 specification that Brown had helped to compile. (Brown, Tr. at 2148-49; see CX-1431C.)

In April 1994, Brown prepared a memo entitled "Barrier Plan" and sent it to Bryson, a vice president at Oak. (Brown Tr. at 2149-50; see RX-88C). In the April 1994 "Barrier Plan" memo, there is a heading entitled "Patents," and in that section, Brown states that "I have a copy of a patent that I intend to file on the IDE interface," which is a reference to the patent application that led to the issuance of the '715 patent. (Brown, Tr. at 2150-51; see RX-88C.) In the next sentence of the Barrier Plan memo, Brown states, "I believe that this patent may not pass the test of being non-obvious, nor the time test, since we have been promoting it for more than two years." (Brown, Tr. at 2151; RX-88C).

After writing the memo titled "Barrier Plan," Brown did talk to two patent attorneys and understood that Oak had one year to file the patent application from the time that Oak had an actual product to sell. He also understood that Oak had its initial sample chips in late August 1993, so he understood and told people internal to Oak that they had until the end of August 1994 to file a patent application. (Brown, Tr. at 2160-61, 2197-98; RX-88C at 1055DOC00306.)

While Brown did play a role in Oak's application for the '715 patent, Brown, however, did not know when or if Oak filed a patent application for what eventually issued as the '715 patent, and he did not participate in the process of determining what information to disclose to the PTO in connection with the filing of the patent application that eventually issued as the '715 patent. (Brown, Tr. at 2152.) Also, Brown is neither a patent agent nor an attorney. (Brown, Tr. at 2152-53.) Moreover, the Mitsumi prototype did not include a direct connection to the IDE bus. (Brown, Tr. at 2164-65; JX-20C at 92, 96-98, 106-07; JX-13C at 872, 878; Samuels, Tr. at 3155-58, 3166, 3335-36, 3346; CX-513C at 58, 64; CDX-93C; CDX-134; CDX-113; CDX-114.)

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} Also, as found supra, the

ATAPI specification does not anticipate the asserted claims of the '527 and '440 patents.

In addition, in connection with the prosecution of the '527 patent, reference is made to the February 28, 2000 Information Disclosure Statement (IDS) filed by applicants at the PTO, (CX-10 at ZC001233-1245), the February 28, 2000 filing with the PTO by applicants of a Notification of Related Litigation in which the documents and prior art addressed in the IDS were discussed, (CX-10 at ZC001483-1489), and the second Notification of Related Litigation, which accompanied a March 2, 2001 Information Disclosure Statement. (CX-10 at ZC001623-1624, ZC001526-1533). In connection with the March 2nd IDS, applicants provided the PTO with relevant materials from the then-pending Federal Circuit appeal in CD-ROM Controllers II. Also, applicants filed a preliminary amendment on August 2, 2001 in which applicants addressed, among other things: (a) the Federal Circuit's opinion in Oak Technology, (b) the Draft Proposed American National Standard – Attachment, (c) the Oak OTI-012 CD-ROM

controller, (d) the ATAPI CD-ROM Standard, Revision A1.3, (e) the Mitsumi prototype and (f) the Kikinis patent. (CX-10 at ZC001741-1745.) On August 2, 2001, the applicants further filed another Information Disclosure Statement with the Patent Office. (CX-10 at ZC001678-1681.) In the August 2nd IDS, the applicants disclosed again, among other documents, the Federal Circuit's opinion in Oak Technology, as well as a Declaration of Robert G. Wedig from the 409 Investigation. (CX-10 at ZC001681.) On February 28, 2002, the applicants filed with the PTO a third Notification of Related Litigation, which accompanied a February 28, 2002 IDS. (CX-10 ZC001802-03, 1811-13.) A complete version of the January 11, 1999 Initial Determination in the 409 investigation was filed with the PTO as part of the Nonconfidential Joint Appendix, Volume I as part of the February 28, 2002 IDS. (CRX-1 at ZC004973-5288.) On February 28, 2002, the applicants also filed an office action response in which they further addressed, among other things, the Kikinis patent and the Mitsumi prototype. (CX-10 at ZC001814-1818.) On September 24, 2002, the applicants filed a fourth Notification of Related Litigation and simultaneously filed another Information Disclosure Statement with the PTO. (CX-10 at ZC001830-1836.) Examination of the prosecution history of the '440 patent also discloses that applicants made filings as to prior art comparable to what was done during the prosecution of the '527 patent. (See CX-11.)

Respondents argued that Oak did not inform the PTO that it had in its possession "later copies of the ATAPI specification that unquestionably were publicly available prior to the date of the '527 and '440 patents" and that there were "changes made to the OTI-011 design that related to ATAPI [which] were complete by June 22, 1993." (See RRCPPF 1736, 1736E.) The administrative law judge however has found, supra, that neither the ATAPI specification nor the

OTI-011 affects the validity of the asserted claims of the '527 and '440 patents.

Based on the foregoing, the administrative law judge finds that Oak, through Brown and/or Verinsky, did not intentionally withhold material information from the PTO. Hence, he finds that respondents have not established, by clear and convincing evidence, that the '527 and '440 patent are not unenforceable.

VIII. Domestic Industry

Respondents argued that complainant Zoran lacks a domestic industry for the '527 and '440 patent because: (1) it cannot satisfy the economic prong of the domestic industry; and (2) it has failed to show that the OTI-9510 or the SC-2120B practice any claims of the '527 or '440 patents. (RBr at 131-33.) Respondents further argued that Zoran does not satisfy the technical prong of the domestic industry requirement for the '736 patent. (RBr at 193.)

Complainants argued that the domestic industry requirements for the asserted patents have been established. (CBr at 38, 148-52, 169-73; CRBr at 38.)

The staff argued that the economic prong of the domestic industry, with respect to the '527 and '440 patents, is satisfied. However, while the staff argued that the technical prong of the domestic industry, with respect to the '527 patent, is satisfied, it argued that complainants' chips do not satisfy the technical prong, with respect to the '440 patent. Moreover, it argued that the technical prong of the domestic industry requirement is not satisfied with respect to the '736 patent. (SBr at 60-66; SRBr at 35-40.)

In proving the existence of a domestic industry a complainant must establish that its activities in the United States meet the threshold set forth in the statute (economic prong) and that those activities are devoted to a product or process which is covered by the patent(s) in issue

(technical prong). In re Certain Removable Elec. Cards and Elec. Card Reader Devices and Prods. Containing Same, Inv. No. 337-TA-396, 1998 WL 479084 at *9 (Comm'n Op. Aug. 1998) (U.S.I.T.C. Pub. No. 3123). A complainant bears the burden of demonstrating the existence of an industry in the United States that practices the patent(s)-at-issue and meets the requirements of section 337(a)(3). Certain Microsphere Adhesives, Process for making Same, and Products Containing Same Including Self-Stick Repositionable Notes, Inv. No. 337-TA-366, Comm'n Op. at 8 (1996) (U.S.I.T.C. Pub. No. 2949) (Microsphere Adhesives).

Regarding the economic prong, a complainant may show that a domestic industry exists or is in the process of being established under any of the three statutory grounds as set forth in 19 U.S.C. § 1337(a)(3):

(3) For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is the United States, with respect to the articles protected by the patent ... concerned –

- (A) significant investment in plant and equipment;
- (B) significant employment of labor or capital; or
- (C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3) (emphasis added). Given that said criteria are in the disjunctive, satisfaction of any one of the three criteria will be sufficient to meet the domestic industry requirement. Certain Variable Speed Wind Turbines and Components Thereof, Inv. No. 337-TA-376, Comm'n Op. at 15 (Nov. 1996) (U.S.I.T.C. Pub. No. 3003). There is no requirement in the statute that an industry must be of any particular size. Id.

The technical prong of the domestic industry requirement requires a complainant to

demonstrate that it practices the patents at issue. Although there must be a domestic industry with respect to each asserted patent, there is no requirement that the claims asserted against a respondent must correspond with those practiced by the domestic industry. Microsphere Adhesives. Thus, a complainant need only show that their products meet one claim of every patent at issue. Certain Lens Fitted Film Packages, Inv. No. 337-TA-406, ID at 203 (Feb. 24, 1999), reviewed-in-part on other grounds (April 9, 1999); Certain Toothbrushes and Packages Thereof, Inv. No. 337-TA-391, Order 8 (July 7, 1997) (unreviewed initial determination).

1. '527 And '440 Patents (Economic Prong)

Regarding the economic prong of the domestic industry requirement, complainants rely upon the activities of Sunext Design, which is a wholly-owned subsidiary of Sunext Technology Co., Ltd. (Sunext), which in turn is a wholly-owned subsidiary of Oak's licensee SunPlus Technology Co., Ltd. (SunPlus). (CX-1801C.)

SunPlus is a Taiwanese corporation. (Yiu, Tr, at 1538.) Sunext is a Taiwanese corporation. (Yiu, Tr. at 1538.) On February 5, 2003, SunPlus and Oak entered into an asset purchase agreement. (CX-363 at ZC007231; RX-276.) {

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The Asset Purchase Agreement (APA) states that the buyer SunPlus shall execute and deliver to the seller Oak a Technology License Agreement. (CX-363 at ZC007274 (¶8.3(c)).)

The APA further states that Technology License Agreement is the agreement as set forth in Exhibit C-2. (CX-363 at ZC007238.) Said exhibit C-2 states that Oak:

grant[s] to SunPlus a perpetual, irrevocable, nonterminable, transferable, fully

sublicensable, royalty-free, fully-paid worldwide nonexclusive license under the Retained Patents to make, have made, use, sell, offer for sale and import any product and practice any process in connection with the Optical Storage Business.

(CX-363 at ZC007295 (emphasis added).) “Retained Patents” means all patents listed in Schedule 1.1(e) and “divisionals, continuations, continuations-in-part, renewals, reissuances, reexaminations, and extensions of the foregoing (as applicable) and patent issuing therefrom.”

(CX-363 at ZC007238.) Schedule 1.1(e) includes the ‘715 patent, the predecessor patent of the ‘527 and ‘440 patents at issue in this investigation. (CX-363 at ZC007548.) The execution of the Technology License Agreement was a condition of closing the APA itself. (Edmunds, Tr. at 2425.)

Pursuant to the APA, Oak and SunPlus entered into the Technology License Agreement on April 3, 2003. (Edmunds, Tr. at 2423-24; CX-1737C.) The actual Technology License Agreement entered into by Oak and SunPlus on April 3, 2003, states that Oak:

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(CX-1737C at OTI012641 (emphasis added).) The APA defines “Newco” as a new corporation formed by SunPlus to conduct the PC Optical Storage Business. (CX-363 at ZC007267 (¶5.13(a)); Edmunds, Tr. at 2426-27.) Sunext was that new corporation.⁴⁹

Sunext Technology has a wholly-owned subsidiary, Sunext Design, in Sunnyvale, California that performs research and development, technical and application support, and all

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}(CX-1801C at Question

No. 7; Edmunds, Tr. at 2427.)

design work. (CX-1801C at Question 21; Edmunds, Tr. at 2428.) After the APA, Sunext Design was the actual recipient of Oak's physical assets and employees. (Edmunds, Tr. at 2428.)

Although from its inception Sunext conducted{

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(CX-1801C at Question 9; CX-1575C; Yiu, Tr. at 1550.) The license agreement granted{

}(CX-1801C at

Question 9; CX-1575C; Yiu, Tr. at 1550.) {

} (Yiu,

Tr. at 1540; CX-1575.) The '527 and '440 patents were not specifically listed in the APA

because at the time of the agreement, those patents were pending. (Yiu, Tr. at 1541, 1549-50;

RX-276.)⁵⁰ Although Sunext Design has{

} (Yiu, Tr. at 1539.)

From April to the end of 2003, Sunext through Sunext Design performed research and development and commercialization on the next generation OTI-9510 optical disk controller chip, the SC-2120B-2. (CX-1801C at Question 17, 21-22.) During this time, Sunext Design in Sunnyvale, California employed{ }full-time individuals and{ }independent contractors engaged in part on research and development of the SC-2120B-2 and improvements to the OTI-9510.

(CX-1801C at Question 22.) Currently, Sunext Design in Sunnyvale, California employs{ }full-

⁵⁰ The '440 patent issued on April 8, 2003 while the '527 patent issued on June 24, 2003. (CX-3; CX-2.)

time individuals and { } independent contractors dedicated to customer technical support, software application support and ASIC development for the sales of its chips. About { } percent of these employees are currently engaged in the support for the OTI-9510 and SC-2120B products. (CX-1801C at Question 25-26.)

Yiu estimated that between { } were engaged in activities related to the OTI-9510 and SC-2120 products. (CX-1801C at Question 24.) { } of Sunext's total resources were dedicated to the OTI-9510 and SC-2120 products. (CX-1801C at Question 24.) From { } of Sunext's total resources were dedicated to the OTI-9510 and SC-2120 products. (CX-1801C at Question 24.) From { } of Sunext's total resources were dedicated to the OTI-9510 and SC-2120 products.

(CX-1801C at Question 24.) CX-1271C consists of invoices from Sunext Design to Sunext from May 2003 to June 2004 documenting { } in the total engineering support costs for the SC-2120, OTI-9510, OTI-9897, OTI-9790 and one new Sunext product. (CX-1801C at Question 27; CX-1271C.) Yiu estimated that { } percent of these costs or { } can be directly attributed to the engineering, research and development, design, testing and support activities for the OTI-9510 and SC-2120B chips. (CX-1801C at Question 30.)

Respondents argued that complainants may not rely on the activities of an "unlicensed third party" to satisfy the economic prong requirements when that third party is simply a sub-licensee twice removed from a foreign entity that is itself merely a bald licensee, such as Sunplus (RRBr at 92-95.) However, the record establishes that Sunext and its wholly-owned subsidiary Sunext Design are licensed under the '527 and '440 patents. Section 337(a)(3)(C) specifically

provides that a domestic industry can be established through licensing. Hence, the administrative law judge finds that complainants have satisfied the economic prong of the domestic industry requirement with respect to the '557 and '440 patents.

2. The '527 Patent (Technical Prong)

Each of complainants and the staff argued that the OTI-9510 and SC-2120B controllers practice claim 3 of the '527 patent. (CRBr at 38; SBr at 64-65.) Respondents argued that the OTI-9510 and SC-2120B do not meet every element of claim 3 of the '527 patent. (RBr at 132-33.)

The OTI-9510 and SC2120B chips are optical storage controller chips that{
} to the IDE bus of a host computer. (Samuels, Tr. at 554; CX-1260C at SUN00541-3; CX-241 at SUN01481.) Both chips include an{
} from the host. (Samuels, Tr. at 554; CX-1260C at SUN00904; CX-241C at SUN01764.) In addition, both the OTI-9510 and SC2120B use the{
} the host computer. (Samuels, Tr. at 565-68; CX-1260C at SUN 00904; CX-241C at SUN01764.) Both chips also include{
} (Samuels, Tr. at 568-69; CX-1260C at SUN00904; CX-241C at SUN01764.)

Accordingly, the administrative law judge finds that the OTI-9510 and SC2120B chips satisfy every limitation of claim 3 of the '527 patent and therefore, that complainants have satisfied the technical prong of domestic industry with respect to the '527 patent.

3. The '440 Patent (Technical Prong)

Complainants argued that the OTI-9510 and SC-2120B controllers satisfy, inter alia, the “status register including a BSY bit that indicates when access by the host to the ATA command block registers is precluded” limitation of asserted claim 14. (CBr at 39, citing CPFF 1023.) As for both the OTI-950 and SC-2120B controller, complainants argued that said controllers include {

} (CBr at 39; see CRRPFF 1670A-M.)

The staff argued that complainants have failed to establish the technical prong for the domestic industry relating to the '440 patent because the OTI-9510 and SC2120B do not prevent or preclude the host from accessing the command block registers, as required by asserted claim 14; that the OTI-9510 and SC2120B comply with the ATA/ATAPI-5 standard, which states that the device reset command shall be accepted when the BSY bit is set to one; and that accepting the device reset command when BSY is set to one means that the host computer “must be able to access at least the ATA command block register at 1F7 in order to write the op code for a device reset even when the BSY bit is set to 1.” (SBr at 65; see SRBr at 38.)

Respondents argued that complainants have represented that the OTI-9510 and SC-2120B comply with the ATA/ATAPI-5 standard; that therefore, said controllers must allow the host computer to write a device reset command to the ATA command register at address 1F7, even when the BSY bit is set to one; and that given that the OTI-9510 and SC-2120B controllers

follow the ATA/ATAPI-5 standard, said controllers cannot practice claim 14 of the '440 patent, which requires that the host computer is precluded from accessing the ATA command block registers when BSY is set. (RBr at 133; RRB at 93.)

Despite statements in the OTI-9510 and SC-2120B product documentation that the{

} Oak

has represented that said controllers comply with the ATA/ATAPI-5 standard. (RPFF 1667, 1673 (undisputed); see CX-1260 at SUN00893-94 (description of OTI-9510 control task register); CX-241 at SUN01755-56 (description of SC-2120B control task register).) Buscaino, commenting on said ATA/ATAPI-5 specification, testified that the OTI-9510 and SC-2120B controllers must be able to accept the device reset command from the host computer at ATA register address 1F7 even when the BSY bit is set. (Buscaino, Tr. at 2766-67; see RX-846 at ZC-E_076679-80.)

Thus, the host computer is not prevented from writing the device reset to the command block register at address 1F7 in the OTI-9510 and SC-2120B controllers when the BSY bit is set.

Accordingly, the administrative law judge finds that the OTI-9510 and SC-2120B controllers do not contain a BSY bit that indicates when access by the host computer to the command block registers is prevented as required by asserted claim 14 and therefore, have not established the technical prong of the domestic industry requirement as it relates to the '440 patent.

4. The '736 Patent (Economic Prong)

The private parties stipulated that complainants satisfy the economic prong of the domestic industry with respect to the '736 patent, based on complainants' investments in the domestic manufacture involving the Vaddis chips. (See CX-1848C.) The staff had no objection

to CX-1848C. The staff also indicated that from November 2003 to January 27, 2004, complainants invested in the domestic fabrication at{ } of approximately{ } Vaddis 6 wafers (approximately{ } Vaddis 6 chips) at a cost of approximately{ } citing SX-7C, ¶¶1,2. (See SBr at 60.) In view of CX-1848C and SX-7C at ¶¶ 1, 2, the administrative law judge finds that complainants have satisfied the economic prong requirement of the domestic industry as it relates to the '736 patent.

5. The '736 Patent (Technical Prong)

Claim 1 of the '736 patent requires a single memory cell that resides within the controller and is used by both the signal processors and error correction and detection subsystem for all processing of CD and DVD data. (See Section V.B.7., supra.) The Vaddis 6 utilizes{

} to process CD and DVD data. (CX-1548C at ZC-E_088904 and ZC-E_018903.)

Hence, the administrative law judge finds that the Vaddis 6 does not meet every claim limitation of claim 1 of the '736 patent and accordingly, he finds that complainants have not satisfied the technical prong of the domestic industry requirement for the '736 patent.

VIII. Remedy

The Commission has broad discretion in selecting the form, scope and extent of the remedy in section 337 proceedings. Integrated Circuit Telecommunication Chips, Inv. No. 337-TA-337, Comm'n Op. (August 3, 1993), citing Viscofan, S.A. v. U.S. Int'l Trade Comm'n, 787 F.2d 544, 548 (Fed. Cir. 1986). An exclusion order can exclude from importation goods and products that directly or contributorily infringe the patented technology. In the Matter of Certain Hardware Logic Emulation Systems & Components Thereof, Inv. No. 337-TA-383, Comm'n Op.

at 27 (March 1998) (U.S.I.T.C. Pub. No. 3089) (Hardware Logic). Direct infringement does not have to precede importation for an exclusion order to reach components that contribute to the infringement of the patents-in-issue. Hardware Logic, Comm'n Op. at 19-20. In Certain Personal Computers & Components Thereof, Inv. No. 337-TA-140 (March 1984) (U.S.I.T.C. Pub. No. 1504), the Commission excluded from entry into the United States personal computers and components thereof "which are less than complete when imported but [which] are designed and intended to be employed by their owner, importer, consignee or agent of either to make a personal computer which directly infringes any of the [patents-in-suit]."

The Commission also has the authority to issue cease and desist orders where a respondent has a sufficient inventory of infringing goods in the United States. See Certain Plastic Encapsulated Integrated Circuits, Inv. No. 337-TA-315, Comm'n Op. at 37 (November 1992) (U.S.I.T.C. Pub. No. 2574). A "sufficient inventory" may consist of one infringing product. See, e.g., Hardware Logic, Comm'n Op. at 26. A cease and desist order can issue in lieu of or in addition to an exclusion order to prevent the sale, distribution or other use of infringing imported products in the United States. The scope of section 337 is broad enough to prevent every type and form of unfair practice. Hardware Logic, Comm'n Op. at 25-29; Certain Digital Satellite Systems Receivers, Inv. No. 337-TA-392, ID at 239-44 (Oct. 1997) (U.S.I.T.C. Pub. No. 3418); Certain Digital Satellite Systems Receivers, Order No. 53 at 7-11 (June 9, 1997).

Complainants, in the event the Commission finds respondents in violation of section 337, requested that the Commission enter permanent limited exclusion orders under 19 U.S.C. § 1337(d) and cease and desist orders under 19 U.S.C. 1337(f) to protect complainants from imports and subsequent sales of respondents' infringing product. (CBr at 174.) Complainants, in

their reply brief, represented:

All parties agree that a limited exclusion order directed to respondent MediaTek's infringing optical disk controller chips and circuit board modules and carriers containing such chips is an appropriate remedy in the event that the Commission finds a violation of Section 337. (Respondents' Posthearing Brief at 198; Staff's Posthearing Brief at 79; Complainants' Posthearing Brief at 174-75.)

Likewise, in the event that the Commission finds a violation of Section 337, all parties agree that limited exclusion orders should also be directed to the infringing products of the remaining respondents that contain those infringing MediaTek chips, including DVD players and PC optical storage devices. (Respondents' Posthearing Brief at 198; Staff's Posthearing Brief at 79; Complainants' Posthearing Brief at 174-75.)

Finally, all parties agree that entry of cease and desist orders against at least each of Artronix, ASUS Computer International, Asustek Computer, Inc., AudioVox Corporation, Initial Technology, Inc., Mintek Digital, MSI Computer Corp., TEAC America, Inc., EPO Science and Technology, and Lite-On Information Technology Corp is appropriate in the event that the Commission finds a violation of Section 337. (Respondents' Posthearing Brief at 198; Staff's Posthearing Brief at 81; Complainants' Posthearing Brief at 175-76.)

(CRBr at 123.) Respondents, in their reply brief, represented:

All parties agree that should the Commission find a Section 337 violation, the following remedies are appropriate: (1) a permanent limited exclusion order prohibiting the importation and subsequent sales of each of the following: (a) any of MediaTek's optical disk controller chips found to infringe; (b) any of MediaTek's circuit board modules and carriers containing these chips; and (c) any of the remaining Respondents' products, which contain these chips; and (2) a cease and desist order directed to any of those Respondents who maintain "commercially significant" inventories in the United States.

(RRBr at 124.) The staff, in its reply brief, represented:

The parties appear to be in agreement that a limited exclusion order as to infringing MediaTek chips and chipsets is appropriate and that only Respondents' downstream products containing the infringing chips should be encompassed within the order. CPB at 174-75; RPB at 198; SPB at 80. Complainants and Respondents agree that the exclusion order should also encompass circuit board modules and carriers containing infringing MediaTek chips. CPB at 175; RPB at 198. The Staff has no objection to the inclusion of these products.

The parties appear to be in agreement that cease and desist orders against ACI, Artronix, Audiovox, EPO, Initial, LITE-ON, Mintek, MSI, and TEAC America are appropriate if a violation is found. CPB at 175-76; RPB at 198; SPB at 81. Complainants assert that ASUSTek Computer Inc. maintains a commercially significant inventory of infringing devices in the United States and therefore a cease and desist order to ASUSTek Computer Inc. is also appropriate. CPB at 176; CFF 4901-02. Based upon the evidence cited by Complainants, the Staff agrees.

(SRBr at 60-61.) As seen from the foregoing, the parties are in agreement for the most part with respect to the appropriate remedy in the event the Commission finds respondents in violation of section 337.

Based on the evidentiary record and the representations of the parties, should a violation of section 337 be found, the administrative law judge is recommending entry of limited exclusion orders directed to respondent MediaTek's infringing optical disk controller chips and circuit board modules and carriers containing said chips and further directed to the infringing products of the remaining respondents that contain those infringing MediaTek chips, including DVD players and PC optical storage devices, as well as circuit board modules and carriers.

The administrative law judge further finds that respondents Artronix, ASUS, Audiovox, Initial Technology, Mintek, MSI, TEAC America, EPO, Lite-On and ASUSTek have sufficient inventory of alleged infringing goods in the United States to warrant the issuance of cease and desist orders. (FF 55-72.) Hence, if the Commission finds a violation of section 337, the administrative law judge recommends the Commission issue cease and desist orders against those respondents.

IX. Bond

Pursuant to Commission rules 210.36(a) and 210.42(a)(1)(ii), the administrative law

judge is to issue a recommended determination on bonding since the accused products are entitled to entry under bond during the 60-day Presidential review period. See 19 U.S.C. § 1337(j)(3). To the extent possible, the bond should be an amount that would be sufficient to protect a complainant from an injury. See Commission rule 210.50(a)(3). In setting a bond amount, “the Commission typically has considered the differential in sales price between the patented product made by the domestic industry and the lower price of the infringing imported product.” See, e.g., Microsphere Adhesives, Process for Making Same, and Products Containing Same, Including Self-Stick Repositionable Notes, Inv. No. 337-TA-366, Comm. Op. at 24 (Jan. 1996) (U.S.I.T.C. Pub. No. 2949). However, where the available pricing information is inadequate, the bond may be set at 100 percent of the entered value. See, e.g., Certain Neodymium-Iron-Boron Magnets, Magnet Alloys, And Articles Containing Same, Inv. No. 337-TA-372, Comm. Op. at 15 (May 1996) (U.S.I.T.C. Pub. No. 2964).

Complainants, in their reply brief, represented:

All parties agree that MediaTek should be required to post a bond of 100% of the entered value of the chips found to infringe the ‘736 patent. (Respondents’ Posthearing Brief at 199; Staff’s Posthearing Brief at 82; Complainants’ Posthearing Brief at 176-78.) And both complainants and the Staff submit that bond of 100% is appropriate for the MediaTek chips that are found to infringe the ‘527 and ‘440 patents. (Staff’s Posthearing Brief at 82; Complainants’ Posthearing Brief at 176-178.)

* * *

Finally, all parties agree that a bond of at least \$4.43 should be set for all of the remaining respondents’ products that incorporate the accused MediaTek chips. (Respondents’ Posthearing Brief at 199; Staff’s Posthearing Brief at 82; Complainants’ Posthearing Brief at 176-78.)

(CRBr at 123-24.) The respondents, in their reply brief, represented:

The parties had, however, disagreed regarding the amount of the bond necessary to adequately protect Complainants from any competitive advantage Respondents may gain during the 60 day Presidential Review period.⁵¹ However, Respondents are persuaded by the arguments of both the Staff and Complainants. Thus, given the disparate pricing of the accused products, in particular the incorporation of these chips into larger and more expensive consumer products, a bond of 100% of the entered value of the imported chips should be applied to any Respondent importing these chips into the U.S. Furthermore, the disparate value between the chips themselves and these consumer products dictate that the bond for these consumer products be set in the amount of no more than \$4.43 (the average selling price of MediaTek's accused products as calculated by Complainant) per DVD player, PC optical storage device or other product containing any MediaTek product found to violate Section 337 and imported into the U.S. by any of the named Respondents.

The staff believed that a bond of 100 percent for chips imported separately and for documentation products, the staff recommended a bond based on an average price for respondents' chips, which the staff estimated is roughly \$5.00 per chip, so that the bond would be \$5.00 for each downstream product containing an infringing chip. (SBr at 82.)

Based on the disparate pricing of the accused products, the administrative law judge recommends a bond of 100 percent of the entered value of the imported chips be applied to any respondent importing said chips into the United States. He further recommends that a bond of at least \$4.43{ } should be set for all of the remaining respondents' products that incorporate the accused chips. (See FF 73-75.)

⁵¹ The only dispute between the parties was whether bond should be set at 100 percent of the chip value or no more than 48 percent based on price differentials. (CBr at 176-78; RBr at 198-99; SBr at 82.) {

Moreover, the record does not establish that the prices on these two chips are representative of the entire range of prices for the optical storage chips at issue in this investigation. }

X. Additional Findings

A. The Parties

1. Complainant Zoran Corporation of Sunnyvale, California is a Delaware corporation that provides digital solutions-on-a-chip for applications in the consumer electronic and digital imaging markets. In particular, Zoran provides back-end decoder chips for both PC optical storage systems and CD/DVD players. (Complaint ¶¶ 1, 3, pp. 1-2.)

2. Complainant Oak Technology, Inc. became a wholly-owned subsidiary of Zoran on May 4, 2003 as a result of a merger transaction. (Complaint ¶ 4, p. 2.) Prior to the merger, Oak developed and provided CD-ROM controller chips to the industry. (Complaint ¶ 6, p. 2, ¶ 95, p. 25.) Zoran and Oak are the co-owners of the asserted patents. (Complaint ¶ 5, p. 2; Exhibits 4-10.)

3. Respondent ASUSTek Computer, Inc. (ASUS) is a Taiwan corporation located in Taipei, Taiwan. (Response to Amended Complaint ¶14, p. 7 (August 13, 2004).) ASUS imports and sells before and after importation into the United States products containing optical disk controller chips and chipsets. (*Id.* at ¶15, p. 7; ¶89, p. 28.) ASUS Computer International (ACI) is a California corporation with its principal place of business in Fremont, California and is a wholly-owned subsidiary of ASUSTek Computer, Inc. (Response to Amended Complaint ¶14, p. 7.) ACI imports and sells after importation into the United States products containing optical disk controller chips and chipsets. (*Id.* at ¶15, p. 7; ¶89, p. 28.)

4. Respondent Audiovox Corporation (Audiovox) is a Delaware corporation with its headquarters in Hauppauge, New York. (Response to Amended Complaint ¶16, p. 7.) Audiovox imports and sells after importation into the United States products containing optical disk

controller chips and chipsets. (Id. at ¶17, p. 8; ¶90, p.28.)

5. Respondent EPO Science and Technology, Inc. (EPO) is a Taiwan entity with its principal place of business is Taipei, Taiwan. (Response to Amended Complaint ¶20, p. 8.) EPO imports and sells after importation into the United States products containing optical disk controller chips and chipsets. (Id. at ¶21, p. 8.)

6. Respondent Jiangsu Shinco Electronic Group Co., Ltd. (JSE Group) is a Chinese corporation located in Jiangsu, China. (Response to Amended Complaint ¶22, pp. 8-9.) Respondent Shinco International AV Co., Ltd. (Shinco International), is a Hong Kong entity operating in Hong Kong. (Id.) Respondent Shinco Digital Technology, Ltd. is misnamed in the complaint and should be referred to as Changzhou Shinco Digital Technology Co., Ltd. (Changzhou Shinco). (Id.) Respondent Changzhou Shinco is a Chinese entity with its principal headquarters in Changshou City, China. (Id.) Changzhou Shinco manufactures all of JSE's and Shinco International's DVD products. (Id.) Respondent Mintek Digital, Inc. (Mintek) is a California corporation located in Anaheim, California and is a U.S. distributor for Changzhou Shinco's DVD players. (Id.) Respondent Initial Technology, Inc. (Initial) is a California corporation with its principal place of business in La Verne, California. (Response to Amended Complaint ¶22, pp. 8-9.) Changzhou Shinco manufactures and sells for importation into the United States products containing optical disk controller chips and chipsets. (Id. at ¶23, pp. 10-11; ¶94 pp. 29-30.) Mintek and Initial Technology import products containing optical disk controller chips and chipsets manufactured by Changzhou Shinco into the United States and thereafter sell such imported products. (Id.) JSE Group does not contest jurisdiction in this matter. (CX-467 ¶2.)

7. Respondent LITE-ON Information Technology Corp. (LITE-ON) is a Taiwan corporation located in Taipei, Taiwan. (Response to Amended Complaint ¶24, p. 11.) LITE-ON imports products containing optical disk controller chips and chipsets and thereafter sells such imported products. (Id. at ¶25, pp. 11-12; ¶93, p. 29.) LITE-ON Group and LITE-ON Technology Corp. were named as respondents in the prior Inv. No. 337-TA-409. (Response to Amended Complaint ¶130, p. 37.)

8.. Respondent MediaTek, Inc. (MediaTek) is a Taiwan corporation located in Hsin-Chu City, Taiwan. (Response to Amended Complaint, ¶26, p. 12.) MediaTek sells optical disk controller chips and chipsets outside of the United States that are components of optical storage devices and DVD players manufactured by its customers and some of these optical storage devices and DVD players may enter the United States. (Id. at ¶27, p. 12.) MediaTek has imported, sold for importation or sold after importation into the United States the accused MT1189 chip. (CX-467 ¶3.) MediaTek was named as a respondent in the prior Inv. No. 337-TA-409. (Response to Amended Complaint ¶130, p. 37.) MediaTek does not contest jurisdiction in this matter. (CX-467 ¶3.)

9. Respondent Micro-Star International Co., Ltd. (Micro-Star) is a Taiwan entity with its headquarters in Taipei Hsien, Taiwan. (Response to Amended Complaint ¶28, p. 12.) Respondent MSI Computer Corporation (MSI) is a California corporation with its principal place of business in City of Industry, California. (Id.) Micro-Star imports, sells for importation and sells after importation into the United States products containing optical disk controller chips and chipsets. (Id. at ¶29, pp. 12-13; ¶96, p. 31.) MSI imports and sells imported products containing optical disk controller chips and chipsets. (Id.)

10. Respondent TEAC Corporation (TEAC) is a Japan corporation located in Tokyo, Japan and is the parent of respondent TEAC America, Inc. (TEAC America), a California corporation located in Montebello, California. (Response to Amended Complaint ¶30 p. 13.) TEAC America sells imported products containing optical disk controller chips and chipsets. (Id. at ¶31, p. 13; ¶97, pp. 31-32.) TEAC sells imported products containing optical disk controller chips and chipsets to TEAC America after importation into the United States by third party suppliers. (Id.) TEAC does not contest jurisdiction in this matter. (CX-467 ¶5.)

11. Respondent Terapin Technology Pte., Ltd. (formerly known as Teraoptix d/b/a Terapin Technology) (Terapin Corp.) is a Singapore corporation located in Singapore. (Response to Amended Complaint ¶32, p. 13.) Respondent Terapin Technology (formerly also known as Teraoptix) (Terapin Technology) is a California corporation located in Carrollton, Texas and is a wholly-owned subsidiary of Terapin Corp. (Id.) Terapin Corp. sells products containing optical disk controller chips and chipsets to Terapin Technology outside the United States. (Id. at ¶33, pp. 13-14; ¶98, p. 32.) Terapin Technology imports these products into the United States and thereafter sells the imported products. (Id.)

12. Respondent Ultima Electronics Corporation (Ultima) is a Taiwan entity with its principal headquarters in Taipei Hsien, Taiwan. (Response to Amended Complaint ¶12, p. 6.) Ultima manufactures and sells before importation into the United States products containing optical disk controller chips and chipsets. (Id. at ¶13, p. 7; ¶88, pp. 27-28.) Respondent Artronix Technology, Inc. (Artronix) is a California corporation with its principal place of business in Brea, California. Artronix is a subsidiary or otherwise affiliated with Ultima Electronics. (Id. at ¶12, p. 6.) Artronix imports and sells after importation products containing optical disk

controller chips and chipsets. (Id. at ¶13, p. 7; ¶88, pp. 27-28.)

B. Witnesses

13. Philip Verinsky received a B.S. in physics from San Jose State University in 1985. (Tr. at 9.) Verinsky was employed by Oak Technology Inc. from 1989 through 2001. (Tr. at 7-8.) Verinsky is a named inventor on the '527 and '440 patents. (CX-2-3.) At the time of the hearing Verinsky “had a committing agreement with Oak and Zoran in effect for several months.” (Tr. at 894-5.)

14. Michael Case received a B.S. in electrical engineering from Walla Walla College and a M.S. in electrical engineering from Stanford University. (Tr. at 151.) Case was employed by Oak Technology Inc. from 1991 to 1998. (Tr. at 151.) Case is a named inventor on the '527 and '440 patents. (CX-2-3.)

15. Allen Samuels was qualified as an expert for complainants in computer hardware architecture, computer and peripheral device interfaces and in operating systems software. (Tr. at 165, 168; CX-59.) Samuels received a B.S. in electrical engineering from Rice University in 1978 and has more than 24 years experience in the computer and electronics industry. (Tr. at 167; CX-59.) Samuels is also a registered patent agent. (Tr. at 185.)

16. Kong-Chen Chen received a Bachelor’s degree in physics from the National Central University in Taiwan, an M.S. in electrical engineering from the University of Texas in Austin and a M.S. in physics from the University of Cincinnati. (Tr. at 797.) Chen was employed by Oak Technology as a senior design manager from 1997 to October 1999. (Tr. at 797, 859.) Chen is a named inventor on the '736 patent. (Tr. at 798; CX-1.) Prior to the evidentiary hearing, Chen entered into a consulting agreement with complainants to cover his expenses and is paid

\$225 per hour. (Tr. at 886-87.)

17. Steven Cahill is an attorney at Townsend, Townsend and Crew. (Tr. at 1502.) Cahill was involved in prosecuting the patent application that eventually issued as the '736 patent. (Tr. at 1502.) Cahill received a B.S. degree in electrical engineering and computer science in 1994 from the University of California at Berkeley. (Tr. at 1530-31.) Cahill also received a J.D. degree from the University of California at Berkeley in 1997. (Tr. at 1530-31.)

18. Sujit Kotwal is an attorney at Townsend, Townsend and Crew. (Tr. at 1561.) Kotwal was involved in prosecuting the patent application that eventually issued as the '736 patent. (Tr. at 1562, 1590.)

19. Leechung Yiu is the Chief Technical Officer of Sunext Technology Co., Ltd. (CX-1801C at Questions 1-3.) Yiu's responsibilities include product and technology development. (Id. at Question 4.)

20. Bruce Allen Smith received a Bachelor's degree in electrical engineering from the University of Pittsburgh and has taken course work for a master's degree. (Tr. at 1605.) In 1993, Smith worked for IBM, Inc. and in the course of his work became aware of Western Digital's efforts to define a method to allow CD-ROM drives to communicate over the IDE/ATA bus. (Tr. at 1605, 1608-09.)

21. Anthony Edward Pione received both a Bachelor's and a Master's degree in engineering from the University of Delaware. (Tr. at 1637-38.) Pione worked for IBM, Inc. from 1981 to 1996.) (Tr. at 1639.)

22. Devon Blaine Worrell studied computer science in several colleges for approximately 2.5 years. (Tr. at 1689.) Worrell was employed by Western Digital from prior to

1992 to 1997. (Tr. at 1692-93.)

23. Val DiEuliis received a Bachelor's degree in electrical engineering from the University of Notre Dame and a Master's degree and Doctoral degree in electrical engineering from the University of Illinois. (Tr. at 1799; RX-953; CX-954.) DiEuliis was qualified as an expert for respondents in computer engineering, integrated circuit design prior to tape-out, computer hardware design, hardware description languages, and digital system architecture and design as it relates to optical disk technology. (Tr. at 1806-07.)

24. Thomas Dickson Hanan studied electrical computer engineering and computer science at California Polytech for three years but did not graduate with a degree. (Tr. at 2412.) Hanan was employed by Western Digital from 1986 or 1987 through 2002. (Tr. at 2361.) Hanan's responsibilities at Western Digital involved ensuring that products were compatible with IDE and interoperable with other products that were available in the industry, including host systems, computers and disk drives. (Tr. at 2362.) Hanan was also Western Digital's liaison to the standards committees for ATA, ATAPI and many IDE standards. (Tr. at 2362.) In June 2004, Hanan entered into a consulting agreement with counsel for respondents. (Tr. at 2379-81; CX-1884C.)

25. Vernon Thomas Rhyne, III received a Bachelor's degree in electrical engineering from Mississippi State University, a Master's degree in electrical engineering from the University of Virginia and a Doctoral degree in electrical engineering from the Georgia Institute of Technology. (Tr. at 1054; CX-347.) Rhyne was qualified as an expert for complainants in computer engineering, integrated circuit and computer hardware design and computer description languages. (Tr. at 1055.)

26. John Sefton Edmunds was chief financial officer of Oak Technology from January 2000 through August of 2003. (Tr. at 2421.) Edmunds was a principal in the negotiation between Oak and SunPlus Technology for the purchase of Oak's optical storage business unit. (Tr. at 2421-22.)

27. Shishir Shah received a Bachelor's degree in mechanical engineering in 1982 and Master's degrees in both computer engineering and mechanical engineering in 1984, all from the University of Southern California. (Tr. at 2435-36, 2438.) Shah was employed at Western Digital from December 1987 through April of 1996. (Tr. at 2435.) In August 2004, Shah entered into a consulting agreement with counsel for Respondents. (Tr. at 2512-13; CX-1886C.)

28. Mehran Ramezani received both a Bachelor's and Master's degree in electrical engineering from the University of Southern California in 1980 and 1981, respectively. (Tr. at 2548.) In September 2004, Ramezani entered into a consulting agreement with counsel for respondents. (Tr. at 2558-59; CX-1885C.)

29. Dale E. Buscaino received a Bachelor's degree in computer science in 1982 from the University of California. (Tr. at 2566; RX-956.) Buscaino was qualified as an expert for respondents in the design and architecture of computer systems, including hardware, software, system architecture, as well as computer interfaces, including interfaces between peripheral and mass storage devices and personal computers. (Tr. at 2567.) Buscaino has been retained on behalf of MediaTek since 1998. (Tr. at 2567.)

30. Jin Hwang received a Bachelor's degree in 1979, a Master's degree from the University of Southern California in 1982 and an "EEE" degree from Sanford University in 1987. (Tr. at 2703-4.) Hwang founded Crest Microsystems in 1992. (Tr. at 2703, 2706.)

31. Robert Zeidman received a Bachelor's degree in electrical engineering from Cornell University in 1981 and a Master's degree in electrical engineering from Stanford University in 1982. (Tr. at 2968; RX-913) Zeidman was qualified as an expert in design and development of computer hardware, software and integrated circuits and hardware description languages. (Tr. at 2968-69.)

C. The Products At Issue

32. The products at issue are optical disk controller chips and chipsets used in DVD players and other optical disk storage devices, including those incorporated into personal computers. Optical disk controller chips and chipsets, such as those used in DVD players, are used to control the transfer of data from the optical disk, *i.e.*, a CD or DVD, through the controller to an MPEG decoder. Similarly, optical disk controller chips and chipsets used in personal computer disk drives are used to transfer data from the disk to the host computer for a variety of purposes. In contrast to earlier DVD and CD control systems, which used discrete chips to perform many of the required functions, the products at issue here combine many of those functions onto one chip. (Response to Amended Complaint ¶35, p. 14.)

33. In modern systems, a single drive that can play both CDs and DVDs must be able to decode and transfer data coming from different optical disk formats. The controllers at issue are used in connection with personal computers and can directly interface with the IDE/ATA bus, which is often adopted in standard computer architecture. (Response to Amended Complaint ¶36, p. 14.) The controller chips and chipsets at issue generally are incorporated into the circuit boards of the optical disk storage devices. These boards can then be incorporated into stand-alone DVD players, such as those purchased for playing movies on a television, or into CD/DVD

players or recorders that are installed into personal computers and laptops. (Response to Amended Complaint ¶37, p. 14.)

34. These controllers are used in CD products, such as CD-ROM and CD recordable (CD-R/W) products, DVD products, such as DVD-ROM and DVD recordable (DVD-R/W) products, products that are capable of reading and/or writing both CD and DVD data (COMBI), and DVD players, such as portable or stand-alone DVD player machines. (Response to Amended Complaint ¶38, p. 14.)

35. A controller chip is an application-specific integrated circuit (ASIC) that is the brain on an optical drive for a CD-ROM device. (Tr. at 8.) Such a controller chip receives input from the host computer. (Tr. at 13.)

D. ATAPI Specification

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44. The June 10, 1993 draft ATAPI specification (Revision A1.3) was confidential.

(See CPFF1151-1218.)

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} (CX-1250C;

CX-1251C; CX-2152C; CX-1253C; CX-1254C; CX-1512C; CX-1255C; CX-1256C; CX-1257C; RX-505.)

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50. In 1993, IBM had a policy regarding accepting confidential information which did allow for the acceptance of confidential information from third parties. (Smith, Tr. at 1614-15.)

51. Pione did not testify that he was certain that IBM asked Western Digital to declassify the June 10, 1993 draft ATAPI specification, only that he “thought” he did. (Pione, Tr. at 1658.)

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F. Bond

73. Complainant's Interrogatory No. 44 to MediaTek specifically sought the average selling price of each of MediaTek's accused products. (CX-1023C, MediaTek's Response to Interrogatory No. 44; CX-1098C, MediaTek's Supplemental Response to Interrogatory No. 44.)

74. While MediaTek responded to Interrogatory No. 44 with respect to numerous accused products, MediaTek never supplied any pricing information for its MT1369, MT1379, and MT1389 chips which are designed to be used in DVD players. (CX-1023C, MediaTek's Response to Interrogatory No. 44; CX-1098, MediaTek's Supplemental Response to Interrogatory No. 44.)

75. The average selling prices in 2004, for each of the accused chips for which MediaTek provided information is set forth in two tables in MediaTek's Supplemental Response to Interrogatory. (CX-1098C, MediaTek's Supplemental response to Interrogatory No. 44). {

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CONCLUSIONS OF LAW

1. The Commission has in rem jurisdiction and in personam jurisdiction.
2. There has been an importation of certain accused optical disk controller chips and chipsets and products containing same, including DVD players and PC optical storage devices, which are the subject of the alleged unfair trade allegations.
3. An industry exists in the United States, as required by subsection (a)(2) of section 337, that exploits the optical disk controller chips and chipsets and products containing same, including DVD players and PC optical storage devices that are covered by the '527 patent. However, such an industry does not exist with respect to the '736 and '440 patents.
4. Respondents' accused products infringe the asserted claim 3 of the '527 patent.
5. Respondents' accused products do not infringe the asserted claims of the '440 patent and the '736 patent.
6. The asserted claims of the '736, '527 and '440 patents are not invalid.
8. The '736, '527 and '440 patents are enforceable.
9. There is a violation of section 337.
10. The record supports issuance of limited exclusion orders, cease and desist orders, and a bond in the amount of 100 percent of the entered value for any importation involving infringing products during the Presidential review period.

ORDER

Based on the foregoing, and the record as a whole, it is the administrative law judge's Final Initial Determination that there is a violation of section 337 in the importation into the United States, sale for importation, and the sale within the United States after importation of certain optical disk controller chips and chipsets and products containing same, including DVD players and PC optical storage devices. It is also the administrative law judge's recommendation that limited exclusion orders and cease and desist orders should issue. The administrative law judge further recommends that a bond be imposed during the Presidential review period in the amount of 100 percent of the entered value for any importation involving infringing products.

The administrative law judge hereby CERTIFIES to the Commission his Final Initial and Recommended Determinations together with the record consisting of the exhibits admitted into evidence. The pleadings of the parties filed with the Secretary and the transcript of the pre-hearing conference and the hearing, including closing arguments, are not certified since they are already in the Commission's possession in accordance with Commission rules.

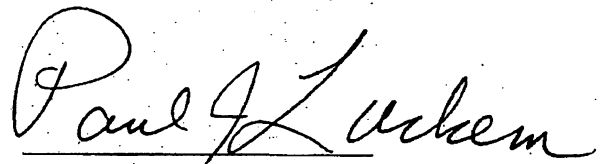
Further it is ORDERED that:

1. In accordance with Commission rule 210.39, all material heretofore marked in camera because of business, financial and marketing data found by the administrative law judge to be cognizable as confidential business information under Commission rule 201.6(a) is to be given in camera treatment continuing after the date this investigation is terminated.

2. Counsel for the parties shall have in the hands of the administrative law judge those portions of the final initial and recommended determinations which contain bracketed confidential business information to be deleted from any public version of said determinations

no later than June 3, 2005. Any such bracketed version shall not be served by telecopy on the administrative law judge. If no such bracketed version is received from a party it will mean that the party has no objection to removing the confidential status, in its entirety, from these initial and recommended determinations.

3. The initial determination portion of the Final Initial and Recommended Determinations, issued pursuant to Commission rule 210.42(h)(2), shall become the determination of the Commission forty-five (45) days after the service thereof, unless the Commission within that period shall have ordered its review or certain issues therein or by order has changed the effective date of the initial determination portion. The recommended determination portion, issued pursuant to Commission rule 210.42(a)(1)(ii), will be considered by the Commission in reaching a determination on remedy and bonding pursuant to Commission rule 210.50(a).


Paul J. Luckern
Administrative Law Judge

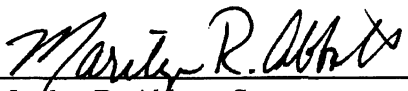
Issued: May 16, 2005

**CERTAIN OPTICAL DISK CONTROLLER CHIPS
AND CHIPSETS AND PRODUCTS CONTAINING
SAME, INCLUDING DVD PLAYERS AND
OPTICAL STORAGE DEVICES**

Investigation No. 337-TA-506

CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **Public Version Final Initial and Recommended Determinations** was served by hand upon Commission Investigative Attorney Karin, J. Norton, Esq. and upon the following parties via first class mail, and air mail where necessary, on July 26, 2005.



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CERTIFICATE OF SERVICE page 2

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CERTIFICATE OF SERVICE page 3

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