

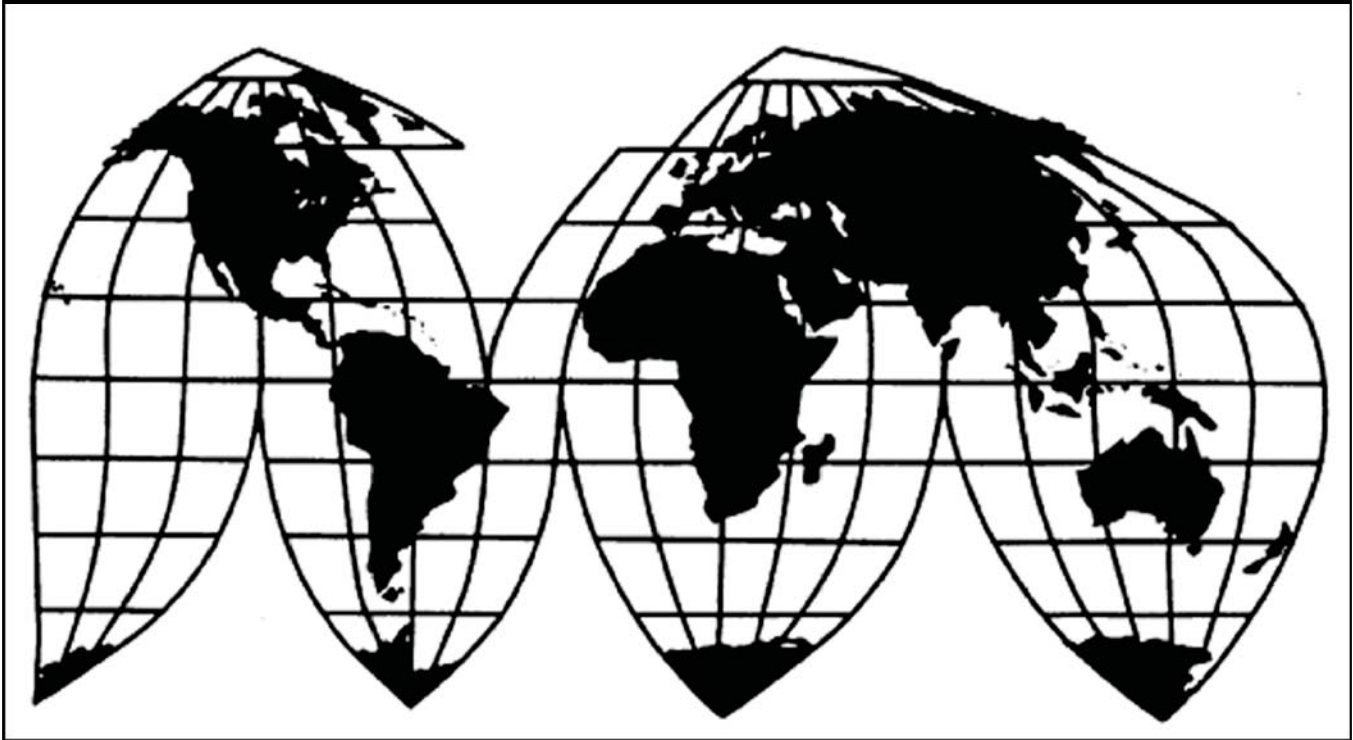
In the Matter of
**Certain Semiconductor Integrated Circuits
and Products Containing Same**

Investigation No. 337-TA-665
Volume 1 of 2

Publication 4268

October 2011

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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In the Matter of

Certain Semiconductor Integrated Circuits and Products Containing Same

Investigation No. 337-TA-665
Volume 1 of 2



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

In the Matter of

**CERTAIN SEMICONDUCTOR
INTEGRATED CIRCUITS
AND PRODUCTS CONTAINING SAME**

Investigation No. 337-TA-665

**NOTICE OF COMMISSION DETERMINATION
TO REVIEW IN PART A FINAL INITIAL DETERMINATION
FINDING NO VIOLATION OF SECTION 337
AND ON REVIEW TO TAKE NO POSITION ON ONE ISSUE;
TERMINATION OF THE INVESTIGATION WITH A FINDING
OF NO VIOLATION**

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined to review in part the final initial determination ("ID") issued by the presiding administrative law judge ("ALJ") on October 14, 2009, finding no violation of section 337 of the Tariff Act of 1930, 19 U.S.C. § 1337, in this investigation. On review, the Commission has determined to take no position on one issue, and to terminate this investigation with a finding of no violation.

FOR FURTHER INFORMATION CONTACT: Sidney A. Rosenzweig, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 708-2532. Copies of non-confidential 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) 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 Inv. No. 337-TA-665 on December 24, 2008, based on a complaint filed by Qimonda AG of Munich, Germany ("Qimonda"). 73 *Fed. Reg.* 79165 (Dec. 24, 2008). The complaint alleged a violation of section 337 in the importation, sale for importation, and sale within the United States after importation of certain semiconductor integrated circuits and products containing same by reason of infringement

of various claims of U.S. Patent Nos. 5,213,670 (“the ’670 patent”); 5,646,434 (“the ’434 patent”); 5,851,899 (“the ’899 patent”); 6,495,918 (“the ’918 patent”); 6,593,240 (“the ’240 patent”); 6,714,055 (“the ’055 patent”); and 6,103,456 (“the ’456 patent”). The complaint further alleged that there exists a domestic industry with respect to each of the asserted patents. The complaint named the following respondents: LSI Corporation of Milpitas, California (“LSI”); Seagate Technology of the Cayman Islands; Seagate Technology (US) Holdings Inc. of Scotts Valley, California; Seagate Memory Products (US) Corporation of Scotts Valley, California; and Seagate (US) LLC of Scotts Valley, California (collectively “Seagate”). Qimonda accuses of infringement certain LSI integrated circuits, as well as certain Seagate hard disk drives that contain the accused LSI integrated circuits.

The ALJ conducted an evidentiary hearing from June 1-9, 2009. Prior to the hearing, Qimonda tacitly withdrew three of the asserted patents: the ’055 patent, the ’240 patent, and the ’456 patent. Qimonda did not present evidence regarding those patents at the hearing, and did not include any analysis of those patents in its post-hearing briefing.

On October 14, 2009, the ALJ issued his final ID. The ID formally withdrew the ’055 patent, the ’240 patent, and the ’456 patent from the investigation. The ALJ found that based on his claim constructions, Qimonda had not demonstrated that it practices any of the patents in suit. Accordingly, the ALJ ruled that an industry does not exist in the United States that exploits any of the four remaining asserted patents, as required by 19 U.S.C. § 1337(a)(2). The ALJ ruled that certain LSI products infringe certain claims of the ’918 patent, but that no accused products infringe any of the other asserted patents. The ALJ ruled that all of the asserted claims of the ’918 patent, and some of the asserted claims of the ’434 patent, are invalid under 35 U.S.C. § 102, but that the asserted claims of the ’670 and ’899 patents are not invalid.

On October 27, 2009, Qimonda filed a petition for review of the ID. Qimonda did not petition for review of the ALJ’s finding of no violation of section 337 as to the ’670 patent. Thus, only three patents – the ’434, ’899, and ’918 patents – remain in suit. On November 5, 2009, the Respondents and IA filed responses to Qimonda’s petition.

Having examined the record of this investigation, including the ALJ’s final ID, the petition for review, and the responses thereto, the Commission has determined to review the final ID in part. Specifically, the Commission has determined to review and to take no position on whether U.S. Patent No. 6,424,051 to Shinogi anticipates, under 35 U.S.C. § 102, any of the asserted claims of the ’918 patent. *See Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1422-23 (Fed. Cir. 1984).

The Commission has determined not to review the remainder of the ID. Accordingly, the Commission has terminated this investigation with a finding of no violation.

The authority for the Commission's determination is contained in 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.

A handwritten signature in black ink, appearing to read "Marilyn R. Abbott". The signature is written in a cursive style with a large initial "M".

Marilyn R. Abbott
Secretary to the Commission

Issued: January 29, 2010

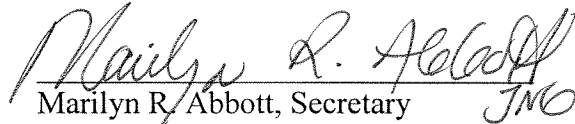
**CERTAIN SEMICONDUCTOR INTEGRATED
CIRCUITS AND PRODUCTS CONTAINING SAME**

337-TA-665

CERTIFICATE OF SERVICE

I, Marilyn R. Abbott, hereby certify that the attached **NOTICE OF COMMISSION DETERMINATION TO REVIEW IN PART A FINAL INITIAL DETERMINATION FINDING NO VIOLATION OF SECTION 337 AND ON REVIEW TO TAKE NO POSITION ON ONE ISSUE; TERMINATION OF THE INVESTIGATION WITH A FINDING OF NO VIOLATION** has been served by hand upon the Commission Investigative Attorneys, Daniel L. Girdwood, Esq., Stephen R. Smith, Esq., Vu Q. Bui, Esq., and the following parties as indicated, on

JAN 29 2010



Marilyn R. Abbott, Secretary
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- Via First Class Mail
- Other: _____

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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

CERTAIN SEMICONDUCTOR
INTEGRATED CIRCUITS AND PRODUCTS
CONTAINING SAME

Inv. No. 337-TA-665

INITIAL DETERMINATION ON VIOLATION OF SECTION 337 AND
RECOMMENDED DETERMINATION ON REMEDY AND BOND

Administrative Law Judge Robert K. Rogers, Jr.

(October 14, 2009)

Appearances:

For the Complainant Qimonda AG:

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For the Respondent LSI Corporation:

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For the Respondents Seagate Technology, Seagate Technology (US) Holdings Inc., Seagate Technology LLC, Seagate Memory Products (US) Corporation, and Seagate (US) LLC:

Charles F. Schill, Esq.; John M. Caracappa, Esq.; Stanley A. Schlitter, Esq.; Susan Koegel, Esq. of Steptoe & Johnson LLP of Washington, DC

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For the Commission Investigative Staff:

Lynn I. Levine, Esq., Director; Thomas S. Fusco, Esq., Supervisory Attorney; Stephen R. Smith, Esq., Investigative Attorney; of the Office of Unfair Import Investigations, U.S. International Trade Commission, of Washington, DC

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Pursuant to the Notice of Investigation and Rule 210.42 of the Rules of Practice and Procedure of the United States International Trade Commission, this is the Administrative Law Judge's Final Initial Determination in the matter of Certain Semiconductor Integrated Circuits & Products Containing Same, Investigation No. 337-TA-665.

The Administrative Law Judge hereby determines that a violation of Section 337 of the Tariff Act of 1930, as amended, has not been found in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain semiconductor integrated circuits & products containing same, in connection with U.S. Patent No. 5,646,434. Furthermore, the Administrative Law Judge hereby determines that a domestic industry in the United States does not exist that practices U.S. Patent No. 5,646,434.

The Administrative Law Judge hereby determines that a violation of Section 337 of the Tariff Act of 1930, as amended, has not been found in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain semiconductor integrated circuits & products containing same, in connection with U.S. Patent No. 5,213,670. Furthermore, the Administrative Law Judge hereby determines that a domestic industry in the United States does not exist that practices U.S. Patent No. 5,213,670.

The Administrative Law Judge hereby determines that a violation of Section 337 of the Tariff Act of 1930, as amended, has not been found in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain semiconductor integrated circuits & products containing same, in connection with U.S. Patent No. 5,851,899. Furthermore, the Administrative Law Judge hereby determines that a domestic industry in the United States does not exist that practices U.S. Patent No. 5,851,899.

The Administrative Law Judge hereby determines that a violation of Section 337 of the

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Tariff Act of 1930, as amended, has not been found in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain semiconductor integrated circuits & products containing same, in connection with U.S. Patent No. 6,495,918. Furthermore, the Administrative Law Judge hereby determines that a domestic industry in the United States does not exist that practices U.S. Patent No. 6,495,918.

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The following abbreviations may be used in this Initial Determination:

CDX	Complainant's demonstrative exhibit
CFF	Complainant's proposed findings of fact
CIB	Complainant's initial post-hearing brief
CORFF	Complainant's objections to Respondents' proposed findings of fact
COSFF	Complainant's objections to Staff's proposed findings of fact
CPX	Complainant's physical exhibit
CRB	Complainant's reply post-hearing brief
CX	Complainant's exhibit
Dep.	Deposition
JSRCC	Joint Statement Regarding Claim Construction
JSUF	Joint Statement of Undisputed Facts
JX	Joint Exhibit
RDX	Respondents' demonstrative exhibit
RFF	Respondents' proposed findings of fact
RIB	Respondents' initial post-hearing brief
ROCFF	Respondents' objections to Complainant's proposed findings of fact
ROSFF	Respondents' objections to Staff's proposed findings of fact
RPX	Respondents' physical exhibit
RRB	Respondents' reply post-hearing brief
RRX	Respondents' rebuttal exhibit
RX	Respondents' exhibit
SFF	Staff's proposed findings of fact
SIB	Staff's initial post-hearing brief
SOCFF	Staff's objections to Complainant's proposed findings of fact
SORFF	Staff's objections to Respondents' proposed findings of fact
SRB	Staff's reply post-hearing brief
Tr.	Transcript
CPHB	Complainant's pre-hearing brief
RPHB	Respondents' pre-hearing brief

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I. BACKGROUND

A. Procedural History

On December 17, 2008, the Commission issued a Notice of Investigation in this matter to determine:

[W]hether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain semiconductor integrated circuits or products containing same that infringe one or more of claims 1-15 and 22-27 of U.S. Patent No. 5,213,670; claims 1-8 and 11 of U.S. Patent No. 5,646,434; claims 1-23 of U.S. Patent No. 5,851,899; claims 1-11 and 14-16 of U.S. Patent No. 6,103,456; claims 1-8 and 11 of U.S. Patent No. 6,495,918; claims 1-18 of U.S. Patent No. 6,593,240; and claims 1-3, 5, and 7-9 of U.S. Patent No. 6,714,055, and whether an industry in the United States exists as required by subsection (a)(2) of section 337.

(See Notice of Investigation.) The investigation was instituted upon publication of the Notice of Investigation in the *Federal Register* on December 24, 2008. See 73 Fed. Reg. 79165 (2008); 19 CFR § 210.10(b).

The complainant is Qimonda AG (“Qimonda”) of Munich, Germany. The respondents are LSI Corporation of Milpitas, California (“LSI”) and Seagate Technology of the Cayman Islands, Seagate Technology (US) Holdings Inc. of Scotts Valley, CA, Seagate Technology LLC of Scotts Valley, CA, Seagate Memory Products (US) Corporation of Scotts Valley, CA, and Seagate (US) LLC of Scotts Valley, CA (collectively “Seagate”). The Commission Investigative Staff of the Office of Unfair Import Investigations (“Staff”) is also a party in this investigation.

The complaint accused LSI’s and Seagate’s products of infringing various claims of U.S. Patent No. 5,213,670 (“the ‘670 patent”), U.S. Patent No. 5,646,434 (“the ‘434 patent”), U.S. Patent No. 5,851,899 (“the ‘899 patent”), U.S. Patent No. 6,103,456 (“the ‘456 patent”), U.S.

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Patent No. 6,495,918 (“the ‘918 patent”), U.S. Patent No. 6,593,240 (“the ‘240 patent”), and U.S. Patent No. 6,714,055 (“the ‘055 patent”). The complaint further alleges that there exists a domestic industry with respect to each of the asserted patents. Qimonda seeks a general exclusion order, and, in the alternative, a limited exclusion order, of the infringing semiconductor integrated circuits & products containing same. Qimonda further seeks a cease & desist order.

On April 8, 2009, LSI filed a motion for summary determination that it does not infringe the asserted claims of the ‘456 patent. On May 6, 2008, I issued Order No. 34, an initial determination granting the motion in part. I found that LSI’s { } processes do not infringe asserted claims 1-11 and 14-16 of the ‘456 patent. On May 29, 2009, the Commission issued a notice of decision not to review the initial determination.

I denied all other motions for summary determination filed by the parties.

An evidentiary hearing was conducted before me from June 1-9, 2009. Qimonda, LSI, Seagate and Staff participated in the hearing. In support of its case-in-chief and rebuttal case, Qimonda called the following witnesses:

- Dr. Shukri J. Souri (expert witness);
- Dr. Peter Lahnor (Patent Professional, Qimonda Dresden GmbH & Co OHG i.IN.);
- Ted O’Shea (Head of the Design Technology Evaluation Group, Tyndall National Institute, University College Cork, Ireland);
- Donald Wayne Scansen (Senior Analysis, Semiconductor Insights);
- Dr. Ronald J. Guttmann (expert witness);
- Dr. Martin L. Hammond (expert witness);
- Hartmud Terletzki (engineer, Infineon Technologies);

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- Dr. Peter Cottrell (expert witness);
- Dr. Alexander Glew (expert witness);
- Dr. Martin Bayerl (Senior Principal, Intellectual Property Litigation, Infineon Technologies);
- George Alexander (formerly Principal Engineer, Design Team Leader, Patent Agent, Licensing Teammember, Qimonda North America);
- Dr. Kenneth R. Button (expert witness).

In support of their case-in-chief and rebuttal case, LSI and Seagate called the following witnesses:

- Dr. John Bravman (expert witness);
- Stephen Fairbanks (expert witness);
- Dr. Bruce Smith (expert witness);
- John Witherspoon (expert witness);
- Warren Waskiewicz (Vice President of the Intellectual Property Business Group, LSI Corporation);
- Dr. Jayanthi Pallinti (Principal Engineer, LSI Corporation);
- Dr. Kenneth Szajda (expert witness);
- Dr. Peter Gwozdz (expert witness);
- Dr. Mark Horenstein (expert witness);
- Dr. Stanley Shanfield (expert witness);
- Carla Mulhern (expert witness).

In addition, various deposition transcripts were received into evidence in lieu of direct witness statements or live testimony.

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After the hearing, post-hearing briefs and reply briefs, together with proposed findings of fact, conclusions of law and rebuttals to the same, were filed on June 26, 2009 and July 6, 2009, respectively.

B. The Private Parties

1. Qimonda AG

Qimonda is a publicly traded company with its corporate headquarters in Munich Germany. (RX-1279.) It was formed in 2006 after it was spun off from Infineon Technologies. (RX-1329.) Qimonda has a wholly owned subsidiary, Qimonda North America (“QNA”). (CX-410.) Qimonda Richmond (“QR”) is a wholly owned subsidiary of QNA and is located in Sandston, Virginia. (*Id.*; RX-1329.)

2. LSI Corporation

LSI is a Delaware corporation with its principal place of business in Milpitas, California. (RX-1350.) LSI develops and markets semiconductor products. (*Id.*) LSI is a fabless semiconductor company, meaning that it does not manufacture its own products. (*Id.*)

3. Seagate Respondents

Seagate Technology, a Cayman Islands Exempt Limited Company, is the indirect parent company of Seagate Technology (US) Holdings, Inc., Seagate Technology LLC, Seagate Memory Products (US) Corporation, and Seagate (US) LLC. (RX-1355.) The latter entities are formed under the laws of Delaware and have executive addresses in Scotts Valley, California. (CX-2.) Seagate designs, manufactures, and markets hard disk drive products. (RX-1355.)

C. Overview Of The Patents At Issue

In its complaint, Qimonda asserted seven patents against Respondents. Prior to the hearing, Qimonda withdrew three of those patents - the ‘055 patent, the ‘240 patent, and the ‘456

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patent. Qimonda did not offer any evidence regarding these patents at the hearing and did not include any analysis of these patents in its post-hearing briefing. Therefore, it is my Initial Determination that U.S. Patent No. 6,103,456, U.S. Patent No. 6,593,240, and U.S. Patent No. 6,714,055 are hereby withdrawn from this investigation.

The '670 patent, entitled "Method For Manufacturing A Polycrystalline Layer On A Substrate," was filed on August 9, 1991 and issued on May 25, 1993. (JX-7.) The named inventors are Emmerich Bertagnolli and Herbert Kabza. (*Id.*) The patent includes 27 claims. The specification states that "[t]he present invention relates generally to a method for manufacturing a polycrystalline layer on a substrate, and in particular, to a method for manufacturing a polycrystalline layer of a defined grain size and texture." (*Id.* at 1:10-13.) The specification goes on to explain that "it is an object of the present invention to provide a manufacturing method for polycrystalline silicon layers of a defined grain size and texture without losing the advantages of amorphously deposited layers." (*Id.* at 2:22-25.)

The '434 patent, entitled "Semiconductor Component With Protective Structure For Protecting Against Electrostatic Discharge," was filed on March 4, 1996 and issued on July 8, 1997. (JX-1.) The named inventors are Ioannis Chrysostomides, Xaver Guggenmos, Wolfgang Nikutta, Werner Reczek, Johann Rieger, Johannes Stecker, and Hartmud Terletzki. (*Id.*) The patent includes 11 claims. The specification states that:

The invention relates to a semiconductor component having a semiconductor body with a terminal pad being connected through an electrically conductive connecting line to a semiconductor function element; a protective element for protecting against electrostatic discharge being connected between the terminal pad and the semiconductor function element; a first supply line for a first supply potential being connected to the semiconductor function element; and a second supply line for the first supply potential being connected to the protective element and being electrically conductively connected to the first supply line.

(*Id.* at 1:10-21.)

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The '899 patent, entitled "Gapfill And Planarization Process For Shallow Trench Isolation," was filed on August 8, 1996 and issued on December 22, 1998. (JX-8.) The named inventor is Peter Weigand. (*Id.*) The patent includes 23 claims. The specification states that "[t]he field of the present invention relates generally to improvements in semiconductor fabrication processes and, more particularly, to a process for filling shallow trench isolation regions without gaps and the use of a planarization scheme which simplifies the chemical mechanical polishing process." (*Id.* at 1:5-10.) The specification goes on to explain that "[t]he present invention provides an improved method for filling the STI regions of an integrated circuit structure with a substantially gapless oxide layer and a planarization scheme which shortens the CMP step in order to reduce oxide erosion." (*Id.* at 4:25-29.)

The '918 patent, entitled "Chip Crack Stop Design For Semiconductor Chips," was filed on September 5, 2000 and issued on December 17, 2002. (JX-5.) The named inventor is Axel Christoph Brintzinger. (*Id.*) The patent includes 18 claims. The specification states that

The present invention includes a structures [*sic*] formed in semiconductor devices for reducing crack propagation. Cracks caused by latent stress or stress induced by dicing may lead to chip failures and reduced chip yield. The present invention increases crack stop resistance by employing additional lines of contacts instead of conventional single contacts. Further, a serpentine or staggered contact structure may be employed. The present invention also employs an air stop structure, which provides an air filled trench to reduce potential crack problems.

(*Id.* at 3:16-25.)

D. Products At Issue

The scope of this investigation reaches "semiconductor integrated circuits or products containing same[.]" 73 Fed. Reg. 79165 (Dec. 24, 2008). Qimonda's infringement analysis focuses on LSI semiconductor integrated circuits manufactured pursuant to the {
} technology nodes. Regarding products that contain the accused LSI semiconductor

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integrated circuits, Qimonda focuses on LSI's {
} and Seagate's hard disk drives ("HDDs").

II. JURISDICTION

A. Subject Matter Jurisdiction

The complaint alleges that LSI and Seagate have violated Subsection 337(a)(1)(B) by the importation and sale of products that infringe the asserted patents. I find that LSI imports into the United States, sells for importation, or sells within the United States after importation products that Qimonda has accused of infringement in this investigation. (CX-35; CX-36; CX-37; CX-38; CX-39; CX-40; CX-41; CX-42; CX-43; CX-44; CX-499C at 20:7-25:4; CX-500C at 49:15-50:18, 51:17-52:22; CX-1019C at 73:3-9; RX-1298C at Q. 170-174, 206-208, 233; RDX-146C; JX-23C.) I find that Seagate imports into the United States, sells for importation, or sells within the United States after importation products that Qimonda has accused of infringement in this investigation. (CX-42; CX-497C at 62:5-67:7, 118:15-120:3, Ex. 13; CX-498C at 34:12-35:25, 46:1-47:24; CX-544C at Q. 117; CX-788C; CX-821C; RX-1298C at Q. 176, 182; RX-1500C; RX-1501C; JX-21C; JX-23C.) Thus, I find that the Commission has subject matter jurisdiction over this investigation under Section 337 of the Tariff Act of 1930. *See Amgen, Inc. v. U.S. Int'l Trade Comm'n*, 902 F.2d 1532, 1536 (Fed. Cir. 1990).

B. Personal Jurisdiction

LSI and Seagate responded to the complaint and notice of investigation, participated in the investigation, made appearances at the hearing, and submitted post-hearing briefs. Thus, I find that LSI and Seagate submitted to the personal jurisdiction of the Commission. *See Certain Miniature Hacksaws*, Inv. No. 337-TA-237, Initial Determination, 1986 WL 379287 (October 15, 1986).

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C. In Rem Jurisdiction

The Commission has *in rem* jurisdiction over the products at issue by virtue of the finding that accused products have been imported into the United States. *See Sealed Air Corp. v. United States Int'l Trade Comm'n*, 645 F.2d 976, 985 (C.C.P.A. 1981).

D. Standing

Qimonda's Position: Qimonda asserts standing based upon ownership of the four patents-in-suit. Qimonda alleges that the entire right, title and interest in the '899 patent was assigned from the inventors to Siemens Components Inc., from Siemens Components Inc. to Siemens AG, from Siemens AG to Infineon Technologies AG, and from Infineon Technologies AG to Qimonda. (CIB at 21-22 (citing CX-12; CX-47C; CX-526C).) Qimonda avers that the entire right, title, and interest to the '670 patent was assigned from the inventors to Siemens AG, from Siemens AG to Infineon Technologies AG, and from Infineon Technologies AG to Qimonda. (*Id.* (citing CX-5; CX-47C; CX-526C).) Qimonda states that the entire right, title, and interest to the '918 patent was assigned from the inventors to Infineon Technologies North America Corp., from Infineon Technologies North America Corp. to Infineon Technologies AG, and from Infineon Technologies AG to Qimonda. (*Id.* (citing CX-18; CX-47C; CX-526C).) Qimonda asserts that the entire right, title, and interest to the '434 patent was assigned from the inventors to Siemens AG, from Siemens AG to Infineon Technologies AG, and from Infineon Technologies AG to Qimonda. (*Id.* (citing CX-9; CX-47C; CX-526C).)

Qimonda says that it continues to own the '899, '670, '918, and '434 patents and argues that German insolvency proceedings have had no effect on Qimonda's ownership of the patents-in-suit. (CIB at 22.)

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Qimonda argues that Respondents admit the patents-in-suit “are part of Qimonda’s insolvency estate.” (CIB at 22 (citing RPHB at 20).) Qimonda says that Section 35 of the German Insolvency Code (“InsO”) defines “estate” as “all of the assets owned by the debtor on the date the proceedings were opened and those acquired by him during the proceedings.”¹ (*Id.* (citing InsO § 35).) Qimonda argues that the phrase “those acquired by him during the proceedings” makes clear that debtors like Qimonda retain title to their assets throughout the insolvency proceedings, and can acquire additional assets during the pendency of those proceedings. (*Id.*)

Qimonda argues that an April 1, 2009 Order² that opened Qimonda’s insolvency proceedings had no effect on Qimonda’s ownership of the patents-in-suit. Qimonda says that “like Section 35, Section 11 of the German Insolvency Code states that insolvency proceedings are opened on “assets owned by any individual or corporation” or “the assets owned by a company without legal personality.”” (CIB at 23 (citing InsO § 11).) Qimonda argues that Respondents have not identified any provision of the German Insolvency Code that causes debtors to lose title to their assets upon the opening of insolvency proceedings. (*Id.*)

Qimonda states that the April 1, 2009 Order is consistent with Section 27 of the German Insolvency Code, which, they allege, states:

The order opening the insolvency proceedings shall specify:

1. the business name or name and first names, year of birth, register court and registration number under which the debtor is entered in the commercial register, branch of business or occupation, commercial establishment or place of abode of the debtor;
2. the name and address of the liquidator;

¹ All citations to the German Insolvency Code herein refer to Exhibit B of the Joint Stipulation of Facts dated June 12, 2009. The parties stipulated to the accuracy of Exhibit B. (Joint Stipulation (June 12, 2009) ¶ 6.)

² All citations to the April 1, 2009 Order herein refer to Exhibit A of the Joint Stipulation of Facts dated June 12, 2009. The parties stipulated to the accuracy of Exhibit A. (Joint Stipulation (June 12, 2009) ¶ 4.)

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3. the hour the insolvency proceedings were opened;
4. whether the debtor has applied for a discharge from residual debts.

(CIB at 23 (citing InsO § 27).) Qimonda continues that Section 27 makes clear that orders opening insolvency proceedings are procedural in nature, and do not involve the transfer of assets. (*Id.*)

Qimonda asserts that the April 1, 2009 Order identifies the debtor and the insolvency administrator, appoints a provisional creditors' committee, sets a deadline for the filing of claims, establishes a date and agenda for the initial creditors' meeting, orders creditors to notify the insolvency administrator of any liens they intend to assert, and instructs the insolvency administrator to "effect the services required in the proceedings." (CIB at 23-24 (citing (Joint Stipulation (June 12, 2009), Ex. A).) Qimonda alleges that the April 1, 2009 Order does not order, or otherwise refer to, the transfer of Qimonda's assets. (*Id.* (citing Joint Stipulation (June 12, 2009), Ex. A).) Qimonda concludes that the German insolvency proceedings have not disturbed Qimonda's ownership of the patents-in-suit. (*Id.*)

Qimonda avers that Respondents do not contest Qimonda's ownership of the '899, '670, '918, or '434 patents in their prehearing brief. Qimonda says that Respondents do not argue Dr. Jaffé acquired title to, or otherwise owns, the patents-in-suit. Qimonda states that Respondents merely assert that Qimonda's legal right to "manage and transfer assets (including the patents) vested in the insolvency administrator, Dr. Michael Jaffé." (CIB at 24 (citing RPHB at 20).) As a result, Qimonda concludes that its ownership of the patents-in-suit is uncontested. Qimonda reasons that Respondents waived their right to dispute Qimonda's ownership of the patents-in-suit under Ground Rule 8.2, which states "any contentions not set forth in detail {in the prehearing brief} 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

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diligence at the time of filing the pre-trial brief.” (*Id.* (citing Order No. 2 at 12).) Qimonda says “Respondents clearly knew about the German insolvency proceedings and Dr. Jaffé’s role as administrator by April 2, 2009 at the latest,” and “as early as March 2009.” (*Id.* (citing Order No. 47 at 3).) Thus, Qimonda concludes, the Respondents had sufficient knowledge and opportunity to raise this issue in their prehearing brief, if they so wished, but they failed to do. Qimonda argues that Respondents are thus precluded from raising this issue in their posthearing briefs. (*Id.* (citing Order No. 2 at 12; *Certain Foam Footwear*, Inv. No. 337-TA-567, 2008 WL 1855922 (Apr. 11, 2008) (Commission held the respondents waived their argument regarding a claim construction by reason of their failure to raise it in their prehearing brief); and *Certain Display Controllers*, Inv. No. 337-TA-491, Order No. 62, 2004 WL 46275 (Jan. 7, 2004) (ALJ held the complainant waived an argument it had allegedly “reserved” in its prehearing brief)).)

Qimonda says that the Commission Rules establish a simple and straightforward test to determine standing: complainants are required to prove they own the asserted patents. (CIB at 24-25.) In other words, the Commission Rules equate standing with ownership of the asserted patents. Specifically, Commission Rule 210.12(a)(7) requires a “a showing that at least one complainant is the owner or exclusive licensee of the subject intellectual property,” and Commission Rule 210.12(a)(9)(ii) requires “the identification of the ownership of each involved U.S. patent and a certified copy of each assignment of each such patent.” 19 C.F.R. §§ 210.12(a)(7) & (9)(ii). (*Id.*)

Qimonda argues that it met its burden at the inception of the investigation by filing the above-referenced assignments and related agreements. (CIB at 25 (citing CX-5; CX-9; CX-12; CX-18; CX-47C; CX-526C).) Qimonda says that, because it proved its ownership of the patents-in-suit, it has standing in this investigation. (*Id.*)

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Qimonda argues that in *Certain Computer Products*, Inv. No. 337-TA-628, Initial Determination, 2009 WL 1021539 (Mar. 16, 2009), the respondent argued that the complainant lacked standing because it had divested the patents. (CIB at 25.) Qimonda says that the ALJ in that case rejected the argument, finding the complainant had “proven its burden of ownership” by producing agreements in which the named inventors assigned the patents to the complainant. *Certain Computer Products*, Inv. No. 337-TA-628, Initial Determination, 2009 WL 1021539 (Mar. 16, 2009) (“The evidence shows that the patents at issue are assigned to IBM and is sufficient to establish ownership.”). Qimonda says that the ALJ concluded that the complainant had standing because it owned the asserted patents. *Id.*; see also *Certain Semiconductor Chips with Minimized Package Size*, Inv. No. 337-TA-605, Initial Determination, 2008 WL 5626937 (Dec. 1, 2008) (same). Qimonda concludes it has standing under the Commission Rules and ITC precedent. (CIB at 25.)

Qimonda argues that following his April 1, 2009 appointment as the insolvency administrator, Dr. Jaffé provided “my authority and approval to continue this Investigation against the Respondents,” an investigation in which Qimonda, not Dr. Jaffé, is the complainant. (CIB at 30 (citing CX-1028C ¶ 6).)

Qimonda points to the testimony at trial of Dr. Martin Bayerl, who they assert confirmed that Dr. Jaffé “is the board now at Qimonda AG.”

A. The Qimonda board consisted of two members. Mr. Loh being the CEO and Mr. Seifert. . . .

Q. . . . Who is the board now at Qimonda AG?

A. At this time, I understand that the board is actually appointed by the court, and that person is now Dr. Michael Jaffe.

Q. So the only board member of Qimonda AG now is Dr. Jaffe. Is that right?

A. That’s how I would characterize it as. . . .

Q. Sir, do you understand who at this time is making the business decisions for Qimonda AG?

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A. At this point in time, all decisions are made by Dr. Jaffe.

(CIB at 30-31 (citing Tr. at 751:21-753:2).)

Qimonda argues that a comparison of Dr. Jaffé's role and responsibilities today with those of the Management Board and Supervisory Board prior to April 1, 2009 demonstrates that the April 1, 2009 Order effected a change in the corporate hierarchy, not a transfer of legal rights to a third party. (CIB at 31.) Previously, Qimonda employees had to obtain the approval of the Management Board (and possibly its Supervisory Board) to assert, license, or transfer patents. Now, Qimonda employees have to obtain the approval of Dr. Jaffé to assert, license, or transfer patents. (*Id.*)

Qimonda asserts that, in its annual reports, Qimonda announced that the members of its Management Board and Supervisory Board "do not own, directly or indirectly, any of [Qimonda's] share capital." (CIB at 32 (citing CX-312 at 119).)

Qimonda argues that under Respondents' theory, Qimonda's Management Board and/or Supervisory Board (rather than Qimonda) should have been the complainant(s) in this investigation since they had authority to transfer and manage Qimonda's patents prior to April 1, 2009. (CIB at 34.) Qimonda says, "Now that Dr. Jaffé has stepped into the shoes of the Management Board and Supervisory Board, Respondents argue that he (rather than Qimonda) should be the complainant in this investigation." (*Id.*)

Qimonda summarizes that it has the same patent rights today as it had at the inception of this investigation. (CIB at 34.) Qimonda argues that the German insolvency proceedings caused Dr. Jaffé to step into the shoes of the Management Board and Supervisory Board; but it did not effect a transfer of Qimonda's legal rights to a third party. (*Id.*)

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Qimonda cites paragraphs 6, 8 and 9 of Dr. Jaffé's sworn declaration to the Commission in which he authorized Qimonda to assert the patents-in-suit and King & Spalding LLP to represent Qimonda in this investigation.

To the extent my written authority or approval is somehow required to continue this Investigation against the Respondents, I hereby provide my authority and approval to continue this Investigation against the Respondents, effective April 1, 2009.

To the extent that my authority or approval is somehow required to continue King & Spalding LLP's representation of QAG in this Investigation, I hereby affirm, appoint, retain and authorize King & Spalding LLP to represent QAG and to act on QAG's behalf throughout the pendency of this Investigation, effective April 1, 2009. In addition, I hereby agree to, and consent to all actions of King & Spalding LLP in this Investigation as of January 23, 2009 and continuing thereafter, including but not limited to all documents prepared for QAG, all pleadings filed on behalf of QAG, all correspondence on behalf of QAG, etc.

(CIB at 35 (citing CX-1028C ¶¶ 6, 8, 9³; Tr. at 817:22-818:6).)

Qimonda responds to Respondents argument that Dr. Jaffé's declaration is insufficient because he failed to join this investigation. (CIB at 35 (citing RPHB at 21).) Qimonda points to Respondents assertion that, "German bankruptcy law dictates that with respect to a pending lawsuit involving assets that are in the insolvent estate, the administrator must either (1) join the lawsuit as a party, formally replacing the debtor, or (2) refuse to join the action and allow the debtor to continue acting as plaintiff in the lawsuit." (*Id.*)

Qimonda says that Respondents rely entirely on Section 85 of the German Insolvency Code for their argument. (CIB at 35-36 (citing RPHB at 21).) Qimonda quotes Section 85:

(1) Actions affecting the property forming part of the estate and pending for the debtor as plaintiff on the date the insolvency proceedings are opened may be joined by the liquidator with their existing status. If such joinder is delayed[,] section 239 subs. 2 to 4 of the Code of Civil Procedure shall apply mutatis mutandis.

³ Paragraph 9 is Dr. Jaffé's declaration under penalty of perjury.

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(2) If the liquidator refuses such joinder[,], the debtor and the defendant may continue the action.

(*Id.* (citing InsO § 85).)

Qimonda argues that Section 85 applies only to legal proceedings in Germany. (CIB at 36.) It can only be understood, they say, against the background of the Section 240 of German Code of Civil Procedure, which is inapplicable in this investigation. (*Id.*) Qimonda says that Section 240 orders an automatic stay to defensive litigation before a German civil court of a company over whose assets insolvency proceedings have been opened as per the opening date of such proceedings. (*Id.*) Qimonda asserts that the first paragraph of Section 85 provides the option to continue the stayed litigation by decision of the insolvency administrator who now manages the company's estate. (*Id.*) Qimonda argues that the German Code of Civil Procedure has no application outside of Germany. (*Id.*) Qimonda continues that since the applicability of Section 240 German Code of Civil Procedure is a mandatory and logical prerequisite for Section 85, Section 85 also has no application outside of Germany. (*Id.*)

Qimonda refers to Respondents' reference to U.S. bankruptcy law in their prehearing brief. (CIB at 36 (citing RPHB at 20-21).) Qimonda asserts, "Like the German Code of Civil Procedure, U.S. bankruptcy law is not relevant to this investigation. Qimonda AG, which owns the entire right, title, and interest to the patents-in-suit, filed for insolvency in Germany under the German Insolvency Code." (*Id.*)

Qimonda concludes that to the extent Section 85 would be applicable to this investigation Dr. Jaffé has authorized the continuation of this investigation. (CIB at 37 (citing CX-1028C).)

Qimonda cites *Certain Catalyst Components*, Inv. No. 337-TA-307, Order No. 23, 1990 WL 710614 (June 7, 1990) (attaching Commission opinion). Qimonda asserts that the Commission identified the bundle of rights necessary to maintain standing:

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The Supreme Court has held that a transfer by the patent owner of (1) the whole patent, comprising the exclusive right to make, use, or sell the patented product throughout the United States, (2) an undivided share of that exclusive right, or (3) the exclusive right under the patent in a specified geographical part of the United States, constitutes an assignment that carries with it the right to maintain an infringement suit. *Waterman v. Mackenzie*, 138 U.S. 252, 255 (1890).

Transferees of the first and third types of assignments above may independently maintain an action, while a transferee of the second type of assignment may not sue unless joined by the other owner(s).

Qimonda argues that in 2007, the Federal Circuit clarified which rights are necessary to maintain standing:

[A] patentee who holds all the exclusionary rights and suffers constitutional injury in fact from infringement is one entitled to sue for infringement in its own name. Additionally, if a patentee transfers “all substantial rights” to the patent, this amounts to an assignment or a transfer of title, which confers constitutional standing on the assignee to sue for infringement in its own name alone. When a party holds all rights or all substantial rights, it alone has standing to sue for infringement.

(CIB at 37 (citing *Morrow v. Microsoft Corp.*, 499 F.3d 1332, 1340 (Fed. Cir. 2007)).)

Qimonda concludes that it has received via assignment the entire right, title, and interest in the patents-in-suit, and the German insolvency proceedings have not had any effect on Qimonda’s patent rights. Accordingly, Qimonda argues, it has standing under Supreme Court, Federal Circuit, and Commission precedent to assert the patents-in-suit in this investigation.

In its reply brief, Qimonda posits, “[O]nce [the complainant] satisfies its initial burden of production showing that it is the owner of the asserted patents, the burden of production shifts to Respondents to rebut such a showing.” (*Id.* (citing *Certain Semiconductor Chips with Minimized Package Size*, Inv. No. 337-TA-605, Initial Determination, 2008 WL 5626937 (Dec. 1, 2008); *Certain Computer Products*, Inv. No. 337-TA-628, Initial Determination, 2009 WL 1021539 (Mar. 16, 2009)).) Qimonda argues that Respondents made no effort to rebut Qimonda’s standing until the eve of trial. (*Id.* (citing Order No. 47 at 3-4).) Qimonda says that Respondents

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rely solely on select provisions of the German Insolvency Code and “a single press release” to rebut Qimonda’s showing of standing. (*Id.* (citing RIB at 8-14).) (*Id.* (citing CX-5; CX-9; CX-12; CX-18; CX-47C; CX-526C).)

Qimonda states that under German law, a German stock corporation (*Aktiengesellschaft*) is dissolved upon the opening of an insolvency proceeding,⁴ and the authority that was previously vested in the Management Board is vested in the insolvency administrator. (CRB at 5-6 (citing Joint Stipulation of Facts (June 12, 2009), Ex. B, InsO § 80; Tr. at 751:21-753:2).) Qimonda says that the opening of the insolvency proceeding does not mean that the corporation is liquidated.⁵ (*Id.*) Instead, Qimonda says, the estate and business of the stock corporation is managed in the best interests of the creditors by the insolvency administrator. Qimonda asserts that a German stock corporation like Qimonda AG continues to exist after the opening of the insolvency proceeding as a “corporation in insolvency,” and “following the insolvency proceeding, the shareholders may decide to re-incorporate Qimonda.” (*Id.* (citing German Stock Corporation Act (*Aktiengesetz*) § 274(2) No. 1).)

Qimonda asserts that under Section 56 of the German Insolvency Code, the insolvency court is required to appoint as insolvency administrator “an independent individual suited to the case at hand who has particular experience in business matters and is independent of the creditors and of the debtor.” (CRB at 6 (citing Joint Stipulation of Facts (June 12, 2009), Ex. B, InsO § 56).) Qimonda says that on its face, Section 56 only requires the insolvency administrator to be “independent” at the time of his appointment. (*Id.*) Once appointed, it is argued, the insolvency administrator runs the estate of the insolvent stock corporation like the Management Board did prior to his appointment. (*Id.*) Qimonda asserts that Dr. Jaffe is not a third party.

⁴ German Stock Corporation Act (*Aktiengesetz*) § 262(1).

⁵ Referring to Hüffer, Commentary on German Stock Corporation Act (*Aktiengesetz*), Sec. 262(13).

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Rather, as a result of his April 1, 2009, appointment, Dr. Jaffé “is the board now at Qimonda AG.” (*Id.* (citing Tr. at 751:21-753:2).)

Qimonda argues that InsO § 148(1) makes clear the insolvency administrator only takes possession of property *belonging to* the estate. (CRB at 7-8.) Qimonda states that Section 35 of the German Insolvency Code confirms that debtors like Qimonda retain title to their assets and have the right to acquire additional assets during the pendency of insolvency proceedings. (*Id.* (citing Joint Stipulation of Facts (June 12, 2009), Ex. B, InsO §§ 35, 148(1)).)

Qimonda argues that it retains title to its assets, but the insolvency administrator assumes possession of the property so he can manage it. (CRB at 8.) Qimonda alleges that Respondents admit the patents-in-suit “are part of Qimonda’s insolvency estate.” (*Id.* (citing RIB at 20).) Qimonda asserts that U.S. courts have clearly distinguished between possession of and title to property. (*Id.* (citing *Nautilus Ins. Co. v. Worldwide Aeros Corp.*, 171 Fed.Appx. 182, 2006 WL 679647 (9th Cir. 2006) (“Physical possession is not the same as lawful possession or full, unfettered ownership.”); *In re PSINet Inc.*, 268 B.R. 358, 369 n.33 (Bkrtcy.S.D.N.Y. 2001) (“The use by an entity, or possession by it, is not the same as ownership.”)).)

Qimonda asserts that Section 85 of the German Insolvency Code is “inextricably intertwined with Section 240 of the German Code of Civil Procedure (“ZPO”), which, by operation of law, stays all litigation concerning the estate upon the opening of insolvency proceedings.” (CRB at 8-9.) Qimonda says that the insolvency administrator has the option under InsO § 85 to continue stayed litigation where the debtor is the plaintiff. (*Id.* (citing Joint Stipulation of Facts (June 12, 2009), Ex. B, InsO § 85).)

Qimonda asserts that Section 85 of the German Insolvency Code has no bearing on this investigation. (CRB at 9.) Qimonda argues that a stay is a prerequisite to the application of InsO

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§ 85, and this investigation was never stayed pursuant to ZPO § 240. (*Id.*) Qimonda argues that this investigation cannot be stayed pursuant to ZPO § 240 because German procedural law does not apply in the United States. (*Id.*)

Qimonda argues that to the extent InsO § 85 applies here, Dr. Jaffé has complied with InsO § 85. (CRB at 9 (citing CX-1028C).) Qimonda says that under German law, Dr. Jaffé is not a third party, thus he is not required to “formally join” the stayed litigation as a third party. (*Id.*) The Bundesgerichtshof, which is the supreme court for civil and criminal matters in Germany, has held insolvency administrators need only submit a declaration in which they express a desire to continue the litigation. (*Id.* (citing BGH, 07.10.1982, VII ZR 84/82).) Qimonda alleges that “a leading treatise states no express declaration of taking up is required; it is sufficient that the intention to continue the lawsuit is clearly identifiable.” (*Id.* (citing Münchener Kommentar zur Insolvenzordnung (2d. ed. 2007) (attached as Exhibit F to CRB))). Qimonda alleges Dr. Jaffé “left no doubt about his intention to continue this investigation,” and argues that he fully complied with InsO § 85. (*Id.* (citing CX-1028C ¶ 6).)

Respondents’ Position: Respondents do not challenge Qimonda’s ownership of the patents in suit. Instead they focus on the insolvency proceeding and allege that Qimonda AG has no standing to continue this investigation as a complainant, because as of April 1, 2009, Qimonda AG has dissolved and no longer exists as an independent corporate legal entity. (RIB at 8.) Respondents allege that the complaint and Notice of Investigation in this case identify only Qimonda AG, a now dissolved legal entity as the sole complainant. (*Id.*) Respondents argue that absent the joinder of Dr. Jaffé, “the true party of interest to Qimonda AG’s estate,” this investigation can no longer proceed for lack of standing. (*Id.*)

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Respondents point to German Insolvency Code § 80 and assert that under that statute, as of April 1, 2009, Dr. Jaffé obtained exclusive authority to manage and transfer all assets in Qimonda's estate (including the patents-in-suit) to maximize value for Qimonda's creditors. (RIB at 8 (citing Joint Stipulation ¶ 6, Insolvency Code § 80).) Respondents argue that Dr. Jaffé, as Qimonda's liquidator, became the only individual with authority to continue, withdraw or settle this Investigation on behalf of Qimonda's insolvent estate. (*Id.*)

Respondents provide their view of the German Insolvency Code, its purpose and basic functions. (RIB at 8-10.) Respondents assert that according to the Insolvency Code, “[u]pon the opening of the insolvency proceedings, the debtor's right to manage and transfer the estate shall be vested in the liquidator.” (*Id.* (citing Joint Stipulation ¶ 6, Insolvency Code § 80).)

Respondents aver that on April 1, 2009, the Insolvency Court issued an order that opened formal insolvency proceedings for Qimonda and appointed Dr. Jaffé as Qimonda's liquidator. (*Id.* (citing Joint Stipulation ¶ 3).) Respondents assert that, as Qimonda's liquidator, Dr. Jaffé is “independent of the creditors and of the debtor.” (*Id.* (citing Joint Stipulation ¶ 6, Insolvency Code § 56).) Respondents argue that as of April 1st, Dr. Jaffé's prime function as insolvency trustee was to maximize the value of the estate of Qimonda for the benefit of its creditors. (*Id.* (citing Joint Stipulation ¶ 6, Insolvency Code § 1).)

Respondents argue that once the insolvency proceedings opened on April 1, 2009, Qimonda's “right to manage and transfer the estate [were] vested in the liquidator,” i.e., Dr. Jaffé. (RIB at 8-10 (citing Joint Stipulation ¶ 6, Insolvency Code § 80).) Thus, Respondents reason, for pending lawsuits in which Qimonda was the plaintiff on April 1, 2009, section 85 of the German Insolvency Code provided Dr. Jaffé with two options: (1) formally join the litigation as a party, or (2) formally refuse to join the litigation and allow Qimonda and defendants to

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continue. (*Id.* (citing Joint Stipulation ¶ 6, Insolvency Code § 85).) Respondents argue that “to the extent that Qimonda claims that Dr. Jaffé need not be a party because of the authority provided in paragraph 6 of his declaration,” such an argument should be rejected, because Dr. Jaffé has pursued neither option required by Section 85, and because paragraph 6 of Dr. Jaffé’s declaration is entitled to little or no weight. (*Id.*)

Respondents object to the admission of the statement in paragraph 6, because no opportunity was provided to depose or cross-examine Dr. Jaffé on it. Respondents allege it is “self-serving and inherently unreliable,” and its admission violates 19 C.F.R. §§ 210.36(d), 210.37(b) and my Ground Rules 9.3 and 10.5. Respondents recall that I stated in Order 47, issued shortly before the hearing: “I note that both parties offer declarations regarding the issue of Qimonda’s standing (See Jaffé Declaration (CX-1028C) & Schiller Declaration (RX-1528C).) Assertions of fact contained in those declarations will not be admissible as evidence in the hearing unless the declarant is available at the hearing for cross- examination. Opinions and legal conclusions expressed in those declarations will not be admitted.” (RIB at 14 (citing Order No. 47 at 4, n.3 (Emphasis added in Respondents’ brief)).) Respondents state that at the hearing, I concluded that the statements in paragraph 6 were neither fact nor opinion. (*Id.* (citing Tr. at 29:10-21, 937:14-939:3.)) Respondents argue, “Dr. Jaffé’s purported delegation of authority, the extent of this delegation, the reasons for such delegation and the reasons for his refusal to formally join as a party are all facts upon which Respondents should have been able to depose and cross-examine Dr. Jaffé.” (*Id.*)

Respondents argue that to pursue option two of Section 85, which they assert generally applies to debtors who are natural persons, not corporations, the liquidator must release the assets from the insolvent estate. (RIB at 14-15.) Dr. Jaffé, they say, has pursued neither option,

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because he has neither formally refused to join the Investigation nor released the assets from the estate. (This is clear, they say, because he is still trying to sell them.) (*Id.*) In addition Respondents argue, Dr. Jaffé cannot pursue option two because there is no “debtor” independent from his office that can continue the Investigation — there is only an insolvent estate. (*Id.*)

Respondents argue that Qimonda seeks a third option under section 85 of the Insolvency Code: a liquidator can delegate some authority to a debtor to continue litigation on behalf of the insolvent estate, yet still maintain his right to dispose of the assets at issue in the litigation. (RIB at 15.) Respondents argue that, if such an option existed, Dr. Jaffé “should have made himself available to testify, under oath, about the extent of the authority he ... delegated (e.g., can Qimonda employees agree to settle the investigation) and the reasons for this delegation.” (*Id.*) The only apparent reason for Dr. Jaffé’s decision not to join this Investigation as a party, they argue, is to avoid being subject to the jurisdiction of the Commission. (*Id.*) On the other hand, Respondents argue that Dr. Jaffé is “effectively acting as the complainant by requesting relief from the Commission on behalf of Qimonda’s insolvent estate.” (*Id.*) Respondents assert that Dr. Jaffé “would not be permitted to proceed in this way in Germany⁶ and argue that he should thus not be permitted to do so here. (*Id.*)

Respondents point out that every intellectual property-based complaint alleging a violation of section 337 of the Tariff Act of 1930, as does Qimonda’s Complaint in this investigation, must “include a showing that at least one complainant is the owner or exclusive licensee of the subject intellectual property.” (RIB at 10-11 (citing Commission Rule 210.12(a)(7)).) Respondents assert that only the owner of “all substantial rights” in the subject

⁶ Respondents, in a footnote, say, “Under section 85 of the German Insolvency Code, if the insolvency administrator delays joinder of the proceedings, he can be summoned by the opposing party to open the proceedings and plead on the main issue. If the insolvency administrator fails to appear despite the summons, a judgment by default can be passed.” They include no citation other than Section 85.

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patents – such as the right to exclude others from practicing the patented invention, the right to indulge infringements of the patent and the right to sue upon the patent – can satisfy that standing requirement. (*Id.*)

Respondents argue that any time there is a legitimate challenge to standing, a complainant must prove that it has standing to an investigation. (RIB at 11-12.) According to Respondents, “Standing is a non-waivable ‘threshold jurisdictional issue,’ *Myers Inv. & Sec. Servs. v. United States*, 275 F.3d 1366, 1369 (Fed. Cir. 2002), and the standing requirement must be satisfied before the merits of a case may be reached, *see Fieldturf, Inc. v. Southwest Rec. Indus., Inc.*, 357 F.3d 1266, 1268 (Fed. Cir. 2004); *see also Catalyst Components*, at *50.” (*Id.*) Respondents assert that a complainant’s standing can be raised by the Administrative Law Judge, the Commission or the parties at any time. It can be raised on appeal even if a respondent failed to raise the issue in the proceedings below. (RIB at 11-12 (citing *United States v. Hays*, 515 U.S. 737, 742 (U.S. 1995) (“We are required to address the issue even if the courts below have not passed on it, and even if the parties fail to raise the issue before us. The federal courts are under an independent obligation to examine their own jurisdiction, and standing ‘is perhaps the most important of [the jurisdictional] doctrines.’”)) (quoting *FW/PBS, Inc. v. Dallas*, 493 U.S. 215, 230-231 (1990)); *Evident Corp. v. Church & Dwight Co.*, 399 F.3d 1310, 1313 (Fed. Cir. 2005) (“While [appellant’s] standing argument was not raised below, the issue has been raised on appeal and it must be addressed here because it is jurisdictional.”); *Mentor H/S, Inc. v. Medical Device Alliance, Inc.*, 240 F.3d 1016, 1018-19 (Fed. Cir. 2001) (“[T]he issue of whether an exclusive licensee has sufficient rights in a patent to bring suit in its own name is jurisdictional and, therefore, is not waived by a party’s failure to raise the issue in the district court.”))).)

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Respondents recite that the parties have stipulated that: 1) Qimonda AG is incorporated under the laws of Germany; (2) on April 1, 2009, the Insolvency Court issued an Order that opened the formal insolvency proceedings over the estate of Qimonda, and appointed Dr. Michael Jaffé as the liquidator; and (3) the formal insolvency proceedings are governed by the Insolvency Code (Insolvenzordnung). (RIB at 12.) In light of these facts, Respondents argue that it is clear that Dr. Jaffé is an indispensable party to this Investigation. (*Id.*)

Respondents assert that under U.S. bankruptcy law, once a trustee is appointed in bankruptcy proceedings for a debtor-corporation, the trustee assumes full control of the debtor and the debtor loses standing to pursue litigation that affects assets in the estate. (RIB at 13) (citations omitted.)

Respondents argue that liquidators in German insolvency proceedings and trustees in U.S. bankruptcy proceedings are appointed full control of the insolvent estate so that he or she may act in the best interest of the creditors. (RIB at 13-15.) They assert that the debtor loses standing as a matter of law. (*Id.*) (citations omitted.) Respondents argue, “like a bankruptcy trustee in the United States, a liquidator in Germany assumes “the debtor’s right to manage and transfer the assets involved in the insolvency proceedings.” (*Id.* (citing Joint Stipulation ¶ 6, Insolvency Code § 80).) Respondents state, “in spite of this, Dr. Jaffé has not sought to formally join as a complainant in compliance with the Commission Rule 210.14.” (*Id.*)

Respondents conclude that, because Dr. Jaffé has failed to join this Investigation as a party, it should be terminated. (RIB at 15.)

In their reply brief, Respondents aver that, Section 262 of the German Stock Corporation Act states: “The stock corporation is dissolved... upon the institution of insolvency proceedings over the company’s assets.” (RRB at 6-7.) Respondents allege that while it is true that the

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patents-in-suit are a part of the insolvent estate, there is no active corporation that can assert or license them. (*Id.*) Respondents discuss paragraph 6 Dr. Jaffé’s declaration, and argue “even if Dr. Jaffé were allowed under the Insolvency Code to delegate his authority to another person — which he is not — Qimonda AG, as a dissolved corporation, cannot receive such authority.” (*Id.* (citing CX-317).) Respondents assert that Dr. Jaffé, as Qimonda’s liquidator, is the only person with the authority and capacity to continue this Investigation on behalf of Qimonda’s insolvent estate and argue that Dr. Jaffé was required to join as a party to this Investigation. (*Id.*)

Respondents argue that Dr. Jaffé is not the equivalent of Qimonda’s Management and Supervisory Boards. (RRB at 8-9.) According to Respondents, the Management and Supervisory Boards were responsible for the management and monitoring of an active corporation, respectively, and were both obligated to maximize value for the company’s shareholders. (*Id.*) Dr. Jaffé, they say, is an independent liquidator who controls the assets of the estate “independent of the creditors and of the debtor.” (*Id.* (citing Joint Stipulation ¶ 6, Insolvency Code § 56).) Respondents argue that he is obligated to manage Qimonda’s insolvent estate on behalf of the creditors, even if this means that he must take action against the shareholders and management. (*Id.* (citing German Stock Corporation Act § 93).) Respondents assert that Dr. Jaffé is not permitted to give preference to continuing the business, which could be in the best interest of the shareholders, if liquidation is in the best interest of the creditors. (*Id.*)

Respondents refer to Dr. Jaffé’s recent filing of a petition in a U.S. bankruptcy court to illustrate that after April 1, 2009, he became the sole authorized representative who can initiate or continue legal actions on behalf of Qimonda’s insolvent estate. (RRB at 9.) Respondents argue that Qimonda no longer has the capacity to continue this Investigation on its own. (*Id.* at

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10.) Rather, it has become an insolvent estate whose assets are managed exclusively by its independent liquidator, Dr. Jaffé. (*Id.*)

Respondents continue that Section 85 of the German Insolvency Code “provides Dr. Jaffé with only two options with respect to litigation that Qimonda brought as a complainant: (1) formally join the litigation as a party, or (2) formally refuse to join the litigation and allow debtor and defendants to continue.” (RRB at 10-11 (citing Joint Stipulation ¶ 6, Insolvency Code § 85).) Respondents argue that Section 85 governs Dr. Jaffé’s obligations and his ability to act as the liquidator of Qimonda’s insolvent estate, regardless of whether the action in question is in Germany or overseas. (*Id.*) Respondents posit that Qimonda can point to no provision of the Insolvency Code or any other applicable regulation that would provide for the application of some other law. (*Id.* (citing Joint Stipulation ¶ 6, Insolvency Code § 335).)

Respondents conclude, even if section 85 applies only to legal actions pending in Germany, Qimonda would still lack standing to continue this Investigation, because the only other law governing the capacity of a bankrupt company in this country is the U.S. Bankruptcy Code. (RRB at 11-12.) Respondents assert that if the company enters liquidation proceedings under Chapter 7, the bankruptcy court appoints a trustee, much the same way the German Insolvency Court appoints a liquidator when formal insolvency proceeding begin. (*Id.*) Once a bankruptcy trustee is appointed in the U.S., they argue, the trustee assumes full control of the debtor-corporation and the corporation loses standing to pursue litigation that affects assets in the bankrupt estate. (*Id.* (citing RIB at 13).)

Addressing Staff’s argument, Respondents assert that Staff believes that Qimonda continued to have standing after April 1, 2009 because “[t]he German Insolvency Code does not appear to confer title or outright ownership to the patents-in-suit on Dr. Jaffé.” (RRB at 12.)

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Respondents say, citing *FilmTec v. Hydranautics*, 983 F.2d 1546, 1550 (Fed. Cir. 1992), Staff claims that this case “falls squarely within the prohibition against raising as a defense the equitable right of ownership of a non-party.” (*Id.* (citing SIB at 11).) Respondents argue that case is inapposite here. (*Id.*)

Respondents argue that *FilmTec* does not stand for the proposition that Staff asserts in its brief. Like Staff in this case, the plaintiff in *FilmTec* cited *Dorr-Oliver, Inc. v. United States*, 432 F.2d 447 (Ct. Cl. 1970) for the proposition that the defendant could not raise equitable ownership as a defense. (RIB at 12.) Respondents say the court rejected this argument stating “*Dorr-Oliver* in fact supports, rather than undermines, [defendant’s] position in this case since the Court of Claims in *Dorr-Oliver* applied a federal statute to preclude the record title-holder from asserting a patent infringement claim.” (*Id.* (citing *FilmTec*, 982 F.2d at 1550 (emphasis added)).) Respondents assert that the question of equitable title is not relevant to the question of Qimonda’s standing in this Investigation.

Respondents conclude that on April 1, 2009, Qimonda AG dissolved and its assets became an insolvent estate that lacks any capacity to act on its own. Because Dr. Jaffé has exclusive authority over the insolvent estate, they argue, only he can initiate, continue, or settle a lawsuit that relates to these patents.

Commission Investigative Staff’s Position: Staff believes that Qimonda has standing. (SIB at 10-11.) They reason that the German Insolvency Code does not appear to confer title or outright ownership to the patents in suit upon Dr. Jaffe. (*Id.*) Staff argues that Respondents’ reliance on Sections 80, 85 and 117 of the German Insolvency Code for the proposition that Qimonda lacks standing, is misplaced. Staff argues that pursuant to Section 80, paragraph 1, “[u]pon the opening of the insolvency proceedings the debtor’s *right to manage and transfer* the

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assets involved in the insolvency proceedings shall be vested in the insolvency administrator.”

(*Id.*) (emphasis added.) Staff adds that Section 85, paragraph 2 provides that “[i]f the administrator refuses [to join an action by the debtor] the debtor and the defendant may continue the action.” (SIB at 10-11.) Staff asserts that Section 117, paragraph 1, provides “[a] proxy granted by the debtor with respect to the property forming part of the assets involved in the insolvency proceedings shall expire upon the opening of the insolvency proceedings.” (*Id.*) Staff avers that nowhere do these sections state that legal title to patents shall be vested, solely or in-part, in the administrator. (*Id.*) Staff adds that Dr. Jaffe “specifically authorized Qimonda to continue this investigation against Respondents. (*Id.* (citing CX-1028C ¶ 6).)

Staff argues that it has been held that “[i]n patent litigation between private parties, equitable rights of ownership of strangers to the suit cannot be raised as defenses against the legal titleholder of a patent.” (SIB at 11 (citing *FilmTec Corp. v. Hydronautics*, 982 F.2d 1546, 1550 (Fed. Cir. 1992) (quoting *Dorr-Oliver, Inc. v. United States*, 432 F.2d 447, 451 (Ct. Cl. 1970))).) Staff argues that while the courts in *FilmTec* and *Dorr-Oliver* both ultimately allowed the defendants to assert a defense against the legal titleholder, those cases both involved federal statutes that specifically dictated United States ownership of certain patents. (*Id.*) Staff says that in *FilmTec*, the plaintiff’s patent was subject to a statute that dictated that the patent’s ownership “shall vest” in the United States. (*Id.* (citing *FilmTec* at 1550).) Staff asserts that in *Dorr-Oliver*, the defendant was the United States, and was statutorily exempt from liability for claims of patent infringement arising prior to the time a plaintiff acquired title to the patent. (*Id.* (citing *Dorr-Oliver* at 451).) From this, Staff reasons that, “because Dr. Jaffe did not acquire legal title to the patents in suit, title to the patents in suit is still vested in Qimonda.” (*Id.*) Staff argues that this case “falls squarely within the prohibition against raising as a defense the equitable rights of

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ownership by non-parties to the proceeding.” (*Id.*) Staff concludes that Qimonda has standing to bring this complaint.

In their reply brief, Staff disagrees with Respondents’ position that Dr. Jaffe must either (1) “formally” join this investigation as a party on behalf of the insolvent estate or (2) “formally” refuse to join the litigation and allow the debtor and defendants to continue. (SRB at 1-2.) Staff expresses their belief that Dr. Jaffe has refused to join this investigation within the meaning of Section 85, paragraph 2 of the German Insolvency Code. Staff notes that none of the parties contest the application of German law to the issue of standing. (*Id.* (citing CIB at 35-37 and RIB at 8-15).)

Staff refers to Dr. Jaffe’s statement in which he said, “[t]o the extent that my written authority or approval is somehow required to continue this investigation against the Respondents, I hereby provide my authority and approval to continue this investigation against the Respondents, effective April 1, 2009.” (SRB at 1-2 (citing CX-1028C ¶ 6).) Staff points to paragraph 2 of Section 85, which states “[i]f the administrator refuses [to join an action by the debtor] the debtor and the defendant may continue the action.” (*Id.*) Staff points out that no authority has been cited that requires an administrator’s statutory refusal to consist of any specific language or follow a particular form. (*Id.*)

Discussion and Conclusion: I find that Qimonda has standing to pursue this investigation.

19 CFR § 210.12 provides in relevant part:

(a) *Contents of the complaint.* In addition to conforming with the requirements of § 201.8 of this chapter and §§ 210.4 and 210.5 of this part, the complaint shall -

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(7) Include a description of the complainant's business and its interests in the relevant domestic industry or the relevant trade and commerce. For every intellectual property based complaint (regardless of the type of intellectual property right involved), include a showing that at least one complainant is the owner or exclusive licensee of the subject intellectual property;

Qimonda has, by a preponderance of evidence, made a showing of standing based upon its ownership of the patents-in-suit. The undisputed evidence shows that: (1) the entire right, title and interest in the '899 patent was assigned from the inventors to Siemens Components Inc., from Siemens Components Inc. to Siemens AG, from Siemens AG to Infineon Technologies AG, and from Infineon Technologies AG to Qimonda. (CX-12; CX-47C; CX-526C.); (2) the entire right, title, and interest to the '670 patent was assigned from the inventors to Siemens AG, from Siemens AG to Infineon Technologies AG, and from Infineon Technologies AG to Qimonda. (CX-5; CX-47C; CX-526C.); (3) the entire right, title, and interest to the '918 patent was assigned from the inventors to Infineon Technologies North America Corp., from Infineon Technologies North America Corp. to Infineon Technologies AG, and from Infineon Technologies AG to Qimonda. (CX-18; CX-47C; CX-526C.); and (4) the entire right, title, and interest to the '434 patent was assigned from the inventors to Siemens AG, from Siemens AG to Infineon Technologies AG, and from Infineon Technologies AG to Qimonda. (CX-9; CX-47C; CX-526C.)

There is no evidence, or even assertion, that ownership of the patents-in-suit has been transferred from Qimonda to another person or entity. Instead, Respondents have argued that the opening of insolvency proceedings in Germany on April 1, 2009, resulted in the dissolution of Qimonda as a corporation and loss of control of its assets. This, they argue, abrogates Qimonda's standing to act as the complainant in this matter and requires the presence of the insolvency administrator, Dr. Jaffe, as a party complainant pursuant to 19 CFR § 210.12(a)(7).

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Because the Respondents' challenge to Qimonda's standing arises under the color of the German Insolvency Code, I will consider its impact upon Qimonda's ownership of the patents-in-suit under the principles of international comity. Comity is a rule of practice, convenience and expediency that may be applied in the discretion of a court. *Pravin Banker Assocs., Ltd. v. Banco Popular Del Peru*, 109 F.3d 850, 854 (2d Cir. 1997).

In *Int'l Nutrition Co. v. Horphag Research, Ltd.*, 257 F.3d 1324 (Fed. Cir. 2001), the court considered ownership of a U.S. patent that was affected by a contract enforced by a French court. In determining that the district court's extension of international comity was not an abuse of its discretion, the Federal Circuit found that comity was appropriate, because the French courts merely determined who owned a United States patent pursuant to a French contract. On that point, the Federal Circuit said, "[T]he question of who owns patent rights, and on what terms, typically is a question exclusively for state courts and not one arising under the United States patent laws. *Jim Arnold Corp. v. Hydrotech Sys., Inc.*, 109 F.3d 1567, 1572, 42 USPQ2d 1119, 1123 (Fed Cir. 1997). A contractual agreement to apply French law as to ownership is just as valid as an agreement to apply the law of a particular state. *Beghin-Say Int'l, Inc. v. Rasmussen*, 733 F.2d 1568, 1573 n.5, 221 USPQ 1121, 1125 n.5 (Fed. Cir. 1984). There is, therefore, no conflict between United States patent law, and enforcing the intent of the parties to the development contract that it should be interpreted under the laws of a foreign country." *Id.* at 1330.

I find that the application of the German Insolvency Code in this matter to determine ownership of the patents-in-suit and "on what terms" is not one arising under the United States patent laws and is an appropriate use of international comity in this case.

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The primary statute at issue here is Section 85 of the German Insolvency Code, which states:

Joinder of Pending Actions as Plaintiff.

(1) Actions affecting the property forming part of the estate and pending for the debtor as plaintiff on the date the insolvency proceedings are opened may be joined by the liquidator with their existing status. If such joinder is delayed section 239 subs. 2 to 4 of the Code of Civil Procedure shall apply mutatis mutandis.

(2) If the administrator refuses such joinder the debtor and the defendant may continue the action.

Section 85 treats actions in which the debtor is plaintiff and applies specifically to the case before me. Its language regarding joinder by the liquidator uses the permissive “may” rather than the mandatory “shall.” Thus the liquidator is not required to join the action. If the liquidator refuses to join the action, the section again provides, permissively, that the debtor and the defendant “may” continue the action.⁷

In this case, Dr. Jaffe has submitted his declaration acknowledging the existence of this investigation and stating “[t]o the extent that my written authority or approval is somehow required to continue this investigation against the Respondents, I hereby provide my authority and approval to continue this investigation against the Respondents, effective April 1, 2009.” (CX-1028C at ¶ 6.)

I do not concur with Respondents’ view that Section 85 of the German Insolvency Code “provides Dr. Jaffé with only two options with respect to litigation that Qimonda brought as a complainant: (1) **formally** join the litigation as a party, or (2) **formally refuse** to join the litigation and allow debtor and defendants to continue.” (RRB at 10) (emphasis added.) The

⁷ The reference in Section 85 to section 239 of the Code of Civil Procedure subs. 2 to 4 is inapplicable in this case, inasmuch as the case does not involve the death of a party. I note that section 239 is directed to “Interruption due to the death of the party.”

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language of Section 85 does not mandate any formal action on the part of the liquidator and speaks in permissive terms. Dr. Jaffe's acknowledgement of this investigation and expression of approval for Qimonda to continue the investigation is sufficient to amount to a "refusal" to join the investigation as a party.

In addition, Respondents argue for the first time in their rebuttal brief that the initiation of the insolvency proceedings "dissolved" Qimonda as a corporation. Respondents aver that, Section 262 of the German Stock Corporation Act states: "The stock corporation is dissolved... upon the institution of insolvency proceedings over the company's assets." Respondents allege that while it is true that the patents-in-suit are a part of the insolvent estate, there is no active corporation that can assert or license them. Respondents discuss paragraph 6 of Dr. Jaffé's declaration, and argue "even if Dr. Jaffé were allowed under the Insolvency Code to delegate his authority to another person — which he is not — Qimonda AG, as a dissolved corporation, cannot receive such authority." (RRB at 6-7 (citing CX-317).) Respondents assert that Dr. Jaffé, as Qimonda's liquidator, is the only person with the authority and capacity to continue this Investigation on behalf of Qimonda's insolvent estate and argue that Dr. Jaffé was required to join as a party to this Investigation. (*Id.*)

First, I find that Respondents' argument raising Section 262 of the German Stock Corporation Act for the first time in their rebuttal brief is improper argument, because it is the first reference by a party in this case to that section. Respondents' argument regarding Section 262 does not reply to any allegation set forth in Qimonda's initial brief, as required by Ground Rule 11.3. Instead, it raises this issue for the first time at a point at which Qimonda is not able to respond. Therefore, Respondents' argument regarding the impact of Section 262 of the German Stock Corporation Act is not considered.

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Second, assuming *arguendo* that Section 262 did apply in this case, the quoted language provides “grounds for dissolution.” Section 263 of the German Stock Corporation Act provides that “in the case of institution ... of insolvency proceedings ... the court shall register the dissolution and the grounds therefor...”

I note that nowhere in the German Insolvency Code does it include an automatic dissolution of a corporation upon opening of insolvency proceedings. In fact, Section 1 of the German Insolvency Code provides that the insolvency proceedings shall “serve the purpose of collective satisfaction of a debtor’s creditors by liquidation of the debtor’s assets and by distribution of the proceeds, or by the reaching of an arrangement in an insolvency plan, particularly in order to maintain an enterprise.” Section 11 provides that Insolvency proceedings may be opened for the assets owned by any individual or corporation. Section 80 provides at subsection (1) that upon opening of the insolvency proceedings the debtor’s right to manage and transfer the estate shall be vested in the liquidator. Section 80 does not purport to affect ownership of the assets of the debtor’s estate. Section 157, regarding the report meeting, states that the creditors will decide “whether the debtor’s enterprise should be closed down or temporarily continued.”

The Order of the Insolvency Court that opened the insolvency proceedings in this matter did not order dissolution of Qimonda as a corporation.⁸ The Order of Insolvency did not purport to affect a transfer of title to any of Qimonda’s property. It merely appointed Dr. Jaffe as insolvency administrator (i.e. liquidator). I conclude that, at this point, Qimonda remains a legal entity and retains ownership of the patents-in-suit.

Based on all of the foregoing, I find that Qimonda retains standing to bring this investigation, and Dr. Jaffe is not a required party pursuant to 19 CFR § 210.12(a)(7).

⁸ The order appears in full as Exhibit A to the Joint Stipulation of the Parties.

III. CLAIM CONSTRUCTION

A. Applicable Law

“An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*), *aff’d*, 517 U.S. 370 (1996) (citation omitted). Claim construction “is a matter of law exclusively for the court.” *Id.* at 970-71. “The construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims.” *Embrex, Inc. v. Serv. Eng’g Corp.*, 216 F.3d 1343, 1347 (Fed. Cir. 2000). “[O]nly those [claim] terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.” *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Claim construction focuses on the intrinsic evidence, which consists of the claims themselves, the specification, and the prosecution history. *See generally Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*). The Federal Circuit in *Phillips* explained that in construing terms, courts must analyze each of these components to determine the “ordinary and customary meaning of a claim term,” which is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Id.* at 1313.

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Id.* at 1312 (citations omitted). “Quite apart from the written description and the prosecution history, the claims themselves provide substantial guidance as to the meaning of particular claim terms.” *Id.* at 1314. For example, “the context in which a term is used in the asserted claim can be highly instructive,” and “[o]ther

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claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term.” *Id.*

“[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* (citation omitted). “The longstanding difficulty is the contrasting nature of the axioms that (a) a claim must be read in view of the specification and (b) a court may not read a limitation into a claim from the specification.” *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1117 (Fed. Cir. 2004). The Federal Circuit has explained that there are certain instances when the specification may limit the meaning of the claim language:

[O]ur cases recognize that the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs. In other cases, the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor. In that instance as well, the inventor has dictated the correct claim scope, and the inventor’s intention, as expressed in the specification, is regarded as dispositive.

Phillips, 415 F.3d at 1316.

In addition to the claims and the specification, the prosecution history should be examined if in evidence. “The prosecution history...consists of the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent. Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent.” *Id.* at 1317 (citation omitted). “[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Id.*

If the intrinsic evidence does not establish the meaning of a claim, then extrinsic evidence

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may be considered. Extrinsic evidence consists of all evidence external to the patent and the prosecution history, including dictionaries, inventor testimony, expert testimony and learned treatises. *Id.* at 1317. Extrinsic evidence is generally viewed “as less reliable than the patent and its prosecution history in determining how to read claim terms[.]” *Id.* at 1318. “The court may receive extrinsic evidence to educate itself about the invention and the relevant technology, but the court may not use extrinsic evidence to arrive at a claim construction that is clearly at odds with the construction mandated by the intrinsic evidence.” *Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 977 (Fed. Cir. 1999).

B. The ‘670 Patent

1. “Amorphous Silicon Layer”

The term “amorphous silicon layer” appears in asserted claim 1.

Qimonda’s Position: Qimonda offered no position on the construction of this term.

Respondents’ Position: Respondents contend that the term “amorphous silicon layer” means a layer of silicon that when viewed as an aggregate lacks the characteristics of a crystalline or polycrystalline structure. (RIB at 36.)

Respondents argue that there are two primary aspects of the asserted claims of the ‘670 patent. (RIB at 36.) First, the claims require “depositing an amorphous silicon layer.” Second, the claims require a particular annealing (or heating) sequence to crystallize the amorphous silicon layer into a polycrystalline layer having a defined grain size and texture. Respondents assert that the ‘670 patent makes clear that, in the context of the invention, the deposition step is critically important because, if the silicon is deposited in polycrystalline form, “[t]he grain structure and the texture are determined by the deposition process itself” rather than by the annealing process. (*Id.* (citing JX-7 at 1:40-42).)

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Respondents' state that their expert, Dr. Gwozdz, testified that "amorphous" means "lacking a crystalline or polycrystalline structure." (RIB at 36-37 (citing RX-1086C at Q. 22). Respondents allege that Qimonda's expert, Dr. Hammond does not disagree, and in his witness statement he indicates that "the darker green dots [on his demonstrative exhibit] in the amorphous silicon layer represent the lack of an ordered crystalline structure." (*Id.* (citing RX-1086C at Q. 22; CX-141C at Q. 23).)

Commission Investigative Staff's Position: Staff submits that read in the context of Claim 1, the phrase "the amorphous silicon layer" refers to the initial amorphous silicon layer deposited on the substrate. (SIB at 30.)

Staff separately addresses the term "amorphous silicon layer," noting that the Respondents argue that this phrase should be construed as "a layer of silicon that when viewed as an aggregate lacks the characteristics of a crystalline or polycrystalline structure." (SIB at 30 (citing RIB at 36).) Staff does not believe that the phrase needs to be construed separately from the term "the amorphous silicon layer;" but "notes that the phrase does not include a polycrystalline or crystalline structure." (*Id.*)

Construction to be applied: "a silicon layer lacking a crystalline or polycrystalline structure."

Claim 1 of the '670 patent reads:

A method for the manufacture of a polycrystalline silicon layer on a substrate, comprising the steps of:

depositing an amorphous silicon layer on a substrate; and

then controlling the phase transformation of the amorphous silicon layer to an initial temperature that is lower than a crystalline temperature for the amorphous silicon,

heating said substrate with said amorphous silicon layer to an initial

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temperature that is lower than a crystalline temperature for the amorphous silicon,

holding the substrate with said amorphous silicon layer at the initial temperature to achieve a thermal equilibrium of the substrate with the amorphous silicon layer at said initial temperature, and then, after reaching the thermal equilibrium,

continuing the heating of said substrate with said amorphous silicon layer to raise the temperature at a controlled rate through a reproducible prescribed temperature profile from said initial temperature to a target temperature, said target temperature being higher than the crystallization temperature of said amorphous silicon so that said amorphous silicon crystallizes and becomes a polycrystalline layer having a defined grain size and texture.

(JX-7 at 6:41-66.)

The term “amorphous silicon layer” appears six (6) times in claim 1 arrayed throughout all of its five (5) elements. Claim 1 makes clear that it teaches a means of transforming an amorphous silicon layer into a polycrystalline layer by a thermal process that achieves crystallization of an amorphous silicon layer that has been deposited on a substrate.

The Abstract of the ‘670 patent supports the teaching of claim 1 when it describes the patent as a “manufacturing method for polycrystalline silicon layers with a defined particle size and texture on a substrate provides for depositing of an amorphous silicon layer on a substrate ... heated in a controlled fashion from the initial temperature to a target temperature which is higher than the crystallization temperature whereby the amorphous silicon layer is completely crystallized and become a polycrystalline layer.” (JX-7 at Abstract.)

The Summary of the Invention further explains the concept of the invention when it describes amorphous layers as “thermodynamically metastable” and describes that term to mean “the layers, upon being subject to energy above a certain threshold level, crystallize.” (*Id.* at 2:46-48, 2:48-50.)

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From all of the foregoing references in the '670 patent, it is clear and unambiguous that the invention is directed toward creating a polycrystalline silicon layer by crystallizing an amorphous silicon layer. Sound logic dictates that the amorphous silicon layer is not in a crystalline form, since it must undergo a process in order to obtain crystallization.

Based upon the foregoing, I find that the term "amorphous silicon layer" as used in the '670 patent shall be construed as "a silicon layer lacking a crystalline or polycrystalline structure."

2. "Substrate"

The term "substrate" appears in asserted claim 1.

Qimonda's Position: Qimonda offered no position on the construction of this term.

Respondents' Position: Respondents contend that the term "substrate" means "a silicon wafer or other semiconductor material on which semiconductor structures are formed." (RIB at 37 (citing JX-22 at 9).)

Respondents argue that "those skilled in the art" will understand generally that, in the context of semiconductor fabrication, a substrate typically refers to the silicon wafer on which semiconductor structures are formed. (RIB at 37.) Respondents conceded that the '670 patent expands that definition by indicating that the substrate is not limited to the silicon wafer itself, but rather, can also include materials other than silicon. (*Id.*) Specifically, they say, in the preferred embodiment of the '670 patent, the substrate "is composed of silicon dioxide." (RIB at 37 (citing JX-7 at 5:19-20).) Respondents request that "substrate" be construed as "a silicon wafer or other semiconductor material on which semiconductor structures are formed." (*Id.*) Respondents believe that Staff's proposed construction would be acceptable, although they opine

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it would more accurate if written to expressly indicate that the substrate may include a silicon wafer. (*Id.*)

Commission Investigative Staff's Position: Staff does not believe that this term needs to be construed. (SIB at 31.) If it is construed, Staff believes it means “the supporting material on which an integrated circuit is fabricated or to which an integrated circuit is attached.” (*Id.*) Staff indicates that in their prehearing brief, Respondents accept Staff's construction but wish to include “that the substrate may include a silicon wafer.” (*Id.* (citing RIB at 37).) Staff states that under their construction there is nothing to preclude the substrate from being comprised of silicon or another material and, therefore, it is unnecessary to qualify the phrase. (*Id.*) Staff believes that this term is not materially disputed among the parties. (*Id.*)

Construction to be applied: “the supporting material on which an integrated circuit is fabricated or to which an integrated circuit is attached.”

The '670 patent is clear that its primary object is to provide a manufacturing method for polycrystalline silicon layers of a defined grain size and texture to be applied to a substrate in, among other things, an integrated circuit in order to reach the same target values of resistance with significantly thinner layers by depositing layers in an amorphous mode and following a specified process for crystallization of the amorphous silicon layers into polycrystalline form.

In the section entitled Background of the Invention, the inventors describe that the present invention relates generally to a method for manufacturing a polycrystalline layer on a substrate. (JX-7 at 1:10-11.) They point out that polycrystalline silicon layers are necessary for resistors composed of polycrystalline silicon in integrated circuits, among other things. (*Id.* at 1:16-20.) The inventors recite that the application of resistance composed of polycrystalline silicon, also known as so-called poly-silicon resistances, on integrated circuits requires reliable

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realization of the target parameters of the resistances. (*Id.* at 1:21-24.) They indicate that one possibility for manufacturing polycrystalline silicon layers is polycrystalline deposition. (*Id.* at 1:39-40.)

The inventors explain that layers deposited in an amorphous mode which are subsequently crystallized only have approximately 1/3 of the layer resistance of layers that are deposited in a polycrystalline fashion given otherwise equal parameters. (*Id.* at 1:59-63.) Layers deposited in an amorphous mode can thus reach the same target values of resistance with significantly thinner layers. Thus, layers deposited amorphously are an essential means to reduce problems of topography in integrated circuits. The inventors point out that one disadvantage of amorphously deposited layers is that extremely great fluctuations in the resulting resistance values of at least [plus or minus] 10% result as compare to layers which are deposited in a polycrystalline fashion which have a maximum fluctuation range of [plus or minus] 2%. (*Id.* at 1:66-2:7.) Therefore, the inventors say, advantages of amorphously deposited layers can only be used adequately in sub-regions of silicon-micro electronic circuits where precisely adjusted resistant values for the resistance layers are not crucial. (*Id.* 2:8-12.)

In the section of the '670 patent entitled Summary of the Invention, the inventors reveal, in light of the problem described hereinabove, it is an object of the present invention to provide a manufacturing method for polycrystalline silicon layers of a defined grain size and texture without losing the advantages of amorphously deposited layers. (*Id.* at 2:21-25.) They continue, "[a]ccording to the present invention, the problems of the prior art are solved by a manufacturing method for polycrystalline silicon layers on a substrate ..." (*Id.* at 2:27-28.)

In summary, the '670 patent describes that it is advantageous to apply resistance layers that are thinner; but maintain a fluctuation range that is not greater than the range previously

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enjoyed by polycrystalline silicon layers of prior generations. The invention is directed toward this end in integrated circuitry by applying amorphous silicon layers on a substrate, and by following a specified process to transform those amorphous silicon layers into polycrystalline layers.

I conclude, then, that the “substrate” mentioned in the Abstract, the Background of the Invention, the Summary of the Invention, the Description of the Preferred Embodiments (*See, e.g., Id.* at 5:18-21.), and asserted claim 1 (*Id.* at 6:41-44.) is clearly the supporting material on which an integrated circuit is fabricated or to which an integrated circuit is attached.

3. “Depositing an Amorphous Silicon Layer”

The term “depositing an amorphous silicon layer” appears in asserted claim 1.

Qimonda’s Position: Qimonda asserts that one of ordinary skill in the art at the time that the ‘670 patent was filed would recognize that the plain and ordinary meaning of “depositing an amorphous silicon layer” includes depositing silicon and then bombarding it with ions, which renders it amorphous.⁹ (CIB at 177 (citing CX-141C at Q. 45, 47, 48; CX-1045C at Q. 36; CX-490C at 94:2-95:3, 96:17-97:18; CX-547C at 74:2-4, 74:12-16; Tr. at 1383:13-1384:1).)

Qimonda alleges that this is supported by the ‘670 patent’s specification, which expressly contemplates a part of “the present invention” doping polycrystalline silicon by ion implant and then transforming the amorphous silicon layer resulting from the doping into polycrystalline silicon prior to activation of the dopants. (CIB at 177-178.) Qimonda quotes trial testimony of Respondents’ expert Dr. Gwozdz and asserts that he supports their position. (*Id.* (citing Tr. at 1675:1-1677:20, 1680:6-13; JX-7 at 4:61-5:3).)

⁹ Qimonda says that people having skill in the art of the ‘670 patent may refer to this method as “pre-amorphizing by ion bombardment.” (CIB at 177 (citing CX-1045C at Q. 36).)

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Qimonda argues that a person of ordinary skill in the art would recognize that this doping would damage the crystalline structure, and therefore amorphize, polycrystalline silicon manufactured according to the invention. (CIB at 178-179 (citing Tr. at 1632:1-3, 1676:9-22; CX-141C at Q. 45, 47, 48; CX-1045C at Q. 36; CX-490C at 94:2-95:3, 96:17-97:18; CX-547C at 74:2-4; 74:12-16; Tr. 1383:13-1384:1).) Qimonda reasons that having amorphized the polycrystalline silicon a person of ordinary skill in the art reading the '670 patent who wanted a defined grain size and texture would "undoubtedly" utilize the inventive method of the '670 patent to re-crystallize the amorphous silicon to polycrystalline of the describe grain size. (*Id.*)

Qimonda avers that "all but one of the persons skilled in the art of the '670 patent who testified in this case demonstrated that they understood that pre-amorphization by ion bombardment was one way to '*deposit[] an amorphous silicon layer.*'" (CIB at 179 (citing CX-547C at 74:2-4, 74:12-16; CX-141C at Q. 45; CX-490C at 96:17-97:18, 94:14-95:3).)

Qimonda cites the testimony of Dr. Herbert Kabza, one of the named inventors on the '670 patent, as demonstrating that the plain and ordinary meaning of "depositing an amorphous silicon layer" include pre-amorphization by ion bombardment when he testified at his deposition:

Q. Were there any other ways in 1989, that you were aware of, to deposit an amorphous silicon layer on a substrate?

* * *

A. This is an option the polycrystalline silicon layer -- to deposit a polycrystalline silicon layer and to make it amorphous through ion implantation. To a certain extent it happens anyway 11:26 because all these layers are being doped.

(CIB at 179 (citing CX-547C at 74:2-4, 74:12-16).) Qimonda next points to the testimony of its expert, Dr. Hammond, who said in his direct testimony:

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It is generally understood in the field that amorphous silicon may be deposited in several different ways, for example, via sputtering, chemical vapor deposition, and pre-amorphization by ion bombardment.

(CIB at 179 (citing CX-141C at Q. 45).)

Qimonda then cites the testimony of one of Respondents' experts, Dr. Bruce Smith, who they say agreed cross-examination at trial that in his deposition testimony he said that one way to "deposit[] an amorphous silicon layer" on a substrate was to deposit silicon then amorphize it with ion bombardment. (CIB at 179-180 (citing Tr. at 1383:13-1384:4; CX-490C at 94:14-95:3, 96:17-97:18).) Qimonda then says that, in his witness statements, Dr. Smith "made an about face, claiming for the first time that he applied 'Qimonda's apparent construction' in his expert reports when saying that 'depositing an amorphous silicon layer' included pre-amorphization by ion bombardment." (*Id.* (citing RX-813C at Q. 49-50, 57; Tr. at 1383:13-1384:1, 1407:21-24; CX-490C at 38:14-41:12).) Qimonda asserts that Dr. Smith's direct testimony lacks credibility. Qimonda states that prior to submitting his witness statements, Dr. Smith never indicated that he was using "Qimonda's apparent construction." (*Id.* (citing CX-490C at 38:14-41:12; RX-813C at Q. 49-50, 57; Tr. at 1383:13-1384:1, 1407:21-24).)

Qimonda alleges that, during his deposition, Dr. Smith testified that his validity "analysis will hold true based on all constructions at this time." (CIB at 180 (citing CX-490C at 41:11-12).) Yet, in his witness statement, he testified differently:

Kabza is not an anticipatory reference unless Qimonda's apparent claim construction of "depositing" is used, because Kabza discloses silicon amorphized by ion implantation.

(CIB at 180-181 (citing RX-813C at Q. 57).) Qimonda asserts that the first time that Dr. Smith indicated that he was applying "Qimonda's apparent construction" was in his first witness statement, wherein he testified:

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... for purposes of my expert reports, I was informed of and used Qimonda's apparent construction of the term “depositing,” which would include amorphization of silicon by ion implantation.

(CIB at 181 (citing RX-813C at Q. 49).) Qimonda points out that at the trial, Dr. Smith admitted that his expert report did not indicate that he was applying “Qimonda’s apparent construction.” (*Id.* (citing Tr. 1407:21-24).) Qimonda continues that, at the hearing, Dr. Smith further testified that his reports expressly stated if he were using anything other than the parties, proposed constructions, he would indicate that he had done so, and that his reports did not include any such alternative analyses for any claim term. (*Id.* at 181-182 (citing Tr. at 1385:25-1388:13).)

Qimonda argues that it is clear from the statements that Dr. Smith made at trial and during his deposition that he was aware of “Qimonda’s apparent construction” before he submitted his expert reports and understood that “depositing” was not a term identified for construction and that he was addressing the full “depositing an amorphous silicon layer” term identified for construction. (CIB at 183 (citing Tr. at 1386:12-1387:14).) Qimonda says that Dr. Smith’s reports never indicated that he was applying an alternate analysis, despite the fact that his reports said that, if there was any disagreement, he would do so. (*Id.*)

Qimonda concludes that two of three experts in this case and one of the named inventors “recognize” that the plain and ordinary meaning of “depositing an amorphous silicon layer” includes pre-amorphization by ion bombardment, and “the specification of the Patent fully and expressly supports this construction.” (CIB at 183.)

In its reply brief, Qimonda states that Respondents argue that “depositing an amorphous silicon layer” does not include bombarding polysilicon with ions to place an amorphous layer on a substrate. (CRB at 100-101 (citing RIB at 38; CX-141C at Q. 45, 47, 48; CX-1045C at Q. 36;

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CX-490C at 94:2-95:3, 96:17-97:18; CX-547C at 74:2-4, 74:12-16; and Tr. 1383:13-1384:1).)

Qimonda argues that Respondents' brief advocates reading into this limitation a requirement that it be performed in a single step, recognizing two ways to manufacture polycrystalline silicon:

“to deposit polycrystalline silicon or to deposit amorphous and crystallize.” (*Id.* (citing RIB at 33, 35, 37).) Qimonda argues that neither the '670 patent's specification nor its claims impose a requirement that depositing occur in a single step. Qimonda asserts that it should not be implied. (*Id.* (citing “the other authorities cited at page 48 of Qimonda's opening Post-Trial Brief”).)

Qimonda states that Respondents are attempting to limit “depositing an amorphous silicon layer” to examples given in the specification of the '670 patent -- specifically, a chemical vapor deposition (CVD) “option” and a sputtering “option.” (CRB at 100-101 (citing RX-1086C at Q. 50-51, 53, 58; JX-7 at 3:65-4:8).) Qimonda argues that this “violates longstanding legal precedent which holds against limiting claims to examples in the specification.” (*Id.* (citing *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1326 (Fed. Cir. 2002); CIB at 48).)

Qimonda argues that the '670 patent specification expressly teaches, as part of “the present invention,” doping of polycrystalline silicon by ion implantation followed by transformation of the resulting amorphous silicon layer into polycrystalline silicon (prior to activation of the dopants). Qimonda quotes:

“The present invention includes the possibility that the amorphous silicon layer is doped via implantation after it is deposited or that the silicon layer is doped via implantation after it has become polycrystalline. The further possibility of doping the amorphous silicon during the deposition process is also encompassed by the present invention. Where the layer has been doped, the doping agents may be activated in a high temperature step which is performed after the transformation of the amorphous silicon layer into a polycrystalline silicon layer.”

(CRB at 101 (citing JX-7 at 4:61-5:3)) (emphasis added by Qimonda.)

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Qimonda argues that the applicability of the controlled heating method of the invention to transform the “amorphous silicon layer” resulting from pre-amorphization by ion bombardment of the polysilicon layer is confirmed in the patent claims, quoting:

“10. A method as claimed in *claim 1*, further comprising the step of: doping said polycrystalline layer via implantation of a doping agent.

* * *

13. A method as claimed in *claim 10*, further comprising the step of: activating said doping agent by heating to a high temperature after transformation of said amorphous silicon layer into said polycrystalline layer in said step of controlled heating.”

(CRB at 101-102 (citing JX-7 at claims 10 and 13, 7:32-35, 7:46-51)) (emphasis added by Qimonda.)

Qimonda asserts that its position was confirmed at trial by Respondents’ expert Dr. Gwozdz, who testified that it was well known to such skilled persons in the field that ion implantation would put an “amorphous layer” on the wafer and that for the integrated circuits at issue in this case this amorphous layer would need to be crystallized back to polysilicon. (CRB at 102-103 (citing Tr. at 1631:23-1633:6).) Qimonda argues that Dr. Gwozdz testified with respect to the relevant disclosures of this in the specification, and they quote:

Q We talked about if an amorphous layer or region is formed on polycrystalline, you can't leave it that way, can you, sir?

A Again, in the '670 patent, you don't do that, that's correct.

Q Thank you. And so the patent goes on and says here at the bottom, and it goes over to page 5: Where the layer has been doped, the doping agents may be activate indeed a high temperature step.

Do you see that?

A I see it.

Q And that has to be done, does it not, sir, you have to activate it at a very high temperature, correct?

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A That's correct.

Q And then it goes on and says that [activation] step is not going to be performed until after the transformation of the amorphous silicon layer into a polycrystalline silicon layer. Is that not correct, sir?

A That's correct.

* * *

Q That layer or region that has been amorphized, a person of skill in the art, knowing that that's where they stand right now, based on this patent disclosure, would they not understand that that region needs to be transformed back to polycrystalline, sir, from this disclosure right here?

A Sure. That's standard. They knew that before they read this, and this reinforces it, yes.

(CRB at 102-103 (citing CIB at 178; Tr. at 1675:1-1677:20, 1680:6-13; JX-7 at 4:61-5:3).)

Qimonda takes the position that a person of ordinary skill in the art would understand that the doping step described and claimed in the patent would amorphize the polycrystalline silicon and that the resulting amorphous layer would then need to be transformed back to polysilicon using the claimed continuous, controlled heating step of the invention. (CRB at 103 (citing Tr. at 1632:1-3, 1676:9-22; CX-141C at Q. 45, 47, 48; CX-1045C at Q. 36; CX-490C at 94:2-95:3, 96:17-97:18; CX 547C at 74:2-4; 74:12-16; Tr. at 1383:13-1384:1).) Qimonda concludes that a person of ordinary skill in the art reading the '670 patent who wanted a defined grain size and texture would "undoubtedly recognize" that the inventors clearly contemplated the inventive method of the '670 patent to be applicable to transformation of an amorphous silicon layer put on the substrate by ion bombardment in order to obtain polycrystalline of the desired crystal size.

(*Id.*)

Qimonda points to the testimony of Dr. Herbert Kabza as supporting its position, quoting:

Q. Were there any other ways in 1989, that you were aware of, to deposit an amorphous silicon layer on a substrate?

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* * *

A. This is an option the polycrystalline silicon layer -- to deposit a polycrystalline silicon layer and to make it amorphous through ion implantation. To a certain extent it happens anyway because all these layers are being doped.

(CRB at 104 (citing CX-547C at 74:2-4, 74:12-16; CIB at 179).)

Qimonda alleges that two of the prior art references disclosed “depositing on an amorphous layer” by pre-amorphization by ion bombardment, quoting:

“74. The Kabza article discloses depositing an amorphous layer on a substrate by the preamorphization of silicon by germanium (Ge) implantation.”

* * *

“92. The step of depositing an amorphous layer on the substrate is also described in the Csepregi article. Pre-amorphizing of silicon is disclosed through an ion implantation step at a sufficient level to induce the accumulation of crystal damage and disorder”

(CRB at 105 (citing CIB at 180-183).)

Qimonda summarizes that it would be improper to restrict the continuous, controlled heating invention of the ‘670 patent to “certain examples in the specification of ways in which amorphous layers may be deposited on a substrate, where the invention is described and claimed by the inventors as applicable to the manufacture of ‘all’ polysilicon layers, and specifically to the transformation of amorphized polysilicon after doping.” (CRB at 105.)

Respondents’ Position: Respondents contend that the term “depositing an amorphous layer” means “depositing a layer of silicon under conditions that result in the silicon layer having amorphous structure.” (RIB at 37.)

Respondents argue that to read this term to include a construction as “Qimonda’s expert asserts that the ‘670 patent extends to deposited polycrystalline layers that are later made amorphous through subsequent processing steps, namely ion implantation,” is a “strained reading” of the claim that should be rejected. (RIB at 38.) Respondents argue that it ignores the

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plain meaning of the word “deposit,” reaches an interpretation that would be contrary to the understanding of a person of ordinary skill in the art, and is unsupported by the language of the claims. (*Id.*) Respondents summarize, “depositing an amorphous silicon layer” does not mean depositing a polycrystalline layer and then later rendering a region of that layer amorphous by ion implantation. (*Id.*)

Respondents relate that the ‘670 patent explains that “[t]he selection of deposition conditions determines the crystallinity of the silicon layer.” (RIB at 38 (citing JX-7 at 1:31-32).) Chief among these deposition conditions, they argue, is the temperature at which the silicon is deposited on the substrate. (*Id.* (citing RX-1086C at Q. 23; RDX-170C.2; Deposition Stipulations, Tab 8, at 76:25-77:6).) Respondents assert that the claims of the ‘670 patent are directed to manufacturing a polycrystalline silicon layer on a substrate. (*Id.* (citing JX-7 at 6:41-42).) Respondents say that the ‘670 patent identifies two ways to manufacture such a polycrystalline layer — (1) “polycrystalline deposition;” and (2) “deposit[ing] in an amorphous mode and . . . subsequently transform[ing] to a polycrystalline layer via crystallization during a high temperature step.” (*Id.* (citing JX-7 at 1:39-40, 1:51-55).) Respondents add that the claims address this second approach because they require “depositing an amorphous silicon layer on a substrate.” (*Id.* (citing JX-7 at 6:43).)

Respondents assert that, in semiconductor fabrication, silicon is typically deposited using a low-pressure chemical vapor deposition (“LPCVD”) process. (RIB at 38-39 (citing RX-1086C at Q. 24; RDX-0170C.2).) Respondents cite the testimony of Qimonda’s expert Dr. Stanley Wolf to say that in LPCVD processes, silicon deposited at temperatures below 580°C are amorphous, while silicon deposited at temperatures above 580°C are polycrystalline. (*Id.* (citing RX-1086C at Q. 28; RX-993 at 179).) That conclusion, they argue, is consistent with the

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teaching of the '670 patent, which cites an article by T. I. Kamins for the proposition that the deposition conditions determine the crystallinity of the silicon layer. (*Id.* (citing JX-7 at 1:31-34).) Respondents assert that Dr. Kamins's article discusses an analysis of the deposition of silicon films under various conditions and explains: "From this portion of the study, we may conclude that silicon films deposited in the LPCVD system at temperatures of 575°C and below, are amorphous while those deposited above 600°C are polycrystalline, with the transition temperature close to 600°C." (*Id.* (citing RX-1086C at Q. 28; RX-994 at 687).)

Respondents aver that there is no discussion in the '670 patent that would support extending the scope of the claims to encompass depositing a polycrystalline layer and then amorphizing that layer (or part of that layer) through ion implantation. (RIB at 39.) Respondents assert that the claims explicitly require "depositing an amorphous silicon layer on the substrate." (*Id.* (citing JX-7 at 6:43).)

Respondents say that the '670 patent does not include "ion bombardment" or "ion implantation" within the scope of "depositing an amorphous silicon layer." (RIB at 39-40.) They assert that the specification discusses only two techniques for depositing an amorphous silicon layer. Specifically, the '670 patent states that "[o]ne option for the manufacturing method of the invention is that an amorphous silicon layer is deposited using a chemical vapor deposition (CVD) method from the gas phase at approximately 560° C." (*Id.* (citing JX-7 at 3:65-68).) Respondents add that the patent also states that "[a]nother option for the present manufacturing method is that an amorphous silicon layer is deposited on a substrate using sputtering at a temperature of between approximately 200° to 350° C." (*Id.* (citing JX-7 at 4:3-6).) Respondents assert that both CVD and sputtering silicon result in a layer of silicon being placed on or laid down on a substrate. (*Id.* (citing RX-1086C at Q. 50-51; Tr. at 368:4-20, 387:2-6).)

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Respondents assert that the purpose of ion implantation is to implant dopants into the silicon to make the silicon conductive rather than to amorphize polycrystalline silicon. (RIB at 40 (citing RX-1086C at Q. 46).) Respondents continue, “as a by-product of the implantation, some of the crystal structure may be damaged to such an extent that a part of the silicon may be rendered amorphous. *Id.* To activate the implanted dopants, the structure must be heated to repair damage to the crystal structure. But this anneal step will not change the grain structure or texture of the polysilicon layer, as these are determined in the deposition process.” (*Id.* (citing JX-7, 1:39-42).)

Respondents argue that it is well-established that the words of the claims must be construed as they would be understood by a person of ordinary skill in the art.¹⁰ (RIB at 40.) Respondents cite *Moba v. Diamond Automation, Inc.*, 325 F.3d 1306, 1315 (Fed. Cir. 2003) (“[A]s this court has repeatedly counseled, the best indicator of claim meaning is its usage in context as understood by one of skill in the art at the time of invention.”). Respondents continue that the Federal Circuit has also made clear that the specification should be used for guidance in determining the meaning of the words used in the patent claims. (*Id.* (citing *Vitronics Corp. v. Conceptor, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).) Here, they argue, the specification confirms that “depositing an amorphous silicon layer” cannot include depositing a polycrystalline layer.

Respondents assert that the ‘670 patent is directed toward deposit of the silicon layer in amorphous form and then later converting it to polycrystalline form through an anneal. (RIB at

¹⁰ Respondents state that Dr. Hammond, Qimonda’s expert, has opined that a person of ordinary skill would have at least a Bachelors’ degree in materials science, or the equivalent, and at least two years of experience working on polycrystalline silicon formation in integrated circuits, or in the alternative, such a person would have enough additional work experience if the formal education were lacking. (RIB at 40 (citing CX-1045C at Q. 7).) Respondents believe that this interpretation regarding the qualifications and experience of a person of ordinary skill in the art relevant to the ‘670 patent is acceptable.

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40-41 (citing JX-7 at 1:39-65).) Respondents posit that the patent recognizes there is an advantage to depositing in amorphous form. Respondents recite that the patent states: “Layers deposited in an amorphous mode can thus reach the same target values of resistance with significantly thinner layers. Thus, layers deposited amorphously are an essential means to reduce problems of topography in integrated circuits.” (*Id.* (citing JX-7, 1:66-2:2).)

Respondents add that the patent explains that its object is “to provide a manufacturing method for polycrystalline silicon layers...without losing the advantages of amorphously deposited layers.” (*Id.* (citing JX-7 at 2:21-25).) Respondents argue that to interpret “depositing” to include layers deposited in polycrystalline form, which would entail, among other things, all the relative disadvantages in layer thickness that the patent identifies as problematic, is wholly incompatible with the stated purpose of the patent. (*Id.* (citing RX-1086C at Q. 78-80).)

As further support, Respondent cite a declaration by Qimonda’s expert, Dr. Hammond, submitted in support of Qimonda’s opposition to Respondents’ Motion for Summary Determination that the ‘670 patent is not infringed, to say: “In LPCVD processes, silicon deposited at temperatures of 575°C and below is amorphous, and silicon deposited at temperatures of 600°C and above is polycrystalline.” (RIB at 41 (citing RDX-0170C.2).) Respondents submit that this is a true statement. Respondents argue that those skilled in the art will understand that an LPCVD (low-pressure chemical vapor deposition) process is used to put down layers of material. (*Id.* (citing RX-1086C at Q. 50-51; Tr. 368:4-20, 387:2-6).) Respondents argue that Dr. Hammond’s statement regarding the temperature is directly consistent with Respondents’ proposed construction of “depositing an amorphous silicon layer,” which defines this term as “depositing a layer of silicon under conditions that result in the silicon layer having amorphous structure.” (*Id.*)

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Respondents add that one of Qimonda's other expert witnesses, Dr. Souris, testified that "[d]eposition refers to a process that transfers or coats a material onto a substrate." (RIB at 41-42 (citing CX-190C at Q. 51; RX-1086C at Q. 55-58).) Respondents also aver that one of the inventors of the '670 patent testified that "[d]epositing means to put a layer on a specific substrate independently of its character or of the nature of the substrate." (*Id.* (citing Deposition Stipulation, Tab 8 at 75:21-24).)

Respondents argue that the foregoing "definitions" are consistent with Respondents' proposed construction of "depositing an amorphous silicon layer" and with the '670 patent. Respondents add that they are consistent with the plain and ordinary meaning of the word "deposit," which they allege means "to lay down; place." (RIB at 42 (citing RX-996 at 341).) Respondents continue that ion implantation does not lay down or place any silicon on the substrate. (*Id.* (citing RX-1086C at Q. 52-53).) Respondents assert that Dr. Hammond admitted during cross-examination that the ion implantation step in the { } does not place any silicon on the substrate, quoting: "Q. { } does not place, or put any silicon onto the substrate, does it? A. No, it doesn't." (*Id.* (citing Tr. 399:9-11).)

Respondents argue that Qimonda has provided no evidence other than its expert's unsupported and conclusory opinion that "depositing an amorphous silicon layer" can mean depositing in polycrystalline form and doing a subsequent ion implantation. (RIB at 42-43.) Respondents argue that the Federal Circuit has explained that "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court." (*Id.* (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (*en banc*))). Respondents say that Dr. Hammond refers to the deposition transcript of Seagate's expert, Dr. Smith, who analyzed the validity of the '670 patent in light of prior-art references that were not before the examiner

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during prosecution. (*Id.* (citing CDX-14).) Respondents argue that Dr. Smith made clear that his invalidity analysis was performed using Qimonda's apparent construction of "depositing." (*Id.* (citing RX-813C at Q. 49; Tr. at 1405:3-1406:17).) Respondents assert that when asked about his opinion regarding the understanding of "deposition," Dr. Smith said that "the accepted definition" of 'deposit in the semiconductor industry' is 'to put a film down or place a film down on a substrate.'" (*Id.* (citing Tr. at 1400:9-13).)

Respondents address Dr. Hammond's demonstrative exhibit, CDX-14, Slide 009, which he used to demonstrate that the '670 patent discloses "depositing an amorphous silicon layer" by "pre-amorphization by ion bombardment." (RIB at 43.) Respondents say that Dr. Hammond referred to column 2, lines 57-58 of the '670 patent which refer to an article in the *Journal of Applied Physics* by K. Zellama et al. (*Id.*) This reference, Respondents aver, was used by Qimonda in its opposition to Respondents' motion for summary determination of noninfringement of the '670 patent, to support its position that amorphizing by ion bombardment constitutes "depositing an amorphous silicon layer." (*Id.*) Respondents' argue that Dr. Gwozdz explained in great detail that the Zellama article discloses depositing amorphous silicon by evaporation, which is a physical vapor deposition technique and does not relate in any way to amorphizing a polycrystalline silicon layer on a substrate. (*Id.* (citing RX-1086C at Q. 66-76).) Respondents continue that when Dr. Hammond took the stand at the hearing, he claimed that the reference to the Zellama article was a "typographical error." (*Id.* (citing Tr. at 371:13-24).) Respondents point out that they objected to Qimonda's attempt to change the reference, and the Court refused to allow any change to be made. (*Id.* (citing Tr. at 462:1-10).)

Respondents conclude that the plain and ordinary meaning of "depositing an amorphous silicon layer" which is supported by the disclosure in the '670 patent is "depositing a layer of

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silicon under conditions that result in the silicon layer having amorphous structure.” (RIB at 43-44.) Respondents continue that it is clear that “depositing” requires placing or laying down silicon on a substrate, as recognized by Respondents’ experts Drs. Gwozdz and Smith, by Qimonda’s expert Dr. Souri, and by the ‘670 patent inventor, Dr. Kabza. (*Id.*) Respondents argue that only Dr. Hammond contends that “depositing” extends to “pre-amorphization by ion bombardment.”

In their reply brief, Respondents address, *inter alia*, Qimonda’s argument that the ‘670 patent supports its position that doing ion implantation of a polycrystalline silicon layer constitutes depositing an amorphous silicon layer. (RRB at 15.) Respondents point to Qimonda’s reference to a portion of the ‘670 patent that discusses ion implantation at pages 178-179 of their initial post-hearing brief. (*Id.*) In that portion of its brief, Qimonda refers to the cross-examination of Dr. Gwozdz regarding column 4, line 61 to column 5, line 3 of the ‘670 patent. (*Id.*) Respondents argue that review of that passage of the ‘670 patent makes clear that it is discussing ion implantation for doping (i.e., to change the electrical properties of the silicon) and not amorphizing polysilicon. (*Id.*) Respondents assert that the patent language expressly differentiates ion implantation from depositing, specifying that implantation occurs after deposition, quoting: “[t]he present invention includes the possibility that the amorphous silicon layer is doped via implantation after it is deposited or that the silicon layer is doped via implantation after it has become polycrystalline.” (RRB at 15 (citing JX-7 at 4: 61-65).) Respondents argue that nowhere in the ‘670 patent, does it even mention that ion implantation may result in amorphization of polysilicon. (*Id.*) Respondents add that the ‘670 patent also does not say that performing ion implantation on polycrystalline silicon is “depositing an amorphous silicon layer.” (*Id.*)

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Respondents address Qimonda's characterization of the testimony of Drs. Kabza, Smith, and Gwozdz as "understand amorphization by ion bombardment to be depositing." (RRB at 15-16.) Respondents assert that the characterization is not correct, citing for example, the testimony of Dr. Kabza cited by Qimonda. (*Id.*) Respondents aver that Dr. Kabza simply stated that one way to form an amorphous layer is "to deposit a polycrystalline silicon layer and to make it amorphous through ion implantation." (*Id.* (citing Deposition Stipulations, Tab. 8 at 74:12-16).) Respondents argue that the cited testimony does not support Qimonda's contention that Dr. Kabza "understands amorphization to be depositing." (*Id.*) Respondents argue that it shows the opposite — that Dr. Kabza distinguished the act of depositing the polycrystalline layer from the subsequent act of making that layer amorphous. (*Id.*) Respondents aver that Dr. Kabza testified that "[d]epositing means to put a layer on a specific substrate independently of its character or of the nature of the substrate." (*Id.* (citing Deposition Stipulations, Tab 8 at 74:13-15).)

Respondents state that testimony at the hearing occurred where Qimonda's counsel was reading from the patent specification. (RRB at 16.) Dr. Gwozdz agreed that the patent says amorphous regions may be formed by ion implantation. (*Id.* (citing Tr. at 1675:1-1676:15).) Respondents argue that Dr. Gwozdz did not agree that ion implantation deposits an amorphous layer of silicon; in fact, they argue, he did not agree that it forms an amorphous layer at all. (*Id.*) Respondents quote Dr. Gwozdz as saying, "[i]t may make an amorphous region if the conditions are right." (*Id.* (citing Tr. at 1675:13-15).)

Respondents assert that Dr. Smith made clear on redirect at the hearing that during his deposition he distinguished forming layers from depositing layers. (RRB at 17 (citing Tr. at 1399:10-19).)

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Respondents argue that Qimonda is attempting to use different construction for the purpose of infringement and invalidity. (RRB at 17.) Respondents argue that Federal Circuit law holds that claims must be construed the same way for both invalidity and infringement. (*Id.* (citing *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1330 (Fed. Cir. 2003) (“It is axiomatic that claims are construed the same way for both invalidity and infringement.”); *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 842 F.2d 1275, 1279 (Fed. Cir. 1988) (“Having construed the claims one way for determining their validity, it is axiomatic that the claims must be construed in the same way for infringement.”))).)

Respondents argue that the fact that Dr. Smith applied Qimonda’s construction in the context of an invalidity analysis does not mean he accepted it. (RRB at 17-18.) Respondents say it means he used the same construction Qimonda uses for its infringement case to show invalidity, as the law requires. (*Id.*) Respondents argue that Qimonda must apply the same construction against accused infringers, and to the issue of invalidity. (*Id.*)

Respondents argue that Dr. Hammond’s opinions are entirely conclusory and unsupported by any intrinsic or extrinsic evidence. Respondents state that the Federal Circuit has held that such testimony is insufficient. (RRB at 18 (citing *Dynacore Holdings Corp. v. U.S. Philips Corp.*, 363 F.3d 1263, 1278 (Fed. Cir. 2004) (“Dynacore’s expert’s opinions are precisely conclusory assertions, reached using words in ways that contradict their plain meaning, that a critical claim limitation is found in the accused device. The district court was correct in ruling that they did not create a material factual dispute for trial.”))).)

Respondents argue that Qimonda attempts to bolster its construction with a claim that one of ordinary skill in the art would recognize that doping polycrystalline silicon by ion implantation necessarily damages its crystalline structure. Respondents say this is improper

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extrinsic evidence. (RRB at 18 (citing *Phillips*, 415 F.3d at 1318).) Respondents assert that Qimonda misstates the record, because Dr. Gwozdz testified on cross-examination by Staff that not all ion implantation will render polycrystalline silicon amorphous; the dose associated with the ion implant has to be sufficiently high. (*Id.* (citing Tr. at 1651:9-25).)

Respondents conclude that there is no basis for Qimonda's claim that one of ordinary skill would use the '670 patent process to recrystallize amorphized silicon to polycrystalline form with a defined grain size and texture. Respondents argue that Implantation and subsequent reheating do not define grain structure. (RRB at 19 (citing RX-1086C at Q. 108).) Thus, they reason, there would be no reason to use the '670 patent's anneal process to define grain size and structure. (*Id.*)

Commission Investigative Staff's Position: Staff believes that the evidence supports construction of the term as "depositing a layer of silicon under conditions that result in the silicon layer having an amorphous structure." (SIB at 25.) Staff attributes this construction to Respondents, citing RIB at 37 and JX-22 at 9.

Staff argues that the claims clearly require that the silicon layer that is initially placed or "deposited" on the substrate be in "amorphous" form. (SIB at 25-26.) Staff notes that the literal language of Claim 1 requires "depositing an amorphous silicon layer on a substrate," and then continues setting forth the following specific detailed steps of transforming the deposited "amorphous silicon layer" to a polycrystalline form, heating the amorphous silicon layer "to an initial temperature that is lower than a crystalline temperature for the amorphous silicon," "holding the substrate at the initial temperature to achieve a thermal equilibrium . . .," and then "continuing the heating" of the amorphous silicon layer to achieve "a polycrystalline layer having a defined grain size." (*Id.* (citing JX-7 at 6:40-65).) Staff argues that claim 1 specifically

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requires that the silicon be deposited on the substrate in amorphous form in order for the layer to be subjected to the process further detailed in claim 1. (*Id.*) Staff cites *Oak Tech. Inc. v. Int'l Trade Comm'n*, 248 F.3d 1316, 1325 (Fed. Cir. 2001) (agreeing with the Commission's observation in construing claim terms at issue "that the claim language contemplates and explicitly describes a sequential process.").

Staff argues the specification also supports the literal language of the claim emphasizing that the silicon must be in amorphous form during its initial placement on the substrate. (SIB at 26 (citing JX-7 at 3:29-31 (the silicon layer "remains in an amorphous state during the *insertion event...*"))) (emphasis added by Staff.) Staff highlights the portion of the specification in which the inventors detailed two prior methods for manufacturing polycrystalline silicon layers. Staff indicates that the first method uses an initial "polycrystalline deposition." (*Id.* (citing JX-7 at 1:39-41).) Staff argues that during a polycrystalline deposition, "[t]he grain structure and the texture are determined by the depositing process itself ..." (*Id.*) Staff asserts that, during their discussion of a polycrystalline method of deposition, the inventors explained that the polysilicon layer could be doped noting that "phosphorous or arsenic doping results in further grain growth in the polycrystalline layer, however, the reproducibility thereof depends upon the *starting conditions of the deposition.*" (*Id.* (citing JX-7 at 1:47-50)) (emphasis added by Staff.)

Staff contrasts other language in the '670 patent specification in which the inventors observed that "another method of manufacturing polycrystalline silicon layers" begins by depositing the silicon layer in an "amorphous mode" which is subsequently transformed to a "polycrystalline layer via crystallization during a high temperature step." (SIB at 26-27 (citing JX-7 at 1:51-54).) Staff asserts that the inventors listed significant advantages associated with deposition by use of amorphous silicon; but noted that such layers produce "great fluctuations in

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the resulting resistance values ...” (*Id.* (citing JX-7 at 2:4-5).) Staff says that as a result of these shortcomings in the inventors’ opinion, amorphously deposited layers could “only be used adequately in sub-regions of silicon-micro electronic circuits where precisely adjusted resistant values for resistance layers are not crucial.” (*Id.* (citing JX-7 at 2:9-12).) Staff continues that in order to overcome these perceived problems, the patentees proposed an “invention to provide a manufacturing method for polycrystalline silicon layers of a defined grain size and texture *without losing the advantages of amorphously deposited layers.*” (*Id.* (citing JX-7 at 2:22-24)) (emphasis added by Staff.) Staff argues that the specification confirms that the patentees’ invention was directed to depositing an initial layer of silicon in amorphous form, and not polycrystalline deposition. (*Id.*)

Staff avers that the specification describes several methods to deposit an amorphous silicon layer, for example by “using a chemical vapor deposition (CVD) method from the gas phase at approximately 560°C.” (SIB at 27 (citing JX-7 at 3:65-68).) Staff says the inventors also disclosed “sputtering at a temperature of between approximately 200 to 350 C as another method for depositing an amorphous silicon layer.” (*Id.* (citing JX-7 at 4:3-6).) Nowhere, argues Staff, did the patentees describe or teach the deposition of an amorphous layer of silicon by use of ion implantation. (*Id.*)

Staff indicates that, while the ‘670 inventors did discuss “doping” or implanting ions in the polycrystalline layer in several passages of the specification, those discussions did not relate to depositing amorphous silicon layers through ion bombardment. Staff offers two passages from the ‘670 patent as examples:

Depending upon the desired electrical conductivity, the polycrystalline silicon layer is doped. The doping step ensues either via implantation into the polycrystalline silicon layer and via subsequent activation of the doping agents or via implantation into the amorphous silicon layer before the crystallization step.

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(SIB at 28 (citing JX-7 at 4:28-33)) (emphasis added by Staff); and

[t]he present invention includes the possibility that the amorphous silicon layer is doped via implantation *after it is deposited* or that the silicon layer is doped via implantation *after it has become* polycrystalline. The further possibility of doping the amorphous silicon during the deposition process is also encompassed by the present invention. Where the layer has been doped, the doping agents may be activated in a high temperature step which is performed after transformation of the amorphous silicon layer into a polycrystalline silicon layer.”

(SIB at 28 (citing JX-7 at 4:61-5:3)) (emphasis added by Staff.)

Staff argues that the foregoing passages make clear that the doping of the silicon layer takes place after the amorphous layer has been deposited or after the deposited layer has been transformed to a polycrystalline layer. (SIB at 28.) Nothing in the passages, Staff asserts, suggests that “depositing an amorphous silicon layer” within the meaning of Claim 1 encompasses laying down a polysilicon layer and subsequently doping the layer with ion implantation thereby rendering it amorphous. (*Id.*) To the contrary, Staff argues, the claims and specification continually note the importance of depositing or laying down the silicon layer in amorphous form. (*Id.*)

Staff next turns to extrinsic evidence to provide further support for their argued constructions. Staff recites the testimony of complainant’s expert Dr. Hammond, “[i]t is generally understood in the field that amorphous silicon may be deposited in several different ways, for example, via sputtering, chemical vapor deposition, and preamorphizing by ion bombardment.” (SIB at 29 (citing CX-141C at Q. 45).) Staff contrasts the testimony of Respondents’ expert Dr. Gwozdz that one of ordinary skill in the art would not consider implanting dopant ions in a polycrystalline layer as “depositing an amorphous silicon layer.” (*Id.*)

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(citing RX-1086C at Q. 52, 53; Tr. at 1653).¹¹ Staff avers that Dr. Gwozdz opined that while ion implantation could transform a polycrystalline layer on a substrate into an amorphous layer, this conversion of “the structural characteristics of a layer from one form to another ...” could not be considered “depositing and amorphous silicon layer.” (*Id.* (citing RX-1086C at Q. 43).) Staff says that Dr. Gwozdz expressed the view that the purpose of ion implantation in general is to render silicon, a poor conductor of electricity, conductive by implanting it with ions such as phosphorous or boron. (*Id.* (citing RX-1086C at Q. 47).) Staff asserts that Dr. Gwozdz explained that “[b]y far the most common use of polysilicon is for the gates of transistors in integrated circuits. If such an intense ion implantation were performed so that the entire polysilicon layer were rendered amorphous, the ion implantation would destroy the transistors and cause them not to function.” (*Id.* (citing RX-695C at Q. 63).)

Staff argues that Dr. Gwozdz’s opinion is fully consistent with the term “depositing an amorphous silicon layer on a substrate” as used in Claim 1, and that the claims and specification fully support a construction that the initial placement or deposition of the silicon must be in amorphous form. (SIB at 29-30.) Staff adds that nothing in the intrinsic evidence implies that placing a polysilicon layer on the substrate and later implanting with ions at an indeterminate point in the process constitutes “depositing an amorphous silicon layer.” (*Id.*) In Staff’s view, Qimonda is trying to impermissibly broaden unambiguous claim language. Staff cites *Helmsderfer v. Bobrick Washroom Equipment, Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008) to say that a court may look to extrinsic evidence as long as the extrinsic evidence does not contradict the meaning otherwise apparent from the intrinsic record. (*Id.*) Staff cites *Phillips*, 415 F.3d at 1318-1319 to say that a court should discount any expert testimony “that is clearly at odds with

¹¹ Throughout its briefs, Staff only cites to page numbers of the hearing transcript, neglecting to include reference to the line numbers. A more appropriate practice is to include both page and line numbers when citing to the hearing transcript or a deposition transcript.

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the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.” (*Id.*)

In its reply brief, Staff addresses Qimonda’s proposed construction. Staff argues that the specification undermines Qimonda’s position. (SRB at 3-4.) Staff avers that the specification lists two options for depositing an amorphous silicon layer: “chemical vapor deposition (CVD),” JX-7 at 3:65-68, and “sputtering at a temperature between approximately 200° and 350°.” JX-7 at 4:5-6 and 4:46-54. (*Id.*) Staff says that the specification never discloses that an amorphous layer can be deposited in polycrystalline form and then subjected to ion bombardment to constitute “depositing an amorphous silicon layer.” (*Id.*)

Staff argues that the discussion regarding implantation in the ‘670 patent to which Qimonda refers is unrelated to depositing an amorphous layer through ion implantation. (SRB at 4-5.) Staff reiterates their argument that any doping described in the specification takes place after deposit of the amorphous silicon layer, and they add that the inventors expressed this preference to avoid “the channeling effect which leads to smudged doping profiles” concluding that “[i]t is, therefore, advantageous to provide the implantation of boron, for example, into the amorphous layer before the crystallization step. In this case, the activation of the doping agent ensues at a high temperature step after the crystallization step.” (*Id.* (citing JX-7 at 4:35-40).) They re-emphasize this point with references to JX-7 at 4:61-68 and 5:1-3. (*Id.*)

Staff argues that the foregoing cited passages from JX-7 support a construction that does not include pre-amorphization by ion bombardment. Staff concludes that, during their brief discussion of the method of polycrystalline deposition, a method staff argues the patentees expressly disclaimed, the patentees explained that polycrystalline layers could be doped; but that certain dopants could lead to further grain growth based “upon the starting conditions of the

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deposition.” (SRB at 5-6 (citing JX-7 at 1:50).) This passage, they argue, makes clear that the patentees knew that doping polycrystalline ions did not render it amorphous within the meaning of the patent. (*Id.*)

Treating the extrinsic evidence in their reply, Staff expresses the view that the intrinsic evidence provides a much clearer and unbiased direction on this issue. (SRB at 7-8.) Staff emphasizes that the opinion of Dr. Hammond, Qimonda’s expert, is at odds with the “extrinsic evidence of the ‘670 patent.” (*Id.*) Staff then elaborates that the patentees explained that the electrical conductivity of a silicon layer can be altered via ion implantation, yet never discussed using ion implantation to deposit an amorphous layer. (*Id.*) Staff contrasts Dr. Hammond’s testimony with that of Dr. Gwozdz, Respondents’ expert, who said that ion implantation of silicon layers is unrelated to amorphously depositing a silicon layer. (*Id.*) Staff argues that Dr. Gwozdz’s testimony is consistent with the claims and specification. Staff cites *Vitronics*, 90 F.3d at 1584 to say that “where the patent documents are unambiguous, expert testimony regarding the meaning of a claim is entitled to no weight.” (*Id.*)

Construction to be applied: “depositing a layer of silicon under conditions that result in the silicon layer having amorphous structure.”

In claim 1, the phrase “depositing an amorphous silicon layer” appears in element 1, wherein it is said, “depositing an amorphous silicon layer on a substrate.” Immediately following that language, claim 1 continues, “and” followed by element 2, which states, “then controlling the phase transformation of the amorphous silicon into a polycrystalline layer by the steps of:” Claim 1 then lists, in elements 3-5, a step-by-step process for achieving that transformation. (JX-7 at 6:43-47, 6:48-66.) The clear and unambiguous language of asserted claim 1 provides for the deposit of a layer of silicon that is in amorphous form and then sets forth

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the step-by-step sequential process of transforming that amorphous silicon into polycrystalline form.

It is proper to construe the terms of a patent in the context of a sequential process set forth therein. In *Oak Technology, Inc. v. International Trade Commission*, 248 F.3d 1316 (Fed. Cir. 2001), the Court upheld the Commission's construction of a claim term in light of the context within which it appeared in a sequential process set forth in the patent-in-suit.

The construction adopted is consistent not only with the clear and unambiguous language of asserted claim 1; but it is consistently supported throughout the Abstract, the Background of the Invention, the Summary of the Invention and the Description of the Preferred Embodiments.

The Abstract of the '670 patent describes the patent as providing:

[a] manufacturing method for polycrystalline silicon layers with a defined particle size and texture on a substrate provides for depositing of an amorphous silicon layer on the substrate. The substrate with the amorphous silicon layer is placed into a furnace at an initial temperature lower than the crystallization temperature of amorphous silicon. After an adjustment to thermal equilibrium, the furnace is heated in a controlled fashion from the initial temperature to a target temperature which is higher than the crystallization temperature, whereby the amorphous silicon layer is completely crystallized and becomes a polycrystalline layer. The method is particularly applicable in manufacturing polycrystalline silicon resistances for integrated circuits.

(JX-7 at page 1.) The Background of the Invention states:

The present invention relates generally to a method for manufacturing a polycrystalline layer on a substrate, and in particular, to a method for manufacturing a polycrystalline layer of a defined grain size and structure.

(JX-7 at 1:10-14.)

The background describes the state of the art prior to the invention to include manufacturing polycrystalline silicon layers by polycrystalline deposition. Another possibility for manufacturing polycrystalline silicon layer was that the layer was first deposited in amorphous mode and subsequently transformed to a polycrystalline layer via crystallization

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during a high temperature step. The background states that layers deposited in an amorphous mode which are subsequently crystallized “only have approximately 1/3 of the layer resistance of layers that are deposited in a polycrystalline fashion given otherwise equal parameters.” (JX-7 at 1:39-40, 1:51-63.)

The background describes an advantage of depositing layers in an amorphous mode as enabling the layers to reach the same target values of resistance with significantly thinner layers. Thus, layers deposited amorphously are “an essential means to reduce problems of topography in integrated circuits.” The background describes a disadvantage of using amorphously deposited layers as having “extremely great fluctuations in the resulting resistance values of at least [plus or minus] 10% ... as compared to layers which are deposited in a polycrystalline fashion which have a maximum fluctuation range of [plus or minus] 2%.” (JX-7 at 1:66-2:7.)

The Summary of the Invention states that in light of the foregoing problem, “it is an object of the present invention to provide a manufacturing method for polycrystalline layers of a defined grain size and texture without losing the advantage of amorphously deposited layers.” (JX-7 at 2:22-25.)

The summary describes two methods of depositing an amorphous silicon layer. First, deposition using a chemical vapor deposition (CVD) method from the gas phase. Second, depositing the amorphous silicon layer by “sputtering.” (JX-7 at 3:65-4:8.)

The specification of the ‘670 patent describes:

In the following, FIGS. 1 and 2 serve to describe an exemplary embodiment of the invention. On a substrate 1, which is composed of silicon dioxide, an amorphous silicon layer 21 is deposited using, for example, a chemical vapor deposition method at 560° C. The amorphous silicon layer 21 is doped with a doping agent, via implantation or in-situ doping...

(JX-7 at 5:17-22.)

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The substrate 1 with the amorphous silicon layer 21 is placed into a furnace which is preheated to an initial temperature. The initial temperature must be clearly below the crystallization temperature...

(*Id.* at 5:26-29.)

After the adjustment of the thermal equilibrium to the initial temperature, in other words, after the substrate 1 and the amorphous silicon layer 21 have been held at the initial temperature for the necessary time for the substrate 1 and layer 21 to reach the initial temperature, then the furnace is changed from the initial temperature to a target temperature. The target temperature lies above the crystallization temperature of the silicon layer ...

(*Id.* at 5:36-44.)

...Thus, a polycrystalline silicon layer 22 as shown in FIG. 2 develops from the amorphous silicon layer 21 of FIG. 1.

(*Id.* at 5:54-56.)

All of the foregoing intrinsic evidence clearly leads one to the conclusion that the term “depositing an amorphous silicon layer” is directed to “depositing a layer of silicon under conditions that result in the silicon layer having amorphous structure.”

Qimonda, however, dissents from this point of view, arguing that the term should be construed to include depositing silicon and then bombarding it with ions, which renders it amorphous. (CIB at 177.) I find Qimonda’s argument to be unpersuasive.

Qimonda refers to the ‘670 patent’s specification, (JX-7 at 4:61-5:3) arguing that it expressly contemplates a part of “the present invention” doping polycrystalline silicon by ion implant and then transforming the amorphous silicon layer resulting from the doping into polycrystalline silicon prior to activation of the dopants. Qimonda’s position is not supported by the intrinsic evidence to which they refer. The cited portion of the specification reads:

The present invention includes the possibility that the amorphous silicon layer is doped via implantation after it is deposited or that the silicon layer is doped via implantation after it has become polycrystalline. The further possibility of doping the amorphous silicon during the deposition process is also encompassed by the

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present invention. Where the layer has been doped, the doping agents may be activated in *a high temperature step which is performed after the transformation of the amorphous silicon layer into a polycrystalline silicon layer.*

(JX-7 at 4:61-5:3) (emphasis added.)

The foregoing language upon which Qimonda relies is part of a larger discussion of the process of manufacturing a polycrystalline silicon layer from a deposited amorphous silicon layer. After describing methods for transforming amorphous silicon into polycrystalline silicon using differing temperatures and time frames, the specification says:

Depending upon the desired electrical conductivity, the polycrystalline silicon layer is doped. The doping step ensues either via implantation into the polycrystalline silicon layer and via subsequent activation of the doping agents, or via implantation into the amorphous silicon layer before the crystallization step. In amorphous layers, the channeling effect which leads to smudged doping profiles basically does not occur. It is, therefore, advantageous to provide the implantation of boron, for example, into the amorphous layer before the crystallization step. In this case, the activation of the doping agent ensues at a high temperature step after the crystallization step.

Another possibility is to apply a doping agent in-situ during the amorphous deposition step.

(JX-7 at 4:28-42.)

The paragraph cited by Qimonda provides for (1) doping the amorphous silicon **after** it is deposited on the substrate; (2) doping the silicon layer after it has become polycrystalline (i.e. after completing the detailed sequential process to change the already deposited amorphous silicon layer into a polycrystalline silicon layer); and (3) doping the amorphous silicon during the deposition process, but activating the doping agents after it has been transformed into a polycrystalline silicon layer. There is no discussion of depositing a polycrystalline silicon layer on a substrate and then doping it to create an amorphous silicon layer.

The foregoing discussion of doping the amorphous silicon layer is consistent with claims 9 through 14, all of which depend from claim 1. Claim 9 teaches the step of “doping said

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amorphous silicon layers via implantation of a doping agent after said step of depositing.” Claim 10 sets forth the step of “doping said polycrystalline layer via implantation of a doping agent.”¹² Claim 11 instructs, “doping said amorphous silicon layer in-situ during said step of depositing.” Claims 12 through 14 all teach activating the doping agent by heating to a high temperature *after transformation of said amorphous silicon layer into said polycrystalline layer in said step of controlled heating*.¹³ Nowhere do the claims or the specification teach or imply that one should apply a polycrystalline silicon layer to a substrate and then dope it.

After examining the claim language and the specification, it is clear to me that “depositing an amorphous silicon layer” is properly construed as “depositing a layer of silicon under conditions that result in the silicon layer having amorphous structure.” I find that examination of the extrinsic evidence (such as expert testimony) offered by the parties is unnecessary because the intrinsic evidence is sufficient to understand the meaning of “depositing an amorphous silicon layer.” *Vitronics Corp.*, 90 F.3d at 1583 (“In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence.”)

4. “A Polycrystalline Layer Having a Defined Grain Size & Texture”

The term “a polycrystalline layer having a defined grain size and texture” appears in asserted claim 1.

Qimonda’s Position: Qimonda offers no construction for this term.

¹² Claim 1 sets forth a step-by-step sequential process of transforming an amorphous silicon layer into polycrystalline form. The amorphous silicon layer is not transformed to polycrystalline until the completion of the step set forth at element 5, whereas the amorphous silicon layer is deposited on the substrate in element 1. Reference to “said polycrystalline layer,” therefore, refers to the language of element 5, and does not contradict the fact that what is deposited on the substrate in element 1 is an “amorphous silicon layer.”

¹³ Claim 1 teaches transforming the amorphous silicon layer into polycrystalline by controlled heating in element 5, the final step of the sequential process.

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Respondents' Position: Respondents contend that the term “a polycrystalline layer having a defined grain size and texture” means “a layer of semiconductor material in polycrystalline form with a uniform grain size and texture.” (RIB at 45.)

Respondents aver that claim 1 requires using the claimed method “so that said amorphous silicon crystallizes and becomes a polycrystalline layer having a defined grain size and texture.” Respondents argue, “Qimonda’s and Staff’s proposal to leave this term unconstrued ignores the importance of this aspect of the claimed invention.” (RIB at 45-46.) Respondents argue that in the specification, the ‘670 patent distinguishes a prior-art technique of crystallizing amorphous layers that are inserted into a preheated furnace. They say the patent explains that when this is done “[t]he transition from amorphous material to crystalline material . . . ensues in an uncontrolled manner so that a reproducible adjustment of the grain structure and texture is not possible.” (*Id.* (citing JX-7 at 3:12-16).)

Respondents recite that the patent also states that “[t]he manufacturing method of the invention is suitable for all polycrystalline layers where a defined grain size and texture are crucial.” (RIB at 45-46 (citing JX-7 at 3:55-56).) They conclude that the patent also teaches that its method is for “polycrystalline silicon layers achieving a defined particle size and texture which is particularly useful in the manufacture of polycrystalline silicon resistances on integrated circuits.” (*Id.* (citing JX-7 at 6:30-33).)

Commission Investigative Staff’s Position: Staff believes that the term should be construed as “a polycrystalline layer with clearly characterized or delimited grain size and texture.” (SIB at 34.) Staff argues that the specification makes clear that the inventors believed their invention would allow production of a “reproducible” and “defined” grain size and texture. (*Id.* (citing JX-7 at 3:40-43) (“Quick as well as slow traversal through the temperature profile

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lead to reproducible texture and grain size in the polycrystalline layer.”)).) Staff argues that nothing in the claims or the specification warrants limiting the phrase to a “uniform” grain size or texture. (*Id.*) Therefore, Staff argues that Respondents’ proposed construction unduly restricts the phrase. (*Id.*)

Construction to be applied: “a layer of semiconductor material in polycrystalline form with clearly characterized or delimited grain size and texture.”

Staff’s argument that the Respondents’ proposed construction would unduly restrict this phrase is persuasive. I find nothing in the intrinsic record that requires the grain size and structure of a polycrystalline layer to be “uniform.” Rather, the conclusion apparent from the language is that the grain size and structure of a polycrystalline layer is “clearly characterized” and “reproducible” as Staff argues.

The Background of the Invention makes clear that a disadvantage of using amorphous silicon layers is that there are extremely great fluctuations in the resulting resistance values, described as at least plus or minus 10%, wherein polycrystalline silicon layers have a maximum fluctuation range of plus or minus 2%. (JX-7 at 2:2-7.) The Summary of the Invention makes clear that the relative sizes, and concomitant resistances, of polycrystalline silicon layers created using the process taught in the ‘670 patent, depend on the use of an “exactly defined crystallization step.” The ‘670 patent teaches that “[q]uick as well as slow traversal through the temperature profile lead to reproducible texture and grain size in the crystallized layer. For slow traversal through the temperature profile, bigger crystallites are generated; whereas a quick traversal through the temperature profile results in smaller crystallites being generated.” (JX-7 at 3:20-21, 3:40-46.) While the processes described will result in defined (i.e. clearly characterized or delimited) grain size and texture, they will not necessarily result in “uniform” grain size and

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texture, which is recognized when the '670 patent allows for a fluctuation range of polycrystalline resistance (i.e. grain size) of plus or minus 2%. While this is considered acceptable by the '670 patent, it is not "uniform."

C. The '434 Patent

1. "First Supply Line" & "Second Supply Line"

The term "first supply line" appears in asserted claims 1-5 and the term "second supply line" appears in asserted claims 1 and 2.

Qimonda's Position: Qimonda contends that the term "first supply line" means "a first on-chip conductor track provided with a first supply potential" and the term "second supply line" means "a second on-chip conductor track provided with a second supply potential." (CIB at 62.)

Qimonda claims that its proposed constructions are "drawn explicitly from the plain language of the intrinsic record of the '434 patent." (CIB at 63.) As support, Qimonda cites to a passage from the Background of the Invention which explains that "[i]n semiconductor chips, it is well known for various circuit elements contained in the chip to be supplied with voltage from mutually separate supply lines." (JX-1 at 1:22-24.) Qimonda additionally cites from the Description of the Preferred Embodiments where the specification explains that the first and second supply lines are "spatially separated from one another." (*Id.* at 4:30-34.) Qimonda notes that the specification refers to the spatially separated supply lines as "conductor tracks." (CIB at 63 (citing JX-1 at 4:63-64).)

With regard to Respondents' proposed constructions - "first conducting path" and "second conducting path" - Qimonda argues that the phrase conducting path does not appear in the specification and is inconsistent with the way that the patent uses the term "supply line." (CIB at 63.) Qimonda asserts that Respondents' expert Mr. Fairbanks conceded at the hearing

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that the term “conducting path” is overbroad when he testified that a supply line is a subset of a conducting path. (*Id.* (citing Tr. at 1117:4-6).)

In its reply brief, Qimonda reiterates that Respondents’ constructions are overly broad and inconsistent with the intrinsic evidence. (CRB at 35.) Qimonda claims that Staff’s proposed construction also finds no support in the intrinsic record. (*Id.*) Qimonda claims that its proposed constructions are drawn directly from the intrinsic evidence and are therefore correct. (*Id.*)

Respondents’ Position: Respondent contend that the term “first supply line” means “a first conducting path” and the term “second supply line” means “a second conducting path.” (RIB at 75-76.)

Respondents assert that the specification explains that for a supply potential to be provided to the semiconductor function element, a conductive path must be established between the semiconductor function element and the supply potential. (RIB at 75 (citing JX-1 at 4:22-30).) Respondents claim that the conductive paths are illustrated in Figures 1 & 3 of the patent. (*Id.* (citing JX-1 at Figs. 1, 3).)

Regarding Qimonda’s proposed constructions, Respondents assert that nothing in the specification requires the supply lines to be on-chip conductor tracks. (RIB at 75 (citing JX-1 at 4:29-32).) Respondents claim that prior to 1995, conductive paths in semiconductor integrated circuits were, and continue to be, routinely implemented in various alternative ways. (*Id.* at 75-76 (citing RX-774C at Q. 88-92).) Respondents accuse Qimonda of reading unnecessary limitations from the specification into the claims. (*Id.* at 76.) Respondents claim that Qimonda’s construction of “second supply line” is incorrect because claim 1 recites that the second supply line is for the first supply potential, as opposed to being associated with a second supply potential. (*Id.*)

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In their reply brief, Respondents argue that the citation to the Background of the Invention that Qimonda relies upon is irrelevant because it refers to prior art devices, and not the claimed invention. (RRB at 33.) Respondents reiterate their claim that Qimonda seeks to improperly import limitations from the preferred embodiment into the claims. (*Id.*) Respondents also address Qimonda's reliance on Mr. Fairbanks' testimony, stating that the fact that other connections, such as signal lines, can be considered conducting paths does not mean that characterizing a supply line as a conducting path is inappropriate. (*Id.*)

Commission Investigative Staff's Position: Staff contends that the term "first supply line" means "first conductive line" and the term "second supply line" means "second conductive line." (SIB at 73.)

Staff first notes that the private parties' experts each offered their opinions regarding what one of ordinary skill in the art would understand the terms to mean. (SIB at 73-74.) Staff states that it does not find either of the opinions helpful. (*Id.* at 74.) Staff agrees with Respondents that Qimonda's proposed constructions are overly narrow and are the result of improperly importing limitations from the specification into the claims. (*Id.*) Staff states that "there is nothing in the specification to demonstrate that the patentees disclaimed a broad claim construction or acted as their own lexicographer to narrow the claim terms." (*Id.*)

Construction to be applied: "conductor track that carries a supply potential"

In arguing their constructions, Qimonda seeks a relatively narrow definition while Respondents and Staff seek a broad definition. I do not concur with any of these constructions, and have adopted the construction of "first supply line" and "second supply line" that is dictated by the intrinsic record. The terms appear in claim 1 in the following instances:

a first supply line for a first supply potential, being connected to said semiconductor function element;

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a second supply line for the first supply potential, being connected to said protective element and being electrically conductively connected to said first supply line; and

From the claim language, it is apparent that the first and second supply lines are conductor tracks that carry the supply potential. This is further supported by the specification:

*Referring now to the figures of the drawing in detail and first, particularly, to FIG. 5 thereof, there is seen a semiconductor component in which **first supply lines VSS1, VCC1 are provided with supply potentials for supplying function elements in the form of input stages 1, 2 of an integrated circuit. The supply potential on the supply line VSS1 is the supply potential toward ground, and the supply potential on the supply line VCC1 is the supply potential that is positive as compared with ground. In order to supply output drivers 3, 4, one further supply line VSS2, VCC2 is provided for each of the two supply potentials.***

(JX-1 at 4:20-30 (emphasis added); *see also* JX-1 at 4:39-44, 4:63-66.) This passage from the specification demonstrates that the supply lines are the conductor tracks which carry power to the semiconductor components.

Respondents and Staff propose similar constructions, but their constructions are overly broad. While the supply lines are conducting paths, they are a type of conducting path that carries a supply potential.¹⁴ Respondents and Staff omit this important piece from their proposed construction. Without this additional piece, there is nothing to distinguish the supply lines from other conducting paths, such as the claimed connecting line.

In contrast, Qimonda's proposed constructions are narrower. Qimonda seeks to include a limitation that the supply lines be "on-chip." Claim 1 teaches "[a] semiconductor component, comprising," among other things, first and second supply lines. Thus, the claim language already makes clear that the supply lines must be "on-chip," i.e. on the semiconductor component, and adding an "on-chip" limitation in this context is not necessary to properly

¹⁴ I note that there does not appear to be any difference between the terms "conductor track" and "conducting path." My construction uses the term "conductor track" because that term is used in the specification to describe the supply lines. (JX-1 at 4:39-44, 4:63-66.)

construe the term.

Qimonda's construction of "first supply line" requires that the conductor track be provided with "a first supply potential" and Qimonda's construction of "second supply line" requires that the conductor track be provided with "a second supply potential." This contradicts the plain language of the claims, which requires "a first supply line for a first supply potential" and "a second supply line for the first supply potential[.]" The claim language includes no "second supply potential," as Qimonda asserts.

2. "Electrically Conductively Connected"

The term "electrically conductively connected" appears in asserted claim 1.

Qimonda's Position: Qimonda contends that the term "electrically conductively connected" means "the first and second supply lines being provided with the same supply potential but spatially separated so that voltage fluctuations are decoupled." (CIB at 64.)

Qimonda argues that its construction is supported by the specification, which describes the connection between the first and second supply lines. (CIB at 64.) Qimonda states that "[i]n describing the preferred embodiment, the '434 patent explains that the first supply line and second supply line are spatially separated and are only electrically connected to each other in that they are supplied with the same supply potential." (*Id.* (citing JX-1 at 4:30-34; CX-1044C at Q. 16).) As support, Qimonda cites to a passage from the Background of the Invention which explains that "[i]n semiconductor chips, it is well known for various circuit elements contained in the chip to be supplied with voltage from mutually separate supply lines." (JX-1 at 1:22-24.) Qimonda argues that the patent teaches that separate supply lines can be connected to a common supply potential off-chip. (CIB at 65 (citing Tr. at 617:5-619:3, JX-1 at 1:23-29, 4:30-34, 4:39-44; CX-1044C at Q. 16, 19).) Qimonda therefore asserts that its construction is "drawn

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explicitly from the plain language of the intrinsic record of the '434 patent." (*Id.*)

Addressing Respondents' proposed construction - "connected by means of a conducting path" - Qimonda argues that the Respondents again use the overly broad phrase "conducting path." (CIB at 65.) Qimonda criticizes Respondents' reliance on an IEEE dictionary, claiming that Respondents ignore the word "conductively" when relying on the dictionary definition. (*Id.* (citing RX-774C at Q. 96-97; CX-1044C at Q. 19; JX-11:23-29, 4:30-34, 4:39-44; Tr. at 617:6-619:3).) Qimonda claims that substituting Respondents' proposed constructions of "first supply line," "second supply line," and "electrically conductively connected" for the actual terms in claim 1 demonstrates that Respondents constructions are "nonsensical" and render the claim void of meaning. (*Id.* at 66.)

In its reply brief, Qimonda argues that its construction does not import limitations from the specification, but explains the meaning of the claim term in the context of the specification. (CRB at 35-36 (citing JX-1 at 4:30-44).) In contrast, Qimonda claims that Respondents' construction is based entirely on extrinsic evidence which is contrary to the intrinsic record. (*Id.* at 36.) Qimonda also claims that Respondents' and Staff's constructions read out the term "conductively." (*Id.*)

Respondents' Position: Respondents contend that the term "electrically conductively connected" means "connected by means of a conducting path." (RIB at 76-77.)

Respondents note that claim 1 uses "electrically conductively connected" to describe the connection between the first and second supply lines. (RIB at 77 (citing RX-774C at Q. 95; JX-1 at claim 1).) Respondents state that the specification describes the connection between the supply lines as a purely electrical connection. (*Id.* (citing RX-774C at Q. 95; JX-1 at 4:32-33).) Respondents point to Figures 1, 3, and 5 as illustrating an electrical conducting path between the

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first and second supply lines. (*Id.* (citing RX-774C at Q. 95; JX-1 at Figs. 1, 3, 5).) According to Respondents, their construction is therefore consistent with the usage of “electrically conductively connected” in the claims and specification. (*Id.* (citing RX-774C at Q. 95; JX-1).)

Respondents further rely on a dictionary definition from the IEEE Standard Dictionary of Electrical and Electronic Terms. They specifically point to the definition of “electrically connected,” which is “connected by means of a conducting path or through a capacitor, as distinguished from connection merely through electromagnetic induction.” (RIB at 77 (citing RX-774C at Q. 96-97; RX-747).)

In addressing Qimonda’s construction, Respondents assert that Dr. Cottrell admitted during cross examination that the cited reference in column 1 of the specification relating to using separate supply lines for the purpose of decoupling various circuit elements was a description of the prior art, and not of the claimed invention. (RIB at 77 (citing Tr. at 1535:1-1536:15).) Respondents argue that Qimonda’s construction is incorrect because “one of ordinary skill in the art would understand decoupling voltage fluctuations between two conductors to imply that the two conductors are actually isolated...and not conductively connected.” (*Id.* at 78 (citing RX-774C at Q. 100; JX-1 at 1:25-29).)

In their reply brief, Respondents argue that Qimonda’s proposed construction is based on a reference to the prior art from the specification and improperly imports limitations from the specification. (RRB at 33-34 (citing JX-1 at 1:23-29, 4:30-34).) Respondents dispute Qimonda’s contention that their proposed constructions of first supply line, second supply line, and electrically conductively connected render language in claim 1 meaningless. (*Id.* at 34.) Respondents insert Qimonda’s proposed constructions into the claim language from claim 1, and claim that this demonstrates that Qimonda’s construction of “electrically conductively

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connected” is “truly nonsensical[.]” (*Id.* at 35.) Respondents allege that Qimonda’s goal in claim construction is to avoid the anticipation arguments made by Respondents. (*Id.*)

Commission Investigative Staff’s Position: Staff contends that the term “electrically conductively connected” means “a conductive path between a terminal pad and the semiconductor function element.” (SIB at 75.)

After reviewing the opinions offered by the parties’ respective experts, Staff argues that Qimonda’s proposed construction is “unduly restrictive.” (SIB at 75-76 (citing *TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364 (Fed. Cir. 2008)).) Staff claims that Qimonda is improperly trying to import limitation from the specification to narrow the phrase “electrically conductively connected.” (*Id.* at 76.)

Construction to be applied: “connected to allow the passage of electricity”

The phrase “electrically conductively connected” appears in claim 1 in the following context: “a second supply line for the first supply potential...being electrically conductively connected to said first supply line[.]” Thus, “electrically conductively connected” describes the connection between the first and second supply lines.

The specification describes this connection between the supply lines:

The supply lines VSS1, VSS2 for the ground supply potential are spatially separated from one another and ***are only electrically connected to one another, so that a supply from the same supply potential source is possible.*** In order to provide a connection to the supply potential source, a connection pin 5 is provided, which is connected to the supply lines VSS1 and VSS2 through respective bonding wires 6, 7. Correspondingly, the supply lines VCC1, VCC2 are connected through respective bonding wires 8, 9 to a supply pin 10. Instead of a single supply pin for supplying a supply potential, separate supply pins may also be used for the lines VSS1 and VSS2, or VCC1 and VCC2, which are then connected through the conductor tracks of a printed circuit or a pole of the voltage source.

(JX-1 at 4:30-44 (emphasis added); *see also* JX-1 at Figs. 1, 3, & 5.)

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The preferred embodiment describes the connection between the supply lines as a bond connection using bonding wires, but the claim language is not limited to such a connection. Furthermore, claim 2 specifically adds the limitation of “at least one bond connection connecting said first and second supply lines to one another.” Thus, it would be inappropriate to read that limitation into claim 1 due to the doctrine of claim differentiation, which holds that limitations stated in dependent claims are not to be read into the independent claim from which they depend. *Nazomi Communications, Inc. v. ARM Holdings, PLC*, 403 F.3d 1364, 1370 (Fed. Cir. 2005).

Thus, the claim language and the specification make clear that there must be an electrical connection between the first and second supply lines. Therefore, I find that the phrase “electrically conductively connected” means “connected to allow the passage of electricity.” This construction adequately conveys that there must be an electrical connection between the supply lines.¹⁵

Qimonda’s construction seeks to include additional limitations. First, Qimonda’s proposed construction includes a requirement that the supply lines are “spatially separated” from each other. Such a “spatially separated” limitation is not expressly found in the claim language, and it would be improper to import it from the specification. Further, claim 1 requires a “first supply line” and a “second supply line.” As Respondents note, “it is self-evident that two separate supply lines must be spatially separated.” (RIB at 78, n. 20 (citing Tr. at 1542:24-1543:8).) I concur, and find that because claim 1 already calls for first and second supply lines, it is unnecessary to include a “spatially separated” limitation in the construction of “electrically conductively connected.”

¹⁵ Qimonda criticizes Respondents’ construction for somehow reading out the term “conductively.” (CRB at 36.) I note that in describing the connection between the supply lines, the specification also omits the term “conductively.” (JX-1 at 4:30-44.) I find that the addition of the word “conductively” in the patent claim does not alter the meaning of “electrically connected,” but adds further emphasis that the connection is an electrical connection, as opposed to a direct physical connection.

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Second, Qimonda's proposed construction includes the limitation that the supply lines are provided with the same supply potential. (CIB at 64.) This limitation is already expressly stated in claim 1 – “a first supply line for a first supply potential” and “a second supply line for the first supply potential” – and thus I find that it is unnecessary to include it in the construction of “electrically conductively connected.”

Qimonda's proposed construction additionally includes the requirement that the supply lines are spatially separated “so that voltage fluctuations are decoupled.” Qimonda cites from the Background of the Invention section of the specification to support the inclusion of this language. The portion Qimonda relies upon states that it is a well-known method to supply voltage to various circuit elements on a semiconductor chip using mutually separate supply lines to reduce the effects of voltage fluctuations in a supply line. (JX-1 at 1:23-29.)

The passage from the Background of the Invention section, found at JX-1 at 1:23-29, describes the knowledge in the art at the time of the invention, and does not directly describe the claimed invention. Further, there is nothing in this passage demonstrating any intent on the part of the inventors to limit the claims to require that the invention decouple voltage fluctuations. *Phillips*, 415 F.3d at 1316; *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1374 (Fed. Cir. 2005) (noting that “‘words or expressions of manifest exclusion’ or ‘explicit’ disclaimers in the specification are necessary to disavow claim scope.”); *Certain Self-Cleaning Litter Boxes & Components Thereof*, Inv. No. 337-TA-625, Initial Determination (Dec. 1, 2008) (discussing in detail the issue of disavowal).

In addition, the language is inconsistent with claim 1. The passage in the Background of the Invention states that in prior art semiconductor chips, voltage to various circuit elements would be provided through mutually separate supply lines. This “serves the purpose of

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decoupling the various circuit elements from one another in such a way that fluctuations in the supply voltage, which can be caused, for instance, by switching events, are not coupled into other circuit elements.” (JX-1 at 1:24-28.) In the claimed invention, there are separate supply lines, but they are electrically connected to one another. Thus, as Respondents’ expert testified, voltage fluctuations will not be decoupled. (RX-774C at Q. 100.) Therefore, I find that it would be improper to include the voltage fluctuation language as proposed by Qimonda.

3. “Protective Element”

The term “protective element” appears in asserted claims 1, 7, and 8.

Qimonda’s Position: Qimonda contends that the term “protective element” should be given its plain and ordinary meaning.

Qimonda argues against Respondents’ position that “protective element” should be construed pursuant to 35 U.S.C. § 112, ¶ 6. Qimonda states that because the term “means” is not used, there is a rebuttable presumption that § 112, ¶ 6 does not apply. (CIB at 67 (citing *Phillips*, 415 F.3d at 1311).) Qimonda claims that Respondents have failed to overcome that presumption. Qimonda states that a person of ordinary skill in the art would have understood the phrase “protective element” as it relates to electrostatic discharge (“ESD”) protection circuits. (*Id.* at 68 (citing Tr. at 600:3-7; CX-1044C at Q. 20-22; RDX-131C; RX-1078C at Q. 12).) Qimonda notes that Mr. Fairbanks was able to point out the “Primary ESD Element” in a demonstrative exhibit displaying LSI’s own circuitry. (*Id.* (citing RDX-131C; RX-1078C at Q. 12).) Qimonda states that the phrase “a protective element for protecting against electrostatic discharge” identifies “a broad class of structures by their function,” which would have been known to one of ordinary skill in the art at the time of invention. (*Id.* at 69 (citing Tr. at 600:3-7; CX-1044C at Q. 20-22; RDX-131C; RX-1078C at Q. 12).)

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Even if the term is construed pursuant to § 112, ¶ 6, Qimonda claims that Respondents' proposed construction is overly narrow because it excludes equivalents. (CIB at 69.) Qimonda states that Mr. Fairbanks admitted that many devices were known ESD protection devices at the time of the filing of the '434 patent, including at least diodes, clamps, grounded gate NMOS transistors, field plate diodes, thick field oxide transistors, NPN bipolar transistors, isolation impedances, inductors, and capacitors. (*Id.* (citing Tr. at 1122:14-1123:15; RX-774C at Q. 56-57).) Qimonda claims that all of these devices qualify as equivalent structures. (*Id.*)

In its reply brief, Qimonda reiterates many of the above-described arguments. (CRB at 34-35.)

Respondents' Position: Respondents contend that the term "protective element" should be construed pursuant to § 112, ¶ 6. (RIB at 72.) Respondents assert that the function is "protecting against ESD by limiting the voltage between the connecting line and the second supply line" and that the structures disclosed in the specification to perform this function are: (1) an NMOS thick field oxide transistor ("TFO") with its gates directly connected to its drain; (2) a TFO in combination with a resistor; or (3) a TFO in combination with a resistor and NMOS transistor having its gate directly connected to its source as shown in Figures 3 & 4. (*Id.* at 73-74.)

Respondents argue that the term "protective element" is not a commonly-used term in the art and does not have an understood meaning in the art. (RIB at 72 (citing RX-774C at Q. 101).) Respondents claim that the term is a generic term which refers to some unspecified structure used to perform the function of protecting against ESD. (*Id.* (citing RX-774C at Q. 101).) Respondents assert that because the term "protective element" is described solely by its function and does not recite any definite structure, § 112, ¶ 6 applies. (*Id.* at 73 (citing *Watts v. XL Sys.*,

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Inc., 232 F.3d 877, 880-81 (Fed. Cir. 2000); *Mas-Hamilton Group v. La Gard, Inc.*, 156 F.3d 1206, 1214 (Fed. Cir. 1998); *Fonar Corp. v. Gen. Elec. Co.*, 107 F.3d 1543, 1551 (Fed. Cir. 1997), *cert. denied* 522 U.S. 908 (1997)).)

Respondents claim that the specification describes three structures for limiting the voltage between the connecting line and the second supply line. (RIB at 73 (citing RX-774C at Q. 101; JX-1 at 5:61-6:9, Figs. 3-4).) The three structures are: (1) a TFO with its gates directly connected to its drain; (2) a TFO in combination with a resistor; or (3) a TFO in combination with a resistor and NMOS transistor having its gate directly connected to its source as shown in Figures 3 & 4. (*Id.* at 73-74 (citing RX-774C at Q. 101; JX-1).) Respondents state that “[t]he specification does not describe any other protective structure and does not describe any equivalent protective structure.” (*Id.* at 74.)

In their reply brief, Respondents cite Mr. Fairbanks’s testimony stating that the term “protective element” is not a term used in the art and does not have any understood meaning to one of ordinary skill in the art. (RRB at 36 (citing RX-774C at Q. 101, 105).) Respondents state that the fact that Mr. Fairbanks identified the protective element in a demonstrative exhibit depicting an accused product does not demonstrate that the term has an understood structure. (*Id.* (citing RDX-131C).) Respondents contend that Mr. Fairbanks used the demonstrative to show how the accused circuit does not contain the required “protective element.” (*Id.* (citing RX-1078C at Q. 12-15).) Finally, Respondents dispute Qimonda’s assertion that Mr. Fairbanks admitted that there were many equivalent ESD protective structures at the time of the invention. (*Id.* at 36-37.) Respondents claim that Mr. Fairbanks testified that { } devices were not equivalent to { } structures because they did not operate in the same way as { } devices. (*Id.* at 37 (citing RX-1082C at Q. 36; RX-1078C at Q. 15).)

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Commission Investigative Staff's Position: Staff contends that the term “protective element” should be given its plain and ordinary meaning. (SIB at 78.)

Staff argues that § 112, ¶ 6 does not apply. (SIB at 78.) Staff notes that there is a rebuttable presumption that § 112, ¶ 6 does not apply due to the lack of the term “means,” and Respondents fail to overcome that presumption. (*Id.* at 78-79.) Staff asserts that Respondents fail to explain why one of ordinary skill in the art would not find a “protective element” to be recited structure in light of the ‘434 patent specification. (*Id.* at 79 (citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1361 (Fed. Cir. 2004)).) Staff notes that both experts testified that it was well known in the art at the time of filing that there were many structures that could serve as protective elements. (*Id.* (citing Tr. at 600; Tr. at 1122-1123).)

Construction to be applied: “a circuit element for protecting against electrostatic discharge.”

I find that the term “protective element” is not a means-plus-function limitation, and that the plain and ordinary meaning of the term should apply.

The parties dispute whether “protective element” is a means-plus-function term subject to 35 U.S.C. § 112, ¶ 6. The term appears in the following context in claim 1: “a protective element for protecting against electrostatic discharge, being connected between said terminal pad and said semiconductor function element[.]” Section 112, ¶ 6 states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

As the Federal Circuit has explained: “[a] claim limitation that actually uses the word ‘means’ will invoke a rebuttable presumption that § 112 ¶ 6 applies...By contrast, a claim term that does not use ‘means’ will trigger the rebuttable presumption that § 112 ¶ 6 does not apply.”

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CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002). Because “protective element” does not use the word “means,” Respondents must overcome the presumption that § 112, ¶ 6 does not apply. *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003) (stating that the burden to overcome the presumption must be met by a preponderance of the evidence).

The analysis thus focuses on whether Respondents have met their burden to demonstrate that the term “protective element” fails to disclose sufficient structure. On this issue, the Federal Circuit stated that “we have held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.” *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1359-1360 (Fed. Cir. 2004). Thus, the Federal Circuit has “seldom held” that a limitation that does not use the term “means” is a means-plus-function limitation. *Id.* at 1362 (stating that the circumstances must be “unusual” for the presumption against § 112, ¶ 6 to be overcome).

The Federal Circuit has found that seemingly broad, generic terms are not means-plus-function limitations. In *Lighting World*, 382 F.3d at 1359, the court addressed whether the term “connector assembly” was subject to § 112, ¶ 6. Before conducting the analysis, the court noted that “what is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term ‘means for.’” *Id.* at 1360. The court looked at dictionary definitions to conclude that “that the term ‘connector’ has a reasonably well-understood meaning as a name for structure, even though the structure is defined in terms of the function it performs.” *Id.* at 1361. The court also noted that the specification used the term

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“connector assembly” as the name for structure. *Id.* The court concluded that the term “connector” disclosed sufficient structure, and therefore the term “connector assembly” was not a means-plus-function limitation. *Id.* The court acknowledged that the term was “certainly broad” and vulnerable to an invalidity attack, but stated that that was a risk that the patent drafter took when choosing that term. *Id.* at 1361-1362.

In *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1582 (Fed. Cir. 1996), the issue was whether the district court correctly found that the phrase “detent mechanism” was a means-plus-function limitation. The court first noted that simply because a term is defined in functional terms, § 112, ¶ 6 does not automatically apply. *Id.* at 1583. The court explained that the names of devices such as “filter,” “brake,” “clamp,” “screwdriver,” and “lock” are derived from the functions they perform, but that does not make them all means-plus-function terms. *Id.* Looking at various dictionary definitions, the court found that the term “detent” denotes a device with a generally understood meaning in the mechanical arts. *Id.* Therefore, the court found that “detent mechanism” connoted sufficient structure and that § 112, ¶ 6 was inapplicable.

In contrast, the Federal Circuit has found on rare occasions that a phrase that does not use the term “means” is a means-plus-function limitation. In *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1353 (Fed. Cir. 2006), the parties disputed whether or not the phrase “colorant selection mechanism” was a means-plus-function limitation. The court first noted that “[t]he generic terms ‘mechanism,’ ‘means,’ ‘element,’ and ‘device’ typically do not connote sufficiently definite structure.” *Id.* at 1354. The court then had to examine whether adding the term “colorant selection” to “mechanism” added sufficient structure to avoid § 112, ¶ 6. The court found that “colorant selection,” when added to “mechanism,” did not disclose sufficient structure to avoid § 112, ¶ 6: “the term ‘colorant selection,’ which modifies ‘mechanism’ here,

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is not defined in the specification and has no dictionary definition, and there is no suggestion that it has a generally understood meaning in the art.” *Id.* Thus, the term was construed as a means-plus-function limitation.

In *Mas-Hamilton*, 156 F.3d at 1213, the issue was whether the phrase “lever moving element” was a means-plus-function limitation. The court affirmed the district court’s determination that “lever moving element” was a means-plus-function limitation. Specifically, the court found that there was no evidence that “lever moving element” has a generally understood structural meaning in the relevant art. *Id.* at 1213-1214. In rejecting the patentee’s argument that the term recited sufficient structure, the court explained:

In the instant case, the claimed “lever moving element” is described in terms of its function not its mechanical structure. If we accepted La Gard’s argument that we should not apply section 112, ¶ 6, a “moving element” could be any device that can cause the lever to move. La Gard’s claim, however, cannot be construed so broadly to cover every conceivable way or means to perform the function of moving a lever, and there is no structure recited in the limitation that would save it from application of section 112, ¶ 6.

Id. at 1214.

Each party relies on the testimony of its respective expert to support the assertion that “protective element” is, or is not, a means-plus-function term. Mr. Fairbanks, Respondents’ expert, testified that “[t]he term ‘protective element’ is not a term commonly used in the art of designing electrostatic discharge protection circuits.” (RX-774C at Q. 101.) Mr. Fairbanks went on to state that “[p]ersons skilled in this art don’t talk about ‘protective elements’ in my experience, and I’m not familiar with any use of the term ‘protective element’ in the literature.”

(*Id.*)

Dr. Cottrell, Qimonda’s expert, testified that “the term ‘protective element’... would have also been readily understood by a skilled person to denote a circuit element with such

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functionality.” (CX-1044C at Q. 21.) Dr. Cottrell provided testimony at the hearing that one of ordinary skill in the art would understand the term “protective element” as it relates to the design of ESD protection circuits, and that there were many well-known ways of designing protective elements at the time of the patent filing. (Tr. at 600:3-20.)

While it is beneficial to have the opinions of the parties’ experts on this issue, the experts’ opinions are clearly contradictory and fail to clarify whether or not a “protective element” is a term that “is used in common parlance or by persons of skill in the pertinent art to designate structure[.]” *Lighting World, Inc.*, 382 F.3d at 1359-1360. The evidence that I find most compelling is the evidence cited by Dr. Cottrell in his witness statement. Dr. Cottrell identified U.S. Patent No. 4,924,339, a prior art patent offered by Respondents, that uses the term “protecting element” multiple times to refer to a circuit structure. (*See, e.g.*, RX-212 at 1:26-40; 3:24-27; 4:13-16.) Dr. Cottrell identified an { } document that refers to { } (CX-79C at LSI-337-665-0146469.) Similarly, another set of { } refer to { } (CX-80C at LSI-337-665-0146778.)

These references do not use the exact term “protective element,” but they demonstrate that very similar terms are commonly used by people of ordinary skill in the art to refer a structure that protects a circuit from ESD. These references therefore strongly support the argument that the term “protective element” is not a means-plus-function limitation. Respondents argue that while terms such as “protection devices” and “protective structures” may have a well-understood meaning in the art, the claim term at issue is “protective element.” (RRB at 36.) As the opinion in *Mass. Inst. of Tech.* made clear, the focus is not on the second word in these phrases (i.e. device, structure, or element). 462 F.3d at 1354. The Federal Circuit has

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stated that those terms by themselves are generic and do not connote structure. *Id.* The focus is on the addition of the “protective” or “protection” before the generic term. It is inconsistent for Respondents to acknowledge that terms such as “protection devices” and “protective structures” have a well-understood meaning in the art while contending that “protective element” does not. Here, replacing one generic term – “device” – for another – “element” – does not alter the determination as to whether the term is understood by one of skill in the art to connote structure.

In light of this evidence of usage in the art, and in light of the fact that Respondents rely solely on the unsupported testimony of Mr. Fairbanks, I find that Respondents have failed to overcome the presumption that “protective element” is not subject to § 112, ¶ 6.

4. “Immediate Spatial Vicinity”

The term “immediate spatial vicinity” appears in asserted claim 4.

Qimonda’s Position: Qimonda does not offer a construction for the term “immediate spatial vicinity,” but disputes Respondents’ allegation that the term is indefinite. (CIB at 71.) Qimonda notes that both its expert and one of the ‘434 patent inventors testified that one of ordinary skill in the art would be able to understand the phrase “immediate spatial vicinity” and would be able to apply the teachings of claim 4 based on the size of the circuitry, the environment of the circuitry, and physical limitations on where one can place the clamp element. (*Id.* (citing Tr. at 483:4-484:4, 484:14-485:6, 488:2-490:12, 491:21-492:4; Tr. at 1537:17-1538:13; JX-1 at Fig. 1, 5:33-38).) As further evidence that the term is not indefinite, Qimonda points to LSI’s own ESD design documentation, which, according to Qimonda, {

} (*Id.* (citing CX-1044C at Q. 25-26; CX-79C at LSI-337-665-0146471; CX-80C at LSI-337-665-0146779; CX-75C at Q. 123-124); *see also* CRB at 37.)

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Respondents' Position: Respondents argue that the term “immediate spatial vicinity” is indefinite, thus rendering claim 4 of the ‘434 invalid under 35 U.S.C. § 112, ¶ 2. (RIB at 81, 129.) Respondents explain that “immediate spatial vicinity” is used to describe the connection of the clamp to the signal line in proximity to the input stage. (*Id.* at 81 (citing RX-774C at Q. 139).) They claim that the specification provides no guidance or criteria for determining when the clamp is within the immediate spatial vicinity of the input stage and when it is not. (*Id.* (citing RX-1082C at Q. 66; Tr. at 484:4-13; Tr. at 1539:21-25, 1540:24-1541:3; RX-774C at Q. 139; JX-1).) Respondents allege that one of ordinary skill in the art, after reading the ‘434 patent, would not know whether the location of the clamp in any given situation is in the immediate spatial vicinity of the input stage. (*Id.* (citing RX-774C at Q. 137, 139).)

In their reply, Respondents note that Dr. Cottrell testified in his rebuttal witness statement that a person of ordinary skill in the art would understand the term “immediate spatial vicinity” based on the need for providing a low impedance between the clamp element and the function element. (RRB at 37 (citing CX-1044C at Q. 25).) Respondent argue that Dr. Cottrell’s testimony is wholly unsupported by the patent, which makes no mention of the impedance between the clamp element and the semiconductor function element. (*Id.* (citing Tr. at 1537:25-1538:18).) Respondents contend that the fact that LSI’s design documentation notes that {
} is irrelevant, because the question to be resolved is whether one of ordinary skill in the art, after reading the ‘434 patent, would understand what the scope of the term “immediate spatial vicinity.” (*Id.* at 37-38.)

Commission Investigative Staff's Position: Staff argues that the term “immediate spatial vicinity” is not indefinite, but it does not offer any proposed construction for the term. (SIB at 81-82.) Staff notes that because the specification specifically uses the term, the term is

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capable of being construed. (*Id.* at 82 (citing JX-1 at 1:49-51, 2:54-60).)

Construction to be applied: “connected to the connecting line at a point in the connecting line that corresponds to the portion of the first supply line that is between (1) the connection of the first and second supply lines; and (2) the connection of the semiconductor function element to the first supply line.”

The phrase “immediate spatial vicinity” appears in dependent claim 4, which states:

4. The semiconductor component according to claim 1, wherein said semiconductor function element is connected to said first supply line and to said connecting line at a given location, and said clamp element has a first terminal connected to said first supply line and a second terminal connected to said connecting line, in the immediate spatial vicinity of said given location.

Respondents argue that “immediate spatial vicinity” is indefinite, rendering claim 4 invalid under 35 U.S.C. § 112, ¶ 2. Qimonda and Staff argue that the phrase is definite, but they do not offer any proposed construction.

“Indefiniteness under 35 U.S.C. § 112 ¶ 2 is an issue of claim construction and a question of law[.]” *Cordis Corp. v. Boston Scientific Corp.*, 561 F.3d 1319, 1331 (Fed. Cir. 2009). The second paragraph of 35 U.S.C. § 112 states that “[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” As explained by the Federal Circuit, “[t]his requirement serves a public notice function, ensuring that the patent specification adequately notifies the public of the scope of the patentee’s right to exclude.” *Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1319 (Fed. Cir. 2008). “If one skilled in the art would understand the bounds of the claim when read in light of the specification, then the claim satisfies section 112 paragraph 2.” *Exxon Research & Eng’g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001). The Federal Circuit has provided the following guidance in determining whether a claim is indefinite:

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If a claim is insolubly ambiguous, and no narrowing construction can properly be adopted, we have held the claim indefinite. If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds.

Id.; see also *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1342 (Fed. Cir. 2003) (characterizing the indefiniteness standard as “somewhat high.”)

The language of the claim is unclear regarding the scope of the term “immediate spatial vicinity.” Nothing in claim 1 or claim 4 explains where the clamp element has to be placed in relation to the semiconductor function element for the two components to be in the “immediate spatial vicinity” of each other. One skilled in the art would not understand the bounds of “immediate spatial vicinity” based on the claim language alone.

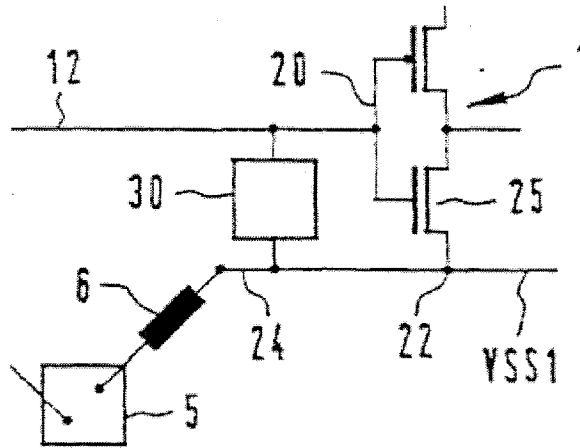
If the only guidance available was the claim language, I would have to find that the term is indefinite. In this situation, the specification provides guidance which saves the claim from invalidity. There is a discussion in the specification of the placement of the clamp element. The specification states:

The semiconductor body 30¹⁶ is suitably connected to the signal line 12 in the *immediate vicinity* of the input terminal 20 of the input stage or buffer 1.¹⁷ A ground terminal of the semiconductor body 30 is also connected to the supply line VSS1 in the *immediate vicinity* of the ground terminal 22 of the input stage or buffer 1. In general, *the placement of the semiconductor body or element 30 and its terminals must be carried out in such a way that the signal line 12 in the portion 24 of the supply line or conductor track VSS1 is connected between a terminal of the bonding wire 6 and the ground terminal 22 of the input stage or buffer 1.*

(JX-1 at 5:33-43) (emphasis added.) The above-quoted passage from the specification refers to the following portion of Figure 1:

¹⁶ The “clamp element” from claims 1 and 4 is referred to as the “semiconductor body 30” in the specification. (See, e.g., JX-1 at 5:33-43, 6:25-28, Figs. 1 & 3.)

¹⁷ The input stage or buffer 1 in Figure 1 represents the “semiconductor function element” of claims 1 and 4.



(*Id.* at Fig. 1.)

I find that the specification provides sufficient guidance to give meaning of the phrase “immediate spatial vicinity.” The above-quoted passage explains that for the clamp element to be in the “immediate spatial vicinity” of the semiconductor function element, the clamp element must be connected to the connecting line at a point on the connecting line that corresponds to the portion of the first supply line that is between the connection of the semiconductor function element (22) to the first supply line and the connection of the first supply line and second supply line (shown in Figure 1 as a bond connection)(6).

In arguing indefiniteness, Respondents fail to address this passage from the specification or explain why it does not shed light on the meaning of immediate spatial vicinity. Because I have found that the term “immediate spatial vicinity” is amenable to claim construction, I find that the term is not indefinite pursuant to 35 U.S.C. § 112, ¶ 2. *Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1371 (Fed. Cir. 2006) (“A claim that is amenable to construction is not invalid on the ground of indefiniteness.”)

D. The ‘899 Patent

1. “HDP-CVD Insulating Material of Silicon Oxide”

The term “HDP-CVD insulating material of silicon oxide” appears in asserted claim 1.

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Qimonda's Position: Qimonda offers no proposed construction for this term in its initial brief.

In its reply brief, Qimonda argues that it has shown that the specification of the '899 patent clearly and expressly distinguishes between inductively coupled plasma (i.e., HDP-CVD) on the one hand, and electron cyclotron plasma on the other. (CRB at 58-59 (citing CIB at 130-131).) Qimonda claims that Respondents raise and rely on, for the first time in their brief, an argument that "the Francombe reference, incorporated by reference for all purposes into the '899 Patent, describes inductively-coupled HDP-CVD as just one of several types of high-density plasma sources." (*Id.* (citing RIB at 137).) Qimonda states that Respondents point to the fact that at the hearing, Dr. Gutmann identified various types of plasma sources in Francombe as "high density sources," among them ECR and inductively coupled. (*Id.* (citing RIB at 136-137).) Qimonda argues that Respondents' "newly-minted argument should be rejected not only based on its post-trial emergence but also because it ignores the explicit teachings of the '899 Patent which clearly distinguish between HDP-CVD and ECR plasma sources." (*Id.*) Qimonda asserts that the '899 patent teaches that Francombe describes HDP-CVD, as well as other techniques such as ECR-CVD, reciting:

HDP-CVD techniques are described in Francombe, Physics of Thin Film, Academic Press (1994), which is herein incorporated by reference for all purposes.

* * *

Thus, *HDP-CVD* techniques reduce or eliminate the formation of gaps in the shallow trenches usually associated with conventional trench filling techniques. *Electron cyclotron* [ECR] and helicon wave excited plasma techniques are *also* useful for depositing the oxide layer. *Such techniques are also described in Francombe*, Physics of Thin Film, Academic Press (1994), already herein incorporated by reference for all purposes.

(CRB at 58-59 (citing JX-8 at 5:22-24, 5:29-36)) (emphasis added by Qimonda). Qimonda argues that while the '899 patent directs the reader to Francombe for both HDP-CVD and ECR

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high density sources, the above section clearly defines and intends them to be distinct from each other. Qimonda asserts that this expressly defined meaning of HDP-CVD as an inductively coupled plasma that satisfies the need for a gapless oxide layer is repeated throughout the patent (CRB at 58-59 (citing JX-8 at 6:8-14, 8:29-31) and Qimonda alleges, represents the proper construction for the claim term. Qimonda recites, “[t]he specification ‘is the single best guide to the meaning of a disputed term.’” (*Id.* (citing *Vitronics*, 90 F.3d at 1582).)

Qimonda argues that Respondents’ argument that claim 1 and claim 22 must have different scope is also based on an improper reading of the law of claim construction, and ignores the contrary teachings of the ‘899 patent’s intrinsic evidence. Qimonda says that Respondents argue that “the doctrine of claim differentiation dictates that ‘HDP-CVD insulating material of silicon oxide’ should not be limited to inductively-coupled HDP,” because claim 22 specifically calls out “inductively coupled” HDP-CVD, whereas claim 1 does not. (CRB at 59-60 (citing RIB at 136).) Qimonda argues that *Seachange Int’l, Inc. v. C-COR Inc.*, 413 F.3d 1361 (Fed. Cir. 2005), cited by Respondents, holds that the doctrine of claim differentiation “is not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history.” *Id.* at 1369. Qimonda says that in *Seachange*, 413 F.3d at 1375, the court found the presumption to have been rebutted, because the intrinsic evidence showed that two independent claims had the same scope despite their different language. (CRB at 59-60.) Moreover, Qimonda argues, the Federal Circuit has clarified the limited application of this doctrine between independent claims (*versus* independent and dependent claims), as is the case here:

Beyond the independent/dependent claim scenario, this court has characterized claim differentiation . . . as the “presumption that each claim in a patent has a different scope.” Different claims with different words can, of course, define different subject matter within the ambit of the invention. On the other hand,

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claim drafters can also use different terms to define the exact same subject matter. *Indeed this court has acknowledged that two claims with different terminology can define the exact same subject matter.*

(CRB at 59-60 (citing *Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380 (Fed. Cir. 2006))) (citations omitted by Qimonda) (emphasis added by Qimonda.). Qimonda concludes that the specification of the '899 patent makes clear that the inventor intended claims 1 and 22 to define the same subject matter, namely, inductively coupled plasma and this is not trumped by the doctrine of claim differentiation. (*Id.*)

Respondents' Position: Respondents propose that the term “HDP-CVD insulating material of silicon oxide” means an insulating material of silicon oxide deposited using a high density plasma-enhanced chemical vapor deposition process. (RIB at 135 (citing JX-22 at 17).) Respondents argue that, in proposing that the term means “silicon oxide material chemical vapor deposited using a high-density, inductively coupled plasma,” Qimonda is improperly attempting to read the words “inductively coupled” into the claim. (*Id.*)

Respondents argue that nothing in the patent suggests that the claim should be limited to inductively-coupled HDP (it is not disputed that HDP-CVD stands for “high density plasma-enhanced chemical vapor deposition”). On the contrary, they say, the doctrine of claim differentiation dictates that “HDP-CVD insulating material of silicon oxide” should not be limited to inductively-coupled HDP. Respondents assert that each of claims 1-21 merely requires “HDP-CVD.” Respondents aver that claim 22, however, specifically calls out and requires “inductively coupled” HDP-CVD. Respondents argue that, because claim 22 specifically requires “inductively coupled” HDP-CVD, claim differentiation dictates that claims 1-21, which do not call out “inductively coupled,” should not be limited to any particular type of HDP-CVD. (RIB at 135-136 (citing *Seachange*, 413 F.3d at 1368 (“The doctrine of claim

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differentiation stems from the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope.”)).)

Respondents argue that the specification makes it clear that “inductively coupled” HDP-CVD is just one example of HDP-CVD, reciting: “[f]ormation of the oxide layer is achieved . . . using a high density plasma source (HDP-CVD). Such HDP-CVD techniques, for example, employ the use of an inductively coupled plasma source.” (RIB at 136 (citing JX-8 at 5:17-21).) Respondents conclude that, according to the specification, “inductively coupled” HDP-CVD is just one “example” of HDP-CVD that can be employed. (*Id.*)

Respondents continue, saying the specification incorporates a book by Francombe titled *Physics of Thin Film*, which states that “inductively coupled” plasma sources are just one of at least four types of high-density plasma sources, quoting: “HDP-CVD techniques are described in Francombe, *Physics of Thin Film*, Academic Press (1994), which is herein incorporated by reference for all purposes.” (RIB at 136-137 (citing JX-8 at 5:22-24).) Respondents argue that Qimonda’s expert, Dr. Gutmann, acknowledges that the Francombe reference illustrates several examples of high-density plasma sources, including “inductive,” “ECR,” “helicon,” and “helicon resonator,” quoting:

Q Let’s go to the book to the Francombe book, if we could. Page 10 of the book at the bottom left, in section C states: For example, a few are shown schematically in figure 3?

A Right.

Q When we look in figure 3, it shows four different types of high density sources, correct?

A Yes, it does.

Q One of those sources is ECR, correct?

A That’s correct.

Q And one is helicon?

A That’s correct.

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Q And the other is inductive?

A A third is inductive, yes.

Q And one is helical resonator, correct?

A That's correct.

Q And the Francombe book describes each of these four as high-density sources; is that correct?

A Yes, it does.

(RIB at 136-137 (citing Tr. at 1452:20-1453:17).)

Respondents summarize: (1) the specification describes “inductively coupled” HDP-CVD as just one example of an HDP-CVD technique; (2) the Francombe reference, incorporated by reference for all purposes into the ‘899 patent, describes inductively-coupled HDP-CVD as just one of several types of high-density plasma sources; and (3) the doctrine of claim differentiation requires that “inductively coupled” should not be read into claims that do not have that specific requirement. (RIB at 137.)

Commission Investigative Staff's Position: Staff proposes that the phrase means an “insulating material of silicon oxide that is formed by plasma-enhanced vapor deposition using a high density inductively coupled plasma source.” Staff argues that such a construction is fully supported by the specification. (SIB at 49-50 (citing JX-8 at 5:20-21).) Staff says that after noting that the present invention overcomes many problems associated with the prior art, the specification expressly describes that the HDP-CVD insulating oxide layer is deposited by an “inductively coupled plasma source.” (*Id.* (citing JX-8 at 8:29-30).) Staff continues that preferred embodiments Figures 3A and 3B similarly provide for an HDP-CVD oxide layer deposited by an “inductively coupled plasma source.” (*Id.* (citing JX-8 at 6:11-12).)

Construction to be applied: “an insulating material of silicon oxide deposited using a high density plasma-enhanced chemical vapor deposition process”

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Element 3 of claim 1 of the '899 patent describes:

forming a layer of HDP-CVD insulating material of silicon oxide, wherein the HDP-CVD silicon oxide layer is non-planar and protrudes angularly above isolation trench edges forming sloping edges that slope away from the trench on the substrate by high density plasma-enhanced chemical vapor deposition (HDP-CVD), the HDP-CVD layer substantially filling the trenches and covering the active regions;

(JX-8 at 8:66-9:6.)

The plain language of the claim makes clear that element 3 teaches that the HDP-CVD insulating material of silicon dioxide contemplated therein is deposited by “high density plasma-enhanced chemical vapor deposition” to which it applies the acronym “HDP-CVD.” (JX-8 at 9:3-4.) The claim does not refer to a requirement that HDP-CVD “use an inductively coupled plasma source.”

The specification, describing an embodiment of the invention, teaches:

... Formation of the oxide layer is achieved by plasma-enhanced chemical vapor deposition (PECVD) using a high density plasma source (HDP-CVD). Such HDP-CVD techniques, for example, employ the use of an inductively coupled plasma source. HDP-CVD techniques are described in Francombe, *Physics of Thin Film*, Academic Press (1994), which is herein incorporated by reference for all purposes.

(JX-8 at 5:17-24.)

The specification also states:

... Thus, HDP-CVD techniques reduce or eliminate the formation of gaps in the shallow trenches usually associated with conventional trench filling techniques. Electron cyclotron and helicon wave excited plasma techniques are also useful for depositing the oxide layer. Such techniques are also described in Francombe, *Physics of Thin Film*, Academic Press (1994), already herein incorporated by reference for all purposes.

(*Id.* at 5:29-36.)

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At another point, the specification describes:

FIGS. 3A-3B are SEM photographs of a portion of the integrated circuit structure 30 of the present invention. The photographs show STI structures which have been filled with HDP-CVD oxide 52 that has been deposited by an inductively coupled plasma source (as described above).

(*Id.* at 6:8-12.)

Finally, the specification explains:

As should now be apparent, the present invention substantially overcomes many of the problems associated with prior art gapfill and planarization schemes in integrated circuit fabrication processes. The HDP-CVD oxide layer deposited by an inductively coupled plasma source provides an insulating oxide layer in the STI regions of the substrate.

(*Id.* at 8:26-31.)

A claim term should be given its ordinary meaning unless the specification or prosecution history provide a special, different meaning or definition. *Kegel Co. v. AMF Bowling, Inc.*, 127 F.3d 1420, 1427 (Fed.Cir.1997). There is a “heavy presumption in favor of the ordinary meaning of claim language.” *Johnson Worldwide Assocs. v. Zebco Corp.*, 175 F.3d 985, 989 (Fed.Cir.1999); cf. *Markman*, 52 F.3d at 980 (“[A]ny special definition given to a word must be clearly defined in the specification.”). Although the written description may aid in the proper construction of a claim term, limitations, examples, or embodiments appearing only there may not be read into the claim. *Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186-1187 (Fed. Cir. 1998).

This case presents an example of the tension between the need to read a claim in view of the specification while avoiding the pitfall of reading a limitation into the claim from the specification. Claim 1 of the ‘899 patent does not use the term “inductively coupled plasma source.” The question is whether or not the specification clearly reveals a clear intent by the inventor to act as his own lexicographer by defining “HDP-CVD” to include that additional

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limit. In two places, the specification describes HDP-CVD as being “deposited by an inductively coupled plasma source.” (JX-8 at 6:8-12, 8:26-31.) In a third place, the specification discusses HDP-CVD and says that “for example” such “techniques” employ the use of an inductively coupled plasma source. (*Id.* at 5:20-21.) In another location, the specification refers twice to “HDP-CVD techniques.” (*Id.* at 5:25-26, 5:29-30.)

The intrinsic evidence does not clearly establish that the inventor intended to be his own lexicographer and to limit the term “HDP-CVD” to require that it be deposited by an inductively coupled plasma source. The claim itself describes the term by spelling it out in words and then using the acronym as shorthand, “high density plasma-enhanced chemical vapor deposition (HDP-CVD).” (JX-8 at 9:3-5.) Where the specification refers to HDP-CVD generally, it does so in the plural “techniques” as opposed to the singular “technique,” indicating that it is not limited to one method of HDP-CVD deposition such as, for example “deposited by an inductively coupled plasma source.” (*Id.* at 5:20, 5:25, 5:29-30.) The two references to the present invention appear in the detailed description of the invention, which is described as “[a]n embodiment of the present invention ...” (*Id.* at 4:36, 6:8-12, 8:26-31.)

In addition, while claim 1 describes “HDP-CVD” (i.e. high density plasma-enhanced chemical vapor deposition), claim 22 describes at element 1 “depositing a silicon oxide layer formed in an inductively coupled high density plasma chamber by chemical vapor deposition ...” (JX-8 at 12:1-3.) This differing language brings into the matter the doctrine of claim differentiation, which originates in “the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope.” *Karlin Tech. Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971-72 (Fed.Cir.1999). Although the doctrine is at its strongest “where the limitation sought to be ‘read into’ an

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independent claim already appears in a dependent claim,” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed.Cir.2004), there is still a presumption that two independent claims have different scope when different words or phrases are used in those claims. *Kraft Foods, Inc. v. Int'l Trading Co.*, 203 F.3d 1362, 1365-69 (Fed.Cir.2000); *see also Tandon Corp. v. U.S. Int'l Trade Comm'n*, 831 F.2d 1017, 1023 (Fed.Cir.1987).

The presumption is not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history. Qimonda and the Respondents both cite *Seachange Int'l, Inc. v. C-COR, Inc.*, 413 F.3d 1361 (Fed. Cir. 2005), to support their position. In *Seachange* the Federal Circuit reviewed a case in which two independent claims were worded differently; but were alleged by one party to mean the same thing. The context of the review was the denial of a motion for judgment as a matter of law (“JMOL”) and denial of a motion for a new trial in which the court reviewed the evidence in a light most favorable to the non-movant. *Id.* at 1367-1368. The court engaged in a detailed discussion of the intrinsic evidence, including the claims, the specification and the prosecution history of the patent, to arrive at the conclusion that the claims in dispute both included “point to point” networks despite the fact that one of the claims did not specifically call out the term “point to point.”

Among other things, the court in *Seachange* noted that the specification made a number of consistent references to the term “point to point;” but found it was “unclear whether these references to point-to-point are simply the consistent description of one possible embodiment or a description of the invention itself.” *Id.* at 1370. Reviewing the prosecution history, the court noted, for example, that the applicant’s attorney argued:

The Examiner rejected claims 1, 9-12, 19, 20, 23-27, 40, 48-51, 53-55, 63-66 under 35 U.S.C. § 103 as being unpatentable over [Morita] in view of [Benner].

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As an illustrative claim in this grouping, Applicant's claim 1 recites a method in which at least three processor systems are interconnected using a point-to-point two-way channel interconnection with each one of the other processor systems. That is, any one processor system can communicate directly with any one of the other processor systems. The claim also recites that data is stored at each of the processor systems which also stores a portion of a redundant representation of the data. Neither the point to point two-way channel interconnection nor the arrangement of stored data and redundant data is suggested by the combination of Morita and Benner.

Id. at 1371.

After reviewing a number of comments by the examiner and responses by the applicant's attorney, the court explained the "examiner grouped several claims together, including claims 1 and 37(40), and rejected them as a group as being obvious over Morita in view of Benner." *Id.* at 1373. The court said the applicant responded, stating, *inter alia*, that "**applicant will in general treat a single claim as being representative of the group.**" *Id.* at 1370 (emphasis added). The court continued that the applicant "**then selected claim 1 as 'an illustrative claim' and argued that Morita and Benner do not suggest connecting each processor to each other processor via point-to-point, two-way channel interconnections.**" *Id.* at 1373 (emphasis added). The court noted that the applicant also argued that "Morita and Benner do not disclose the arrangement of stored data and redundant data" required by claim 1. *Id.*

The court said the applicant concluded that "in view of the fact that neither Morita nor Benner ... suggest the above-mentioned elements of Applicant's invention ..., it is submitted that the rejection has been overcome by argument." *Id.* The court continued that even though Applicant "reserve[d] its right to later argue that additional ones of the claims are patentably distinct over the combination of references, *Id.* at 29-30. the applicant made no separate patentability argument for claim 37(40), and because the applicant provided 'clear notice of th[e] linkage' between claim 1 and claim 37(40) for the purpose of its argument to overcome the prior

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art rejection on the basis of the ‘point-to-point’ and ‘redundant storage’ limitations, it would be improper to now broadly construe claim 37(40) not to contain those limitations.” *Id.* The court also cited *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1347 (Fed.Cir.1998) (holding that a general statement distinguishing prior art applied to all claims linked to the statement).

In *Kraft Foods*, the Federal Circuit upheld a district court opinion in which it held that differing language in two claims of one patent revealed the same limitation and overcame the presumption of the doctrine of claim differentiation. In that case, the court found, based upon the written description and the prosecution history, that the term “a protecting back panel” in claim 2 had the same meaning as the term “a back panel comprising a flat relatively stiff planar sheet” contained in claim 1. 203 F.3d at 1368. The Federal Circuit explained that the district court focused on the unequivocal declaration in the written description that “[a]ny of the back panels would be constructed of a relatively stiff material such as paperboard or a relatively thick plastic material such as high density polyethylene.” *Id.* The district court further recognized that, in prosecuting application claim 41 (the predecessor to issued claim 2), the inventors previously had required that the “protecting back panel” include an “end portion” to allow the food tray to be displayed vertically. *Id.* at 1368-1369. Although the inventors later amended application claim 41 to eliminate this “end portion” of the “protecting back panel,” they did not indicate that they were eliminating its relatively stiff attribute. *Id.* The district court also noted that the inventors had amended application claim 41 to require that the “protecting back panel” be “non-bendable” in an attempt to overcome a prior art reference disclosing a bag supported by a hinged paperboard panel. In response to this amendment, the examiner had stated that the written description did not support a characterization of the back panel as “non-bendable,” since it described the back panel as composed of paperboard or HDPE (high density polyethylene). *Id.*

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at 1367. The examiner acknowledged that the panel was “stiff,” however, and the applicants subsequently removed this “non-bendable” requirement. *Id.*

Finally, in *Tandon* the Federal Circuit upheld the Commission’s finding that differing language in three independent claims of one patent overcame the presumption of claim differentiation. 831 F.2d at 1023-1024. In that case, one claim referred to a “non-gimballed” first transducer, while two other claims did not mention the “non-gimballed” modifier. *Id.* at 1021-1022. Nevertheless, based upon the prosecution history, in which the inventor asserted that the invention differed from prior art, because, “In contrast, applicants’ system utilizes one head that has an invariant position bearing against one side of the media without spring loading, and this head is nongimballed.” *Id.* at 1023. The court found that nothing in the prosecution history limited the foregoing assertion to a specific claim. *Id.* Therefore, the evidence supported the Commission’s finding that the doctrine of claim differentiation had been overcome, and the three claims with differing language were properly construed to include the “non-gimballed” term. *Id.* at 1023-1024.

Seachange, Kraft and *Tandon* illustrate the type of clear evidence that is lacking in this case to overcome the presumption of applicability of claim differentiation. There is no evidence that the references in the specification to a preferred embodiment relate to claim 1 rather than claim 22. In fact, claim 22 specifically teaches the preferred embodiment when it describes “depositing a silicon oxide layer formed in an inductively coupled high density plasma chamber by chemical vapor deposition.” The evidence does not, however, indicate that all HDP-CVD “techniques” require the use of an inductively coupled plasma source. Further, *Qimonda* does not cite any portion of the prosecution history to support overcoming the presumption of claim differentiation. I find that the doctrine of claim differentiation applies in this case, and that claim

1 necessarily does not refer to a requirement to employ an inductively coupled plasma source, because claim 22 specifically calls out that limitation.

Based on the foregoing, I find that the evidence does not support a finding that the specification teaches that the inventor clearly intended to define HDP-CVD in claim 1 to be limited to HDP-CVD deposited by an inductively coupled plasma source. After examining the claim language and the specification, it is clear to me that the term in element 3 of claim 1 “HDP-CVD insulating material of silicon dioxide” is properly construed as “an insulating material of silicon oxide deposited using a high density plasma-enhanced chemical vapor deposition process.” I find that examination of the extrinsic evidence (such as expert testimony) offered by the parties is unnecessary because the intrinsic evidence is sufficient to understand the meaning of “HDP-CVD insulating material of silicon dioxide.” *Vitronics*, 90 F.3d at 1583 (“In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence.”)¹⁸

2. “Removing the Exposed Portion of the Insulating Material Over the Active Regions”

The term “removing the exposed portion of the insulating material over the active regions” appears in asserted claim 1.

Qimonda’s Position: Qimonda asserts that the asserted claims of the '899 patent require removal of a sufficient amount of the insulating material over the active regions, for the purpose of shortening the subsequent chemical-mechanical polishing (CMP) step. (CIB at 118.)

Qimonda indicates that claim 1 recites “removing at least a portion of the insulating material covering the active regions . . . removing the exposed portion of the insulating material over the

¹⁸ In the event that extrinsic evidence is considered necessary to support my finding here, I note that Qimonda’s expert, Dr. Gutmann, admitted on cross-examination that the Francombe reference illustrates several examples of high-density plasma sources, including “inductive,” “ECR,” “helicon,” and “helical resonator.” (Tr. at 1452:20-1453:17.)

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active regions,” and that claim 22 recites “removing the silicon oxide in the exposed regions.”

(*Id.*)

Qimonda says that Respondents wish to rewrite this limitation to require removal of “all” the insulating material over the active regions “to expose the surface of the semiconductor substrate.” (CIB at 118-119 (citing Tr. at 125:24-126:24; JX-22 at 15).) Qimonda argues “Respondents’ desire to import additional limitations into the claims finds no support anywhere, and it is also inconsistent with specification and the legal proscription against burdening more broadly expressed claim elements with unrecited modifiers.” (*Id.* (citing *SciMed Life Sys.*, 242 F.3d at 1340 (importing limitations from a patent’s specification into the claims is “one of the cardinal sins of patent law”))).)

Qimonda argues that the ‘899 patent specification confirms that the invention does not require removal of “all” of the exposed oxide over the active regions or that it must be removed “in its entirety” until the substrate is exposed. (CIB at 119.) Qimonda asserts that the specification makes clear that the invention solves the over-polishing problem, inherent in prior art CMP planarization techniques, which causes erosion in the STI regions. (*Id.* (citing JX-8 at 2:44-60).) Qimonda says that the ‘899 patent discloses and claims removing just enough oxide to shorten the subsequent CMP step, reciting:

In accordance with the invention, the CMP step is shortened to avoid excessive erosion of the STIs and narrow active regions. In *one embodiment*, shortening of the CMP step is achieved by selectively removing portions of the oxide from the triangular-shaped oxide regions above the active areas. By reducing the amount of oxide needed to be removed in order to expose the active areas, the CMP step is shortened. Typically, *the amount of oxide that is removed from the active regions is sufficient to effectively shorten the CMP step* so as to expose the active areas without excessive oxide erosion occurring in the STIs, thus resulting in a substantially planar surface.

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(CIB at 119 (citing JX-8 at 6:48-59) (emphasis added by Qimonda). Qimonda argues that the above description of “one embodiment” of the invention, as well as “other sections” of the patent, make clear that after selective removal to reduce the amount of oxide needed to be removed, the subsequent CMP step effectuates the complete removal of the remaining “oxide layer in order to expose the active areas.” (*Id.* (citing JX-8 at 6:19-25; 3:56-59 (“Portions of the insulation layer is selectively removed, enabling the subsequent planarization step, *which exposes the active regions*, to be shortened.”)) (emphasis added by Qimonda.); CX-202C at Q. 88 (“there would have been no real reason for completely removing the oxide, because the following CMP step would have removed it anyway”)).)

Qimonda argues that the specification of the ‘899 patent makes it clear that the described embodiments are only for purposes of explanation and better understanding of the invention, and are not intended to limit it, quoting:

It should be noted that the process steps and structures described herein do not necessarily form a complete process flow for manufacturing integrated circuits. It is anticipated that the present invention may be practiced in conjunction with integrated circuit fabrication techniques currently used in the art. As such, only the process steps which are necessary for an understanding of the present invention are included.

(CIB at 120 (citing JX-8 at 4:29-36; 8:38-55).)

Qimonda avers that the specification also provides a more detailed description of what it calls out as a preferred embodiment, which does describe complete removal of the oxide over the exposed active regions; but Qimonda alleges, it nowhere states that this is in any way required by the invention. (CIB at 120 (citing JX-8 at 4:17-20, Figs. 4A-4D, 7:1-8:25).) Qimonda argues that the law provides that the “claims of a patent are not limited to the preferred embodiment” or specific examples disclosed in the specification, especially where, as here, the intrinsic evidence nowhere *requires* it but, in fact, states the opposite is true. (*Id.* (citing *Karlin*, 177 F.3d at 973;

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JX-8 at 6:48-59 (amount removed need only be “sufficient to effectively shorten the CMP step”)).)

Qimonda argues that the prosecution history of the ‘899 patent supports its position, because the inventor repeatedly expressed his understanding that the invention calls for removal of “at least a portion” of the oxide layer. (CIB at 120-121 (citing JX-9 at QAG-665-ITC-0189248-50, QAG-665-ITC-0189315).) Qimonda asserts that the Patent Office confirmed this exact understanding and interpretation of the claims, when the ‘899 patent Examiner stated in the Examiner’s Reasons for Allowance, “{The p}rior art of record does not teach or suggest the claimed invention in which an inverse active area mask is used to remove *at least a portion* of the insulating layer from the active regions as claimed.” (*Id.* (citing JX-9 at QAG-665-ITC - 0189318)) (emphasis added by Qimonda).

In its reply brief, Qimonda argues that the “central issue with respect to the ‘899 Patent” is the construction of the term “removing at least a portion of the insulating material covering the active regions [including] removing the exposed portion of the insulating material over the active regions” in claim 1, and “removing the silicon oxide in the exposed regions” in claim 22. (CRB at 53-54.)

Qimonda argues that in their reply brief that Respondents “ignore that even the lone part of the specification (JX-8, col. 7 and Figs. 4A-4D) on which they rely for this position is described by the patent as merely ‘a preferred embodiment’ (JX-8, 4:18-21) and ‘one embodiment’ (*Id.*, 7:7).” (CRB at 54.) Qimonda asserts that the law is clear that the claims of a patent are not limited to the preferred embodiment. (*Id.* (citing *Karlin*, 177 F.3d at 973).)

Qimonda argues that teachings of other sections of the patent, including the express recitations of the purpose of the invention, are directly contrary to Respondents’ proposed

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construction. Qimonda quotes the specification to say:

SUMMARY OF THE INVENTION

*Portions of the insulation layer is selectively removed, enabling the subsequent planarization [CMP] step, which **exposes the active regions**, to be shortened. . . .*

The present invention provides an improved method for filling the STI regions with a substantially gapless oxide layer and a planarization scheme which shortens the CMP step in order to reduce oxide erosion. . . .

In accordance with the invention, the CMP step is shortened to avoid excessive erosion In one embodiment, shortening of the CMP step is achieved by selectively removing portions of the oxide from the triangular shaped regions above the active areas. By reducing the amount of oxide need to be removed in order to expose the active areas, the corresponding CMP step is shortened.

*Typically, the **amount of oxide that is removed** from the active regions is is sufficient to effectively shorten the CMP step so as to expose the active areas without excessive oxide erosion occurring in the STIs, thus resulting in a substantially planar surface. . . .*

It should be understood that the embodiments described herein are merely exemplary and that a person skilled in the art may make reasonable variations and modifications to these embodiments utilizing functionally equivalent elements to those described herein. . . . Any and all such variations and modifications, as well as others which may become apparent to those skilled in the art are intended to be included with[in] the scope of the invention as defined by the appended claims.

(CRB at 54-55 (citing JX-8 at 3:49, 3:56-59, 4:25-29, 6:48-59, 8:39-56)) (emphasis added by Qimonda.)

Qimonda alleges that the Patent Office Examiner and patentee explicitly confirmed in the prosecution history this broader meaning of the claim language in allowing the claims:

Prior art of record does not teach or suggest the claimed invention in which an inverse active area mask is used to remove at least a portion of the insulating layer from the active regions as claimed.

(CRB at 55 (citing JX-9 at QAG-665-ITC-0189318 (emphasis added by Qimonda.); *Phillips*, 415 F.3d at 1317 (“[T]he prosecution history provides evidence of how the PTO and the inventor understood the patent.”)).)

Qimonda argues that this intrinsic evidence completely undercuts any notion that the claimed invention requires the removal of “all” or the entirety of the exposed oxide above the

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active regions, and it clearly confirms that the oxide above the active regions need only be reduced by a portion or amount that is “sufficient” to “shorten the CMP step.” (CRB at 55-56.) Qimonda asserts that despite the extensive testimony at trial concerning these sections of the specification and their direct relevance to the claim construction issue, they are nowhere referenced in Respondents’ or Staff’s briefs. (*Id.* (citing Tr. at 351-354).)

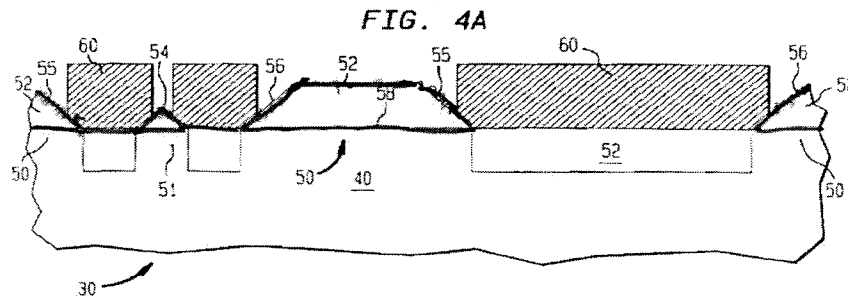
Qimonda argues that the law proscribes importing unrecited limiting modifiers into unrestricted claim language. (CRB at 55-56, fn. 28-29 (citing *Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 987 (Fed. Cir. 1988); *Prot. Optics, Inc. v. Panoptx, Inc.*, 458 F. Supp. 2d 1053, 1060 (N.D. Cal. 2006) (“To read the claims as requiring the material to ‘keep out all contaminants’ would impermissibly import into the claims an inference based on a single embodiment.”)).) Qimonda argues that the actual teachings of the patent are also completely at odds with Respondents’ unsupported claim that, “[t]he primary thrust of the invention of the ‘899 Patent is to reduce the amount of CMP required to planarize the surface of the wafer . . . by removing as much insulating material as possible in an etch step before the CMP step.” (*Id.* (citing at RIB 131-132)) (emphasis added by Qimonda.)

Qimonda argues that from the above quoted teachings, it can also be seen that in the context of the invention as described, this step of selective removal of oxide is not intended to “expose the semiconductor substrate” as Respondents argue, but rather to shorten the CMP step so that this subsequent step can expose it. (CRB at 56.) Qimonda alleges that this purpose of the final CMP step (*versus* the CMP-shortening “removal” step) is explicitly called out in the patent, quoting: “[t]he purpose of the CMP step is to polish the surface of the substrate to . . . remove the oxide layer in order to expose the active areas” (*Id.* (citing JX-8 at 6:22-24.)) Qimonda says this disclosure also clearly contemplates that the final CMP step would remove a “layer” of

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oxide as opposed to only “unexposed” triangles as Respondents argue, and thus also squarely undercuts their position (RIB at 141) that the “only description in the ‘899 patent of exposed oxide being left over the active region is found in Figure 1B.” (*Id.*) In view of this, Qimonda argues, Respondents’ statement that “[b]ecause *only* the triangles 62 in Fig. 4C remained above the active areas before planarizing, the planarization process is much shorter” does not accurately delineate the full scope of the ‘899 invention. (*Id.* (citing RIB at 133, 142)) (emphasis added by Qimonda).

Referring to extrinsic evidence, Qimonda argues that at trial, when asked by Respondents’ counsel to visually identify on Figure 4A “the exposed portions” (by a jagged red line), Dr. Gutmann showed that the top surface of this exposed region does not necessarily mean the entire amount of oxide down to the substrate, illustrating:



(CRB at 56-57 (citing RDX-440; Tr. at 312:16-313:21).)

Qimonda argues that contrary to the Staff’s suggestion, the testimony of Qimonda’s expert, Dr. Gutmann, is not “at odds with the plain language of the claim and the express disclosures of the specification” and does not “seek[] to contradict or expand plain claim language.” (CRB at 57 (citing SIB 48-49).) Qimonda argues that Dr. Gutmann’s testimony is consistent with the intrinsic evidence, and helps explain why a person of ordinary skill would have understood the claims of the ‘899 patent to require removal of only a “sufficient” amount -

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and not “all” - of the oxide above the active regions to shorten the CMP step’s exposure of the substrate. (*Id.*) Qimonda says Dr. Gutmann explained why it would have been clear to a person of ordinary skill that a better approach, consistent with the purpose of the invention, would have been to stop the etch before reaching the nitride layer. (*Id.* (citing CX-202C at Q. 88).) Qimonda continues that he also directly rebutted the argument in Respondents’ brief at page 134, that “the oxide remaining above the active areas in the prior-art process (Figure 1B) required a longer CMP time, which caused oxide erosion (Figure 1C)” and that “[b]y removing the exposed oxide over the active areas and leaving *only* the triangles 62 (Figure 4C), the method of the ‘899 Patent shortened the CMP process and resulted in a planar surface with no oxide erosion (Figure 4D).” (CRB at 57 (citing Tr. at 294:7-16).) Qimonda argues that on this, the specification of the ‘899 patent also makes clear that the problem with the prior art lies in the “uneven and non-planar topography 24 over the wide STIs 16” and not the thin oxide layer 18. (*Id.* (citing JX-8 at 2:39-43).)

Respondents’ Position: Respondents contend that the term “removing the exposed portion of the insulating material over the active regions” means removing the insulating material from those areas not covered by the photoresist layer to expose the surface of the semiconductor substrate. (RIB at 137-138 (citing JX-22 at 15).) Respondents say that Qimonda and Staff propose that the term be given its plain and ordinary meaning; but that they do not articulate what they contend the plain and ordinary meaning of the phrase is. (*Id.* (citing JX-22 at 15).)

Respondents note that following Order No. 19, Qimonda is “precluded from offering any definitions for claim terms: (1) that Qimonda defined as having a ‘plain and ordinary meaning’ or ‘plain meaning’ in the March 12, 2009 joint construction submission; and (2) that were not

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specifically defined in Qimonda's March 17, 2009 initial expert reports." (RIB at 138 (citing Order No. 19).) Respondents aver that the term "removing the exposed portion of the insulating material over the active regions" is one of the terms for which Qimonda's proposed construction was merely "plain and ordinary meaning." (*Id.* (citing JX-22 at 15).) Respondents add that Qimonda's initial expert report on the '899 patent did not provide a construction for this term. Therefore, they reason, following Order No. 19, Qimonda is precluded from offering a definition for this term. (*Id.*)

Respondents assert that under their construction, all of the exposed material above the active region must be removed to practice the invention. This, they argue, is consistent with the claim language and the specification. (RIB at 138.)

Respondents assert that in context, the relevant limitation of claim 1 recites:

. . . removing at least a portion of the insulating material covering the active regions . . . wherein removing at least a portion of the insulating material from the active regions includes . . . depositing a mask layer over the insulating material; patterning the mask layer to expose at least a portion of the insulating material over the active regions; and removing the exposed portion of the insulating material over the active regions, leaving unexposed portions of the insulating materials

(RIB at 138 (citing JX-8 at 9:7-19).)

Respondents believe that Qimonda contends that since the claim states a portion of the insulating material covering the active regions must be removed, it does not require removing all of the insulating material over any specific regions. (RIB at 138-139.) Respondents assert that Qimonda omits one of the limitations of the claim. Respondents say that the patent defines the portion of insulating material to be removed as the material left exposed when the mask layer is deposited, quoting: "removing *at least a portion* of the insulating layer from the active regions includes . . . patterning the mask layer *to expose at least a portion* of the insulating material over

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the active regions.” (*Id.*) (emphasis added by Respondents). Respondents note that only a portion — not all — of the insulating material over the active layers is exposed. (*Id.*)

Respondents assert that this “exposed material” is the “at least a portion of the insulating material over the active regions” that must be removed, as the claim continues, “and removing the exposed portion of the insulating material over the active regions.” (*Id.*) Respondents argue although some insulating material may be left over the active regions, any such remaining material must be unexposed, as the claim explicitly states, “leaving *unexposed* portions.” (*Id.*) (emphasis added by Respondents).

Respondents argue that the patent confirms that the exposed portion must be removed entirely. (RIB at 139.) First, they say, “removing the exposed portion of the insulating material over the active regions” must mean removing the entire exposed portion because the claim language requires removing “the exposed portion.” (*Id.*) Respondents assert that the word “the” is a definite article, meaning that the noun “portion” that it refers to has been previously specified. (*Id.*) In this case, they say, “portion” was previously specified when the mask layer was patterned “to expose at least a portion of the insulating material over the active regions.” (*Id.*) Respondents argue that this phrase defines the exposed portion to be the insulating material that is not covered by the patterned mask layer. (*Id.*) Respondents say that the meaning of “the exposed portion” is further clarified by the requirement that unexposed portions of the insulating material remain. (RIB at 139.) Respondents argue that the patent, therefore, teaches leaving unexposed portions behind, and it does not describe a process that leaves behind any of the exposed portions. (*Id.*) Respondents note that the claim language requires that “the exposed

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portion” be removed. (*Id.* (citing JX-8 at 18).) Respondents argue that a person of ordinary skill in the art would understand this phrase to mean removing all of the exposed portions. (*Id.*)¹⁹

Respondents argue that the only embodiment described in the '899 patent clearly states that “removing the exposed portion of the insulating material over the active regions” means removing the entire exposed portion so as to expose the substrate. (RIB at 139-140.)

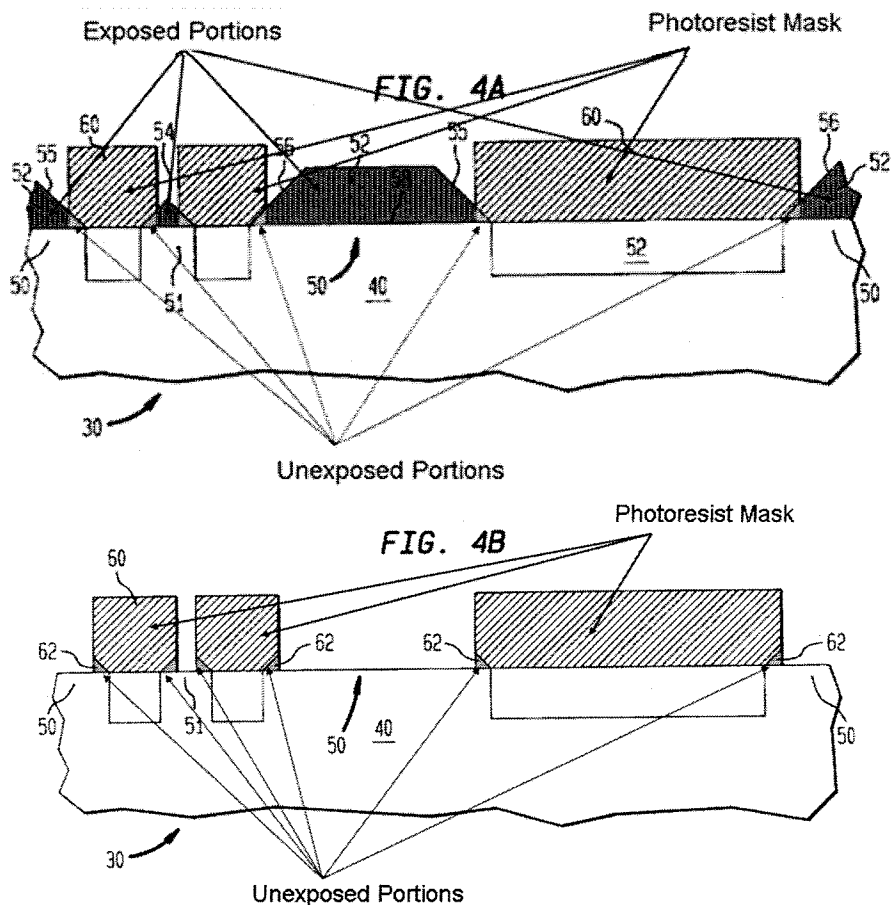
Respondents aver that the '899 patent specification describes only once the process of removing the exposed portion of insulating material, and it clearly calls for removal of all the oxide in the areas not covered by the photoresist, quoting:

The regions of the oxide layer 52 unprotected by photoresist are then etched using a suitable etching technique (such as RIE). The RIE etching step is oxide selective. By employing an oxide selective RIE, the silicon substrate and resist act as etch stops. Thus, the RIE removes only the HDP-CVD oxide layer 52, **exposing the semiconductor substrate surface above those areas not covered by the photoresist layer 60.**

(RIB at 139-140 (citing JX-8 at 7:45-52)) (emphasis added by Respondents). Respondents reason that the surface of the substrate will not be exposed unless all of the oxide material above it is removed. (*Id.*)

Respondents argue that the figures of the '899 patent clearly show that “removing the exposed portion of the insulating material over the active regions” means removing the entire exposed portion. (RIB at 140-141.) They refer to a comparison of Figures 4A and 4B of the '899 patent shown below, saying the exposed and unexposed portions of the insulating material are each highlighted.

¹⁹ Respondents argue, at fn. 42, that one of ordinary skill in the art related to the '899 patent would have a graduate degree in a relevant discipline such as electrical engineering, materials science, chemical engineering, physics, or mechanical engineering. This person would also have had two to four years experience in IC technology, specifically in CMP or IC process flows. (CX1046 at Q. 12.)



Respondents argue that the text in the '899 patent specification discussing Figure 4B confirms that all the exposed oxide 52 is removed and that only the unexposed wedges 62 are left, quoting:

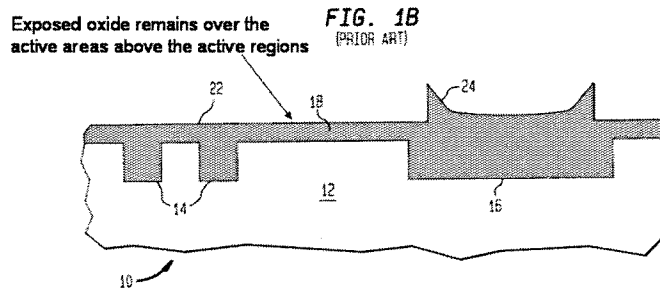
As shown in FIG. 4B, the RIE etching process results in the removal of portions of the HDP-CVD oxide layer 52 overlying the active regions. It can also be seen that wedge shaped portions 62 of the HDP-CVD oxide layer 52 are left on the surfaces of the edges of the active areas after the RIE etching step. These wedge shaped portions 62 are removed in a subsequent CMP step.

(RIB at 140-141 (citing JX-8 at 7:53-59).) Respondents assert that these figures and the accompanying description clearly show all of the exposed insulating material being removed. (*Id.* at 141.)

Respondents add that the inventor of the '899 patent knew how to show leaving exposed oxide over the active regions, but did so only when describing the prior art. Respondents relate

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that the only description in the '899 patent of exposed oxide being left over the active regions is found in Figure 1B, which shows a prior-art teaching:



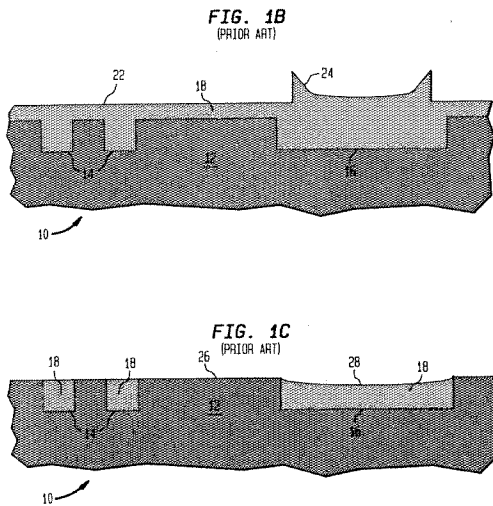
(RIB at 141-142 (citing JX-8 at Fig. 1B (annotated)).) Respondents say that the blue region in this prior-art figure is the silicon oxide, and the figure shows the state of the oxide and substrate after what the '899 patent terms “a conventional etchback,” in which the oxide layer 18 is left over the active region. (*Id.* (citing JX-8 at 2:36-38).) Respondents argue that the inventor knew how to show exposed oxide being left over the active regions, yet he intentionally did not show any such oxide when describing his invention. Respondents state that the inventor’s description of the invention specifically discussed removing all the exposed oxide, thus “exposing the semiconductor substrate surface above those areas.” (*Id.* (citing JX-8 at 7:45-52).)

Respondents argue that the '899 patent specifically relies on the shortened CMP step to solve the oxide erosion problem. (RIB at 142-143.) They say that the '899 patent specification explains, because only the triangles 62 in Fig. 4C remain above the active areas before planarizing, the planarization process is much shorter, and the wide isolation trenches are not as likely to suffer from oxide erosion. (*Id.* (citing RX-723 at Q. 24).) Respondents assert that this benefit of the invention of the '899 patent is best seen by contrasting Figures 1B and 1C with Figures 4C and 4D from the patent. (*Id.*) Respondents state that Figures 1B and 1C depict the prior-art STI method, whereas Figures 4C and 4D depict the invention of the '899 patent. (*Id.*) Respondents say the side-by-side comparison below shows, the oxide remaining above the active

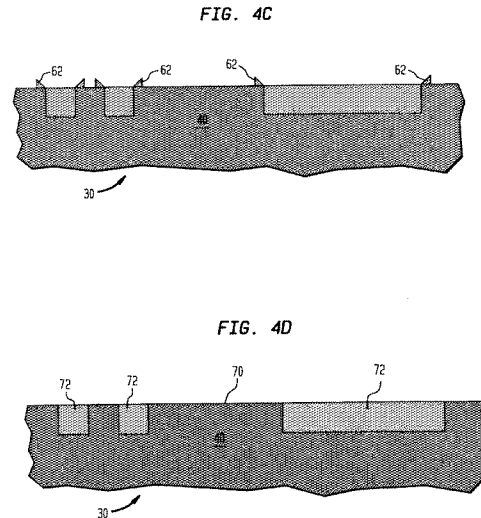
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areas in the prior-art process (Figure 1B) required a longer CMP process that in turn resulted in oxide erosion (Figure 1C). (*Id.*) Respondents assert that by removing the exposed oxide over the active areas and leaving only the triangles 62 (Figure 4C), the method of the '899 patent shortened the CMP process and resulted in a planar surface with no oxide erosion (Figure 4D). (*Id.*)

Prior Art



Invention of the '899 Patent



Respondents say that Qimonda's argument that the language "removing the exposed portion of the insulating material . . ." allows leaving exposed oxide above the active areas: (1) violates Order No. 19, which precludes Qimonda from offering a claim construction for this term; and (2) eviscerates the very teaching needed to achieve one of the key advantages described in the '899 patent - minimizing the length of the CMP step to avoid the problem of oxide erosion. (RIB at 143.)

Respondents argue that the phrase "removing the exposed portion of the insulating material over the active regions" must mean "removing the insulating material from those areas not covered by the photoresist layer to expose the surface of the semiconductor substrate." (RIB

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at 143.) Respondents reason that this meaning is the only possible meaning consistent with the plain language as read in view of the teachings of the specification. (*Id.*) Respondents aver that the '899 specification consistently states that the substrate must be exposed and that the invention is an improvement over the prior art because it removes the insulating material over the active regions. (*Id.*)

In their reply brief, Respondents argue that Qimonda continues to rely on the phrase “removing at least a portion of the insulating material,” taken out of context, to support its position that the '899 patent does not require removing all of the exposed oxide. (RRB at 66 (citing CIB at 118).) Respondents say that Qimonda’s argument ignores that the patent explicitly defines what the term “removing at least a portion of” means. (*Id.*) Respondents aver that the patent claims a process in which (1) a mask layer is patterned to expose some portions of the insulating material but not others, and (2) only the exposed portions are removed. (*Id.*) They conclude the claim is clear and direct — “removing at least a portion of the insulating material” means removing the exposed portions while leaving unexposed portions. (*Id.*)

Respondents repeat their argument that the only embodiment described in the specification — which includes the only discussion of how to remove the “exposed portions” — unquestionably describes removing all the exposed oxide above the active areas so as to expose the substrate. (RRB at 66-67 (citing JX-8 at 7:45-52).) Respondents argue that, Qimonda now relies on a different passage from the specification, cited for the first time in its initial post-hearing brief, to support its position that the patent does not require removing all the exposed oxide. (*Id.* at 67 (citing at CIB 119-120; JX-8 at 6:48-59).) Respondents argue that Qimonda’s reliance is misplaced, referring to the next paragraph, which they say makes clear that the referenced excerpt is describing the size of the unexposed triangles that remain after the etch

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step, not a layer of exposed oxide.²⁰ (*Id.*) Respondents set forth the entire section of the specification — Qimonda’s excerpt and the immediately following paragraph — to illustrate their point, as follows:

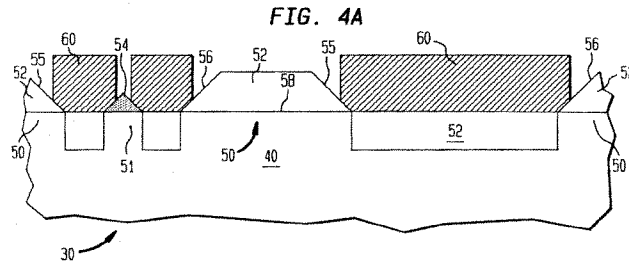
In accordance with the invention, the CMP step is shortened to avoid excessive erosion of the STIs and narrow active regions. In one embodiment, shortening of the CMP step is achieved by selectively removing portions of the oxide from the triangular-shaped oxide regions above the active areas. By reducing the amount of oxide needed to be removed in order to expose the active areas, the corresponding CMP step is shortened. Typically, the amount of oxide that is removed from the active regions is sufficient to effectively shorten the CMP step so as to expose the active areas without excessive oxide erosion occurring in the STIs, thus resulting in a substantially planar surface.

Typically, **the time needed to remove the amount of oxide in triangles 54** above the narrow active areas 51 is sufficiently short to result in a substantially planar surface in the STIs. **As such, the amount of oxide remaining above the wide active regions 50 should not exceed the amount in the triangles 54.** If a portion of center if the oxide region 52 is removed, **then each of the remaining side portions should not exceed about the amount of oxide in the triangle 54.**

(RRB at 66-67 (citing JX-8 at 6:48-67) (emphasis added by Respondents).

Respondents argue that the paragraph Qimonda omits explains that the “amount of oxide that is removed,” refers to the size of the openings (patterning) in the mask layer, not a layer of exposed oxide. (RRB at 66-67.) Respondents argue this is what it means when it says that “the amount of oxide remaining above the wide active regions 50 should not exceed the amount in triangles 54.” (*Id.*) Respondents assert that triangles 54 are the triangles of oxide over the narrow active regions, colored orange in the version of Figure 4A shown below:

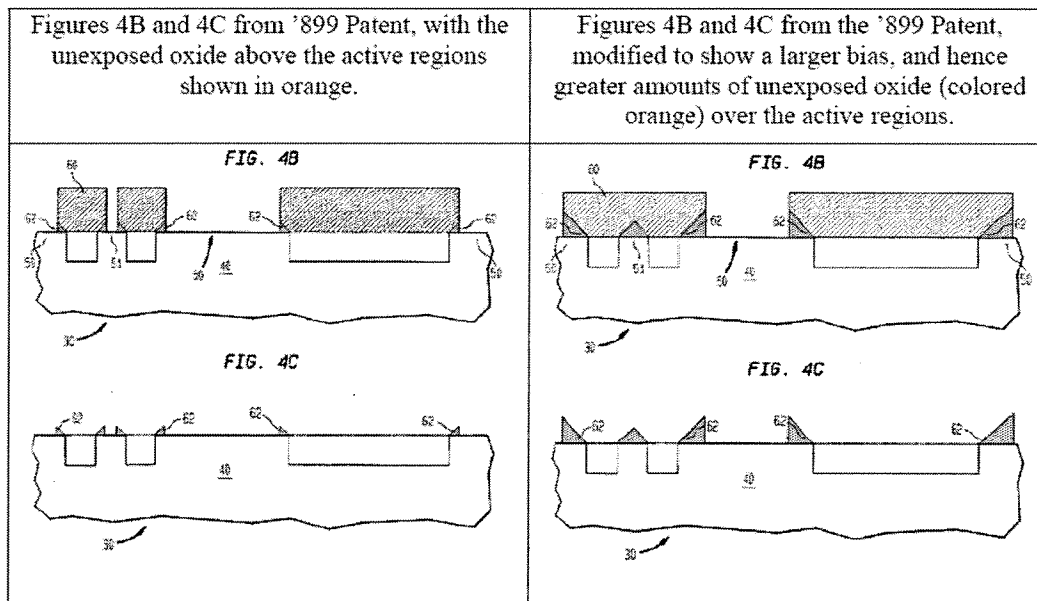
²⁰ Respondents aver that this new theory was never mentioned by Qimonda’s own expert, Dr. Gutmann, either in his expert report or in his witness statement (CX-202C).



(RRB at 67-68 (citing JX-8 at Fig. 4A)) (emphasis added by Respondents to show triangle 54 in orange). Respondents posit that the specification actually explains that the amount of oxide remaining above the wide active regions 50 - the triangles 62 shown in Figure 4B, below - should not exceed the amount in the triangles 54. (*Id.* at 68 (citing JX-8 at 6:60-67).)

Respondents reason that this requirement relates to the amount of “bias” in the mask layer. The larger the bias, they say, the more oxide is left over the active regions after the etch step.

Respondents cite as examples claims 3-5, 10-12, and 17-19, which address different amounts of bias, and hence different amount. (*Id.*) They illustrate this concept in the figures appearing below, where Figures 4B and 4C of the '899 patent are shown next to a version of these same figures as modified to show a larger bias:



(RRB at 68.)

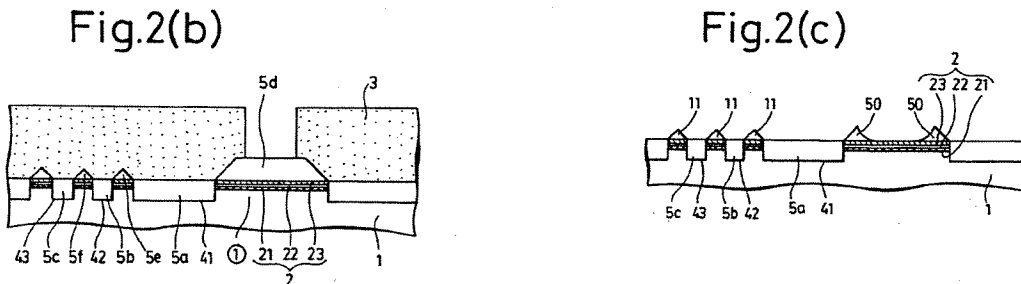
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Respondents assert that the figures show, when the bias of the mask is increased, the openings in the mask layer 60 get smaller. (RRB at 68-69.) Respondents say that smaller openings in the mask layer result in less exposure and thus leave more of the oxide covered. (*Id.*) Respondents reason that this is why the triangles 62 in the figures on the right are larger than the triangles 62 in the figures on the left. (*Id.*)

Respondents argue that when Qimonda's excerpt from the specification states that "[b]y reducing the amount of oxide needed to be removed in order to expose the active areas, the corresponding CMP step is shortened," it does not mean, as Qimonda suggests, a layer of exposed oxide is left. (RRB at 69.) Rather, they say, as the immediately following paragraph describes, it refers to the width of the opening in the mask, and hence the size of the triangles remaining after the etch step, and it ensures that "the amount of oxide remaining above the wide active regions 50 should not exceed the amount in the triangles 54." (*Id.* (citing JX-8 at 6:60-67).) Respondents argue that this was an important concept to the inventor, as he included 9 claims — claims 3-5, 10-12, and 17-19 — directed to the amount of bias and setting forth different possibilities for the amount of bias. (*Id.*) Respondents argue that the specification provides guidance that in selecting the amount of bias, "the amount of oxide remaining above the wide active regions 50 should not exceed the amount in the triangles 54." (*Id.*) Respondents say that the only place where a layer of exposed oxide is mentioned is in the description of the prior-art method (Figure 1B) that resulted in the very oxide erosion problems (Figure 1C) the '899 patent was trying to solve. (*Id.*)

Respondents re-emphasize that the prosecution quoted by Qimonda in its initial brief specifically states "as claimed." Respondents argue that the prosecution statement cited by Qimonda does nothing more than refer back to the claim language. (RRB at 69-70.)

Respondents assert that at least one of the prior-art references of record - Gocho (RX-598) - clearly shows removal of “at least a portion of” the insulating material, as demonstrated in Gocho Figures 2(b) and 2(c), which show portions of insulating material 5d being removed so as to leave triangles 50:



(RRB at 70.)

Respondents argue the examiner’s statement was not meant to highlight the novelty of removing “at least a portion of the insulating layer” because that limitation was practiced by the prior art. Instead, a fair reading of the examiner’s comment would be that it expressed doubt that a biased inverse active area mask was used to perform the removal. (RRB at 70-71.)

Respondents argue that Qimonda’s only support for the contention that the claim language contemplates leaving some exposed oxide is purely extrinsic evidence - namely, its own expert’s opinions. (RRB at 71.) Respondents assert that Dr. Gutmann’s opinions are not consistent with the intrinsic record. (*Id.*) Respondents say that the claim language itself states that “the exposed portion” is to be removed, and the only embodiment describing such removal teaches using the substrate as an etch stop, thus removing all the exposed oxide. (*Id.* (citing JX-8 at 9:16-20, 7:45-52).)

Commission Investigative Staff’s Position: Staff opines that the central dispute over this critical phrase turns on whether this element requires the removal of all or only a portion of the insulating material over the exposed active regions. (SIB at 44.) Staff concurs with

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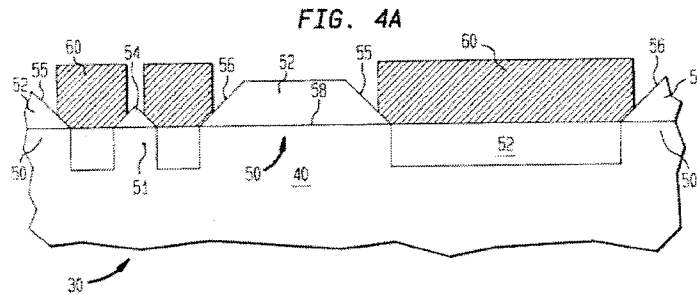
Respondents' construction which they indicate is "removing the insulating material from those areas not covered by the photoresist layer to expose the surface of the semiconductor substrate." (*Id.* (citing RPHB at 152; JX 22 at 15).)

In Staff's opinion a careful reading of the claims provides strong support for Respondents' construction. Staff asserts that claim 1 specifically "defines" what constitutes "removing of at least a portion of the insulating material from the active regions ..." (SIB at 45-46 (citing JX-8 at 9:16-17).) Staff says that claim 1 teaches depositing a mask "to cover" the active regions with the mask pattern designed "to expose at least a portion of the insulating material over the active regions." (*Id.* (citing JX-8 at 9:16-17).) Staff avers that the claim continues setting forth the critical language of "removing the *exposed* portion of the insulating material over the active regions, *leaving unexposed portions* of the insulating material ..." (*Id.* (citing JX-8 at 9:18-19)) (emphasis added by Staff). Staff argues that the claim explains that the removed portion is the *exposed portion* of the insulating material covering the active region(s), that is, the insulating material that was exposed by the mask pattern, as opposed to the insulating material that remained protected by the mask and still remains covered by the photoresist (the "unexposed portions of the insulating material"). (SIB at 45-46.) In this context, Staff claims, it is clear that the claim requires that all of the exposed portion of the insulating material be removed. Staff argues that interpreting the claim to distinguish between the exposed and unexposed portions of the insulating material fully comports with the specification and the preferred embodiments. (*Id.*) Staff concludes that "nowhere in the recited language did the patentees qualify that removal could consist of some indeterminate amount." (*Id.*)

Staff argues that the specification is fully in accord with the Respondents' proposed construction. Staff says that the only preferred embodiment of the patent confirms that the entire

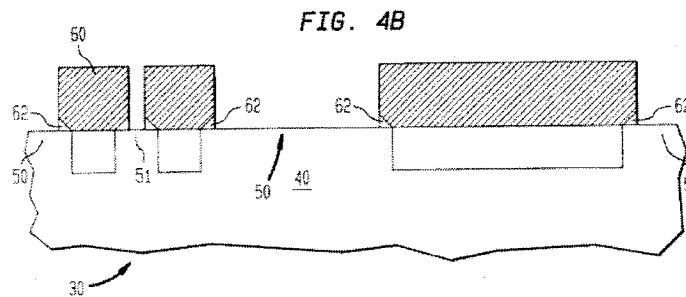
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exposed portion of the oxide over the active regions must be removed. (SIB at 46.) Staff points to Figure 4A, shown below, as depicting an oxide layer 52 covering an active portion of the substrate 50. (*Id.* (citing JX-8 at 7:4-29).) They say a portion of the oxide layer 52 is covered by the photoresist layer 60. (*Id.* (citing JX-8 at 7:27-29).)



(SIB at 46.)

Staff continues that Figure 4B, shown below, illustrates the subsequent removal of the oxide layer 52 by an etching process such as RIE. (SIB at 46-47 (citing JX-8 at 7:53-55).) Staff asserts that the result, depicted below, is the removal of the oxide layer 52 (shown in Figure 4A, above) over the active portion of the substrate 50 not covered by the photoresist layer 60.



(SIB at 46-47.)

Staff concedes that the etching process does leave behind small wedge shaped portions 62 of the oxide layer; but points out that these wedge shaped portions are covered by the photoresist layer and are thus unexposed. (SIB at 47.) Staff asserts that Figure 4B clearly

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discloses that all of the oxide layer over the active portion of the substrate not covered by a photoresist is removed. (*Id.*)

Staff indicates that in discussing these figures, the specification provides that “[t]he regions of the oxide layer 52 unprotected by photoresist are then etched using a suitable technique (such as RIE). The RIIIE (sic) etching step is oxide selective. By employing an oxide selective RIE, the silicon substrate and resist act as etch stops. Thus, the RIE removes only the HDP-CVD oxide layer 52, exposing the semiconductor substrate surface above those *areas not covered by the photoresist layer.*” (SIB at 47 (citing JX-8 at 7:45-52)) (emphasis added by Staff). Staff concludes that the specification and figures confirm that the exposed oxide layer is completely removed. (*Id.*)

In their reply brief, Staff notes that Qimonda never discusses the express language of claim 1, which they say fully supports the Staff’s and Respondents’ construction. Staff reiterates its argument contained in its initial brief regarding the language of the claim and specification. (SRB at 8.)

Staff adds that Qimonda proposed a plain and ordinary meaning for this term. (SRB at 9 (citing JX-22 at 15).) Staff argues that now Qimonda argues that the phrase is qualified by an indeterminate phrase such as “removing [some or most of] the exposed portion of the insulating material over the active regions, leaving unexposed portions of the insulating materials ...” (*Id.*) Staff asserts there is no support for such an alteration, and the express language of claim 1 dictates against such a qualification. (*Id.* (citing *Bincon, Inc. v. Strauman Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006); *Innova/Pure Water, Inc.*, 381 F.3d at 1119).)

Staff again refers to the specification and prosecution history as being fully in accord with Respondents’ construction. Staff says that Qimonda admits that the preferred embodiments

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contained in figures 4A-4D “describe the complete removal of the oxide over the exposed active regions ...” (SRB at 9-10 (citing CIB at 120).) Staff argues that the selected portions of the specification upon which Qimonda relied do not distinguish between the exposed and unexposed portions of the active regions during oxide removal. (*Id.* (citing JX-8 at 3:56-59. (“Portions of the insulating layer is [sic] selectively removed, enabling the subsequent planarization step, which exposes the active regions, to be shorted.”)).) Staff points out that, although claim 1 provides for “removing at least a portion of the insulating material from the active portion covering the active regions ...” (*id.* (citing JX-8, 9:7-8)) the claim specifically continues to define that selective removal by detailing the removal of the exposed portions of the insulating material over the active regions, while the unexposed portions remain. Staff concludes that the statements cited by Qimonda reflect the first generalized part of claim 1; but they cannot be interpreted as reading out claim 1’s distinction between exposed and unexposed insulating material over the active regions. (*Id.*)

Directing their attention to the prosecution history, Staff focuses on the examiner’s notice of allowability which, they say, provides that the prior art “does not teach or suggest the claimed invention in which an inverse active area mask is used to remove at least a portion of the insulating layer from the active regions *as claimed* ...” (SRB at 10 (citing JX-9 at QAG-665-ITC-0189318)) (emphasis added by Staff). Staff points to the “as claimed” qualification as being in full accord with the fact that claim 1 specifically distinguishes between exposed and unexposed areas of the insulating material. (*Id.*)

Discussing extrinsic evidence, Staff points out that Dr. Gutmann, Qimonda’s expert, opined that the term does not require that all of the exposed portion of the oxide layer be removed. (SIB at 47-48 (citing CX-202C at Q. 86-87).) Staff points out that Dr. Gutmann

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admitted during cross-examination that the only preferred embodiment of the patent discloses the substrate as the etch stop and the removal of all of the exposed oxide layer over the active areas. (*Id.* (citing Tr. at 303-304).) Staff says Dr. Gutmann testified that “‘a person of ordinary skill at the time of [*sic*] the ‘899 patent was filed would have understood that the etch should be stopped before the oxide over the device islands is eliminated ...’ to prevent comprising [*sic*] the nitride layer necessary to protect the silicon surface during the CMP process.” (*Id.* at 48 (citing CX-202C at Q. 87-88).) Staff states that in Dr. Gutmann’s view the major point and context of the patent is to remove oxide over the active regions to shorten the CMP step and, thus, the preferred embodiments merely “illustrate the core of the invention.” (*Id.* (citing Tr. at 234, 351-352).)

Staff contrasts the foregoing with the testimony of Dr. Bravman, Respondents’ expert, who opined that the claim terms and specification clearly teach and disclose that all of the exposed portion of the oxide over the active regions must be removed. (SIB at 47-48 (citing RX-1084C at Q. 35-43).) Staff explains that in Dr. Bravman’s opinion, “the patent teaches using an oxide selective reactive ion etch for removing the exposed portion of the insulating material. This type of material will remove the oxide layer at a much faster rate than the nitride etch stop layer beneath it. This faster removal allows the removal step to be designed to leave the nitride layer substantially intact.” (*Id.* (citing RX-1084C at Q. 43).)

Staff argues that the testimony provides some support for Respondents’ construction. They assert that Dr. Gutmann’s opinion is at odds with the plain language of the claims and the express disclosures in the specification. (SIB at 47-48.) They say the disclosures undermine Dr. Gutmann’s position that one of ordinary skill in the art would have known that some uncertain amount of oxide would remain after applying the steps taught and disclosed by the ‘899 patent. (*Id.* at 48-49.) Staff asserts that Dr. Gutmann’s opinion fits within the Federal Circuit’s

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admonition that expert testimony that seeks to contradict or expand plain claim language should be given little weight. (*Id.* at 49 (citing *Markman*, 52 F.3d at 981).) Staff contrasts this with Dr. Bravman’s opinion, which they say is fully consistent with the claims and specification of the patent. (*Id.*)

Construction to be applied: “removing the insulating material from those areas not covered by the photoresist layer to expose the surface of the semiconductor substrate”

Claim 1 of the ‘899 patent, in element 4, teaches “removing at least a portion of the insulating material covering the active regions.” (JX-8 at 9:7-8.) Element 5 of claim 1 then provides the following details:

...wherein removing of at least a portion of the insulating material from the active regions includes:

depositing a mask layer over the insulating material;

patterning the mask layer to expose at least a portion of the insulating material over the active regions; and

removing the exposed portion of the insulating material over the active regions, leaving unexposed portions of the insulating materials; and wherein the mask layer is deposited using an inverse active area mask that is biased so that the mask layer after patterning covers the non-active regions and at least a portion of the active regions.

(JX-8 at 9:9-24) (emphasis added).

By reading the foregoing in context, one is led to the logical conclusion that claim 1 of the ‘899 patent teaches that removing at least a portion of the insulating material covering the active regions refers to all of that portion of the active regions that were exposed when the patterned mask layer was in place. Element 5 signals that the specific process of ***removing of at least a portion of the insulating material from the active regions includes*** the steps that follow.

Those steps specifically call for (1) depositing a mask layer over the insulating material; (2)

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patterning the mask layer to expose at least a portion of the insulating material over the active regions; (3) removing *the exposed portion* of the insulating material over the active regions, *leaving unexposed portions* of the insulating materials. The final phrase of the final step further clarifies that the process is accomplished using an inverse active area mask that is biased so that the *mask layer after patterning covers* the non-active regions and *at least a portion of the active regions*.

I concur with Respondents' argument that the claim language that requires removing "the exposed portion" by using the definite article "the" designates all of the item being described, which is in this case the words "exposed portion." The term was previously defined when the claim taught that the mask layer was patterned "to expose at least a portion of the insulating material over the active regions." I find, too, that the meaning of "the exposed portion" is further strengthened by the claim's teaching that unexposed portions of the insulating material are to be left *in situ*.

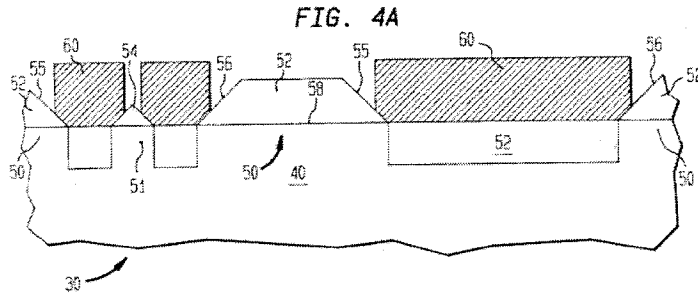
It is well settled that the claims of a patent define the invention to which the patentee is entitled the right to exclude. *See generally Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*). The Federal Circuit in *Phillips* explained that, "[q]uite apart from the written description and the prosecution history, the claims themselves provide substantial guidance as to the meaning of particular claim terms." *Id.* at 1314. For example, "the context in which a term is used in the asserted claim can be highly instructive." *Id.* at 1314. From my reading of claim 1 of the '899 patent in context, I conclude that the term "removing at least a portion of the insulating material covering the active regions" contained in element 4 means "removing the insulating material from those areas not covered by the photoresist layer to expose the surface of the semiconductor substrate."

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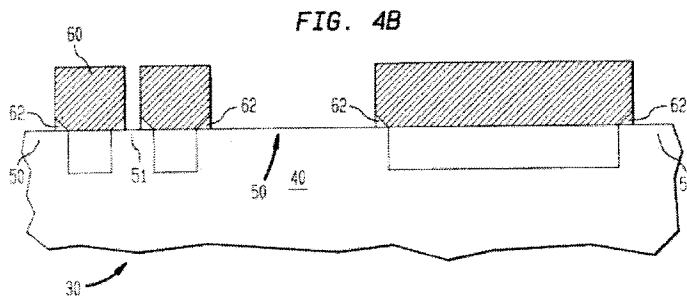
The construction given to this term is also supported by the specification of the '899 patent. The Summary of the Invention provides that a layer of insulating material, such as oxide, is formed on the surface of the substrate. Portions of the insulation layer are selectively removed, enabling the subsequent planarization step, which exposes the active regions, to be shortened. (JX-8 at 3:54-59.)

The Detailed Description of the Invention makes clear that the invention's purpose is achieved by using, for example, an RIE, which is described as "oxide selective." Because the RIE etching step is oxide selective, the silicon substrate and resist act as etch stops. Thus, the specification says, "the RIE removes only the HDP-CVD oxide layer 52, exposing the semiconductor substrate above those areas not covered by the photoresist layer 60." (JX-8 at 7:47-52.)

In the description of the preferred embodiment, the '899 patent uses Figures 4A through 4D, inclusive to describe the process used to achieve the foregoing. First, as illustrated in Figure 4A below, a photoresist layer 60 is formed and patterned over the HDP-CVD oxide layer 52 to expose the active areas. (JX-8 at 7:4-6.) To compensate for overlay inaccuracies, the inverse mask is biased. (*Id.* at 7:12-13.) The bias is described as being typically "between about an amount which is sufficient to effectively shift the edges of the photoresist onto the sloping edges [55 and 56 of the HDP-CVD oxide layer] to about an amount which effectively shortens the polishing step so as to expose the active areas with a substantially planar surface." (*Id.* at 7:18-22, 7:14-16.)



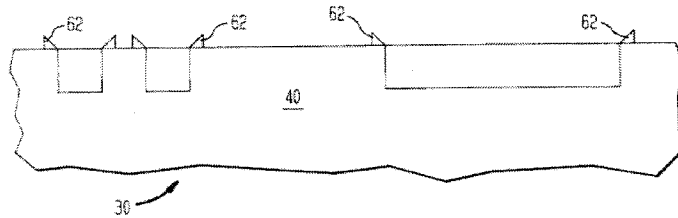
Second, as shown in Figure 4B below, using an inverse biased area mask, “[t]he regions of the oxide layer 52 unprotected by photoresist are then etched using a suitable etching technique (such as RIE). The RIE etching step is oxide selective. By employing an oxide selective RIE, the silicon substrate and resist act as etch stops. Thus, the RIE removes only the HDP-CVD oxide layer 52, *exposing the semiconductor substrate surface above those areas not covered by the photoresist layer 60.*” (JX-8 at 7:45-52) (emphasis added). Figure 4B also depicts that wedge-shaped portions 62 of the HDP-CVD oxide layer 52 are left on the surfaces of the edges of the active areas after the RIE etching step. The description teaches that these wedge-shaped portions 62 are removed in a subsequent CMP step. (*Id.* at 7:55-59.)



Third, as Figure 4C illustrates below, the photoresist mask described above has been removed. The process removes only the photoresist masking layer, leaving the wedge-shaped 62 HDP-CVD oxide portions on the surface of the semiconductor substrate 40. The description continues that the “resulting structure is then exposed to *a final CMP step which removes all of the remaining HDP-CVD oxide structures 62*, leaving a highly planarized topography to the semiconductor substrate 40. Because of the steps taken in the above- described technique

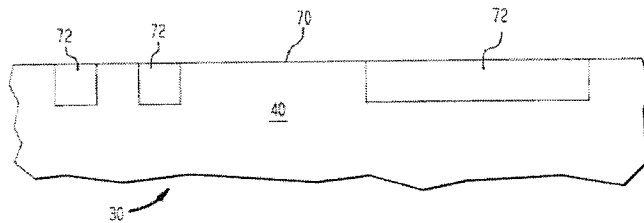
regarding the small size of the HDP-CVD oxide structures, this particular CMP step can be kept short ...” (JX-8 at 7:60-8:6) (emphasis added).

FIG. 4C



Finally, Figure 4D below, reveals the final planarized semiconductor substrate of the integrated circuit structure. One can observe that the top surface 70 of the semiconductor substrate 40 of the integrated circuit 30 is substantially planar. (*Id.* at 8:9-13.)

FIG. 4D



The specification makes clear that the process described in claim 1 calls for the removal of all of the exposed portion of the HDP-CVD oxide layer over the active regions, leaving only the wedge-shaped portions that are unexposed. Those wedge-shaped portions are the remaining portions of the HDP-CVD oxide layer that are removed in the final planarization process described in the first portion of element 5 of claim 1, which results in a “planar topography.” (JX-8 at 9:9-12.)²¹ Qimonda’s argument addresses the term out of context and ignores the detailed description of the process set forth in element 5 of claim 1.

²¹ A correct reading of element 5, requires that its first phrase be recognized as the final planarization step without reference to CMP – leaving open any recognized planarization method. To consider this phrase to be limited to CMP would violate the admonition against reading a limitation into a claim from the specification. *Innova/Pure Water, Inc.*, 381 F.3d at 1117. In addition, through a combination of inartful structuring and an unfortunate similarity in language, one can be misled by this phrase to believe that it relates to the etching process described in element 4 and

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After examining the claim language and the specification, it is clear to me that the term in element 4, of claim 1 “removing at least a portion of the insulating material covering the active regions” is properly construed as “removing the insulating material from those areas not covered by the photoresist layer to expose the surface of the semiconductor substrate.” I find that examination of the extrinsic evidence (such as expert testimony) offered by the parties is unnecessary because the intrinsic evidence is sufficient to understand the meaning of “removing at least a portion of the insulating material covering the active regions.” *Vitronics Corp.*, 90 F.3d at 1583 (“In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence.”)

3. “Leaving Unexposed Portions of the Insulating Materials”

The term “leaving unexposed portions of the insulating materials” appears in asserted claim 1.

Qimonda’s Position: Qimonda offers no proposed construction for this term in its post-hearing briefs.

Respondents’ Position: Respondents contend that the term “leaving unexposed portions of the insulating materials” means leaving insulated material protected by the photoresist mask. (RIB at 143 (citing JX-22 at 17).) Respondents say that Qimonda and Staff propose that the term be given its plain and ordinary meaning; but that they do not articulate what they contend the plain and ordinary meaning of the phrase is, so it is impossible to know what construction they are proposing. (*Id.*) Respondents conclude that, following Order No. 19, Qimonda is precluded from offering a definition for this term. (*Id.*)

the last portion of element 5 in claim 1. Such an application, however, would create a circular logic that would not result in achieving planar topography, because the wedge-shaped portions of the HDP-CVD oxide layer would never be removed.

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Respondents argue that the proper construction of the term is evident from the plain language of the claim and the specification. Respondents assert that in contrast to the term discussed above, which referenced “the exposed portion,” this term does not have a definite article and could be read to mean “some.” (RIB at 143-144.) Respondents argue that the omission of the definite article here makes particular sense because a person of ordinary skill in the art at the time of the ’899 patent would have understood that a common method of etching oxide would be to use a wet etch. (*Id.* (citing RX-1084C at Q. 41).) Respondents argue that a wet etch could have been used to accomplish the goals of the ’899 patent; but would have removed some portion of the material underneath the mask layer (the unexposed portion). (*Id.*) Respondents say “[t]he definite article was likely omitted from this claim language to ensure that the removal of only some of the unexposed portion of the material would still fall within the scope of the claimed invention.” (*Id.*) Respondents conclude that the decision not to use a definite article was a deliberate effort to broaden the scope of this limitation. (*Id.*)

Commission Investigative Staff’s Position: Staff argues that the phrase “leaving unexposed portions of the insulating materials” set forth in claim 1 refers to the portions of the oxide layer that remain after etching on the active regions of the substrate and protected by the photoresist. (SIB at 49.)

Construction to be applied: “leaving insulated material protected by the photoresist mask”

The plain and ordinary meaning of this term is clear from its context in element 5(c) of claim 1, which states:

... wherein removing of at least a portion of the insulating material from the active regions includes:

depositing a mask layer over the insulating material;

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patterning the mask layer to expose at least a portion of the insulating material over the active regions; and
removing the exposed portion of the insulating material over the active regions, leaving unexposed portions of the insulating materials ...

(JX-8 at 9:12-20.)

As discussed in section IV.D.2, *supra*, the portions of the insulating material that are left after removing the exposed portion of the insulating material are the wedge-shaped portions of the HDP-CVD oxide layer that are then removed in the final planarization process described in the first portion of element 5 of claim 1. (*Id.* at 9:9-12.)

4. “Inverse Active Area Mask”

The term “inverse active area mask” appears in asserted claims 1, 2 and 22.

Qimonda’s Position: Qimonda offered no proposed construction of this term in its post-hearing briefs.

Respondents’ Position: Respondents propose that the terms “inverse active area mask” and “biased so that the mask layer after patterning covers the non-active regions and at least a portion of the active regions” be construed separately. (RIB at 144-145 (citing JX-22 at 18).) Respondents say that Qimonda proposes that they be construed together as a single phrase. (*Id.*) Respondents contend that the term “inverse active area mask” means a mask that is the negative of the mask used to create the active areas - that is, a mask that is opaque where the active areas mask is transparent and vice-versa, with regard to the radiation used to expose the selected photoresist material. (*Id.*)

Commission Investigative Staff’s Position: Staff agrees with Respondents that the phrase “inverse active area masks” means a “mask that is negative of the mask used to create the active areas.” (SIB at 50-51 (citing JX-22 at 16).) Staff says that Qimonda contends that the phrase means “a mask that is related to the original mask that was used to define the trenches,

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now used inversely to define an area outside the trenches, by shifting the original mask's definitions in a fixed (biased) manner such that deposited mask layer after patterning covers the non-active regions and at least a portion of the active regions." (*Id.*) In the Staff's view, the parties agree that the phrase refers to the opposite or the "inverse" of the original active area mask and that after patterning the mask covers the non-active regions and at least a portion of the active regions. (*Id.*)

Staff says that the sole dispute turns on whether the biased inverse area mask is limited or constrained by the trenches as Qimonda contends. Staff asserts that nothing in the claims or specifications confine the inverse active area biased masks to the trenches. (SIB at 50-51.) Staff says that neither party addressed their respective claim constructions with much specificity in either their respective prehearing briefs or at trial. (*Id.*) Staff concludes that they do not believe that, to the extent relevant, the terms in question should be limited by reference to the trenches as Qimonda suggests. (*Id.*) They say nothing in the intrinsic or extrinsic evidence supports such a limitation. (*Id.*)

Construction to be applied: "a mask that is negative of the mask used to create the active areas."

The term is fully set forth in claim 1:

... and wherein the mask layer is deposited using an inverse active area mask that is biased so that the mask layer after patterning covers the non-active regions and at least a portion of the active regions.

(JX-8 at 9:20-24.)

The claim clearly teaches that the mask after patterning covers the non-active regions and at least a portion of the active regions, which reflects the inverse, or negative, of the mask used to create the active areas.

5. “Biased so that the Mask Layer After Patterning Covers the Non-active Regions and at Least a Portion of the Active Regions”

The term “biased so that the mask layer after patterning covers the non-active regions and at least a portion of the active regions” appears in asserted claim 1.

Qimonda’s Position: Qimonda has offered no proposed construction of this term in its post-hearing briefs.

Respondents’ Position: Respondents propose that the terms “inverse active area mask” and “biased so that the mask layer after patterning covers the non-active regions and at least a portion of the active regions” be construed separately. (RIB at 144 (citing JX-22 at 18).) Respondents say that Qimonda proposes that they be construed together as a single phrase. (*Id.*) Respondents contend that the term “biased so that the mask layer after patterning covers the non-active regions and at least a portion of the active regions” means dimensionally adjusted so that the patterned photoresist covers the non-active regions and at least a portion of the active regions. (*Id.*) Respondents say that Staff’s proposed construction is almost identical, except that it replaces Respondents’ “patterned photoresist” with “mask layer after patterning.” (*Id.*) Respondents concede they would accept Staff’s construction. (*Id.*)

Respondents say that the ’899 patent does not teach how the biased inverse active area mask is created; but Qimonda’s construction provides a specific method of making such a mask, stating that the biased mask be made “by shifting the original masks’ definitions in a fixed (biased) manner.” (RIB at 145.) Respondents argue that this concept is not found in the ’899 patent and should therefore be disregarded. (*Id.*)

Commission Investigative Staff’s Position: Staff agrees with Respondents that the phrase “biased so that the mask layer after patterning covers non-active regions and at least a portion of the active region” means “dimensionally adjusted so that the mask layer after

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patterning covers the non-active regions and at least a portion of the active regions.” (SIB at 50-51 (citing JX-22 at 16).) Consistent with its argument regarding the term “inverse active area masks,” Staff argues that the sole dispute turns on whether the biased inverse area mask is limited or constrained by the trenches as Qimonda contends. (*Id.*) Staff asserts that nothing in the claims or specifications confine the inverse active area biased masks to the trenches. (*Id.*) Staff says that neither party addressed their respective claim constructions with much specificity in either their respective prehearing briefs or at trial. Staff concludes that they do not believe that, to the extent relevant, the terms in question should be limited by reference to the trenches as Qimonda suggests. (*Id.*) They say nothing in the intrinsic or extrinsic evidence supports such a limitation. (*Id.*)

Construction to be applied: “dimensionally adjusted so that the mask layer after patterning covers the non-active regions and at least a portion of the active regions.”

The language of the claim makes clear that the inverse active area mask will be patterned to cover the non-active areas and at least a portion of the active areas. The specification, using Figure 4A as an illustration, makes clear that this term refers to a mask that is biased sufficient to effectively shift the edges of the photoresist onto the sloping edges 55 and 56 of the HDP-CVD oxide layer. (JX-8 at 7:4-16.) The specification goes into some detail regarding various bias measurements; but it consistently results in a mask layer after patterning that covers the non-active regions and at least a portion of the active regions. (*Id.* at 7:18-39, Fig. 4A.)

E. The ‘918 Patent

1. “At Least Two First Contacts Connected to the Substrate and To the First Conductive Line”

The phrase “at least two first contacts connected to the substrate and to the first conductive line” appears in asserted claim 1.

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Qimonda's Position: Qimonda contends that the phrase “at least two first contacts connected to the substrate and to the first conductive line” should be construed to mean “first and second longitudinally extending conductive walls connected to the silicon substrate (without dielectric between the wall and the substrate) and connected to the first longitudinally extending conductive line above (without dielectric between the wall and the first conductive line).” (CIB at 138-139.)

Qimonda asserts that its construction is derived directly from the claim language, specification and prosecution history of the '918 patent. (CIB at 139.) Qimonda notes that during prosecution, the applicant characterized the first two contacts as “a plurality of walls” that extend “longitudinally along the conductive line like railroad tracks.” (*Id.* (citing JX-6 at QAG-665-ITC-0190124; RX-772C at Q. 88-89; Tr. at 1310:7-1312:2).) According to Qimonda, in distinguishing the prior art, the applicant argued that “[n]one of the cited art discloses contacts extending longitudinally along the conductive lines, wall-like.” (*Id.* (citing JX-6 at QAG-665-ITC-0190124; RX-772C at Q. 88-89).)

Qimonda states that claim 1 requires that the contacts are connected to the substrate, and the specification repeatedly states that the two first contacts are connected to the substrate, and not the dielectric above the substrate. (CIB at 139 (citing JX-5 at Abstract; 2:1-3; 2:19-22; 3:49-51).) Qimonda asserts that the specification teaches that the “dielectric material 209 surrounds the crack stop structure” and is not embedded within the dielectric material. (*Id.* (citing JX-5 at 2:30-33, 2:48-52, 4:56-57, 5:5-6).) Qimonda therefore concludes that because the crack stop structure is surrounded by the dielectric (and not embedded within it), there is no dielectric material between the bottom of the crack stop structure and the substrate. (*Id.* (citing JX-5 at 2:30-33, 2:48-52, 4:56-57, 5:5-6).)

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In its reply brief, Qimonda reiterates that its construction is based on the intrinsic evidence. (CRB at 67-68.) Qimonda criticizes Respondents' and Staff's constructions as being based on improper extrinsic evidence such as expert testimony, an IEEE dictionary, and an unrelated patent. (*Id.*)

Respondents' Position: Respondents contend that the phrase "connected to the substrate" should be construed to mean "touching the base layer of the integrated circuit." (RIB at 195-196.) Respondents contend that the phrase "at least two first contacts connected to the substrate and to the first conductive line" should be construed to mean "first conductive structures between layers of a device touching a base layer of an integrated circuit and a conductive structure spaced from the substrate." (*Id.* at 196.)

Respondents criticize Qimonda's and Staff's constructions because they do not make clear that the concept of touching - the physical connection - is the important issue with this claim language. (RIB at 196.) Respondents state that the IEEE Dictionary of Electrical and Electronics Terms defines connection as "[a] low impedance tie between electrically conducting components." (*Id.* (citing RX-735).) Therefore, according to Respondents, one of ordinary skill in the art would understand the phrase "connected to the substrate" to mean "touching the base layer of the integrated circuit," and that an electrically conductive connection would be established. (*Id.* (citing RX-772C at Q. 46).)

Respondents point to Dr. Glew's testimony at the hearing, where he allegedly admitted that "connected to the substrate" means "attached to the substrate." (RIB at 197 (citing Tr. at 651:4-7).) According to Respondents, Dr. Glew further admitted that it means "physically attached to" the substrate. (*Id.* (citing Tr. at 651:8-13).) Respondents argue that this testimony supports their proposed construction.

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In their reply brief, Respondents argue that “Qimonda clearly overloads the claim with unnecessary and unsupported additional limitations not found in the claims, the specification, or other intrinsic evidence.” (RRB at 77-78.) Respondents claim that Qimonda’s citation to the prosecution history is not relevant because the cited portion was not discussing the applicable claim language from claim 1. (*Id.* at 78 (citing JX-5 at 6:28-30).) Respondents further claim that Qimonda’s reliance on the specification is misplaced because the portion of the specification relied upon relates to a more limited embodiment recited in claim 11. (*Id.* (citing JX-5 at 3:1-2, 6:28-30, Figs. 3A-3B).)

Commission Investigative Staff’s Position: Staff contends that the phrase “at least two first contacts connected to the substrate and to the first conductive line” should be construed to mean “first conductive structures connected to the substrate and to the first conductive line.” (SIB at 59.)

Staff states that it agrees with Respondents that the term “connected” in the phrase in dispute requires a physical contact. (SIB at 59 (citing RX-772C at Q. 48).) Staff states that this is supported by the IEEE dictionary, and that there is nothing in the intrinsic evidence that suggests that the patentee defined the term outside of its plain and ordinary meaning. (*Id.* at 60.)

Construction to be applied: “a direct physical connection between the first contacts and the substrate, and a direct physical connection between the first contacts and the first conductive line.”

The phrase “at least two first contacts connected to the substrate and to the first conductive line” appears in claim 1. The construction mandated by the intrinsic evidence confirms that when the claim requires the contacts to be “connected to” the substrate and the first conductive line, it is clear that it requires a direct physical connection between the contacts and

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the components. This physical connection is supported by the intrinsic evidence, as shown in Figures 2, 4, and 6 and described in the specification. (JX-5 at 3:47-4:15.)

Qimonda's proposed construction states that there cannot be a dielectric between the contacts and the substrate. (CIB at 138-139.) Qimonda's proposed construction is overbroad in that it allows for the possibility of an indirect electrical connection between the substrate and the contacts. I find that the claim only covers a direct physical connection between the substrate and the contacts. As described *supra*, the specification depicts and describes the direct physical connection between the substrate and the contacts. (JX-5 at 3:47-4:15, Figs. 2, 4, 6.) Qimonda has not offered intrinsic evidence that supports allowing for an indirect electrical connection between the substrate and the contacts. It would be contrary to the law of claim construction to expand the plain meaning of the term "connected to" to encompass a non-physical electrical connection when there is no evidence in the intrinsic record to support such a broad construction.

Qimonda's proposed construction also seeks to construe the claim terms "contacts," "substrate," and "conductive line." First, Qimonda seeks to define the term "contacts" to mean "longitudinally extending conductive walls." I find that such a definition is unnecessary in light of the claim language. Claim 1 requires that the contacts are "spaced apart from each other and extend[] longitudinally along a length of the first conductive line[.]" In addition, claim 1 requires the contacts to be "of substantially greater longitudinal dimension than lateral dimension." This claim language makes clear that the contacts extend longitudinally along a length of the conductive lines and that the contacts are substantially longer than they are wide. The applicant added this claim language to distinguish the invention over the prior art. (JX-6 at QAG-665-ITC-0190124.)

Next, Qimonda seeks to limit the claimed substrate to a silicon substrate. This is directly

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contrary to the specification, which states that “[s]ubstrate 102 may include mono-crystalline silicon, gallium arsenide, germanium, silicon-on-insulator (SOI) or any other substrate material.” (JX-5 at 3:37-40.) Thus, the claimed substrate is not limited to a silicon substrate.

Finally, Qimonda seeks to define “conductive line” as a “longitudinally extending conductive line.” As with “contacts” above, I find that Qimonda’s addition of “longitudinally extending” is unnecessary in light of the claim language. The term is a “conductive line,” thus requiring that it have some length. Claim 1 states that the contacts “extend[] longitudinally along a length of the first conductive line,” implying that the conductive line is longitudinally extending. In light of this claim language, I find it unnecessary to specifically define “conductive line.”

Respondents primarily rely on an IEEE dictionary for their support. As described *supra*, the intrinsic evidence resolves any ambiguity in this claim language. Thus, I decline to rely on the extrinsic technical dictionary offered by Respondents. *Vitronics*, 90 F.3d at 1583 (“In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence.”)

2. “Crack Stop Structure”

The term “crack stop structure” appears in asserted claims 1 and 4.

Qimonda’s Position: Qimonda contends that the term “crack stop structure” should be construed to mean “structure for preventing cracks from propagating into the active circuitry.” (CIB at 139.)

Qimonda argues that Respondents either concede or do not dispute that the Qimonda’s proposed construction for “crack stop structure” is proper. Qimonda states that Respondents’

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expert, Dr. Bravman, acknowledged that “crack stop structure” refers to “a physical structure that impedes the propagation of cracks.” (CIB at 140 (citing RX-772 at Q. 50).)

In its reply brief, Qimonda reiterates that its construction is based on the intrinsic evidence. (CRB at 67-68.) Qimonda criticizes Respondents’ and Staff’s constructions as being based on improper extrinsic evidence such as expert testimony, an IEEE dictionary, and an unrelated patent. (*Id.*)

Qimonda claims that Respondents’ and Staff’s constructions demonstrate a misunderstanding of the nature of a crack stop. (CRB at 68.) Qimonda asserts that crack stops are used to prevent cracks from propagating on the chip through the dielectric layers. (*Id.* (citing JX-5 at 1:12-23).) Qimonda states that crack stops do little to stop cracks from propagating in the area between the kerf and the crack stop, which is an area that lacks any active circuitry. (*Id.*)

Respondents’ Position: Respondents contend that the term “crack stop structure” should be construed to mean “a barrier that impedes the propagation of cracks.” (RIB at 197.)

Respondents point to a prior art patent, U.S. Patent No. 6,022,791 to Cook, entitled “Chip Crack Stop,” as support for its construction. (RIB at 197.) Respondents state that Cook describes a pattern found “to be effective at interrupting propagation of delamination cracks in thin film layers” and that is provided “to suppress crack propagation from the chip edge.” (*Id.* at 197-198 (citing RX-664 at Abstract).) Respondents note that Cook also states that “[c]rack stops provide protection from the propagation of cracks from the chip edge.” (*Id.* at 198 (citing RX-664 at 3:45-47).) Respondents conclude that a person of ordinary skill in the art would understand that a crack-stop structure is a barrier that impedes the propagation of cracks from the edge of the device where cracks begin, but not necessarily limited to “into the active circuitry” as

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proposed by Qimonda. (*Id.* (citing RX-772C at Q. 50).)

Respondents address Qimonda's construction, stating that a crack stop structure does not purport to prevent cracks, but instead seeks to impede further crack propagation. (RIB at 197.) Respondents claim that Qimonda's attempt to include an "into the active circuitry" limitation is improper, as the intrinsic record does not require such a limitation. (*Id.*) Respondents state that Staff's construction "is not especially helpful" because it defines a "structure" as a "structure." (*Id.*)

In their reply brief, Respondents state that Qimonda wrongly suggests that Respondents do not dispute Qimonda's proposed construction of "crack stop structure." (RRB at 79.) Respondents reiterate their arguments regarding why their construction is correct and Qimonda's construction is incorrect. (*Id.*) Respondents point to Dr. Glew's testimony to show that he agrees that preventing cracks at any location in the semiconductor device is a desirable goal. (*Id.* (citing Tr. at 644:22-645:6).)

Commission Investigative Staff's Position: Staff contends that the term "crack stop structure" should be construed to mean "a structure preventing the propagation of cracks." (SIB at 60.)

Staff argues that Qimonda's construction improperly limits the term to prevent cracks in the active circuitry. (SIB at 60.) citing two portions of the specification, Staff claims that the invention is directed to preventing cracks in the entire semiconductor chip and not just active regions. (*Id.* at 60-61 (citing JX-5 at 1:8-9, 1:16-19).) Staff states that there is nothing in the intrinsic record to support limiting the construction to prevention of cracks in the active regions only. (*Id.* at 61.)

Construction to be applied: "structure for reducing crack propagation"

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Claim 1 requires a semiconductor chip which includes a substrate and a crack stop structure. The parties dispute the meaning of “crack stop structure.”

The specification explains the purpose of a crack stop structure. The Technical Field of the patent states that “[t]his disclosure relates to semiconductor fabrication, and more particularly, to *a method for reducing the risk of cracks in semiconductor chips.*” (JX-5 at 1:8-10) (emphasis added.) The Detailed Description of Preferred Embodiments states that “[t]he present invention includes a structures [*sic*] formed in semiconductor devices for reducing crack propagation.” (*Id.* at 3:16-17.) Based on the specification, I find that a “crack stop structure” is a “structure for reducing crack propagation.”

Qimonda seeks to construe the term as a “structure for preventing cracks from propagating into the active circuitry.” Staff seeks to construe the term as a “structure preventing the propagation of cracks.” These constructions runs counter to the specification. The specification does not state that the crack stop structure prevents crack propagation; it states that the crack stop structure reduces crack propagation. (JX-5 at 1:8-10, 3:16-17.) In addition, there is no statement in the intrinsic record that the reduction of cracks is limited to the “active circuitry.” In contrast, the specification discusses reducing cracks in semiconductor chips. (*See, e.g.*, JX-5 at 1:8-23, 3:16-25.) Qimonda’s “active circuitry” limitation finds no support in the patent or the prosecution history, and therefore will not be included in the construction.

Respondents’ proposed construction is similar in substance to the adopted construction, but the adopted construction finds stronger support in the intrinsic record. Respondents primarily rely on an unrelated patent to support their construction of “crack stop structure.” As described *supra*, the intrinsic evidence provides sufficient guidance on the meaning of the term. Thus, I decline to rely on the extrinsic Cook patent offered by Respondents. *Vitronics*, 90 F.3d

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at 1583 (“In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence.”)

3. “The First Metal Line”

The term “the first metal line” appears in asserted claim 11.

Qimonda’s Position: Qimonda contends that the term “the first metal line” should be construed to mean “the first conductive line.” (CIB at 139.)

Qimonda asserts that Respondents either concede or do not dispute that the Qimonda’s proposed construction for “the first metal line” is proper. (*Id.* at 140 (citing JX-22).) In its reply brief, Qimonda reiterates that its construction is based on the intrinsic evidence. (CRB at 67-68.)

Respondents’ Position: Respondents offer no construction for this term.

Commission Investigative Staff’s Position: Staff offers no construction for this term.

Construction to be applied: “the first conductive line”

Qimonda seeks to construe the term “the first metal line” from claim 11, while Respondents and Staff offer no position on the construction of the term. The term appears in the phrase “at least two first contacts and the at least two second contacts extend over the entire length of the first metal line.” Claim 11 is dependent on claim 1. The use of the term “the” in “the first metal line” implies that there should be antecedent basis for the term either somewhere in the claim, or somewhere in claim 1. Neither claim 1 nor claim 11 introduces the term “first metal line.” Instead, claim 1 uses the term “first conductive line.”

As an initial matter, claim 11 is not automatically invalid as indefinite due to a lack of antecedent basis for “the first metal line.” *Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366 (Fed. Cir. 2006). In *Energizer*, the patent claim at issue lacked an antecedent basis for

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the phrase “said zinc anode.” *Id.* at 1369-1370. The court found that the claim was not invalid for this reason, because the intended scope of the claim was reasonably ascertainable from a review of the intrinsic record. *Id.* at 1370-1371.

Here, I find that the lack of antecedent basis does not invalidate the claim, as a review of the intrinsic evidence demonstrates that “the first metal line” is amenable to construction. When describing the claimed conductive lines, the specification of the ‘918 patent refers to them as metal lines. (JX-5 at 3:59-4:20.) From a review of the specification, it is clear that “metal line” is synonymous with “conductive line.” (*Id.*)

Based upon the foregoing, I construe “the first metal line” to mean “the first conductive line.” I also find that the term “a first conductive line” in claim 1 is by implication the antecedent basis for “the first metal line” in claim 11. *Energizer*, 435 F.3d at 1371 (concluding that “anode gel” was by implication the antecedent basis for “said zinc anode”).

IV. DOMESTIC INDUSTRY

A. Applicable Law

In patent-based proceedings under section 337, a complainant must establish that an industry “relating to the articles protected by the patent...exists or is in the process of being established” in the United States. 19 U.S.C. § 1337(a)(2) (2008). Under Commission precedent, the domestic industry requirement of Section 337 consists of an “economic prong” and a “technical prong.” *Certain Data Storage Systems and Components Thereof*, Inv. No. 337-TA-471, Initial Determination Granting EMC’s Motion No. 471-8 Relating to the Domestic Industry Requirement’s Economic Prong (unreviewed) at 3 (Public Version, October 25, 2002).

The “economic prong” of the domestic industry requirement is satisfied when it is determined that the economic activities set forth in subsections (A), (B), and/or (C) of subsection

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337(a)(3) have taken place or are taking place. *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, USITC Pub. No. 3003, 1996 ITC LEXIS 556, Comm'n Op. at 21 (Nov. 1996). With respect to the "economic prong," 19 U.S.C. § 1337(a)(2) and (3) provide, in full:

(2) Subparagraphs (B), (C), (D), and (E) of paragraph (1) apply only if an industry in the United States, relating to the articles protected by the patent, copyright, trademark, mask work, or design concerned, exists or is in the process of being established.

(3) For purposes of paragraph (2), an 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, copyright, trademark, mask work, or design 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.

Given that these criteria are listed in the disjunctive, satisfaction of any one of them will be sufficient to meet the domestic industry requirement. *Certain Integrated Circuit Chipsets and Products Containing Same*, Inv. No. 337-TA-428, Order No 10, Initial Determination (Unreviewed) (May 4, 2000), citing *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, Commission Op. at 15, USITC Pub. 3003 (Nov. 1996).

To meet the technical prong, the complainant must establish that it practices at least one claim of the asserted patent. *Certain Point of Sale Terminals and Components Thereof*, Inv. No. 337-TA-524, Order No. 40 (April 11, 2005). "The test for satisfying the 'technical prong' of the industry requirement is essentially same as that for infringement, i.e., a comparison of domestic products to the asserted claims." *Alloc v. Int'l Trade Comm'n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003). The technical prong of the domestic industry can be satisfied either literally or under the

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doctrine of equivalents. *Certain Excimer Laser Systems for Vision Correction Surgery and Components Thereof and Methods for Performing Such Surgery*, Inv. No. 337-TA-419, Order No. 43 (July 30, 1999).

B. Summary of Domestic Industry Findings

Notwithstanding the fact that I have found, *infra*, that Qimonda maintains significant investment in plant and equipment and significant employment of labor, related to maintaining its Richmond fab in warm idle status, Qimonda has failed to prove by a preponderance of evidence that it practices one claim of a valid patent pursuant to the technical prong requirement. Therefore, I find that Qimonda has failed to prove by a preponderance of evidence that an industry, relating to articles protected by any of the asserted patents, exists or is being established²² in the United States, as required by 19 U.S.C. § 1337(a)(2) and (3).

C. Economic Prong

Qimonda's Position: Qimonda alleges that through its subsidiaries,²³ it met the economic prong of the domestic industry requirement when it filed the complaint on November 20, 2008. (CIB at 217-218.) Qimonda avers that it had two large fabrication facilities ("fabs") in Richmond, Virginia that employed { } of DRAMs per year, many of which practiced the patents-in-suit. (*Id.* (citing CX-544C at Q. 36, 37, 57; CX-989C at Q. 64, 67, 72, 127, 135, 143, 151; Tr. at 1821:20-21; Tr. at 696:13-698:7, 920:925:5; CX-302C; CDX-12C).) Qimonda states that it had { } of employees in the United States that sold or { } the

²² I note that Qimonda has made no effort to argue or prove that a domestic industry is being established. Qimonda focuses its efforts on proving that a domestic industry exists in the United States.

²³ Qimonda AG avers that it owns at least two entities that are relevant to this investigation: QNA and QR. (CX-295C; CX-989C at Q. 23-24; Tr. at 686:13-687:20.) Qimonda alleges that QNA "oversees" Qimonda's operations in the United States, including { } semiconductors. Qimonda says that QR "operates" the Richmond wafer fabrication facilities. (CX-989C at Q. 23-24; CX-295C.) Qimonda alleges that QNA and QR are currently reorganizing through Chapter 11 bankruptcy, and are continuing to operate today. (CX-409; CX-411; CX-413; CX-416; CX-418; CX-419; CX-421; CX-427.)

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patents. (*Id.* (citing CX-989C at Q. 69, 74, 77, 132, 140, 148, 156-157).) Qimonda contends that

{

} the

patents. (*Id.* (citing CX-545C at Q. 7-8, 12-15, 18-20, 22-25, 32-41, 44, 49-53; CX-989C at Q.

68, 70, 73, 75, 79-80; Tr. at 990:23-991:10, 992:2-994:10, 994:18-24, 999:9-1000:5).) Qimonda

states that, based on this evidence, Respondents' expert, Carla Mulhern, agrees the domestic

industry requirement was met as of the filing of the complaint. (*Id.* (citing Tr. at 1879:24-

1881:2; CX-534C at 93:14-95:2, 99:6-19).)

Qimonda alleges that, although it filed for insolvency in Germany on January 23, 2009, it continues to meet the economic prong of the domestic industry requirement. (CIB at 218 (citing

Joint Stipulation of Facts (June 12, 2009); CX-544C at Q. 46).) Qimonda asserts that it

continues to own the Richmond fabs, which are being maintained in {

} (*Id.*) Qimonda says the Richmond fabs are the

physical embodiment of { } in capital investments by Qimonda and represent a

continuing investment in the exploitation of the patents-in-suit. (*Id.*) Qimonda asserts that it

{

}

of these products "in recent months." (*Id.* (citing CX-989C at Q. 37, 65, 84, 94-99, 100, 106,

107; CX-544C at Q. 37, 46-56, 60, 82-86; CX-545C at Q. 12-29, 32-41, 44; Tr. at 824:3-16,

1818:17-1819:10, 1831:20-23, 1818:11-13, 920:5-925:5).)

Qimonda alleges that it continues to employ { } of engineers and other

personnel in the United States who are responsible for maintaining Qimonda's production

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that exploit, or support the exploitation, of the patents-in-suit. (CIB at 218-219 (citing CX-989C at Q. 99, 108-110; CX-544C at Q. 49, 59-61).)

Qimonda concedes that to prove the economic prong of the domestic industry requirement of 19 U.S.C. § 1337(a)(2), Qimonda must show that “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.” (CIB at 219-2220 (citing 19 U.S.C. § 1337(a)(3)).) Qimonda asserts that subsection (C) “does not require actual production of the article in the United States if it can be demonstrated that investment activities of this type enumerated are taking place in the United States.” (*Id.* (citing H. Rep. No. 100-40, 100th Cong., 1st Sess. at 157 (1987)).)

Qimonda contends that Section 337(a)(3) requires complainants to prove a domestic industry exists with respect to “articles protected by the patent,” and not “particular claims” of the patent. (CIB at 221 (citing 19 U.S.C. § 1337(a)(3))) (emphasis added by Qimonda). Therefore, Qimonda reasons, for the economic prong, it must show “significant” or “substantial” investments in the United States relating to articles protected by the patents-in-suit; but it is not required to show, for the economic prong, that “the claimed investments relate to the patents at issue.” (*Id.* at 221-222 (citing *Certain Ammonium Octamolybdate Isomers*, Inv. No. 337-TA-477, USITC Pub. 3668 at 55 (Jan. 2004)).)

Qimonda argues that the Commission has established a broad interpretation of the economic prong. Qimonda says that in *Certain Wind Turbines*, the Commission affirmed the ALJ’s determination that the domestic industry should be defined to include wind turbines, not just the component of the wind turbine that practiced the asserted patents. (CIB at 222 (citing

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Certain Variable Wind Turbines and Components Thereof, Inv. No. 337-TA-376, USITC Pub. 3003 at 16 (Nov. 1996).) Qimonda concedes that to establish a domestic industry under subsection (C), Qimonda must establish “a sufficient nexus between Complainants' domestic activities and investments and the patents at issue.” (*Id.* (citing *Certain Microlithographic Machines and Components Thereof*, Inv. No. 337-TA-468, Initial Determination, 2003 WL 1831891 (Jan. 29, 2003)).)

Detailing its holdings and investments prior to bankruptcy, Qimonda says it had a business campus in Richmond, Virginia that was approximately { } (CIB at 223-224.) Qimonda indicates campus included two fabs consisting of more than { } square feet, one of which { } and the other of which { } both of which { } (*Id.* (citing CX-296C; CX-301C; CX-989C at Q. 64; CX-544C at Q. 36; Tr. at 696:13-698:6).) Qimonda alleges that { } percentage” of these products practiced the patents-in-suit. (*Id.* (citing CX-989C at Q. 127, 135, 143, 151; Tr. at 920:5-925:5; CDX-12C; CX-302C).)

Qimonda notes that the semiconductor industry is extremely capital-intensive, and requires significant investments in property, plant, and equipment. (CIB at 224 (citing CX-312 at 40; CX-313 at 40).) Qimonda alleges it requires the use of highly complex, specialized, and costly equipment, materials, and techniques to produce semiconductor wafers at the very small geometries demanded by the market and its customers. (*Id.* (citing CX-544C at Q. 37; CX-545C at Q. 9).) Qimonda says { } were used to

²⁴ As recently as 2006, Qimonda operated a back-end fab in the United States for separating integrated circuits from semiconductor wafers. (Tr. at 696:13-698:6.)

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manufacture products practicing the patents-in-suit. (*Id.* (citing CX-989C at Q. 128-129, 136-137, 144-145, 152-153; CX-302C; Tr. at 920:5-925:5; CDX-12C).)

Qimonda asserts that since 1996, it has invested approximately {
fabs. (CIB at 224 (citing CX-298C; CX-299C; CX-544C at Q. 37; CX-989C at Q. 65; Tr. at 1818:11-13, 824:5-7, 902:24-903:1).) Qimonda states it “used a significant portion of the {
Richmond.” (*Id.* (citing CX-989C at Q. 66; CX-544C at Q. 37).) Qimonda avers that it invested approximately {
} the patents-in-suit. (*Id.* (citing CX-298C; CX-544C at Q. 37; CX-989C at Q. 65, 127, 135, 143, 151; Tr. at 920:5-925:5; CDX-12C; CX-302C).)

Qimonda says, because wafer production involves high fixed costs, Qimonda “operated” {
} (CIB at 224-225.) Qimonda asserts that it {
} (*Id.* (citing CX-544C at Q. 36, 37; CX-300C; CX-989C at Q. 67, 72; CX-300C; Tr. at 1821:20-21).) Qimonda states that it {
} (*Id.* (citing CX-989C at Q. 67).) Qimonda asserts that {
} the patents-in-suit. (*Id.* (citing CX-989C at Q. 127, 135, 143, 151; Tr. at 920:5-925:5; CDX-12C; CX-302C).)

Qimonda says it {
} specialty DRAMs. (CIB at 225 (citing CX-544C at Q. 63; CX-545C at Q. 5-7, 10, 25, 32;

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CX-989C at Q. 68; Tr. at 688:1-689:23, 690:19-691:8.) Qimonda alleges that QNA invested

{

} (*Id.* (citing CX-989C at Q. 68).) Qimonda also asserts that it “maintained” a

{

} (*Id.* (citing CX-989C at

Q. 70; CX-301C; Tr. at 685:25-686:2, 891:12-18).) Qimonda states that the {

} (*Id.* (citing

CX-545C at Q. 27-29).) Qimonda says QNA invested approximately {

} in its

{

} (*Id.* (citing CX-301C; CX-989C at

Q. 70).) Qimonda contends these investments supported in part the development, modification,

testing, and implementation of designs and products practicing the patents-in-suit. (*Id.* (citing

CX-545C at Q. 12-15, 18-20, 22-25, 32-41, 44, 49-53; Tr. at 688:1-689:23, 690:19-691:18).)

Qimonda says it {

}

customers in the United States. (CIB at 225-226.) Qimonda asserts that the {

} (*Id.*) Qimonda avers that QNA invested approximately {

} (*Id.* (citing CX-989C at Q.

69; CX-301C).) Qimonda then alleges a {

}

suit.” (*Id.* (citing CX-989C at Q. 132, 140, 148, 156-157; CX-545C at Q. 49-53; Tr. at 726:6-20;

CDX-12C; CX-530C).)

Qimonda alleges that it also {

} (CIB at

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226 (citing CX-301C; CX-989C Q. 69; Tr. at 726:6-20, 729:4-10).) Qimonda indicates that a

{

} (*Id.* (citing

CX-989C at Q. 132, 140, 148, 156-157).)

Qimonda avers that when it filed the complaint, it had significant investments in labor and capital for its manufacturing, product engineering, design, research and development, process development, product development, testing, and sales operations in the United States. (CIB at 226.) Qimonda says that significant investments in plant and equipment also constitute significant investments in capital under subsection (B) of Section 337(a)(2)-(3) (*Id.* (citing CX-544C at Q. 35, 37; CX-989C at Q. 65, 71).)

Qimonda asserts that as of November 20, 2008, it had a large number of employees engaged in the production, research and development, and sales and marketing of products practicing the patents-in-suit. (CIB at 226-227 (citing CX-545C at Q. 8, 12-15, 18-20, 22-25, 32-41, 44, 49-53; CX-989C at Q. 131-133, 139-141, 147-149, 155, 157-158; Tr. at 992:11-14).)

Qimonda says it had {

} (*Id.* (citing Tr. at 1820:12-14;

CX-544C at Q. 57; CX-989C at Q. 72).) Qimonda asserts that the {

} (*Id.* (citing CX-304C; CX-301C; CX-989C at Q. 72;

CX-544C at Q. 57).) Qimonda continues that a {

}

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attributable to the production of products practicing the patents-in-suit. (*Id.* (citing CX-989C at Q. 131, 139, 147, 155; Tr. at 920:5-925:5; CDX-12C; CX-302C).)

Qimonda continues that it had approximately {
} (CIB at 227.) In financial year
{
} related to the employment of the R&D engineers and other personnel in { } (*Id.*) Qimonda states that those investments supported in part the development, modification, testing, and implementation of designs and products practicing the patents-in-suit. (*Id.* (citing CX-545C at Q. 12-15, 18-20, 22-25, 32-41, 44, 49-53; Tr. at 990:23-991:10, 992:2-994:10, 994:18-24, 999:9-1000:5; CX-530C; CX-989C at Q. 73; CX-545C at Q. 8; CX-304C).)

Qimonda alleges it had approximately { } who engaged in { } Qimonda asserts, it incurred approximately { } related to the { } (CIB at 227-228.) Qimonda also says it { } on its behalf. (*Id.*) Qimonda concludes that these investments supported in part the sale and marketing of products practicing the patents-in-suit. (*Id.* (citing CX-989C at Q. 74, 132, 140, 148, 157; CX-530C; CX-545C at Q. 49-53; 726:6-20; CX-304C; CX-466C; CX-467C).)

Qimonda alleges it had approximately {
} (CIB at 228.) Qimonda contends that in financial year { } related to the employment of these administrative personnel, and these investments supported in part the production, research and development, and sales and marketing of products practicing

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the patents-in-suit. (*Id.* (citing CX-989C, at Q. 76, 131-133, 139-141, 147-149, 155, 157-158; CX-304C).)

Qimonda alleges it maintained { } in the United States, including {

} (CIB at 228-229.) Qimonda says these {

}

Qimonda avers that these investments supported in part the sale and marketing of products practicing the patents-in-suit. (*Id.* (citing CX-545C at Q. 37-41, 44, 48-53; CX-989C at Q. 77, 78, 132, 140, 148, 157; CX-474C; Tr. at 726:6-20, 729:4-10; CX-305C).)

Qimonda avers that prior to the {

}

CX-989C at Q. 79; CX-301C; CX-530C; CX-545C at Q. 27-29).)

Qimonda states that when it filed the complaint, it had substantial investments in the exploitation of the patents-in-suit through its engineering, research and development, and licensing operations in the United States. (CIB at 229 (citing CX-544C at Q. 62).) Qimonda asserts that it engaged in engineering, and R&D activities relating to the patents-in-suit at its

{

} (*Id.*)

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Qimonda continues that it engaged in research and development activities at its facilities in {

for standard and specialty DRAM products, including products practicing the patents-in-suit.

(*Id.* (citing CX-544C at Q. 63; CX-989C at Q. 68, 70; CX-545C at Q. 7-8, 12-15, 18-20, 22-29, 32-41, 44, 49-53).) Qimonda alleges it {

and development activities in the United States. (*Id.* at 229-230 (citing CX-989C at Q. 80).)

Qimonda asserts that as of November 20, 2008, QNA had more than {

to products practicing the patents-in-suit. (CIB at 230.) Qimonda says that in financial year

{
to the employment of these persons.²⁵ (*Id.*) Qimonda adds that in {

activities in the United States. (*Id.*) Qimonda concludes that it {

other personnel. (*Id.* (citing CX-989C at Q. 80; Tr. at 990:23-991:10, 992:2-994:10, 994:18-24, 999:9-1000:5; CX-530C; CX-545C at Q. 8, 12-41, 44).)

Qimonda indicates that its {
products practicing the patents-in-suit. (CIB at 230-231.) Qimonda says these {

²⁵ In financial year 2006/2007, Qimonda had approximately 330 engineers and other personnel who engaged in research and development activities in the United States. (CX-989C at Q. 80.) Qimonda incurred approximately \$51.1 million in salary and other expenses related to the employment of these R&D engineers and other personnel. (*Id.*)

}
concludes that its U.S.-based engineers engaged in significant additional design and development work for products { } including products practicing the patents-in-suit. (*Id.* (citing CX-545C at Q. 12-18, 21-26, 32-41, 44; CX-544C at Q. 65; Tr. at 990:23-991:10, 992:2-994:10, 994:18-24, 999:9-1000:5).)

Qimonda states that { }
facilities participated. (CIB at 231.) Qimonda asserts that { }
in the United States. (*Id.* (citing CX-545C at Q. 12-14, 21-29, 35-41, 44; CX-544C at Q. 68).)

Qimonda adds that it employed { } in the United States { } bringing new products, including products practicing the patents-in-suit, to market successfully. (CIB at 232.) Qimonda says that its { } in the United States worked with { } (*Id.*) Qimonda asserts that when its { } in the United States made a { } { } (*Id.* (citing CX-545C at Q. 12-20, 23-25, 32-41, 44; CX-544C at Q. 66, 69; Tr. at 999:24-1000:15).)

Qimonda alleges that it exploited all of the patents-in-suit through the above-referenced engineering and R&D activities in 2008. (CIB at 233.) Qimonda asserts that for each

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technology node that practices one of the patents-in-suit, substantial R&D activities were performed by Qimonda's engineers and other personnel in the United States in 2008. (*Id.* (citing CX-545C at Q. 12-29, 32-47; CX-544C at Q. 72; CDX-12C; CX-4C; CX-190C at Q. 265-266, 270-271, 275-276, 284-285, 289-290).)

Qimonda avers that it engaged in {

} (CIB at 233-234.)

{

} in 2008. (*Id.* (citing CX-545C at Q. 32; CX-544C at Q. 74).)

Qimonda alleges it engaged in significant engineering and R&D work on {

} (CIB at 234 (citing CX-545C at Q. 26-

29, 33; CX-544C at Q. 75).)

Qimonda asserts that it engaged in significant engineering and R&D work on {

} (*Id.* (citing CX-545C at Q. 26-29, 34; CX-544C

at Q. 76).)

Qimonda states that it engaged in significant engineering and R&D work on {

}

products was developed by Qimonda's engineers in the United States. Qimonda contends that

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{

}

engineers working on these products. (*Id.* (citing CX-545C at Q. 26-29, 35; CX-544C at Q. 76, 77).)

Qimonda says its engineers in the United States began design work for the {

}

the { } (*Id.* (citing CX-545C at Q. 26-29, 35; CX-544C at Q. 77).)

Qimonda represents that it maintained an { } that implemented

{

} (CIB at 235.)

{

}

patent license agreement. (*Id.*) Qimonda says that in {

}

property and seek payment of royalties. (*Id.* (citing CX-989C at Q. 28, 56, 81-82, 133, 141, 149, 158; CX-545C at Q. 5, 57-67; Tr. at 994:25-995:24).)

Qimonda alleges that as of November 20, 2008, Qimonda had { } in the United States who were engaged in { }

Qimonda says these persons engaged in a variety of {

} (CIB at 235-236.)

{

}

activities in the United States. (*Id.* (citing CX-545C at Q. 5, 57-67; CX-989C at Q. 81-82, 133, 141, 149, 158; Tr. at 994:25-995:24).)

Qimonda asserts that it has enforced its patent portfolio, including the patents-in-suit,

{

}

in-suit. (*Id.* (citing CX-314; CX-989C at Q. 41, 44-47, 83, 134, 142, 150, 159; CX-315; CX-316; CX-989C at Q. 83, 134, 142, 150, 159; Tr. at 892:3-6, 994:25-995:24).)

Qimonda admits it filed for insolvency in Germany; but contends it continues to have a significant investment in plant and equipment in the United States. (CIB at 238.) Qimonda avers that all of Qimonda's investments in plant and equipment in Richmond remain intact. (*Id.*)

{

} (*Id.* (citing Tr. at 713:19-

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714:17; Joint Stipulation of Facts (June 12, 2009); CX-544C at Q. 46; CX-989C at Q. 84, 94-96; CX-544C at Q. 37, 47, 50-52; Tr. at 1817:14-1818:10, 1831:20-23; Tr. at 824:3-16, 902:14-20).

Qimonda alleges { } (CIB at 238-239.)
{

} (*Id.* (citing CX-989C at Q. 36, 46, 87, 88, 92, 95-96, 127, 135, 143, 151; CDX-12C; CX-302C; Tr. at 520:5-525:5; CX-544C at Q. 36, 40, 42-46; Tr. at 1820:20-22, 1827:12-1828:14, 1873:12-15; CX-1006C; CX-508C; CX-509C; CX-1006C; Tr. at 703:22-704:2, 709:2-710:20, 712:22-24; 910:7-11; Tr. at 976:16-20).)

Qimonda avers that the { }
mode. Qimonda describes that there are five modes: (i) “hot,” or active production; (ii) “warm idle,” wherein the tools and equipment are capable of being restarted on short notice; (iii) “cold idle,” wherein the tools and equipment are powered down, and extensive preparations would be required to resume production; (iv) “Dismantle/Crate/Ship,” wherein the tools and equipment are disaggregated and prepared for shipping to other facilities; and (v) “Decontamination,” wherein the fab is cleansed of dangerous chemicals or residue. (CIB at 239.) Qimonda explains, {
}

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CX-544C at Q. 47, 48, 51, 52; CX-3C, Munn Dec. ¶¶ 13-14; CX-989C at Q. 94, 97; CX-1004C.)

Qimonda alleges that the {
}(CIB at 240.) Qimonda says that Respondents’
expert, Carla Mulhern, admitted during her trial testimony that this investment is valued at
{ } (*Id.* (citing CX-989C at Q. 65, 94, 97; Tr. at 1818:11-13; CX-298C;
CX-299C; CX-544C at Q. 37, 56; Tr. at 824:5-7, 902:24-903:1).)

Qimonda alleges it {
} (CIB at 240.) For example, Qimonda says, {
returned to active production for approximately { } (*Id.*
(citing CX-989C at Q. 72, 94, 97; CX-544C at Q. 50, 53-54, 56, 57; Tr. at 1052:19-1053:2; Tr. at
1818:17-1819:10).)

Qimonda alleges that QNA/QR { }
(CIB at 240-241.) Qimonda avers that {
}
wafers produced at the Richmond fabs. (*Id.*) Qimonda says these sales amounted to a total
{ }
million. (*Id.*) Qimonda says that it “continues to work with logistics and other subcontractors to
{ }

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States.” (*Id.* (citing CX-544C at Q. 84-86; CX-989C at Q. 93, 100-107, 127, 132, 135, 140, 143, 148, 151, 156; Tr. at 742:14-24, 913:4-7; CDX-12C; CX-302C; Tr. at 920:5-925:5; CX-310C; CX-311C; CX-1012C; CX-1013C; CX-1014C; Tr. at 797:16-21, 906:2-908:21, 927:13-22, 1016:6-14).)

Qimonda alleges that it “continues to have a significant inventory in the United States {

}

QNA/QR’s inventory practice the ‘899, ‘670, and ‘434 patents. (*Id.* (citing CX-545C at Q. 36-41, 44; CX-989C at Q. 107, 127, 135, 143, 151; CX-302C; CDX-12C; CX-544C at Q. 86; Tr. at 740:1-8, 821:14-24, 822:12-823:14, 920:5-925:5).)

Qimonda alleges that it {

}

patents-in-suit to third parties in the United States.” (CIB at 241.) Qimonda states that from {

}

modules to U.S. customers. (*Id.* (citing CX-3C, Munn Dec. ¶ 20; CX-989C at Q. 101; CX-544C at Q. 85; Tr. at 763:19-764:14, 771:1-17).)

Qimonda alleges that QNA has {

}

bankruptcy in January 2009. (CIB at 242.) Qimonda says QNA concluded an agreement in late {

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} (*Id.* (citing

CX-306C; CX-989C at Q. 102-105; Tr. at 763:19-764:14, 771:1-17).)

Qimonda avers that it “continues to have a significant investment in labor and capital in the United States.” (CIB at 242.) Qimonda says that as of the end of March 2009, Qimonda had

{

}

200mm semiconductor wafers. (*Id.* (citing CX-544C at Q. 49; CX-989C at Q. 99).) Qimonda alleges that “[a]s of May 11, 2009, Qimonda had approximately {

}

maintaining them in that state.” (*Id.* (citing CX-989C at Q. 99).)

Qimonda alleges it is continuing {

} (*Id.* (citing

CX-3C, Munn Supp. Dec; CX-989C at Q. 94, 97, 99; Tr. at 761:16-762:15, 918:21-919:5; CX-544C at Q. 59; CX-1003C; CX-1004C; CX-1005C; CX-1007C).)

Qimonda details the process of converting the fabs and equipment {

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} (*Id.* (citing CX-544C at Q. 48, 50-53, 56, 60;
CX-989C at Q. 94, 97; CX-1003C; CX-1004C; CX-1005C; CX-1007C).)

Qimonda alleges that it continues to have a significant number of U.S. employees who
{ } (CIB at 244.) Qimonda represents that as of the end of
{

} (*Id.* (citing CX-989C at Q. 69, 74, 109-110; CX-545C at Q.
49-51, 54-56; Tr. at 918:21-919:5).)

Qimonda alleges that it continues to have a significant number of employees in { } who
{ } (CIB at
244.) {

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”} (*Id.* (citing CX-545C at Q. 54-56, 61-64; CX-989C at Q. 94, 99, 108-110; Tr. at 919:2-4).)

Qimonda contends that it employed engineers and other R&D personnel at its facility in { } (CIB at 244-245.) Qimonda { }

activities “for several months.” (*Id.* (citing CX-544C at Q. 79; CX-545C at Q. 32; Tr. at 691:4-8, 976:23-977:4, 1873:22-1874:22).)

Qimonda alleges { } (*Id.* (citing CX-545C at Q. 54-56, 62-64; CX-989C at Q. 81; Tr. at 919:2-4, 986:1-3, 990:13-19, 1000:17-1001:4).)

Qimonda alleges that nearly all of its employees in the United States are engaged in activities related to products practicing the patents-in-suit. (CIB at 246-247.) Qimonda asserts { }

suit. (*Id.*) Qimonda asserts that some of these employees are engaged { }

fabs, the site of production for products practicing the patents-in-suit. (*Id.* (citing CX-544C at Q. 59, 61; Tr. at 761:16-762:15, 918:21-919:5, 999:2-4; CX-3C, Munn Supp. Dec; CX-989C at Q. 94, 99, 108-110; CX-545C at Q. 54-56, 59, 62-64).)

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Qimonda alleges that it continues to exploit the patents-in-suit, {

} differ from

those used at Qimonda's other fabs, so Qimonda's U.S.-based engineers in the United States had to develop designs, products, processes, and recipes specifically for use at Richmond. (*Id.* (citing CX-544C at Q. 46, 56, 60, 71, 82, 83; CX-545C at Q. 2-29, 32-41, 44; Tr. at 747:14-750:7, 990:23-991:10, 992:2-994:10, 994:18-24, 999:9-1000:5; CX-989C at Q. 94-99).)

Qimonda alleges that these "historic investments in engineering and R&D have continuing value." (CIB at 248-149.) Qimonda says these investments enabled Qimonda to manufacture products practicing the patents-in-suit as recently as { }, and provide { } (*Id.*) Qimonda cites the testimony of Martin Bayerl, who testified at trial that Qimonda's products using most advanced technology, {

}

(*Id.*) Qimonda says its "historic investments in engineering and R&D in the United States laid the foundation for the use of this technology at the Richmond fabs." (*Id.* (citing CX-1015C at QAG-ITC-665-0227624; CX-1006C at QAG-ITC-665-0227440; Tr. at 745:23-750:7, 913:13-918:7; CX-544C at Q. 44, 46, 50-53, 56, 60, 82, 83; CX-545C at Q. 12-41, 44; CX-508C; CX-509C; Tr. at 703:22-704:2, 709:2-710:20, 712:22-24; CX-989C at Q. 88, 94-99, 127, 135, 143, 151; Tr. at 976:16-20).)

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Regarding its licensing activities, Qimonda asserts that it has { } that are licensed to use the technology covered by the patents-in-suit. (CIB at 251.) Qimonda says, {

} original process technology, which includes the technologies covered by the patents-in-suit. (*Id.* (citing CX-989C at Q. 41, 112-115, 120; CX-48C; CX-333C; CX-350C – CX-406C; CX-510C – CX-513C; CX-545C at Q. 57, 60).)

Qimonda states that on May 1, 2006, Infineon Technologies AG spun off its Memory Products business unit, and Qimonda was established as an independent company. (CIB at 251.) Qimonda reiterates that Infineon assigned the entire right, title, and interest in the patents-in-suit to Qimonda. (*Id.*) Qimonda alleges that Infineon also transferred its interest in Inotera to Qimonda on or about July 31, 2006. (*Id.*) Under this transfer, Qimonda alleges, it received all of Infineon's rights and obligations under the original joint venture agreement. (*Id.* (citing CX-989C at Q. 16, 115, 116; CX-48C; CX-333C; CX-350C – CX-406C; CX-510C – CX-513C; CX-312 at 12; CX-545C at Q. 3; Tr. at 1833:11-18; CX-5; CX-9; CX-12; CX-18; CX-47C).)

Qimonda includes reference to a license it alleges to have created with {

}

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excluded the evidence relating to { } introduced for the purpose of demonstrating the existence of a domestic industry pursuant to 19 CFR § 210.12(a)(9)(iii)-(iv)²⁶

Qimonda improperly includes an “Exhibit C,” attached to its brief, which purports to recite its principal patent-specific investments in the United States at the time of the filing of the complaint. (CIB at 252.) Qimonda’s argument should refer only to exhibits in the official record to assert facts. This Exhibit will not be considered in this Initial Determination.

Qimonda cites *Bally/Midway Mfg.*, to support its argument of the continued existence of a domestic industry requirement. In that case, Qimonda argues, the Federal Circuit upheld the domestic industry requirement even though the domestic industry deteriorated following the filing of the complaint. *Bally/Midway Mfg. Co. v. Int’l Trade Comm’n*, 714 F.2d 1117, 1123 (Fed. Cir. 1983). The complainant manufactured arcade video games that had limited life spans:

Unlike most other products, a particular video game generally has only a brief period of popularity, accompanied by high production and sales. As new video games enter the market, the old games decline in popularity, and production and sales decrease. This pattern of production and sales is reinforced by the fact that there are only a limited number of sites for video games (i.e., in arcades), and most arcades will purchase only a few of each game. Thus, there is continual pressure on video game manufacturers to develop new games, and sell as many of each game as possible during its short life-span.

Id. at 1119 (emphasis added by Qimonda).

Qimonda does not contend that *Bally/Midway Mfg.* stands for the proposition that the domestic industry is always analyzed at the time of the complaint. Qimonda concedes that “the domestic industry analysis is not confined to a rigid formula, and must be addressed on a case-by-case basis.” (CIB at 253.) However, Qimonda argues that Federal Circuit and Commission precedent make clear that the principal factor in determining domestic industry should be the

²⁶ This evidence will not be considered by me for purposes of deciding whether or not the economic prong of the domestic industry requirement is met by Qimonda.

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complainants' investments at the time of the filing of the complaint, in particular where the complainant's domestic industry deteriorates over the course of the investigation. (*Id.*)

Qimonda notes that the Commission found no domestic industry based on the rapid deterioration in the production, sale, and inventory of "Rally-X" arcade video games:

With respect to Rally-X, the Commission concluded that no domestic industry existed. It stated that Bally's inventory of Rally-X games is low, that "[c]urrently, there are no facilities being used to produce an article competitive with the imported Rally-X games[,]” and that the “[c]omplainant is no longer actively engaged in distribution or sale of Rally-X games.” Based on the administrative law judge's findings, the Commission concluded that “the popularity of the Rally-X game is in a state of permanent decline[,]” and that “[t]here is nothing in the record to indicate that complainant will resume the manufacture and marketing of the games even if the Commission were to find a violation of section 337 and issue a general exclusion order.

Bally/Midway Mfg., 714 F.2d at 1120 (emphasis added by Qimonda).

Qimonda argues that the Federal Circuit overturned the Commission's finding of no domestic industry, holding that the “proper date for determining whether Bally's Rally-X game constituted an ‘industry’ entitled to protection under section 337 was the date on which the complaint was filed rather than the date on which the Commission rendered its decision.”

Bally/Midway Mfg., 714 F.2d at 1121, 1123. Qimonda says the Federal Circuit justified its decision based on “the cyclical nature of the arcade video game industry,” quoting:

If the fact that Rally-X was short-lived was dispositive or even significant in determining the existence of an industry under section 337(a), it would be a rare video game that would be entitled to the protection of that section. There is nothing in the statute that indicates or even suggests that Congress did not intend relatively short-lived American video games to receive the same protection against copyright and trademark infringement by imported competing products that other domestic businesses enjoy.

Id. at 1123.

Qimonda asserts that the Federal Circuit found the complainant met the domestic industry requirement at the time of the filing of the complaint, quoting:

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Bally manufactured and sold a substantial number of Rally-X games during the first half of 1981. . . . Bally continued this business until late 1981, although “production and sales ... decreased” from March through November of that year. Bally apparently had ceased production and most sales of the game by late 1981, and few games were left in inventory at that time.

Bally/Midway Mfg., 714 F.2d at 1123. Qimonda says the decline in the domestic industry did not alter the court’s conclusion, quoting:

Bally’s Rally-X business thus constituted a domestic industry under section 337(a) at the time the complaint was filed. The deterioration of that business during the Commission proceedings does not undermine that conclusion.

Id.

Qimonda argues it is similarly situated to the complainant in *Bally/Midway Mfg.*

Qimonda says at the time of the filing of the complaint, it had high levels of production and sales, producing hundreds of millions of DRAMs per year, many, if not all, of which practiced the patents-in-suit. (CIB at 255 (citing CX-544C at Q. 36, 37, 57; CX-989C at Q. 64, 67, 72, 127, 135, 143, 151).) Qimonda continues that it also had a robust sales and technical support operation in the United States. (*Id.* (citing CX-989C at Q. 69, 74, 77, 132, 140, 148, 156-157).)

Qimonda reiterates that it continued to produce semiconductor wafers at the {
} (*Id.* (citing CX-544C at Q. 42-56, 83; CX-989C at Q. 84, 88, 92, 95-98; Tr. at 1052:19-1053:2, 1818:17-1819:10).) Qimonda alleges that it also {
} (*Id.* (citing CX-1012C – CX-1014C; CX-989C at Q. 100, 106; CX-544C at Q. 85).)

Qimonda alleges, “[l]ike the complainant in *Bally/Midway Mfg.*, Qimonda operates in a highly cyclical industry.” (CIB at 255-256 (citing CX-313 at 3).) Qimonda says that DRAM manufacturers are forced to invest huge sums in property, plant, and equipment to manufacture DRAMs at increasingly small geometries, and quickly reap the rewards of those investments

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before their new DRAMs become commodity products. (*Id.* (citing CX-313 at 4; CX-989C at Q. 29-31).) Qimonda says the cyclical nature of the DRAM semiconductor industry drove Qimonda

{

}

Richmond. (*Id.* (citing CX-989C at Q. 29-31, 86; CX-313 at 3-7; CX-1015C at QAG-ITC-665-0227624; CX-1006C at QAG-ITC-665-0227440; Tr. at 745:23-750:7, 913:13-918:7, 1819:17-1820:20).) Qimonda alleges that {

}

number of integrated circuits on the wafer and to remain cost competitive. (*Id.* (citing Tr. at 908:23-910:2; CX-320C).)

Qimonda reiterates its position that the cyclical nature of the semiconductor industry indicates that the proper date for determining domestic industry in this investigation is the date on which the complaint was filed. (CIB at 256 (citing *Bally/Midway Mfg.*, 714 F.2d at 1117, 1121).) Qimonda argues that the Commission reached the same conclusion in Inv. No. 337-TA-242, which involved the type of semiconductors manufactured by Qimonda (DRAMs). (*Id.* (citing *Certain Dynamic Random Access Semiconductors (DRAMs)*, Inv. No. 337-TA-242, USITC Pub. 2034 at 15, 72 (Nov. 1987)).)

Qimonda argues that the evidence in the record of Qimonda's domestic industry at the time of the filing of the complaint is overwhelming. Qimonda continues that the Federal Circuit's decision in *Bally/Midway Mfg.* does not require the Commission to disregard the changes in Qimonda's investments in the United States. (CIB at 256-257.) Instead, Qimonda says, *Bally/Midway Mfg.* makes clear that the principal measure of Qimonda's domestic industry should be the investments in place as of the filing of the complaint (in particular for companies

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in cyclical industries), and the “deterioration of that business during the Commission proceedings does not undermine” or negate those investments. (*Id.* (citing *Bally/Midway Mfg.*, 714 F.2d at 1117, 1123; *Certain DRAMs*, Inv. No. 337-TA-242, USITC Pub. 2034 at note 166 (Nov. 1987) (“Deterioration in the condition of the domestic industry during the Commission’s proceedings does not undermine the conclusion that a domestic industry existed at the time the complaint was filed.”))).)

Qimonda asserts that Respondents argue that the existence of a domestic industry can vary from hour to hour and day to day: when the machines are running, a domestic industry exists, but when the machines are idled, the domestic industry disappears into the ether. (CIB at 257.) Qimonda counters that the existence of a domestic industry is not measured by the output of a particular machine or factory, and it “is not a light switch that can be turned on and off.” (*Id.*)

Qimonda argues that a domestic industry consists as much, if not more, of the investments made to enable production than the products actually produced. (CIB at 257.) Qimonda analogizes to the United States auto industry, which it says, did not cease to exist when Chrysler, General Motors, and Ford “idled their factories in 2008/2009.” (*Id.*) Qimonda says the Commission stated in *Certain DRAMs*: “[b]ringing a DRAM wafer fabrication facility fully on-line is not merely a matter of turning on the equipment. It frequently requires months of refinement of product and process design.” (*Id.* (quoting *Certain DRAMs*, Inv. No. 337-TA-242, USITC Pub. 2034 (Nov. 1987))).)

Qimonda argues that the Commission has repeatedly held that changes in investments do not indicate the absence of a domestic industry. Qimonda cites *Certain Toy Vehicles*, to illustrate that the Commission affirmed the ALJ’s finding of domestic industry based on the

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complainant's investments in plant, equipment, labor, and capital, even though the complainant had ceased manufacturing articles practicing the patents-in-suit prior to filing the complaint and had no plans to manufacture additional units when its current inventory was depleted. (CIB at 257 (citing *Certain Battery-Powered Ride-On Toy Vehicles and Components Thereof*, Inv. No. 337-TA-314, Order No. 6 (Dec. 5, 1990); *aff'd* USITC Pub. 2420 (Apr. 9, 1981) (determining not to review portions of Initial Determination related to domestic industry)).)

Qimonda says the Commission also affirmed a finding of domestic industry in *Certain Video Graphics* even though the complainant announced during the course of the investigation that it intended to phase out its graphics business. Qimonda quotes the Commission:

That Cirrus is not currently manufacturing the 5465 product is not dispositive, as the evidence shows that Cirrus has invested substantial capital in developing and manufacturing the 5465 product, and uncontradicted testimony establishes that Cirrus is currently offering for sale and intends to continue offering for sale an existing inventory of the product.

(CIB at 258 (quoting *Certain Video Graphics Display Controllers and Prods. Containing the Same*, Inv. No. 337-TA-412, USITC Pub. 3224 at 13 (Aug. 1999)).)

Qimonda concludes that the Commission affirmed a finding of domestic industry in *Certain Wind Turbines* even though the complainant had ceased its manufacturing activities and was negotiating with creditors to "sell its manufacturing business as a going concern." (CIB at 258 (citing *Certain Variable Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, USITC Pub. 3003 at 16 (Nov. 1996)).) Qimonda says the Commission made clear that the complainant's historic investments in plant, equipment, labor, capital, engineering, and R&D, as described by the ALJ in his initial determination, were sufficient to meet the domestic industry requirement, notwithstanding the changes in the domestic industry. (*Id.*)

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Qimonda argues that in each of the foregoing cases, the Commission made clear that the complainants' investments as of the filing of the complaint should be the primary factor in determining the existence of a domestic industry. (CIB at 258.) Qimonda says that subsequent events, while relevant, did not diminish or negate the value or significance of the investments at the time of filing. (*Id.*)

Qimonda asserts that the Commission based these decisions in part on public policy concerns, which also motivate a decision in Qimonda's favor in this investigation. Qimonda states that in *Toy Vehicles*, the ALJ noted that to deprive patent protection for a complainant that has ceased manufacturing articles that exploit the patent "merely because his sales of the patented articles have declined or even stopped" or because complainant improved its product would not "make sense" and would not "encourage anyone else to do research to obtain patents and manufacture patented products in the United States if the patent protection is so easily lost." (CIB at 258-259 (quoting *Certain Battery-Powered Ride-On Toy Vehicles and Components Thereof*, Inv. No. 337-TA-314, Order No. 6 (Dec. 5, 1990); *aff'd* USITC Pub. 2420 (Apr. 9, 1981)).)

Qimonda says its domestic industry activities under Section 337(a)(3)(C) alone fulfill the requirements of domestic industry-economic prong even if production has ceased at Qimonda's Richmond fabs. Qimonda argues that Congress stated with respect to subsection (C) "[t]his definition does not require actual production of the article in the United States if it can be demonstrated that investment activities of this type enumerated are taking place in the United States." (CIB at 259 (citing H. Rep. No. 100-40, 100th Cong., 1st Sess. at 157 (1987)).)

Qimonda argues that the Richmond fabs have continuing and substantial value and that

{

}

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directly relate to the patents at issue. Qimonda alleges that these research and development activities have lasting value, and continue support the existence of a domestic industry even if the { } (CIB at 259-260 (citing CX-989C at Q. 68, 70, 73, 75, 79-80, 94-99; CX-544C at Q. 46-47, 50-53, 56, 60, 82, 83; CX-545C at Q. 7-8, 12-41, 44, 49-53; Tr. at 1052:19-1053:2; Tr. at 1818:17-1819:10; Tr. at 990:23-991:10, 992:2-994:10, 994:18-24, 999:9-1000:5).)

Qimonda argues that its licensing activities similarly meet the criteria for domestic industry-economic prong. Qimonda cites *Certain DSS Receivers*, in which they say the ALJ found that a domestic industry existed based solely on complainant's activities in licensing the patent at issue, even though the complainant had only five employees in the United States involved in its licensing program. (CIB at 260 (citing *Certain Digital Satellite System Receivers and Components Thereof*, Inv. No. 337-TA-392, Initial Determination (Oct. 20, 1997)).)

Qimonda argues that the ALJ stated that a "complainant may establish that a domestic industry exists by relying solely on its investment in licensing, without showing that articles are manufactured in the United States that practice a claim" of the patents at issue. (*Id.*) Qimonda indicates that the ALJ noted that Section 337 "does not require a complainant to manufacture the patented product nor does it require that a complainant show that a product covered by the [patent at issue] is made by complainant's licensee." (*Id.*)

Qimonda says that in *Certain Semiconductor Chips with Minimized Chip Package Size and Prods. Containing Same*, ITC Inv. No. 337-TA-432, Order No. 13 (Jan. 24, 2000), the ALJ granted summary determination that the domestic industry requirement was satisfied by complainant based solely on its licensing activity. Qimonda asserts that the complainant did not manufacture anything other than small quantities of prototypes. (CIB at 260.) Qimonda

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indicates that the Court found as a matter of law that “actual production of an article in the United States is not required if substantial investment in licensing the patent(s) at issue has been made by the complainant.” (*Id.* (quoting *Certain Semiconductor Chips with Minimized Chip Package Size and Prods. Containing Same*, ITC Inv. No. 337-TA-432, Order No. 13 (Jan. 24, 2000))

Qimonda argues that Respondents’ contention that post-complaint events are determinative of the existence of domestic industry is wrong. (*Id.* (citing *Certain Audio Digital-To-Analog Converters and Products Containing Same*, 337-TA-499, Initial Determination at 115, 2004 ITC LEXIS 933 (Nov. 15, 2004) (“past expenditures are not ‘irrelevant’ to the domestic industry analysis”))). Qimonda says that *Bally/Midway*, *Certain Toy Vehicles*, *Certain Video Graphics Display Controllers*, *Certain Variable Wind Turbines*, and other Commission and ALJ decisions²⁷ hold that the complainants’ investments as of the filing of the complaint were the focus of the Commission’s evaluation of the existence of a domestic industry. Qimonda concludes that subsequent events, while relevant, do not diminish or negate the value or significance of the investments at the time of filing. (*Id.*)

Qimonda argues that Mr. Munn’s declaration and deposition testimony confirm that Qimonda continues to sell modules and components practicing the patents-in-suit to { } in the United States. (CRB at 123-124.) Qimonda continues that his declaration and deposition testimony confirms that from { } patents-in-suit.” (*Id.*) Qimonda argues that other record evidence regarding Qimonda’s U.S.

²⁷ Qimonda provides a lengthy list of case citations with no further details, and the list is omitted here.

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sales and marketing activities is not contradicted by Mr. Munn. (*Id.* (citing Tr. at 726:6-20, 729:4-10, 763:19-764:14, 771:1-17; CX-3C, Munn Dec. ¶ 20; CX-3C, Munn Supp. Dec; CX-989C at Q. 54-56, 62-64, 69, 94, 99, 101, 102, 103, 104, 105, 108-110, 132, 140, 148, 156-157; CX-544C at Q. 61, 85; Tr. at 761:16-762:15, 918:21-919:5, 999:2-4; CX-545C at Q. 54-56, 59, 62-64; CX-301C; CX-306C).)

Qimonda asserts that the legislative history to the 1988 amendments to section 337 “made clear that [m]arketing and sales in the United States *alone* would not . . . be sufficient to meet this test.” (*Id.* (citing H. Rep. No. 40, 100th Cong., 1st Sess., at 157 ((1987) (emphasis added))).) Qimonda notes that Respondents concede that “such ongoing [sales and marketing] activities, in conjunction with more traditional domestic activities, can evidence a domestic industry under subparagraph (C)” (*Id.* (citing RIB at 267 n. 68).) Qimonda says that taken in conjunction with its other domestic industry activities, these significant sales and marketing activities, particularly {
Richmond fabs, support the existence of a domestic industry. (*Id.*)

Qimonda alleges that as of the February 20, 2009 bankruptcy filing, QNA and QR had {
} (*Id.* (citing RX-1248C at ¶¶ 16-22).) Qimonda says {

}
and involved equipment in Qimonda’s 300mm fab. (*Id.* (citing RX-1275C).) Qimonda says that {
}

that { }

(*Id.*)

{

}

(citing RX-1268C; Tr. at 908:23-910:2; CX-320C).)

Qimonda argues that Respondents improperly inject the standard for domestic industry-technical prong into the evaluation of domestic industry-economic prong. Qimonda asserts that to “establish a domestic industry-technical prong”, the complainant must show that the articles protected by the patent practice or “employ” one or more claims of the patent. (*Id.*) By contrast, Qimonda says, to establish domestic industry-economic prong, the complainant need only show that its investments are for activities that “relate to” the articles covered by the patents. (*Id.* (citing *Certain Integrated Circuits*, Inv. No. 337-TA-450, Initial Determination at 203, 2002 ITC LEXIS 753 (May 6, 2002)).) Qimonda argues that its {

} (*Id.*)

Qimonda says it is irrelevant that Qimonda’s predecessors contributed the R&D related to the patents before Qimonda’s formation in 2006. (CRB at 127-128.) Qimonda asserts that Section 337 requires only the existence of a domestic industry in the United States; it does not require the original patent holder to be the complainant or forbid the assignee from relying on the

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domestic industry activities of the assignor. (*Id.* (citing 19 U.S.C. § 1337(a)(2)).) In this case, Qimonda says, Respondents concede that “Qimonda AG began its operations as part of Siemens AG’s semiconductor group” and that, “in 1999, Siemens transferred its semiconductor group to a subsidiary to form Infineon Technologies AG.” (*Id.* (citing RFF 938-39).) Qimonda alleges that on May 1, 2006, Infineon Technologies AG spun off its Memory Products business unit, and Qimonda was established as an independent company. (*Id.* (citing CX-312 at 12; CX-545C at Q. 3; CX-989C at Q. 16, 115; Tr. at 1833:11-18).) Qimonda argues that Respondents concede that Infineon transferred its memory products segment to establish Qimonda AG in May 2006. (*Id.* (citing RFF 940).) Qimonda avers that this succession of interest in the patents from Siemens to Qimonda makes clear that R&D occurred in connection with each of the patented technologies. (*Id.*)

Qimonda argues that Respondents wrongly suggest that the R&D conducted on the ‘899 patent did not occur in the United States. (CRB at 128.) Qimonda asserts that beginning in {

} (*Id.* (citing CX-989C at Q. 20-21; CX-12; CX-13; Tr. at 1832:12-1833:20).) Qimonda indicates that the first page of the ‘899 patent shows the inventor, Peter Weigand, was domiciled in upstate New York when the patent application was filed in August 1996. (*Id.*) Qimonda continues that the assignment for the ‘899 patent shows that Mr. Weigand was domiciled in the state of New York when he assigned the

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patent application to Siemens in October 1996. (*Id.* (citing CX-12 at QAG-665-ITC-0201555; CX-13 at QAG-665-ITC-0201563).)

Qimonda concludes that Respondents are wrong to contend that Qimonda's R&D activities do not relate to the patents-in-suit or the articles protected by the patents. Qimonda cites the testimony of Dr. Kenneth Button, who they say concluded that Qimonda performed substantial R&D activities in the United States in 2008 with respect to each of the technology nodes of the products that practiced the patents. (CRB at 128 (citing CX-544C at Q. 72-77).)

Qimonda argues that Respondents are incorrect to state that licenses *must* generate royalties to be considered for domestic industry purposes. (CRB at 129.) Qimonda concedes that Commission precedent holds that the generation of royalties supports licensing as a domestic industry activity; but argues that none of the cases cited by Respondents required the licenses at issue to generate royalties to count towards domestic industry. (*Id.*) In any event, Qimonda argues, { } (*Id.*)

Respondents' Position: Respondents argue that the evidence shows Qimonda was once an international DRAM manufacturer, but is now in ruin, and its U.S. activities are now nonexistent. Respondents assert that the evidence in this investigation establishes:

- Qimonda and all of its subsidiaries relevant to this investigation, including those located in the United States, are insolvent and have filed for bankruptcy (RIB at 252 (citing JX-23C at 7; RX-1248 at 9; RX-1282C; Tr. at 704:24-706:8, 717:2-6; RX-1321C; RX-1322C));
- Qimonda has ceased all manufacturing activities in the United States, has laid off the employees previously associated with those activities, and does not intend { } (citing RX-1298C at Q. 41, 50, 52, 53, 55-57, 61-62, 64-65; CX-989C at Q. 87, 88, 92, 96; Tr. at 708:25-709:5; Deposition Stipulations, Munn at Tab 10, 23:1-18, 28:12-22, 39:13-40:22, 74:22-77:3, 119:9-13, 181:21-183:11, 185:21-186:22; Tr. at 192:7-

²⁸{
26, *supra*.

} See fn.

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10; Tr. at 760:22-761:15, 762:16-20; Tr. at 1013:16-1014:1; JX-23C at 20; RX-1248 at 4; RX-1253C at 95));

- Qimonda has ceased all research and development activities in the United States and has laid off the employees previously associated with those activities (RIB at 252 (citing JX-23C at 20; Deposition Stipulations, Munn at Tab 10 at 42:1-43:14, 66:4-7, 66:14-67:3, 95:21-96:3; RX-1298C at Q. 61-62, 64-65; CX-989C at Q. 111; Tr. at 688:24-689:23; RX-1248 at 4; Tr. at 1857:6-1858:6; Tr. at 763:1-5; RX-1253C at 95));

- {
and has laid off the employees previously associated with those activities (RIB at 252 (citing Tr. at 763:6-17; Deposition Stipulations, Munn at Tab 10, 138:20-141:22));

- Qimonda has ceased all sales and marketing activities in the United States and has laid off the employees previously associated with those activities (RIB at 252-253 (citing JX-23C at 20; RX-1298C at Q. 61-62, 64-65, 105; RX-1248 at 4; RX-1253C at 95; Deposition Stipulations, Munn at Tab 10 at 47:7-47:9, 47:21-48:22; 49:1-51:9, 59:15-17, 59:22-60:3, 62:4-14; Tr. at 726:6-20, 731:12-734:3, 762:21-25));

- The {
} that allegedly made up Qimonda's domestic licensing program have either been laid off or were unable to identify any domestic activities that were undertaken to assist or contribute to any licensing of the patents-in-suit (RIB at 253 (citing JX-23C at 20, 21; RX-1298C at Q. 83; Deposition Stipulations, Munn at Tab 10, 144:2-145:22, 151:3-18, 155:4-14, 159:5-10, 169:11-170:16, 171:5-14, 171:20-172:6, 175:7-11, 175:14-22, 178:7-17; RX-1329 at F-3; Tr. at 987:7-12, 977:22-978:2));

- Qimonda's remaining U.S. activities involve maintaining the domestic {
}
} locating a purchaser expeditiously for all of Qimonda's domestic assets (RIB at 253 (citing RX-1298C at Q. 41, 52-54, 56; CX-989C at Q. 84, 88, 96; Tr. at 192:7-10; Deposition Stipulations, Munn at Tab 10, 23:1-18, 39:13-40:22, 119:9-13; RX-1268; RX-1273C; RX-1274C; RX-1275C; RX-1276C; Tr. at 734:25-740:8; RX-1248 at 6-7, 10; JX-23C at 14; RX-1324; Tr. at 722:15; Tr. at 1818:1-10));

- {
}
} (RIB at 253 (citing RX-1268; RX-1273C; RX-1274C; RX-1275C; RX-1276C; Tr. at 734:25-740:8; RX-1248 at 6-7)); and

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- Qimonda is in the process of { }
that will be based entirely overseas (RIB at 253 (citing RX-1710C; RX-1711C)).

Respondents assert that these “uncontroverted facts” defeat any claim by Qimonda that it has demonstrated significant or substantial domestic activities related to the patents-in-suit so as to establish the existence of a domestic industry under Section 337(a)(3), or a domestic industry in the process of being established under Section 337(a)(2). (RIB at 253-254 (citing Tr. at 1857:6-23, 1857:24-1858:2, 1858:3-6, 1869:18-1870:16).) Respondents argue that issuance of any remedial relief against Respondents would be inappropriate insofar as the evidence adduced at trial unmistakably demonstrates that a domestic industry does not currently exist. (*Id.*)

Respondents say that the Commission has assessed the existence and sufficiency of an alleged domestic industry at various points during the investigative process, including: (1) the original filing date of the complaint, (2) the filing date of the most recent amendment or supplement to the complaint, (3) the discovery cut-off date prior to the evidentiary hearing, and (4) where bankruptcy is at issue at points even after the target date of the investigation. (RIB at 256-257 (citing *Certain Short-Wavelength Light Emitting Diodes, Laser Diodes and Products Containing Same*, Inv. No. 337-TA-640, 2008 ITC LEXIS 1041, Order No. 16 at *31 (June 18, 2008) (“As for the cut-off date for establishing a domestic industry, the Commission has used not only the filing of the complaint as the cut-off point for satisfaction of the domestic industry requirement, but it has also used the end of the discovery as the cut-off point.”); *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-587, 2008 ITC LEXIS 755, Comm. Op. (May 16, 2008); *Certain Concealed Cabinet Hinges*, 337-TA-289, 1990 ITC LEXIS 3, Comm. Op. at 21 (Jan. 9, 1990) (holding that “we assess the existence of the domestic industry as of the discovery cutoff date prior to the evidentiary hearing”); *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, USITC Pub. No. 3003, 1996 ITC

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LEXIS 556, Comm'n Op. at 22 (Nov. 1996) (holding that the Commission may even take into account events that occur after the target date when evaluating the existence of domestic industry and the appropriateness of any continued relief).) Respondents argue that the time period for examining a domestic industry is determined "on a case-by-case basis in light of the realities of the marketplace." (*Id.* (citing *Certain Dynamic Random Access Memories, Components Thereof and Products Containing Same*, Inv. No. 337-TA-242, USITC Pub. No. 2034, 1987 ITC LEXIS 170, Comm'n Op. at *93 (Nov. 1987)).)

Respondents argue that Qimonda is not entitled to any relief under Section 337 because it has failed to establish that a domestic industry currently exists or is in the process of being established under Section 337(a)(2) and (3). (RIB at 257-258.) With respect to subparagraphs (A) and (B) of Section 337(a)(3), Respondents assert that the uncontested evidence of record {

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activities. (*Id.*) Respondents say that because subparagraphs (A) and (B) of Section 337(a)(3) require actual domestic manufacturing-related activities that employ the patents-in-suit to establish a domestic industry, Qimonda, by its own admissions, has not and cannot establish a domestic industry under those subparagraphs. (*Id.*)

Respondents continue that Qimonda cannot meet the requirements of subparagraph (C). Respondents say that in an attempt to establish a domestic industry under subparagraph (C), Qimonda reveals only a partial picture of its alleged U.S. activities. (RIB at 258.) Respondents say that at the hearing, Qimonda witnesses testified to recent domestic sales and marketing activities; but {

} (*Id.*)

Respondents state that Qimonda witnesses also testified to activities undertaken to bring and

{

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Respondents argue that the appropriate measuring date for evaluating the economic prong of the domestic industry requirement in this investigation must be one which incorporates the steep decline and ultimately the cessation of Qimonda's domestic activities following the filing of its original complaint. (RIB at 258-259.) Respondents argue that in deciding whether or not a domestic industry exists or is in the process of being established, "the domestic industry analysis is not confined to a rigid formula, and must be addressed on a case-by-case basis." (*Id.* (citing Order No. 21 at 8).) Respondents posit that Commission precedent confirms that Qimonda's post-bankruptcy activities must be taken into account in the domestic industry analysis. (*Id.* (citing *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, USITC Pub. No. 3003, 1996 ITC LEXIS 556, Comm'n Op. at 22 (Nov. 1996)).) Respondents conclude that {

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satisfying the economic prong of the domestic industry requirement under subparagraphs (A) or (B) of Section 337(a)(3)." (*Id.*)

Respondents argue that to satisfy the domestic industry standing requirement under subparagraphs (A) or (B) of Section 337(a)(3), a complainant is required to show that significant manufacturing-related activities are taking place in the United States. (RIB at 259-260 (citing *Certain Miniature, Battery-Operated, All-Terrain, Wheeled Vehicles*, Inv. No. 337-TA-122,

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USITC Pub. No. 1300, 1982 ITC LEXIS 207, Comm'n Op. (Oct. 1982), aff'd, *Schaper Manuf. Co. v. U.S. Int'l Trade Comm'n*, 717 F.2d 1368, 1371-73 (Fed. Cir. 1983) (the domestic industry requirement under subparagraphs (A) and (B) requires "exploitation of the {intellectual property} right by production in the United States"); H.R. Rep. No. 93-571, 93rd Cong., 1st Sess. at 78 (1973); S. Rep. No. 100-71, 100th Cong., 1st Sess. at 129 (1987) ("The first two factors in this definition have been relied on in prior Commission decisions finding that an industry exists in the United States."); H.R. Rep. No. 100-40, 100th Cong., 1st Sess. at 157-58 (1987) (same)). Respondents say the Commission has interpreted the intent of Section 337(a)(3)(A) and (B) to be "the protection of domestic manufacture of goods." (*Id.* (citing *Certain Dynamic Random Access Memories, Components Thereof and Products Containing Same*, Inv. No. 337-TA-242, USITC Pub. No. 2034 (Nov. 1987), Comm. Op. at 61, 1987 WL 450856 (Sept. 21, 1987); *Certain Ammonium Octamolybdate Isomers*, Inv. No. 337-TA-477, USITC Pub. No. 3668 (Jan. 2004), Initial Det., 2004 ITC LEXIS 105 (May 15, 2003)).)

Respondents assert that domestic non-manufacturing related activities may not be considered under subparagraphs (A) or (B) of Section 337(a)(3). (RIB at 259-260 (citing *Certain Dynamic Sequential Gradient Compression Devices and Components Parts Thereof*, Inv. No. 337-TA-335, USITC Pub. No. 2575, 1992 ITC LEXIS 710, Initial Det. at *107-08 (Nov. 1992) ("When Congress amended Section 337 in 1988, it expanded the scope of activities which could constitute a domestic industry. Subsections (A) and (B) of 337(a)(3) codified the existing Commission practice regarding a domestic industry as defined by investment in plant and equipment, or employment of labor or capital. Subsection (C) represents Congress' intent to define certain appropriate non-manufacturing activities as a domestic industry."))).)

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Respondents argue that the evidence in this investigation is consistent and unequivocal –
Qimonda {
} (RIB at 260-261 (citing RX-1298C at Q. 41, 52-
57, 61-62; CX-989C at Q. 87, 88, 92, 96; Tr. at 708:25-709:5; Deposition Stipulations, Munn at
Tab 10, 23:1-18, 28:12-22, 39:13-40:22, 74:22-77:3, 119:9-13, 181:21-183:11; Tr. at 192:7-10,
760:22-761:15, 762:16-20, 1013:16-1014:1, 185:21-186:22; JX-23C at 20; RX-1248 at 4; RX-
1253C at 95).) Respondents say that the evidence adduced at the hearing indicated that Qimonda
{

} (*Id.* (citing JX-23C at 7, 12, 14, 16; RX-1298C at Q. 41;
RX-1248 at 3, 8; Deposition Stipulations, Munn at Tab 10, 23:1-18, 35:9-36:1, 67:7-12, 68:21-
69:12, 69:21-70:5, 181:21-183:11; Tr. at 969:13-20; 696:21-697:13, 709:6-14; RX-1325; CX-
989C at Q. 85, 91; RX-1233; RX-1323).)

Respondents assert that the evidence shows that following initiation of the preliminary
insolvency proceeding by Qimonda AG in Germany on January 23, 2009, Qimonda AG cut off
{

²⁹ Respondents assert that Qimonda has claimed that the '899 patent was practiced {
facilities. (RIB at 160-261 (citing JX-23C at 17; RX-1298C at Q. 58-60).) }

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from Qimonda Richmond LLC in the future. (*Id.* (citing RX-1268: Tr. at 700:18-24; Deposition Stipulations, Munn at Tab 10, 114:18-115:13).) Respondents allege that these facts, which were {

}

(citing RX-1248 at 7-10, 9; JX-23C at 7; RX-1321C; Tr. at 717:2-6; RX-1322C.)

Respondents say that Miriam Martinez, President and Chief Financial Officer of Qimonda North America Corp. and Qimonda Richmond LLC, indicated that Qimonda decided in February 2009 to cease all manufacturing activities in the United States. (RIB at 261-262 (citing JX-23C at 14; RX-1248).) They continue that by the end of February 2009, all manufacturing

{ } (*Id.* (citing RX-1298C at Q. 52;

CX-989C at Q. 92; Deposition Stipulations, Munn at Tab 10, 181:21-183:11).) Respondents state that by early March 2009, all manufacturing activities at { }

facility had ceased. (*Id.*) Respondents conclude saying all of Qimonda's domestic

manufacturing activities had { } (*Id.* (citing RX-1298C at Q. 41, 52;

CX-989C at Q. 87, 92; Tr. at 708:25-709:5; Deposition Stipulations, Munn at Tab 10, 74:22-77:3, 181:21-183:11).)

Respondents assert that the evidence belies any continuing claim by Qimonda that (1) its {

}

future is sufficient to establish a domestic industry in the process of being established. (*Id.*)

Respondents allege that since at least early March 2009, Qimonda has {

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} (*Id.*) To support these allegations, Respondents refer to the following evidence: RX-1248 at 10; Tr. at 722:15, 723:5-726:5, 744:1-745:8, 760:3-761:15, 762:16-20; RX-1298C at Q. 54-57, 112-115; RX-1508; RX-1513C; RX-1251; RX-1263; RX-1296; RX-1324; RX-1554; CX-989C at Q. 99; Tr. at 1013:16-1014:1, 1818:1-10,1831:12-23; Deposition Stipulations, Munn at Tab 10, 28:12-22, 74:22-77/3, 185:21-186:22; JX-23C at 14. (RIB at 262-263.)

Respondents elaborate that Qimonda has entered into a number of sale and leveraged {
} (RIB at 263 (citing RX-1268; RX-1273C; RX-1274C; RX-1275C; RX-1276C; Tr. at 734:25-740:8; RX-1248 at 6-7).) Respondents argue that “Qimonda appears {
} fabrication facilities.” (*Id.*)

Respondents state that Qimonda has indicated that it {
} (RIB at 263-264 (citing RX-1298C at Q. 55-56, 112-115; CX-989C at Q. 99; Tr. at 1831:12-23; Deposition Stipulations, Munn at Tab 10, 185:21-186:22; Tr. at 760:3-21; RX-1508; RX-1263; RX-1513C).) Respondents say that Qimonda representatives testified at the hearing that despite these efforts they were unaware of any interest {
} facilities. (*Id.* (citing Tr. at 745:9-22; RX-1516).) Respondents argue that Qimonda’s actions to {
} existing assets, does not equate to a significant investment in plant or equipment, or a significant

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employment of labor or capital. (*Id.*) They say it signifies the opposite. Respondents continue that Qimonda's actions clearly indicate that it has no intent to establish an industry in the future and can point to no overt acts to demonstrate a "readiness to commence production" as required to prove that a domestic industry in the process of being established." (*Id.* (citing *Certain Electric Power Tools, Battery Cartridges, and Battery Chargers*, Inv. No. 337-TA-284, USITC Pub. No. 2389, 1991 ITC LEXIS 909, Comm'n Op. at *324 (June 1991); *Certain Ultra-Microtome Freezing Attachments*, 337-TA-10, 195 U.S.P.Q. (BNA) 653 (Apr. 2, 1976)).)

Respondents argue rather than proving that a domestic industry exists, under subparagraphs (A) or (B), the evidence demonstrates that any alleged past domestic industry is now extinct and that Qimonda is committed to a complete withdrawal from the U.S. market. (RIB at 264.) Respondents reason that because Qimonda has ceased all manufacturing-related activities in the United States and will not resume any such manufacturing-related activities in the United States in the future, the law precludes the ALJ from finding that Qimonda has satisfied the economic prong of the domestic industry requirement under subparagraphs (A) or (B) of Section 337(a)(3). (*Id.*)

Respondents argue that the evidence also precludes a finding of a domestic industry under subparagraph (C) of Section 337(a)(3). (RIB at 264.) They say Qimonda attempts to reveal only a partial picture of its alleged domestic activities in the hope of creating an illusion of a substantial U.S. presence; but an assessment of all the facts proves that Qimonda's U.S. presence is now extinct and will not be revived. (*Id.*)

Respondents assert that Qimonda witnesses testified to a {

} (RIB at 264-265.) Respondents say Qimonda ignored the fact that the

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party customer. (*Id.*) Respondents allege that Qimonda artfully crafted the testimony of its {
} would continue, which is not true. (*Id.* (citing Tr. at 794:19-805:7; CX-989C at Q. 100, 106; CX-1013C; CX-1014C).) Respondent recall the testimony of Dr. Bayerl, who testified that {
} (*Id.* (citing Tr. at 821:25-822:1).) They say Dr. Bayerl testified that he was unaware of a single {
} activities. (*Id.* (citing Tr. at 762:21-25).) Respondents point to Mr. Alexander and Mr. Lahnor, Qimonda’s two other domestic industry witnesses appearing at the hearing, and say that they also {
} (*Id.* (citing Tr. at 196:18-22, 708:7-15, 734:12-15, 771:22-772:2).)

Respondents note that Qimonda’s two witnesses operated or operate out of Germany and {
} to testify. (*Id.* at 266 (citing Tr. at 977:22-24; Tr. at 684:10-12, 717:7-718:23; CX-090C at Q. 2; CX-545C at Q. 5).) Respondents assert that Mr. Munn “and others” also testified that Qimonda {
} United States. (*Id.* (citing Tr. at 763:6-17; Deposition Stipulations, Munn at Tab 10, 138:20-141:22).) Respondents argue that these activities cannot substantiate Qimonda’s claim that a domestic industry currently exists or is in the process of being established under subparagraph (C) of Section 337(a)(3). (*Id.* at 267.)

Respondents argue that even if the alleged domestic sales and marketing activities did exist, they do not amount to evidence of a current domestic industry or a domestic industry in the

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process of being established. (RIB at 267.) Respondents say Commission precedent and the legislative history to Section 337 are well-settled – domestic sales and market activities alone are insufficient to meet the domestic industry requirement under subparagraphs (A), (B) or (C) of Section 337(a)(3). (*Id.* (citing *Certain Dynamic Sequential Gradient Compression Devices and Components Parts Thereof*, Inv. No. 337-TA-335, USITC Pub. No. 2575, 1992 ITC LEXIS 710, Comm’n Op. at *108 (Nov. 1992) (“Marketing and sales in the United States alone would not, however, be sufficient to meet {the domestic industry} test {under either subparagraph (A), (B) or (C)}.”); *Certain Integrated Circuits, Processes for Making Same, and Products Containing Same*, Inv. No. 337-TA-450, 2002 ITC LEXIS 753 at *204 (May 6, 2002) (mere sales and marketing activities are not the types of domestic non-manufacturing activities that were contemplated by Congress when it enacted Section 337(a)(3)(C)); S. Rep. No. 71, 100th Cong., 1st Sess. at 129 (1987); H.R. Rep. No. 40, 100th Cong., 1st Sess. at 157-58 (1987)).) Respondents concede that it may be true that such ongoing activities, in conjunction with more traditional domestic activities, can evidence a domestic industry under subparagraph (C); but they argue the lack of any ongoing sales and marketing activities by Qimonda, and its failure to sufficiently demonstrate that other “more traditional domestic activities” are ongoing, renders Qimonda’s claim under Section 337(a)(3)(C) inadequate. (*Id.*)

Respondents argue that Qimonda distorts and mischaracterizes the facts surround the

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facilities, and that keeping these facilities {

} (RIB at 267-269 (citing RX-1298C at Q. 54-57; Tr. at 762:16-20, 1013:16-1014:1; Deposition Stipulations, Munn at Tab 10, 28:12-22, 74:22-77:3, 185:21-186:22; RX-1268; RX-1273C; RX-1274C; RX-1275C; RX-1276C; Tr. at 734:25-740:8; RX-1248 at 6-7).)

Respondents assert that the evidence of record clearly establishes that the majority of {
owned by Qimonda. (RIB at 267-269 (citing RX-1268; RX-1273C; RX-1274C; RX-1275C; RX-1276C; Tr. at 734:25-740:8; RX-1248 at 6-7).) Respondents say this equipment was {

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these nominal activities. (*Id.*) Respondents argue that any reliance by Qimonda that these

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activities are sufficient to demonstrate a current or ongoing domestic industry is misplaced. To support their allegations, Respondents cite: RX-1268; RX-1273C; RX-1274C; RX-1275C; RX-1276C; Tr. at 734:25-740:8, 740:11-741:6; RX-1248 at 6-7; RX-1298C at Q. 111; RX-1265; and RX-1269. (RIB at 267-269.)

Respondents argue that, regardless of the reason for { } they are nevertheless legally insufficient to establish a domestic industry under subparagraph (C) of Section 337(a)(3) because they do not relate to either the patents-in-suit or any products produced pursuant thereto. (RIB at 269 (citing *Certain Microlithographic Machines and Components Thereof*, Inv. No. 337-TA-468, 2002 ITC LEXIS 426, Order No. 27 at 7 (July 7, 2002) (subparagraph (C) requires a showing of “a nexus . . . between the domestic industry in the United States and the patent in question”); *Certain Encapsulated Integrated Circuit Devices and Products Containing Same*, Inv. No. 337-TA-501, 2004 ITC LEXIS 426, Order No. 55 at 10 (May 24, 2004)).) Respondents say numerous witnesses at the hearing, including Qimonda’s own witnesses, { } (*Id.* (citing RX-1298C at Q. 54; Tr. at 192:11-24, 193:19-194:2, 1013:3-6, 1823:3-20).) Respondents say the patents-in-suit relate to either the design of semiconductors or the process for manufacturing semiconductors. They argue that because the fabrication facilities are not producing { } relate to the patents-in-suit. (*Id.* (citing RX-1298C at Q. 54; Tr. at 1012:20-1013:2, 1823:3-20).)

Respondents assert that Qimonda mischaracterizes the prior research and development activities allegedly undertaken with respect to the patents-in-suit. Respondents state that Qimonda “witnesses” testified to “certain prior research and development activities that

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allegedly led to the development of the patents-in-suit.” (RIB at 270.) They argue that Qimonda could not have contributed to any of the research and development related to the development of the patents-in-suit inasmuch as they were all developed prior to Qimonda’s formation in May 2006. (*Id.* (citing Tr. at 978:16-980:23).) Respondents allege that none of these efforts were undertaken in the United States. They say these efforts were undertaken in Germany. (*Id.* (citing RX-1298C at Q. 71-80; RX-1329 at 2; RX-1238C at 169; Tr. at 1014:3-1015:3; Tr. at 982:2-12, 983:16-985:3; Stecker Deposition at 41-42).)

Respondents assert that the evidence on this point was clear and uncontradicted that all of {
any research and development personnel in the United States. (*Id.*) Respondents allege that, just prior to Qimonda’s filing of the original complaint in this investigation, Qimonda decided to and {

} (*Id.*) Respondents continue that at that time, Qimonda publicly stated that any remaining research and development would be performed at Qimonda’s offices in Munich and Dresden, Germany. (*Id.*) Respondents conclude that, by the {

} (*Id.*) To support these allegations, Respondents cite the following evidence: JX-23C at 20; Deposition Stipulations, Munn at Tab 10, 42:1-43:14, 66:4-7, 66:14-67:3, 93:16-95:8, 95:21-96:3, 138:20-141:22; RX-1298C at Q. 13, 42, 61-62; CX-989C at Q. 111; Tr. at 688:20-689:23, 690:6-12; RX-1248 at 4, 8; Tr. at 1857:6-1858:6; Tr. at 763:1-17; RX-1253C at 95; RX-1326; RX-1507; RX-1551; RX-1328. (*Id.*)

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Respondents argue that Qimonda's alleged domestic research and development activities are insufficient to establish a domestic industry under subparagraph (C) of Section 337(a)(3) because they do not relate to either the patents-in-suit or any products produced pursuant thereto. (RIB at 272.) Respondents refer to the testimony of Qimonda's domestic industry expert, Dr. Button, who they say could not identify any domestic research and development undertaken by Qimonda that related to the patents-in-suit. (*Id.* (citing RX-1298C at Q. 77-78).) Respondents continue that Qimonda's own witnesses confirmed the lack of evidence on this point. (*Id.* (citing RX-1298C at Q. 72-80; RX-1329 at 2; RX-1238C at 169; Tr. at 1014:3-1015:3; "Stecker Deposition at 41-42"; Tr. at 978:16-980:23, 982:2-12, 983:16-985:3).)

Regarding Qimonda's attempt to establish a domestic industry through licensing activities, Respondents assert that the effort falls short of the standard required by law. (RIB at 273-274.) Respondents state that Qimonda witnesses testified to the prior and hopeful future activities of Qimonda's alleged domestic licensing program. (*Id.*) Respondents say that the Qimonda personnel that were allegedly part of that program could identify no such domestic activities. (*Id.*) Respondents state that Qimonda's alleged domestic licensing program was made

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from work or efforts of himself, Mr. Alexander or Ms. Maple related to the patents-in-suit. (*Id.*) Respondents argue that the evidence of record demonstrated that there was and is no link between any alleged licensing activities of Mr. Munn, Mr. Alexander and Ms. Maple and the patents-in-suit. (*Id.*) To support their contentions, Respondents cite the following evidence: JX-23C at 20, 21, Ex. 11; RX-1298C at Q. 16, 83-85, 88; Deposition Stipulations, Munn at Tab 10, 144:2-145:22, 151:3-18, 155:4-14; 159:5-10, 169:11-170:16, 171:5-14, 171:20-172:6, 175:7-11, 175:14-22, 178:7-17; Tr. at 869:4-16, 870:25-871:9, 875:22-876:12, 880:3-8, 881:16-20, 887:22-25; RX-1710C; RX-1711C; RX-1329 at F-3; Tr. at 977:22-978:2, 987:7-12; and RX-1253 at 144-45, 172 and 178. (RIB at 273-274.)

Respondents argue that Commission precedent indicates that the foregoing facts are insufficient to demonstrate a domestic industry under subparagraph (C) of Section 337(a)(3). (RIB at 274 (citing *Certain Wireless Communications Equipment, Articles Therein, and Products Containing Same*, Inv. No. 337-TA-577, 2007 ITC LEXIS 322, Order No. 20 at 5 (Feb. 22, 2007) (denying complainant’s claim under subparagraph (C) because it was “unclear what involvement [the alleged] office had” in licensing activities related to the patents in issue)).)

Respondents state that {

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patents-in-suit. (*Id.* (citing Deposition Stipulations, Munn at Tab 10, 169:11-170:16, 171:5-14, 171:20-172:6, 175:7-11, 175:14-22, 178:7-17).) Respondents argue that Commission precedent dictates that Qimonda’s claim must fail because the claimed activities lack any nexus to the

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patents-in-suit. (*Id.* (citing *Certain Wireless Communications Equipment, Articles Therein, and Products Containing Same*, Inv. No. 337-TA-577, 2007 ITC LEXIS 322, Order No. 20 at 6-7 (Feb. 22, 2007) (noting that complainant had “failed to prove a nexus between the money allegedly spent . . . and any domestic licensing activities”)).) Respondents add that Qimonda’s claim must fail because Qimonda has not put forward any evidence to demonstrate that the { } is “substantial,” as required by the statute. (*Id.* (citing 19 U.S.C. § 1337(a)(3)(C); *Certain Encapsulated Integrated Circuit Devices and Products Containing Same*, Inv. No. 337-TA-501, 2004 ITC LEXIS 426, Order No. 55 at 11 (May 24, 2004) (requiring a complaint to provide a “detailed, verified factual accounting” of its alleged activities under subparagraph (C))).) Rather, they say, the evidence of record indicates to the contrary as a { } (*Id.* (citing JX-23C at 21, Ex. 11; RX-1298C at Q. 84).)³¹ Respondents argue that such an investment cannot be said to be “significant.” (RIB at 274-275.)

Respondents argue that Commission precedent also does not recognize licensing activities for domestic industry purposes absent (1) a consummated license agreement and (2) the receipt of significant revenues (i.e., royalties) by the patent owner from its licensing activities. (RIB at 275-276 (citing *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, 2007 WL 4427218, Initial Det. (Dec. 3, 2007) (“Commission decisions [] reflect the fact that a complainant’s receipt of royalties is an important factor in determining whether the domestic industry requirement is satisfied There is no Commission precedent for the establishment of a domestic industry based on licensing in which a complainant did not receive any revenue from alleged licensing activities.”) (citations omitted); *Certain Semiconductor Chips*

³¹ Respondents note that in fiscal year 2006-2007, Qimonda’s worldwide revenues totaled \$4.8 billion. (RIB at 275 (citing JX-23C at 7, 21; RX-1298C at Q. 84; RX-1329 at 95, 97).)

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with Minimized Chip Package Size and Products Containing Same, Inv. No. 337-TA-630, 2008 ITC LEXIS 1700, Order No. 31 at *6-7 (Sept. 16, 2008) (same)). Respondents assert that Qimonda can show neither. (*Id.*)

Respondents state that Qimonda was unable to produce a single consummated license agreement covering any of the patents-in-suit that provided for a royalty payment. (RIB at 276.) They say the one agreement produced by Qimonda that fell within the scope of evidence permitted by me for purposes of domestic industry was entered into in {

} (*Id.* (citing RX-1298C at Q. 88).) Respondents say that the { } (*Id.* (citing RX-1298C at Q. 88-91; Deposition Stipulations, Munn at Tab 10, 245:4-13).) Respondents add that the agreement was not a license agreement at all. They say it was part of a complex deal {

} (*Id.* (citing RX-1298C at Q. 91-96).) Respondents assert that {

} (*Id.* (citing RX-1298C at Q. 88-94, 99; CX-989C at Q. 26).) Respondents argue that this agreement, like the others claimed to exist by Qimonda, { } to establish the required nexus to the patents-in-suit. (*Id.*)

Respondents point to Mr. Munn's testimony indicating that he was unable to provide any evidence that would support any domestic investment by Qimonda in exploitation of the patents-in-suit. (*Id.* (citing Deposition Stipulations, Munn at Tab 10, 169:11-170:16, 171:5-14, 171:20-172:6, 175:7-11, 175:14-22, 178:7-17).) Respondents say this explains why Qimonda's domestic industry expert, Dr. Button, could not opine that Qimonda has a substantial investment

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in the exploitation of the patents-in-suit through licensing activities. (*Id.* (citing Tr. at 1015:5-8).)

In their reply brief Respondents argue that Ground Rule 11.1 provides that any arguments not raised in a party's Post-trial Brief shall be waived. Respondents assert that, since Qimonda did not claim in its Post-trial Brief that it has a domestic industry in the process of being established, Qimonda has waived any right to assert such a claim in this Investigation. (RRB at 104.)

Respondents assert that Dr. Bayerl is not a knowledgeable witness concerning Qimonda AG's alleged domestic activities. They say {

} (*Id.* at 106 (citing Tr. at 684:10-

12, 713: 3-8).) Respondents state that when cross-examined, Dr. Bayerl could not speak to any details regarding the plans that the CEO of Qimonda North America and Qimonda Richmond represented to the U.S. bankruptcy court. (*Id.* (citing Tr. at 718: 24-719: 6).) They continue that {

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industry. They conclude Dr. Bayerl admitted that he did not speak with anyone at Qimonda North America to educate himself about issues such as whether {

} (*Id.* (citing Tr. at 732: 5-10).)

They continue that at the hearing Dr. Bayerl, could not state what portion, if any, of this inventory remains in the United States. (*Id.* (citing Tr. at 821:25-822:1).) Respondents say he also did not know what portion of the alleged {

} to the

'670, '434, or '899 patents. (*Id.* (citing Tr. at 822:2-11).) Respondents assert that, although Dr.

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produced at Qimonda Richmond were fabricated using the patented technology. (*Id.* (citing Tr. at 822:12–823:14; CX-989C at Q. 151.)

Respondents assert that Dr. Bayerl is not a credible witness because his testimony was “clearly not his own.” (RRB at 107-108.) Respondents state that Qimonda AG witnesses Dr. Bayerl and Marc Ignacio Asperas and Qimonda North America witness Michael Munn have all submitted testimony or declarations during the course of this Investigation. Respondents contend that although the declarations and testimony supposedly came from these three separate people, the language that appears within them is nearly identical. (*Id.*) Respondents say Dr. Bayerl’s direct testimony consists of 198 questions and answers. (*Id.* (citing CX-989C).) Respondents continue that despite his sworn testimony that his witness statement contains his own answers, 166 questions and answers in Dr. Bayerl’s direct testimony are identical to those contained in the direct testimony of Mr. Asperas, who also testified under oath that this witness statement contains his own answers. (*Id.* (citing CX-989C; RX-1705C).) Respondents add that another 6 questions and answers of their direct testimonies are “virtually identical.” (*Id.* (citing CX-989C; RX-1705C).) Respondents conclude that, in addition to being nearly identical to each other, 72 answers in Dr. Bayerl’s and Mr. Asperas’ direct testimonies use nearly identical language as that used in the Declaration and Supplemental Declaration of Qimonda North America’s General Counsel and Vice President, Michael Munn. (*Id.* (citing CX-989C; RX-1705C; CX-3C; JX-23C at 17; RX-1298C at Q. 58-60).)

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Respondents assert that in an attempt to explain away the striking similarity between Dr. Bayerl's direct testimony and that of Mr. Asperas, Dr. Bayerl testified that his witness statement was put together before Mr. Asperas'. (RRB at 108 (citing Tr. at 902:1-6).) Respondents note that both Dr. Bayerl's and Mr. Asperas' direct testimonies were signed on May 11, 2009. (*Id.* (citing CX-989C "at 233369"; and RX1705C "at 233444").) Respondents argue that this testimony does not explain why such a large portion of Dr. Bayerl's testimony is nearly identical, if not completely identical, to portions of the Declaration and Supplemental Declaration of Michael Munn, which were signed on November 20, 2008 and April 13, 2008, respectively, months before Dr. Bayerl's testimony was prepared. (*Id.* (citing CX-3C "at 201346" and "at 201350").) They conclude that, the "self-serving testimony on this issue should be disregarded." (*Id.*)

Respondents posit that Dr. Bayerl copied the statements contained in Mr. Munn's declaration. Respondents assert that Dr. Bayerl did not know whether or not the {
} America on the topic. (RRB at 108-109 (citing Tr. at 732:5-10, 734:12-15).) Respondents say Mr. Munn previously testified that the {
} off, on May 20, 2009. (*Id.* (citing Deposition Stipulations, Munn at Tab 10, 42:1-43:14, 46:6-47:3).) Respondents indicate that Dr. Bayerl stated that approximately {
} (*Id.* (citing CX-989C at Q. 107; Tr. at 821:25-822: 1).) Respondents contrast that testimony with Mr. Munn's in which he said that Qimonda's domestic inventory was {
} (*Id.* (citing Deposition Stipulations, Munn at Tab 10, 59:15-17, 59:22-60:3, 62:4-14).)

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Respondents argue that, because Dr. Bayerl is an unknowledgeable witness and because he lacks credibility, Dr. Bayerl's testimony cannot be relied upon as the basis for finding that Qimonda AG has a domestic industry or is in the process of establishing one. (RRB at 109.)

Respondents contend that Qimonda misrepresents the evidence of record, more specifically Qimonda states that “{b}ased on this evidence, . . . Respondents' expert, Carla Mulhern, agree{s} the domestic industry requirement was met as of the filing of the complaint.” (RRB at 110-111 (citing CIB at 217-18 (citing Tr. at 1879:24-1881:2)).) Respondents aver that Ms. Mulhern never agreed that Qimonda had met the domestic industry requirement as of the filing of the complaint. Rather, they say, Ms. Mulhern's cited testimony provides “I would agree that with respect to three of the four patents they had domestic manufacturing activities ongoing {at the time of the filing of the complaint}.” (*Id.* (citing Tr. at 1879:24-1881:2).) Respondents argue that ongoing domestic manufacturing activities at the time the original complaint was filed do not equate to satisfying the domestic industry requirement, particularly inasmuch as Ms. Mulhern testified that she has not interpreted the claims of the patents-in-suit and has no opinion as to whether Qimonda's products were manufactured pursuant to the claims of any of the patents-in-suit. (*Id.* (citing Tr. at 1824:1-8).) Respondents conclude that Ms. Mulhern notes that it is “Qimonda's conten{ion}” that the products previously manufactured “practice the patents-in-suit.” (*Id.* (citing Tr. at 1879:24-1881:2).)

Respondents argue that *Bally/Midway Mfg. Co. v. Int'l Trade Comm'n*, 714 F.2d 1117, 1123 (Fed. Cir. 1983) is inapposite. (RRB at 111-112.) They say that case “was premised on the fact that the respondents' unfair acts had injured the domestic industry for Rally-X to the point that complainant was no longer producing the game.” (*Id.* (citing Order No. 21 at 10).) Respondents say that here, “the parties agree that Respondents do not compete and are not

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responsible for the demise of Qimonda's domestic activities." (*Id.*) Respondents argue that "the other precedent" cited by Qimonda is also not on point as they not only involved historic domestic investments by the complainant, but also involved significant or substantial ongoing or continuing domestic activities related to the patents-in-suit or products produced pursuant thereto. (*Id.*)

Respondents give as an example, *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, USITC Pub. No. 3003, 1996 ITC LEXIS 556, Comm'n Op. (Nov. 1996), saying that the Commission found that the complainant "continue[d] to exploit the patent" through the provision of ongoing "operation and maintenance services" for the products protected by the patent and imposed a quarterly reporting requirement which would act to revoke the remedial order if the domestic activities ceased. (RRB at 112.) Respondents compare *Certain Battery-Powered Ride-On Toy Vehicles and Components Thereof*, Inv. No. 337-TA-314, 1990 ITC LEXIS 393, Order No. 6 (Dec. 5, 1990), saying the ALJ found that the complainant "still ha[d] inventory of the dual control power pedal unit that is the subject of the patent," that these were still being "sold as replacement parts to stores or individual purchasers when the warranties on their toys expired," that "[t]he dual control unit is a safety feature on the toy" and thus that "[f]urnishing replacement parts would be significant," that "[m]aking replacement parts available generates good will for the company," etc. (*Id.*) They argue in addition, it was clear in *Certain Battery-Powered Ride-On Toy Vehicles and Components Thereof* that the complainant was still manufacturing and selling an improved product that may also have practiced the patent (the improved product was simply not before the ALJ). (*Id.*)

Finally, Respondents examine *Certain Video Graphics Display Controllers and Prods. Containing Same*, No. 337-TA-412, 1999 ITC LEXIS 503, Initial Det. (May 14, 1999), saying

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that the ALJ found “[t]hat Cirrus is not currently manufacturing the 5465 product is not dispositive, as the evidence shows that Cirrus has invested substantial capital in developing and manufacturing the 5465 product, and uncontradicted testimony establishes that Cirrus is currently offering for sale and intends to continue offering for sale an existing inventory of the product.” (RRB at 112.) In addition, they say, the ALJ found that “the evidence is undisputed that, in exchange for a significant monetary payment, Cirrus has licensed the ’525 patent,” and that complainant “is paying ISD Corporation for research and development activities, including continuation of software development and maintenance for the 5465 product.” (*Id.* at 113.) Respondents argue that accordingly, the ALJ concluded “[t]he sum total of Cirrus’ past as well as present investment associated with the 5465 product, coupled with Cirrus’ activity related to licensing the ’525 Patent supports a finding of domestic industry at any point from the time of the filing of the complaint through the date of the hearing.” (RRB at 113.)³²

Respondents concede that Qimonda’s interpretation of the law is correct with respect to the “significant investments” required under subparagraphs (A) and (B), but they argue that Qimonda’s interpretation is wrong for the “substantial investments” required under subparagraph (C). (*Id.*) Respondents say that Congress used unique language in subparagraph (C) requiring “substantial investment in its exploitation” – which they say expressly refers to the patents-in-suit. (*Id.*) Respondents assert that Qimonda has made no effort to tie any of its domestic activities or investments in licensing or R&D to the patents-in-suit as required by subparagraph (C). (*Id.*) Respondents argue the record demonstrates that there was none. Respondents conclude that Qimonda has not made a colorable claim with respect to subparagraph (C) of Section 337(a)(3) in its Post-trial Brief. (*Id.*) Respondents argue that in accordance with Ground

³² Respondents assert that DRAMs are not the kind of product which requires post-sale services, such as replacement parts or technical support, as in these cases. (RRB at 113.) Here, they contend, there is simply no basis for finding a continuing or ongoing operation now that Qimonda’s domestic inventory is fully depleted. (*Id.*)

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Rule 11.1, Qimonda has waived its right to make any assertion that it has established the economic prong of the domestic industry requirement under subparagraph (C). (RRB at 114.)

Respondents argue that Qimonda's interpretation of the law is directly at odds with its own brief and the legislative history that it cites. Respondents say Qimonda argues "Congress made clear in the legislative history to the Omnibus Trade and Competitiveness Act of 1988 that subsection (C) 'does not require actual production of the article in the United States if it can be demonstrated that investment activities of the type enumerated are taking place in the United States.'" (RRB at 114-115 (citing CIB at 220 (citing H. Rep. No. 100-40 at 157 (1987))).)

Respondents reason, therefore, Qimonda must agree that without the production of articles it is impossible to demonstrate a substantial investment in the United States relating to articles protected by the patents-in-suit under subparagraph (C). (*Id.*) Respondents argue that Commission precedent has expressly found that "[t]he word 'its' [in Section 337(a)(3)(C)] cannot refer to the 'articles' protected by the patent. Because of the singular nature of the word 'its,' it must refer to the singular noun 'patent,' or one of the other forms of intellectual property, which are all enumerated in the singular by section 337(a)(3)." (RRB at 114-115 (citing *Certain Semiconductor Chips with Minimized Chip Package Size and Products Containing Same*, Inv. No. 337-TA-432, 2001 ITC LEXIS 971, Order No. 13 (Jan. 24, 2001))).)

Respondents contend that Commission precedent also has expressly found that the economic prong of the domestic industry requirement under subparagraph "(C) does require 'substantial' domestic investment in the exploitation of the [] patent." (RRB at 115 (citing *Certain Home Vacuum Packaging Machines*, Inv. No. 337-TA-496, 2003 ITC LEXIS 790, Order No. 36 at 141 (Dec. 3, 2007))). Respondents state that Commission precedent confirms Respondents' interpretation of the statutory requirements under Section 337(a)(3)(C), which is

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that “[t]he domestic industry analysis under subsection (C) ‘subsumes within it the technical-prong aspect’ and, thus, only the economic prong needs to be proven.” (*Id.* (citing *Certain Short-Wavelength Light Emitting Diodes, Laser Diodes and Products Containing Same*, Inv. No. 337-TA-640, Order No. 16 (June 18, 2008) (quoting *Certain Light Emitting Diodes and Products Containing Same*, Inv. No. 337-TA-512, Initial Det. at 134 (May 10, 2005))).)

Respondents reason that inasmuch as, { }
activities in the United States and { }
Qimonda has not and cannot establish a domestic industry under subparagraphs (A) or (B) of Section 337(a)(3). (RRB at 120.) Respondents thus need not address Qimonda’s claims under those subparagraphs any further. (*Id.*)

Respondents argue that Qimonda has failed to legally substantiate its claim. Respondents assert that the primary activities upon which Qimonda’s contentions rely had ceased as of the date of the evidentiary hearing. (RRB at 122-123.) They continue that regarding those minimal activities that may be ongoing, Qimonda has not and cannot establish that the corresponding investments “relate to” or have a “sufficient nexus” to the patents-in-suit. (*Id.* (citing *Certain Home Vacuum Packaging Machines*, Inv. No. 337-TA-496, 2003 ITC LEXIS 790, Order No. 36 at 141 (Dec. 3, 2007); *Certain Short-Wavelength Light Emitting Diodes, Laser Diodes and Products Containing Same*, Inv. No. 337-TA-640, Order No. 16 (June 18, 2008); *Certain Light Emitting Diodes and Products Containing Same*, Inv. No. 337-TA-512, Initial Det. at 134 (May 10, 2005))).) Respondents argue that Qimonda cannot establish that the alleged investments are “substantial,” as required by Section 337(a)(3)(C). (*Id.* (citing 19 U.S.C. § 1337(a)(3)(C); *Certain Encapsulated Integrated Circuit Devices and Products Containing Same*, Inv. No. 337-TA-501, 2004 ITC LEXIS 426, Order No. 55 at 11 (May 24, 2004) (requiring a complaint to

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provide a “full and detailed, verified factual accounting” of its alleged domestic activities under subparagraph (C)).)

Respondents counter Qimonda’s claim that it {

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production”. (RRB at 123-124 (citing CIB at 218, 238-240, 247).) Respondents say these activities are not being undertaken to enable Qimonda to resume domestic manufacturing, because the evidence of record clearly establishes that Qimonda does not intend to resume domestic manufacturing at any time in the future. (*Id.*) Respondents emphasize that Qimonda

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(*Id.*) Respondents argue that the evidence is clear that Qimonda views these expenses as an

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establish a domestic industry under subparagraph (C) of Section 337(a)(3) because they do not relate to or have a sufficient nexus to the patents-in-suit. (*Id.*)

Respondents highlight that the testimony and evidence cited to by Qimonda expressly establishes that the inventory figures referenced are as of { } (RRB at 127 (citing CIB at 244).) Respondents argue that the record is replete with evidence that Qimonda has

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activities in the United States and has laid off the employees previously associated with those activities. (*Id.*)

Respondents contend that “[w]hat, if any, raw material inputs Qimonda North America Corp. or Qimonda Richmond LLC currently have in inventory is irrelevant insofar as their only customer for these raw material inputs is Qimonda AG which is insolvent, as of April 1, 2009, legally dissolved, and has expressly stated that it does not intend to purchase any further raw material inputs from Qimonda North America Corp. or Qimonda Richmond LLC.” (RRB at 127-128 (citing RX-1268; Tr. at 700:18-24; “Munn, Dep. Tr. at 114:18-115:13”).) Respondents conclude that, even if Qimonda were still selling product in the United States, which it is not, well-settled Commission precedent provides that domestic sales and market activities alone are insufficient to meet the domestic industry requirement under subparagraphs (A), (B) or (C) of Section 337(a)(3). (*Id.*)

Respondents assert that the evidence of record establishes that Qimonda sought to reject { } (RRB at 128 (citing RX-1298C at Q. 108; RX-1267; Tr. at 741:20-742:8; RX-1297; RX-1293).) Respondents aver that Qimonda asserted to the Delaware bankruptcy court that it no longer required any product distribution services given that domestic manufacturing and sales had ceased. (*Id.* (citing RX-1267; RX-1298C at Q. 112; Deposition Stipulations, Munn at Tab 10, 223:5-18).) Respondents conclude that the evidence “suggests” that “DC Richmond,” Qimonda’s distribution center and warehouse complex for DRAM products sold by QNA, { } (*Id.* (citing RX-1267).)

Respondents note that Qimonda also alleged that a { } related to the {

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} (*Id.*) Respondents argue that Mr.

Munn testified that he was unable to allocate any expenditures incurred by Qimonda to domestic exploitation of any of the patents-in-suit. (*Id.*) Respondents conclude that the two Qimonda representatives who were closest to the facts surrounding Qimonda licensing allegations, Mr. Munn and Dr. Button, were unable to provide any evidence that would support any domestic investment by Qimonda in exploitation of the patents-in-suit. (*Id.*)

Commission Investigative Staff's Position: Staff argues that the domestic industry determination should not be made according to any rigid formula; but by an examination of the facts in each investigation, the articles of commerce and the realities of the marketplace. (SIB at 92 (citing *Certain Double-Sided Floppy Disk Drives and Components Thereof (Temporary Relief)*, Inv. No. 337-TA-215, 227 USITC Pub. 1860 (May 1986), Comm'n Op. at 17 ("*Floppy Disk Drives*"))).)

Staff notes that there is no dispute that Qimonda has filed for bankruptcy in Germany with its subsidiaries filing for bankruptcy in the United States. Staff, however, believes that the evidence shows that Qimonda has sufficient activities to satisfy domestic industry requirements set forth at 19 U.S.C. § 1337(a)(3). (SIB at 91-92.)

Staff argues that the evidence shows that Qimonda had a significant domestic industry in the United States at the time the complaint was filed in this investigation. They assert that the evidence demonstrates that at or about the time of filing the complaint, Qimonda and its subsidiaries maintained: (1) {

}

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(SIB at 92-93 (citing CX-544C at Qs. 36-40, 72-79).)

Staff states that the evidence shows that {

} (SIB at 93 (citing CX-554C at Q.35).)

Staff adds that, from 2004 through 2007, Qimonda and its subsidiaries invested

{

} (SIB at 93-94 (citing CX-989C at Q. 64, 80;

CX-554C at Q. 36, 64).) They assert that, during cross-examination, Respondents' domestic industry expert, Carla Mulhern, "tacitly conceded" that Qimonda possessed a domestic industry at the time of filing the original complaint in this case. (*Id.* (citing Tr. at 1879-80).)

Staff concedes that following its bankruptcy filing in early 2009, Qimonda's domestic activities in the United States have decreased dramatically. (SIB at 94.) Staff points out that

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idle.” (*Id.*) Staff points out that Qimonda admitted { }

[relevant] products ...” (*Id.*) Staff states the Qimonda asserts that it intends to employ

{
} (*Id.* (citing CPHB at 186-187).) Staff says it is unclear how many Qimonda employees presently remain in the United States and what responsibilities they may have in the future. (*Id.*)

Staff asserts that the evidence shows Qimonda has a significant inventory of both { } investigation. (SIB at 94-95.) Staff indicates that, while these sales and sales activities have continued to decline, they are nonetheless ongoing. (*Id.* (citing CX-989C at Q. 93-107; CX-554C at Q. 85-86).)

Staff argues that Qimonda’s post-bankruptcy activities, when viewed in the context of its pre-bankruptcy activities, constitute sufficient domestic activities to satisfy the economic prong of the domestic industry requirement. To support their assertion Staff cites: *Certain Video Graphics Display Controllers and Products Containing Same*, Inv. No. 337-TA-412, Initial Determination (May 14, 1999)(“*Video Graphics*”); *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, Comm’n Op. (Sep 23, 1996)(“*Wind Turbines*”); and *Certain Battery-Powered Ride-On Toy Vehicles and Components Thereof*, Inv. No. 337-TA-314, Comm’n Op. (declining to review portions of Initial Determination related to domestic industry), U.S.I.T.C. Publ. No. 2420 (January 4, 1991) (“*Toy Vehicles*”). (SIB at 95.)

Staff argues that in *Wind Turbines* the Commission found a domestic industry existed

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despite Complainant's initiation of bankruptcy proceedings shortly before the issuance of the Initial Determination. (SIB at 96 (citing *Wind Turbines* at 9).) Staff says that relying on *Toy Vehicles* the Commission reasoned:

Because it has been only a matter of months since complainant ceased its manufacturing activities with respect to the [alleged domestic product], and because of complainant's substantial investment in plant and equipment, significant employment of labor and capital, and substantial investment in engineering, research and development related to the patented technology, as well as evidence that it continues to exploit the patent (albeit in a more limited fashion), we reaffirm our determination that there is a domestic industry in this investigation.

(SIB at 96.)

Staff says that in *Toy Vehicles*, the Commission declined to review the ALJ's Initial Determination finding that a domestic industry existed despite the fact that Complainant had ceased production and sales of the alleged domestic industry product. (SIB at 96.) Staff says the ALJ observed that the Complainant had previously incurred significant expenditures in "buildings, labor, equipment, and research to develop the invention ..." protected by the patents-in-suit. (*Id.*) Staff indicates that the ALJ noted that despite the cessation of manufacturing and sale of the domestic industry product, Complainants continued to sell existing inventory of the products "as replacement parts to stores or individual purchasers when the warranties on their toys have expired." (*Id.*) Staff adds that the ALJ concluded that "[t]he current sales of the unit may be few, and the costs of replacing these parts free may not be large, but they meet the criteria of the statute." (*Id.*)

Staff says that in *Video Graphics*, the Commission adopted the ALJ's Initial Determination regarding a finding of domestic industry. (SIB at 96.) Staff represents that the ALJ found a domestic industry existed despite the Complainant's cessation of manufacturing of the protected product based on *Wind Turbines* and *Toy Vehicles*, noting Complainant had

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“invested substantial capital in developing an manufacturing the [protected] product” and planned to continue to sell existing inventory of the product, and had licensed the product to a third party. (*Id.* (citing *Video Graphics* at 8).)

Staff argues that there is no dispute that Qimonda had wide ranging and substantial domestic activities in the United States at the time of filing the complaint. They contend that Qimonda’s bankruptcy filings in Germany and the United States do not alter that it expended substantial capital in the development and manufacturing of its domestic products. Staff adds that following its bankruptcy filing, Qimonda continued to employ relevant personnel in the United States and continued selling off its inventory of domestic products. Staff argues that this evidence is sufficient to establish a domestic industry particularly when viewed in light of *Video Graphics*, *Wind Turbines* and *Toy Vehicles*. (SIB at 97.)

Staff argues that Qimonda may not rely on the activities of { } to support its domestic industry allegations, because of my ruling in Order No. 31 (May 4, 2009) denying Qimonda’s motion for leave to amend the complaint to add the { } (SIB at 53.)

Discussion and Conclusion: Based upon all of the foregoing evidence and argument, I find that Qimonda has proven by a preponderance of evidence that it meets the economic prong of the domestic industry requirement pursuant to 19 U.S.C. § 1337(a)(2) and (3)(A).

It is undisputed that, through its subsidiaries,³³ Qimonda met the economic prong of the domestic industry requirement when it filed the complaint on November 20, 2008.³⁴ The

{

sales of DRAM semiconductors. {

} (CX-989C at Q. 23-24; CX-295C.)

³⁴ While Respondents do not concede this point, they appear to ignore it, focusing instead on the period following Qimonda’s entry into bankruptcy. Staff believes that Qimonda met the economic prong as of November 20, 2008.

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unchallenged evidence indicates that as of the date of filing the complaint, Qimonda had two {
}.
(CX-544C at Q. 36, 37, 57; CX-989C at Q. 64, 67, 72, 127, 135, 143, 151; Tr. at 696:13-698:7, 920:925:5, 1821:20-21; CX-302C; CDX-12C.) Qimonda had { } of employees in the United States who sold or offered technical support to customers for products allegedly protected by the patents-in-suit. (CX-989C at Q. 69, 74, 77, 132, 140, 148, 156-157.) Qimonda had research and development facilities in the United States that employed { } of engineers who developed, modified, tested, and implemented designs or products allegedly protected by the patents-in-suit. (CX-545C at Q. 7-8, 12-15, 18-20, 22-25, 32-41, 44, 49-53; CX-989C at Q. 68, 70, 73, 75, 79-80; Tr. at 990:23-991:10, 992:2-994:10, 994:18-24, 999:9-1000:5.) Based on this evidence, Respondents' expert, Carla Mulhern, agreed the domestic industry requirement was met as of the filing of the complaint. (Tr. at 1879:24-1881:2; CX-534C at 93:14-95:2, 99:6-19.)

The evidence shows that prior to bankruptcy, Qimonda had a business campus in {
}.
(CX-296C; CX-301C; CX-989C at Q. 64; CX-544C at Q. 36; Tr. at 696:13-698:6.) A significant percentage of these products were allegedly protected by the patents-in-suit. (CX-989C at Q. 127, 135, 143, 151; Tr. at 920:5-925:5; CDX-12C; CX-302C.)

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The evidence indicates that since 1996, Qimonda has invested approximately { } in its Richmond fabs. (CX-298C; CX-299C; CX-544C at Q. 37; CX-989C at Q. 65; Tr. at 824:5-7, 902:24-903:1, 1818:11-13.) Qimonda invested approximately { } 2006/2007 and 2007/2008 to maintain and improve its Richmond fabs, which enabled the production of products allegedly protected by the patents-in-suit. (CX-298C; CX-544C at Q. 37; CX-989C at Q. 65, 127, 135, 143, 151; Tr. at 920:5-925:5; CDX-12C; CX-302C.)

Qimonda operated the Richmond fabs { } (CX-544C at Q. 36, 37; CX-300C; CX-989C at Q. 67, 72; CX-300C; Tr. at 1821:20-21.) Qimonda earned approximately { } (CX-989C at Q. 67.)

Qimonda maintained research and development facilities in the United States, including a { } DRAMs. (CX-544C at Q. 63; CX-545C at Q. 5-7, 10, 25, 32; CX-989C at Q. 68; Tr. at 688:1-689:23, 690:19-691:8.) { } which “comprised” approximately { } (CX-989C at Q. 68.) Qimonda also maintained a research and development center in { } (CX-989C at Q. 70; CX-301C; Tr. at 685:25-686:2, 891:12-18.) { }) QNA { } square feet. (CX-301C; CX-989C at Q. 70.) These investments supported in part the development, modification, testing, and implementation of designs and products allegedly

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protected by the patents-in-suit. (CX-545C at Q. 12-15, 18-20, 22-25, 32-41, 44, 49-53; Tr. at 688:1-689:23, 690:19-691:18.)

Qimonda maintained sales facilities in the United States, including a facility based in {
United States. {

} (CX-989C at Q. 69; CX-301C.) A significant portion of these expenses were dedicated to sale, marketing, and customer support activities relating to products allegedly protected by the patents-in-suit. (CX-989C at Q. 132, 140, 148, 156-157; CX-545C at Q. 49-53; Tr. at 726:6-20; CDX-12C; CX-530C.)

Qimonda also maintained a {
engaged in sales activities and associated engineering work for customers. (CX-301C; CX-989C at Q. 69; Tr. at 726:6-20, 729:4-10.) A significant portion of the expenses for this facility was dedicated to sale, marketing, and customer support activities relating to products allegedly protected by the patents-in-suit. (CX-989C at Q. 132, 140, 148, 156-157.)

As of November 20, 2008, Qimonda had approximately {
personnel engaged in the production of semiconductor wafers at the Richmond fabs, who also engaged in quality control and other, production-related activities at the Richmond fabs. (Tr. at 1820:12-14; CX-544C at Q. 57; CX-989C at Q. 72.) The Richmond fabs produced wafers {
personnel at the Richmond fabs. (CX-304C; CX-301C; CX-989C at Q. 72; CX-544C at Q. 57.)

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A significant percentage of those expenses were attributable to the production of products allegedly protected by the patents-in-suit. (CX-989C at Q. 131, 139, 147, 155; Tr. at 920:5-925:5; CDX-12C; CX-302C.)

In financial year 2007/2008, Qimonda incurred approximately {

}

patents-in-suit. (CX-989C at Q. 74, 132, 140, 148, 157; CX-530C; CX-545C at Q. 49-53; 726:6-20; CX-304C; CX-466C; CX-467C.)

All of the foregoing clearly establishes that when it filed the complaint, Qimonda had significant investments in labor and capital for its manufacturing, product engineering, design, research and development, process development, product development, testing, and sales operations in the United States. (CX-544C at Q. 35, 37; CX-989C at Q. 65, 71.) Based on all of the foregoing, I find that, as of the date the complaint was filed in this matter, November 20, 2008, Qimonda met the economic prong of the domestic industry requirement pursuant to 19 U.S.C. § 337(a)(3)(A) and (B).

Based upon the evidence before me, however, it is necessary to examine Qimonda's activities after the date it filed the complaint to determine whether or not it has abandoned the products upon which it relies to satisfy the economic prong of the domestic industry requirement, and if so, whether or not as a result of that abandonment Qimonda has ceased to satisfy the economic prong of the domestic industry requirement.

Qimonda has clarified that it does not contend that *Bally/Midway Mfg. Co. v. Int'l Trade Comm'n*, 714 F.2d 1117, 1123 (Fed. Cir. 1983) stands for the proposition that the domestic industry is always analyzed at the time of the complaint. Qimonda concedes that "the domestic

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industry analysis is not confined to a rigid formula, and must be addressed on a case-by-case basis.” (CIB at 253.) Qimonda argues, however, that Federal Circuit and Commission precedent hold that the principal factor in determining domestic industry should be the complainant’s investments at the time of the filing of the complaint, in particular where the complainant’s domestic industry deteriorates over the course of the investigation. (*Id.*)

Qimonda argues that in *Bally/Midway Mfg.*, the Federal Circuit held that the complainant met the domestic industry requirement even though the domestic industry deteriorated following the filing of the complaint. Qimonda asserts that the complainant manufactured arcade video games that had limited life spans, quoting a description of the 1981 video game market. Qimonda notes that the Commission found no domestic industry based on the rapid deterioration in the production, sale, and inventory of “Rally-X” arcade video games.

Qimonda says that in overturning the Commission’s finding of no domestic industry, the Federal Circuit held that the “proper date for determining whether Bally’s Rally-X game constituted an ‘industry’ entitled to protection under section 337 was the date on which the complaint was filed rather than the date on which the Commission rendered its decision.” *Bally/Midway Mfg.*, 714 F.3d at 1121. Qimonda states that the Federal Circuit justified its decision based on the cyclical nature of the arcade video game industry and found that the complainant met the domestic industry requirement at the time of the filing of the complaint. My reading of *Bally/Midway Mfg.* leaves me unconvinced regarding Qimonda’s latter point.

A careful review of *Bally/Midway Mfg.*, decided August 2, 1983, reveals that the decision was directed at the Commission’s decision that the importation of the infringing games at issue did not, as the statute then required, have an “effect or tendency” to “destroy or substantially injure an industry ... in the United States.” In finding that no domestic industry existed, the

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Commission noted that Bally's inventory of the Rally-X games is low, that "[c]urrently, there are no facilities being used to produce an article competitive with the imported Rally-X games[,]” and that the “[c]omplainant is no longer actively engaged in distribution or sale of Rally-X games.” *Id.* at 1120-1121. The Commission also noted that the popularity of the Rally-X games was in a state of permanent decline, and that there was nothing in the record to indicate that the complainant would resume the manufacture and marketing of the games even if the Commission were to find a violation of section 337 and issue an exclusion order. *Id.*

The Federal Circuit reversed the Commission, finding that the statute protects a domestic industry that existed at the time of the complaint but was subsequently destroyed during the investigation due to the unfair acts of the respondents. In explaining its reasoning, the court stated that it would be contrary to the meaning of Section 337 to provide no protection to a complainant because respondents' acts had destroyed the complainant's domestic industry:

If the effect of the unfair practices has been to injure seriously the affected business during the administrative proceeding—for example, if the infringing imports captured half of the complainant's business—the importation would violate section 337(a). If, however, the infringers were so effective that they succeeded in capturing all of complainant's business and therefore destroyed the relevant “industry,” then there would be no violation under the Commission's theory. The result would be that the infringing importers whose unfair practices were most effective, i.e., those who succeeded in destroying their American competition, would be treated more favorably than those whose unfair practices were less successful.³⁵ It is most unlikely that Congress, which enacted section 337 to “prevent every type and form of unfair practice” and to provide “a more adequate

³⁵ The Federal Circuit did discuss the nature of the video game industry in 1983 and noted that “[u]nlike most other products, a particular video game generally has only a brief period of popularity, accompanied by high production and sales. As new video games enter the market, the old games decline in popularity, and production and sales decrease. This pattern of production and sales is reinforced by the fact that there are only a limited number of sites for video games (i.e. in arcades), and most arcades will purchase only a few of each game. Thus there is continual pressure on video game manufacturers to develop new games, and sell as many of each game as possible during its short life-span.” *Bally/Midway Mfg.*, 714 F.2d at 1119. Qimonda's attempt to draw an analogy between this limited and dated set of facts and the characterization of the current computer chip industry as “cyclical” is unconvincing.

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protection to American industry than any anti-dumping statute the country has ever had[,]” intended the statute to have such a bizarre effect.

Id. at 1121-22.

The Federal Circuit noted that the unfair practices directed against Rally-X were identical to those directed against another product involved in the case, Pac-Man, which the Commission had found “have the effect or tendency of substantially injuring the domestic Pac-Man industry.” This was a key point stressed by the Federal Circuit in *Bally/Midway Mfg.* Thus, the court concluded “that in the **circumstances of this case** the proper date for determining whether Bally’s Rally-X game constituted an ‘industry’ entitled to protection under section 337 was the date on which the complaint was filed rather than the date on which the Commission rendered its decision.” *Id.* at 1121 (emphasis added).

There are neither facts nor allegations in the case before me that Qimonda’s bankruptcy filing or the decline of Qimonda’s involvement in the industry is in any way connected to the conduct of Respondents in this case or to the importation of the accused products. In fact, Qimonda has asserted that the reason for its bankruptcy is “an unprecedented global economic downturn.” (CRB at 116.) Therefore, I find that *Bally/Midway Mfg.* is inapposite, and Qimonda’s post-bankruptcy domestic activities are relevant to a domestic industry analysis and must be examined.

Respondents note that the Commission has assessed the existence and sufficiency of an alleged domestic industry at various points during the investigative process, including: (1) the original filing date of the complaint, (2) the filing date of the most recent amendment or supplement to the complaint, (3) the discovery cut-off date prior to the evidentiary hearing, and (4) where bankruptcy is at issue, at points even after the target date of the investigation. *Certain Short-Wavelength Light Emitting Diodes, Laser Diodes and Products Containing Same*, Inv. No.

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337-TA-640, 2008 ITC LEXIS 1041, Order No. 16, at *31 (June 18, 2008) (“As for the cut-off date for establishing a domestic industry, the Commission has used not only the filing of the complaint as the cut-off point for satisfaction of the domestic industry requirement, but it has also used the end of the discovery as the cut-off point.”); *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-587, 2008 ITC LEXIS 755, Comm. Op. (May 16, 2008); *Certain Concealed Cabinet Hinges*, 337-TA-289, 1990 ITC LEXIS 3, Comm. Op. at 21 (Jan. 9, 1990) (holding that “we assess the existence of the domestic industry as of the discovery cutoff date prior to the evidentiary hearing”); *Certain Variable Speed Wind Turbines and Components Thereof*, Inv. No. 337-TA-376, USITC Pub. No. 3003, 1996 ITC LEXIS 556, Comm’n Op. at 22 (Nov. 1996) (holding that the Commission may even take into account events that occur after the target date when evaluating the existence of domestic industry and the appropriateness of any continued relief). Indeed, the time period for examining a domestic industry is determined “on a case-by-case basis in light of the realities of the marketplace.” *Certain Dynamic Random Access Memories, Components Thereof and Products Containing Same*, Inv. No. 337-TA-242, USITC Pub. No. 2034, 1987 ITC LEXIS 170, Comm’n Op. at *93 (Nov. 1987).

Based upon the foregoing, I find that analysis of Qimonda’s ongoing activities is appropriate through the date of close of the record of hearing in this matter, which occurred on June 19, 2009.³⁶

First, the Notice of Investigation in this matter orders that an investigation be instituted to determine whether or not there is a violation of section 337(a)(1)(B). In such an investigation, 19 U.S.C. § 1337(a)(2) requires proof that an industry in the United States, relating to the articles

³⁶ The evidentiary record was closed following submission of Exhibits RX-1710C and 1711C, pursuant to a post-hearing telephone conference I held with all of the parties.

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protected by the patent “exists or is in the process of being established.” The 1988 amendment to the domestic industry statutory language of Section 337 and its legislative history support a liberal and flexible interpretation of the requirement. *See* H.R. Rep. No. 100-40, 100th Congress, 1st Sess. (1987).

In *Wind Turbines*, for example, the complainant filed for bankruptcy after the ALJ issued the initial determination. The evidence showed that the complainant had ceased manufacturing the patented products, but that it continued to provide “operation and maintenance services” for the products that were already sold. The complainant continued to devote significant resources to manufacture of components of the patented products. The Commission endorsed the ALJ’s opinion that “the domestic industry determination is not made by application of a rigid formula and is no longer confined under those portions of the domestic production facilities that manufacture under the patent in controversy.” *Id.* at 24. The Commission went on to say:

... a domestic industry can be found based on complainant’s past activities in exploiting the ‘039 patent. While there have been circumstances where not practicing the patent claim in issue for a significant time has defeated a section 337 investigation,³⁷ we note that in this case it has only been a matter of several months, at most, since the ALJ found that complainant was, in fact, exploiting the ‘039 patent. Because it has only been a matter of months since complainant ceased its manufacturing activities with respect to the KVS-33, and because of complainant’s substantial investment in plant and equipment, significant employment of labor and capital, and substantial investment in engineering, research and development related to the patented technology, as well as evidence that it continues to exploit the patent (albeit in a more limited fashion)

...

Id. at 25-26 (emphasis in original).

In *Toy Vehicles*, the Commission found that the domestic industry requirement was met because of the complainant’s past extensive research and development expenditures, as well as

³⁷ The Commission noted that in *Certain Grain Oriented Silicon Steel* (Docket No. 1479, complaint filed in December, 1988) they refused to institute a patent-based 337 investigation where the complainants most recent activities devoted to exploitation of the technology covered by the patent in question had occurred more than 8 years prior to filing the complaint. *Wind Turbines* at 25, fn. 71.

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its inventory of patented products, which were still being sold as replacement parts. *Toy Vehicles* at 19-20.

Other cases have found a domestic industry based on both the complainant's past investment and current domestic activities when the complainant has stopped manufacturing the patented product. In *Video Graphics* at page 13, the ALJ concluded that the economic prong of the domestic industry requirement had been met, saying:

That Cirrus is not currently manufacturing the 5465 product is not dispositive, as the evidence shows that Cirrus has invested substantial capital in developing and manufacturing the 5465 product, and uncontradicted testimony establishes that Cirrus is currently offering for sale and intends to continue offering for sale an existing inventory of the product. Additionally, the evidence is undisputed that, in exchange for a significant monetary payment, Cirrus has licensed the '525 Patent to at least one third party. Credible evidence of record also shows that Cirrus is paying ISD corporation for research and development activities, including continuation of software development and maintenance for the 5465 product.

The cases have two significant factors in common. First, they all begin with a complainant having a recent history (i.e. within months) of significant exploitation of the asserted patents. Second, they all include ongoing, although limited, activities by the complainant that indicate continued exploitation of the asserted patents. In *Toy Vehicles* the complainant maintained an inventory of patented products that were still being sold as replacement parts. In *Wind Turbines* the complainant had continued to provide operations and maintenance services for the products that were already sold and continued to devote significant resources to manufacture of components of the patented products. Finally, in *Video Graphics* the complainant was continuing to offer the products for sale from existing inventory; had actually licensed the product to "at least one third party;" and was paying for research and development activities for the patented product.

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The evidence before me is that, prior to entering bankruptcy, Qimonda's activities in the United States clearly met the standard required to establish the economic prong of the domestic industry requirement, and it has been less than one year since Qimonda's activities have diminished.

The undisputed evidence shows that, on January 23, 2009, Qimonda AG filed for bankruptcy under German law. On February 20, 2009, Qimonda's wholly-owned U.S. subsidiaries filed for creditor protection in Delaware under Chapter 11 of the U.S. Bankruptcy Code. On April 1, 2009 an order issued in the German bankruptcy court that opened Qimonda's insolvency proceedings.

The evidence shows that by the end of February 2009, all manufacturing activities at { } (RX-1298C at Q. 52; CX-989C at Q. 92.)
{ }
ceased. (RX-1298C at Q. 41, 52; CX-989C at Q. 87; Tr. at 708:25-709:5.)

Since { } I look
to other indicators to determine whether or not a domestic industry existed as of June 19, 2009. First, pursuant to 19 U.S.C. § 1337(a)(3)(A), I must consider whether or not Qimonda has maintained significant investment in plant and equipment. The evidence is that Qimonda's Richmond fabs are currently being maintained {

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Qimonda argues that it continues to exploit the patents-in-suit, because the fabs, the tools and equipment, the placement and configuration of the tools and equipment, the recipes and other data stored in the tools and equipment were all specially designed, developed, created, constructed, and/or customized to manufacture products practicing the patents-in-suit in Richmond. Qimonda asserts that the tools used in Richmond differ from those used at Qimonda's other fabs, so Qimonda's U.S.-based engineers in the United States had to develop designs, products, processes, and recipes specifically for use at Richmond. Martin Bayerl, a Qimonda witness, testified that the fab reflects a capital investment {

} (CX-989C at Q. 94-

99.) Dr. Kenneth Button testified that the investment in equipment was estimated at { } and that it "the QR facility represents a huge economic asset, which embodies the very significant capital investments made by Qimonda in QR's plant and equipment ..." (CX-544C at Q. 56; CX-545C at Q. 40-41.)

Respondents argue that Qimonda distorts and mischaracterizes the facts surrounding the {

longer owned by Qimonda. A review of Exhibits RX-1273C; RX-1274C; RX-1275C; and RX-1276C reveals that they are {
Richmond fab.

The language of {
} (*See, e.g.*, RX-1275C at ¶ 7.) RX-1268 documents that Qimonda {
the Delaware bankruptcy court that Qimonda continues to incur costs and expenses related to the equipment, specifically, “the costs associated with maintaining the equipment, which are unnecessary.” RX-1269 reveals that the requested relief was granted. Martin Bayerl testified on June 4, 2009, that Qimonda Richmond continued to own the Richmond fabs as of that date. (Tr. at 902:16-20.)

Respondents place emphasis on their assertion that while Qimonda attempts to suggest {
}

that reliance by Qimonda that these activities are sufficient to demonstrate a current or ongoing

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domestic industry is misplaced. In my view, however, Qimonda's intent is not the deciding factor. Rather, the important issue is whether or not Qimonda has made and continues to have a significant investment in plant and equipment related to articles protected by the patents-in-suit.

The uncontroverted evidence is that the { } was created and designed to produce products and practice processes that are allegedly covered by the asserted patents. It is also uncontroverted that {

}

2009. Therefore, I find that Qimonda's investment in plant and equipment continued to meet the economic prong of the domestic industry requirement as of June 19, 2009.

Pursuant to 19 U.S.C. § 1337(a)(3)(B), I turn to the issue of whether or not Qimonda met its burden to prove by a preponderance of evidence that it maintains significant employment of labor or capital in the United States.

Martin Bayerl, a Qimonda witness, testified that maintaining the Richmond fab { } (CX-989C at Q. 94-99.) There is no evidence to the contrary and no evidence that {

} In *Certain In-Line Roller Skates with Ventilated Boots and In-Line Roller Skates with Axle Aperture Plugs and Components Thereof*, Inv. No. 337-TA-348, Order No. 21, 1993 WL 852393 (July 30, 1993), the Administrative Law Judge granted summary determination of the existence of a domestic industry based upon a showing by the complainant that it had five employees, some of whom were "quality engineers" involved in the development of new products, who worked with suppliers to solve problems arising in the manufacture of components, and designed laboratory test procedures and standards, and the remainder were

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inspectors who performed a variety of tests on skates and components.³⁸ The ALJ reasoned that the in-line roller skate industry was not a “giant industry” involving “enormous” numbers of people. In this case, while the industry involved is arguably quite large, and Qimonda at one time employed { } of people in its domestic industry, I find that the continued employment of { } people remains a significant employment of labor in the United States.

Finally, I consider whether or not Qimonda met its burden to prove by a preponderance of evidence that it maintains substantial investment in its exploitation, including engineering, research and development, or licensing pursuant to 19 U.S.C. § 1337(a)(3)(C).

Martin Bayerl, a Qimonda witness, testified at the hearing on June 3, 2009, that he knows { } North America. (Tr. at 762:21-763:5.) He testified that all research and development activities { } (Tr. at 690:6-691:14, 694:1-17; RX-989C at Q. 111.) On May 11, 2009, Mr. Bayerl testified that following { } (RX-989C at Q. 109-110.) On May 1, 2009, George Alexander, a Qimonda employee whose employment terminated on that same date, testified that { } (CX-545C at Q. 48-56.) Mr. Bayerl also testified on June 3, 2009, { } (Tr. at 763:6-17.) On April 15, 2009, Michael Munn, a Qimonda North America employee, testified that { }

³⁸ The decision in *In-Line Roller Skates* did not enumerate how many employees of the five were design engineers and how many were inspectors.

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Qimonda North America or Qimonda Richmond. (Deposition Stipulations, Munn at page 64 of Tab 10, 138:20-141:22).³⁹

The evidence does not support Qimonda's contention that it continues to sell products allegedly practicing the patents-in-suit and maintain an inventory in the United States consisting {

know whether or not the foregoing statement remained true. (Tr. at 821:19-822:1.)

Based upon the foregoing, I find that Qimonda has failed to prove by a preponderance of evidence that it maintains substantial investment in its exploitation, including engineering, research and development and sales related to the patents-in-suit.

I turn finally to the issue of licensing. A complainant may establish that a domestic industry exists relying solely on its investment in licensing of the patents-in-suit without regard to whether or not the articles practicing a claim of the patents-in-suit are manufactured in the United States. The complainant is not required to show that a product covered by the patents-in-suit is made by the complainant or its licensee. *Certain Digital Satellite System Receivers and Components Thereof*, Inv. No. 337-TA-392, USITC Pub. No. 3418, Initial Det. at 10 (Oct. 20, 1997).

In *Certain DSS Receivers*, the ALJ found that a domestic industry existed based solely on complainant's activities in licensing the patent at issue, even though the complainant had only five employees in the United States involved in its licensing program. In *Certain DSS Receivers*, the complainant had issued four licensees granted licenses under a patent-in-suit, and the licenses had generated more than \$15 million in royalties to the complainant. *Certain DSS Receivers*, at

³⁹ This deposition designation is disorganized. Consequently pages of the deposition itself do not appear in sequence. Therefore, the citation includes a page number within the Tab showing where the deposition transcript page:line can be located.

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10-11. In order to meet the domestic industry requirement pursuant to 19 U.S.C. § 1337(a)(3)(C), Commission precedent has generally required (1) a consummated license agreement and (2) the receipt of significant revenues (i.e., royalties) by the patent owner from its licensing activities.⁴⁰

Certain Stringed Musical Instruments and Components Thereof, Inv. No. 337-TA-586, 2007 WL 4427218, Initial Det. (Dec. 3, 2007).

Qimonda has alleged that { } were assigned in the United States to pursue licensing activities. They were { } (CX-545C at Q. 57, 62; Deposition Stipulation at page 65 of Tab 10, 144:14-145:2.) Mr.

{ } (CX-545C at Q. 58.) { }

On June 4, 2009, { } (Tr. at 987:7-12.) { }

(*Id.* at 977:22-978:2.) { } (Deposition Stipulation at page 66 of Tab 10, 151:3-151:18; 155:4-14; 159:5-10.)

{ }

at any time relevant to this investigation. Therefore, Qimonda has failed to prove by a

⁴⁰ The Commission has also said that, while the absence of any actual license prior to a complaint is a factor to be considered, documented evidence of substantial pre-licensing activities can result in finding of a domestic industry. *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, Comm'n Op. (May 15, 2008).

preponderance of evidence that it maintains substantial investment in licensing the patents-in-suit.⁴¹

D. Technical Prong

1. The '670 Patent

Qimonda's Position: Qimonda offers that the process used to manufacture {
} exemplifies Qimonda's practice of the invention claimed in the '670
patent. (CIB at 200 (citing CX-141C at Q. 14, 64, 69).) {

}

{

}

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}

{
}
In its reply brief, Qimonda argues that arguments that the process information is incomplete, and that { } are without merit and contradicted by the evidence, including the element-by-element concessions of Respondents' expert at trial. (CRB at 113-114 (citing CIB at 200-202; Tr. at 1714:10-1715:11).)

Respondents' Position: Respondents argue that the evidence fails to demonstrate that Qimonda practices claim 1 of the '670 patent through the manufacture of its { } (RIB at 58-59.)

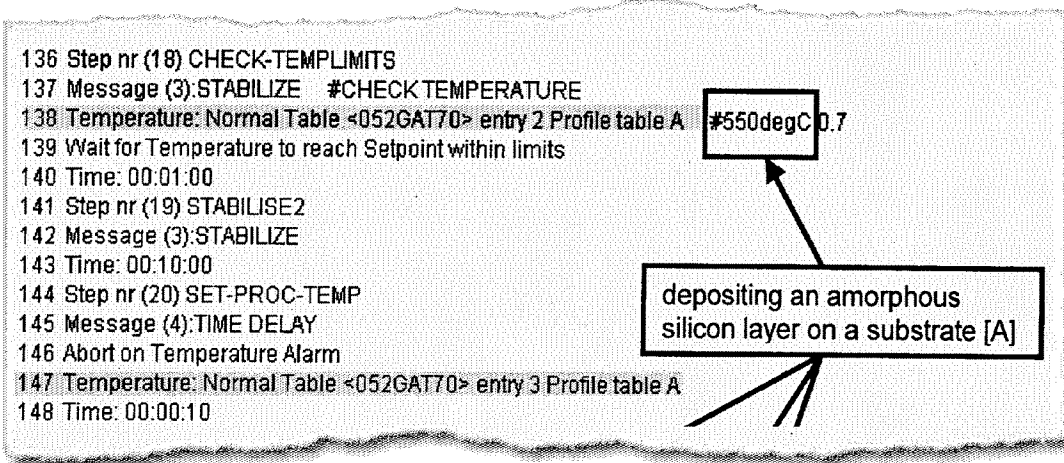
Respondents aver that Dr. Hammond relies entirely on { } as the basis for his opinion that Qimonda practices claim 1 of the '670 patent. (RIB at 59 (citing CX-141C at Q. 68-73).) This { } they argue, fails to establish that Qimonda practices claim 1 of the '670 patent. (*Id.*)

Respondents say it is impossible to determine from the information relied upon by Dr. Hammond whether { } much less whether { } (RIB at 59-60 (citing RX-1236C at Q. 18).) Respondents assert that Dr. Hammond contends that { } shows that Qimonda deposits an amorphous silicon layer on a substrate. (*Id.* (citing CX-141C at Q. 70).) Respondents argue that the referenced portion does not show { } which is necessary to determine whether Qimonda deposits an amorphous silicon

{ }
}

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layer or a polycrystalline silicon layer. (*Id.* (citing RX-1236C at Q. 18).) Respondents submit an annotated excerpt from { }



(RIB at 59-60 (citing RX-1236C at Q. 18).)

Respondents assert that the above { } referenced by Dr. Hammond shows that { } (RIB at 60 (citing RX-1236C at Q. 18).) Respondents argue that {

{ } (*Id.* (citing RX-1236C at Q. 18).) Respondents say that nothing in Dr. Hammond’s testimony suggests that he considered { } or was “even provided access to that necessary information.” (*Id.* (citing RX-1236C at Q. 18).)

Respondents note that { } (RIB at 60 (citing RX-1236C at Q. 18).) Respondents allege that nothing in Dr. Hammond’s testimony suggests that he consulted { } or “even was provided access to that necessary information.” (*Id.* (citing RX-1236C at Q. 18).)

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Respondents point out that, in this case, {

} (*Id.* (citing RX-1236C at Q. 18).)

Respondents say that the {

} Respondents argue that without

consulting { } (which, they say, has not been produced by Qimonda in this Investigation and was not identified as information considered by Dr. Hammond in forming his opinion), Dr. Hammond has no basis for his testimony that Qimonda deposits an amorphous silicon layer. (RIB at 60-61 (citing RX-1236C at Q. 18).) Respondents argue that, assuming that

{ } correctly identifies { } then the {

} (*Id.*) Respondents

conclude that if the { } then the

{ . } would not have been necessary. (*Id.* (citing RX-1236C at Q. 19-20).)

Respondents assert that without additional information, including {

} it is impossible for Dr. Hammond to determine whether Qimonda {

} (RIB at

61 (citing RX-1236C at Q. 19-22).) Respondents argue that Qimonda fails to demonstrate that it deposits an amorphous silicon layer as recited by the first step of claim 1. (*Id.*)

Respondents argue that Qimonda also fails to demonstrate that it practices steps [2] through [5] of claim 1. Respondents assert that Dr. Hammond testified that Qimonda's practice of these limitations is also demonstrated by { } (RIB at 61-62 (citing CX-141C at Q. 71-73).) Respondents aver that claim 1 requires, among other things, "controlling the phase transformation of the amorphous silicon into a polycrystalline layer," "heating said substrate

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with said amorphous silicon layer,” “holding the substrate with said amorphous silicon layer at the initial temperature,” and “continuing the heating of said substrate . . . so that said amorphous silicon crystallizes and becomes a polycrystalline layer” (*Id.* (citing JX-7 at 6:41-66).)

Respondents say that each of these steps requires { } They conclude that Qimonda has failed to show that {

} (*Id.* (citing RX-1236C at Q. 24).)

Respondents argue that Qimonda has failed to demonstrate that it {

} But, they say, even if Qimonda does { } Qimonda has failed to demonstrate that { }

Respondents allege that the information considered by Dr. Hammond did not specify {

} Respondents argue that it is likely that {

} (RIB at 62 (citing RX-1236C at Q.

25).) Respondents state that on cross-examination Dr. Hammond admitted that {

}

(*Id.* (citing Tr. at 424:19-426:7).) Respondents say that Dr. Hammond acknowledged that he had

reviewed { } in connection with his analysis of Qimonda’s alleged domestic industry. (*Id.* (citing Tr. at 421:21-422:2).) Respondents assert that { } fails to set

forth any information regarding { } that would be present in the

Qimonda process. (*Id.* (citing RX-1236C at Q. 25).)

Respondents argue that it is “pure speculation” regarding whether or not {

} (RIB at 62.)

Respondents argue that, even if {

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} (*Id.*) Respondents reason that without considering { } it is impossible for Dr. Hammond to determine whether {

} (*Id.* (citing RX-1236C at Q. 25).) Respondents say, therefore, Qimonda has failed to demonstrate that it practices steps [2] through [5] of claim 1.

Respondents add that step [3] requires heating to an initial temperature that is below the crystallization temperature. (RIB at 62-63 (citing JX-7 at 6:48-51).) Respondents say that Dr. Hammond asserts {

} (*Id.* (citing CX-141C at Q. 71).) They assert this is not the case. (*Id.* (citing RX-1236C at Q. 26-27).) Respondents refer to U.S. Patent No. 4,814,292 (“the Sasaki patent”), which they say provides that crystallization of amorphous silicon:

can take place at a temperature of 500°C or higher. But a temperature of about 500°C, the rate of crystallization is low and is not practical. At a temperature of 700°C or higher, the rate of crystallization is too high and the resultant grains are not large enough.

(RIB at 62-63 (citing RX-392 at 3:17-22).)

Respondents continue, saying the Sasaki patent suggests an optimal range of 550°C to 650°C to control grain size during crystallization. (RIB at 62-63 (citing RX-1236C at Q. 26-27).)

Respondents state that the Sasaki patent explains that an amorphous silicon layer will crystallize in just 15 minutes at 600°C to form a polysilicon layer. (*Id.* (citing RX-392 at 3:13-17).)

Respondents reason that a temperature of 600°C is above the crystallization temperature, and therefore cannot meet the limitations of step [3] of claim 1. (*Id.* (citing RX-1236C at Q. 26-27).)

Respondents conclude that Qimonda has failed to meet its burden of demonstrating that it practices step [3] of claim 1 of the ‘670 Patent. (*Id.* (citing RX-1236C at Q. 26-27).)

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Respondents argue that Qimonda has failed to demonstrate that the {
 } are used in the { } or that the relied upon {
 } and gate anneal recipe were used in { }
They say that Dr. Hammond admitted on cross-examination that he did not prepare {
 } does not know who prepared it, when it was prepared, or how it
was prepared. (RIB at 63 (citing Tr. at 422:3-423:1).) Respondents conclude that Qimonda has
not demonstrated that { } practice claim 1 of the '670
patent. (*Id.*)

In their reply brief, Respondents argue that Qimonda's reliance on {
 } is misplaced. Respondents aver that the { }
does not relate in any way to { } including { }
discussed by Dr. Hammond. (RRB at 29 (citing CX-991C at Q. 35).) Respondents assert that
{ } which he said was { }
(*Id.* (citing CX-991C at Q. 35)) (emphasis added by Respondents.) Respondents argue that his
testimony relates only to { } and it does not support
Qimonda's broad contention that {

{ } (*Id.*) Accordingly, they say, there is no
evidence that {

{ } which is the only information upon which Dr. Hammond relied in forming his
opinion that Qimonda practiced the patent in the United States. (*Id.*)

Commission Investigative Staff's Position: Staff believes that Qimonda has shown, by
a preponderance of the evidence, that its {

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} practices all of the elements of claim 1 of the '670 patent. (SIB at 39-41.) Staff says that Dr. Hammond, Qimonda's expert, relying on { } testified that all of the elements of claim 1 were satisfied by { } (*Id.* (citing CX-141C at Q. 62-73).) Staff asserts that Respondents' expert, Dr. Bruce Smith primarily critiqued Dr. Hammond's use of the { } contained in {

} because it allegedly fails to disclose a step of depositing an amorphous silicon layer on a substrate as required by claim 1. (*Id.* (citing RX-1236C at Q. 18).) Staff recites that Dr. Smith points out that { } sets forth a { } (*Id.* (citing RX-1236C at Q. 18).)

Staff argues that although line 137 goes on to list the temperature at "550degC0.7," Dr. Smith opines that this disclosed temperature setting is "only a comment - to determine the actual value, Dr. Hammond would need to refer to 'Table <052GAT70>'." (SIB at 39-41 (citing RX-1236C at Q. 18).) Staff notes that Dr. Gwozdz, Respondents' expert regarding non-infringement of the '670 patent, opined in the context of the LSI accused { } that a temperature of { } results in the deposition of { } while a temperature of less than { } conversely results in { } (*Id.* (citing RX-1086C at Q. 25-29).) Staff says that the factual dispute in this regard turns on the narrow issue of whether {

} is sufficient to show that { } Staff concedes that Dr. Smith's testimony "casts some doubt" on { } but nonetheless believes that the cited { } which specifically discloses { } along with Dr. Hammond's testimony, satisfies this element of claim 1 by a preponderance of the evidence. (*Id.*)

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Staff concludes that since Qimonda { } all other elements of claim 1 have been met by { } based on Dr. Hammond's testimony and { } (SIB at 39-41.) Staff refers to the testimony of Dr. Smith at RX-1236C at Q. 24, in which he says,

{ (*Id.*)

Discussion and Conclusion: Based on the evidence of record, I find that Qimonda has failed to show by a preponderance of the evidence that the { } practices claim 1 of the '670 patent.

First, Qimonda has failed to show by a preponderance of the evidence that { } practices element 1 of claim 1 of the '670 patent, which teaches, "depositing an amorphous silicon layer on a substrate." (JX-7 at 6:43.)

Critical to a finding of depositing an amorphous silicon layer on a substrate is { } I found in Section V.B.1, *supra*, that the crystallization temperature of amorphous silicon is in the range of 580°C. to 600°C. Therefore, { }

Qimonda's expert Dr. Hammond testified on cross-examination at the hearing of this matter that he could not identify any reference, other than { } upon which he relied to reach his opinion that Qimonda practices claim 1 of the '670 patent. (Tr. at 420:21-421:2.) On re-direct examination, Dr. Hammond opined that, based upon comparing { } to the claims of the '670 patent, the Qimonda process practices the '670 patent. (*Id.* at 426:13-21.)

In his direct testimony, Dr. Hammond testified that { } He did not identify what { }

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} is, and he did not discuss the {
} Dr. Hammond also mentioned { } but never provided details
regarding their function or what they achieve { } One is left to discern the
meaning of the { } based solely upon the printed word. (CX-141C at Q. 70.)
The {

} From the foregoing, I conclude that {

} I do not draw any specific conclusion regarding what {
} because there is no evidence of it in the record.

Second, a preponderance of the evidence establishes that the process used by Qimonda to
{ } does not practice element 3 of claim 1 of the '670 patent, which
teaches:

Heating said substrate with said amorphous silicon layer to an *initial temperature
that is lower than a crystalline temperature for the amorphous silicon,*

(JX-7 at 6:48-51) (emphasis added.)

Dr. Hammond was more enlightening in his testimony regarding {
} He testified that { }

{

}

Inasmuch as, the { } calls for {

} I find that the {

} is not lower than a crystalline temperature for the amorphous silicon. The evidence is that the {

}

Based on all of the foregoing, I find that the process used by Qimonda {

} does not practice claim 1 of the '670 patent. Qimonda has based its assertion that it meets the technical prong of the domestic industry requirement solely on its alleged practice of asserted claim 1 of the '670 patent. Because Qimonda has failed to show by a preponderance of the evidence that it practices claim 1 of the '670 patent, I find that it has not met the technical prong of the domestic industry requirement. *See, e.g., Alloc v. Int'l Trade Comm'n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003); *Certain Point of Sale Terminals and*

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Components Thereof, Inv. No. 337-TA-524, Order No. 40 (April 11, 2005).

2. The '434 Patent

Qimonda's Position: Qimonda contends that its {

} practices claim 1 of the '434 patent. Qimonda asserts that the only contested claim elements are "protective element," "clamp element," and "second supply line." (CIB at 92.)

For the "protective element," Qimonda points to { } (CIB at 92-93 (citing CX-75C at Q. 44-47; CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 204960; CDX-10C at QAG-665-ITC-0233498-233501, 233503; CDX-48C; Tr. at 607: 5-608:15).) Qimonda claims that { } and is located between the "terminal pad" and the "semiconductor function element." (*Id.* at 93 (citing CX-75C at Q. 44-47; CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 204960; CDX-10C at QAG-665-ITC-0233498-233501, 233503; CDX-48C; Tr. at 607:5-608:15).)

For the "second supply line," Qimonda identifies { } (CIB at 93 (citing CX-75C at Q. 44-47; CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 204960; CDX-10C at QAG-665-ITC-0233498-233501, 233503; CDX-48C; Tr. at 607: 5-608:15).) For the "clamp element," Qimonda identifies the {

} (*Id.* at 94 (citing CX-75C at Q. 48, 50; CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 204960; CDX-10C at QAG-665-ITC-0233504; CDX-47C; Tr. at 602:16-606:18, 606:25-607:4).) Qimonda states that although the { } (*Id.* at 96 (citing Tr. at 604:18-606:18, 606:25-607:4).) Qimonda states that anyone of ordinary skill in the art would know that a { }

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{ } (*Id.* at 96-97 (citing Tr. at 604:18-606:18, 606:25-607:4).)

Qimonda argues that the first and second supply lines in its product are “electrically conductively connected” as required by claim 1. Qimonda states that the connection { } (CIB at 97 (citing CX-75C at Q. 48, 49; CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 204960; CDX-10C at QAG-665-ITC-0233502, 233503; CDX-47C; CDX-48C; Tr. at 558:10-559:10, 602:16-606:18, 606:25-608:15; 614:25-615:9, 616:3-19, 617:5-619:3).) Qimonda asserts that the common ground potential is {

{ } (*Id.* at 97-98 (citing CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 204960; CDX-10C at QAG-665-ITC-0233502, 233503; CDX-47C; CDX-48C; Tr. at 555:7-15, 556:7-557:1, 562:21-563:24, 614:25-615:9, 616:3-19).)

Regarding the “protective element” limitation, Qimonda argues that {

{ } (CIB at 98-99 (citing CX-75C at Q. 44-47; CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 204960; CDX-10C at QAG-665-ITC-0233498-233501, 233503; CDX-48C; Tr. at 607:5-608:15; RX-1240C at Q. 22).) Qimonda notes that Mr. Fairbanks has admitted that {

{ } (*Id.* at 99 (citing RX-774C at Q. 56-57; Tr. at 1122:14-1123:15).)

Qimonda avers that the “protective element” is {

{ } (*Id.* at 99-100 (citing CX-75C at Q. 44-47; CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 204960; CDX-10C at QAG-665-ITC-

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0233498-233501, 233503; CDX-48C; Tr. at 607:5-608:15).)

Qimonda states that it is un rebutted that the {

} (CIB at 100 (citing CX-75C at Q. 42-46; CDX-10C at QAG-665-ITC-0233498-233500; CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 204960; Tr. at 607:5-608:2).) Qimonda further states that it is un rebutted that {

} (*Id.* (citing CX-75C at Q. 48; CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 204960; CDX-10C at QAG-665-ITC-0233502).)

Finally, Qimonda claims that it is un rebutted that {

} (*Id.* (citing Tr. at 921:22-922:18, 923:1-20).)

In its reply brief, Qimonda explains that it relies on { } to prove domestic industry – { } (CRB at 41.)

Qimonda states that, contrary to Respondents’ arguments, the two documents are wholly consistent. (*Id.* at 41-42 (citing RX-1240C at Q. 18; Tr. at 586:3-593:9, 602:16-606:18, 606:25-608:15; CDX-47C; CDX-48C).) Qimonda further argues, contrary to Respondents’ contentions, that Dr. Cottrell’s opinions regarding domestic industry have been consistent throughout the hearing. (*Id.* at 42 (citing Tr. at 586:3-593:9, 602:16-606:18, 606:25-608:15; CDX-47C; CDX-48C).)

Respondents’ Position: Respondents contend that {

} does not practice claim 1 of the ‘434 patent. Respondents assert that

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Dr. Cottrell relies on { } to support his opinion, but the { } (RIB at 99 (citing RX-1240C at Q. 18; CX-85C; CX-86C).) Respondents claim that the { } (*Id.* (citing RX-1240C at Q. 18, 22; CX-85C; CX-86C).)

Respondents criticize Dr. Cottrell's testimony on domestic industry. Respondents claim that Dr. Cottrell admitted during cross examination that his expert report failed to include any opinions regarding whether {

} (RIB at 99-100 (citing Tr. at 597:14-598:4).) Respondent also claim that Dr. Cottrell revealed new opinions for the first time on redirect at the hearing {

} (*Id.* at 100 (citing Tr. at 628:10-17).) Respondents claim that either Dr. Cottrell's testimony goes beyond the scope of his expert report and should be stricken pursuant to Ground Rule 6, or his ever-changing opinions should be given no weight. (*Id.*)

Turning to the substance of the issue, Respondents argue that Qimonda failed to demonstrate that the first and second supply lines are "electrically conductively connected." (RIB at 100.) Respondents state that { } (*Id.* (citing RX-1240C at Q. 20; CX-75C at Q. 31-51; CDX-10C).) Respondents' expert, Dr. Horenstein, testified { } (*Id.* at 100-101 (citing RX-1240C at Q. 20; CX-86C).)

Respondents next argue that Qimonda failed to prove that { } includes a "protective element." (RIB at 101 (citing RX-1240C at Q. 20; CX-86C).) Respondents state that this claim limitation is a means-plus-function limitation that requires a thick field oxide transistor or equivalent. (*Id.*) Respondents argue that neither { } identified by Dr. Cottrell as the protective element { }

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{ } (*Id.* at 101-102 (citing RX-1240C at Q. 22; CDX-10C; CX85C; CX-75C at Q. 31-51).)

Respondents claim that Qimonda failed to demonstrate that { } includes a “clamp element.” (RIB at 102.) Respondents point to Dr. Cottrell’s alleged ever-changing testimony regarding the clamp element, and stated that “Qimonda has failed to proffer any reliable testimony” that { } (*Id.* (citing Tr. at 597:14-598:4, 598:10-14, 628:10-13; CX-75C at Q. 50; CDX-10C).)

In their reply brief, Respondents first attack Qimonda’s argument that { } Respondents claim that Qimonda { } explaining that because { } (RRB at 46-47.)

Respondents also claim that { } (*Id.* at 47.) Respondents assert that Qimonda, { } concedes the absence of this limitation. (*Id.*)

Respondents again argue that Qimonda’s reliance on { } is “unsound” because the documents are not consistent in { } (RRB at 48-49.) For example, Respondents note that the {

} In sum, Respondents state that “Qimonda is unable to show where {

} because it is clearly not there.” (*Id.* at 49.)

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Respondents argue that the { } because the
{ } (RRB at 49-50 (citing RX-
1240C at Q. 22).) Respondents add that Qimonda has waived the argument that {
} (*Id.* at 49.)

Respondents assert that even {
} (*Id.* at 50
(citing CX-86C at 170; RX-1240C at Q. 23).)

Commission Investigative Staff's Position: Staff argues that the {
} product does not practice claim 1. (SIB at 86.) Specifically, Staff claims that
{ } (*Id.*) Staff relies
on Dr. Hornstein's opinion stating { } and on the fact that
Dr. Cottrell's testimony on the issue is "rather cursory and fails {
} (*Id.* (citing (RX-1240C at
Q. 20; CX-75C at Q. 46-49).)

Discussion and Conclusion: Based upon the evidence before me, I find that Qimonda
has failed to show by a preponderance of the evidence that {
} practices claim 1 of the '434 patent.

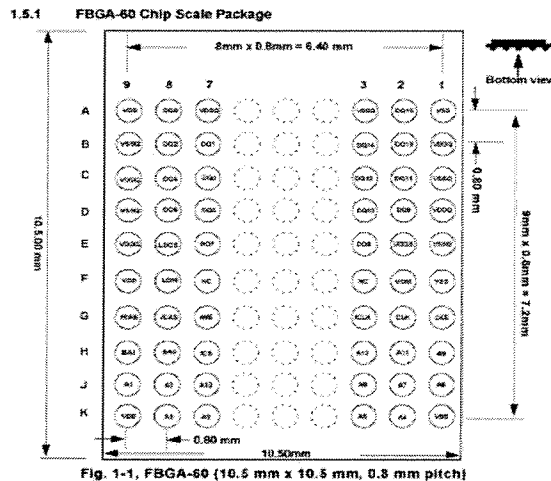
I find that Qimonda has failed to demonstrate that {
} Qimonda identifies {

}

{ }

Qimonda claims that { } but fails to cite any evidence to support that statement. (See RX-1240C at Q. 20.) Dr. Cottrell’s witness statement is silent on this limitation. (CX-75C at Q. 31-51.) The demonstrative relied upon by Dr. Cottrell likewise does not depict { } (CDX-10C at 30E, 30F.) The { } (CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936, 0204960; see also CDX-47C; CDX-48C.) Examining Dr. Cottrell’s hearing testimony cited by Qimonda, a majority of the testimony is irrelevant because it concerns the accused LSI products. (See, e.g., Tr. at 555:7-15, 556:7-557:1, 558:10-559:10, 562:21-563:24.) The one cited portion where Dr. Cottrell states that { } comes as part of a lengthy response that fails to identify any supporting evidence for the assertion. (Id. at 604:18-606:23.)

Qimonda points to { } which is shown below:



CLK /CLK	Clock Inputs	UDQM / DQM	Data Mask
CKE	Clock Enable	LDQM	Data Mask
JCS	Chip Select	Vdd	Power (+1.8V)
iRAS	Row Address Strobe	Vss	Ground
jCAS	Column Address Strobe	Vddq	Power for DQ's (+1.8V)
jWE	Write Enable	Vssq	Ground for DQ's
A0-A12	Address Inputs	NC	not connected
BA0, BA1	Bank Select	UDQS/ LDQS	Data Strobe
DQ	Data Input /Output		

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(CX-85C at QAG-665-ITC-0204320.) Qimonda argues that this schematic shows that {
} (CRB at 47-48.) What this
{ } shows {
} From the face of { } these are { } and Qimonda fails to
explain how this { } Thus,
not only does { } not advance Qimonda’s argument, but it supports the position
taken by Respondents and Staff.

Qimonda’s argument appears to be that {
} (CRB at 46.) Respondents note this
flawed argument, and explain why it is incorrect. (RRB at 46-47.) As Respondents state,
“[p]otential and connectivity are clearly different concepts. If two supply lines supply the same
potential, it does not logically follow that they are connected.” (*Id.*) I concur with Respondents’
explanation, and find that simply because {

} does not necessarily mean that the supply lines are electrically conductively connected.

I also find that Qimonda has failed to demonstrate {
} contains “a protective element for protecting against electrostatic discharge,
being connected between said terminal pad and said semiconductor function element.”
Specifically, Qimonda has not identified any evidence which demonstrates that {

}
Dr. Cottrell points to { } to demonstrate the existence
of { } Qimonda {
}

(CDX-10C at 30D; CX-85C at CX-85C at QAG-665-ITC-0204396; CX-75C at Q. 44, 47.) The

{

}

Qimonda also relies on {

}

(CDX-10C at 30C; CX-86C at QAG-665-ITC-0204936; CX-75C at Q. 44-46.)

The {

} There has been no claim by Qimonda that {

} Dr. Cottrell references { } in his

testimony, yet never explains what it is and never asserts that it is the claimed “protective element.” (CX-75C at Q. 46-47.) The {

} (RX-1240C

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at Q. 23.) Therefore, the evidence fails to demonstrate that {
}

Qimonda identifies a list of evidence that purportedly demonstrates that this claim element is met; but none of the evidence actually supports the assertion. (CIB at 99-100.) As explained, Dr. Cottrell's witness statement fails to explain the manner in which the {
} meets the limitation requiring {
}

(CX-75C at Q. 44-47.) {
} (CX-85C at QAG-665-ITC-0204396; CX-86C at QAG-665-ITC-0204936,
0204960.) {

)
Qimonda also argues that {
} (CIB at 99.)

The evidence does not support this, as the {
}

3. The '899 Patent

Qimonda's Position: Qimonda alleges that it incorporated the '899 process into {

} (CIB at 124 (citing CX-989C at Q. 22-24; Tr. at 824:3-7; CX-991C at Q. 26, 34-43; Tr. at 194:18-196:10).)

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{

}

Qimonda says that the record is “clear and uncontroverted” that {

} process practices every element of claim 22 of the ‘899 patent. (CIB at 126-127 (citing JX-8 at 11:18-12:14; CX-202C at Q. 32, 230; CX-991C at Q. 26-43; CX-231C at 15-19; CX-989C at Q. 42; Tr. at 194:18-196:10, 924:1-12).) Qimonda states that {

}

{

}

Qimonda alleges that based on his review of { } as well as from his extensive experience in the field of semiconductor processing, Dr. Gutmann concluded and testified that Qimonda's { } practices each element of claim 22 of the '899 patent. (CIB at 127 (citing CX-202C at Q. 30, 32, 227-230; Tr. at 333:12-24).) Qimonda asserts that Dr. Gutmann's testimony on this issue went un rebutted at trial. Qimonda concludes that Dr. Lahnor confirmed this conclusion based on his personal knowledge of { } as well as his close and long-term familiarity with Qimonda's { } (*Id.* (citing CX-991C at Q. 8-11, 18-23, 26-43; Tr. at 191:19-192:6, 194:18-196:10).) Qimonda adds that Dr. Lahnor's testimony on this

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issue also went unrebutted at trial and that { } shows {

} (*Id.* (citing CX-202C at Q. 238-241).)

Qimonda says that the only argument against Qimonda’s showing of domestic industry for the ‘899 patent is both unsupported and based on a “flawed syllogism” – that (i) if Qimonda’s technical documents show practice of the patent; and (ii) the result of one of the steps shown in Qimonda’s technical documents appears similar to what is shown in a prior art reference; then, (iii) either both the Qimonda documents and the prior art disclose that element of the claim or neither of them do for purposes of domestic industry. (CRB at 61-62 (citing RIB at 152-154).)

Qimonda argues that there is no inconsistency between the fact that the prior art does not disclose use of an “inverse active area mask” that has been biased, and the fact that Qimonda’s evidence shows practice of that claimed element. (CRB at 61-62.) Qimonda asserts that it was conceded at trial that, on their face the prior art references relied on by Respondents do not disclose that an inverse active area mask was generated from the original active area mask and then was biased. (*Id.*) Qimonda asserts that the patent examiner during prosecution of the ‘899 patent considered what Gocho and Sato disclosed on their face. (*Id.*) Qimonda says Respondents’ argument that “[i]f the Applicant had argued that { } — or masks like it — was a biased inverse active area mask, the Examiner would not have allowed the ‘899 patent in light of Gocho,” in addition to having no factual basis whatsoever, is legally incorrect. (CRB at 61-62 (citing RIB at 170).)

Qimonda argues that Respondents fail to address that Qimonda’s evidence at trial included the factual testimony of Dr. Peter Lahnor, a Qimonda employee who was familiar both

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with the technology of the '899 patent and with Qimonda's {

} (CRB at 61

(citing CX-991C at Q. 18-23, 40).) Qimonda contends that its un rebutted evidence showed that its commercial process practices claim 22 of the '899 patent. (*Id.*)

Qimonda asserts that in their post-trial brief, Respondents put forward for the first time a new argument on the technical prong – that Qimonda's {

} as required by claim 22.” (CRB at 62-63.) Qimonda says that

Respondents argue that Qimonda's {

} (*Id.* (citing RIB at 154-155).) Qimonda notes that this defense was not disclosed

during discovery, nor was it supported by any testimony at the hearing. Qimonda argues that

Respondents' argument must fail because, as discussed above, a proper construction of claim 22 does not require complete removal of the oxide over the exposed active regions. (*Id.*)

Qimonda contends that Respondents' “belated defense” supports Qimonda's interpretation of the claims of the '899 patent, which they characterize as evidence of three independent, major semiconductor manufacturers (Qimonda, LSI and pre-merger Agere), all of which implement an industry-standard process (adopted after the '899 patent), following the express teachings and achieving the stated goals of the '899 patent – removing an amount of oxide sufficient to speed up the subsequent CMP step, but without necessarily removing the oxide in its entirety. (CRB at 62-63 (citing JX-8 at 6:48-67).)

Respondents' Position: Respondents argue that Qimonda's expert, Dr. Gutmann, relies solely on {

} to support his conclusion that Qimonda {

} (RIB at 151 (citing CX-202C at Q.

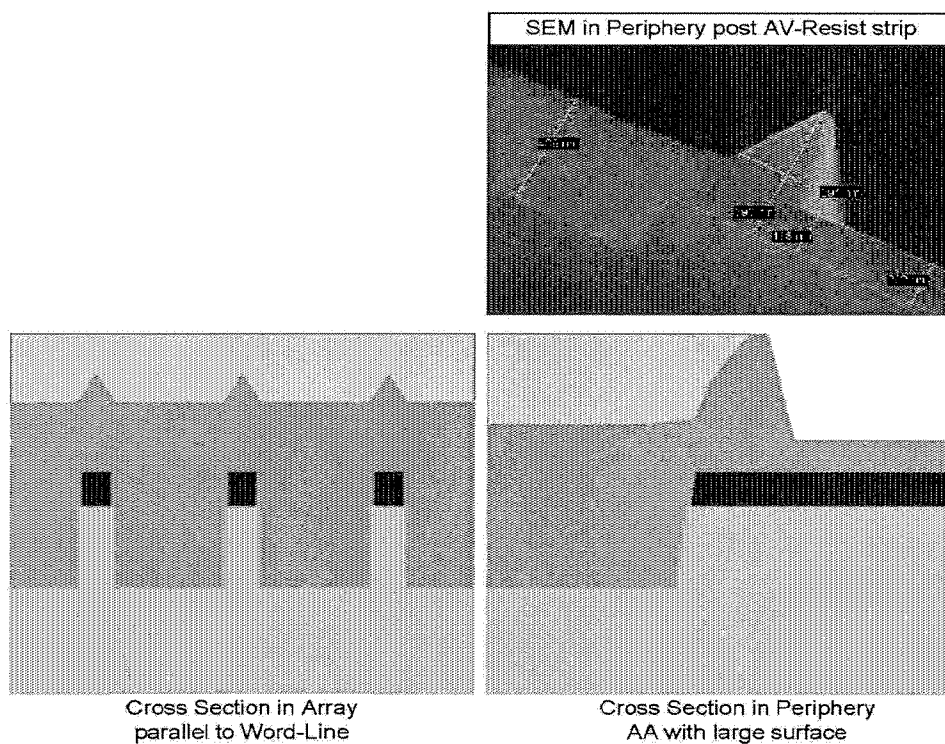
32; Tr. at 332:2-23).) Respondents say that his direct testimony on the issue is limited to the following:

Q234. Does the process disclosed in Exhibit CX-231C include the step of “depositing a photoresist layer on the oxide layer and patterning the photoresist layer with an inverse active area mask while biasing the layer so that the photoresist overlies at least a portion of the angled oxide layer”?

A. Yes. Page 18 shows a salmon-pink material indicated as “Photo Resist.” From my experience, this is a resist mask that is deposited and patterned to expose the portions of the oxide to be etched. Moreover, the exhibit also shows that the resist is patterned with a biased inverse active area mask so that the patterned resist overlies at least part of the HDP-CVD oxide where it slopes away from the trench edge. The micrograph at the top right of the page clearly shows that the distance between the edge of the photoresist mask and the point where the sloping edge meets the plateau over the trench is well defined. From my experience, this is one way to define a mask bias.

(RIB at 151 (citing CX-202C at Q. 234).)

Respondents aver that the { } to which Dr. Gutmann referred are replicated below, and they are the only information about { } upon which he relied.

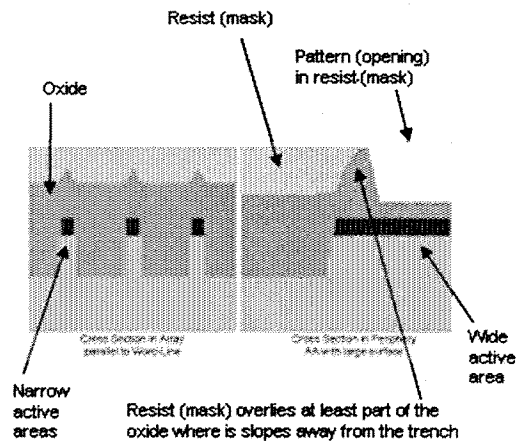


(RIB at 151-152.)

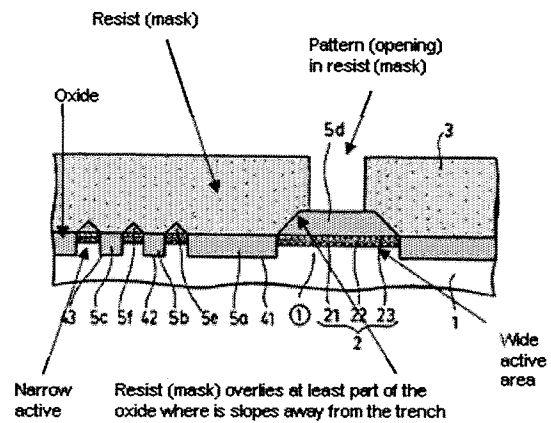
Respondents assert that Dr. Gutmann said that the { } shown on { } is a { } but he refused to admit that a { } (RIB at 151-

152 (citing CX-202C at Q. 234; CX-1046 at Q. 81).) Respondents argue that the comparison below shows there is no basis for his opinion:

Qimonda Mask



Gocho Mask



{ }
}

(RIB at 152-153.)

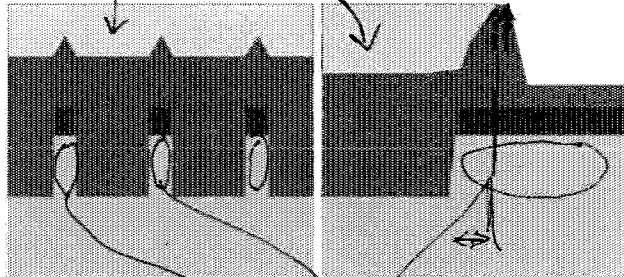
Respondents argue that the side-by-side comparison reveals that the { } are, "for all practical purposes," the same. (RIB at 153

(citing CX-231C at 18; RX-598 at Fig. 2(b)).) Respondents say that both {

} They say Dr. Gutmann explained that the reason { } (Id. (citing Tr. at

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338:25-339:14.) Respondents conclude that during cross-examination, Dr. Gutmann discussed the extent of the bias with respect to the Qimonda mask using RDX-441C and the horizontal double-headed arrow. (Shown below.)



RDX441C (excerpt, showing bias using horizontal double-headed arrow)

(RIB at 153.)

Respondents state that Dr. Gutmann agreed that {

} They

quote his testimony from the hearing:

{

. }

(RIB at 153 (citing Tr. at 340:8-12).)

Respondents state that rather than {

} (RIB at 153-154 (citing CX-1046 at Q. 80-82).)

Respondents argue that Dr. Gutmann takes this position even though {

} (*Id.*)

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Respondents argue that Dr. Gutmann’s “inconsistent testimony about the {

} is not credible. (RIB at 154.) If {

}

Respondents assert that either Qimonda meets the technical prong of the domestic industry requirement and the ‘899 patent is invalid, or the ‘899 patent is valid and Qimonda does not meet the technical prong of the domestic industry requirement. (*Id.*)

Respondents argue that Qimonda also fails to meet the technical prong of the domestic-industry requirement because {

} (RIB at 154.) They assert that {

} Respondents contend that {

}

{

}

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Respondents state that {

}

In their reply brief, Respondents {

} Respondents include {

}

{

}

{

}

(RRB at 72-73.)

Respondents agree that {
} but contend that under Respondents' claim
construction, { } does not practice claim 22 of the '899 patent,
just as { } do not infringe the patent. (*Id.*)

Respondents assert that the testimony of Qimonda's employee, Dr. Peter Lahnor, is
conclusory. Respondents aver that he stated, while discussing {

} Respondents say he offered no basis for that statement. Respondents
conclude that Qimonda is left with nothing but { } to show that it {
} (*Id.* (Citing CIB at 126).)

Commission Investigative Staff's Position: Staff takes the position that the evidence
shows that { } practices claim 22 of the '899 patent. (SIB at 52-53
(citing CX-202C at Q. 227-241).)

Discussion and Conclusion: Based on the evidence of record, I find that Qimonda has

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failed to show by a preponderance of the evidence that { }

practices claim 22 of the '899 patent.

There are two disputed issues at bar, to wit: (1) whether or not {

} practices element 2 of claim 22, which requires "... patterning the photoresist layer with an inverse active area mask while biasing the layer so that the photoresist overlies at least a portion of the angled oxide layer;" and (2) whether or not {

} practices element 3 of claim 22, which requires, "removing the silicon oxide in the exposed regions". (JX-8 at 12:8-10, 12:11.)

Qimonda's expert, Dr. Lahnor, testified based on his personal knowledge of { } as well as his close and long-term familiarity with { } His testimony was that { } describes {

} He testified that {

}Dr. Lahnor's

testimony was un rebutted at trial.

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Respondents' argument on this issue is based on a comparison of {

} Respondents use this

reasoning to attack the credibility of Qimonda's expert, Dr. Gutmann, who testified that {

}

Respondents' argument on this point is unconvincing. Respondents' focus on the ultimate appearance { } ignores the actual process { } I have already found in section III.D.1 and 3, *supra*, that in the case at hand, the evidence indicates that an inverse active area mask is a mask that is obtained from the active area mask using an inversion step in which the clear and opaque areas of the mask are reversed. Thus, it is a specific type of mask *derived from reversing its predecessor*.

The evidence shows that Gocho, however, does not refer to an "inverse active area mask" and does not teach or suggest making or using one. It merely instructs the reader to form a resist pattern to expose only the wide active area regions, and the evidence shows there are many ways to create a photoresist pattern. At the hearing, Respondents' expert conceded that Gocho does not explicitly disclose a biased inverse active area mask. (Tr. at 1236:8-1237:22, 1243:11-16.) Dr. Bravman admitted that he had not cited any reference in his direct testimony existing before the '899 patent was filed that explicitly described the generation of an inverse active area mask. (*Id.* at 1243:17-23.) Dr. Bravman also admitted that the patent examiner, speaking of Gocho, had found that the prior art of record does not teach or suggest the claimed invention in which an inverse active area mask is used to remove at least a portion of the insulating layer from the

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active area regions as claimed. (*Id.* at 1242:13-23.) Qimonda argues persuasively that techniques for generating the inverse active area mask directly from the original active area mask are not specified in Gocho, which generally instructs the reader to form a resist pattern to expose only the wide active area regions. Qimonda contrasts RX-598 at 11:1-3 and claim 1 with JX-8 at 7:43-45, and notes that the latter provides the biased inverse active area mask of the ‘899 claimed invention “advantageously eliminates the need to randomly generate a new mask in order to expose the active areas.” (CIB at 131-133.)

Dr. Gutmann in his direct testimony described, *inter alia*, that an inverse active area mask is a mask that is obtained from the active area mask using an inversion step in which the clear and opaque areas of the mask are reversed. (CX-202C at Q. 83-84.) By contrast, Dr. Bravman conceded both at his deposition and at the trial that there are many ways to create a photoresist pattern, and an inverse active area mask is merely one of the many possible ways. (Tr. at 1236:8-14; 1249:24-1250:10.)

Dr. Gutmann’s credibility on this point remains intact. Respondents’ argument also does nothing to rebut the testimony of Dr. Lahnor on this subject. Dr. Lahnor’s testimony, which supports Dr. Gutmann’s conclusion regarding { } is credible, and he has the experience to be knowledgeable about { } at issue here.

I find that a preponderance of evidence supports a finding that the process used to create { } practices element 2 of claim 22 of the ‘899 patent.

I turn to element 3 of claim 22, which requires “removing the silicon oxide from the exposed regions.” (JX-8 at 12:11.)

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Qimonda asserts correctly that, in their post-trial brief, Respondents have put forward for the first time a new argument on the technical prong – that Qimonda’s {

} Qimonda says that

Respondents argue that {

} (CRB at 62-63 (citing RIB at 154-155).) Qimonda notes that this defense was not disclosed during discovery. I find that, pursuant to Ground Rule 8.2, Respondents’ argument that {

} was abandoned by

Respondents when they failed to include it in their pre-hearing brief and statement.

Nevertheless, it is complainant’s burden to prove by a preponderance of evidence that each and every element of claim 22 is practiced by its {

}

regardless of whether or not Respondents raise an issue disputing that fact.

Qimonda has argued consistently that construction of the term requires removal of a sufficient amount of the insulating material over the active regions, for the purpose of shortening the subsequent chemical-mechanical polishing (CMP) step. In this portion of its brief, Qimonda asserts that {

} (CIB at 118.) Qimonda does not allege that its {

}

While not repeating the entire rationale here, I find that the construction and rationale applied in section III.D.2 of this Initial Determination, remains correct and will be applied to element 3 of claim 22. I find that “removing the silicon oxide from the exposed regions” as set forth in element 2 of claim 22, means “removing the insulating material from those areas not covered by the photoresist layer to expose the surface of the semiconductor substrate.”

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I note that { } consonant with Qimonda's position states { } Thus, the height of the { } This supports a finding that Qimonda's process { }

Based on all of the foregoing, I find that the process used by Qimonda in { } does not practice claim 22 of the '899 patent.

Qimonda has based its assertion that it meets the technical prong of the domestic industry requirement solely on its alleged practice of asserted claim 22 of the '899 patent. Because Qimonda has failed to show by a preponderance of the evidence that it practices claim 22 of the '899 patent, I find that it has not met the technical prong of the domestic industry requirement. *See, e.g., Alloc v. Int'l Trade Comm'n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003); *Certain Point of Sale Terminals and Components Thereof*, Inv. No. 337-TA-524, Order No. 40 (April 11, 2005)

4. The '918 Patent

Qimonda's Position: Qimonda contends that its { } practices claim 1 of the '918 patent. (CIB at 144.) Qimonda states that Glew compared the reverse engineering images of { } to each limitation of claim 1 and found that the each limitation was present in the chip. (*Id.* (citing CX-110 at Q. 134-149; CX-20C; CX-131C; CX-134C; CDX-28C).)

Qimonda states that Respondents' expert, Dr. Shanfield, only contests { } (CIB at 144 (citing Tr. at 1738:15-29).) Qimonda asserts that the reverse engineering images of the Qimonda product prove { } (*Id.* at 145 (citing CX-110C at Q. 134-135, 141-142, 152; CX-20C; CX-131C; 134C; CDX-28C).) Qimonda states that Dr. Shanfield claims that

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there is { }but, according to
Qimonda, even a cursory look at { } shows that it is in fact { }
(*Id.* (citing CX-110C at Q. 134-135, 141-142, 152; CX-20C; CX-131C; 134C; CDX-28C).)

Qimonda asserts that {

} (*Id.* (citing Tr. at 1747:21-1748:6).)

Qimonda asserts that this is consistent with Dr. Glew's opinion that {

} Qimonda argues that a {

} (CIB at 145 (citing

CX-131C; Tr. at 1739:6-1740:21).) Qimonda claims that even if {

}

(*Id.* at 145-146 (citing CX-131C; Tr. at 1739:6-1740:21).) Qimonda states that because there is
no dispute that { } Qimonda's

{ } and practices claim 1. (*Id.* at 146 (citing RX-1246 at Q.
32).)

Qimonda claims that Dr. Shanfield's testimony was not credible. According to Qimonda,
Dr. Shanfield conceded during cross-examination that if { } was constructed the
way he alleged, it would not work. (CIB at 146 (citing CX-131C; RX-1706C; Tr. at 1746:20-
1752:8).) Qimonda notes that Dr. Shanfield testified that {

} (*Id.* (citing CX-131C; RX-1706C; CDX-55; Tr. at 1752:10-

1755:13).) Qimonda argues that under no circumstances would a trench ever be filled with
metal, as this would defeat the purpose the trench. (*Id.* (citing CX-190C at Q. 67-86; CX-202C
at Q. 50).)

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Qimonda states that there are currently { } wafers, each having hundreds of chips, in inventory at Qimonda Richmond, and all of these were manufactured pursuant to the '918 patent. (CIB at 147 (citing Tr. at 821:14-823:14).) Qimonda claims that out of the { } chips produced in Sandston in financial year 2007-2008, 93% were made according to the '918 patent. (*Id.* (citing Tr. at 821:14-823:14).)

In its rebuttal brief, Qimonda disputes Respondents' assertion that it failed to explained { } (CRB at 77.) Qimonda states that Dr. Glew fully explained { } (*Id.* (citing CX-110 at Q. 132-149; CX-20C; CX-131C; CX-134C; CDX-28C).)

Qimonda reiterates its argument that { } meets either proposed construction for the "connected to the substrate" limitation of claim 1. (CRB at 78-79.) Qimonda notes that Dr. Shanfield opined that { } (*Id.* at 80 (citing RX-1246C at Q. 29).) According to Qimonda, four out of five { } meet all of the parties' construction { } (*Id.* (citing RX-1246C at Q. 29).) Thus, Qimonda argues that Respondents admit that there is at least an 80 percent likelihood that Qimonda meets all of the limitation of the '918 patent. (*Id.* (citing RX-1246C at Q. 29).)

Respondents' Position: Respondents contend that Qimonda failed to meet its burden to prove that { } practices claim 1 of the '918 patent. (RIB at 206-210.) Respondents assert that Dr. Glew relies on { } to support his opinion that the Qimonda product practices claim 1: { } (*Id.* at 206 (citing RX-1246C at Q. 25; CX-110C at Q. 134-147; Tr. at 670:13-671:7).) Respondents argue that this testimony and documentary evidence fails to establish that the Qimonda product practices every

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limitation. (*Id.* (citing RX-1246C at Q. 28; Tr. at 1738:17-21).)

Respondents focus on the claim limitation requiring “at least two first contacts connected to the substrate and to the first conductive line” Respondents state that {

} (*Id.* at

207.) Respondent aver that because Qimonda has failed to prove that {

} it has not proven that the purported two first contacts are “connected to”

the substrate. (RIB at 206 (citing RX-1246C at Q. 33, 35).)

Respondents assert that Qimonda has failed to prove the {

} (RIB at 208.) Respondents note that Dr. Glew did

not address { } in any way in his testimony, and did not { } (*Id.* at

208-209 (citing CX-110C).) Respondents state that Dr. Glew did not inspect or test {

}

(*Id.* at 209 (citing Tr. at 670:2-12, 673:4-10; RX-1246C at Q. 37).) Because Qimonda has no

idea { } Respondents argue that Qimonda cannot meet its

burden to demonstrate that { } practices claim 1. (*Id.* (citing RX-1246C at Q. 33, 35)).

In their reply brief, Respondents state that their proposed construction of “two first contacts connected to the substrate” requires that the first two contacts touch the substrate. (RRB at 84.) Respondents argue that if their construction is adopted, it is undisputed that Qimonda cannot meet the technical prong {

}

Thus, according to Respondents, the only issue is whether { } meets

the “two first contacts connected to the substrate” limitation under Qimonda’s proposed

construction, { }

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{ .} (RRB at 84.) Respondents claim that Qimonda has failed to {
} and thus cannot meet its burden under its own proposed
construction. (*Id.*)

Respondents criticize Qimonda's allegedly new argument that {
} (RRB at 84-85.) Respondents assert that Dr. Glew's direct testimony never
addresses { } and cannot support Qimonda's argument. (*Id.* at 85 (citing CX-
110C at Q. 136-147).) Respondents contend that Dr. Shanfield did not testify that the
{ } (*Id.* at 85-86 (citing Tr. at 1739: 6-1740: 14,
1747:21-1748:6; RX-1706C; RDX-163C; CX-131C).) Respondents further argue that because
this new argument was no raised in Qimonda's pre-trial brief, it has been waived. (*Id.* at 87.)

Respondents also attempt to rebut Qimonda's allegations regarding Dr. Shanfield's
testimony. Respondents state that Dr. Shanfield did not testify that the { } would not
work as he described them. (RRB at 87 (citing Tr. at 1743:9-1745:8, 1760: 11-16; RX-1246C at
Q. 33-35).) Respondents argue that Dr. Shanfield's testimony was not in conflict with Dr.
Bravman's testimony, as alleged by Qimonda. (*Id.* at 87-88 (citing RX-772C at Q. 203).)

Commission Investigative Staff's Position: Staff contends that Qimonda failed to meet
its burden to demonstrate that { } practices claim 1 of
the '918 patent. (SIB at 62-63.) Staff notes that the dispute between the parties concerns the {
} (*Id.*) After summarizing
the testimony of both experts, Staff argues that both experts' testimony should be disregarded on
this point because neither expert offers credible testimony. (*Id.* at 63.) After discounting the
testimony of both experts, Staff claims that Qimonda does not have the necessary evidence to
meet its burden. (*Id.*)

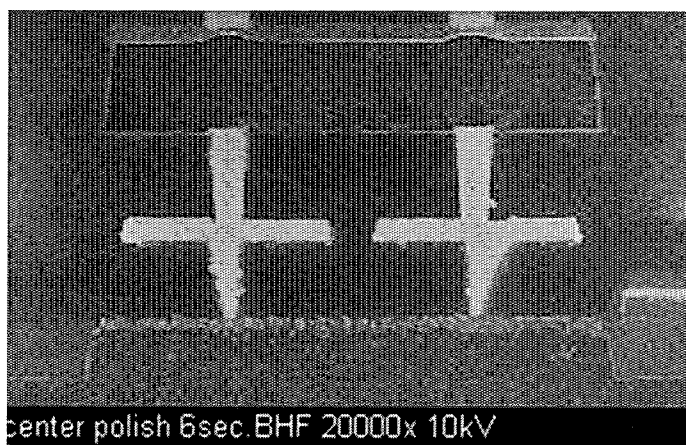
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Discussion and Conclusion: Based upon the evidence before me, I find that Qimonda has not shown by a preponderance of the evidence that {

} practices claim 1 of the '918 patent.

Qimonda and Respondents dispute one issue regarding {
} whether or not the first contacts are connected to the substrate. The source of the dispute is {

} Respondents argue that
the { } The SEM image in
question can be seen below:



(CX-131C at QAG-665-ITC-0206333; *see also* CX-134C; RDX-163C.)

As described *supra*, I construed the phrase “at least two first contacts connected to the substrate and to the first conductive line” to require a direct physical connection between the first contacts and the substrate, and a direct physical connection between the first contacts and the first conductive line. Thus, if {

} then the contacts are not connected to the substrate.

Dr. Glew’s direct testimony does not go into any detail regarding {the }
He simply testifies that the first contacts are connected to the substrate. (CX-110C at Q. 141-

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142; CX-134C.) Dr. Glew's {

} (CX-134C.) Dr. Glew was not asked about this during the portion of the cross examination devoted to domestic industry. (Tr. at 668:24-673:15.)

Respondents' expert Dr. Shanfield testified that it was his opinion that {

}

(RX-1246C at Q. 29, 32; RDX-163C.) Specifically, he testified that {

} (*Id.*) Dr. Shanfield testified that there are several easy ways to determine

{ } but Dr. Glew failed to perform such testing. (*Id.* at Q. 36-37.)

Qimonda notes that Dr. Shanfield's testimony is not credible in light of his opinion offered at trial: (1) that { } would not work and; (2) that the shallow trenches { } are filled with metal. (Tr. at 1746:20-1755:10.) I concur. The purpose of the trenches, as outlined in the '899 patent, is to electrically isolate various sections of the substrate from each other. (*See generally* JX-8.) Filling those trenches with metal would defeat the purpose of electrical isolation. Based on this questionable testimony from Dr. Shanfield, I find that his testimony regarding Qimonda's product lacks credibility.

Even discounting Dr. Shanfield's testimony, Qimonda failed to explain {

} and, more importantly, whether or not { }

Contrary to Qimonda's assertion, Dr. Glew's direct testimony provides no discussion of this

{ } he merely testifies that the "connected to the substrate" limitation is met, with no analysis to support his conclusion. (CX-110C at Q. 141.)

Qimonda also points to a portion Dr. Glew's deposition testimony, which was not