IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

FORCE MOS TECHNOLOGY CO., LTD., *Plaintiff*, v. ASUSTEK COMPUTER, INC., *Defendant*.	§ § § § § § § § §	CIVIL ACTION NO. 2:22-CV-00460-JRG **FILED UNDER SEAL**

FINDINGS OF FACT AND CONCLUSIONS OF LAW

The Court held a bench trial in the above-captioned civil action on March 31, 2025. During the bench trial, the Court heard evidence and argument from Plaintiff Force MOS Technology, Co., Ltd. ("Force MOS" or "Plaintiff") and Defendant ASUSTeK Computer, Inc. ("ASUSTeK" or "Defendant") (collectively, the "Parties") on Defendant's equitable defenses and counterclaims of inequitable conduct as to U.S. Patent No. 7,629,634 (the "'634 Patent") and U.S. Patent No. 7,812,409 (the "'409 Patent") (the "Asserted Patents").

The Court makes these findings of fact and conclusions of law pursuant to Fed. R. Civ. P. 52.[1] The Court's findings of fact are based on the admissible evidence.[2] For the reasons set forth below, the Court concludes that Defendant has not established by clear and convincing evidence the required elements of its inequitable conduct defenses and counterclaims. Accordingly, the Court finds that Plaintiff's '634 and '409 Patents are enforceable, and Defendant should take nothing by way of its inequitable conduct defenses and counterclaims.

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[1] Any finding of fact that could also be considered a conclusion of law should be treated as such. Any conclusion of law that could also be considered a finding of fact should be treated as such.

[2] Prior to the bench trial, the Parties filed a "Joint Submission in Advance of Bench Trial," that, *inter alia*, asks the Court to take judicial notice of several points of authority. (Dkt. No. 387.) The Court has considered all the matters contained therein and taken judicial notice of the points of authority as requested by the Parties.

I. FINDINGS OF FACT

A. The Parties

[FF 1.] Plaintiff Force MOS is a limited company organized and existing under the laws of Taiwan and located 24F, No. 555, Siyuan Road, Xinzhuang District, New Taipei City, Taiwan (R.O.C.). (Second Amended Complaint, Dkt. No. 144 at ⁋ 1.)

[FF 2.] Defendant ASUSTeK is a corporation organized and existing under the laws of Taiwan, with a principal place of business at No. 15, Li-Te Road, Beitou District, Taipei 112, Taiwan. (Answer, Dkt. No. 172 at ¶ 2.)

B. The Lawsuit

[FF 3.] On November 28, 2022, Force MOS filed its original complaint in this case. (Dkt. No. 1.) In the complaint, Force MOS alleged that certain ASUSTeK products infringed U.S. Patent Nos. 7,629,634 and 7,847,346 (the "'346 Patent"). (*Id.* at 1.)

[FF 4.] On March 7, 2023, Force MOS filed its first amended complaint in this case. (Dkt. No. 13.) In its First Amended Complaint, Force MOS alleged that certain ASUSTeK products also infringed U.S. Patent No. 7,812,409. (*Id.* at 1.)

[FF 5.] Force MOS withdrew its claims related to the '346 Patent on the eve of trial. (Dkt. No. 412 at ¶ 1.) The Court dismissed with prejudice all claims and counterclaims asserted between the Parties concerning the '346 Patent on February 7, 2025, the ruling of which the Court memorialized on February 10, 2025. (Dkt. No. 353.)

C. The Asserted Patents

[FF 6.] On February 23, 2008, Dr. Fu-Yuan Hsieh[3] filed U.S. Patent Application No. 12/036,243 (the "'243 Application"). (JX-2 at Cover Page.) On December 8, 2009, the United States Patent and Trademark Office ("USPTO") issued U.S. Patent No. 7,629,634 (the "'634 Patent"), which is entitled, "Trenched MOSFET with Trenched Source Contact," from the '243 Application. (*Id.*) Dr. Hsieh is listed as the named inventor on the '634 Patent. (*Id.*)

[FF 7.] The invention of the '634 Patent generally "relates to a trenched MOSFET with trenched source contact and, in particular, to provide a lateral contact layer in the MOSFET for avalanche improvement." (*Id.* at 1:6-8.)

[FF 8.] On December 4, 2006, Dr. Hsieh filed U.S. Patent Application No. 11/633,366 (the "'366 Application"). (JX-3 at Cover Page.) On October 12, 2010, the USPTO issued U.S. Patent No. 7,812,409 (the "'409 Patent") entitled, "Trenched MOSFET with Cell Layout, Ruggedness, Truncated Corners," from the '366 Application. (*Id.*) Dr. Hsieh is listed as the named inventor of the '409 Patent. (*Id.*)

[FF 9.] The invention of the '409 Patent generally "relates to a novel and improved cell structure, device configuration and improved process for fabricating a trenched semiconductor power device with improved ruggedness with truncated corners." (*Id.* at 1:9-13.)

[FF 10.] Plaintiff Force MOS is the owner of the Asserted Patents. (JX-2 at Cover Page; JX-3 at Cover Page; Dkt. No. 358 at 4.)

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[3] At times, "Fu-Yuan Hsieh" is also spelled as "Fwu-Iuan Hshieh." (*See* Joint Pre-Trial Order, Dkt. 276 at 18.) As the Parties agree that both spellings refer to the same person, the Court will refer to him hereafter as "Dr. Hsieh" for clarity in the record. (*Id.*)

D. Jury Trial

[FF 11.] On February 7-13, 2025, the Court held a jury trial on Force MOS's infringement claims. During the trial, Force MOS accused various ASUSTeK electronics—including laptops, motherboards, and graphic cards—of incorporating Metal–Oxide–Semiconductor Field-Effect Transistors ("MOSFETs") that infringe the patent claims at issue. The patent claims at issue were Claims 1-3 of the '634 Patent, and Claim 1 of the '409 Patent (the "Asserted Claims"). (Dkt. No. 358 at 5.) The jury also heard ASUSTeK's patent defenses, which included non-infringement of the Asserted Patents and invalidity of the '409 Patent. (*See* Dkt. Nos. 369-373.)

[FF 12.] On February 13, 2025, the jury found that ASUSTeK willfully infringed all the Asserted Claims and that the Asserted Claims are valid. (*Id.* at 8.) The jury awarded $10,500,000 as damages in the form of a reasonable royalty. (*Id.* at 9.)

E. Bench Trial

[FF 13.] On March 31, 2025, the Court held a bench trial on ASUSTeK's inequitable conduct defenses and counterclaims. (*See e.g.,* Bench Trial Tr., Dkt. No. 409.)

F. Inventor Dr. Hsieh

[FF 14.] Dr. Hsieh is the sole inventor of the Asserted Patents. (JX-2 at Cover Page; JX-3 at Cover Page; Dkt. No. 397 at 1.) Dr. Hsieh is also the sole inventor or co-inventor of approximately 480 patents and published patent applications, of which approximately 83 of those patents are assigned to the Plaintiff, Force MOS. (Stip. Facts, Dkt. No. 397 at ¶¶ 1, 11.)

[FF 15.] There was no testimony from Dr. Hsieh during the jury trial or the bench trial. (*See generally* Dkt. Nos. 369-73; *see also* Bench Trial Transcript, Dkt. No. 409.) He did not appear in person or by deposition.

[FF 16.] The Parties agree that during the prosecution of 73 of the 83 issued patents assigned to Force MOS, Dr. Hsieh did not file an Information Disclosure Statement ("IDS"). (Dkt. No. 397 at ¶ 2.)

G. Patent Attorney Grace Lee Huang

[FF 17.] Grace Lee Huang ("Ms. Huang") is the patent prosecution counsel for Plaintiff Force MOS that prosecuted the '634 Patent. (JX-2 at Cover Page.)

[FF 18.] There was no testimony from Ms. Huang during the jury trial or the bench trial. (*See generally* Bench Trial Transcript, Dkt. No. 409.) She did not appear in person or by deposition.

[FF 19.] There was no testimony of anyone during the jury trial or the bench trial that was involved with the prosecution of the '634 Patent. (*See id.*)

H. Patent Attorney Dr. Bo-In Lin

[FF 20.] Bo-In Lin ("Dr. Lin") is the patent prosecution counsel for Plaintiff Force MOS that prosecuted the '409 Patent. (JX-3 at Cover Page.)

[FF 21.] Dr. Lin is the only person who testified during the bench trial that was involved with the prosecution of the '409 Patent. Dr. Lin is the only witness who provided testimony and who had first-hand knowledge of the prosecution of any patents and/or patent applications to which Dr. Hsieh was an inventor. (Bench Trial Tr. at 8:12-14, 105:12-14.)[4]

[4] ASUSTeK submitted hardcopies of its deposition designations to the Court following the Bench Trial, which the Court accepted into evidence. (*See* Dkt. 409 (Bench Trial Tr.) at 56:23-59:3; *see also* Dkt. 387 at 1-2, 6.) Copies of those deposition designations were also filed on the docket. (*See* Dkt. Nos. 412-1 through 412-5.)

I. Force MOS Testifying Employees

[FF 22.] Testimony was presented during the bench trial from three employees of Force MOS, namely Ming-Tao Chung ("Dr. Ming-Tao Chung"), Rafael Chung ("Mr. Rafael Chung") and Kaoway Tu ("Dr. Tu"). (*Id*. at 5:8-12, 52:21-53:1, 98:7-14.)

[FF 23.] Neither Dr. Ming-Tao Chung, Mr. Rafael Chung, nor Dr. Tu were involved with the prosecution of either of the Asserted Patents. (*See id*. at 5:8-12, 52:21-53:1, 98:7-14.)

[FF 24.] Dr. Ming-Tao Chung, Mr. Rafael Chung, and Dr. Tu testified via video deposition through the aid of an interpreter. (*See* Bench Trial Tr. at 53:14-56:18 (deposition taken in Chinese); *see also* R. Chung Dep. Tr. (deposition taken in Chinese); M. Chung Dep. Tr. (deposition taken in Chinese).)

[FF 25.] None of these three Force MOS employees—Dr. Ming-Tao Chung, Mr. Rafael Chung, and Dr. Tu—were recognized as experts during the bench trial. (*See generally* Bench Trial Transcript, Dkt. No. 409.)

J. ASUSTeK's Expert Dr. Stanley Shanfield

[FF 26.] ASUSTeK's technical expert witness, Dr. Stanley Shanfield, was qualified in the jury trial and the bench trial as an expert in the field of design fabrication and analysis of semiconductor devices, including MOSFET. (Dkt. No. 409, Bench Trial Tr. at 11:5-12.)

K. Force MOS's Expert Dr. Dean Neikirk

[FF 27.] Force MOS's technical expert witness, Dr. Dean Neikirk, was qualified in the jury trial and the bench trial as an expert on semiconductors, electronic devices, and integrated circuit fabrication. (Bench Trial Tr. at 59:18-23.)

L. Inequitable Conduct

[FF 28.] In its pleadings, ASUSTeK contended that the '634 Patent was unenforceable due to inequitable conduct based upon the alleged failure by Dr. Hsieh and others involved in the

prosecution to disclose U.S. Patent Publication No. 2006/0273384 ("Hsieh '384") (JX-23) to the USPTO during prosecution of the '634 Patent. (Dkt. No. 172 at 19-22.)

[FF 29.] In its pleadings, ASUSTeK contended that the '409 Patent was unenforceable due to inequitable conduct based upon the alleged failure by Dr. Hsieh and others involved in the prosecution to disclose U.S. Patent No. 5,763,914 ("Hsieh '914") (JX-25) to the USPTO during prosecution of the '409 Patent. (*Id.* at 22-24.)

[FF 30.] During the bench trial, ASUSTeK limited its accusations of inequitable conduct to the conduct of Dr. Hsieh, and not to any other individuals involved in the prosecution of the Asserted Patents. (Bench Trial Tr. at 5:7-7:9.)

M. Materiality

1. Alleged "But For" Materiality of Hsieh '384 to the Claims of the '634 Patent

[FF 31.] ASUSTeK contends the '634 Patent is unenforceable due to inequitable conduct based upon the alleged failure by Dr. Hsieh to disclose Hsieh '384 to the USPTO during prosecution of the '634 Patent. (Dkt. No. 409, Bench Trial Tr. at 100:22-24.)

[FF 32.] Specifically, ASUSTeK contends that Dr. Hsieh's description of the prior art in the Background section of the '634 Patent includes three false statements and constitutes an egregious mischaracterization of the actual state of the prior art to the '634 Patent, and also that disclosing prior art via general description in the Background section of the '634 Patent is not a proper disclosure. (*See e.g.*, Dkt. No. 389 at 8; *see also* Dkt. No. 409, Bench Trial Tr. at 100:22-101:2.)

[FF 33.] Dr. Hsieh did not disclose Hsieh '384 via an IDS to the USPTO. (*See* JX-02.)

[FF 34.] Hsieh '384 is not mentioned by application number, publication number, or inventor name in the text of the '634 Patent nor is it listed under "References Cited." (*See id.*)

[FF 35.] ASUSTeK did not present any invalidity case regarding the '634 Patent at the jury trial in this action. (*See* Dkt. No. 371, Jury Trial Tr. at 803:16-818:21.)

[FF 36.] ASUSTeK did not present any evidence or argument regarding Hsieh '384 at the jury trial in this action. (*Id.*)

[FF 37.] During the bench trial, and in its trial brief, ASUSTeK did not present a limitation-by-limitation comparison of Hsieh '384 with each limitation of any claim of the '634 Patent. Rather, ASUSTeK only compared Hsieh '384 to the "lateral contact layer" and "base contact layer" limitations of Claim 1 of the '634 Patent. (*See* Dkt. No. 389 at 4, 6-8; Bench Trial Tr. at 16:11-19:5.)

[FF 38.] For example, ASUSTeK did not prove, or attempt to show, that Hsieh '384 discloses "a bottom metal layer formed on the lower surface of said semiconductor region" as recited in claim 1 of the '634 Patent. (*Id.*)

[FF 39.] During the bench trial, and in its trial brief, ASUSTeK did not present any evidence or argument of a motivation to combine Hsieh '384 with any other prior art reference. For example, ASUSTeK did not present any motivation to combine Hsieh '384 with the admitted prior art of the '634 Patent. (*Id.*)

[FF 40.] Thus, ASUSTeK has not advanced a prima facie anticipation or obviousness theory for Hsieh '384. Since "but-for" materiality requires a showing that the claim would have not issued (*i.e.*, that it would have been rendered anticipated or obvious if the non-disclosed reference would have been provided to the USPTO) if the reference had been disclosed, ASUSTeK has failed to show Hsieh '384 is but-for material to any claim of the '634 Patent. Nevertheless, the Court will also explain why the theories that ASUSTeK did present for Hsieh '384 fail.

[FF 41.] Since ASUSTeK has not disclosed in its trial brief, or any place prior to the bench trial, any specific alternative construction of "lateral contact layer" under the broadest reasonable interpretation standard, ASUSTeK has forfeited any argument that the term "lateral contact layer" in claim 1 of the '634 Patent has a different claim construction under the "broadest reasonable interpretation" standard than the construction adopted in the Court's claim construction order. (Dkt. Nos. 132, 389.)

[FF 42.] Even if ASUSTeK had not forfeited such argument, the Court would conclude that the broadest reasonable interpretation of "lateral contact layer" would require P* doping (*i.e.*, doping between P and P+) as the broadest reasonable interpretation consistent with the specification because the specification of the '634 Patent uses the definitional language "[a]ccording to the present invention" before describing the lateral contact layer as having P*-type doping, (i.e. doping between P and P+). (JX-2 ('634 Patent) at 2:1-11.)

[FF 43.] Hsieh '384, however, discloses that the sidewalls of the source contact trenches have P+ doping. (JX-23 (Hsieh '384) at Figs. 3-4, 5-7, 9G-9J, 9G', [0028]-[0030], [0032]-[0033], [0035]-[0036] (elements 128, 228); Bench Trial Tr. at 39:1-40:14, 43:10-44:3, 64:20-65:15, 66:6-22 ("In the '384 Hshieh, nonetheless, always calls this P+. It's very clear that the entire region should be P+. In my opinion, that means it's not a lateral contact layer as required by the '634 Patent."); 82:17-83:12.) Other than the description of the sidewalls of the source contact trenches as having P+ doping, Hsieh '384 contains no further details regarding the doping concentration for such regions, or the dosages used for creating those regions. (*Id.*)

[FF 44.] The disclosures in Hsieh '384 are consistent with the ion implantation process resulting in a uniformly high dosage of positive dopants, such that both the sidewalls and bottom of the source contact trenches have P+ doping (*i.e.*, such that there is a single doped P+ region

rather than a P+ region at the bottom and P+ region at the sidewalls). (*Id.*) ASUSTeK has presented no persuasive evidence or argument that would indicate to one of skill in the art otherwise.

[FF 45.] Dr. Neikirk's trial testimony that the accused MOSFETs have P* doping at the source contact trench sidewalls was based on a variety of sources having more details than those disclosed in Hsieh '384, not simply that the accused MOSFETs have tapered sidewalls. (Bench Trial Tr. at 66:23-67:12; Jury Trial Tr. at 293:24-294:10, 300:19-301:9, 327:11-17, 329:11-19, 350:20-351:3, 360:4-9, 374:8-15, 397:20-298:15, 409:12-416:15, 560:6-19, 564:7-17.)

[FF 46.] Since the sidewalls of the source contact trenches in Hsieh '384 have P+ doping, and because P+ is not less than P+, Hsieh '384 fails to disclose P* doping at the sidewalls of the source contact trenches and thus fails to disclose a "lateral contact layer" as claimed in claim 1 of the '634 Patent. (JX-23 (Hsieh '384) at Figs. 3-4, 5-7, 9G-9J, 9G', [0028]-[0030], [0032]-[0033], [0035]-[0036] (elements 128, 228); Bench Trial Tr. at 39:1-40:14, 43:10-44:3 ("And there's no teaching; it never mentions P* anywhere within the disclosure of the Hshieh '384 Patent. Correct? A. I disagree. Q. Does it mention the word P* -- A. No."), 64:20-65:15 ("What is your opinion as to whether Hshieh P+ doped region 128 satisfies the broadest reasonable interpretation of 'lateral contact layer'? A. In my opinion, it does not. The '634 Patent repeatedly refers to P*. It gives examples of why that P* should not be P+--I just gave one; the threshold voltage--as opposed to this disclosure where it always says that the sidewalls are P+; always. Q. So how does this affect the materiality of Hshieh '384? A. In my opinion, it is not material because it simply does not disclose a lateral contact layer as required by the '634 Patent."), 66:6-22, 82:17-83:12.)

[FF 47.] Hsieh '384 consistently describes and depicts the source contact trench sidewalls as having a single doped region (i.e. elements 128 or 228) surrounding the bottom and sidewalls

of the source contact trenches. (JX-23 (Hsieh '384) at Figs. 3-4, 5-7, 9G-9J, 9G', [0028]-[0030], [0032]-[0033], [0035]-[0036] (elements 128, 228); Bench Trial Tr. at 38:5-40:14.)

[FF 48.] ASUSTeK and Dr. Shanfield have identified that single doped region surrounding the bottom and sidewalls of the source contact trenches in Hsieh '384 (i.e. elements 128 or 228) as satisfies both the "base contact layer" and the "lateral contact layer" limitations of claim 1 of the '634 Patent. (Bench Trial Tr. at 38:3-39:7.)

[FF 49.] By contrast, claim 1 of the '634 Patent separately recites having both a "lateral contact layer" and a "base contact layer." (Bench Trial Tr. at 38:3-39:7.) Where a claim lists elements separately, the clear implication of the claim language is that those elements are distinct components of the patented invention. *Becton, Dickinson & Co. v. Tyco Healthcare Grp.*, LP, 616 F.3d 1249, 1254 (Fed. Cir. 2010); *Regeneron Pharms., Inc. v. Mylan Pharms. Inc.*, 130 F.4th 1372, 1378-84 (Fed. Cir. 2025). ASUSTeK has not presented any evidence or argument that these limitations of the '634 Patent should be interpreted differently.

[FF 50.] Accordingly, Hsieh '384's P+ region (*i.e.*, elements 128 or 228) cannot satisfy both the "lateral contact layer" and "base contact layer" limitations of claim 1 of the '634 Patent, and thus cannot anticipate or render obvious claim 1 of the '634 Patent. (*Id.*; *see* Bench Trial Tr. at 63:24-64:18, 65:18-66:5.)

[FF 51.] Furthermore, during prosecution of the '634 Patent, the examiner performed a search of Dr. Hsieh's prior art, and did not cite Hsieh '384 or any other art of Dr. Hsieh as being material. (JX-5 (634 File History) at JX05-035; Bench Trial Tr. at 44:13-21.)

[FF 52.] The Court finds that, based on the totality of the record before it, ASUSTeK has failed to establish that Hsieh '384 is but-for material to any of the claims of the '634 Patent.

2. Alleged Misrepresentations in the Specification of the '634 Patent

[FF 53.] Prior to its trial brief, ASUSTeK did not disclose any theory of inequitable conduct based on alleged misrepresentations in the specification of the '634 Patent or egregious misconduct. (Dkt. Nos. 172 at 19-30; *see also* Dkt. Nos. 390, 395.) Accordingly, such theories are waived. Nonetheless, the Court will make alternative findings in the event it is determined on appeal that such theory is not waived.

[FF 54.] A person of ordinary skill in the art would understand the portion of the specification of the '634 Patent at column 1, lines 33-45 as discussing the particular prior art example illustrated in Figure 1 of the '634 Patent rather than advancing representations regarding every trenched MOSFET in the prior art. (JX-2 at 1:18-41; Bench Trial Tr. 75:19-24, 93:21-95:5.)

[FF 55.] Dr. Neikirk is the only expert witness who testified regarding the accuracy of these representations in the '634 Patent. It is unrebutted that the representations regarding Figure 1 of the '634 Patent are accurate and do not contain any misrepresentations. (*Compare* Bench Trial Tr. at 11:14-52:15, *with* Bench Trial Tr. at 75:19-76:24, 93:21-95:5.)

[FF 56.] ASUSTeK has failed to show that the portion of the specification of the '634 Patent at column 1, lines 33-45 mischaracterizes the prior art example of Figure 1 of the '634 Patent. (*Id.*)

[FF 57.] ASUSTeK has failed to show that Figure 1 of the '634 Patent or the text in column 1, lines 33-45 of the '634 Patent do not constitute accurate descriptions of at least one example of the prior art. (*Id.*)

[FF 58.] Additionally, the '634 Patent identifies its improvement over the prior art as the lateral contact layer, which it describes as having dopant sufficient to achieve ohmic contact but not so high as to significantly affect threshold voltage. (JX-2 ('634 Patent) at 1:6-8, 2:5-11, Figs. 1, 2G.) Read in the context of the '634 Patent as a whole (including column 1, lines 33-45), the

specification reasonably describes the invention as presenting a new structure for sidewalls with an intermediate degree of doping between P+ and P, which is not disclosed in Hsieh '384. (*Id.*; JX-2 ('634 Patent) at 1:18-2:33; Bench Trial Tr. at 65:4-11, 95:7-23.)

[FF 59.] Thus, even if one interpreted column 1, lines 33-45 of the '634 Patent as concerning representations of the prior art as a whole, the statements in that passage are reasonably accurate in the context of the '634 Patent as a whole such that they could not rise to the level of egregious misconduct. (*Id.*)

[FF 60.] The Court finds that, based on the totality of the record before it, ASUSTeK has failed to establish that any statements in the specification of the '634 Patent include a misrepresentation.

3. Alleged "But For" Materiality of Hsieh '914 to the Claims of the '409 Patent

[FF 61.] ASUSTeK contends the '409 Patent is unenforceable due to inequitable conduct based upon the alleged failure by Dr. Hsieh to disclose Hsieh '914 to the USPTO during prosecution of the '409 Patent. (Bench Trial Tr. at 103:11-12; *see also* Dkt. No. 172 at 22-24.)

[FF 62.] Dr. Hsieh filed U.S. Patent Application No. 895,507 (the "'507 Application") on July 16, 1997. (JX-25 (Hsieh '914) at Cover Page.) The USPTO issued the '507 Application as U.S. Patent No. 5,763,914 ("Hsieh '914") on June 9, 1998, with the title "CELL TOPOLOGY FOR POWER TRANSISTORS WITH INCREASED PACKING DENSITY." (*Id.*)

[FF 63.] Hsieh '914 issued more than eight years before Dr. Hsieh applied for the '409 patent. Hsieh '914 is therefore prior art to the '409 patent under Pre-AIA 35 U.S.C. § 102(b).

[FF 64.] Hsieh '914 was not disclosed in an IDS to the USPTO. (*See generally* JX-06.) Hsieh '914 is not mentioned by application number, publication number, or inventor name in the text of the '409 patent, nor is Hsieh '914 listed under "References Cited." (*See generally*, JX-03.)

[FF 65.] Hsieh '914 is directed to MOSFETs with non-orthogonal parallelogram cells. (JX-25 (Hsieh '914) at Abstract, Figs. 4A-8B, 10A, 2:64-3:24, 3:46-50, 4:32-5:51, 6:39-7:25, 7:39-44, 8:6-23, claims 1, 8, 12, 21, 26, 30; Bench Trial Tr. at 67:15-68:2; Jury Trial Tr. at 952:4-953:12 ("[Hsieh '914] is focused on the use of non-orthogonal parallelograms.")

[FF 66.] Hsieh '914 teaches that MOSFETs with non-orthogonal parallelogram cells are advantageous over MOSFETs with square-shaped cells, as non-orthogonal parallelogram cells have better packing density compared to typical square cells while maintaining the same total channel width. (JX-25 (Hsieh '914) at Abstract, 2:34-53, 2:64-3:5, 3:47-50, 4:32-5:2, 5:12-17; Jury Trial Tr. at 953:13-955:12.)

[FF 67.] The specification of Hsieh '914 does not describe or depict any embodiment with trenched gates and cells having rounded or truncated corners. (JX-25 (Hsieh '914) at Figs. 4B, 10A-10B; Bench Trial Tr. at 32:19-23, 67:21-68:2 ("The '914 clearly teaches away from using squares. It teaches to use non-orthogonal parallelograms. But the only corners that are rounded are shown in that figure. It doesn't show a rounded center contact.")

[FF 68.] Hsieh '914 does not disclose any embodiment with trenched source contacts (*i.e.*, trenched contacts that penetrate into the surface of the semiconductor so as to contact the source and body regions). (JX-25 (Hsieh '914) at Figs. 4B, 10B; Bench Trial Tr. at 32:19-23, 67:21-68:2.)

[FF 69.] Hsieh '914 discloses using parallelogram-shaped source contacts. (JX-25 (Hsieh '914) at Figs. 4A, 5A, 7A-7B, 8A-8B, 10A, claims 20, 33; Bench Trial Tr. at 67:22-24.) Hsieh '914 does not disclose any embodiment with circular source contacts. (Bench Trial Tr. at 32:21-23.)

[FF 70.] ASUSTeK has not shown that Hsieh '914 anticipates any claim of the '409 Patent.

a. Hsieh '914 Combined with Art of Record of the '409 Patent

[FF 71.] ASUSTeK's position of materiality of Hsieh '914 is based solely upon the combination of Hsieh '914 with Kobayashi '196. (*Id.* at 35:23-25, 37:23-38:2.)

[FF 72.] Dr. Shanfield testified that Hsieh '914 became material to the patentability of the claims of the '409 Patent when combined with U.S. Patent No. 6,888,196 ("Kobayashi '196") (JX-24) even though Kobayashi '196 was not prior art of record for the '409 Patent. (*Id.*)

[FF 73.] Kobayashi '196 was not art of record during prosecution of the '409 Patent. (JX-3 at Cover Page; Bench Trial Tr. at 36:1-3.)

[FF 74.] ASUSTeK has not advanced an obviousness theory for Hsieh '914 alone, or for Hsieh '914 in combination with any of the prior art of record during prosecution of the '409 Patent. (JX-3 at Cover Page; Bench Trial Tr. at 36:1-3.)

[FF 75.] ASUSTeK has failed to demonstrate that Hsieh '914, whether alone, or in combination with any other prior art of record during prosecution of the '409 Patent, would have rendered any claims of the '409 Patent obvious.

b. Hsieh '914 Was Cumulative Prior Art That Is Non-Material

[FF 76.] U.S. Patent Publication No. 2002/0006703 ("Pfirsch '703") (JX-29) was repeatedly cited and applied by the examiner in issuing rejections during prosecution of the '409 Patent. (JX-6 (409 File History) at JX06-049 to JX06-059, JX06-062, JX06-090 to JX06-098, JX06-132 to JX06-137, JX06-505 to JX06-510, JX06-544 to JX06-552, JX06-577 to JX06-587, JX06-885 to JX06-890, JX06-924 to JX06-932, JX06-957 to JX06-967.)

[FF 77.] As the examiner recognized during prosecution of the '409 Patent, Pfirsch '703 discloses trench gate MOSFETs having substantially square-shaped cells with rounded corners.

(JX-6 (409 File History) at JX06-132 to JX06-133; JX-29 (Pfirsch '703) at Fig. 2; Bench Trial Tr. at 31:12-14, 68:4-69:8.)

[FF 78.] During prosecution of the '409 Patent, the patentee did not dispute that Pfirsch '703 disclosed substantially square-shaped cells with rounded corners. Rather, the patentee distinguished the Pfirsch '703 reference based on Pfirsch '703 failing to disclose circular trench contacts. (JX-6 (409 File History) at JX06-079 ("[T]he amended claims 1 and 13 have different top view of closed cells from that of Pfirsch which has a closed cell with square trench gate with rounded corner and square contact with rounded corner as shown in Fig. 2, 5 and 6 in Pfirsch."); Dkt. No. 132 at 26 ("The Court [found that] the patentee distinguished Pfirsch because it included a 'square contact with rounded corner,' which was distinguishable from a 'circular trench contact."); Bench Trial Tr. at 31:15-32:7.)

[FF 79.] Pfirsch is concerned with addressing issues of ruggedness of MOSFET cells, and in particular, the issues of breakdown currents and latch-up effects, especially at the corners of the MOSFET cells. (Bench Trial Tr. at 33:7-15, 34:23-35:6, 70:3-15; JX-29 (Pfirsch '703) at Abstract, [0003], [0004], [0014], [0024], [0058]-[0059].)

[FF 80.] ASUSTeK has not identified any disclosure in Hsieh '914 as material to the claims of the '409 Patent that is not also present in Pfirsch '703. (Bench Trial Tr. at 33:3-6.)

[FF 81.] Hsieh '914 is cumulative to the prior art references cited during prosecution of the '409 Patent, including at least the Pfirsch '703 reference. (*Id.;* Bench Trial Tr. at 69:22-70:15.)

[FF 82.] Furthermore, during prosecution of the '409 Patent, the examiner performed two separate searches of Dr. Hsieh's prior art, and did not cite Hsieh '914 (but did cite other Hsieh prior art) as being material. (JX-06 ('409 File History) at JX06-140 (search ref. nos. L1, L3, L4), JX06-166 (search ref. nos. S1, S3, S4), JX06-488 (search refs. Nos. S1, S3, S4), JX06-513 (search

refs. Nos. L1, L3, L4), JX06-868 (search refs. Nos. S1, S3, S4), JX06-893 (search ref. nos. L1, L3, L4); Bench Trial Tr. at 45:2-46:5.)

[FF 83.] The Court finds that, based on the totality of the record before it, Hsieh '914 is not material and is cumulative of the prior art of record in the '409 Patent.

c. Hsieh '914 Combined with Art not of Record of the '409 Patent

[FF 84.] Prior to its trial brief, ASUSTeK did not disclose any theory of inequitable conduct based on Hsieh '914 being material based upon its combination with the Kobayashi '196 reference, another reference not of record of the '409 Patent, which ASUSTeK contended during the bench trial should have been disclosed during prosecution of the '409 Patent. (Dkt. Nos. 172 at 19-30; *see also* Dkt. Nos. 390, 395.) Accordingly, such theory is waived. Nonetheless, the Court will make alternative findings in the event it is determined on appeal that such theory is not waived.

[FF 85.] At the jury trial, the only motivation to combine argument that ASUSTeK or Dr. Shanfield advanced for combining Hsieh '914 and Kobayashi '196 was that they were the same subject matter, same kind of device, and trying to solve the same problem. (Jury Trial Tr. at 814:16-815:2; 950:6-952:1.) That argument is inadequate to demonstrate a motivation to combine. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.")).

[FF 86.] At the bench trial and in its trial brief on inequitable conduct, ASUSTeK did not present any new or additional evidence or argument regarding any motivation to combine regarding Hsieh '914.

[FF 87.] The Court finds that, based on the totality of the record before it, ASUSTeK has failed to establish that a POSITA would have been motivated to combine Hsieh '914 with Kobayashi '196 (or any other reference) in the manner claimed by any claim of the '409 Patent. (Jury Trial Tr. at 950:6-957:2.)

[FF 88.] The jury rejected ASUSTeK's invalidity defense that Claim 1 of the '409 Patent was obvious over Kobayashi '196 and Hsieh '914. (Dkt. No. 358 at 6.)

[FF 89.] ASUSTeK has failed to demonstrate that Hsieh '914, whether alone or in combination with any other reference or disclosure, would have rendered any claims of the '409 patent obvious.

[FF 90.] The Court finds that, based on the totality of the record before it, ASUSTeK has failed to establish that Hsieh '914 is but-for material to any of the claims of the '409 Patent even if Kobayashi '196, prior art not of record during prosecution of the '409 Patent, was considered.

d. Kobayashi '196

[FF 91.] Prior to its trial brief, ASUSTeK did not disclose any theory of inequitable conduct based on alleged non-disclosure of Kobayashi '196. (Dkt. Nos. 172 at 19-30; *see also* Dkt. Nos. 390, 395.) Accordingly, such theory is waived. Nonetheless, the Court will make alternative findings in the event it is determined on appeal that such theory is not waived.

[FF 92.] At the jury trial, ASUSTeK and Dr. Shanfield asserted that Kobayashi '196 anticipates claim 1 of the '409 Patent, and in particular, that the side-view visible rounded disclosed by Kobayashi '196 at Figure 6C and column 6, lines 57 to 60 to disclose "closed cells constituting substantially square-shaped cells with rounded corners" as recited in claim 1 of the '409 Patent. (Jury Trial Tr. at 804:24-810:24.)

[FF 93.] The Court finds that ASUSTeK's anticipation theory for Kobayashi '196 is not persuasive, as "closed cells constituting substantially square-shaped cells with rounded corners" is directed to the shape of the *cells*, while Kobayashi '196's disclosures regarding rounding of the trench *gate*'s opening and bottoms do not result in a substantially square shape with rounded corners (*i.e.*, a shape essentially like that shown in Figure 3 of the '409 Patent). (JX-24 (Kobayashi '196) at Fig. 6C, 6:57-60; JX-3 ('409 Patent), Fig. 3, cl. 1; Jury Trial Tr. at 946:10-949:25 ("And, Dr. Neikirk, do you agree with Dr. Shanfield's conclusion that claim 1 of the '409 Patent is anticipated by Kobayashi? A. No, I do not," then explaining that Kobayashi does not disclose the "closed cells constituting substantially square-shaped cells with rounded corners" limitation).)

[FF 94.] ASUSTeK has not shown that Kobayashi '196 anticipates any claim of the '409 Patent.

[FF 95.] ASUSTeK has failed to demonstrate that a POSITA would have been motivated to combine Kobayashi '196 with any other reference in the manner claimed by any claim of the '409 Patent. (Jury Trial Tr. at 950:6-957:2.)

[FF 96.] ASUSTeK has failed to demonstrate that Kobayashi '196, whether alone or in combination with any other reference or disclosure, would have rendered any claims of the '409 patent obvious.

[FF 97.] Under the USPTO's patent prosecution guidelines, an examiner may rely on admissions regarding the prior art by the applicant in the specification in issuing anticipation or obviousness rejections. *See Riverwood Int'l Corp. v. R.A. Jones & Co.*, 324 F.3d 1346, 1354 (Fed. Cir. 2003); *Constant v. Advanced Micro-Devices Inc.*, 848 F.2d 1560, 1570 (Fed. Cir. 1988)).

[FF 98.] Figures 1A-1D of the '409 Patent contain applicant-admitted prior art that the examiner is presumed to have considered when allowing the '409 Patent. (JX-3 ('409 Patent) at Figs. 1A-1D, 1:20-42, 3:12-16.)

[FF 99.] The admitted prior art of Figures 1A-1D of the '409 Patent disclose a trenched semiconductor power device comprising a plurality of trenched gates surrounding a plurality of transistor cells formed in a semiconductor substrate. (JX-3 ('409 Patent) at Figs. 1A, 1C (trenched gate at element 20 surrounding square-shaped closed cell), Bench Trial Tr. at 19:6-20:20.)

[FF 100.] The admitted prior art of Figures 1A-1D of the '409 Patent disclose trenched gates surrounding transistor cells as closed cells constituting substantially square-shaped cells. (*Id.*)

[FF 101.] The admitted prior art of Figures 1A-1D of the '409 Patent disclose that each of said closed cells further includes a trench contact disposed substantially in a central portion of said closed cells, penetrating through a source region surrounding said trenched gates and extending into a body region encompassing said source region. (JX-3 ('409 Patent) at Figs. 1A, 1C (element 15 in top-view center of cell, and in side view, extending from source metal layer, penetrating into n+ source and p body regions), Bench Trial Tr. at 19:6-20:20.)

[FF 102.] The admitted prior art of Figures 1A-1D of the '409 Patent disclose that the trench contact comprises a hole opened from a top surface of said semiconductor substrate and is filled with a contact metal plug wherein sidewalls of said hole are surrounded by and in contact said source and body regions and said trench contact is separate from said trenched gates with said source region and body region disposed between a gate oxide lining of said trenched gates and all points around the trench contact. (*Id.*)

[FF 103.] The admitted prior art of Figures 1A-1D of the '409 Patent disclose that the contact metal plug is connected to a source metal disposed on top of the trench contact. (*Id.*)

[FF 104.] With the exception of trench contacts, which are circular, each claim limitation of the '409 Patent that ASUSTeK contends is disclosed by Kobayashi '196 is also disclosed by the admitted prior art in Figures 1A, 1B, 1C and 1D of the '409 Patent. (*Id.*; Jury Trial Tr. at 809:12-813:10; Bench Trial Tr. at 24:11-25:10.)

[FF 105.] During prosecution of the '409 Patent, the examiner found that the Imam reference (US Patent No. 6,867,083) (the "Imam Reference") disclosed a circular trench contact. (JX06 (409 File History) at JX06-091.)

[FF 106.] During prosecution of the '409 Patent, the patentee did not dispute that the Imam Reference disclosed a circular trench contact but rather argued that the Imam Reference did not disclose (and taught away from) the trench contact being disposed at a distance from the gate oxide lining and all circumferential points of the circular trench contact hole. (JX06 (409 File History) at JX06-120 to JX-06-121.)

[FF 107.] Thus, Kobayashi '196 is cumulative to the prior art of record during the prosecution of the '409 Patent.

[FF 108.] The Court finds that, based on the totality of the record before it, ASUSTeK has failed to establish that Kobayashi '196 is material to any claim of the '409 Patent.

4. Alleged Misrepresentations in the Specification of the '409 Patent

[FF 109.] Prior to its trial brief, ASUSTeK did not disclose any theory of inequitable conduct based on alleged misrepresentations in the specification of the '409 Patent or egregious misconduct. (Dkt. Nos. 172 at 19-30; *see also* Dkt. Nos. 390, 395.) Accordingly, such theories are waived. Nonetheless, the Court will make alternative findings in the event it is determined on appeal that such theory is not waived.

[FF 110.] A person of ordinary skill in the art would understand the portion of the specification of the '409 Patent at column 1, lines 3-13 as discussing the particular prior art example illustrated in Figure 1 of the '409 Patent, rather than advancing representations regarding every trenched MOSFET in the prior art. (JX-3 ('409 Patent) at 1:7-3:3; Bench Trial Tr. at 84:22-86:6, 94:14-95:5.)

[FF 111.] Dr. Neikirk is the only expert witness who testified regarding the accuracy of these representations in the '409 Patent. It is unrebutted that the representations regarding Figure 1 of the '409 Patent are accurate and do not contain any misrepresentations. (*Compare* Bench Trial Tr. at 84:22-86:6, 94:14-95:5 *with* Bench Trail Tr. at 11:16-52:17.)

[FF 112.] ASUSTeK has failed to show that the portion of the specification of the '409 Patent at column 1, lines 3-13 mischaracterizes the prior art example of Figure 1 of the '409 Patent.

[FF 113.] ASUSTeK has failed to show that the disclosed or claimed embodiments of the '409 Patent are not novel or an improvement over the prior art. In particular, ASUSTeK has failed to identify any one prior art reference with rounded (or truncated) corners and circular trench contacts. (*See* [FF69]; [FF92-FF93].)

[FF 114.] ASUSTeK has failed to show that the disclosed or claimed embodiments of the '409 Patent do not improve ruggedness.

[FF 115.] ASUSTeK has failed to show that Figure 1 of the '409 Patent or the text in column 1, lines 3-13 of the '409 Patent do not constitute accurate descriptions of at least one example of the prior art.

[FF 116.] Additionally, the '409 Patent identifies its improvement over the prior art as a MOSFET cell configuration having more uniform space between the contact metal and the

trenched gate. (JX-3 ('409 Patent) at Abstract, 1:28-2:23.) Read in the context of the '409 Patent as a whole (including column 1, lines 3-13), the specification reasonably describes the invention as presenting a new cell structure formed from the combination of a circular contact and a closed cell with rounded or truncated corners so as to have more uniform distances between the contact and the gate trench surrounding the cell. Such combination is not disclosed in Hsieh '914 or Kobayashi '196. (*Id.*; Jury Trial Tr. at 335:9-336:18.)

[FF 117.] Thus, even if one interpreted column 1, lines 3-13 of the '409 Patent as concerning representations of the prior art as a whole, the statements in that passage are reasonably accurate in the context of the '409 Patent as a whole such that they could not rise to the level of egregious misconduct. (*Id.*)

[FF 118.] The Court finds that, based on the totality of the record before it, ASUSTeK has failed to establish that any statements in the specification of the '409 Patent include a misrepresentation.

5. Alleged Acts Regarding Other Hsieh Patents

[FF 119.] Dr. Shanfield's testimony was directed to materiality of the prior art for the Asserted Patents. Dr. Shanfield did not provide any testimony reading materiality regarding any of Dr. Hsieh's other 480 patents and patent applications. (Bench Trial Tr. at 29:9-25.)

[FF 120.] There has been no expert analysis presented to the Court regarding any of Dr. Hsieh's other 480 patents and patent applications. There has been no expert analysis presented to the Court regarding anything that transpired during the prosecution of Dr. Hsieh's other 480 patents and patent applications. (*See generally* Bench Trial Tr.; *see also id.* at 8:21-9:4.)

[FF 121.] For each of these other 480 patents and patent applications of Dr. Hsieh, ASUSTeK has failed to identify any specific prior art that was material to patentability that was

not disclosed to the USPTO during prosecution of that patent/patent application. (*See generally* Bench Trial Tr.)

[FF 122.] For each of these other 480 patents and patent applications of Dr. Hsieh, ASUSTeK has not identified any misrepresentations (material or otherwise) that were made in the patent/patent application or during its prosecution. (*See generally* Bench Trial Tr.)

[FF 123.] Based upon the totality of the circumstances, ASUSTeK has failed to demonstrate any wrongdoing by Dr. Hsieh (or anyone else) during prosecutions of these other 480 patents and patents applications of Dr. Hsieh. Thus, ASUSTeK has failed to demonstrate any pattern of wrongdoing by Dr. Hsieh, or anyone else involved in the prosecution of Dr. Hsieh's patents (including the '634 and '409 Patents).

[FF 124.] There is no egregious conduct, affirmative or otherwise, by Dr. Hsieh or anyone involved with the prosecution of the Asserted Patents any of the other 480 patents and patents applications of Dr. Hsieh that occurred during the prosecutions.

N. Intent

1. ASUSTeK Has Failed to Present Evidence of Intent

a. Hsieh '384

[FF 125.] While Dr. Hsieh, as the inventor of Hsieh '384, knew of Hsieh '384, ASUSTeK has failed to demonstrate that Dr. Hsieh knew that Hsieh '384 was material to any claims to the '634 Patent. Dr. Hsieh's knowing of the existence of a prior art reference, even his own, is not evidence that he had actual knowledge of its materiality.

[FF 126.] There is no direct evidence from Dr. Hsieh, Ms. Huang, or anyone else associated with the prosecution of the '634 Patent that anyone of them had actual knowledge that Hsieh '384 was material to patentability of any claims of the '634 Patent.

[FF 127.] There is no documentary evidence that Dr. Hsieh, Ms. Huang, or anyone else associated with the prosecution of the '634 Patent had knowledge that Hsieh '384 was material to patentability. (*See generally* Bench Trial Tr.)

[FF 128.] There is no witness testimony from anyone that Dr. Hsieh, Ms. Huang, or anyone else associated with the prosecution of the '634 Patent had knowledge that Hsieh '384 was material to patentability. (*Id.*)

[FF 129.] Accordingly, ASUSTeK has failed to demonstrate that Dr. Hsieh, Ms. Huang, or anyone else associated with the prosecution of the '634 Patent had actual knowledge of any materiality of Hsieh '384 during prosecution of the '634 Patent. (*Id.*)

[FF 130.] ASUSTeK has further failed to present evidence that Dr. Hsieh, Ms. Huang, or anyone else associated with the prosecution of the '634 Patent made a deliberate decision to withhold Hsieh '384 during prosecution of the '634 Patent to mislead the examiner into allowing the claims of the '634 Patent. (*Id.*)

[FF 131.] There is no direct evidence from Dr. Hsieh, Ms. Huang, or anyone else associated with the prosecution of the '634 Patent that any one of them made a deliberate decision to withhold Hsieh '384 during prosecution of the '634 Patent to mislead the examiner into allowing the claims of the '634 Patent. (*Id.*)

[FF 132.] There is no documentary evidence that Dr. Hsieh, Ms. Huang, or anyone else associated with the prosecution of the '634 Patent made a deliberate decision to withhold Hsieh '384 during prosecution of the '634 Patent to mislead the examiner into allowing the claims of the '634 Patent. (*Id.*)

[FF 133.] There is no witness testimony from anyone that Dr. Hsieh, Ms. Huang, or anyone else associated with the prosecution of the '634 Patent made a deliberate decision to

withhold Hsieh '384 during prosecution of the '634 Patent to mislead the examiner into allowing the claims of the '634 Patent. (*Id.*)

[FF 134.] Accordingly, ASUSTeK has failed to demonstrate that Dr. Hsieh, Ms. Huang, or anyone else associated with the prosecution of the '634 Patent made a deliberate decision to withhold Hsieh '384 during prosecution of the '634 Patent to mislead the examiner into allowing the claims of the '634 Patent. (*Id.*)

b. Hsieh '914

[FF 135.] While Dr. Hsieh, as the inventor of Hsieh '914, knew of Hsieh '914, ASUSTeK has failed to demonstrate that Dr. Hsieh knew that Hsieh '914 was material to any claims of the '409 Patent. (*See generally* Bench Trial Tr.) Dr. Hsieh's knowing of the existence of a prior art reference, even his own, is not evidence that he had actual knowledge of its materiality.

[FF 136.] There is no direct evidence from Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent that anyone of them had actual knowledge that Hsieh '914 was material to patentability. (*Id.*)

[FF 137.] There is no documentary evidence that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent had knowledge that Hsieh '914 was material to patentability of any claims of the '409 Patent. (*Id.*)

[FF 138.] There is no witness testimony from anyone that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent had knowledge that Hsieh was material to patentability. (*Id.*)

[FF 139.] Accordingly, ASUSTeK has failed to demonstrate Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent had actual knowledge of any materiality of Hsieh '914 during prosecution of the '409 Patent.

[FF 140.] ASUSTeK has further failed to present evidence that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent made a deliberate decision to withhold Hsieh '914 during prosecution of the '409 Patent to mislead the examiner into allowing the claims of the '409 Patent.

[FF 141.] There is no direct evidence from Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent that anyone of them made a deliberate decision to withhold the Hsieh '914 during prosecution of the '409 Patent to mislead the examiner into allowing the claims of the '634 Patent. (*Id.*)

[FF 142.] There is no documentary evidence that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent made a deliberate decision to withhold Hsieh '914 during prosecution of the '409 Patent to mislead the examiner into allowing the claims of the '409 Patent. (*Id.*)

[FF 143.] There is no witness testimony from anyone that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent made a deliberate decision to withhold Hsieh '914 during prosecution of the '409 Patent to mislead the examiner into allowing the claims of the '409 Patent. (*Id.*)

[FF 144.] Accordingly, ASUSTeK has failed to demonstrate that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent made a deliberate decision to withhold Hsieh '914 during prosecution of the '409 Patent to mislead the examiner into allowing the claims of the '409 Patent.

c. Kobayashi '196

[FF 145.] Kobayashi '196 is involved in the theories of inequitable conduct that ASUSTeK presented at the bench trial for the '634 Patent and the '409 Patent. (*See, e.g.*, Bench

Trial Tr. at 14:16-15:1 (providing opinions on Kobayashi, prior art of record in '634 Patent prosecution, in relation to inequitable conduct claim for the '634 Patent), 25:3-10 (providing opinions on Kobayashi in relation to inequitable conduct claim for the '409 Patent).)

[FF 146.] With respect to the '409 Patent, as raised for the first time in ASUSTeK's Trial Brief, ASUSTeK contends that that Kobayashi '196 should have been disclosed during prosecution of the '409 Patent. (Dkt. No. 389 at 7-8; Bench Trial Tr. at 35:23-38:2)

[FF 147.] With respect to the '634 Patent, Kobayashi '196 was disclosed in an Information Disclosure Statement ("IDS"); however, ASUSTeK contends that Force MOS should also have disclosed Hsieh '384 during prosecution of the '634 Patent. (JX-5 ('634 Patent File History), at JX05-43; Bench Trial Tr. at 35:23-38:2.)

[FF 148.] The IDS was filed by Ms. Huang in the '634 Patent in 2008, which was about two years after the filing of the '409 Patent. (*Compare* JX-5 ('634 Patent File History) at JX05-43 (dated May 19, 2008), *with* JX-3 ('409 Patent) at Cover Page (filed December 4, 2006).) Ms. Huang was not involved in the prosecution of the '409 Patent; rather Dr. Lin was the patent prosecution counsel for the '409 Patent. (JX-3 ('409 Patent), at Cover Page.)

[FF 149.] Unlike Hsieh '384 and Hsieh '914, Kobayashi '196 is not a patent or patent application for which Dr. Hsieh was an inventor. (JX-024 (Kobayashi '196) at Cover Page; *see also* JX-2 ('634 Patent) at Cover Page; JX-3 ('409 Patent) at Cover Page.)

[FF 150.] ASUSTeK has failed to demonstrate that Dr. Hsieh or anyone associated with the prosecution of the '409 Patent had knowledge of the contents of Kobayashi '196 or to what extent, if any, Dr. Hsieh or anyone associated with the prosecution of the '409 Patent had reviewed Kobayashi '196 at that, or any other, time.

[FF 151.] There is no evidence that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent knew Kobayashi '196 was material to the '409 Patent. (*See generally* Bench Trial Tr.) Even if Dr. Hsieh knew of the existence of Kobayashi '196, knowing the existence of a prior art reference (including one submitted to the USPTO in an IDS in another patent application of Dr. Hsieh) is not evidence that Dr. Hsieh had actual knowledge of materiality of that prior art reference to the '409 Patent.

[FF 152.] Accordingly, ASUSTeK has failed to demonstrate that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent had actual knowledge of any materiality of Kobayashi '196 during prosecution of the '409 Patent.

[FF 153.] ASUSTeK has further failed to demonstrate that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent made a deliberate decision to withhold Kobayashi '196 during prosecution of the '409 Patent to mislead the examiner into allowing the claims of the '409 Patent.

2. Dr. Hsieh's Acts of Disclosure

[FF 154.] In each of the applications submitted by Dr. Hsieh, he acknowledged his duty of disclosure by submitting a signed oath. (MPEP, 8th ed., § 602; *see also* JX-05 at FORCE-MOS0000121–23 (Dr. Hsieh's signed oath in the '634 patent file history); JX-06 at FORCE-MOS0000246–47 (Dr. Hsieh's signed oath in the '409 patent file history).

[FF 155.] At the bench trial, Dr. Lin was the only witness who testified about the prosecuting of Dr. Hsieh's patents and patent applications. (*See* Bench Trial Tr. at 105:12-15.)

[FF 156.] Dr. Hsieh was requested by his patent prosecution counsel to provide the prior art that Dr. Hsieh believed to be material the first time they communicated about his invention. This request occurred specifically because the patent prosecution counsel needed and

required such prior art from Dr. Hsieh to write and prepare the application. (Lin Dep. Tr. at 47:5-6, 47:8-18, 47:20-24, 59:22-24, 60:1-5.)

[FF 157.] Further, if Dr. Hsieh did not send the prior art, the patent prosecution counsel would request it again, until Dr. Hsieh provided the prior art to patent prosecution counsel. (*Id.* at 47:17-18, 47:20-24.)

[FF 158.] Moreover, there was never a time when Dr. Hsieh failed to provide the prior art requested by his patent prosecution counsel. (*Id.* at 60:18-20, 60:22-24.)

[FF 159.] Throughout this time, the patent prosecution counsel would perform searches and remind Dr. Hsieh of his duty of candor under 37 C.F.R. § 1.56. (*Id.* at 48:4-48:4-16, 48:18, 59:22-24, 60:1-5, 60:10-12.)

[FF 160.] The patent prosecution counsel would then disclose the prior art provided to the patent prosecution counsel by Dr. Hsieh in their "regular process of disclosure," which was to disclose the prior art in the body of the patent application that was being drafted. (*Id.* at 66:15-22.)

[FF 161.] The 83 Hsieh patents owned by Force MOS that ASUSTeK identified in the stipulated facts confirm Dr. Hsieh's regular practice of disclosure of the prior art. Of these 83 Hsieh patents, every single one disclosed prior art generally in the Background section, 82 (*i.e.*, all but one) included at least one labeled figure showing the "prior art," and 72 of these Hsieh patents additionally identified one or more specific prior art references by name and/or number. (Stip. Facts, Dkt. No. 397 at Fact No. 6.) In 13 of these 83 patents, Dr. Hsieh identified his own prior art. (*Id.* at Fact No. 7.)

[FF 162.] Such disclosures were similarly done in the additional 27 Hsieh patent applications owned by Force MOS that ASUSTeK identified in the stipulated facts. (Stip. Facts, Dkt. No. 397 at Fact Nos. 8-9.)

[FF 163.] For the patents issued to Dr. Hsieh that he assigned to Force MOS, Dr. Hsieh did not file an IDS in 73 of the 83 applications. (Stip. Facts, Dkt. No. 397 at Fact No. 2.) Dr. Hsieh filed an IDS identifying his own prior art in 3 of the 83 issued patents that he assigned to Force MOS. (*Id.* at Fact No. 3.)

[FF 164.] An examiner located and cited Dr. Hsieh's own prior art in connection with 57 of the 83 patents, despite Dr. Hsieh not disclosing his prior art via an IDS. (*Id.* at Fact No. 4.)

[FF 165.] The Asserted Patents were prosecuted consistent with Dr. Hsieh's regular process of disclosure. (*Compare* JX-2 ('634 Patent), at 1:10-45, JX-3 ('409 Patent), at 1:14-63, *with* Lin Dep. Tr. at 67:15-22.) Both included a Background Section that included a discussion of the prior art generally, as well as one or more figures showing the prior art. (JX-2 ('634 Patent) at 1:10-45, Fig. 1; JX-3 ('409 Patent), at 1:14-63, Figs. 1A-1D.)

[FF 166.] Dr. Lin specifically pointed to the Background section and the figures of the '409 Patent to show that this application was drafted consistent with this regular process of disclosure. (Lin Dep. Tr. at 69:2-10, 69:12-19, 69:21-24.)

[FF 167.] As the examiner is expected to consider the prior art disclosed in the specification, such disclosure by Dr. Hsieh shows that he was disclosing prior art consistent with his obligations under 37 C.F.R. § 1.56. (Lin Dep. Tr. at 69:2-10, 69:12-19, 69:21-24.)

[FF 168.] Though ASUSTeK has cited to allegations Dr. Lin made in his pleading against Force MOS in another case (not before this Court) involving a dispute between Force MOS and Dr. Lin, that pleading and the allegations therein are not persuasive evidence of any issue at

the bench trial. (DX-37 (Dr. Lin's pleading *against* Force MOS in *Force MOS Technology Co., Ltd. v. Bo-In Lin*, Case No. 5:22-cv-8938, Dkt. No. 68 at ¶ 447).) Dr. Lin's allegations were made in a pleading in a case filed adverse to Force MOS, so these are not admissions by Dr. Lin as an agent of Force MOS. (*Id.*) Moreover Dr. Lin testified that his allegations in his pleading were made by copying those of ASUSTeK in the present lawsuit, and that Dr. Lin had no independent basis to support the allegations in his complaint. (Lin Dep. Tr. at 271:21-25, 272:5-10, 272:14-273:9, 273:11-13, 273:15-21.) It is reasonable that Dr. Lin was copying these allegations as he testified to preserve his affirmative defenses based upon ASUSTeK's allegations in its pleadings in this case, to which Dr. Lin did not have personal knowledge. Accordingly, the Court gives no weight to such allegations in Dr. Lin's pleadings.

[FF 169.] ASUSTeK has failed to provide a persuasive motivation for Dr. Hsieh to withhold any material prior art. Both Dr. Hsieh and Force MOS had numerous issued patents before prosecution of the Asserted Patents, and thus there is no reason to conclude that Dr. Hsieh would be motivated to cause the claims of the Asserted Patents to improperly issue.

[FF 170.] In summary, the single most reasonable inference is Dr. Hsieh intended to disclose what he believed to be the material prior art to the patent office during prosecution of the Asserted Patents by providing it to patent prosecution counsel, and letting patent prosecution counsel disclose the material prior art to the patent office. Even if the Court were to conclude that Dr. Hsieh withheld any material prior art reference, the most reasonable explanation would be that Dr. Hsieh did not believe such prior art to be material.

[FF 171.] It is not the single most reasonable inference that Dr. Hsieh or anyone else associated with the prosecution of the Asserted Patents specifically intended to deceive the examiner by withholding material prior art.

3. ASUSTeK's Attorney Argument Is Not Evidence

[FF 172.] ASUSTeK's case of intent is grounded in attorney argument, rather than evidence. (*See* Bench Trial Tr. at 114:14-117:16.)

[FF 173.] There is no established pattern of deceit by Dr. Hsieh.

[FF 174.] To show a pattern of deceit, ASUSTeK must show the acts of deceit, which ASUSTeK has failed to do.

[FF 175.] ASUSTeK contends there is a pattern based upon 83 U.S. patents and 27 abandoned patent applications owned by Force MOS. (*Id.* at 5:7-6:10 (referencing Stip. Facts (Dkt. No. 397)).

[FF 176.] ASUSTeK's evidence is a small number of stipulated facts regarding 83 patents and 27 patent applications owned by Force MOS and invented by Dr. Hsieh. These stipulated facts regard the number of IDSs filed in these 110 patents and patents applications, the rejections of the applications, *etc.,* from which ASUSTeK then provides attorney argument, not expert testimony, that there is a pattern of deceit. (*Id.*)

[FF 177.] ASUSTeK has isolated a narrow subset of facts concerning a subset of Dr. Hsieh's 480 patents and patent applications, ignoring more than three-quarters of Dr. Hsieh's entire patent portfolio and over 20 percent of Force MOS's patents and patent applications. (Stip. Facts (Dkt. No. 397) at Fact Nos. 1, 11, 12.)

[FF 178.] ASUSTeK failed to provide a fact witness with knowledge of these 110 patents and patent applications or any of the other 480 Hsieh patents/patent applications. (*See generally* Bench Trial Tr.) ASUSTeK likewise failed to provide an expert witness to provide any opinions on these 110 patents and patent applications or on what transpired during their prosecution. (*Id.*)

[FF 179.] These stipulated facts regarding IDSs and abandonment of patent applications evidence very little, if anything, as to what actually transpired in these 110 Hsieh patents and patent applications or any of the other 480 patents of Dr. Hsieh. These stipulated facts do not evidence or support that there was any deceit at all during prosecution of any of Hsieh's 480 patents and patent applications, including the 110 Hsieh patents and patent applications focused upon by ASUSTeK.

[FF 180.] An examiner is expected to consider prior art disclosed in the specification, so the lack of an IDS in some of the 110 patents and patents applications is not sufficient to establish any deceptive intent. (*See* [CL3].)

[FF 181.] ASUSTeK's attorney argument is that Dr. Hsieh should have known of something in his own patent portfolio to turn over to the examiner. (*Id.* at 5:7-6:10, 98:5-106:25, 114:14-117:16.) ASUSTeK has not identified what specific Hsieh prior art should have been disclosed in each of the 110 patents and patent applications. ASUSTeK has further not provided any evidence that Dr. Hsieh actually knew such specific Hsieh prior art was material and has not provided any evidence that Dr. Hsieh acted with an intent to mislead the examiners issuing those patents by deliberately withholding such specific prior art.

[FF 182.] There is no evidence as to the reasons why the 27 applications of Dr. Hsieh were abandoned in these 110 patents and patent applications. (*See* Stip. Facts (Dkt. No. 397), at Fact Nos. 8-9; *see generally* Bench Trial Tr.) ASUSTeK's attorney argument speculating as to the reasons for their abandonment is not evidence.

[FF 183.] ASUSTeK has failed to identify any wrongful act in any of these 110 patent and patent applications. (*See* Bench Trial Tr. at 98:5-106:25, 114:14-117:16.)

[FF 184.] There is no evidence that there were any false affidavits or false submissions made to the patent office during the prosecution of the Asserted Patents or any of Dr. Hsieh's 480 patents and patent applications.

[FF 185.] Reviewing the totality of the circumstances, the Court finds no pattern of deceit by Dr. Hsieh or others involved with the prosecution of the Hsieh patents and patent applications.

[FF 186.] Reviewing the totality of the circumstances, the Court finds no egregious behavior (affirmative or otherwise) by Dr. Hsieh or anyone involved with the prosecution of the Hsieh patents and patent applications.

[FF 187.] Reviewing the totality of the circumstances, the Court finds no intent to deceive the patent office into allowance of each of the Asserted Patents.

4. ASUSTeK's Theories Regarding Alleged Misrepresentations in the Specifications of the Asserted Patent and Alleged Egregious Misconduct Fail

[FF 188.] Prior to its trial brief, ASUSTeK did not disclose any theory of inequitable conduct based on alleged misrepresentations in the specifications of the Asserted Patents or egregious misconduct. (Dkt. Nos. 172 at 19-30; *see also* Dkt. Nos. 390, 395.) Accordingly, such theories are waived. Nonetheless, the Court will make alternative findings in the event it is determined on appeal that such theory is not waived.

[FF 189.] ASUSTeK has failed to demonstrate that Dr. Hsieh, Ms. Huang, Dr. Lin, and any others involved in the prosecution of the Asserted Patents made misrepresentations to the USPTO in the Asserted Patents or otherwise. ASUSTeK has failed to demonstrate that any of the statements in the Asserted Patents are false. (*Compare* Bench Trial Tr. at 75:19-76:24, 93:21-95:7 *with* Bench Trial Tr. at 11:16-52:17.)

[FF 190.] ASUSTeK has failed to demonstrate that Dr. Hsieh, Ms. Huang, Dr. Lin, or any others involved in the prosecution of the Asserted Patents and others made any misrepresentations with the intent to mislead the examiner into allowing the claims of the Asserted Patents. ASUSTeK has provided no evidence that Dr Hsieh, Ms. Huang, Dr. Lin, or any others involved in the prosecution of the Asserted Patents, intended to make any misrepresentations in the specifications of the Asserted Patents and did so with the intention to mislead the examiner into allowing the claims of the Asserted Patents.

[FF 191.] ASUSTeK has failed to demonstrate that there was any egregious behavior (affirmative or otherwise) by Dr. Hsieh, Ms. Huang, Dr. Lin, or any others involved in the prosecution of the Asserted Patents during prosecution of the Asserted Patents.

[FF 192.] ASUSTeK has failed to demonstrate that there was any egregious behavior by Dr. Hsieh, Ms. Huang, Dr. Lin, or any others involved in the prosecution of any Dr. Hsieh's 480 patents and patent applications, including the 110 patents and patents applications of Dr. Hsieh owned by Force MOS that ASUSTeK has focused upon.

[FF 193.] ASUSTeK has provided no evidence that Dr. Hsieh, Ms. Huang, Dr. Lin, or any others involved in the prosecution of the Asserted Patents had the intent to perform egregious behavior (affirmative or otherwise) during prosecution of the Asserted Patents or any of Dr. Hsieh's other 480 patents and patent applications.

[FF 194.] Based upon the totality of the circumstances, ASUSTeK has failed to demonstrate that there was any egregious behavior (affirmative or otherwise) to support any of ASUSTeK's claims or theories of inequitable conduct for the Asserted Patents.

II. Conclusion Of Law

A. Patent Examiners

[CL 1.] The examiner is presumed to act from the viewpoint of a person having ordinary skill in the art. *In re Sang Su Lee*, 277 F.3d 1338, 1345 (Fed. Cir. 2002).

[CL 2.] Patent examiners are presumed to do their job correctly. *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 97 (2011).

[CL 3.] "[P]rior art described in the specification[] is expected to be considered by the Examiner." *Polaroid Corp. v. Eastman Kodak Co*., 641 F. Supp. 828, 833 (D. Mass. 1986).

B. Inequitable Conduct

[CL 4.] "Because inequitable conduct renders an entire patent . . . unenforceable, as a general rule, the doctrine should only be applied in instances where the patentee's misconduct resulted in the unfair benefit of receiving an unwarranted claim." *Therasense, Inc. v. Beckton Dickinson & Co.*, 649 F.3d 1276, 1292 (Fed. Cir. 2011) (en banc).

[CL 5.] "To prevail on the defense of inequitable conduct, the accused infringer must prove that the applicant misrepresented or omitted material information with the specific intent to deceive the PTO." *Id.* at 1287.

[CL 6.] A finding of inequitable conduct requires the accused infringer to prove both elements—materiality and intent to deceive—by clear and convincing evidence. *See id*.

[CL 7.] Intent and materiality are separate requirements. *Id.* A district court should not use a "sliding scale," where a weak showing of intent may be found sufficient based on a strong showing of materiality, and vice versa. *Id.*

[CL 8.] If the accused infringer meets its burden, then the Court "must weigh the equities to determine whether the applicant's conduct before the PTO warrants rendering the entire patent unenforceable." *Id*.

[CL 9.] To show materiality, "as a general matter, the materiality required to establish inequitable conduct is but-for materiality." *Id*. at 1291. "[I]t must be shown that the PTO would not have allowed the claim but for the nondisclosure or misrepresentation." *In re Rousvastatin Calcium Patent Litig.*, 703 F.3d 511, 519 (Fed. Cir. 2012).

[CL 10.] A reference is not material when the information is cumulative to information already of record in the Application. 37 C.F.R. § 1.56(b) (2008); M.P.E.P. § 2001.05 (R-07.2022) ("[T]here is no duty to disclose [the cumulative] information to the Office.").

[CL 11.] In making the decision of whether the PTO would have allowed the claim, courts use the preponderance of the evidence standard and give claims their broadest reasonable construction. *Therasense*, 649 F.3d at 1291-92.

[CL 12.] To show specific intent, "the accused infringer must prove by clear and convincing evidence that the applicant knew of the reference, knew that it was material, and made a deliberate decision to withhold it." *Id.* at 1290. A district court may not infer intent solely from materiality; instead, a court must weigh the evidence of intent to deceive independent of its analysis of materiality. *Id.* at 1297.

[CL 13.] The Court may not "infer intent to deceive from non-disclosure of a reference solely because that reference was known and material." *Navico Inc. v. Garmin Int'l, Inc.*, No. 2:16-CV-00190-JRG-RSP, 2017 WL 3701189, at *2 (E.D. Tex. Aug. 7, 2017) (quoting *1st Media, LLC v. Elec. Arts, Inc.*, 694 F.3d 1367, 1372-73 (Fed. Cir. 2012)), *report & recommendation adopted*, No. 2:16-CV-00190-JRG-RSP, 2017 WL 3676787 (E.D. Tex. Aug. 25, 2017).

[CL 14.] Proving that the applicant knew of a reference, should have known of its materiality, and decided not to submit it to the USPTO does not prove specific intent to deceive. *See Star Scientific Inc. v. R.J. Reynolds Tobacco Co.*, 537 F.3d 1357, 1366 (Fed. Cir. 2008) ("[T]he

fact that information later found material was not disclosed cannot, by itself, satisfy the deceptive intent element of inequitable conduct."); *Therasense*, 649 F.3d at 1290.

[CL 15.] "Because neither mere nondisclosure of prior art references to the PTO nor failure to mention prior art references in an affidavit constitutes affirmative egregious misconduct, claims of inequitable conduct that are based on such omissions require proof of but-for materiality." *Therasense*, 649 F.3d at 1292-93.

[CL 16.] "When the patentee has engaged in affirmative acts of egregious misconduct, such as the filing of an unmistakably false affidavit, the misconduct is material." *Id.* (citing *Rohm & Haas Co. v. Crystal Chem. Co.*, 722 F.2d 1556, 1571 (Fed. Cir. 1983)).

[CL 17.] "Intent to deceive may be found only if specific intent to deceive is 'the single most reasonable inference able to be drawn from the evidence.'" *Transweb, LLC v. 3M Innovative Props. Co.*, 812 F.3d 1295, 1304 (Fed. Cir. 2016) (quoting *Therasense*, 649 F.3d at 1290). Thus, "[w]hen there are multiple reasonable inferences that may be drawn, intent to deceive cannot be found." *Therasense*, 649 F.3d at 1290-91.

[CL 18.] Since ASUSTeK bears the burden of proof, Force MOS, as the patentee, "need not offer any good faith explanation unless the accused infringer first . . . prove[s] a threshold level of intent to deceive by clear and convincing evidence. The absence of a good faith explanation for withholding a material reference does not, by itself, prove intent to deceive." *Therasense*, 649 F.3d at 1291 (internal citations omitted). The evidence "must be sufficient to require a finding of deceitful intent in light of all the circumstances." *Id*. at 1290.

C. ASUSTeK's Failure of Proof

[CL 19.] "[A]ttorney argument is not evidence' and cannot rebut other admitted evidence." *Elbit Sys. of Am., LLC v. Thales Visionix, Inc*., 881 F.3d 1354, 1359 (Fed. Cir. 2018) (quoting *Icon Health & Fitness, Inc. v. Strava, Inc*., 849 F.3d 1034, 1043 (Fed. Cir. 2017)).

[CL 20.] Based on the findings of fact and applicable legal standards discussed above, the Court finds that the ASUSTeK has not carried its burden of establishing the defenses of inequitable conduct for each of the Asserted Patents by clear and convincing evidence—both because the references ASUSTeK alleges should have been disclosed to the USPTO were not but-for material to the patentability of any claim in the Asserted Patents, and because, even if they had been material, the evidence does not establish that the single most reasonable inference to draw from the failure to disclose such references was an intent to deceive the USPTO. *See Therasense*, 649 F.3d at 1290; [FF31-FF124]; [FF125-F194].

D. ASUSTeK's Failure of Proof on the Issue of Materiality

1. "But For" Materiality of Hsieh '384 to the Claims of the '634 Patent

[CL 21.] The Court holds that ASUSTeK has not proven that Hsieh '384 satisfies the "but-for" test for materiality for the '634 Patent as required under Federal Circuit precedent.

[CL 22.] ASUSTeK has not advanced a prima facie anticipation or obviousness theory for Hsieh '384. Since "but-for" materiality requires a showing that the claim would have not issued (*i.e.*, that it would have been rendered anticipated or obvious if the non-disclosed reference would have been provided to the USPTO) if the reference had been disclosed, ASUSTeK has failed to show Hsieh '384 is but-for material to any claim of the '634 Patent. [FF31-FF52]; *Therasense*, 649 F.3d at 1291.

[CL 23.] The broadest reasonable interpretation of "lateral contact layer" requires P* doping (*i.e.*, doping between P and P+), which is consistent with the specification of the '634 Patent that uses the definitional language "[a]ccording to the present invention" before describing the lateral contact layer as having P*-type doping, (i.e. doping between P and P+). (JX-2 ('634 Patent) at 2:3-11; [FF41-FF44].) *Therasense*, 649 F.3d at 1291-92.

[CL 24.] Accordingly, the broadest reasonable interpretation of "lateral contact layer" is the same interpretation as the Court's claim construction for that term. [FF41-FF44].

[CL 25.] Hsieh '384's P+ region (*i.e.*, elements 128 or 228) cannot satisfy both the "lateral contact layer" and "base contact layer" limitations of Claim 1 of the '634 Patent, and thus cannot anticipate or render obvious Claim 1 of the '634 Patent. [FF43-FF50].

[CL 26.] ASUSTeK has failed to prove that Hsieh '384 anticipates any claim of the '634 Patent. [FF37-FF38]; [FF39-FF50].

[CL 27.] ASUSTeK has failed to prove that Hsieh '384, whether alone or in combination with any other reference, would have rendered any claims of the '634 Patent obvious. [FF39-FF50]

[CL 28.] The Court holds that, based on the totality of the record before it, ASUSTeK has failed to establish that Hsieh '384 is but-for material to any of the claims of the '634 Patent. [FF52].

2. Alleged Misrepresentations in the Specification of the '634 Patent and Alleged Egregious Misconduct

[CL 29.] ASUSTeK has not proven that there were any misrepresentations in the specification of the '634 Patent that satisfies the "but-for" test for materiality for the '634 Patent as required under Federal Circuit precedent.

[CL 30.] ASUSTeK has failed to show by clear and convincing evidence that there were any statements in the specification of the '634 Patent that were misrepresentations. Thus, ASUSTeK has failed to show that there were any misrepresentations in the '634 Patent that satisfied the "but for" test for materiality as required under Federal Circuit precedent. [FF53-FF60]; *Therasense*, 649 F.3d at 1291-92.

[CL 31.] ASUSTeK has failed to show by clear and convincing evidence that there were any egregious conduct (affirmative otherwise) during prosecution of the '634 Patent (or elsewhere). ASUSTeK has failed to show that there was any egregious conduct (affirmative

otherwise) that satisfies materiality as required under Federal Circuit precedent. [FF58-FF60]; [FF119-124]; *Therasense*, 649 F.3d at 1291-92.

3. "But For" Materiality of Hsieh '914 to the Claims of the '409 Patent

[CL 32.] The Court holds that ASUSTeK has not proven that Hsieh '914 satisfies the "but-for" test for materiality of the '409 Patent as required under Federal Circuit precedent.

[CL 33.] ASUSTeK has not shown nor argued that Hsieh '914 anticipates any claim of the '409 Patent. [FF61-FF70].

[CL 34.] ASUSTeK has failed to demonstrate that Hsieh '914, whether alone, or in combination with any other prior art of record during prosecution of the '409 Patent, would have rendered any claims of the '409 patent obvious. [FF71-FF75].

[CL 35.] Hsieh '914 is cumulative of Pfirsch '703, which was before the USPTO during prosecution of the '409 Patent. Pfirsch '703 disclosed substantially square-shaped cells with rounded corners, which is the same feature of Claim 1 of the '409 Patent to which ASUSTeK contends Hsieh '914 is material. ASUSTeK has not identified any disclosure in Hsieh '914 as material to the claims of the '409 Patent which is not also present in Pfirsch '703. [FF76-FF83]. This is a further reason why Hsieh '914 is not material to the claims of the '409 Patent.

4. "But For" Materiality of Hsieh '914 Combined with Art Not of Record to the Claims of the '409 Patent

[CL 36.] Prior to its trial brief, ASUSTeK did not disclose any theory of inequitable conduct based on Hsieh '914 being material based upon its combination with the Kobayashi '196 reference, another reference not of record of the '409 Patent, which ASUSTeK contended during the bench trial should have been disclosed during prosecution of the '409 Patent. Accordingly, the Court holds that such theory is waived. [FF84].

[CL 37.] ASUSTeK has not proven that Hsieh '914, even when combined with Kobayashi '196, satisfies the "but-for" test for materiality of the '409 Patent as required under Federal Circuit precedent.

[CL 38.] ASUSTeK has failed to prove that Hsieh '914, whether alone or in combination with any other reference or disclosure such as Kobayashi '196, would have rendered any claims of the '409 Patent obvious. [FF85-FF90].

[CL 39.] The Court holds that, based on the totality of the record before it, ASUSTeK has failed to establish that Hsieh '914 is but-for material to any of the claims of the '409 Patent, even if Kobayashi '196 were to be considered in the analysis. [FF90]; *Therasense*, 649 F.3d at 1291-92.

5. "But For" Materiality of Kobayashi '196 to the Claims of the '409 Patent

[CL 40.] ASUSTeK has not proven that Kobayashi '196 satisfies the "but-for" test for materiality of the '409 Patent as required under Federal Circuit precedent.

[CL 41.] ASUSTeK has not proven that Kobayashi '196 anticipates or renders obvious any claims of the '409 Patent. [FF91-FF108].

[CL 42.] Based on the totality of the record before it, ASUSTeK has failed to establish that Kobayashi '196 is material to any claim of the '409 Patent. [FF91-FF108]; *Therasense*, 649 F.3d at 1291-92.

6. Alleged Misrepresentations in the Specification of the '409 Patent and Alleged Egregious Misconduct

[CL 43.] ASUSTeK has not proven that there were any misrepresentations in the specification of the '409 Patent that satisfies the "but-for" test for materiality for the '409 Patent as required under Federal Circuit precedent.

[CL 44.] ASUSTeK has failed to show by clear and convincing evidence that there were any statements in the specification of the '409 Patent that were misrepresentations. ASUSTeK has

failed to show that there were any misrepresentations in the '634 Patent that satisfied the "but for" test for materiality as required under Federal Circuit precedent. [FF109-FF118]; *Therasense*, 649 F.3d at 1291-92.

[CL 45.] ASUSTeK has failed to show by clear and convincing evidence that there were any egregious conduct (affirmative otherwise) during prosecution of the '409 Patent (or elsewhere). ASUSTeK has failed to show that there was any egregious conduct (affirmative otherwise) that satisfies materiality as required under Federal Circuit precedent. [FF116-FF118]; [FF119-124]; *Therasense*, 649 F.3d at 1291-92.

7. Other Hsieh Patents

[CL 46.] Based on the totality of the record before it, ASUSTeK has failed to establish materiality regarding any of Dr. Hsieh's other 480 patents and patent applications as required under Federal Circuit precedent.

[CL 47.] ASUSTeK has failed to show by clear and convincing evidence that, for each of the 480 patents and patent applications of Dr. Hsieh, any specific prior art was material to patentability that was not disclosed to the USPTO during prosecution of that patent/patent application. [FF119-F124].

[CL 48.] ASUSTeK has failed to show by clear and convincing evidence that, for each of the 480 patents and patent applications of Dr. Hsieh, there were any misrepresentations (material or otherwise) that was made in the patent/patent application or during its prosecution. [FF119-F124].

[CL 49.] ASUSTeK has failed to show by clear and convincing evidence that there is any pattern of any wrongdoing by Dr. Hsieh (or anyone else) during prosecutions of these 480 patents and patents applications of Dr. Hsieh. [FF119-F124].

E. ASUSTeK's Failure of Proof on the Issue of Intent

[CL 50.] ASUSTeK has failed to show that Dr. Hsieh, Ms. Huang, or anyone else associated with the prosecution of the '634 Patent "knew that [Hsieh '384] was material [to the '634 Patent], and made a deliberate decision to withhold it" during prosecution of the '634 Patent. *Therasense*, 649 F.3d at 1290; [FF125-FF134]; *see also* [FF162-FF187].

[CL 51.] ASUSTeK has failed to show that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the '409 Patent "knew that [Hsieh '914] was material [to the '409 Patent], and made a deliberate decision to withhold it" during prosecution of the '409 Patent. *Therasense,* 649 F.3d at 1290; [FF135-FF144]; *see also* [FF172-FF187].

[CL 52.] ASUSTeK has failed to show that Dr. Hsieh, Dr. Lin, or anyone else associated with the prosecution of the'409 Patent "knew that [Kobayashi '196] was material [to the '409 Patent], and made a deliberate decision to withhold it" during prosecution of the '409 Patent. *Therasense,* 649 F.3d at 1290; [FF145-FF153].

[CL 53.] Dr. Hsieh told his patent prosecution counsel, Dr. Lin what he believed to be the material prior art, and then Dr. Lin would disclose the material prior art to the Patent Office by including it in the body of the patent application. Dr. Lin's testimony reveals that Dr. Hsieh intended to disclose what he believed to be the material prior art to the examiner in the specification, specifically in the background of the invention section and the figures. Defendant thus fails to prove that "the specific intent to deceive [is] 'the single most reasonable inference to be drawn from the evidence.'" *Navico Inc.*, 2017 WL 3701189 at *2 (quoting *Larson Mfg.*, 559 F.3d at 1340); [FF154-FF171].

[CL 54.] ASUSTeK's case of intent is grounded in attorney argument which provides no evidence that Dr. Hsieh actually knew any reference naming Dr. Hsieh as inventor was material

the ’634 Patent or the ’409 Patent, nor that Dr. Hsieh acted with an intent to mislead the examiner into issuing the patents. *Elbit Sys.*, 881 F.3d at 1359 [FF172-FF187].

[CL 55.] Since “there are multiple reasonable inferences that may be drawn, intent to deceive cannot be found.” *Therasense*, 649 F.3d at 1290-91.

[CL 56.] Accordingly, ASUSTeK has failed to prove by clear and convincing evidence that Dr. Hsieh or anyone associated with the prosecution of the ’634 Patent had the specific intent to deceive the PTO, as required for its inequitable conduct defense and counterclaim. *See Therasense,* 649 F.3d at 1290.

[CL 57.] Likewise, ASUSTeK has failed to prove by clear and convincing evidence that Dr. Hsieh or anyone associated with the prosecution of the ’409 Patent had the specific intent to deceive the USPTO, as required for its inequitable conduct defense and counterclaim. *See Therasense,* 649 F.3d at 1290.

III. CONCLUSION

1. Accordingly, ASUSTeK’s inequitable conduct defense and counterclaim directed to the ’634 Patent fails. *Therasense,* 649 F.3d at 1290.

2. Likewise, ASUSTeK’s inequitable conduct defense and counterclaim directed to the ’409 Patent fails. *Therasense,* 649 F.3d at 1290.

3. For the reasons set forth above, the Court concludes that ASUSTeK has failed to meet its burden of clear and convincing evidence to show that the Asserted Patents should be unenforceable under the equitable theory of inequitable conduct during the prosecution of the ’634 and ’409 Patents.

4. Accordingly, it is **ORDERED, ADJUDGED, AND DECREED** that Force MOS prevails as to each of ASUSTeK’s defenses and counterclaims of inequitable conduct, and that ASUSTeK’s requests for declaratory judgment of inequitable conduct are therefore **DENIED**. Judgment will be entered consistent herewith.

So ORDERED and SIGNED this 10th day of June, 2025.

RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE