Exhibit 2

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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

APPLIED MATERIALS, INC., Plaintiff, vs. DEMARAY LLC, Defendant.	Case No. 5:20-cv-09341-EJD **DEFENDANT DEMARAY LLC~~'S~~'S [PROPOSED] AMENDED ANSWER~~ AND~~, AFFIRMATIVE DEFENSES, AND COUNTERCLAIMS TO COMPLAINT** **DEMAND FOR JURY TRIAL**

Defendant Demaray LLC (“Demaray”), by its undersigned counsel, hereby submits its **Amended** Answer **and Counterclaims** to plaintiff Applied Materials, Inc.’s (“Applied”) Complaint for Declaratory Judgment. Solely for convenience, the headings from the Complaint are reproduced here. To the extent not specifically admitted herein, the allegations of the Complaint are denied.

NATURE OF THE ACTION

1. Demaray admits that Applied has filed this lawsuit purporting to seek a declaratory judgment. Demaray admits that it filed lawsuits against Intel and Samsung alleging infringement of U.S. Patent Nos. 7,544,276 (the “’276 ~~patent~~ Patent”) and 7,381,657 (the “’657 ~~patent~~ Patent”) on July 14, 2020. Demaray admits that what appears to be copies of its complaints against Intel and Samsung are attached as Exhibit A and B to the Complaint. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

2. Demaray admits that the ’276 and ’657 ~~patents~~ Patents are titled “Biased Pulse DC Reactive Sputtering of Oxide films” and share a common specification. Demaray admits that the ’276 ~~patent~~ Patent is directed toward apparatus claims and that the ’657 ~~patent~~ Patent is directed toward method claims. This paragraph contains legal conclusions to which no response is required. Demaray is without knowledge sufficient to admit or deny the remaining allegations in this paragraph and therefore denies them.

3. Demaray admits that John Forster purports to have been an Applied employee who submitted a declaration in *Applied Materials, Inc. v. Demaray LLC*, Case No. 5:20-cv-05676-EJD (“*Applied I*”), a copy of which appears to be attached as Exhibit Q to the Complaint. Demaray affirmatively states that Exhibit Q speaks for itself. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

4. Demaray admits that Dr. Ernest Demaray is a former employee of Applied Komatsu Technology, Inc. (“Applied Komatsu”) and has decades of experience working with or in the semiconductor industry. Demaray admits that a copy of Dr. Demaray’s declaration submitted in *Applied I* appears to be attached as Exhibit M to the Complaint. Demaray admits that Scot Griffin

works as a consultant to Demaray and "has extensive knowledge about the semiconductor industry." Demaray affirmatively states that Exhibits M and R speak for themselves. Demaray denies any remaining allegations in this paragraph.

5. Demaray admits that Applied filed a purported declaratory judgment action of non-infringement in *Applied I* on August 13, 2020 and that Applied moved for a preliminary injunction on September 4, 2020. This paragraph contains legal conclusions to which no response is required. Demaray is without knowledge sufficient to admit or deny the remaining allegations in this paragraph and therefore denies them.

6. Demaray admits that the excerpted text appears in its opposition to Applied's motion for preliminary injunction in *Applied I*. Demaray admits that in the Texas complaints it "did not accuse Applied PVD reactors standing alone of infringement in the Texas cases." This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

7. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

8. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

9. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

10. Demaray admits that it served infringement contentions on October 9, 2020 in the Texas cases, copies of which appear to be attached as Exhibits C and D to the Complaint. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

11. Demaray admits that Applied submitted declarations in *Applied I* in alleged support of its motion for preliminary injunction. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

12. Demaray admits that it required, and still requires, discovery from Applied or other sources such as Applied suppliers to ascertain whether it will file **additional** compulsory counterclaims of infringement and that correspondence and conferences occurred regarding the same. Demaray affirmatively states that Exhibit E of the Complaint speaks for itself. Demaray denies any remaining allegations in this paragraph.

13. Demaray admits that the excerpted text appears in the Joint Case Management Statement filed in *Applied I*. Demaray is without knowledge sufficient to admit or deny the remaining allegations in this paragraph and therefore denies them.

14. Demaray admits that it served Applied with subpoenas in the Texas actions, copies of which appear to be attached as Exhibits F and G to the Complaint. Demaray denies any remaining allegations in this paragraph.

15. Demaray admits that the excerpted text appears in correspondence to the Court in the Texas action, a copy of which appears to be attached as Exhibit H to the Complaint. Demaray denies any remaining allegations in this paragraph.

16. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

17. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

18. Demaray admits that Dr. Demaray left Applied Komatsu and participated in forming Symmorphix, Inc. ("Symmorphix"), and that Symmorphix entered a Sales and Relationship Agreement ("SRA") with Applied Komatsu. Demaray affirmatively states that Exhibit I speaks for itself. Demaray denies any remaining allegations in this paragraph.

19. Demaray affirmatively states that Exhibit J speaks for itself. Demaray denies any remaining allegations in this paragraph.

20. Demaray affirmatively states that Exhibit K speaks for itself. Demaray denies any remaining allegations in this paragraph.

21. Denied.

22. Demaray admits that Mukundan Narasimhan is one of the four named inventors on the '276 and '657 ~~patents~~Patents and joined Symmorphix on April 16, 2001. Demaray denies any remaining allegations in this paragraph.

23. Demaray admits that Applied purports to request declaratory relief as described in this paragraph.

THE PARTIES

24. Demaray admits that Applied asserts that it is a Delaware corporation with its principal place of business at 3050 Bowers Avenue, Santa Clara, CA 95054-3299. Demaray is without knowledge sufficient to admit or deny the remaining allegations in this paragraph and therefore denies them.

25. Demaray admits that Demaray is a Delaware LLC. Demaray admits that Dr. Demaray is the founder of Demaray and that Dr. Demaray is one of the named inventors on the '276 and '657 ~~patents~~Patents. Demaray admits that the excerpted text in this paragraph appears on the hyperlinked website. Demaray admits that Dr. Demaray has over 50 years of experience working with or in the semiconductor industry.

SUBJECT MATTER JURISDICTION

26. Demaray admits that Applied ~~has~~ purports to bring this action for a declaration under the Declaratory Judgment Act, 28 U.S.C. § 2201. Demaray denies any remaining allegations in this paragraph.

27. Demaray admits that it filed lawsuits against Intel and Samsung alleging infringement of the '276 ~~patent~~Patent and '657 ~~patent~~Patent on July 14, 2020. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

28. Admitted.

29. Admitted.

30. Demaray admits that its complaints in the Texas cases identified the Endura product line from Applied that can be configured for deposition of TaN layers (*e.g.*, CuBS RFX PVD with

the Encore II Ta(N) barrier chamber) and TiN layers (*e.g.*, Cirrus ionized PVD chamber). Demaray denies any remaining allegations in this paragraph.

31. Demaray admits that Intel and Samsung use Applied reactors, among others, to deposit film layers in semiconductor products. Demaray is without knowledge sufficient to admit or deny the remaining allegations in this paragraph and therefore denies them.

32. Demaray is without knowledge sufficient to admit or deny the allegations in this paragraph and therefore denies them.

33. Denied.

34. Demaray admits that its complaints in the Texas cases mentioned Applied reactors. Demaray denies any remaining allegations in this paragraph.

35. Demaray admits that its complaints in the Texas cases mentioned Applied reactors. Demaray denies any remaining allegations in this paragraph.

36. Demaray admits that the excerpted text appears in its complaints in the Texas cases. Demaray denies any remaining allegations in this paragraph.

37. Demaray admits that its complaints in the Texas cases mentioned Applied reactors. Demaray admits that the excerpted text appears in Exhibit Q of the complaint. Demaray denies any remaining allegations in this paragraph.

38. Demaray admits that its complaints in the Texas cases mentioned Applied reactors. Demaray denies any remaining allegations in this paragraph.

39. Denied.

40. Demaray admits that Applied filed a purported declaratory judgment complaint on August 13, 2020 and amended its complaint on September 1, 2020. Demaray denies any remaining allegations in this paragraph.

41. Admitted.

42. Demaray admits that the excerpted text appears in its opposition to Applied~~'~~'s motion for preliminary injunction. Demaray denies any remaining allegations in this paragraph.

43. Demaray admits that it served infringement contentions on October 9, 2020. Demaray denies any remaining allegations in this paragraph.

44. Denied.

45. Demaray admits that Applied submitted declarations in *Applied I* in purported support of its motion for preliminary injunction. Demaray denies any remaining allegations in this paragraph.

46. Demaray admits that it required, and still requires, discovery from Applied or other sources such as Applied suppliers to ascertain whether it will file **additional** compulsory counterclaims of infringement and that correspondence and conferences occurred regarding the same. Demaray denies any remaining allegations in this paragraph.

47. Demaray admits that the excerpted text appears in the Joint Case Management Conference Statement submitted in *Applied I*. Demaray denies any remaining allegations in this paragraph.

48. Denied.

49. Demaray admits that it served Applied with subpoenas in the Texas actions. Demaray denies any remaining allegations in this paragraph.

50. Denied.

51. Denied.

52. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

53. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

54. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

55. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

56. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

57. Demaray admits that the excerpted text appears in Exhibits A and B. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

58. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

PERSONAL JURISDICTION AND VENUE

59. For purposes of this case only, Demaray admits that this Court has personal jurisdiction over Demaray. Demaray admits that the excerpted information appears on the hyperlinked webpages. Demaray denies any remaining allegations in this paragraph.

60. For purposes of this case only, Demaray admits that this Court has personal jurisdiction over Demaray. Demaray admits that Intel purports to be headquartered in Northern California and that Samsung has an office in Northern California. Demaray admits that Applied asserts that it is headquartered in Northern California. Demaray denies any remaining allegations in this paragraph.

61. For purposes of this case only, Demaray admits that venue is proper in this district. Demaray denies any remaining allegations in this paragraph.

62. Demaray admits that Dr. Demaray has filed for over a hundred patents and has spent much of his career in California. Demaray denies any remaining allegations in this paragraph.

63. Demaray admits that Gary Edwards resides in Northern California. Demaray admits that the Sales and Relationship Agreement between Applied Komatsu and Symmorphix was executed in Northern California. Demaray is without knowledge sufficient to admit or deny the remaining allegations in this paragraph and therefore denies them.

FACTUAL BACKGROUND

64. Denied.

65. Admitted.

66. Demaray admits that Dr. Demaray, along with several other former employees of Applied Komatsu formed Symmorphix and that Dr. Demaray held several roles at Symmorphix. Demaray denies any remaining allegations in this paragraph.

67. Demaray admits that Symmorphix employees continued to develop sputtered silicon deposition technology at Symmorphix. Demaray denies any remaining allegations in this paragraph.

68. Demaray affirmatively states that Exhibit I speaks for itself. Demaray denies any remaining allegations in this paragraph.

69. Demaray affirmatively states that Exhibit I speaks for itself. Demaray denies any remaining allegations in this paragraph.

70. Demaray affirmatively states that Exhibits I, J, and K ~~speaks~~speak for themselves. Demaray denies any remaining allegations in this paragraph.

71. Demaray affirmatively states that Exhibit J speaks for itself. Demaray denies any remaining allegations in this paragraph.

72. Demaray admits that the excerpted text appears in Dr. Demaray~~'~~'s declaration submitted in *Applied I*. Demaray denies any remaining allegations in this paragraph.

73. Demaray affirmatively states that Exhibit J speaks for itself. Demaray denies any remaining allegations in this paragraph.

74. Demaray affirmatively states that Exhibit N speaks for itself. Demaray denies any remaining allegations in this paragraph.

75. Demaray admits that the excerpted text appears in Exhibit N. Demaray denies any remaining allegations in this paragraph.

76. Demaray admits that the excerpted text appears in Exhibit N. Demaray denies any remaining allegations in this paragraph.

77. Demaray affirmatively states that Exhibit K speaks for itself. Demaray denies any remaining allegations in this paragraph.

78. Demaray affirmatively states that Exhibit K speaks for itself. Demaray denies any remaining allegations in this paragraph.

79. Denied.

80. Denied.

81. Denied.

82. Denied.

83. Denied.

84. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

85. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

86. Denied.

87. Admitted.

88. Admitted.

89. Denied.

90. Demaray admits that Mukundan Narasimhan's employee agreement with Applied contained the excerpted text. Demaray admits that the '276 and '657 ~~patents~~Patents claim priority to the '863 Application filed on March 16, 2002. Demaray denies any remaining allegations in this paragraph.

FIRST COUNT
(Declaration of Non-Infringement of U.S. Patent No. 7,544,276)

91. Demaray incorporates its answers to paragraphs 1-90.

92. Demaray admits that it owns all rights, title, and interest in the '276 ~~patent~~Patent.

93. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

94. Denied.

95. Demaray admits that Applied purports to seek declaratory judgment that Applied's reactors, including those in the Endura product line, do not directly or indirectly infringe any claim of the '276 ~~patent~~Patent. Demaray admits that its complaints in the Texas cases mentioned Applied reactors. Demaray denies any remaining allegations in this paragraph.

SECOND COUNT
(Declaration of Non-Infringement of U.S. Patent No. 7,381,657)

96. Demaray incorporates its answers to paragraphs 1-95.

97. Demaray admits that it owns all rights, title, and interest in the '657 ~~patent~~Patent.

98. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

99. Denied.

100. Demaray admits that Applied purports to seek declaratory judgment that Applied's reactors, including those in the Endura product line, do not directly or indirectly infringe any claim of the '657 ~~patent~~Patent. Demaray admits that its complaints in the Texas cases mentioned Applied reactors. Demaray denies any remaining allegations in this paragraph.

THIRD COUNT
(Declaration of Non-Infringement Based on License)

101. Demaray incorporates its answers to paragraphs 1-100.

102. This paragraph contains legal conclusions to which no response is required. Demaray denies any remaining allegations in this paragraph.

103. Denied.

104. Denied.

105. Demaray admits that Ravi Mullapudi had an Applied Komatsu Employee Agreement. Demaray denies any remaining allegations in this paragraph.

106. Denied.

107. Denied.

108. Demaray admits that Applied purports to seek a declaration that it holds a license to the '276 and '657 ~~patents~~Patents. Demaray denies any remaining allegations in this paragraph.

FOURTH COUNT
(Declaration of Non-Infringement Based on Assignment of Rights to Applied and Demaray's Failure to Join All Co-Owners)

109. This claim has been dismissed pursuant to an order of the Court.

110. This claim has been dismissed pursuant to an order of the Court.

111. This claim has been dismissed pursuant to an order of the Court.

112. This claim has been dismissed pursuant to an order of the Court.

113. This claim has been dismissed pursuant to an order of the Court.

114. This claim has been dismissed pursuant to an order of the Court.

115. This claim has been dismissed pursuant to an order of the Court.

116. This claim has been dismissed pursuant to an order of the Court.

117. This claim has been dismissed pursuant to an order of the Court.

118. This claim has been dismissed pursuant to an order of the Court.

DENIAL OF APPLIED'S PRAYER FOR RELIEF

Demaray denies that Applied is entitled to any relief, and specifically denies the allegations and requests for relief set forth in paragraphs A-G under the heading "PRAYER FOR RELIEF" in the Complaint.

FIRST AFFIRMATIVE DEFENSE
(No Declaratory Judgment Jurisdiction)

The Complaint, and each purported cause of action asserted therein, improperly seeks to invoke the jurisdiction of this Court under the Declaratory Judgment Act, 28 U.S.C. §§ 2201 and 2202, and the Court should decline to exercise such jurisdiction.

SECOND AFFIRMATIVE DEFENSE
(Failure To State A Claim For Non-Infringement)

The Complaint, and each purported cause of action asserted therein, fails to state a claim upon which relief can be granted because, among other things, Applied has not plausibly alleged that it does not infringe either the '276 ~~patent~~Patent or the '657 ~~patent~~Patent.

THIRD AFFIRMATIVE DEFENSE
(Failure To State A Claim For License)

The Complaint, and each purported cause of action asserted therein, fails to state a claim upon which relief can be granted because, among other things, Applied has not plausibly alleged that it holds a license to the '276 ~~patent~~Patent or the '657 ~~patent~~Patent.

FOURTH AFFIRMATIVE DEFENSE
(Unenforceability Due to Estoppel, Waiver, and/or Unclean Hands)

The Complaint, and each purported cause of action asserted therein, is barred by the doctrines of laches, estoppel, waiver, acquiescence, unclean hands, and/or other applicable equitable defenses. For example, Applied has asserted various license and ownership claims to the '276 ~~patent~~Patent or the '657 ~~patent~~Patent based upon assignment provisions in employee agreements that it knew had been previously found by courts in this district to be void and unenforceable as an unlawful restraint on trade in violation of California Business and Professions Code § 16000.

FIFTH AFFIRMATIVE DEFENSE
(Not An Exceptional Case Warranting Attorneys' Fees From Demaray)

Applied cannot prove that this is an exceptional case justifying an award of attorneys' fees against Demaray pursuant to 35. U.S.C. § 285.

DEMARAY LLC'S COUNTERCLAIMS FOR INFRINGEMENT OF U.S. PATENT NOS. 7,544,276 and 7,381,657

Demaray hereby asserts the following Counterclaims against Applied, as follows:

1. This is a civil action seeking a judgment of infringement of U.S. Patent Nos. 7,544,276 (the "'276 Patent") (Ex. 1) and 7,381,657 (the "'657 Patent") (Ex. 2) (collectively, the "Asserted Patents") under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, including 35 U.S.C. § 271, giving rise to remedies specified under 35 U.S.C. § 281 and 283-85.

PARTIES

2. Dr. Richard Ernest Demaray, a named inventor on both of the patents at issue in this case, has been working in and with the semiconductor industry for more than forty years. Dr. Demaray began his training in chemical physics, studying ultraviolet photoconductivity of materials. His doctoral work focused on cross-supersonic molecular and atomic beams with which he demonstrated lossless conversion of molecular vibration to light in vacuum. During his post-doctoral fellowship, he designed and built some of the first pulsed excimer laser driven tunable dye lasers for resonant multiphoton photoionization in the

cooled beam. That work became instrumental to understanding the photo-physics of the high lying states of small and aromatic molecules.

3. Much of Dr. Demaray's work in industry has involved advances in thin film technology. In the 1980s, he worked as a senior physicist at BOC Group on electron beam evaporation technology used to deposit thermal barrier coatings. His work on adherent electron beam evaporation thermal barrier coatings revolutionized high-temperature jet engine performance, efficiency and longevity. Dr. Demaray's zirconia coatings are in worldwide production today on military, commercial and power generation turbine hot section blades and vanes. Later that decade and continuing into the early 1990s, Dr. Demaray worked at Varian Associates. He served as Varian's R&D Director for thin film systems, and developed full-face erosion and sputter physical vapor deposition technology now used extensively in semiconductor manufacturing worldwide. In the late 1990s, he helped form Applied Komatsu, where he served as General Manager of the PVD division and developed wide-area magnetron sputter machines. Thereafter, he managed several additional companies in the thin film space, including Symmorphix Inc., where he served as Chief Technology Officer and Chairman of the Board.

4. After serving in senior management roles at some of the more prominent companies in the industry, he founded Demaray in order to focus on research, development, and commercialization of new product applications based on technologies he had developed, including technologies protected by the patents at issue in this case. Much of that work—which remains ongoing—relates to the production of low-defect thin films for advanced electronic devices. In the course of his work, Dr. Demaray discovered that his patented technology was being used by entities such as Samsung and Intel—Applied's

customers—without authorization, to manufacture thin films in Samsung and Intel electronic devices.

5. Demaray is a Delaware limited liability company duly organized and existing under the laws of the State of Delaware. The address of the registered office of Demaray is 9 East Loockerman Street, Suite 202, Dover, DE 19901. The name of Demaray's registered agent at that address is Spiegel & Utrera, P.A.

6. Demaray is the assignee and owns all right, title, and interest to the '276 Patent and the '657 Patent. A true and correct copy of the '276 Patent is attached hereto as Exhibit 1. A true and correct copy of the '657 Patent is attached hereto as Exhibit 2.

7. On information and belief, Applied is a corporation organized and existing under the laws of the state of Delaware, with its principal place of business at 3050 Bowers Avenue, Santa Clara, CA 95054-3299.

JURISDICTION AND VENUE

8. This is an action arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*. Accordingly, this Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

9. Applied is subject to this Court's specific and general personal jurisdiction consistent with the principles of due process.

10. Personal jurisdiction exists generally over Applied because it has sufficient minimum contacts with the forum as a result of business conducted within the State of California and the Northern District of California and/or has engaged in continuous and systematic activities in the Northern District of California, and Applied is believed to have its principal place of business at 3050 Bowers Avenue, Santa Clara, California, 95054-3299. Personal jurisdiction also exists over Applied because Applied, directly or through subsidiaries, makes, uses, sells, offers for sale, imports, advertises, makes available, and/or

markets products or processes within the State of California and the Northern District of California that infringe one or more claims of the Asserted Patents, as alleged more particularly below. The Court further has personal jurisdiction over Applied because Applied has submitted to the personal jurisdiction of this Court through the filing of the Complaint.

11. Venue in this District is proper under 28 U.S.C. §§ 1400(b) and 1391(b) and (c) because Applied is subject to personal jurisdiction in this District and has committed acts of infringement in this District. Applied, directly or through subsidiaries, makes, sells, offers to sell, and/or provides process recipes for use in infringing products or processes within this District, has a continuing presence within the District, and has the requisite minimum contacts with the District such that this venue is a fair and reasonable one. Upon information and belief, Applied, directly or through subsidiaries, has transacted, and at the time of the filing of the Counterclaims, is continuing to transact business within this District. Venue is also proper in this judicial district because Applied submitted to the venue of this Court by filing the Complaint.

TECHNOLOGY BACKGROUND

12. Semiconductor devices are generally manufactured using a series of process steps applied to a substrate. A particularly important portion of typical semiconductor manufacturing processes involves the deposition of thin films used to form structures in the final product. One of the most practical and effective approaches to thin film deposition used to make modern semiconductor devices, and which is often used a dozen or more times in manufacturing even a single semiconductor product, is called "magnetron sputtering."

13. Magnetron sputtering is a physical vapor deposition ("PVD") technique. It can be carried out in a reactor that applies power to a target, *e.g.*, a metal such as cobalt (Co) or titanium (Ti), to deposit a thin film onto a substrate, *e.g.*, silicon.

14. Magnetron sputtering, as practiced in modern commercial operations, generally involves the use of magnets behind the negative cathode in the reactor to create magnetic and electrical fields superimposed on the metal target. *See also, e.g.*, Ex. 1 at 8:38-60. An inert gas, *e.g.*, argon, can be introduced into the chamber to create a magnetically confined ionized plasma. The plasma may be located near the surface of the metal target such that the positively charged plasma ions collide with the negatively charged metal target material ejecting atoms from the metal target, which then deposit on the substrate. *See also, e.g., id.* at 5:24-27.

15. One form of magnetron sputtering is bias pulsed DC sputtering. As that process is practiced in the semiconductor industry today, a DC power supply that provides one or more pulses in the form of alternating negative and positive voltages is generally applied to the metal target while an RF voltage is generally applied to the substrate. *See also, e.g., id.* at 2:45-3:7, 5:60-67.

APPLIED'S KNOWLEDGE OF THE ASSERTED PATENTS

16. On information and belief, Applied has had actual knowledge of the existence of the Asserted Patents. For example, Demaray contacted Applied regarding the Asserted Patents and the claimed technology at least as early as 2012. As another example of Applied's actual knowledge of the Asserted Patents, Applied became aware of the Asserted Patents when the portfolio comprising the Asserted Patents was owned by Symmorphix. As a further example of Applied's actual knowledge of the Asserted Patents, Applied's actual knowledge of the '657 Patent and its family member, the '276 Patent, is evidenced by the reference to or citation of the '657 Patent during prosecution of Applied's own patents. In particular, Applied is believed to be the assignee of U.S. Patent No. 8,894,827, which is dated November 25, 2014 and which cites to the '657 Patent. Additionally, Applied's actual knowledge of the Asserted

Patents is evidenced by Applied's own efforts to invalidate both of the Asserted Patents in multiple *inter partes* review petitions—specifically, PTAB Case Nos. IPR2021-00103 and IPR2021-00105 against the '276 Patent, and PTAB Case Nos. IPR2021-00104 and IPR2021-00106 against the '657 Patent.

COUNTERCLAIM I

(Infringement of U.S. Patent No. 7,544,276)

17. Demaray re-alleges and incorporates herein by reference Paragraphs 1-16 of its Counterclaims.

18. The '276 Patent, entitled "Biased pulse DC reactive sputtering of oxide films," was duly and lawfully issued on June 9, 2009. Ex. 1.

19. The '276 Patent names Hongmei Zhang, Mukundan Narasimhan, Ravi B. Mullapudi, and Richard E. Demaray as co-inventors.

20. The '276 Patent has been in full force and effect since its issuance. Demaray owns by assignment the entire right, title, and interest in and to the '276 Patent, including the right to seek damages for past, current, and future infringement thereof.

21. The '276 Patent relates generally to a configuration of a reactor for deposition of thin films by sputtering, which, in certain implementations, uses "a pulsed DC power supply providing alternating negative and positive voltages to the target," and "a narrow band-rejection filter" coupled between the pulsed DC power supply and a target area that receives a metal target to provide high quality deposition layers. *See, e.g.*, Ex. 1 at 1:12-14.

22. The '276 Patent also describes, among other things, "a substrate electrode coupled to an RF power supply. A substrate mounted on the substrate electrode is therefore supplied with a bias from the RF power supply." *Id.* at 2:45-53.

23. Demaray is informed and believes, and thereon alleges, that Applied has infringed, and, unless enjoined, will continue to infringe, one or more claims of the '276 Patent, in violation of 35 U.S.C. § 271.

24. Demaray is informed and believes, and thereon alleges, that Applied has directly infringed the '276 Patent by, among other things, making, using, offering to sell, and selling within the United States, supplying or causing to be supplied in or from the United States, and/or importing into the United States, without authority or license, semiconductor manufacturing equipment including reactors configured as described in the claims of the '276 Patent.

25. Demaray is informed and believes, and thereon alleges, that Applied has indirectly infringed and continues to infringe the '276 Patent within the meaning of at least 35 U.S.C. § 271(b) and/or (c) by knowingly and intentionally inducing infringement and/or contributing to the infringement of the '276 Patent by providing and/or selling in the United States reactors configured as described in the claims of the '276 Patent and/or reactor components to be configured as described in the claims of the '276 Patent to customers and/or distributors.

26. Demaray is informed and believes, and thereon alleges, that Applied is currently actively inducing and has induced infringement of the '276 Patent under 35 U.S.C. § 271(b) through, among other things, the sale and offer for sale, in the United States, of reactors configured as described in the claims of the '276 Patent or reactor components to be configured as described in the claims of the '276 Patent to direct infringers that include, without limitation, customers and/or distributors who make, use, sell, offer to sell, or import reactors configured as described in the claims of the '276 Patent.

27. Demaray is informed and believes, and thereon alleges, that Applied had knowledge of the '276 Patent.

28. Demaray is informed and believes, and thereon alleges, that Applied has encouraged and continues to encourage customers and/or distributors to make, use, sell, offer to sell, or import reactors configured as described in the claims of the '276 Patent in an infringing manner by providing product materials and directions instructing customers and/or distributors to make, use, sell, offer to sell, or import reactors configured as described in the claims of the '276 Patent in an infringing manner, which product materials and directions include but are not limited to process recipes; by providing training, instructions, and/or technical support to customers and/or distributors instructing them on how to make and/or use reactors configured as described in the claims of the '276 Patent in an infringing manner; and by advertising, marketing, and promoting the assembly, use, sale, offers for sale, or importation of reactors configured as described in the claims of the '276 Patent in an infringing manner. On information and belief, Applied has done so with the specific intent to cause infringement of the '276 Patent by direct infringers or was willfully blind to such infringement.

29. Demaray is informed and believes, and thereon alleges, that Applied has also indirectly infringed and continues to indirectly infringe the '276 Patent pursuant to 35 U.S.C. § 271(c) by contributing to the infringement of the '276 Patent by providing and/or selling reactors configured as described in the claims of the '276 Patent or reactor components to be configured as described in the claims of the '276 Patent in the United States to customers and/or distributors, the structures and features of which reactors and/or reactor components constitute a material part of one or more claims of the '276 Patent, are not a staple article of

commerce suitable for non-infringing uses, and are especially made and or adapted for use in infringing the '276 Patent.

30. Demaray is informed and believes, and thereon alleges, that Applied had knowledge of the '276 Patent.

31. Demaray is informed and believes, and thereon alleges, that Applied possessed and continues to possess intent to contributorily infringe the '276 Patent because Applied knew that the structures and features of reactors configured as described in the claims of the '276 Patent and/or reactor components to be configured as described in the claims of the '276 Patent are especially made or adapted for use in an infringement of one or more claims of the '276 Patent and such structures and features are not a staple article of commerce suitable for non-infringing uses.

32. Demaray is informed and believes, and thereon alleges, that the direct infringers for Applied's contributory infringement include, without limitation, the customers and/or distributors who assemble and/or use reactors configured as described in the claims of the '276 Patent, and to whom Applied sells and offers to sell reactors configured as described in the claims of the '276 Patent and/or reactor components to be configured as described in the claims of the '276 Patent. Applied has contributed to these customers' and/or distributors' infringement by selling and offering to sell to them reactors configured as described in the claims of the '276 Patent or reactor components to be configured as described in the claims of the '276 Patent, by advertising and promoting reactors configured as described in the claims of the '276 Patent or reactor components to be configured as described in the claims of the '276 Patent, and by encouraging and providing instructions to its customers and/or distributors for making, using, selling, offering for sale, and/or importing reactors configured as described in the claims of the '276 Patent.

33. Demaray is informed and believes, and thereon alleges, that Applied has indirectly infringed and continues to infringe the '276 Patent within the meaning of at least 35 U.S.C. § 271(f).

34. Applied knowingly and intentionally induces infringement of the '276 Patent by supplying or causing to be supplied, in or from the United States, all or a substantial portion of the components of reactors configured as described in the claims of the '276 Patent. Among other things, Applied provides product materials, directions, instructions, training, and/or technical support intended to instruct its employees, its contractors, its agents, its subsidiaries, its customers (or their employees, contractors, and agents), and/or its distributors for the purpose of inducing the combination of such components outside the United States into reactors configured as described in the claims of the '276 Patent. On information and belief, Applied has done so knowing and intending that the components will be combined outside of the United States in a manner that would infringe the '276 Patent if such combination occurred within the United States.

35. Applied knowingly and intentionally induces infringement of the '276 Patent by supplying or causing to be supplied, in or from the United States, one or more components that are especially made or especially adapted for use in reactors configured as described in the claims of the '276 Patent, which components are not a staple article or commodity of commerce suitable for substantial non-infringing use. Among other things, Applied provides product materials, directions, instructions, training, and/or technical support intended to instruct its employees, its contractors, its agents, its subsidiaries, its customers (or their employees, contractors, and agents), and/or its distributors for the purpose of inducing the combination of such components outside the United States into reactors configured as described in the claims of the '276 Patent. On information and belief, Applied has done so

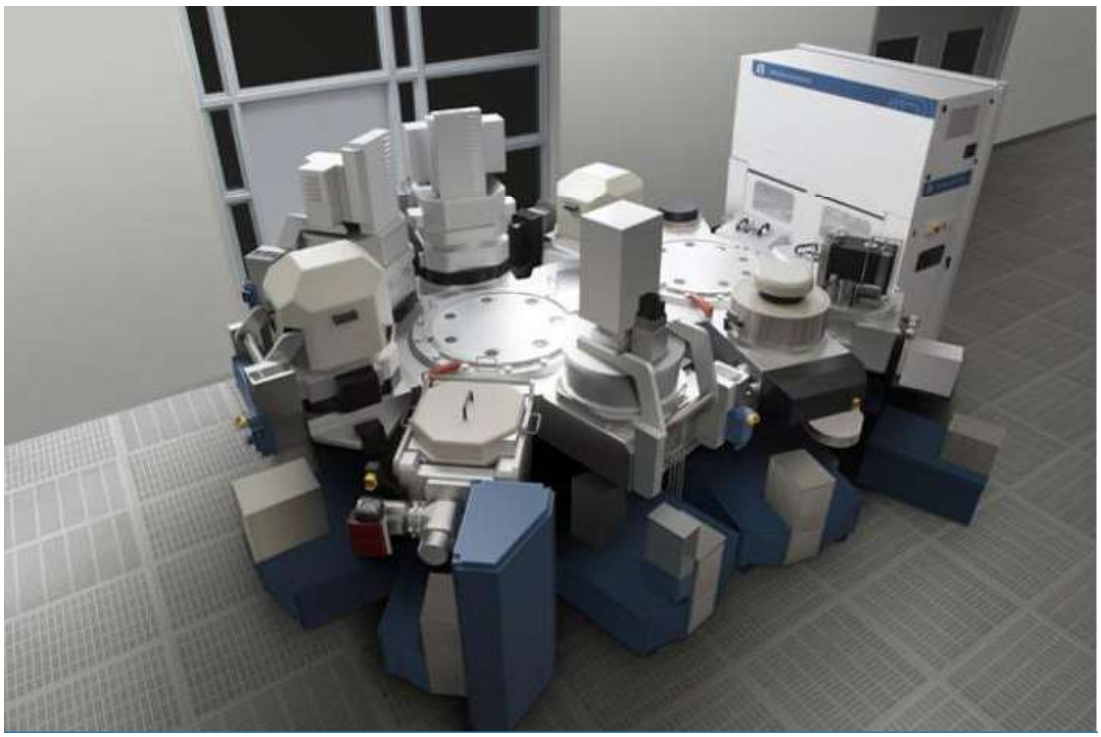
knowing and intending that such components will be combined outside of the United States in a manner that would infringe the '276 Patent if such combination occurred within the United States.

36. By way of example only, the accused products for the '276 Patent identified below embody every limitation of claims of the '276 Patent, literally or under the doctrine of equivalents, including as set forth in the illustrative example below. The further descriptions below are preliminary examples and are non-limiting.

["1. A reactor according to the present invention, comprising:"]

37. On information and belief, Applied manufactures infringing reactors ("Applied reactors") according to the claims of the '276 Patent in the production of its reactors at its plants and research facilities, including but not limited to premises within the United States. On information and belief, Applied also supplies and uses process recipes on the use of its reactors for semiconductor fabrication.

38. On information and belief, Applied configures its reactors, including for example chambers in the Cirrus product line for deposition of layers (including, *e.g.*, metal layers, such as Co or Ti) in semiconductor products. As an example, a reactor from Applied Materials is shown below:



39. As an example, on information and belief, Applied has configured, or causes to be configured, and gives process recipes on the use of infringing Applied chambers for metal (*e.g.*, Co and Ti) layer deposition in order to be used by Applied's customers for the fabrication of semiconductor products. On information and belief, for example, Applied has configured, or causes to be configured, and gives process recipes on use of, infringing Cirrus chambers for its customers' fabrication of Co and Ti metal layers.

["a target area for receiving a target;"]

40. On information and belief, the Applied reactors comprise a target area for receiving a target.

41. For example, for Applied reactors, "[i]n PVD, the target is the source of the material to be deposited. Atoms are ejected from the target as a result of the bombardment of energetic particles."[1] On information and belief, in Applied reactors for depositing Co, for

[1] **https://www.appliedmaterials.com/resources/glossary.**

example, Co is the source material (*i.e.*, the metal target). On information and belief, the chambers include a target area for receiving the Co.

42. An example of a target and target area in a reactor is shown below:

["a substrate area opposite the target area for receiving a substrate;"]

43. On information and belief, the Applied reactors comprise a substrate area opposite the target area for receiving a substrate.

44. For example, in Applied reactors a substrate is "[t]he material upon which thin films are manipulated. Silicon is most commonly used for semiconductors …."[2] On information and belief, the substrate in a reactor for deposition of, *e.g.*, a Co barrier layer in Applied's Cirrus chambers can be a silicon wafer and can include, for example, prior deposited layers of materials. On information and belief, a substrate area is opposite the target area for receiving the silicon substrates.

["a pulsed DC power supply coupled to the target area, the pulsed DC power supply providing alternating negative and positive voltages to the target;"]

[2] https://www.appliedmaterials.com/resources/glossary.

45. On information and belief, Applied configures, or causes to be configured, the Applied reactors such that they comprise a pulsed DC power supply coupled to the target area, and the pulsed DC power supply provides alternating negative and positive voltages to the target. For example, on information and belief, in the Applied Cirrus chambers a power source is coupled to the target area, for example, an Advanced Energy Pinnacle power supply. On information and belief, the Advanced Energy Pinnacle power supplies provide one or more pulses of DC to a target, for example, during arc suppression, such that the voltage on the target alternates between negative and positive voltages.

["an RF bias power supply coupled to the substrate;"]

46. On information and belief, Applied configures, or causes to be configured, the Applied reactors such that they comprise an RF bias power supply coupled to the substrate. For example, on information and belief, in the Applied Cirrus chamber a power supply is coupled to the substrate area to bias the substrate.

["and a narrow band-rejection filter that rejects at a frequency of the RF bias power supply coupled between the pulsed DC power supply and the target area."]

47. On information and belief, Applied configures, or causes to be configured, the Applied reactors such that they comprise a narrow band rejection filter that rejects at a frequency of the RF bias power supply coupled between the pulsed DC power supply and the target area.

48. On information and belief, a narrow band filter is coupled between the pulsed DC power supply and the target area in, for example, Applied Cirrus chambers for deposition of Co. On information and belief, a narrow band filter is used in, for example, the Applied Cirrus chambers.

49. As a result of Applied's infringement of the '276 Patent, Demaray has been damaged. Demaray is entitled to recover for damages sustained as a result of Applied's

wrongful acts in an amount subject to proof at trial, but for the avoidance of doubt, does not seek to recover, in this litigation, either (a) damages to compensate Demaray for Intel's and Samsung's use of the Applied reactors, which damages are at issue in the Texas litigations, or (b) damages to compensate Demaray for Applied's infringing activities with respect to reactors sold or provided to Intel and Samsung, as Demaray has elected to seek damages instead against Intel and Samsung in the Texas litigations.

50. In addition, Applied's infringing acts and practices have caused, are causing, and, unless enjoined, will continue to cause immediate and irreparable harm to Demaray.

51. To the extent 35 U.S.C. § 287 is determined to be applicable, on information and belief, its requirements have been satisfied with respect to the '276 Patent.

COUNTERCLAIM II

(Infringement of U.S. Patent No. 7,381,657)

52. Demaray re-alleges and incorporates herein by reference Paragraphs 1-16 of its Counterclaims.

53. The '657 Patent, entitled "Biased pulse DC reactive sputtering of oxide films," was duly and lawfully issued on June 3, 2008. Ex. 2.

54. The '657 Patent names Hongmei Zhang, Mukundan Narasimhan, Ravi B. Mullapudi, and Richard E. Demaray as co-inventors.

55. The '657 Patent has been in full force and effect since its issuance. Demaray owns by assignment the entire right, title, and interest in and to the '657 Patent, including the right to seek damages for past, current, and future infringement thereof.

56. The '657 Patent generally relates to a method of depositing thin films "by pulsed DC reactive sputtering." Ex. 2 at 1:11-13.

57. The '657 Patent describes, among other things, methods of using a "sputtering reactor according to the present invention includes a pulsed DC power supply coupled

through a filter to a target and a substrate electrode coupled to an RF power supply. A substrate mounted on the substrate electrode is therefore supplied with a bias from the RF power supply." *Id.* At 2:45-54.

58. Demaray is informed and believes, and thereon alleges, that Applied has infringed, and, unless enjoined, will continue to infringe, one or more claims of the '657 Patent, in violation of 35 U.S.C. § 271.

59. Demaray is informed and believes, and thereon alleges, that Applied has directly infringed the '657 Patent by, among other things, making and using, within the United States, without authority or license, semiconductor products (including but not limited to wafers with a deposited thin film) that were manufactured using process recipes that practice the claimed methods for reactive sputtering, such manufacture being for purposes of, among other things, experimentation, testing, calibration, certification, or qualification.

60. Demaray is informed and believes, and thereon alleges, that Applied is currently actively inducing and has induced infringement of the '657 Patent under 35 U.S.C. § 271(b). For example, among other things, Applied provides, sells, and/or offers for sale, in the United States, process recipes for use with Applied's reactors to direct infringers, including without limitation Applied's customers.

61. Demaray is informed and believes, and thereon alleges, that Applied had knowledge of the '657 Patent.

62. Demaray is informed and believes, and thereon alleges, that Applied has encouraged and continues to encourage customers to use such process recipes in Applied's reactors, which process recipes are used in an infringing manner to manufacture semiconductor products according to the claimed methods for reactive sputtering. Among other things, Applied provides product materials and directions instructing customers and/or

distributors to use such process recipes in an infringing manner; provides training, instructions, and/or technical support to customers and/or distributors instructing them on how to use process recipes in an infringing manner; and advertises, markets, and promotes the use of such process recipes in an infringing manner. On information and belief, Applied has done so with the specific intent to cause infringement of the '657 Patent by direct infringers or was willfully blind to such infringement. Direct infringement by Applied's customers includes but is not limited to making, offering to sell, or selling within the United States, and/or importing into the United States, without authority or license, semiconductor products produced using the claimed methods for reactive sputtering in an infringing manner.

63. By way of example only, on information and belief, Applied uses itself or provides to other direct infringers process recipes to make semiconductor products that are produced by a method that embodies every limitation of claims of the '657 Patent, literally or under the doctrine of equivalents, including as set forth in the illustrative example below. The further descriptions below are preliminary examples on information and belief and are non-limiting.

["A method of depositing a film on an insulating substrate, comprising:"]

64. On information and belief, Applied manufactures and tests reactors and provides process recipes on use of a method of depositing a film on an insulating substrate according to the claims of the '657 Patent in the production of semiconductor products at Applied's customers' semiconductor fabrication plants and research facilities, including but not limited to facility premises within the United States.

65. As an example, on information and belief, Applied manufactures and tests reactors and provides process recipes for depositing layers of material on insulating

substrates (*e.g.*, semiconductor wafers and/or such wafers with prior deposited insulating layers) for products.

["providing a process gas between a conductive target and the substrate;"]

66. On information and belief, Applied manufactures and tests reactors and provides to its customers process recipes for fabricating semiconductor products using a method comprising providing a process gas between a conductive target and the substrate for example for TiN. As an example, on information and belief, Applied manufacturers Cirrus chambers and provides to its customers process recipes for use in the fabrication of layers in customer products. On information and belief, Applied manufactures reactors and provides to its customers process recipes for using reactors that its customers can configure to use with a process gas.

67. On information and belief, Applied manufactures reactors and provides to its customers process recipes to use for its reactors as configured; for example, in the Applied Cirrus chambers, a process gas is provided in the chamber between a target and a silicon substrate to deposit a film on the substrate.

["providing pulsed DC power to the target through a narrow band rejection filter such that the target alternates between positive and negative voltages;"]

68. On information and belief, Applied manufactures reactors and gives process recipes for use in the fabrication of semiconductor products using a method comprising providing pulsed DC power to the target through a narrow band rejection filter such that the target alternates between positive and negative voltages.

69. As an example, on information and belief, Applied manufactures reactors and gives process recipes for use in the fabrication of layers in semiconductor products. For example, on information and belief, in Applied Cirrus chambers, a pulsed DC power source is

coupled to the target. On information and belief, a narrow band filter is coupled between the pulsed DC power supply and the target area in a reactor for deposition of layers when using a target and a process gas.

["providing an RF bias at a frequency that corresponds to the narrow band rejection filter to the substrate;"]

70. On information and belief, Applied manufactures reactors and gives process recipes for use in the fabrication of semiconductor products using a method comprising providing an RF bias at a frequency that corresponds to the narrow band rejection filter to the substrate.

71. As an example, on information and belief, Applied manufactures reactors and gives process recipes for use in the fabrication of layers in semiconductor products. For example, on information and belief, in the Applied Cirrus chambers, a RF power supply is coupled to the substrate area to bias the substrate.

["providing a magnetic field to the target;"]

72. On information and belief, Applied manufactures reactors and gives process recipes for use in the fabrication of semiconductor products using a method comprising providing a magnetic field to the target.

73. As an example, as discussed above, on information and belief, Applied manufactures reactors and gives process recipes for use in the fabrication of layers in semiconductor products. On information and belief, as configured in the Applied reactors, reactive magnetron sputtering involves the use of magnets to provide a magnetic field to the target. For example, on information and belief, the Applied Cirrus chambers are configured to contain a magnetron for deposition of layers when using a target and a process gas.

["and reconditioning the target;"]

74. On information and belief, Applied manufactures reactors and gives process recipes for use in the fabrication of semiconductor products using a method comprising reconditioning the target.

75. As an example, on information and belief, Applied manufactures reactors and gives process recipes for use in the fabrication of layers in semiconductor products. On information and belief, as configured in the Applied Cirrus reactors with process gas, impurities generated in the deposition process are removed from the target surface prior to the next deposition by sputtering in the absence of the process gas.

["wherein reconditioning the target includes reactive sputtering in the metallic mode and then reactive sputtering in the poison mode."]

76. On information and belief, Applied manufactures reactors and gives process recipes for use in the fabrication of semiconductor products using a method in which the reconditioning of the target includes reactive sputtering in the metallic mode and then reactive sputtering in the poison mode.

77. As an example, as discussed above, on information and belief, Applied manufactures reactors and gives process recipes for use in the fabrication of layers in semiconductor products. On information and belief, as configured in the Applied Cirrus reactors with process gas, impurities generated in the deposition process are removed from the target surface prior to the next deposition by sputtering in the absence of the process gas before sputtering in the presence of the process gas.

78. As a result of Applied's infringement of the '657 Patent, Demaray has been damaged. Demaray is entitled to recover for damages sustained as a result of Applied's wrongful acts in an amount subject to proof at trial, but for the avoidance of doubt, does not seek to recover, in this litigation, either (a) damages to compensate Demaray for Intel's and Samsung's use of the Applied reactors, which damages are at issue in the Texas litigations, or

(b) damages to compensate Demaray for Applied's infringing activities with respect to reactors sold or provided to Intel and Samsung, as Demaray has elected to seek damages instead against Intel and Samsung in the Texas litigations.

79. In addition, Applied's infringing acts and practices have caused, are causing, and, unless enjoined, will continue to cause immediate and irreparable harm to Demaray.

80. To the extent 35 U.S.C. § 287 is determined to be applicable, on information and belief, its requirements have been satisfied with respect to the '657 Patent.

APPLIED'S WILLFUL INFRINGEMENT OF THE ASSERTED PATENTS

81. Demaray re-alleges and incorporates herein by reference Paragraphs 1-80 of its Counterclaims.

82. Applied has long had actual knowledge of the Asserted Patents and its infringement thereof. Furthermore, to the extent necessary, these Counterclaims now provide Applied with the requisite knowledge of the Asserted Patents.

83. Demaray is informed and believes, and thereon alleges, that Applied's infringement of the Asserted Patents has been and continues to be willful, intentional, and deliberate. Applied has deliberately continued to infringe in a wanton, malicious, and egregious manner, with reckless disregard for Demaray's patent rights.

84. For example, despite Applied's actual knowledge of the Asserted Patents and of its own infringement, Applied has not sought a license, instead engaging in egregious ongoing conduct by continuing and obfuscating its infringing activities throughout this litigation as well as throughout two previously-filed, co-pending litigations in Texas involving Applied's customers. *See Demaray LLC v. Intel Corp.*, 6:20-cv-00634-ADA (W.D. Tex.); *Demaray LLC v. Samsung Electronics Co., Ltd.*, 6:20-cv-00636-ADA (W.D. Tex.) (collectively, the "Texas litigations").

85. For example, Applied has sought to conceal its infringing activities and the infringing activities of its customers by making specious and inconsistent claims and by taking positions intended to prevent Demaray from confirming Applied's infringement. For example, Applied incorrectly represented during discovery in the Texas litigations that its Cirrus chambers have a low-pass filter and not the claimed narrow band rejection filter, all the while refusing to provide the schematics needed for Demaray to confirm this claim for other chambers. Indeed, Applied claimed during discovery in the Texas litigations that there was no filter at all with respect to the DC power supply—let alone the claimed narrow band rejection filter, all the while refusing to provide the schematics needed for Demaray to confirm this claim; and Applied, in other instances, claimed that it had no knowledge regarding any filter as the circuitry was made for it by third parties, all the while refusing to provide the schematics needed for Demaray to confirm this claim.

86. But as Demaray subsequently discovered from a third-party supplier to Applied, Applied's filter was built according to Applied's own specifications (and therefore with Applied's knowledge) and contained a narrow band rejection filter, contrary to Applied's representations otherwise to Demaray and the Texas court.

87. Demaray is further informed, and on this basis alleges, that Applied's infringement of the Asserted Patents has been and continues to be deliberate and willful, and, therefore, this is an exceptional case warranting an award of enhanced damages for up to three times the actual damages awarded and attorney's fees to Demaray pursuant to 35 U.S.C. §§ 284-285.

PRAYER FOR RELIEF ON THE COUNTERCLAIMS

WHEREFORE, Demaray prays for judgment against Applied as follows:

A. That each of the Asserted Patents is valid and enforceable;

B. That Applied has infringed, and, unless enjoined, will continue to infringe, each of the Asserted Patents;

C. That Applied has willfully infringed each of the Asserted Patents;

D. That Applied pay Demaray damages adequate to compensate Demaray for Applied's infringement of each of the Asserted Patents, together with interest and costs under 35 U.S.C. § 284, except that Applied will not pay Demaray either (a) damages to compensate Demaray for Intel's and Samsung's use of the Applied reactors, which damages are at issue in the Texas litigations, or (b) damages to compensate Demaray for Applied's infringing activities with respect to reactors sold or provided to Intel and Samsung, as Demaray has elected to seek damages instead against Intel and Samsung in the Texas litigations;

E. That Applied be ordered to pay prejudgment and post-judgment interest on the damages assessed, save for the exception noted above in Paragraph D;

F. That Applied pay Demaray enhanced damages pursuant to 35 U.S.C. § 284, save for the exception noted above in paragraph D;

G. That Applied be ordered to pay supplemental damages to Demaray, including interest, with an accounting, as needed, save for the exception noted above in Paragraph D;

H. That Applied be enjoined from infringing the Asserted Patents, including but not limited to Applied's infringement of each of the Asserted Patents resulting from the sale of Applied's reactors to Intel and Samsung; or if Applied's infringement is not enjoined, that Applied be ordered to pay ongoing royalties to Demaray for any post-judgment; infringement of the Asserted Patents, save for the exceptions noted above in Paragraph D, which damages are at issue in the Texas litigations;

I. That this is an exceptional case under 35 U.S.C. § 285, and that Applied pay Demaray's attorneys' fees and costs in this action; and

J. That Demaray be awarded such other and further relief, including equitable

relief, as this Court deems just and proper.

DEMAND FOR JURY TRIAL ON THE COUNTERCLAIMS

Pursuant to Federal Rule of Civil Procedure 38(b), Demaray hereby demands a trial by jury on all issues triable to a jury.

ADDITIONAL CLAIMS AND DEFENSES RESERVED

Demaray ~~requires discovery from Applied or other sources such as Applied suppliers to ascertain whether it will file compulsory counterclaims of infringement. Demaray~~ reserves the right to assert **additional** counterclaims~~, including for infringement by Applied,~~ as they become known through further investigation and discovery. Demaray also reserves the right to assert any additional affirmative defenses available under Section 35 of the United States Code, the rules, regulations, or laws related thereto, the Federal Rules of Civil Procedure, the Rules of this Court, and/or otherwise in law or equity, now existing, or later arising, as may be discovered.

PRAYER FOR RELIEF ON ~~THE~~APPLIED'S COMPLAINT

WHEREFORE Demaray requests the following relief:

A. That Applied~~'~~'s claims for relief are denied in full;

B. That the Court enter judgment in favor of Demaray and against Applied;

C. That the Court determine that this is an exceptional case under ~~35.~~35 U.S.C. § 285 and award attorneys~~'~~' fees and costs to Demaray in this action; and

D. Such other and further relief as the Court may deem just and proper.

Dated: ~~September 30, 2021~~ **March 9, 2022** Respectfully submitted,

Irell & Manella LLP

By: */s/ ~~C. Maclain Wells~~Samuel K. Lu*
~~C. Maclain Wells~~
Samuel K. Lu
Attorneys for Defendant
DEMARAY LLC