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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

The CALIFORNIA INSTITUTE OF TECHNOLOGY, a California Corporation,

Plaintiff,

vs.

BROADCOM LIMITED, BROADCOM CORPORATION, AVAGO TECHNOLOGIES LIMITED,, APPLE INC., AND CYPRESS SEMICONDUCTOR CORPORATION,

Defendants.

CASE NO. 2:16-cv-3714-GW-AGRx

**CALIFORNIA INSTITUTE OF TECHNOLOGY'S ANSWER TO COUNTERCLAIMS**

**JURY TRIAL DEMANDED**

Plaintiff and Counterclaim-Defendant California Institute of Technology ("Caltech"), by and through its undersigned counsel, respond as follows to the Counterclaims ("Counterclaims") of Defendants and Counterclaim-Plaintiffs Broadcom Corporation ("Broadcom Corp.") and Apple Inc. ("Apple") (collectively, "Counterclaim-Plaintiffs") (Dkt. 47).

Caltech responds to Counterclaim-Plaintiffs' individual allegations using the same paragraph numbers that appear in the Counterclaims. All allegations not expressly admitted below are denied.

**PARTIES AND JURISDICTION**

1. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 1 of the Counterclaims and therefore denies them.

2. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations of Paragraph 2 of the Counterclaims and therefore denies them.

3. Caltech admits the allegations of Paragraph 3 of the Counterclaims.

4. Caltech admits that this Court has jurisdiction over the Counterclaims. Caltech denies any remaining allegations of Paragraph 4 of the Counterclaims.

5. Caltech admits that Counterclaim-Plaintiffs purport to state a cause of action for declaratory judgment of non-infringement, invalidity, and unenforceability arising under the patent laws of the United States, 35 U.S.C. §§ 1, *et. seq.*, and the Declaratory Judgment Act, 28 U.S.C. §§ 2201-02, but denies that such cause of action has merit. Caltech admits that this Court has subject matter jurisdiction over the Counterclaims. Caltech denies any remaining allegations of Paragraph 5 of the Counterclaims.

6. Caltech admits that it alleges in its Complaint that U.S. Patent No. 7,116,710 ("the '710 Patent"), U.S. Patent No. 7,421,032 ("the "'032 Patent"), U.S. Patent No. 7,916,781 ("the '781 Patent"), and U.S. Patent No. 8,284,833 ("the '833

Patent") (collectively, "the Asserted Patents") are valid, enforceable, and infringed by Counterclaim-Plaintiffs. Caltech admits that an actual controversy exists between the parties under the Declaratory Judgment Act. Caltech denies any remaining allegations of Paragraph 6 of the Counterclaims.

7. Caltech admits that venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391 and 1400. Caltech denies any remaining allegations of Paragraph 7 of the Counterclaims.

**COUNT I**

**ALLEGED NON-INFRINGEMENT OF THE '710 PATENT**

8. Caltech admits that Counterclaim-Plaintiffs repeat and re-allege the allegations contained in Paragraphs 1 through 7 of its Counterclaims. Caltech repeats, re-alleges, and incorporates by reference its responses to Paragraphs 1 through 7 as though fully set forth herein.

9. Caltech admits the allegations of Paragraph 9 of the Counterclaims.

10. Caltech denies each and every allegation of Paragraph 10 of the Counterclaims.

11. Caltech admits that a valid and justiciable controversy has arisen and exists between Caltech and Counterclaim-Plaintiffs regarding Counterclaim-Plaintiffs' infringement of the '710 Patent. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations that Counterclaim-Plaintiffs desire a judicial determination and declaration of the respective rights and duties of the parties herein, and therefore denies them. Caltech denies that Counterclaim-Plaintiffs' Counterclaims have merit. Caltech denies any remaining allegations of Paragraph 11 of the Counterclaims.

12. Caltech denies each and every allegation of Paragraph 12 of the Counterclaims.

**COUNT II**

**ALLEGED INVALIDITY OF THE '710 PATENT**

13. Caltech admits that Counterclaim-Plaintiffs repeat and re-allege the allegations contained in Paragraphs 1 through 7 of its Counterclaims. Caltech repeats, re-alleges, and incorporates by reference its responses to Paragraphs 1 through 7 as though fully set forth herein.

14. Caltech admits that Counterclaim-Plaintiffs contend on information and belief that the claims of the '710 Patent are invalid but denies that the claims of the '710 Patent are invalid. Caltech denies any remaining allegations of Paragraph 14 of the Counterclaims.

15. Caltech admits and contends that the claims of the '710 Patent are valid and enforceable.

16. Caltech admits that a valid and justiciable controversy has arisen and exists between Caltech and Counterclaim-Plaintiffs regarding the validity of the '710 Patent. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations regarding what Counterclaim-Plaintiffs desire, and therefore denies them. Caltech denies that Counterclaim-Plaintiffs' Counterclaims have merit. Caltech denies any remaining allegations of Paragraph 16 of the Counterclaims.

17. Caltech denies each and every allegation of Paragraph 17 of the Counterclaims.

**COUNT III**

**ALLEGED NON-INFRINGEMENT OF THE '032 PATENT**

18. Caltech admits that Counterclaim-Plaintiffs repeat and re-allege the allegations contained in Paragraphs 1 through 7 of its Counterclaims. Caltech repeats, re-alleges, and incorporates by reference its responses to Paragraphs 1

through 7 as though fully set forth herein.

19. Caltech admits the allegations of Paragraph 19 of the Counterclaims.

20. Caltech denies each and every allegation of Paragraph 20 of the Counterclaims.

21. Caltech admits that a valid and justiciable controversy has arisen and exists between Caltech and Counterclaim-Plaintiffs regarding Counterclaim-Plaintiffs' infringement of the '032 Patent. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations that Counterclaim-Plaintiffs desire a judicial determination and declaration of the respective rights and duties of the parties herein, and therefore denies them. Caltech denies that Counterclaim-Plaintiffs' Counterclaims have merit. Caltech denies any remaining allegations of Paragraph 21 of the Counterclaims.

22. Caltech denies each and every allegation of Paragraph 22 of the Counterclaims.

**COUNT IV**

**ALLEGED INVALIDITY OF THE '032 PATENT**

23. Caltech admits that Counterclaim-Plaintiffs repeat and re-allege the allegations contained in Paragraphs 1 through 7 of its Counterclaims. Caltech repeats, re-alleges, and incorporates by reference its responses to Paragraphs 1 through 7 as though fully set forth herein.

24. Caltech admits that Counterclaim-Plaintiffs contend on information and belief that the claims of the '032 Patent are invalid but denies that the claims of the '032 Patent are invalid. Caltech denies any remaining allegations of Paragraph 24 of the Counterclaims.

25. Caltech admits and contends that the claims of the '032 Patent are valid and enforceable.

26. Caltech admits that a valid and justiciable controversy has arisen and exists between Caltech and Counterclaim-Plaintiffs regarding the validity of the

'032 Patent. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations regarding what Counterclaim-Plaintiffs desire, and therefore denies them. Caltech denies that Counterclaim-Plaintiffs' Counterclaims have merit. Caltech denies any remaining allegations of Paragraph 26 of the Counterclaims.

27. Caltech denies each and every allegation of Paragraph 27 of the Counterclaims.

**COUNT V**

**ALLEGED NON-INFRINGEMENT OF THE '781 PATENT**

28. Caltech admits that Counterclaim-Plaintiffs repeat and re-allege the allegations contained in Paragraphs 1 through 7 of its Counterclaims. Caltech repeats, re-alleges, and incorporates by reference its responses to Paragraphs 1 through 7 as though fully set forth herein.

29. Caltech admits the allegations of Paragraph 29 of the Counterclaims.

30. Caltech denies each and every allegation of Paragraph 30 of the Counterclaims.

31. Caltech admits that a valid and justiciable controversy has arisen and exists between Caltech and Counterclaim-Plaintiffs regarding Counterclaim-Plaintiffs' infringement of the '781 Patent. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations that Counterclaim-Plaintiffs desire a judicial determination and declaration of the respective rights and duties of the parties herein, and therefore denies them. Caltech denies that Counterclaim-Plaintiffs' Counterclaims have merit. Caltech denies any remaining allegations of Paragraph 31 of the Counterclaims.

32. Caltech denies each and every allegation of Paragraph 32 of the Counterclaims.

**COUNT VI**

**ALLEGED INVALIDITY OF THE '781 PATENT**

33. Caltech admits that Counterclaim-Plaintiffs repeat and re-allege the allegations contained in Paragraphs 1 through 7 of its Counterclaims. Caltech repeats, re-alleges, and incorporates by reference its responses to Paragraphs 1 through 7 as though fully set forth herein.

34. Caltech admits that Counterclaim-Plaintiffs contend on information and belief that the claims of the '781 Patent are invalid but denies that the claims of the '781 Patent are invalid. Caltech denies any remaining allegations of Paragraph 34 of the Counterclaims.

35. Caltech admits and contends that the claims of the '781 Patent are valid and enforceable.

36. Caltech admits that a valid and justiciable controversy has arisen and exists between Caltech and Counterclaim-Plaintiffs regarding the validity of the '781 Patent. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations regarding what Counterclaim-Plaintiffs desire, and therefore denies them. Caltech denies that Counterclaim-Plaintiffs' Counterclaims have merit. Caltech denies any remaining allegations of Paragraph 36 of the Counterclaims.

37. Caltech denies each and every allegation of Paragraph 37 of the Counterclaims.

**COUNT VII**

**ALLEGED NON-INFRINGEMENT OF THE '833 PATENT**

38. Caltech admits that Counterclaim-Plaintiffs repeat and re-allege the allegations contained in Paragraphs 1 through 7 of its Counterclaims. Caltech repeats, re-alleges, and incorporates by reference its responses to Paragraphs 1

through 7 as though fully set forth herein.

39. Caltech admits the allegations of Paragraph 39 of the Counterclaims.

40. Caltech denies each and every allegation of Paragraph 40 of the Counterclaims.

41. Caltech admits that a valid and justiciable controversy has arisen and exists between Caltech and Counterclaim-Plaintiffs regarding Counterclaim-Plaintiffs' infringement of the '833 Patent. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations that Counterclaim-Plaintiffs desire a judicial determination and declaration of the respective rights and duties of the parties herein, and therefore denies them. Caltech denies that Counterclaim-Plaintiffs' Counterclaims have merit. Caltech denies any remaining allegations of Paragraph 41 of the Counterclaims.

42. Caltech denies each and every allegation of Paragraph 42 of the Counterclaims.

**COUNT VIII**

**ALLEGED INVALIDITY OF THE '833 PATENT**

43. Caltech admits that Counterclaim-Plaintiffs repeat and re-allege the allegations contained in Paragraphs 1 through 7 of its Counterclaims. Caltech repeats, re-alleges, and incorporates by reference its responses to Paragraphs 1 through 7 as though fully set forth herein.

44. Caltech admits that Counterclaim-Plaintiffs contend on information and belief that the claims of the '833 patent are invalid but denies that the claims of the '833 Patent are invalid. Caltech denies any remaining allegations of Paragraph 44 of the Counterclaims.

45. Caltech admits and contends that the claims of the '833 Patent are valid and enforceable.

46. Caltech admits that a valid and justiciable controversy has arisen and exists between Caltech and Counterclaim-Plaintiffs regarding the validity of the

'833 Patent. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations regarding what Counterclaim-Plaintiffs desire, and therefore denies them. Caltech denies that Counterclaim-Plaintiffs' Counterclaims have merit. Caltech denies any remaining allegations of Paragraph 46 of the Counterclaims.

47. Caltech denies each and every allegation of Paragraph 47 of the Counterclaims.

**COUNT IX**

**ALLEGED UNENFORCEABILITY OF THE ASSERTED PATENTS DUE TO INEQUITABLE CONDUCT**

48. Caltech admits that Counterclaim-Plaintiffs repeat and re-allege the allegations contained in Paragraphs 1 through 7 of its Counterclaims and paragraphs 147-168 of its Answer. Caltech repeats, re-alleges, and incorporates by reference its responses to Paragraphs 1 through 7 as though fully set forth herein.

49. Caltech admits that the Asserted Patents are directed to Irregular Repeat-Accumulate codes, which may be referred to as "IRA codes." Caltech denies the remaining allegations of Paragraph 49 of the Counterclaims.

50. Caltech denies each and every allegation of Paragraph 50 of the Counterclaims.

51. Caltech denies each and every allegation of Paragraph 51 of the Counterclaims.

52. Caltech admits that Dr. Khandekar submitted his thesis to Caltech in 2002, and that Dr. Khandekar's thesis includes the passages within quotations cited from the thesis in Paragraph 52 of the Counterclaims. Caltech denies the remaining allegations of Paragraph 52 of the Counterclaims.

53. Caltech denies each and every allegation of Paragraph 53 of the Counterclaims.

54. Caltech admits that Richardson99 includes the quoted passage cited in

Paragraph 54 of the Counterclaims. Caltech denies the remaining allegations of Paragraph 54 of the Counterclaims.

55. Caltech denies each and every allegation of Paragraph 55 of the Counterclaims.

56. Caltech admits that the Court in *California Institute of Technology v. Hughes Communications*, No. 2:12-cv-07245-MRP-JEM, Docket No. 370 (C.D. Cal. May 5, 2015) ("Court's Order") denied Caltech's motion for summary judgment as to no inequitable conduct. Caltech admits that the Court's order (Case No. 2:12-cv-07245, Dkt. 370) includes portions of the quoted passages cited in Paragraph 56 of the Counterclaims. Caltech denies the remaining allegations of Paragraph 56 of the Counterclaims.

57. Caltech admits that 37 C.F.R. § 1.56 and the Court's Order includes the quoted passages cited in Paragraph 57 of the Counterclaims. Caltech denies the remaining allegations of Paragraph 57 of the Counterclaims.

58. Caltech denies each and every allegation of Paragraph 58 of the Counterclaims.

59. Caltech admits that, during prosecution of the application leading to the '710 patent, the Patent Office issued a First Office Action rejecting claims as invalid based on a prior art reference called Wang. Caltech also admits that in its Response to the First Office Action, it stated "There is no indication in Wang that the rate r is irregular. Rather, all bits are repeated the same number of times, i.e., regularly." Caltech also admits that in its Response to the First Office Action, it stated "Each of the independent claims 11, 15, and 24 recites that in a first encoding, bits are repeated 'irregularly' or 'a different number of times'." Caltech denies the remaining allegations of Paragraph 59 of the Counterclaims.

60. Caltech denies each and every allegation of Paragraph 60 of the Counterclaims.

61. Caltech denies each and every allegation of Paragraph 61 of the

Counterclaims.

62. Caltech admits that Luby98 includes the passage quoted in Paragraph 62 of the Counterclaims. Caltech denies the remaining allegations of Paragraph 62 of the Counterclaims.

63. Caltech admits that Luby98 includes the passages quoted in Paragraph 63 of the Counterclaims. Caltech denies the remaining allegations of Paragraph 63 of the Counterclaims.

64. Caltech admits that Luby98 includes the passages quoted in Paragraph 64 of the Counterclaims. Caltech denies the remaining allegations of Paragraph 64 of the Counterclaims.

65. Caltech admits that Richardson99 includes the passages quoted in Paragraph 65 of the Counterclaims. Caltech denies the remaining allegations of Paragraph 65 of the Counterclaims.

66. Caltech admits that the Court's Order includes the quoted passage cited in Paragraph 66 of the Counterclaims. Caltech denies the remaining allegations of Paragraph 66 of the Counterclaims.

67. Caltech denies each and every allegation of Paragraph 67 of the Counterclaims.

68. Caltech denies each and every allegation of Paragraph 68 of the Counterclaims.

69. Caltech denies each and every allegation of Paragraph 69 of the Counterclaims.

70. Caltech admits the March 28, 2011 application for the '833 Patent is a continuation of the June 30, 2008 application for the '781 Patent, which is a continuation of the October 3, 2006 application for the '032 Patent, which is a continuation of the May 18, 2001 application for the '710 Patent. Caltech admits that the '833 Patent purports to be a continuation-in-part of the August 18, 2000 application for U.S. Patent No. 7,089,477.

71. Caltech admits that the Asserted Patents share a common specification and relate to the same subject matter. Caltech denies the remaining allegations of Paragraph 71 of the Counterclaims.

72. Caltech denies each and every allegation of Paragraph 72 of the Counterclaims.

73. Caltech admits and contends that the Asserted Patents are valid and enforceable.

74. Caltech admits that a valid and justiciable controversy has arisen and exists between Caltech and Counterclaim-Plaintiffs. Caltech is without knowledge or information sufficient to form a belief as to the truth of the allegations regarding what Counterclaim-Plaintiffs desire, and therefore denies them. Caltech denies that Counterclaim-Plaintiffs' Counterclaims have merit. Caltech denies any remaining allegations of Paragraph 74 of the Counterclaims.

75. Caltech denies each and every allegation of Paragraph 75 of the Counterclaims.

**DEMAND FOR JURY TRIAL**

Under Fed. R. Civ. P. 38(b), Caltech demands a trial by jury on all issues so triable.

**PRAYER FOR RELIEF**

To the extent that this section may be deemed to allege any facts or any factual or legal entitlements to the relief requested, Caltech denies each and every such allegation.

A. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (a).

B. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (b).

C. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (c).

D. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (d).

E. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (e).

F. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (f).

G. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (g).

H. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (h).

I. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (i).

J. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (j).

K. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (k).

L. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (l).

M. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (m).

N. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (n).

O. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (o).

P. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (p).

Q. Caltech denies that Counterclaim-Plaintiffs are entitled to the relief requested in Paragraph (q).

**GENERAL DENIAL**

Caltech denies all allegations of the Counterclaims not specifically admitted above.

DATED: September 19, 2016

Respectfully submitted,

QUINN EMANUEL URQUHART & SULLIVAN, LLP

By /s/ *James R. Asperger*
James R. Asperger
*Attorneys for Plaintiff California Institute of Technology*