

1 TREVOR Q. CODDINGTON, PH.D. (CSB NO. 243042)

2 trevorcoddington@sandiegoiplaw.com

3 CODY R. LEJEUNE (CSB NO. 249242)

4 codylejeune@sandiegoiplaw.com

5 CHARLES A. BLAZER, II (CSB NO. 282495)

6 charlesblazer@sandiegoiplaw.com

7 **INSIGNE LLP**

8 701 Palomar Airport Rd., Suite 230

9 Carlsbad, CA 92011

10 Telephone: (858) 227-6633

11 Facsimile: (858) 408-4422

12 *Attorneys for Plaintiff,*

13 POWER DENSITY SOLUTIONS LLC

14
15 UNITED STATES DISTRICT COURT
16
17 NORTHERN DISTRICT OF CALIFORNIA
18

19 POWER DENSITY SOLUTIONS LLC, a
20 Delaware limited liability company,

21 *Plaintiff,*

22 v.

23 IBM CORPORATION, a New York
24 corporation, and DOES 1-10, inclusive,

25 *Defendants.*

CASE NO.: 3:19-cv-03710

**FIRST AMENDED COMPLAINT
FOR PATENT INFRINGEMENT**

DEMAND FOR JURY TRIAL

1 Plaintiff Power Density Solutions LLC (“PDS” or “Plaintiff”) hereby complains of
2 Defendant IBM Corporation (“IBM” or “Defendant”) and alleges as follows:

3 **NATURE OF ACTION**

4 1. This is an action for patent infringement under the patent laws of the United
5 States, 35 U.S.C. § 271, *et seq.*

6 **THE PARTIES**

7 2. PDS is a Delaware limited liability company with its principal place of
8 business located at 10 Lilac Drive, Hatfield, Pennsylvania 19440.

9 3. IBM is a New York corporation with its global headquarters located at 1
10 New Orchard Rd, Armonk, New York 10504.

11 4. IBM has numerous regular and established places of business in this district.
12 IBM has a location at 425 Market Street, San Francisco, California 94105. In addition,
13 IBM Research – Almaden, located at 650 Harry Road, San Jose, California 95120, is a
14 research lab branch of IBM’s research and development division, known as IBM
15 Research. IBM resides in this District.

16 5. PDS is ignorant of the true names and capacities of the parties sued herein as
17 DOES 1 through 10, inclusive, whether individual, corporate or otherwise, and therefore
18 sues these defendants by such fictitious names. PDS will seek leave to amend the
19 complaint to assert their true names and capacities when they have been ascertained.
20 PDS is informed and believes and based thereon alleges that all defendants sued herein
21 as DOES 1 through 10 are in some manner responsible for the acts and omissions
22 alleged herein.

23 **JURISDICTION AND VENUE**

24 6. This Court has original and exclusive subject matter jurisdiction over this
25 action under 28 U.S.C. §§ 1331 and 1338(a) because PDS’s claims for patent
26 infringement arise under the laws of the United States, 35 U.S.C. § 271, *et seq.*

27 7. This Court has personal jurisdiction over IBM because it resides in this
28 District and has a continuous, systematic, and substantial presence in this District,

1 because it regularly conducts business and/or solicits business within this District,
 2 because it has committed and continues to commit patent infringement in this District,
 3 including without limitation by making, using, selling, and offering for sale infringing
 4 products and inducing consumers in this District to purchase and use infringing products,
 5 by purposefully directing infringing activities at residents of this District, and by placing
 6 infringing products into the stream of commerce with the knowledge that such infringing
 7 products would be sold in California and this District, which acts form a substantial part
 8 of the events giving rise to PDS's claims.

9 8. Venue is proper in this District under 28 U.S.C. § 1400(b) because IBM has
 10 a regular and established place of business in this District and has committed and
 11 continues to commit acts of patent infringement in this District.

12 **GENERAL ALLEGATIONS**

13 9. PDS has been working in the field of evaporative cooling for nearly two
 14 decades and has developed novel cooling solutions for electronic systems and
 15 components. On November 6, 2001, the United States Patent and Trademark Office
 16 ("PTO") duly and lawfully issued United States Patent No. 6,313,992, entitled "Method
 17 and Apparatus for Increasing the Power Density of Integrated Circuit Boards and Their
 18 Components" ("the '992 patent"). PDS is the owner of the '992 patent, a copy of which is
 19 attached hereto as **Exhibit 1** and is fully incorporated herein.

20 10. On April 22, 2003 the PTO duly and lawfully issued United States Patent
 21 No. 6,552,901, entitled "Apparatus and System for Cooling Electronic Circuitry, Heat
 22 Sinks, and Related Components" ("the '901 patent"). PDS is the owner of the '901 patent,
 23 a copy of which is attached hereto as **Exhibit 2** and is fully incorporated herein.

24 11. IBM is and has been making, using, selling, offering for sale, importing,
 25 and/or exporting products that infringe the '992 patent including without limitation
 26 computer chips and other computer components utilizing IBM's so-called intra-chip
 27 enhanced cooling ("ICECool") technology (the "'992 Accused Products"). IBM
 28 represents on its website that the '992 Accused Products "could reduce the cooling

energy for a traditional air-cooled data center by more than 90 percent.”¹ IBM also represents that the ‘992 Accused Products “could reduce the computational energy up to 14% compared to the traditional refrigerated air-cooled data centers.”²

12. Further, IBM is and has been making, using, selling, offering for sale, importing, and/or exporting products that infringe the ‘901 patent including without limitation IBM’s z/Architecture mainframe computers utilizing vaporizable dielectric fluid cooling systems as well as IBM’s eServer Rear Door Heat eXchanger (“Cool Blue Component”) (collectively the “‘901 Accused Products”).

13. IBM also actively induces infringement of the ‘992 patent and ‘901 patent by its customers, when it sells the ‘992 Accused Products and ‘901 Accused Products (collectively the “Accused Products”) to customers who then use the Accused Products without permission from PDS.

14. On information and belief, IBM has been aware of the ‘992 patent and ‘901 patent for over six years.

FIRST CLAIM FOR RELIEF

(Patent Infringement of the ‘992 Patent)

(35 U.S.C. § 271)

15. PDS repeats, realleges, and incorporates by reference the preceding allegations above as though set forth fully herein.

16. IBM has been and is currently infringing the ‘992 patent by making, using, selling, offering for sale, importing, and/or exporting into the United States, the Accused Products that embody one or more claims set forth in the ‘992 patent.

¹ Timothy Chainer *et al.*, IBM Research Blog, *Beat the Heat in 3D Chip Stacks with ICECool* (2017), <https://www.ibm.com/blogs/research/2017/08/beat-heat-3d-chip-stacks-icecool> (last visited Jun. 12, 2019).

² Timothy J. Chainer, *et al.*, IEEE Transactions on Components, Packaging and Manufacturing Technology, *Improving Data Center Energy Efficiency With Advanced Thermal Management* (2017), <https://ieeexplore.ieee.org/document/7876756> (last visited Jun. 12, 2019).

1 17. For example, the ‘992 Accused Products meet all the limitations set forth in
2 claim 21 of the ‘992 patent. A chart identifying specifically where each limitation of
3 claim 21 is found in the ‘992 Accused Products is attached hereto as **Exhibit 3**. This
4 infringement chart is based on PDS’s current understanding of the Accused Products,
5 which only considers public literature available at the time of this filing. The chart does
6 not set forth all of PDS’s infringement theories – the Accused Products embody other
7 claims set forth in the ‘992 patent. Pursuant to Patent L.R. 3-1 and/or this Court’s case
8 management schedule, PDS will serve a Disclosure of Asserted Claims and Infringement
9 Contentions that may alter and/or supplement the infringement charts submitted herewith.
10 PDS reserves the right to amend or supplement its infringement theories upon more
11 information becoming available through formal discovery and/or this Court completing
12 its claim construction proceedings.

13 18. IBM actively induces its customers to directly infringe the ‘992 patent. IBM
14 sells the Accused Products to its customers, who then use the Accused Products without
15 authorization from PDS. IBM knew or should have known that these actions would result
16 in its customer’s infringement.

17 19. IBM’s acts of infringement were undertaken without permission or license
18 from PDS.

19 20. PDS is informed and believes and based thereon alleges that IBM’s
20 infringement of the ‘992 patent will continue unless enjoined by this Court.

21 21. By reason of the foregoing infringing acts, PDS has been damaged,
22 continues to be damaged, and is entitled to no less than a reasonable royalty in
23 accordance with 35 U.S.C. § 284 in an amount to be determined at trial. In addition,
24 pursuant to 35 U.S.C. § 284, PDS is entitled to enhanced and treble damages against IBM
25 together with interest at the maximum legal rate and costs as fixed by the Court.

26 22. In addition, PDS is entitled to reasonable attorneys’ fees incurred in this
27 action under 35 U.S.C. § 285.

28 23. Because of the aforesaid infringing acts, PDS has suffered and continues to

1 suffer great and irreparable injury for which there is no adequate remedy at law.

2 **SECOND CLAIM FOR RELIEF**

3 **(Patent Infringement of the ‘901 Patent)**

4 **(U.S.C. § 271)**

5 24. PDS repeats, realleges, and incorporates by reference the preceding
6 allegations above as though set forth fully herein.

7 25. IBM has been and is currently infringing the ‘901 patent by making, using,
8 selling, offering for sale, importing, and/or exporting into the United States, the Accused
9 Products that embody one or more claims set forth in the ‘901 patent.

10 26. For example, the ‘901 Accused Products meet all the limitation set forth in
11 claim 16 of the ‘901 patent. A chart identifying specifically where each limitation of
12 claim 16 is found in the ‘901 Accused Products is attached hereto as **Exhibit 4**. This
13 infringement chart is based on PDS’s current understanding of the Accused Products,
14 which only considers public literature available at the time of this filing. The chart does
15 not set forth all of PDS’s infringement theories – the Accused Products embody other
16 claims set forth in the ‘901 patent. Pursuant to Patent L.R. 3-1 and/or this Court’s case
17 management schedule, PDS will serve a Disclosure of Asserted Claims and Infringement
18 Contentions that may alter and/or supplement the infringement charts submitted herewith.
19 PDS reserves the right to amend or supplement its infringement theories upon more
20 information becoming available through formal discovery and/or this Court completing
21 its claim construction proceedings.

22 27. IBM actively induces its customers to directly infringe the ‘901 patent. IBM
23 sells the Accused Products to its customers, who then use the Accused Products without
24 authorization from PDS. IBM knew or should have known that these actions would result
25 in its customer’s infringement.

26 28. IBM’s acts of infringement were undertaken without permission or license
27 from PDS.

28 29. PDS is informed and believes and based thereon alleges that IBM’s

1 infringement of the '901 patent will continue unless enjoined by this Court.

2 30. By reason of the foregoing infringing acts, PDS has been damaged,
3 continues to be damaged, and is entitled to no less than a reasonable royalty in
4 accordance with 35 U.S.C. § 284 in an amount to be determined at trial. In addition,
5 pursuant to 35 U.S.C. § 284, PDS is entitled to enhanced and treble damages against IBM
6 together with interest at the maximum legal rate and costs as fixed by the Court.

7 31. In addition, PDS is entitled to reasonable attorneys' fees incurred in this
8 action under 35 U.S.C. § 285.

9 32. Because of the aforesaid infringing acts, PDS has suffered and continues to
10 suffer great and irreparable injury for which there is no adequate remedy at law.

11
12 **PRAYER FOR RELIEF**

13 WHEREFORE, PDS prays for judgment against IBM as follows:

14 (a) an Order adjudging IBM to have infringed the '992 patent and '901 patent
15 under 35 U.S.C. § 271;

16 (b) an Order adjudging IBM to have willfully infringed the '992 patent and '901
17 patent under 35 U.S.C. § 271;

18 (c) a preliminary and permanent injunction under 35 U.S.C. § 283 enjoining
19 IBM, its officers, directors, agents, servants, resellers, retailers, employees and attorneys,
20 and those persons acting in concert or participation with them, from infringing the '992
21 patent and '901 patent in violation of 35 U.S.C. § 271;

22 (d) an accounting of all gains, profits, and advantages IBM derived by their
23 infringement of the '992 patent and '901 patent, and for damages adequate to compensate
24 PDS for such infringement of the '992 patent and '901 patent;

25 (e) an award to PDS no less than a reasonable royalty for IBM's manufacture,
26 sale, use, importation, and/or exportation of the Accused Products, subject to proof at
27 trial;

28 (f) an Order for a trebling of damages and/or enhanced damages due to IBM's

1 willful infringement under 35 U.S.C. § 284;

2 (g) an award to PDS of all attorneys' fees and costs incurred by PDS in
3 connection with this action under 35 U.S.C. § 285;

4 (h) an award of pre-judgment and post-judgment interest and costs of this action
5 against IBM; and

6 (i) for such other and further relief as the Court deems just and proper.
7

8 Dated: October 17, 2019

INSIGNE LLP

9
10 By: /s/Cody R. LeJeune

Trevor Q. Coddington, Ph.D.

Cody R. LeJeune

Charles R. Blazer, II

701 Palomar Airport Rd., Suite 230

Carlsbad, CA 92011

Phone: (858) 227-6633

Fax: (858) 405-4422

16 *Attorneys for Plaintiff,*

POWER DENSITY SOLUTIONS LLC
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CERTIFICATE OF SERVICE

I hereby certify that on October 17, 2019, I caused a copy of the foregoing
FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT
and attachments thereto to be served *via* electronic mail to counsel for all parties and their
counsel of record, who are deemed to have consented to electronic service using the
Court's CM/ECF system.

I declare under penalty of perjury under the laws of the United States of America
that the foregoing is true and correct.

Dated: October 17, 2019

INSIGNE LLP

By: /s/Cody R. LeJeune

Trevor Q. Coddington, Ph.D.

Cody R. LeJeune

Charles R. Blazer, II

701 Palomar Airport Rd., Suite 230

Carlsbad, CA 92011

Phone: (858) 227-6633

Fax: (858) 405-4422

Attorneys for Plaintiff,

POWER DENSITY SOLUTIONS LLC