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16 17	Attorneys for Plaintiff Sharp Corporation	n
18	UNITED STATES D	ISTRICT COURT FOR THE
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20	CENTRAL DIST	TRICT OF CALIFORNIA
21	SHARP CORPORATION, a Japan	Civil Action No. 8:20-cv-0490
22	Corporation	COMPLAINT FOR:
23	Plaintiffs,	
		(1) INFRINGEMENT OF U.S.
24	V.	PATENT NO. 6,937,300; (2) INFRINGEMENT OF U.S.
25	VIZIO INC., a California	PATENT NO. 6,977,704;
26	Corporation; TPV TECHNOLOGY,	(3) INFRINGEMENT OF U.S.
27	LTD., a Bermuda Corporation; TPV DISPLAY TECHNOLOGY	PATENT NO. 7,450,206;
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(XIAMEN) COMPANY LIMITED, a China Corporation; TPV INTERNATIONAL (USA), INC., a California Corporation; TREND SMART AMERICA, LTD, a California Corporation; TREND SMART CE MEXICO S.R.L. DE D.V., a Mexico Corporation; XIANYANG CAIHONG OPTOELECTRONICS TECHNOLOGY CO., LTD, a China Corporation

Defendants

- (4) INFRINGEMENT OF U.S. PATENT NO. 8,044,907;
- (5) INFRINGEMENT OF U.S. PATENT NO. 8,446,556;
- (6) INFRINGEMENT OF U.S. PATENT NO. 8,471,994;
- (7) INFRINGEMENT OF U.S. PATENT NO. 8,531,634;
- (8) INFRINGEMENT OF U.S. PATENT NO. 8,558,959;
- (9) INFRINGEMENT OF U.S. PATENT NO. 8,797,490;
- (10) INFRINGEMENT OF U.S. PATENT NO. 8,804,079;
- (11) INFRINGEMENT OF U.S. PATENT NO. 9,081,239; and
- (12) INFRINGEMENT OF U.S. PATENT NO. 9,201,275

JURY TRIAL DEMANDED

Plaintiff Sharp Corporation¹ ("Plaintiff" or "Sharp"), a Japan Corporation, by and through its undersigned counsel, files this Complaint for Patent Infringement invoking the Court's jurisdiction under 28 U.S.C. §§ 1331 and 1338(a) because the claims set forth herein arise under the patent laws of the United States, 35 U.S.C. § 1 *et seq.*, and asserting claims against the following Defendants:

- Vizio Inc. ("Vizio"), a California Corporation;
- TPV Technology, Ltd. ("TPV"), a Bermuda Corporation; TPV Display Technology (Xiamen) Company Limited, a China Corporation; TPV International (USA), Inc., a California Corporation; Trend Smart America, Ltd ("Trend Smart America"), a California Corporation; Trend Smart CE Mexico S.R.L. De D.V. ("Trend Smart CE"), a Mexico Corporation (collectively, "TPV Defendants"); and
- Xianyang CaiHong Optoelectronics Technology Co., Ltd. ("CHOT"), a China Corporation.

Sharp alleges based on its knowledge, information, and belief, as follows:

SHARP AND ITS LIQUID CRYSTAL DISPLAY INNOVATIONS

- 1. For more than 40 years, Sharp has been recognized as a pioneering innovator in the Liquid Crystal Display ("LCD") industry. Sharp has invested immense resources—and countless hours by its employees in the United States and around the world—developing and furthering the LCD technologies used in the marketplace.
- 2. Because of these efforts, the Sharp brand is synonymous with leading LCD technologies and is famous throughout the world.
- 3. Sharp's reputation is built upon the proprietary technologies that Sharp and its predecessors developed. Sharp holds more than 10,000 LCD patents in the United States, China, and Japan. This intellectual property is the backbone of Sharp's commercial success.

¹ Sharp Corporation is also known as Sharp Kabushiki Kaisha.

4. Recently, Sharp learned that Defendant CHOT is making, using, importing, offering to sell, and selling LCD panels that infringe a large number of Sharp's patents. The TPV Defendants, acting in concert with CHOT, manufacture, import, and sell televisions that further infringe Sharp's patents. Those televisions are sold to Vizio, which likewise infringes when it offers the televisions to consumers in retail outlets throughout the United States.

5. Sharp's efforts to halt this infringing conduct have been unsuccessful. The infringing products are displacing Sharp's products and sales, and they are causing significant financial harm to Sharp. Sharp has therefore brought this action to stop the Defendants from using Sharp's intellectual property.

NATURE OF THE ACTION

- 6. This action arises under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.*, from Defendants' infringement of U.S. Patent Nos. 6,937,300 ("the '300 Patent"); 6,977,704 ("the '704 Patent"); 7,450,206 ("the '206 Patent"); 8,044,907 ("the '907 Patent"); 8,446,556 ("the '556 Patent"); 8,471,994 ("the '994 Patent"); 8,531,634 ("the '634 Patent"); 8,558,959 ("the '959 Patent") 8,797,490 ("the '490 Patent"); 8,804,079 ("the '079 Patent"); 9,081,239 ("the '239 Patent"); and 9,201,275 ("the '275 Patent") (collectively, the "Patents-in-Suit").
- 7. Sharp is the rightful owner of the Patents-in-Suit. The listed assignee of the patents, Sharp Kabushiki Kaisha, is Sharp's name in transliterated English.
- 8. Sharp seeks injunctive relief as well as damages comprising both lost profits and a reasonable royalty.

THE PARTIES

9. Sharp is a corporation organized under the laws of Japan with its principal place of business at 1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan Osaka, Japan.

10. Defendant Vizio is incorporated under the laws of California. Vizio has a principal place of business at 39 Tesla, Irvine, CA 92618. Vizio may be served through its registered agent for service, Registered Agent Solutions, Inc., via Ricardo Orozco at 1220 South St. Ste. 150, Sacramento, CA 95811.

- 11. Defendant TPV is incorporated in under the laws of Bermuda. On information and belief, TPV has a principal place of business at Units 1208-16, 12/F, C-Bons International Center, 108 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong. On information and belief, TPV may be served with process in Hong Kong pursuant to the Hague Convention on the Service Abroad of Judicial and Extrajudicial Documents in Civil or Commercial Matters.
- 12. TPV Display Technology (Xiamen) Co., Ltd. ("TPV Xiamen") is organized under the laws of China, headquartered at No. 1, Xianghai Road, (Xiang'An) Industrial Zone, Torch Hi-New Zon, Xiamen, Fujian, 361101, China. On information and belief, TPV Xiamen may be served with process in China pursuant to the Hague Convention on the Service Abroad of Judicial and Extrajudicial Documents in Civil or Commercial Matters. TPV Xiamen is a subsidiary of TPV. *See*, *e.g.*, https://www.tpv-tech.com/en/PrincipalSubsidiaries.aspx.
- 13. TPV International (USA), Inc. ("TPV USA") is organized under the laws of the State of California and maintains its principal place of business at 3737 Executive Center Drive, Suite 261, Austin, Texas 78731. On information and belief, TPV USA can be served with process via its registered agent listed with the California Secretary of State, Registered Agent Solutions, Inc. c/o Ricardo Orozco. 1220 South St. Ste. 150, Sacramento, CA 95811. TPV USA is a subsidiary of TPV. *See*, *e.g.*, https://www.tpv-tech.com/en/PrincipalSubsidiaries.aspx.
- 14. Defendant Trend Smart America is incorporated under the laws of California. On information and belief, Trend Smart America has a principal place of business at 2 South Pointe Dr. Ste. 152, Lake Forest, CA, 92630. On information and

belief, Trend Smart America can be served with process via its registered agent listed with the California Secretary of State, Sandy Chu, at 2 South Point Dr. Ste. 152, Lake Forest, CA, 92630. Trend Smart America is a subsidiary of TPV. *See*, *e.g.*, https://www.tpv-tech.com/en/PrincipalSubsidiaries.aspx.

- 15. On information and belief, Defendant Trend Smart CE is organized under the laws of Mexico headquartered at Sor Juana Ines De La Cruz No. 196202, Tijuana, Baja California 22435, Mexico. On information and belief, Trend Smart CE may be served with process in Mexico pursuant to the Hague Convention on the Service Abroad of Judicial and Extrajudicial Documents in Civil or Commercial Matters. On information and belief, Trend Smart CE is a wholly owned, indirect subsidiary of TPV.
- 16. On information and belief, Defendant CHOT is organized under the laws of China. On information and belief, CHOT has a principal place of business at No.1, Gaoke Yilu, Qindu District, Xianyang, Shaanxi, China. On information and belief, CHOT may be served with process in China pursuant to the Hague Convention on the Service Abroad of Judicial and Extrajudicial Documents in Civil or Commercial Matters.

THE DEFENDANTS' ROLES IN CREATING THE INFRINGING TELEVISIONS

- 17. The Defendants identified in paragraphs 11–15 above (collectively, "TPV Defendants") are an interrelated group of companies which together operate as one of the world's largest manufacturers of televisions, including televisions provided to Defendant Vizio, and sold to consumers and businesses under the Vizio brand name.
- 18. On information and belief, the TPV Defendants work collectively, and in concert, to design, manufacture, import, offer for sale and sell televisions to Defendant

Vizio, including Vizio model V705-G1. Such actions occur, in substantial part, in the State of California generally and this judicial district in particular.

- 19. Packaging for Vizio's model V705-G1 confirms the TPV Defendants' joint action in manufacturing and selling the accused televisions. For example, the packaging states that the Vizio model V705-G1 is assembled by Trend America CE in Mexico, and import records show that TPV Xiamen provides the accused parts for the Vizio televisions to Trend America CE through ports in California and in this District, including the Port of Los Angeles.
- 20. Labels on the components within the Vizio V705-G1 television further show the TPV Defendants' role in manufacturing the infringing components. For example, the Vizio V705-G1 television includes the following label, which shows that the components originate from "TPV."



21. The TPV Defendants obtain the infringing LCD panels from Defendant CHOT. On information and belief, the TPV Defendants incorporate LCD panels manufactured by CHOT into at least Vizio model V705-G1 and work collectively, and in concert, with CHOT to design, manufacture, import, offer for sale, and sell at least Vizio model V705-G1 to Vizio in the State of California generally and in this judicial district in particular. Again, the components within Vizio's accused televisions demonstrate that CHOT supplies the LCD panels in the accused televisions:



22. CHOT and the TPV Defendants work together to create the infringing televisions. CHOT is part of the same corporate structure and distribution chain as the TPV Defendants, and both are under common ownership and control. TPV is an owned and controlled subsidiary and secondary enterprise of the same corporation that owns and controls CHOT. On information and belief, in part because of this common control, the TPV Defendants and CHOT operate as a unitary business venture in connection with the accused LCD panels and are therefore jointly and severally liable for the acts of patent infringement alleged herein.

- 23. On information and belief, CHOT and the TPV Defendants operate as agents of one another for the purposes of making, importing, offering to sell, selling, and using the accused devices in the United States, including in this District. For example, on information and belief, CHOT and the TPV Defendants conduct business in California, at the direction of their common corporate parent. CHOT and the TPV Defendants direct the actions of—among other entities—TPV's U.S. subsidiaries and agents, including Trend Smart America and TPV USA. Thus, if the TPV Defendants and CHOT did not have those representatives to perform their business in the State of California and in this District, CHOT and the TPV Defendants would undertake to perform substantially similar services themselves.
- 24. TPV treats its affiliates and subsidiaries as part of the same company by, for example, reporting its financial results for the "Group" and by branding its products manufactured, imported, and sold by its affiliates and subsidiaries with the "TPV" brand. *See*, *e.g.*, https://api.aconnect.com.hk/Attachment/37507; https://www.tpv-tech.com/en/GroupProfile.aspx.
- 25. The parties to this action are properly joined under 35 U.S.C. § 299 because the right to relief asserted against Defendants jointly and severally arises out of the same series of transactions or occurrences relating to the making and using of the same products or processes, including televisions and related processes bearing the

Vizio brand. Additionally, questions of fact common to all Defendants will arise in this action.

JURISDICTION AND VENUE

- 26. Subject matter jurisdiction is proper in this Court under 28 U.S.C. §§ 1331 and 1338(a) because the claims arise under the patent laws of the United States, 35 U.S.C. § 1 *et seq*.
- 27. This Court has personal jurisdiction over Vizio because it is incorporated in this District, and maintains a regular and established place of business at 39 Tesla, Irvine, CA 92618, located in this District.
- 28. As to Vizio, venue is proper in this Judicial District under 28 U.S.C. § 1400(b) because Vizio is incorporated in California, and has a regular and established place of business at 39 Tesla, Irvine, CA 92618, which is located in this District.
- 29. The TPV Defendants are subject to the personal jurisdiction in this Court and are amenable to service of process pursuant to California's long-arm statute, California Code of Civil Procedure § 415.40, and Federal Rule of Civil Procedure 4.
- 30. This Court has personal jurisdiction over the TPV Defendants because the TPV Defendants have, directly and through agents, committed acts within this State and this District giving rise to this action as a result of business conducted directly and/or indirectly through its agents within this State and this District, such that the exercise of jurisdiction is consistent with due process. For example, on information and belief, the TPV Defendants are acting in concert in this State, and in this District, to manufacture, use, import, sell, or offer for sale, infringing products to Vizio such that the TPV Defendants are subject to personal jurisdiction because of the activities of their agents within the forum state. The TPV Defendants also maintain a presence in this District, including through Trend Smart America, which is incorporated in this District and maintains a regular and established place of business at 2 South Pointe Dr. Ste. 152, Lake Forest, CA, 92630, located in this District.

31. This Court has personal jurisdiction over the TPV Defendants because the TPV Defendants have purposefully established minimum contacts in California and in this District specific to the acts of infringement alleged. For example, on information and belief, the TPV Defendants, including TPV Xiamen, and/or their agents have directly shipped and continue to directly ship accused products or components of accused products into this State and District including into the Port of Los Angeles, over a period of years, purposefully directing their actions to this State and this District. In addition, on information and belief, TPV solicits customers in the State of California and this District, and has one or more customers who are residents of the State of California and this District, including Vizio, who use or resell the TPV Defendants' products in the State of California and in this District.

- 32. The claims asserted in this complaint arise directly from TPV Defendants' acts in this State and in this District, including the importation, sale, offer for sale of accused products into the State of California and into this District, including TPV Defendants' business contacts and other activities in the State of California and in this District. The TPV Defendants, directly and/or through intermediaries, make, use, sell, ship, import, distribute, and offer for sale, their products in the United States, the State of California, and this District.
- 33. Personal jurisdiction over the TPV Defendants in this action is also proper because the TPV Defendants have placed, and are continuing to place, infringing products into the stream of commerce, via an established distribution channel, with the knowledge and/or understanding that such products are sold in the State of California, including in this District. On information and belief, the TPV Defendants knew that collectively, and in concert, they were making, using, offering for sale, and/or importing accused products to Vizio in this District. For example, the TPV Defendants themselves and/or through their agents or intermediaries packaged and labeled the accused products with the Vizio brand and/or shipped products from

China to be incorporated into products imported, sold, or offered for sale to Vizio. The TPV Defendants purposefully put the accused products into the stream of commerce through an established distribution channel with the expectation that infringing products are being and will continue to be purchased and sold in the State of California, including in this District, including to Vizio and customers of Vizio. For example, on information and belief, the TPV Defendants themselves or through their agents and intermediaries contracted with and worked in concert with Vizio to supply the accused product in this State and in this District. The claims asserted in this complaint for patent infringement arise out of these activities. As a result, the TPV Defendants have purposefully availed themselves of the privilege of doing business in the State of California such that the exercise of personal jurisdiction in this District is proper.

- 34. Venue is proper in this District over the TPV Defendants pursuant to 28 U.S.C. §§ 1391(b), 1391(c), and 1400(b) because (i) the TPV Defendants have done and continue to do business in this District; (ii) the TPV Defendants have committed and continue to commit acts of patent infringement in this District, including making, using, offering to sell, and/or selling accused products in this District, and/or importing accused products into this District, including by internet sales, and/or inducing others to commit acts of patent infringement in this District; and (iii) many of the TPV Defendants are foreign entities, as shown in paragraphs 11–12 and 15 above. Venue is also proper in this District under 28 U.S.C. § 1400(b) because Trend Smart America is incorporated in California, and has a regular and established place of business at 2 South Pointe Dr. Ste. 152, Lake Forest, CA, 92630, located in this District.
- 35. This Court also has personal jurisdiction over CHOT. CHOT is subject to personal jurisdiction in this Court and is amenable to service of process pursuant to

California long-arm statute, California Code of Civil Procedure § 415.40, and Federal Rule of Civil Procedure 4.

- 36. This Court has personal jurisdiction over CHOT because CHOT has, directly and through agents, committed acts within this State and this District giving rise to this action. CHOT has conducted business directly and/or indirectly through its agents within this State and this District, such that the exercise of jurisdiction is consistent with due process. For example, on information and belief, CHOT works in concert with the TPV Defendants and/or Vizio to design, manufacture, import, use, sell and offer to sell accused products for importation, sale, offer for sale, manufacture, and use in this State and in this District, purposefully directing their actions to this State and this District.
- 37. CHOT has also purposefully established minimum contacts in California and in this District specific to the acts of infringement alleged. On information and belief, CHOT directly ships infringing LCD panels to Trend Smart CE in California. For example, CHOT purposefully shipped two containers of infringing LCD panels to Long Beach, California to Trend Smart CE that arrived on November 26, 2018. The claims asserted in this complaint arise from, among other things, this shipment of infringing LCD panels. Based on these acts alone, personal jurisdiction over CHOT is proper. In addition, on information and belief, CHOT solicits customers in the State of California and this District, and has one or more customers who are residents of the State of California and this District and who use or resell CHOT's products in the State of California and in this District, including Vizio.
- 38. The claims asserted in this complaint arise directly from CHOT's acts in this State and in this District including the importation, sale, offer for sale of accused products into the State of California and into this District, including CHOT's business contacts and other activities in the State of California and in this District. CHOT, directly, and through intermediaries, makes, uses, sells, ships, imports, distributes, and

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offers for sale, its products in the United States, the State of California, and this District.

- Personal jurisdiction over CHOT in this action is also proper because 39. CHOT has placed, and is continuing to place, infringing products into the stream of commerce, via an established distribution channel, with the knowledge and/or understanding that such products are sold in the State of California, including in this District. On information and belief, CHOT knew its LCD panels were used by Trend Smart CE and the other TPV Defendants to manufacture, assemble, import, sell, offer to sell or use televisions incorporating its LCD panel and that the TPV Defendants made, used, offered for sale, and/or imported accused products to Vizio in this District. CHOT purposefully put the infringing LCD panels into the stream of commerce through the TPV Defendants' established distribution channel with the expectation that infringing products are being and will continue to be purchased and sold in the State of California, including in this District, to Vizio and Vizio's customers. The patent infringement claims asserted in this complaint arise out of CHOT's activities. As a result, CHOT has purposefully availed itself of the privilege of doing business in the State of California such that the exercise of personal jurisdiction in this District is proper.
- 40. As to CHOT, venue is proper in this District pursuant to 28 U.S.C. § 1391(b) and (c) and 28 U.S.C. § 1400 because: (i) CHOT does business in this District, directly or through intermediaries and agents; (ii) at least a portion of the acts of infringement described herein occurred in this District; (iii) CHOT regularly solicits business, engages in other persistent courses of conduct, or derives revenue from goods and services provided to individuals in this District; and (iv) CHOT is a foreign entity.

THE PATENTS-IN-SUIT

U.S. Patent No. 6,937,300

- 41. On August 30, 2005, the U.S. Patent and Trademark Office issued U.S. Patent No. 6,937,300 ("the '300 Patent"), titled "LIQUID CRYSTAL DISPLAY DEVICE AND METHOD OF FABRICATING THE SAME," which was filed on July 16, 2004 and claims priority to Japanese Applications 2001-306906 and 2002-136128 filed on October 2, 2001 and May 10, 2002 respectively. A true and correct copy of the '300 Patent is attached at **Exhibit 1**.
 - 42. The '300 Patent is presumed valid under 35 U.S.C. § 282(a).
- 43. Sharp is the owner and assignee of all substantial rights, title, and interest in the '300 Patent.
- 44. The '300 Patent generally describes and claims a liquid crystal display device. (Ex. 1, Abstract, Claim 1).

U.S. Patent No. 6,977,704

- 45. On December 20, 2005, the U.S. Patent and Trademark Office issued U.S. Patent No. 6,977,704 ("the '704 Patent"), titled "LIQUID CRYSTAL DISPLAY," which was filed on March 12, 2002 and claims priority to Japanese Application 2001-098455 filed on March 30, 2001. A true and correct copy of the '704 Patent is attached at **Exhibit 2**.
 - 46. The '704 Patent is presumed valid under 35 U.S.C. § 282(a).
- 47. Sharp is the owner and assignee of all substantial rights, title, and interest in the '704 Patent.
- 48. The '704 Patent describes and claims a liquid crystal display with a cured material in the liquid crystal layer. (Ex. 2, Abstract, Claim 1).

U.S. Patent No. 7,450,206

49. On November 11, 2008, the U.S. Patent and Trademark Office issued U.S. Patent No. 7,450,206 ("the '206 Patent"), titled "LIQUID CRYSTAL DISPLAY

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DEVICE AND METHOD OF FABRICATING THE SAME," which was filed on July 16, 2004 and claims priority to Japanese Applications 2001-306906 and 2002-136128 filed on October 2, 2001 and May 10, 2002 respectively. A true and correct copy of the '206 Patent is attached at **Exhibit 3**.

- 50. The '206 Patent is presumed valid under 35 U.S.C. § 282(a).
- 51. Sharp is the owner and assignee of all substantial rights, title, and interest in the '206 Patent.
- 52. The '206 Patent describes and claims generally describes and claims a liquid crystal display device. (Ex. 3, Abstract, Claim 2).

U.S. Patent No. 8,044,907

- 53. On October 25, 2011, the U.S. Patent and Trademark Office issued U.S. Patent No. 8,044,907 ("the '907 Patent"), titled "LIQUID CRYSTAL DISPLAY AND METHOD OF MANUFACTURING THE SAME," which was filed on December 6, 2010 and claims priority to Japanese Applications 2003-073553, 2003-095319, 2003-096779, and 2004-048296 filed on March 18, 2003, March 31, 2003, March 31, 2003, and February 24, 2004 respectively. A true and correct copy of the '907 Patent is attached at **Exhibit 4**.
 - The '807 Patent is presumed valid under 35 U.S.C. § 282(a). 54.
- 55. Sharp is the owner and assignee of all substantial rights, title, and interest in the '907 Patent.
- 56. The '907 Patent generally describes and claims a liquid crystal display device with a polymer formed between two substrates with a plurality of threshold voltages associated with a plurality of areas within the display. (Ex. 4, Abstract, Claim 1).

U.S. Patent No. 8,446,556

On May 21, 2013, the U.S. Patent and Trademark Office issued U.S. 57. Patent No. 8,446,556 ("the '556 Patent"), titled "FLEXIBLE PRINTED CIRCUIT

AND ELECTRIC CIRCUIT STRUCTURE," which was filed on June 24, 2009 and claims priority to Japanese Application 2008-178299. A true and correct copy of the '556 Patent is attached at **Exhibit 5**.

- 58. The '556 Patent is presumed valid under 35 U.S.C. § 282(a).
- 59. Sharp is the owner and assignee of all substantial rights, title, and interest in the '556 Patent.
- 60. The '556 Patent describes and claims a circuit structure with a wiring pattern on a base film of a printed circuit board. (Ex. 5, Abstract, Claim 1).

U.S. Patent No. 8,471,994

- 61. On June 25, 2013, the U.S. Patent and Trademark Office issued U.S. Patent No. 8,471,994 ("the '994 Patent"), titled "LIQUID CRYSTAL DISPLAY DEVICE AND METHOD FOR FABRICATING THE SAME," which was filed on March 18, 2011 and claims priority to Japanese Application 2000-295266 filed on September 27, 2000. A true and correct copy of the '994 Patent is attached at **Exhibit** 6.
 - 62. The '994 Patent is presumed valid under 35 U.S.C. § 282(a).
- 63. Sharp is the owner and assignee of all substantial rights, title, and interest in the '994 Patent.
- 64. The '994 Patent describes and claims a liquid crystal display device with micro-structures directionally configured with respect to a polarizer layer and an analyzer layer. (Ex. 6, Abstract, Claim 1).

U.S. Patent No. 8,531,634

65. On September 10, 2013, the U.S. Patent and Trademark Office issued U.S. Patent No. 8,531,634 ("the '634 Patent"), titled "LIQUID CRYSTAL DISPLAY," which was filed on November 22, 2010 and claims priority to Japanese Application 2001-098455 filed on March 30, 2001. A true and correct copy of the '634 Patent is attached at **Exhibit 7**.

- 66. The '634 Patent is presumed valid under 35 U.S.C. § 282(a).
- 67. Sharp is the owner and assignee of all substantial rights, title, and interest in the '634 Patent.
- 68. The '634 Patent describes and claims a liquid crystal display with a cured material formed on vertical alignment films. (Ex. 7, Abstract, Claim 1).

U.S. Patent No. 8,558,959

- 69. On October 15, 2013, the U.S. Patent and Trademark Office issued U.S. Patent No. 8,558,959 ("the '959 Patent"), titled "LIQUID CRYSTAL DISPLAY DEVICE AND METHOD OF FABRICATING THE SAME," which was filed on September 11, 2012 and claims priority to Japanese Applications 2001-306906 and 2002-136128 filed on October 2, 2001 and May 10, 2002 respectively. A true and correct copy of the '959 Patent is attached at **Exhibit 8**.
 - 70. The '959 Patent is presumed valid under 35 U.S.C. § 282(a).
- 71. Sharp is the owner and assignee of all substantial rights, title, and interest in the '959 Patent.
- 72. The '959 Patent generally describes and claims a liquid crystal display device. (Ex. 8, Abstract, Claim 1).

U.S. Patent No. 8,797,490

- 73. On August 5, 2014, the U.S. Patent and Trademark Office issued U.S. Patent No. 8,797,490 ("the '490 Patent"), titled "LIQUID CRYSTAL DISPLAY DEVICE AND METHOD FOR FABRICATING THE SAME," which was filed on September 18, 2013 and claims priority to Japanese Application 2000-295266 filed on September 27, 2000. A true and correct copy of the '490 Patent is attached at **Exhibit 9**.
 - 74. The '490 Patent is presumed valid under 35 U.S.C. § 282(a).
- 75. Sharp is the owner and assignee of all substantial rights, title, and interest in the '490 Patent.

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76. The '490 Patent describes and claims a liquid crystal display device with micro-structures directionally configured with respect to a polarizer layer and an analyzer layer. (Ex. 9, Abstract, Claim 1).

U.S. Patent No. 8,804,079

- 77. On August 12, 2014, the U.S. Patent and Trademark Office issued U.S. Patent No. 8,804,079 ("the '079 Patent"), titled "LIQUID CRYSTAL DISPLAY DEVICE," which was filed on March 18, 2013 and claims priority to Japanese Application 2005-001356 filed in January 6, 2005. A true and correct copy of the '079 Patent is attached at **Exhibit 10**.
 - 78. The '079 Patent is presumed valid under 35 U.S.C. § 282(a).
- 79. Sharp is the owner and assignee of all substantial rights, title, and interest in the '079 Patent.
- 80. The '079 Patent describes and claims a liquid crystal display device with an electrode arrangement comprising micro-electro parts. (Ex. 10, Abstract, Claim 1).

U.S. Patent No. 9,081,239

- 81. On July 14, 2015, the U.S. Patent and Trademark Office issued U.S. Patent No. 9,081,238 ("the '239 Patent"), titled "LIQUID CRYSTAL DISPLAY DEVICE AND METHOD FOR FABRICATING THE SAME," which was filed on February 3, 2014 and claims priority to Japanese Application 2000-295266 filed on September 27, 2000. A true and correct copy of the '239 Patent is attached at **Exhibit** 11.
 - 82. The '239 Patent is presumed valid under 35 U.S.C. § 282(a).
- 83. Sharp is the owner and assignee of all substantial rights, title, and interest in the '239 Patent.
- The '239 Patent describes and claims a liquid crystal display device with 84. micro-structures directionally configured with respect to a polarizer layer and an analyzer layer. (Ex. 11, Abstract, Claim 1).

U.S. Patent No. 9,201,275

- 85. On December 1, 2015, the U.S. Patent and Trademark Office issued U.S. Patent No. 9,201,275 ("the '275 Patent"), titled "LIQUID CRYSTAL DISPLAY DEVICE AND METHOD FOR FABRICATING THE SAME," which was filed on September 12, 2014 and claims priority to Japanese Application 2000-295266 filed on September 27, 2000. A true and correct copy of the '275 Patent is attached at **Exhibit** 12.
 - 86. The '275 Patent is presumed valid under 35 U.S.C. § 282(a).
- 87. Sharp is the owner and assignee of all substantial rights, title, and interest in the '275 Patent.
- 88. The '275 Patent describes and claims a liquid crystal display device with micro-structures directionally configured with respect to a polarizer layer and an analyzer layer. (Ex. 12, Abstract, Claim 1).

DEFENDANTS' INFRINGING ACTIVITY AND THE ACCUSED PRODUCTS

- 89. CHOT manufactures, imports, offers for sale, and sells LCD panels, including CV700U1-T01, to resellers, distributors, and consumers throughout the United States, including in this District.
- 90. CHOT also sells its LCD Panels to the TPV Defendants, including TPV and Trend Smart America.
- 91. The TPV Defendants manufacture, import, offer for sale, and sell LCD Modules, including 750TBV700U11Q8N000, that include CHOT-provided LCD Panels to resellers, distributors, and consumers throughout the United States, including in this District.
- 92. On information and belief, the TPV Defendants instruct CHOT to import LCD Panels, including CV700U1-T01, to this District through, for example, the Port of Long Beach.

- 93. Trend Smart America imports and sells certain LCD Modules, including modules that include CHOT LCD Panels, into the United States, including in this District.
- 94. Vizio offers for sale and sells LCD TVs that include LCD Modules provided by the TPV Defendants, including V705-G1, to resellers, distributors, and consumers throughout the United States, including in this District.
- 95. On information and belief, Vizio instructs the TPV Defendants to purchase CHOT LCD Panels, including CV700U1-T01, for use in its LCD TVs.
- 96. The TPV Defendants provide CHOT LCD Panels, including CV700U1-T01, for use in Vizio and/or TPV Defendants' Tijuana, Mexico manufacturing plant.
- 97. In the Vizio and/or TPV Defendants' Tijuana, Mexico manufacturing plant, the TPV Defendants and/or Vizio incorporate the TPV LCD Module, including 750TBV700U11Q8N000, into the Vizio V705-G1 TV.
- 98. By way of this incorporation, Vizio also incorporates the CV700U1-T01 LCD panel into the Vizio V705-G1 TV.
- 99. On information and belief, Vizio and/or the TPV Defendants then import and sell the V705-G1 TV's to resellers, distributors, and consumers throughout the United States, including in this District.
- 100. CHOT, the TPV Defendants, Trend Smart America, and Vizio, have each committed acts of patent infringement in this District, causing direct injury to Sharp throughout this District and the United States.
- 101. Defendants make, use (including by testing), sell, offer for sale within the United States, and import into the United States, the Vizio V705-G1 LCD TV that includes, among other components, CHOT's CV700U1-T01 panel:

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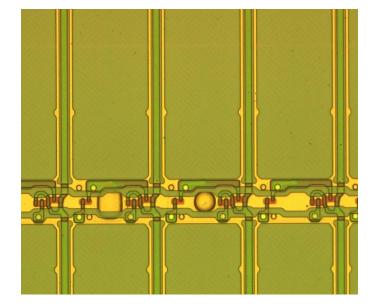


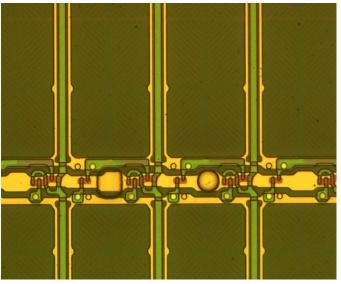
102. This CHOT LCD Panel is found within at least Vizio's V705-G1 LCD TV.



https://www.vizio.com/v705g1.html

- 103. The CHOT LCD Panel includes a plurality of pixels that are configured to illuminate when a voltage is applied. These pixels are divided into a plurality of sub-areas that are connected to a plurality of electrodes for selectively providing a voltage to a sub-area.
- 104. The below images reflect an example pixel configuration of the CHOT LCD Panel.





105. These pixels include a polymer layer that assists in the alignment of liquid crystal molecules within the display device. Moreover, this polymer layer helps to provide for a pre-tilt angle and a pre-tilt direction of the liquid crystal molecules within the display. In addition, these pixels also include micro-structures extending in multiple directions. These micro-structures help to provide for a multiple tilt directions of the liquid crystal molecules when the driving voltage is applied within the display device. In this regard, within each pixel, a clearer viewing experience, including a faster response and refresh time, a wide-viewing angle, brighter colors and greater contrast for an end user of the display, can be achieved.

106. CHOT has been aware of the '994 Patent, the '490 Patent, the '239 Patent, the '275 Patent, the '206 Patent, the '959 Patent, the '300 Patent, the '704 Patent, and the '907 Patent and its infringement of those patents since at least November 15, 2019.

- 107. CHOT has been on notice of its infringement of the '994 Patent, the '490 Patent, the '239 Patent, the '275 Patent, the '634 Patent, the '206 Patent, the '959 Patent, the '300 Patent, the '704 Patent, the '907 Patent, and the '079 Patent since at least January 23, 2020.
- 108. In addition, CHOT, on information and belief, knew or should have known, at the very least as a result of its freedom to operate analyses and the filing of this complaint, that it infringes the '556 Patent.
- 109. The TPV Defendants have been aware of the '994 Patent, the '490 Patent, the '239 Patent, the '275 Patent, the '206 Patent, the '959 Patent, the '300 Patent, the '704 Patent, and the '907 Patent and its infringement of same since at least November 15, 2019.
- 110. The TPV Defendants, on information and belief, knew or should have known, at the very least as a result of their freedom to operate analyses and the filing of this complaint, that they infringe the '556 Patent, the '634 Patent, and the '079 Patent.
- 111. Vizio has been on notice of its infringement of the '300 Patent since at least January 24, 2011 by virtue of the notice provided to Vizio in ITC Investigation No. 337-TA-760, *Liquid Crystal Display Device, Products Containing Same, and Methods for Using the Same.*
- 112. Vizio, on information and belief, knew or should have known, at the very least as a result of its freedom to operate analyses and the filing of this complaint, that it infringes the '994 Patent, the '490 Patent, the '239 Patent, the '275 Patent, the '634

Patent, and the '079 Patent.

113. Defendants were therefore aware of Sharp and its intellectual property rights.

Patent, the '206 Patent, the '959 Patent, the '556 Patent, the '704 Patent, the '907

- 114. Defendants have failed to alter their infringing behavior.
- 115. Faced with Defendants' failure to cease the infringing activities in the United States, Sharp has been forced to file this suit to seek this Court's protection of its valuable intellectual property rights.

COUNT I: DEFENDANTS' INFRINGEMENT OF THE'300 PATENT

- 116. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 117. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.
- 118. The method of fabricating the CV700U1-T01, a liquid crystal display device, includes all of the steps of claim 1 of the '300 Patent.
- 119. The method of fabricating the CV700U1-T01 includes forming a common electrode and a color filter layer on a first substrate.
- 120. The method of fabricating the CV700U1-T01 includes constructing a second substrate from an array substrate on which are formed a gate bus line layer, a gate insulating film layer, a drain bus line layer, a protective film layer, and a pixel electrode layer.
- 121. The method of fabricating the CV700U1-T01 includes forming fine slits in the pixel electrode layer in such a direction that a pixel is divided by the slits into at least two sub-regions.

- 122. The method of fabricating the CV700U1-T01 includes forming on each of the two substrates a vertical alignment film for vertically aligning liquid crystal molecules.
- 123. The method of fabricating the CV700U1-T01 includes forming a liquid crystal layer by filling an n-type liquid crystal composition having a negative dielectric anisotropy into a gap between the two substrates, the liquid crystal composition containing an ultraviolet curable resin having a liquid crystal backbone.
- 124. The method of fabricating the CV700U1-T01 includes radiating ultraviolet light while applying to the liquid crystal molecules a voltage not smaller than a threshold value of the liquid crystal molecules, thereby defining the direction in which the liquid crystal molecules tilt in the presence of an applied voltage.
- 125. The method of fabricating the CV700U1-T01 includes arranging two polarizers on top and bottom surfaces of the liquid crystal display device in a crossed Nicol configuration with the absorption axes thereof oriented at an angle of 45 degrees to the alignment directions of the liquid crystal molecules.
- 126. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '300 Patent, either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.
- 127. As a direct and proximate result of Defendant's direct infringement of the '300 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 128. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '300 Patent by actively inducing its customers, including the TPV Defendants and Vizio, by, among other things, providing the CV700U1-T01 to down-

stream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '300 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 1 of the '300 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.

- 129. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '300 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.
- 130. As a direct and proximate result of CHOT's indirect infringement by inducement of the '300 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 131. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '300 Patent, pursuant to 35 U.S.C. § 271.
- 132. Defendants have committed these acts of infringement without license or authorization.
- 133. Defendants have committed these acts of infringement with actual knowledge of the '300 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '300 Patent.

134. As a result of Defendants' willful infringement of the '300 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.

- 135. Defendants' infringement of the '300 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 136. Defendants' infringement of the '300 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.
- 137. Defendants' infringement of the '300 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.
- 138. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT II: DEFENDANTS' INFRINGEMENT OF THE '704 PATENT

- 139. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 140. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.

- 141. The CV700U1-T01 includes all of the elements of claim 1 of the '704 Patent.
 - 142. The CV700U1-T01 is a liquid crystal display device.
- 143. The CV700U1-T01 includes a pair of substrates having a predetermined cell gap and arranged opposite to each other.
- 144. The CV700U1-T01 includes vertical alignment films formed between the pair of substrates.
- 145. The CV700U1-T01 includes a liquid crystal layer sealed between the vertical alignment films and having a negative dielectric anisotropy.
- 146. The CV700U1-T01 includes an alignment regulating structural member arranged on at least one of the pair of substrates, for regulating a total alignment direction of liquid crystal molecules in the liquid crystal layer at a time of voltage application.
- 147. The CV700U1-T01 includes a cured material provided in the liquid crystal layer and including a liquid crystal skeleton formed in a state where the skeleton is tilted to the substrate for tilting the liquid crystal molecules.
- 148. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '704 Patent, either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.
- 149. As a direct and proximate result of Defendant's direct infringement of the '704 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 150. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '704 Patent by actively inducing its customers, including the TPV

Defendants and Vizio, by, among other things, providing the CV700U1-T01 to down-stream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '704 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 1 of the '704 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.

- 151. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '704 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.
- 152. As a direct and proximate result of CHOT's indirect infringement by inducement of the '704 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 153. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '704 Patent, pursuant to 35 U.S.C. § 271.
- 154. Defendants have committed these acts of infringement without license or authorization.
- 155. Defendants have committed these acts of infringement with actual knowledge of the '704 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '704 Patent.

- 156. As a result of Defendants' willful infringement of the '704 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.
- 157. Defendants' infringement of the '704 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 158. Defendants' infringement of the '704 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.
- 159. Defendants' infringement of the '704 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.
- 160. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT III: DEFENDANTS' INFRINGEMENT OF THE '206 PATENT

- 161. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 162. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.

Patent.

164. The CV700U1-T01 is a liquid crystal display device.

165. The CV700U1-T01 includes a pair of substrates.

163. The CV700U1-T01 includes all of the elements of claim 2 of the '206

- 166. The CV700U1-T01 includes a liquid crystal layer sandwiched between the pair of substrates, the liquid crystal layer including a photopolymerizable component mixed therein.
- 167. The CV700U1-T01 includes a pixel electrode formed on one of the substrates, the pixel electrode including at least two pixel slit areas separated by a liquid crystal domain boundary area, wherein each of the pixel slit areas include a plurality of generally parallel slits therein.
- 168. The CV700U1-T01 includes an additional electrode, having the same potential as the pixel electrode, formed in at least a portion of the liquid crystal domain boundary area without extending into any of the pixel slit areas.
- 169. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 2 of the '206 Patent, either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.
- 170. As a direct and proximate result of Defendant's direct infringement of the '206 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 171. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 2 of the '206 Patent by actively inducing its customers, including the TPV Defendants and Vizio, by, among other things, providing the CV700U1-T01 to downstream purchasers with the knowledge that the provided product will be imported into

the United States, as well as sold within this District and others in the United States, in violation of at least claim 2 of the '206 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 2 of the '206 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendant's and Vizio's direct infringement.

- 172. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '206 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.
- 173. As a direct and proximate result of CHOT's indirect infringement by inducement of the '206 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 174. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '206 Patent, pursuant to 35 U.S.C. § 271.
- 175. Defendants have committed these acts of infringement without license or authorization.
- 176. Defendants have committed these acts of infringement with actual knowledge of the '206 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '206 Patent.
- 177. As a result of Defendants' willful infringement of the '206 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.

- 178. Defendants' infringement of the '206 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 179. Defendants' infringement of the '206 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.
- 180. Defendants' infringement of the '206 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.
- 181. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT IV: DEFENDANTS' INFRINGEMENT OF THE '907 PATENT

- 182. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 183. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.
- 184. The CV700U1-T01 includes all of the elements of claim 1 of the '907 Patent.
 - 185. The CV700U1-T01 is a liquid crystal display device.

186. The CV700U1-T01 includes a pair of substrates provided opposite to each other.

- 187. The CV700U1-T01 includes a plurality of divisional areas which are a plurality of divisions of each pixel arranged on one of the pair of substrates, wherein a plurality of the pixels are aligned in a column between adjacent drain bus lines, and further wherein the liquid crystal display includes a plurality of the columns.
- 188. The CV700U1-T01 includes a plurality of gate bus lines provided on the one of the substrates.
- 189. The CV700U1-T01 includes a pixel electrode formed at each of the divisional areas.
- 190. The CV700U1-T01 includes a first thin film transistor driving a first of the divisional areas and a second thin film transistor driving a second of the divisional areas, wherein the first and second thin film transistors are both electrically connected to the same gate bus line, and further wherein both the first divisional area and the second divisional area are located in the same one of the columns.
- 191. The CV700U1-T01 includes liquid crystal molecules sealed between the pair of substrates.
- 192. The CV700U1-T01 includes a polymer, formed between the substrates, wherein the polymer determines directions in which the liquid crystal molecules tilt, wherein the pixel electrodes formed at each of the divisional areas are electrically insulated from each other or the pixel electrodes formed at each of the divisional areas are connected to each other through a high resistance, and wherein a first threshold voltage of liquid crystal molecules within the first divisional area is different from a second threshold voltage of liquid crystal molecules within the second divisional area.
- 193. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '907 Patent,

either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.

194. As a direct and proximate result of Defendant's direct infringement of the '907 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.

195. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '907 Patent by actively inducing its customers, including the TPV Defendants and Vizio, by, among other things, providing the CV700U1-T01 to downstream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '907 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 1 of the '907 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.

196. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '907 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.

197. As a direct and proximate result of CHOT's indirect infringement by inducement of the '907 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.

198. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '907 Patent, pursuant to 35 U.S.C. § 271.

- 199. Defendants have committed these acts of infringement without license or authorization.
- 200. Defendants have committed these acts of infringement with actual knowledge of the '907 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '907 Patent.
- 201. As a result of Defendants' willful infringement of the '907 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.
- 202. Defendants' infringement of the '907 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 203. Defendants' infringement of the '907 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.
- 204. Defendants' infringement of the '907 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.
- 205. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement

up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT V: DEFENDANTS' INFRINGEMENT OF THE '556 PATENT

- 206. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 207. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.
- 208. The CV700U1-T01 includes all of the elements of claim 1 of the '556 Patent.
 - 209. The CV700U1-T01 includes an electric circuit structure.
- 210. The electrical circuit structure of the CV700U1-T01 includes a flexible printed circuit comprising a flexible base film and a wiring pattern disposed on the flexible base film, the wiring pattern including a plurality of terminals arranged side-by-side, each of the plurality of terminals having a narrowed portion extending to an edge of the flexible base film.
- 211. The electrical circuit structure of the CV700U1-T01 includes an electric circuit substrate having a plurality of electrode terminals thereon, the plurality of electrode terminals being arranged side-by-side with a prescribed spacing therebetween, wherein the plurality of terminals of the wiring pattern are attached to the plurality of electrode terminals of the electric circuit substrate, respectively, to establish physical and electrical connection therebetween, and wherein a width of the narrowed portion of each of the plurality of terminals of the wiring pattern is smaller than the prescribed spacing of the plurality of electrode terminals of the electric circuit substrate.
- 212. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '556 Patent,

either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.

- 213. As a direct and proximate result of Defendant's direct infringement of the '556 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 214. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '556 Patent by actively inducing its customers, including the TPV Defendants and Vizio, by, among other things, providing the CV700U1-T01 to downstream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '556 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 1 of the '556 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.
- 215. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '556 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.
- 216. As a direct and proximate result of CHOT's indirect infringement by inducement of the '556 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.

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- 217. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '556 Patent, pursuant to 35 U.S.C. § 271.
- 218. Defendants have committed these acts of infringement without license or authorization.
- 219. Defendants have committed these acts of infringement with actual knowledge of the '556 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '556 Patent.
- 220. As a result of Defendants' willful infringement of the '556 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.
- 221. Defendants' infringement of the '556 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 222. Defendants' infringement of the '556 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.
- 223. Defendants' infringement of the '556 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.
- 224. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement

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up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT VI: DEFENDANTS' INFRINGEMENT OF THE '994 PATENT

- 225. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 226. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.
- 227. The CV700U1-T01 includes all of the elements of claim 1 of the '994 Patent.
 - 228. The CV700U1-T01 is a liquid crystal display device.
 - 229. The CV700U1-T01 includes a first substrate.
 - 230. The CV700U1-T01 includes a second substrate facing the first substrate.
- 231. The CV700U1-T01 includes a liquid crystal layer sealed between the first substrate and the second substrate.
 - 232. The CV700U1-T01 includes a first electrode formed on the first substrate.
- 233. The CV700U1-T01 includes a second electrode formed on the second substrate.
- 234. The CV700U1-T01 includes a first molecule orientation film formed on the first substrate so as to cover the first electrode.
- 235. The CV700U1-T01 includes a second molecule orientation film formed on the second substrate so as to cover the second electrode.
- 236. The CV700U1-T01 includes a polarizer provided outside of the first substrate, the polarizer having a light absorption axis P.
- 237. The CV700U1-T01 includes an analyzer provided outside of the second substrate, the analyzer having a light absorption axis A, wherein the light absorption axis A of the analyzer crosses the light absorption axis P of the polarizer.

238. The CV700U1-T01 includes a plurality of micro structures associated with at least one of the first and second electrodes, wherein the micro structures are obliquely arranged with respect to the light absorption axis P of the polarizer and the light absorption axis A of the analyzer.

239. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '994 Patent, either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.

240. As a direct and proximate result of Defendant's direct infringement of the'994 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.

241. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '994 Patent by actively inducing its customers, including the TPV Defendants and Vizio, by, among other things, providing the CV700U1-T01 to downstream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '994 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 1 of the '994 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.

242. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '994 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV

Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.

- 243. As a direct and proximate result of CHOT's indirect infringement by inducement of the '994 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 244. As a direct and proximate result of Defendants' contributory infringement of the '994 Patent, Sharp has been and continues to be damaged. Defendants' infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 245. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '994 Patent, pursuant to 35 U.S.C. § 271.
- 246. Defendants have committed these acts of infringement without license or authorization.
- 247. Defendants have committed these acts of infringement with actual knowledge of the '994 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '994 Patent.
- 248. As a result of Defendants' willful infringement of the '994 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.
- 249. Defendants' infringement of the '994 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 250. Defendants' infringement of the '994 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.

251. Defendants' infringement of the '994 Patent has and will disrupt Sharp's
customer relationships, such as Sharp's relationship with Vizio itself as well as other
purchasers of Sharp's patented technology. Such disruptions have and will continue to
result in the formation of customer relationships between Defendants and Sharp's
existing customers, the adverse effects of which cannot be adequately compensated for
in money damages.

252. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT VII: DEFENDANTS' INFRINGEMENT OF THE '634 PATENT

- 253. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 254. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.
- 255. The CV700U1-T01 includes all of the elements of claim 1 of the '634 Patent.
 - 256. The CV700U1-T01 is a liquid crystal display.
- 257. The CV700U1-T01 includes a pair of substrates arranged opposite to each other to form a gap.
- 258. The CV700U1-T01 includes spaced vertical alignment films formed on the substrate in the gap.
- 259. The CV700U1-T01 includes a cured material being formed on at least one of the alignment films in the gap.

260. The CV700U1-T01 includes a liquid crystal layer of liquid crystal molecules.

261. The CV700U1-T01 includes a pixel electrode formed on one of the substrates in a pixel region and having a plurality of elongated members arranged with spaces therebetween; wherein the pixel electrode also has a connecting member which electrically connects the plurality of elongated members to each other, the connecting member includes a first connecting portion extending parallel to a first direction and a second connecting portion extending parallel to a second direction which is perpendicular to the first direction, each of the plurality of elongated members extends from the connecting member in an oblique direction of approximately 45 degrees with respect to one of the first direction and the second direction, and the cured material is at least formed on the vertical alignment films so that an alignment direction of at least the liquid crystal molecules adjacent the alignment films is regulated, wherein the liquid crystal molecules in the spaces between elongated members of the pixel electrode at the time of voltage application are tilted in directions parallel to the extending directions of the elongated members of the pixel electrode.

262. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '634 Patent, either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.

263. As a direct and proximate result of Defendant's direct infringement of the '634 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.

264. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '634 Patent by actively inducing its customers, including the TPV

Defendants and Vizio, by, among other things, providing the CV700U1-T01 to down-stream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '634 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 1 of the '637 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.

- 265. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '634 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.
- 266. As a direct and proximate result of CHOT's indirect infringement by inducement of the '634 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 267. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '634 Patent, pursuant to 35 U.S.C. § 271.
- 268. Defendants have committed these acts of infringement without license or authorization.
- 269. Defendants have committed these acts of infringement with actual knowledge of the '634 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '634 Patent.

270. As a result of Defendants' willful infringement of the '634 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.

- 271. Defendants' infringement of the '634 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 272. Defendants' infringement of the '634 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.
- 273. Defendants' infringement of the '634 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.
- 274. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT VIII: DEFENDANTS' INFRINGEMENT OF THE '959 PATENT

- 275. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 276. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.

COMPLAINT FOR INFRINGEMENT OF PATENTS

277. The CV700U1-T01 includes all of the elements of claim 1 of the '959 Patent.

- 278. The CV700U1-T01 is a liquid crystal display device.
- 279. The CV700U1-T01 includes a pair of substrates defined as a first substrate and a second substrate.
- 280. The CV700U1-T01 includes a liquid crystal layer sandwiched between the pair of substrates.
- 281. The CV700U1-T01 includes a pixel electrode and an additional electrode formed on the first substrate.
- 282. The CV700U1-T01 includes a contact hole that is configured and arranged to connect the pixel electrode and the additional electrode.
- 283. The CV700U1-T01 includes a contact hole formed at a liquid crystal domain boundary.
- 284. The CV700U1-T01 includes a pixel electrode that includes a plurality of pixel electrode slits arranged in a pattern to form a plurality of liquid crystal domains within each pixel.
- 285. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '959 Patent, either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.
- 286. As a direct and proximate result of Defendant's direct infringement of the '959 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 287. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '959 Patent by actively inducing its customers, including the TPV

Defendants and Vizio, by, among other things, providing the CV700U1-T01 to down-stream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '959 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 1 of the '959 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.

288. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '959 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.

289. As a direct and proximate result of CHOT's indirect infringement by inducement of the '959 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.

290. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '959 Patent, pursuant to 35 U.S.C. § 271.

- 291. Defendants have committed these acts of infringement without license or authorization.
- 292. Defendants have committed these acts of infringement with actual knowledge of the '959 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '959 Patent.

- 293. As a result of Defendants' willful infringement of the '959 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.
- 294. Defendants' infringement of the '959 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 295. Defendants' infringement of the '959 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.
- 296. Defendants' infringement of the '959 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.
- 297. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT IX: DEFENDANTS' INFRINGEMENT OF THE '490 PATENT

- 298. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 299. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.

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- 300. The CV700U1-T01 includes all of the elements of claim 1 of the '490 Patent.
 - 301. The CV700U1-T01 is a liquid crystal display device.
 - 302. The CV700U1-T01 includes a first substrate.
 - 303. The CV700U1-T01 includes a second substrate facing the first substrate
- 304. The CV700U1-T01 includes a liquid crystal layer sealed between the first substrate and the second substrate.
 - 305. The CV700U1-T01 includes a first electrode formed on the first substrate.
- 306. The CV700U1-T01 includes a second electrode formed on the second substrate.
- 307. The CV700U1-T01 includes a first molecule orientation film formed on the first substrate so as to cover the first electrode.
- 308. The CV700U1-T01 includes a second molecule orientation film formed on the second substrate so as to cover the second electrode.
- 309. The CV700U1-T01 includes a plurality of micro structures associated with at least one of the first and second electrodes, wherein at least some of the micro structures extend generally parallel to each other, wherein when a driving voltage is applied between the first electrode and the second electrode, liquid crystal molecules of the liquid crystal layer are oriented such that no dark line occurs in a vicinity of the plurality of micro structures and no dark line occurs between adjacent ones of the micro structures.
- 310. The CV700U1-T01 also includes a polarizer provided outside of one of the first and second substrates, the polarizer having a light absorption axis P
- 311. The CV700U1-T01 also includes an analyzer provided outside of the other of the first and second substrates, the analyzer having a light absorption axis A, wherein the light absorption axis A of the analyzer crosses the light absorption axis P of the polarizer, wherein at least some of the micro structures extend in a direction that

obliquely crosses at least one of the light absorption axis A of the analyzer and the light absorption axis P of the polarizer.

- 312. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '490 Patent, either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.
- 313. As a direct and proximate result of Defendant's direct infringement of the '490 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 314. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '490 Patent by actively inducing its customers, including the TPV Defendants and Vizio, by, among other things, providing the CV700U1-T01 to downstream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '490 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 1 of the '490 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.
- 315. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '490 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.

- 316. As a direct and proximate result of CHOT's indirect infringement by inducement of the '490 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 317. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '490 Patent, pursuant to 35 U.S.C. § 271.
- 318. Defendants have committed these acts of infringement without license or authorization.
- 319. Defendants have committed these acts of infringement with actual knowledge of the '490 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '490 Patent.
- 320. As a result of Defendants' willful infringement of the '490 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.
- 321. Defendants' infringement of the '490 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 322. Defendants' infringement of the '490 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.
- 323. Defendants' infringement of the '490 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.

324. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT X: DEFENDANTS' INFRINGEMENT OF THE '079 PATENT

- 325. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 326. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.
- 327. The CV700U1-T01 includes all of the elements of claim 1 of the '079 Patent.
 - 328. The CV700U1-T01 is a liquid crystal display device.
- 329. The CV700U1-T01 includes a first substrate and a second substrate which are arranged to be opposite to each other.
- 330. The CV700U1-T01 includes a liquid crystal layer sandwiched between the first and second substrates, wherein the first substrate includes a plurality of picture elements, and at least one of the plurality of picture elements includes: a switching element; a plurality of gate bus lines extending in a first direction and electrically connected to the switching element; a plurality of data bus lines extending in a second direction different from the first direction and electrically connected to the switching element; a first sub picture element electrode and a second sub picture element electrode being disposed adjacent to the first sub picture element electrode with a gap therebetween, and a control electrode overlapping with both the first sub picture element electrode and the second sub picture element electrode, wherein the control electrode extends in the second direction, wherein the second substrate includes a common

electrode, wherein each of the first and second sub picture element electrodes includes a cross-shaped connecting electrode part and microelectrode parts extending from the connecting electrode part in an oblique direction to the gate bus line and the data bus line, with the microelectrode parts being parallel to each other, and wherein the first sub picture element electrode and the second sub picture element electrode are arranged in the second direction.

- 331. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '079 Patent, either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.
- 332. As a direct and proximate result of Defendant's direct infringement of the '079 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 333. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '079 Patent by actively inducing its customers, including the TPV Defendants and Vizio, by, among other things, providing the CV700U1-T01 to downstream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '079 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 1 of the '079 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.

334. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '079 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.

- 335. As a direct and proximate result of CHOT's indirect infringement by inducement of the '079 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 336. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '079 Patent, pursuant to 35 U.S.C. § 271.
- 337. Defendants have committed these acts of infringement without license or authorization.
- 338. Defendants have committed these acts of infringement with actual knowledge of the '079 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '079 Patent.
- 339. As a result of Defendants' willful infringement of the '079 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.
- 340. Defendants' infringement of the '079 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 341. Defendants' infringement of the '079 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.

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342. Defendants' infringement of the '079 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.

343. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT XI: DEFENDANTS' INFRINGEMENT OF THE '239 PATENT

- 344. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 345. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.
- 346. The CV700U1-T01 includes all of the elements of claim 1 of the '239 Patent.
 - 347. The CV700U1-T01 is a liquid crystal display device.
 - 348. The CV700U1-T01 includes a first substrate.
 - 349. The CV700U1-T01 includes a second substrate facing the first substrate
- 350. The CV700U1-T01 includes a liquid crystal layer sealed between the first substrate and the second substrate.
 - 351. The CV700U1-T01 includes a first electrode formed on the first substrate.
- 352. The CV700U1-T01 includes a second electrode formed on the second substrate.

- 353. The CV700U1-T01 includes a first molecule orientation film formed on the first substrate so as to cover the first electrode
- 354. The CV700U1-T01 includes a second molecule orientation film formed on the second substrate so as to cover the second electrode.
- 355. The CV700U1-T01 includes a plurality of micro structures associated with at least one of the first and second electrodes, and a plurality of rough structural patterns associated with at least one of the first and second electrodes, wherein: at least some of said micro structures extend generally parallel to each other; said rough structural patterns extend in directions different from directions in which said micro structures extend; each of said rough structural patterns crosses two or more of the micro structures which extend generally parallel to each other; and the rough structural patterns have a larger width than a width of the micro structures.
- 356. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '239 Patent, either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.
- 357. As a direct and proximate result of Defendant's direct infringement of the '239 Patent, Sharp has been and continues to be damaged. Defendant's infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 358. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '239 Patent by actively inducing its customers, including the TPV Defendants and Vizio, by, among other things, providing the CV700U1-T01 to downstream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '239 Patent. In this regard, CHOT knew the

CV700U1-T01 infringed at least claim 1 of the '239 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.

- 359. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '239 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.
- 360. As a direct and proximate result of CHOT's indirect infringement by inducement of the '239 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 361. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '239 Patent, pursuant to 35 U.S.C. § 271.
- 362. Defendants have committed these acts of infringement without license or authorization.
- 363. Defendants have committed these acts of infringement with actual knowledge of the '239 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '239 Patent.
- 364. As a result of Defendants' willful infringement of the '239 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.

COMPLAINT FOR INFRINGEMENT OF PATENTS

365. Defendants' infringement of the '239 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.

- 366. Defendants' infringement of the '239 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.
- 367. Defendants' infringement of the '239 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.
- 368. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

COUNT XII: DEFENDANTS' INFRINGEMENT OF THE '275 PATENT

- 369. Sharp incorporates by reference each of its allegations in the foregoing paragraphs as though set forth fully herein.
- 370. The Defendants have sold, offered for sale, and/or imported the CV700U1-T01, either as a distinct component or as part of the TPV Defendants' 750TBV700U11Q8N000, and/or part of Vizio's V705-G1 LCD TV.
- 371. The CV700U1-T01 includes all of the elements of claim 1 of the '275 Patent.
 - 372. The CV700U1-T01 is a liquid crystal display device.
 - 373. The CV700U1-T01 includes a first substrate.

374. The CV700U1-T01 includes a second substrate facing the first substrate

375. The CV700U1-T01 includes a liquid crystal layer sealed between the first substrate and the second substrate.

- 376. The CV700U1-T01 includes a pixel electrode formed on the first substrate.
- 377. The CV700U1-T01 includes a counter electrode formed on the second substrate.
- 378. The CV700U1-T01 includes a first molecule orientation film formed on the first substrate so as to cover the pixel electrode
- 379. The CV700U1-T01 includes a second molecule orientation film formed on the second substrate so as to cover the counter electrode, wherein the pixel electrode includes first micro-electrode patterns extending in a first direction, second micro-electrode patterns extending in a second direction, third micro-electrode patterns extending in a fourth direction and, fourth micro-electrode patterns extending in a fourth direction, wherein the first, second, third and fourth directions are different from one another, and when a driving voltage is applied between the pixel electrode and the counter electrode, liquid crystal molecules of the liquid crystal layer which are located at the first, second, third and fourth micro-electrode patterns are tilted parallel to a corresponding one of the first, second, third and fourth directions, respectively, when viewed in a plan view.
- 380. By selling, offering for sale, and/or importing the CV700U1-T01 in this Judicial District and throughout the United States without license or authorization, Defendants are and have been directly infringing at least claim 1 of the '275 Patent, either literally or under the doctrine of equivalents, as proscribed by 35 U.S.C. § 271, et seq.
- 381. As a direct and proximate result of Defendant's direct infringement of the '275 Patent, Sharp has been and continues to be damaged. Defendant's infringing

activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.

- 382. CHOT additionally indirectly infringed and continues to indirectly infringe at least claim 1 of the '275 Patent by actively inducing its customers, including the TPV Defendants and Vizio, by, among other things, providing the CV700U1-T01 to downstream purchasers with the knowledge that the provided product will be imported into the United States, as well as sold within this District and others in the United States, in violation of at least claim 1 of the '275 Patent. In this regard, CHOT knew the CV700U1-T01 infringed at least claim 1 of the '275 Patent and it actively and intentionally sold this product knowing that it would be incorporated into the TPV Defendants' products as well as into Vizio TVs, which would arrive to be sold in the United States. In this regard, CHOT actively and knowingly aided the TPV Defendants' and Vizio's direct infringement.
- 383. CHOT has engaged and will continue to engage in such inducement having actual knowledge of the '275 Patent. Furthermore, CHOT knew or should have known that its actions would and will continue to induce direct infringement by TPV Defendants and Vizio, and have intended and will continue to intend that their actions would induce direct infringement by such CHOT down-stream customers.
- 384. As a direct and proximate result of CHOT's indirect infringement by inducement of the '275 Patent, Sharp has been and continues to be damaged. CHOT's induced infringing activities will continue unless enjoined by this Court or until the patent expires, whichever is sooner.
- 385. By engaging in the conduct described herein, Defendants have injured Sharp and are thus liable for infringement of the '275 Patent, pursuant to 35 U.S.C. § 271.
- 386. Defendants have committed these acts of infringement without license or authorization.

387. Defendants have committed these acts of infringement with actual knowledge of the '275 Patent, including since the filing of this complaint, and thus have acted recklessly and willfully with regard to Sharp's rights in the '275 Patent.

- 388. As a result of Defendants' willful infringement of the '275 Patent, Sharp has suffered monetary damages and is entitled to a monetary judgment in an amount at least adequate to compensate for Defendants' infringement to date.
- 389. Defendants' infringement of the '275 Patent has resulted and will result in loss of market leadership and loss of market share for Sharp's own LCD modules. Such losses cannot be adequately compensated for in money damages.
- 390. Defendants' infringement of the '275 Patent has and will expose Sharp to loss of pricing discretion for its own LCD Modules and price erosion whose magnitude and adverse effects cannot be adequately compensated for in money damages.
- 391. Defendants' infringement of the '275 Patent has and will disrupt Sharp's customer relationships, such as Sharp's relationship with Vizio itself as well as other purchasers of Sharp's patented technology. Such disruptions have and will continue to result in the formation of customer relationships between Defendants and Sharp's existing customers, the adverse effects of which cannot be adequately compensated for in money damages.
- 392. Sharp will continue to suffer damages in the future unless this Court enjoins Defendants' infringing activities or the patent expires, whichever is sooner. As such, Sharp is entitled to compensation for any continuing and/or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patent expires, whichever is sooner.

PRAYER FOR RELIEF

WHEREFORE, SHARP prays for the following relief:

- A. Defendants be adjudged to have infringed the Patents-in-Suit directly and by way of induced and contributory infringement, either literally or under the doctrine of equivalents;
- B. That Defendants, and each of their officers, directors, agents, servants, employees, attorneys, affiliates, divisions, branches, parents, and those persons in active concert or participation with any of them, be restrained and enjoined from directly or indirectly infringing the Patents-in-Suit;
- C. An award of damages pursuant to 35 U.S.C. § 284 sufficient to compensate Sharp for Defendants' past infringement and any continuing or future infringement up until the date that Defendants are finally and permanently enjoined from further infringement or the patents expire, whichever is sooner, including compensatory damages in the form of lost profits and a reasonable royalty;
- D. An assessment of pre-judgment and post-judgment interest and costs against Defendants, together with an award of such interest and costs, in accordance with 35 U.S.C. § 284;
- E. That Defendants be directed to pay enhanced damages under 35 U.S.C. § 284 and Sharp's attorneys' fees incurred in connection with this lawsuit pursuant to 35 U.S.C. § 285; and
 - F. Such other and further relief as this Court may deem just and proper.

Dated: March 10, 2020 Respectfully submitted,

K&L Gates LLP

/s/ Christina N Goodrich Christina N Goodrich (SBN 261722) christina.goodrich@klgates.com **K&L GATES LLP**

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1 **JURY DEMAND** 2 Pursuant to Federal Rule of Civil Procedure 38(b), Sharp hereby demands a trial 3 by jury on all issues triable of right by a jury. 4 Dated: March 10, 2020 Respectfully submitted, 5 **K&L Gates LLP** 6 /s/ Christina N Goodrich 7 Christina N Goodrich (SBN 261722) christina.goodrich@klgates.com K&L GATES LLP 8 10100 Santa Monica Blvd., 8th Floor 9 Los Angeles, CA 90067 Tel: (310) 552-5547 10 Fax: (310) 552-5001 11 Theodore J. Angelis (*Pro hac vice* filed concurrently herewith) 12 theodore.angelis@klgates.com Elizabeth J. Weiskopf (*Pro hac vice* filed concurrently herewith) 13 elizabeth.weiskopf@klgates.com 14 K&L GATES LLP 925 Fourth Avenue, Suite 2900 15 Seattle, WA 98104 Tel: (206) 370-8101 16 Fax: (206) 370-6006 17 Jason A. Engel (*Pro hac vice* filed concurrently herewith) 18 jason.engel@klgates.com Erik J. Halverson (*Pro hac vice* filed 19 concurrently herewith) erik.halverson@klgates.com 20 K&L GATES LLP 70 W. Monroe, Suite 3300 21 Chicago, IL 60602 Tel: (312) 807-4236 Fax: (312) 827-8145 22 23 Attorneys for Plaintiff Sharp Corporation 24 25 26 27 28