

with AUO as the surviving entity. AUO further merged Taiwan CFI Co., Ltd. (“CFI”) on October 1, 2016, with AUO as the surviving entity.

3. On information and belief, AUO is a multi-national corporation organized under the laws of the Republic of China, with its principal place of business located at No. 1, Li-Hsin Road 2, Hsinchu Science Park, Hsinchu, Taiwan, R.O.C. AUO does business in the State of Texas and in the Eastern District of Texas.

JURISDICTION AND VENUE

4. This action arises under the patent laws of the United States, namely 35 U.S.C. §§ 271, 281, and 284-285, among others.

5. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

6. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(c). AUO is a foreign entity and may be sued in any judicial district under 28 U.S.C. § 1391(c)(3).

7. On information and belief, AUO is subject to this Court’s specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to its substantial business in this State and judicial district, including: (A) at least part of its infringing activities alleged herein; and (B) regularly doing or soliciting business, engaging in other persistent conduct, and/or deriving substantial revenue from goods sold and services provided to Texas residents. For example, “AUO generated NT\$329 billion in sales revenue in 2016 (US\$10.2 billion) and now houses a staff of more than 43,000 throughout its global operations spreading across Taiwan, Mainland China, Japan, Singapore, South Korea, the United States, and Europe. https://www.auo.com/en-global/About_AUO/index) (emphasis added). AUO designs, develops, manufactures, assembles and markets flat panel displays and most of its products are

TFT-LCD panels. SEC Form 20-F, AU Optronics Corp. (2018) at 32 (*available at* <https://seekingalpha.com/filings/pdf/12654022.pdf>). AUO sells primarily to companies that design and assemble products based on their customers' specifications, commonly known as original equipment manufacturing service providers, and to brand customers. *Id.* Its original equipment manufacturing service provider customers, most of whose production operations are located in Taiwan or the PRC, use its panels in the products that they manufacture on a contract basis for brand companies worldwide. *Id.* (emphasis added).

8. This Court has personal jurisdiction over AUO, directly or through intermediaries, including its wholly-owned subsidiary, AU Optronics Corporation America (1525 McCarthy Blvd. Suite 218 Milpitas, CA 95035) because it has committed acts within Texas giving rise to this action and/or has established minimum contacts with Texas such that personal jurisdiction over AUO would not offend traditional notions of fair play and substantial justice.

9. Upon information and belief, AUO controls the wholly-owned subsidiary listed above, as well as many other subsidiaries. https://www.auo.com/en-global/Financial_Results/download/1551 ("March 31, 2018 Report") at 16-19. And the subsidiary above gives AUO substantially the business advantages that it would have enjoyed if it conducted its business through its own offices or paid agents in the state.

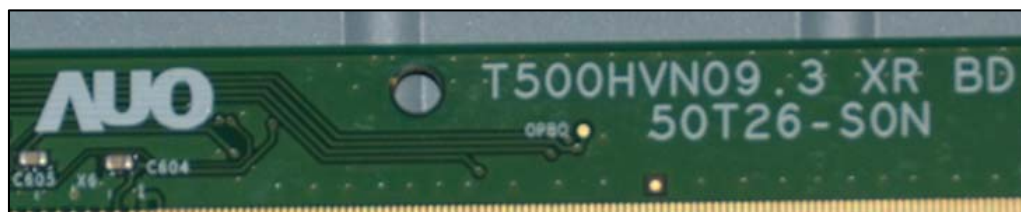
10. Upon information and belief, AUO has placed and continues to place infringing TFT-LCD panels into the stream of commerce via an established distribution channel with the knowledge and/or intent that those products were sold and continue to be sold in the United States and Texas, including in this District.

11. On information and belief, AUO has significant ties to, and presence in, the State of Texas and the Eastern District of Texas, making venue in this judicial district both proper and convenient for this action.

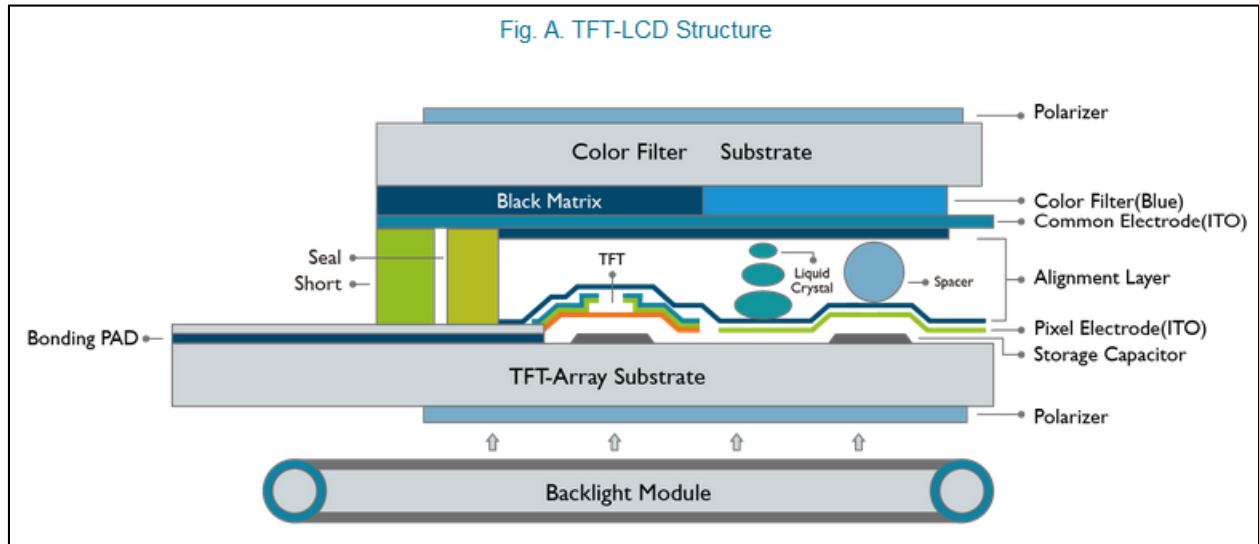
THE ASSERTED PATENTS AND TECHNOLOGY

12. Upon information and belief, AUO’s main activities are the research, development, production and sale of thin film transistor liquid crystal displays (“TFT-LCDs”) and other flat panel displays used in a wide variety of applications. https://www.auo.com/en-global/Financial_Results/download/1551.

13. The Asserted Patents cover AUO’s TFT-LCDs, their components, and processes related to the same. An example AUO TFT-LCD is model no. T500HVN09, which is used in end-user products such as Samsung monitor model no. UN50J6300AF. That monitor and the label for its AUO TFT-LCD panel are shown below:

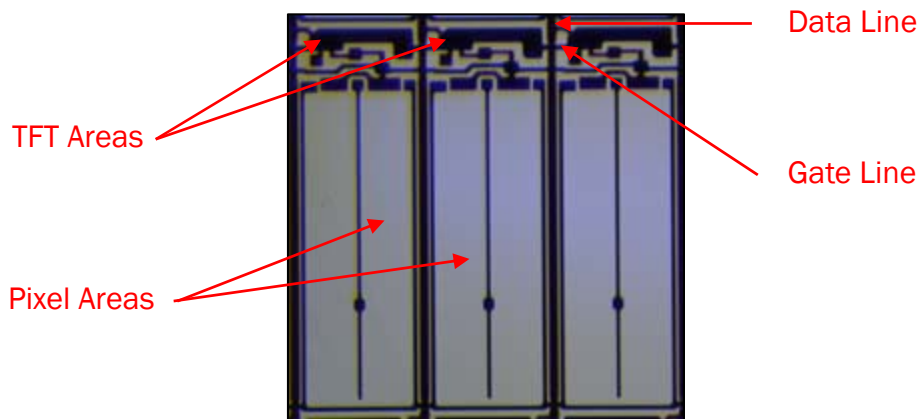


14. AUO publishes a diagram of the structure of its TFT-LCDs as follows:



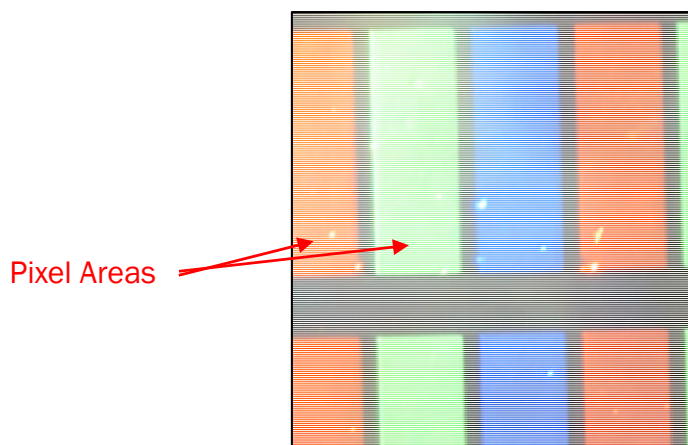
https://www.auo.com/en-global/TFT-LCD_Introduction/index/TFT_LCD_Process

15. As shown in the diagram above, the TFT-LCD panel contains a TFT array substrate, with one of the TFTs in the array illustrated above it. A teardown image below from the AUO TFT-LCD model no. T500HVN09 shows a sampling of TFTs and their accompanying circuitry lines, with larger rectangular areas associated with the pixels.

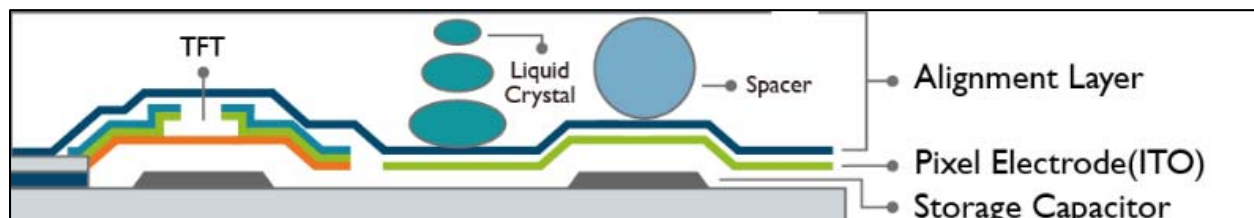


16. A TFT acts as a switch that operates its respective individual pixels using the circuitry lines. In that way, the pixels can be turned on and off to create an image on an LCD by

allowing or preventing light to pass through. The individual pixels are more apparent when a color filter layer overlays the circuits as shown in the image below for the T500HVN09.

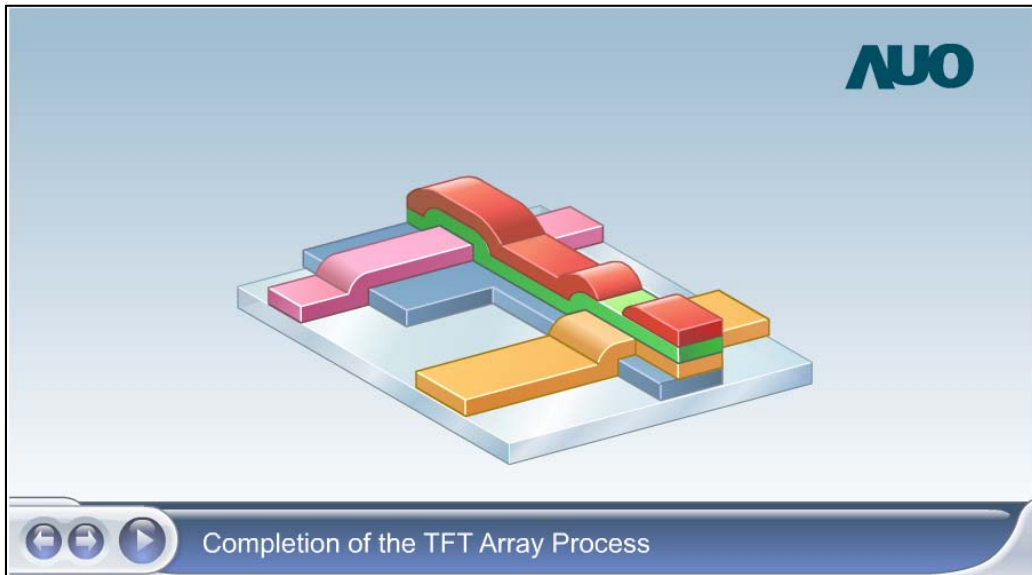
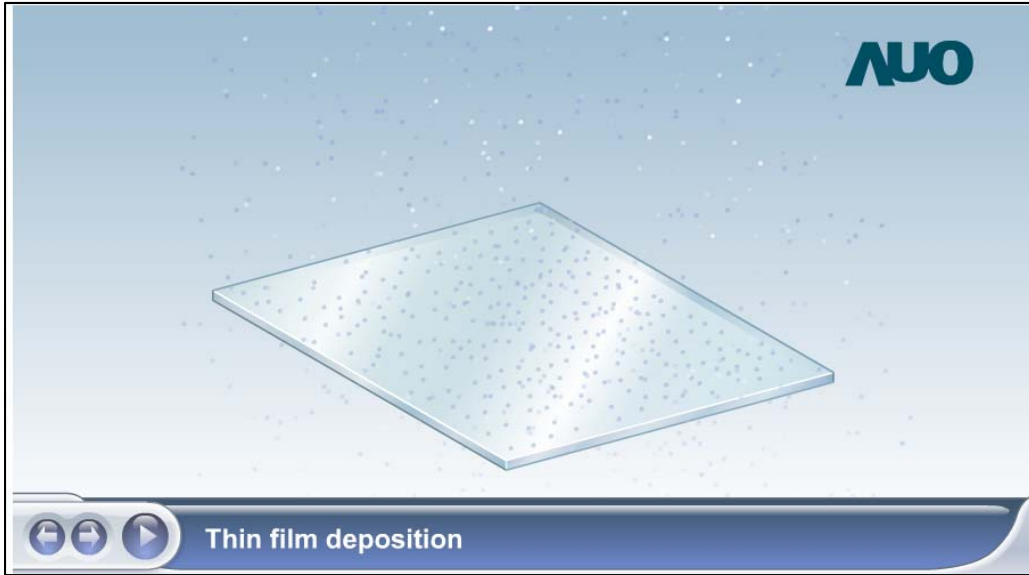


17. AUO publishes a simplified version of a side view of its TFTs on its website as follows.

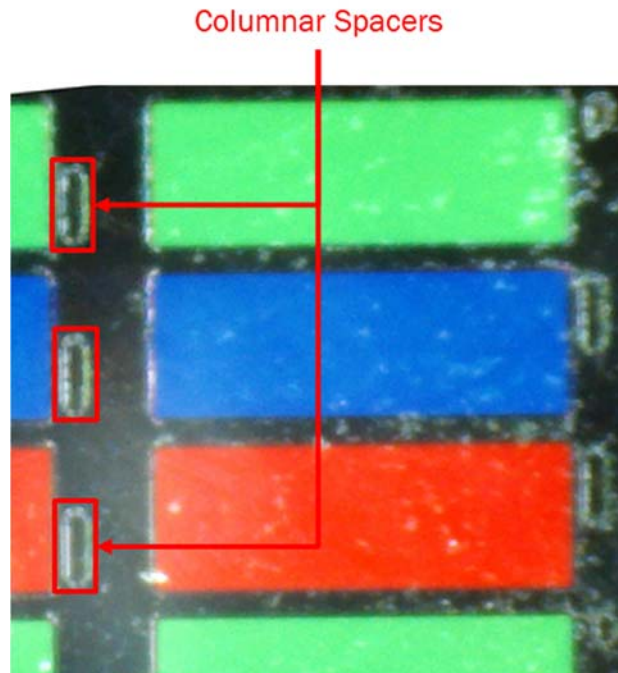


https://www.auo.com/en-global/TFT-LCD_Introduction/index/TFT_LCD_Process (excerpt).

18. The Asserted Patents also cover AUO’s processes for making TFT LCDs. AUO explains the steps in the process of making its TFTs in an animation on its website at https://www.auo.com/en-global/TFT-LCD_process_animation/index/. The animations include many steps including, “Thin Film Deposition” (below) and “Completion of the TFT Array Process” (below).



19. Another teardown image of the TFT-LCD model no. T500HVN09 shows the black matrix and color filter layers referred to in the AUO diagram above. This image shows columnar spacers as annotated.



COUNT I

(INFRINGEMENT OF U.S. PATENT NO. 6,781,643)

20. Plaintiff incorporates paragraphs 1 through 19 herein by reference.

21. VPV is the assignee of the '643 patent, entitled "Active matrix liquid crystal display device," with ownership of all substantial rights in the '643 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

22. The '643 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '643 patent issued from U.S. Patent Application No. 09/573,185.

23. AUO has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '643 patent in this judicial district and elsewhere in Texas and the United States.

24. AUO designs, develops, manufactures, assembles and markets flat panel displays and most of its products are TFT-LCD panels. SEC Form 20-F, AU Optronics Corp. (2018) at 32 (*available at* <https://seekingalpha.com/filings/pdf/12654022.pdf>).

25. AUO directly infringes the '643 patent via 35 U.S.C. § 271(a) by making, having made, offering for sale, selling, and/or importing those TFT-LCD panels, their components, and/or products containing same that incorporate the fundamental technologies covered by the '643 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, AUO sells and makes TFT-LCD panels outside of the United States, intending and/or knowing that those panels are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '643 patent.

26. For example, AUO infringes claim 1 of the '643 patent via its LCD panel model no. T500HVN09. That product includes an “active matrix liquid crystal display device comprising” each of the limitations of claim 1. The technology discussion above and the example accused TFT-LCD panel (T500HVN09) provide context for Plaintiff’s allegations that each of those limitations are met. For example, the T500HVN09 includes a plurality of scan lines formed on an insulating substrate; a plurality of signal lines formed to cross said scan lines; thin film transistors formed near intersections between said scan lines and signal lines, respectively; pixel electrodes connected to an electrode of said thin film transistors, respectively; an area surrounded by: (a) one of said plurality of scan lines; (b) another one of said plurality of scan lines at a preceding stage; (c) one of said plurality of signal line which crosses said scan lines; and (d) another one of said plurality of signal lines which crosses said scan lines thereby forming a unit pixel; said plurality of scan lines and said plurality of signal lines thereby forming a plurality of unit pixels, each said unit pixel having one of said thin film transistors and one of said pixel electrodes associated with each said unit pixel; an accumulation capacity portion formed by said pixel electrode overlapping with said scan line at the preceding stage via insulating film; an additional capacity portion formed in at least one of said plurality of unit pixels, said additional capacity portion formed by overlapping said pixel electrode associated with said at least one unit pixel, via an insulating film and a semiconductor film each associated with said associated pixel electrode, over the scan line at an applicable stage to be connected to a gate electrode of said thin film transistor associated with the same said at least one unit pixel, said associated thin film transistor for switching said associated pixel electrode of said unit pixel; and said pixel electrode at the next stage overlaps with said scan line at the applicable stage via insulating film to thereby form an accumulation capacity portion for said pixel electrode at the next stage.

27. At a minimum, AUO has known of the '643 patent at least as early as the filing date of the complaint. In addition, AUO has known of the '643 patent since May 16, 2018, when AUO was provided access to a data room containing claim charts, including for the '643 patent.

28. Upon information and belief, since at least the above-mentioned date when AUO was on notice of its infringement, AUO has actively induced, under U.S.C. § 271(b), distributors, importers and/or consumers that purchase or sell TFT-LCD panels that include all of the limitations of one or more claims of the '643 patent to directly infringe one or more claims of the '643 patent by using, offering for sale, selling, and/or importing the TFT-LCD panels. Since at least the notice provided on the above-mentioned date, AUO does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '643 patent. Upon information and belief, AUO intends to cause, and has taken affirmative steps to induce, infringement by the distributors, importers, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of the TFT-LCD panels (*see, e.g.*, <https://www.auo.com/en-global/Events/index> (showing AUO's participation in SID Display Week 2017)), creating established distribution channels for the TFT-LCD panels into and within the United States, manufacturing the TFT-LCD panels in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

29. On information and belief, despite having knowledge of the '643 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '643 patent, AUO has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. AUO's infringing activities relative to the '643 patent have been, and

continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

30. VPV has been damaged as a result of AUO's infringing conduct described in this Count. AUO is, thus, liable to VPV in an amount that adequately compensates VPV for AUO's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II

(INFRINGEMENT OF U.S. PATENT NO. 7,046,327)

31. Plaintiff incorporates paragraphs 1 through 30 herein by reference.

32. VPV is the assignee of the '327 patent, entitled "Liquid crystal display device including columnar spacer above gate line," with ownership of all substantial rights in the '327 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

33. The '327 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '327 patent issued from U.S. Patent Application No. 10/833,318.

34. AUO has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '327 patent in this judicial district and elsewhere in Texas and the United States.

35. AUO designs, develops, manufactures, assembles and markets flat panel displays and most of its products are TFT-LCD panels. SEC Form 20-F, AU Optronics Corp. (2018) at 32 (*available at* <https://seekingalpha.com/filings/pdf/12654022.pdf>).

36. AUO directly infringes the '327 patent via 35 U.S.C. § 271(a) by making, having made, offering for sale, selling, and/or importing those TFT-LCD panels, their components, and/or products containing same that incorporate the fundamental technologies covered by the '327 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, AUO sells and makes TFT-LCD panels outside of the United States, intending and/or knowing that those panels are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '327 patent.

37. For example, AUO infringes claim 1 of the '327 patent via its LCD panel model no. T500HVN09. That product includes a “liquid crystal display device including” each of the limitations of claim 1. The technology discussion above and the example accused TFT-LCD panel (T500HVN09) provide context for Plaintiff’s allegations that each of those limitations are met. For example, the T500HVN09 includes a first substrate, a second substrate, and a liquid crystal layer sandwiched between the first and second substrates, the device comprising, on the first substrate: a gate line; a common line parallel to the gate line; a data line intersecting the gate line while sandwiching a gate insulating film on the gate line therebetween; a first interlayer insulating film coating the data line; and a first orientation film coating the first interlayer insulating film, and the device comprising, on the second substrate: a light shielding film opposite to the gate line; a second interlayer insulating film coating the light shielding film; a columnar spacer located above the gate line apart from an intersection of the gate line and the data line and provided on the second interlayer insulating film; and a second orientation film coating the second interlayer insulating

film and the columnar spacer, wherein a center of a top of the columnar spacer is shifted from above a widthwise center of the gate line toward above the common line, and the top of the columnar spacer partially overruns from above the gate line toward above the common line when viewed from the above, the top being directed to the first substrate.

38. At a minimum, AUO has known of the '327 patent at least as early as the filing date of the complaint. In addition, AUO has known of the '327 patent since May 16, 2018, when AUO was provided access to a data room containing claim charts, including for the '327 patent.

39. Upon information and belief, since at least the above-mentioned date when AUO was on notice of its infringement, AUO has actively induced, under U.S.C. § 271(b), distributors, importers and/or consumers that purchase or sell TFT-LCD panels that include all of the limitations of one or more claims of the '327 patent to directly infringe one or more claims of the '327 patent by using, offering for sale, selling, and/or importing the TFT-LCD panels. Since at least the notice provided on the above-mentioned date, AUO does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '327 patent. Upon information and belief, AUO intends to cause, and has taken affirmative steps to induce, infringement by the distributors, importers, and/or consumers by, inter alia, creating advertisements that promote the infringing use of the TFT-LCD panels (*see, e.g.*, <https://www.auo.com/en-global/Events/index> (showing AUO's participation in SID Display Week 2017)), creating established distribution channels for the TFT-LCD panels into and within the United States, manufacturing the TFT-LCD panels in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

40. On information and belief, despite having knowledge of the '327 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '327 patent, AUO has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. AUO's infringing activities relative to the '327 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

41. VPV has been damaged as a result of AUO's infringing conduct described in this Count. AUO is, thus, liable to VPV in an amount that adequately compensates VPV for AUO's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT III

(INFRINGEMENT OF U.S. PATENT NO. 6,730,970)

42. Plaintiff incorporates paragraphs 1 through 41 herein by reference.

43. VPV is the assignee of the '970 patent, entitled "Thin film transistor and fabrication method of the same," with ownership of all substantial rights in the '970 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

44. The '970 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '970 patent issued from U.S. Patent Application No. 10/833,318.

45. AUO has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '970 patent in this judicial district and elsewhere in Texas and the United States.

46. AUO designs, develops, manufactures, assembles and markets flat panel displays and most of its products are TFT-LCD panels. SEC Form 20-F, AU Optronics Corp. (2018) at 32 (*available at* <https://seekingalpha.com/filings/pdf/12654022.pdf>).

47. AUO directly infringes the '970 patent via 35 U.S.C. § 271(a) by making, having made, offering for sale, selling, and/or importing those TFT-LCD panels, their components, and/or products containing same that incorporate the fundamental technologies covered by the '970 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, AUO sells and makes TFT-LCD panels outside of the United States, intending and/or knowing that those panels are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '970 patent.

48. For example, AUO infringes claim 1 of the '970 patent via its LCD panel model no. T500HVN09. That product includes a "thin film transistor including" each of the limitations of claim 1. The technology discussion above and the example accused TFT-LCD panel (T500HVN09) provide context for Plaintiff's allegations that each of those limitations are met. For example, the T500HVN09 includes a back channel electrode, wherein a voltage of a front channel positioned on the side of a gate wiring of said thin film transistor is made equal to a voltage of said back channel positioned on the side of a back channel electrode by short-circuiting said back channel electrode to a gate electrode through a contact-hole provided in a portion of semiconductor layer forming said thin film transistor.

49. At a minimum, AUO has known of the '970 patent at least since February 16, 2018, and no later than the filing of this complaint. On February 16, 2018, AUO received a letter from Dominion Harbor Group, LLC, notifying AUO that it required a license to the '970 patent, and offering to provide claim charts to AUO. Moreover, on May 16, 2018, AUO was provided access to a data room containing claim charts, including for the '970 patent.

50. Upon information and belief, since at least the above-mentioned date when AUO was on notice of its infringement, AUO has actively induced, under U.S.C. § 271(b), distributors, importers and/or consumers that purchase or sell TFT-LCD panels that include all of the limitations of one or more claims of the '970 patent to directly infringe one or more claims of the '970 patent by using, offering for sale, selling, and/or importing the TFT-LCD panels. Since at least the notice provided on the above-mentioned date, AUO does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '970 patent. Upon information and belief, AUO intends to cause, and has taken affirmative steps to induce, infringement by the distributors, importers, and/or consumers by, inter alia, creating advertisements that promote the infringing use of the TFT-LCD panels (*see, e.g.*, <https://www.auo.com/en-global/Events/index> (showing AUO's participation in SID Display Week 2017)), creating established distribution channels for the TFT-LCD panels into and within the United States, manufacturing the TFT-LCD panels in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States.

51. On information and belief, despite having knowledge of the '970 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '970 patent,

AUO has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. AUO's infringing activities relative to the '970 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

52. VPV has been damaged as a result of AUO's infringing conduct described in this Count. AUO is, thus, liable to VPV in an amount that adequately compensates VPV for AUO's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

INJUNCTIVE RELIEF

53. Plaintiff seeks preliminary and permanent injunctions as a result of AUO's infringement of the Asserted Patents. Plaintiff is likely to succeed in showing that AUO infringes the Asserted Patents. Because of that infringement, Plaintiff has suffered an irreparable injury, and the remedies available at law, such as monetary damages, are inadequate to compensate for that injury. For example, if Plaintiff must enforce a judgment against AUO in China, Plaintiff will face a historically challenging burden in persuading a Chinese court to enforce a judgment from a U.S. court, likely preventing Plaintiff from obtaining any monetary damages from AUO. Considering the balance of hardships between the Plaintiff and AUO, a remedy in equity is warranted; and the public interest would not be disserved by a permanent or preliminary injunction.

CONCLUSION

54. Plaintiff is entitled to recover from AUO the damages sustained by Plaintiff as a result of AUO's wrongful acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court.

55. Plaintiff has incurred and will incur attorneys' fees, costs, and expenses in the prosecution of this action. The circumstances of this dispute may give rise to an exceptional case within the meaning of 35 U.S.C. § 285, and Plaintiff is entitled to recover its reasonable and necessary attorneys' fees, costs, and expenses.

JURY DEMAND

56. Plaintiff hereby requests a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

PRAYER FOR RELIEF

57. Plaintiff respectfully requests that the Court find in its favor and against AUO, and that the Court grant Plaintiff the following relief:

1. A judgment that AUO has infringed the Asserted Patents as alleged herein, directly and/or indirectly by way of inducing infringement of such patents;
2. A judgment for an accounting of all damages sustained by Plaintiff as a result of the acts of infringement by AUO;
3. A preliminary and permanent injunction against AUO, its subsidiaries, or anyone acting on its behalf from making, using, selling, offering to sell, or importing any products that infringe the Asserted Patents, and any other injunctive relief the Court deems just and equitable;

4. A judgment and order requiring AUO to pay Plaintiff damages under 35 U.S.C. § 284, including up to treble damages as provided by 35 U.S.C. § 284, and any royalties determined to be appropriate;
5. A judgment and order requiring AUO to pay Plaintiff pre-judgment and post-judgment interest on the damages awarded;
6. A judgment and order finding this to be an exceptional case and requiring AUO to pay the costs of this action (including all disbursements) and attorneys' fees as provided by 35 U.S.C. § 285; and
7. Such other and further relief as the Court deems just and equitable.

Dated: July 10, 2018

Respectfully submitted,

/s/ Patrick J. Conroy w/permission Claire
Abernathy Henry

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