

<https://www.boe.com/en/about/gsj/s/>). In its Company Profile, BOE lists its core businesses as “Display and Sensor Devices, Smart Systems and Healthcare Services.” *See* BOE Company Profile. BOE asserts that its “display and sensor products are widely used in a broad spectrum of applications such as mobile phone, tablet, notebook, monitor, TV, vehicle display, digital information display, healthcare, finance, and wearable devices.” *Id.* BOE’s TV display business was launched in 2010. BOE was formerly known as “Beijing Oriental Electronics Group Co., Ltd.” and changed its name in 2001. *See* BOE Course of Development.

3. On information and belief, BOE is a multinational corporation organized under the laws of the People’s Republic of China, with its principal place of business located at No.12 Xihuazhong RD, BDA, Beijing, P.R.China, with Postal Code 100176. BOE 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). BOE 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, BOE 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, BOE “boasts a global marketing and R&D centers in 19 countries and regions like the United States, Germany, the United Kingdom, France, Switzerland, Japan, South Korea, Singapore, India, Russia, Brazil and The United Arab Emirates, with its service networks covering the world's major areas such as Europe, America, Asia and Africa.” *See* BOE Company Profile (*available at* <https://www.boe.com/en/about/gsjjs/>). The same Company Profile asserts that “Large size LCD panel shipments, small and medium size LCD panel shipments ranked first in the world.” *Id.*

8. This Court has personal jurisdiction over BOE, directly or through intermediaries, including its wholly-owned subsidiary, BOE Technology America Inc. (2350 Mission College Blvd Suite 1000, Santa Clara, CA with satellite offices in San Diego, Houston, and Boston), 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 BOE would not offend traditional notions of fair play and substantial justice. *See* BOE Global webpage, USA region, (*available at* <https://www.boe.com/en/about/boeqq/>).

9. Upon information and belief, BOE controls its wholly-owned subsidiary listed above, as well as many other subsidiaries. *See* BOE Global, USA region. The subsidiary listed above gives BOE 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. BOE has placed and continues to place infringing thin-film transistor – liquid crystal display (“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. In 2017, BOE reported 3,198,611,737.00 RMB (approximately \$465,665,700 USD) in sales revenue to the “Americas.” 2017 Annual Report

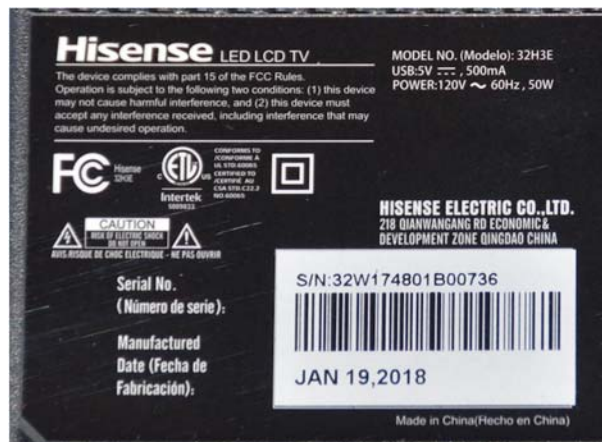
at 16 (*available at* <https://www.boe.com/files/2018/0829/7156784848263569394.pdf>). Relative to its worldwide sale revenue, BOE reports that the Display and Sensor Business Group accounted for 88% of total sales revenue in 2016 and 2017. *See* 2017 Annual Report at 15-16. In the first half of 2018, BOE reported 2,235,667,679.00 RMB (approximately \$325,481,467.58) in “operating revenue” to the “Americas.” *See* BOE Interim Report 2018 (*available at* <https://www.boe.com/files/2018/0829/5782155438880487121.pdf>) at 14.

11. On information and belief, BOE 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.

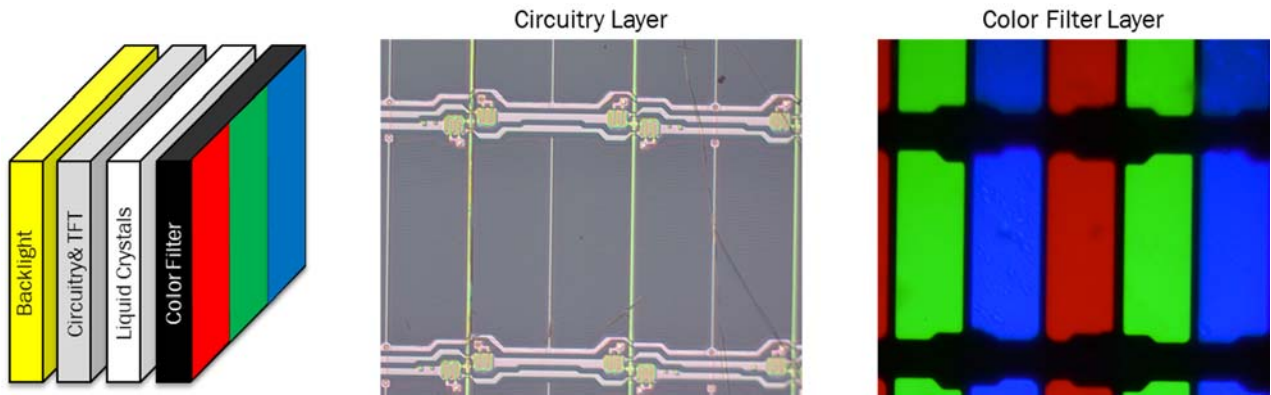
THE ASSERTED PATENTS AND TECHNOLOGY

12. Upon information and belief, a significant portion of operating revenue of BOE is derived from the manufacture and sale of TFT-LCD flat panel displays and BOE’s main commodities include large-sized and small-to-medium-sized TFT-LCD related products. BOE asserts that its Display and Sensor Device division provides “TFTLCD, AMOLED, Micro Display and other intelligent interface devices for smartphones, tablet PCs, laptops, displayers, TVs, VR/AR devices, vehicles, wearable devices, industrial control, medical care, tiled display screens, etc.” BOE Interim Report 2018 at 9-10. Furthermore, BOE has steadily improved its display production with “the first TFT-LCD Production Line of the highest generation in the world-- the 10.5th Generation BOE Hefei TFT-LCD Production Line.” *See id.* BOE’s 2018 Interim Report also states that “the shipment of BOE display screens was nearly 0.4 billion in the first half year of 2018, enjoying a year-on-year growth surpassing 35% and ranking 1st in the world, including 5 major display screens that ranks No. 1 respectively in terms of their market occupancy.” *Id.*

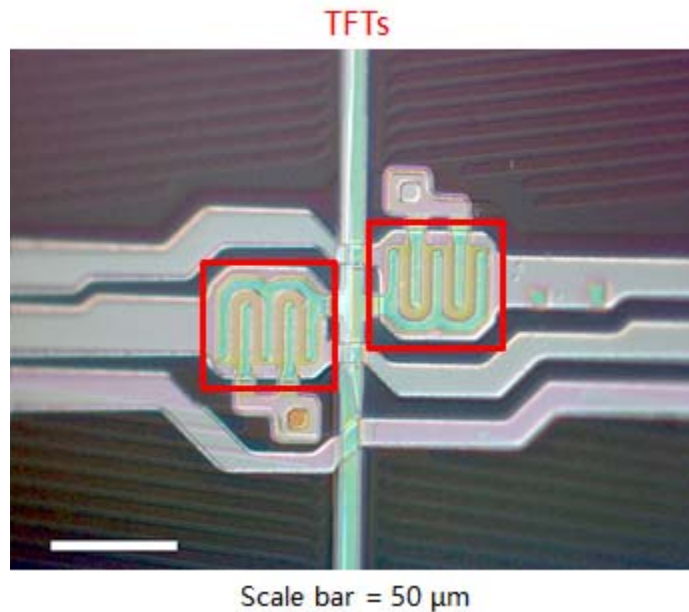
13. The Asserted Patents cover BOE's TFT-LCDs, their components, and processes related to the same. An example of a BOE TFT-LCD is model no. HV320WHB-N86, which is used in end-user products such as Haier TV model no. 32G2000. Another example of a BOE TFT-LCD is model no. BOEI320WX1-01, which is used in end-user products such as Hisense TV model no. 32H3E. That monitor and the label for its BOE TFT-LCD panel are shown below:

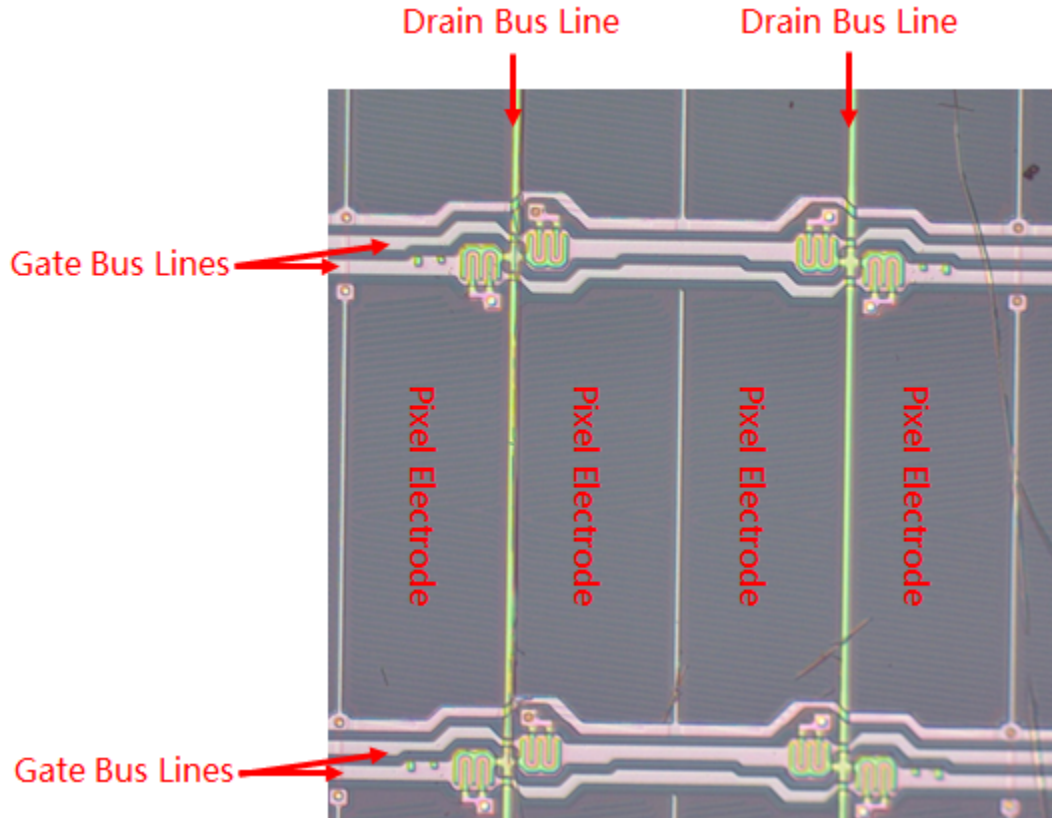


14. Typically, a TFT-LCD has the following structure shown below, comprising of a backlight, a TFT/circuitry layer, a liquid crystal layer, and a color filter:

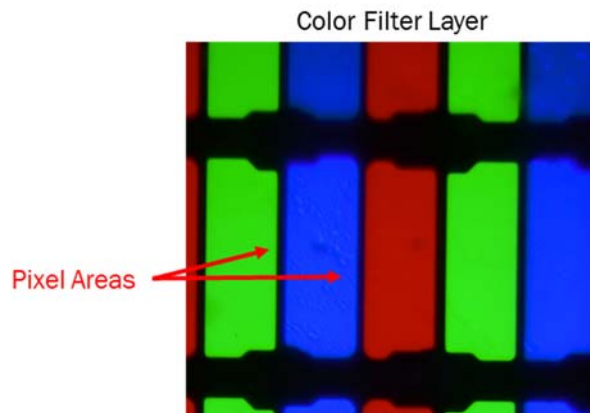


15. As shown above, the TFT-LCD panel contains a TFT array substrate and many TFTs. A teardown image below from the BOE TFT-LCD model no. BOEI320WX1-01 shows a sampling of TFTs and their accompanying circuitry lines, with larger rectangular areas associated with the pixels.

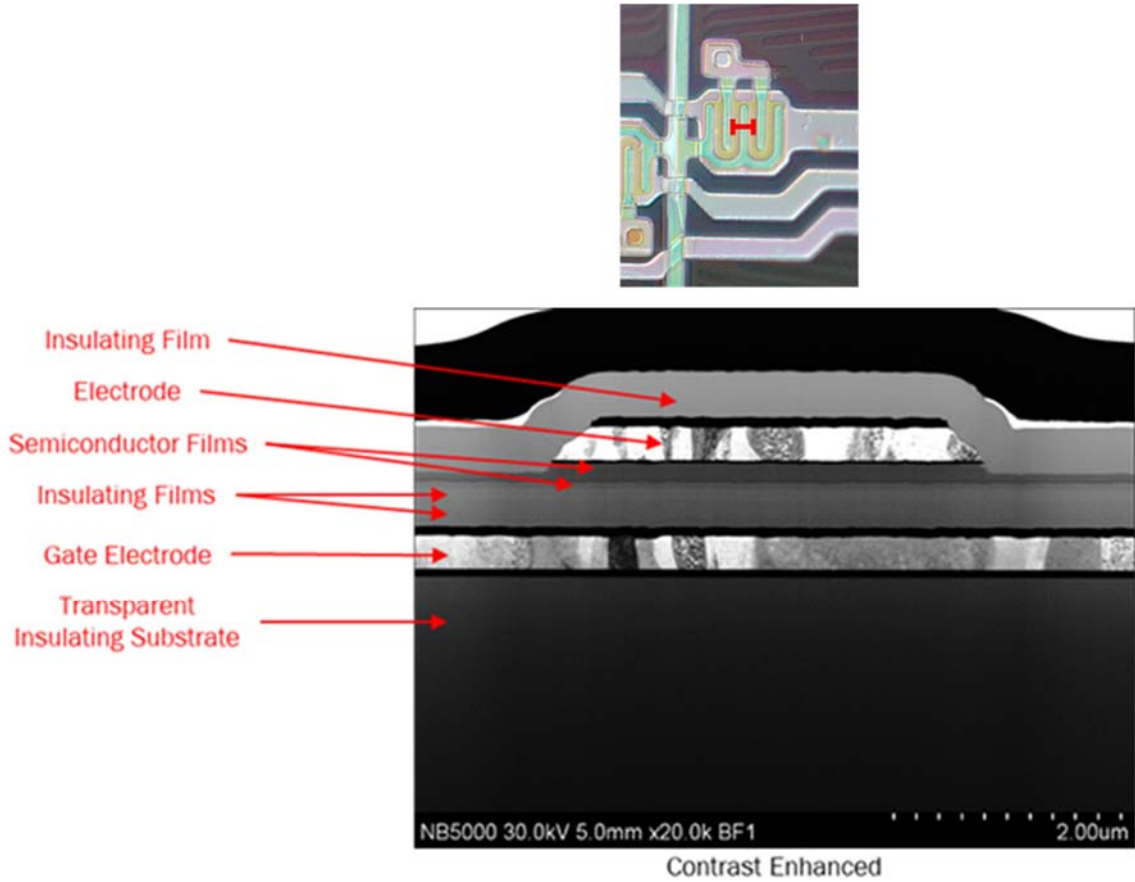




16. A TFT acts as a switch that operates its respective individual pixels using the circuitry lines. In that way, the pixels can be turned on and off to create an image on an LCD by allowing or preventing light to pass through. The individual pixels are more apparent when a color filter layer overlays the circuits as shown in the image below for the BOEI320WX1-01.



17. The Asserted Patents also cover BOE's processes for making TFT LCDs. The microscopic cross-sectional view of a TFT in model no. BOEI320WX1-0 shows a TFT made using BOE's processes and identifies the components of that TFT.



COUNT I

(INFRINGEMENT OF U.S. PATENT NO. 5,929,947)

18. Plaintiff incorporates paragraphs 1 through 17 herein by reference.

19. VPV is the assignee of the '947 patent, entitled "Liquid crystal display thin film transistor array with redundant film formed over a contact hole and method of fabricating the same," with ownership of all substantial rights in the '947 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

20. The '947 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '947 patent issued from U.S. Patent Application No. 09/168,085.

21. BOE has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '947 patent in this judicial district and elsewhere in Texas and the United States.

22. Upon information and belief, BOE engages in the research, development, design, manufacture, and sales of TFT-LCD panels. *See* BOE Interim Report 2018 at 9-10.

23. BOE directly infringes the '947 patent via 35 U.S.C. § 271(a) by making, 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 '947 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, BOE 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 '947 patent.

24. For example, BOE infringes claim 1 of the '947 patent via at least its LCD panel model nos. HV320WHB-N86 and BOEI320WX1-01. Those products each include “[a] liquid crystal display thin film transistor array comprising” each of the limitations of claim 1. The technology discussion above and the example accused TFT-LCD panels (model nos. HV320WHB-N86 and BOEI320WX1-01) provide context for Plaintiff’s allegations that each of those limitations are met. For example, model nos. HV320WHB-N86 and BOEI320WX1-01 include a plurality of parallel gate bus lines arranged on a transparent insulating substrate; a plurality of drain bus lines arranged perpendicularly to said gate bus lines and electrically isolated from said gate bus lines by a first insulating film; a thin film transistor arranged near an intersection of said gate bus line and said drain bus line; and a pixel electrode arranged in a region surrounded by said gate bus lines and said drain bus lines and made of a transparent conductive film, said thin film transistor comprising a gate electrode formed on said transparent insulating substrate and electrically connected to said gate bus line, a drain electrode formed via said first insulating film, a channel layer, and a contact layer and electrically connected to said drain bus line, and a source electrode formed via said first insulating film, said channel layer, and said contact layer and electrically connected to said pixel electrode, and said pixel electrode being electrically isolated from said drain electrode and said drain bus line by a second insulating film, wherein a contact hole which is to be electrically connected to said drain bus line is formed in said second insulating film stacked on said drain bus line in a region including the intersection of said gate bus line and said drain bus line, and an interconnection redundant film made of the same transparent conductive film as said pixel electrode is formed on said second insulating film so as to cover said contact hole.

25. BOE further infringes the '947 patent via 35 U.S.C. § 271(g) by selling, offering to sell, and/or importing TFT-LCD panels, their components, and/or products containing same, that are made by a process covered by the '947 patent. Upon information and belief, the infringing TFT-LCD panels, their components, and/or products containing same are not materially changed by subsequent processes, and they are neither trivial nor nonessential components of another product.

26. At a minimum, BOE has known of the '947 patent at least as early as the filing date of the complaint. In addition, BOE has known of the '947 patent since May 3, 2018, when BOE was provided access to a data room containing claim charts, including for the '947 patent.

27. Upon information and belief, since at least the above-mentioned date when BOE was on notice of its infringement, BOE has actively induced, under U.S.C. § 271(b), distributors, importers and/or consumers that purchase or sell TFT-LCD panels that include or are made using all of the limitations of one or more claims of the '947 patent to directly infringe one or more claims of the '947 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, BOE does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '947 patent. Upon information and belief, BOE 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, 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. *See, e.g.*, BOE's 2017 Annual Report at 16 and Interim Report 2018 at 14.

28. On information and belief, despite having knowledge of the '947 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '947 patent, BOE has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. BOE's infringing activities relative to the '947 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.

29. VPV has been damaged as a result of BOE's infringing conduct described in this Count. BOE is, thus, liable to VPV in an amount that adequately compensates VPV for BOE'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. 6,579,749)

30. Plaintiff incorporates paragraphs 1 through 29 herein by reference.

31. VPV is the assignee of the '749 patent, entitled "Fabrication method and fabrication apparatus for thin film transistor," with ownership of all substantial rights in the '749 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

32. The '749 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '749 patent issued from U.S. Patent Application No. 09/440,615.

33. BOE has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '749 patent in this judicial district and elsewhere in Texas and the United States.

34. Upon information and belief, BOE engages in the research, development, design, manufacture, and sales of TFT-LCD panels. *See* BOE Interim Report 2018 at 9-10.

35. BOE directly infringes the '749 patent via 35 U.S.C. § 271(a) by making, 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 '749 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, BOE 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 '749 patent.

36. For example, BOE infringes claim 13 of the '749 patent via its LCD panel model nos. HV320WHB-N86 and BOEI320WX1-01. Those products are made by BOE pursuant to a “method for fabricating a semiconductor device, comprising the steps of” each of the limitations of claim 13. The technology discussion above and the example accused TFT-LCD panels (model nos. HV320WHB-N86 and BOEI320WX1-01) provide context for Plaintiff’s allegations that each of those limitations are met. For example, model nos. HV320WHB-N86 and BOEI320WX1-01 each includes semiconductor devices made pursuant to a first step of forming an amorphous silicon film on a substrate; and a second step of performing plasma processing with respect to said

substrate having said amorphous silicon film formed thereon, said plasma containing an n-type impurity element selected from a group V of a periodic table to provide an n-type region in the top surface of the amorphous silicon film; and then directly a third step of forming a metal film on said amorphous silicon film to form an n-type amorphous silicon film therebetween.

37. BOE further infringes the '749 patent via 35 U.S.C. § 271(g) by selling, offering to sell, and/or importing TFT-LCD panels, their components, and/or products containing same, that are made by a process covered by the '749 patent. Upon information and belief, the infringing TFT-LCD panels, their components, and/or products containing same are not materially changed by subsequent processes, and they are neither trivial nor nonessential components of another product.

38. At a minimum, BOE has known of the '749 patent at least as early as the filing date of the complaint. In addition, BOE has known of the '749 patent since May 3, 2018, when BOE was provided access to a data room containing claim charts, including for the '749 patent.

39. Upon information and belief, since at least the above-mentioned date when BOE was on notice of its infringement, BOE has actively induced, under U.S.C. § 271(b), distributors, importers and/or consumers that purchase or sell TFT-LCD panels that include or are made using all of the limitations of one or more claims of the '749 patent to directly infringe one or more claims of the '749 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, BOE does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '749 patent. Upon information and belief, BOE 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, 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. *See, e.g.*, BOE's 2017 Annual Report at 16 and Interim Report 2018 at 14.

40. On information and belief, despite having knowledge of the '749 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '749 patent, BOE has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. BOE's infringing activities relative to the '749 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 BOE's infringing conduct described in this Count. BOE is, thus, liable to VPV in an amount that adequately compensates VPV for BOE'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. 6,674,093)

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

43. VPV is the assignee of the '093 patent, entitled "Active matrix substrate and manufacturing method therefor," with ownership of all substantial rights in the '093 patent,

including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

44. The '093 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '093 patent issued from U.S. Patent Application No. 09/695,321.

45. BOE has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '093 patent in this judicial district and elsewhere in Texas and the United States.

46. Upon information and belief, BOE engages in the research, development, design, manufacture, and sales of TFT-LCD panels. *See* BOE Interim Report 2018 at 9-10.

47. BOE directly infringes the '093 patent via 35 U.S.C. § 271(a) by making, 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 '093 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, BOE 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 '093 patent.

48. For example, BOE infringes claim 1 of the '093 patent via its LCD panel model nos. HV320WHB-N86 and BOEI320WX1-01. Those products each include an “active matrix substrate comprising” each of the limitations of claim 1. The technology discussion above and the example accused TFT-LCD panel (model nos. HV320WHB-N86 and BOEI320WX1-01) provide context for Plaintiff’s allegations that each of those limitations are met. For example, model nos. HV320WHB-N86 and BOEI320WX1-01 each include (a) a gate electrode layer, a gate insulating

layer and an amorphous silicon semiconductor layer deposited in a substantially stacked fashion on a transparent insulating substrate, viewed from a direction normal to said transparent insulating substrate, to form a layered structure including a gate electrode, a gate wiring and a thin-film transistor area; (b) a drain wiring formed on a first passivation film disposed on said substrate so as to cover said layered structure; (c) a second passivation film formed as a layer overlying said drain wiring and said first passivation film; (d) source/drain openings passing through said first passivation film and said second passivation film to reach said amorphous silicon semiconductor layer; (e) an opening passing through said second passivation film to reach said drain wiring; and (f) a wiring layer formed by a pixel electrode film disposed on said second passivation film, said wiring layer extending through said opening and openings for connection.

49. At a minimum, BOE has known of the '093 patent at least as early as the filing date of the complaint. In addition, BOE has known of the '093 patent since May 3, 2018, when BOE was provided access to a data room containing claim charts, including for the '093 patent.

50. Upon information and belief, since at least the above-mentioned date when BOE was on notice of its infringement, BOE 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 '093 patent to directly infringe one or more claims of the '093 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, BOE does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '093 patent. Upon information and belief, BOE 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, 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. *See, e.g.*, BOE's 2017 Annual Report at 16 and Interim Report 2018 at 14.

51. On information and belief, despite having knowledge of the '093 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '093 patent, BOE has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. BOE's infringing activities relative to the '093 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 BOE's infringing conduct described in this Count. BOE is, thus, liable to VPV in an amount that adequately compensates VPV for BOE'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 IV

(INFRINGEMENT OF U.S. PATENT NO. 6,800,872)

53. Plaintiff incorporates paragraphs 1 through 52 herein by reference.

54. VPV is the assignee of the '872 patent, entitled "Active matrix thin film transistor," with ownership of all substantial rights in the '872 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

55. The '872 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '872 patent issued from U.S. Patent Application No. 10/235,493.

56. BOE has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '872 patent in this judicial district and elsewhere in Texas and the United States.

57. Upon information and belief, BOE engages in the research, development, design, manufacture, and sales of TFT-LCD panels. *See* BOE Interim Report 2018 at 9-10.

58. BOE directly infringes the '872 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 '872 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, BOE 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 '872 patent.

59. For example, BOE infringes claim 2 of the '872 patent via at least its LCD panel model nos. HV320WHB-N86 and BOEI320WX1-01. Those products each include an “active matrix substrate comprising” each of the limitations of claim 2. The technology discussion above and the example accused TFT-LCD panel (model nos. HV320WHB-N86 and BOEI320WX1-01) provide context for Plaintiff’s allegations that each of those limitations are met. For example, model nos. HV320WHB-N86 and BOEI320WX1-01 each include a plurality of crossing gate wirings and drain wirings formed on a transparent insulating substrate; a thin film transistor formed in each area surrounded by said gate wiring and said drain wiring, said thin film transistor including

a gate electrode connected to said gate wiring, a gate insulating film formed on said gate electrode so as to have a width which is not more than that of said gate electrode, and a semiconductor film formed on said gate insulating film so as to have a width which is not more than that of said gate electrode; an insulation film for covering said gate insulating film and said semiconductor film; a drain electrode and a source electrode connected to said semiconductor film through a pair of openings formed to said insulation film; and a pixel electrode which is connected to said source electrode and formed on said insulation film, wherein said gate wiring is formed in the same conductive layer as said gate electrode.

60. At a minimum, BOE has known of the '872 patent at least as early as the filing date of the complaint. In addition, BOE has known of the '872 patent since September 6, 2018, when BOE was provided access to a data room containing claim charts, including for the '872 patent.

61. Upon information and belief, since at least the above-mentioned date when BOE was on notice of its infringement, BOE 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 '872 patent to directly infringe one or more claims of the '872 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, BOE does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '872 patent. Upon information and belief, BOE 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, 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. *See, e.g.*, BOE's 2017 Annual Report at 16 and Interim Report 2018 at 14.

62. On information and belief, despite having knowledge of the '872 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '872 patent, BOE has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. BOE's infringing activities relative to the '872 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.

63. VPV has been damaged as a result of BOE's infringing conduct described in this Count. BOE is, thus, liable to VPV in an amount that adequately compensates VPV for BOE'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 V

(INFRINGEMENT OF U.S. PATENT NO. 6,891,196)

64. Plaintiff incorporates paragraphs 1 through 63 herein by reference.

65. VPV is the assignee of the '196 patent, entitled "Active matrix substrate and manufacturing method therefor," with ownership of all substantial rights in the '196 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

66. The '196 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '196 patent issued from U.S. Patent Application No. 10/617,035.

67. BOE has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '196 patent in this judicial district and elsewhere in Texas and the United States.

68. Upon information and belief, BOE engages in the research, development, design, manufacture, and sales of TFT-LCD panels. *See* BOE Interim Report 2018 at 9-10.

69. BOE directly infringes the '196 patent via 35 U.S.C. § 271(a) by making, 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 '196 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, BOE 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 '196 patent.

70. For example, BOE infringes claim 1 of the '196 patent via its LCD panel model nos. HV320WHB-N86 and BOEI320WX1-01. Those products each include a “lateral electrical field type active matrix substrate comprising” each of the limitations of claim 1. The technology discussion above and the example accused TFT-LCD panel (model nos. HV320WHB-N86 and BOEI320WX1-01) provide context for Plaintiff’s allegations that each of those limitations are met. For example, the model nos. HV320WHB-N86 and BOEI320WX1-01 includes (a) a gate electrode layer, a gate insulating layer and an amorphous silicon semiconductor layer deposited in a substantially stacked fashion on a transparent insulating substrate, viewed from a direction normal

to said transparent insulating substrate, to form a layered structure, including a gate electrode, a gate wiring, a comb-shaped common electrode and a thin-film transistor area; (b) a drain wiring formed on a first passivation film disposed on said substrate so as to cover said layered structure; and (c) a second passivation film formed as a layer overlying said drain wiring and said first passivation film; (d) source/drain openings passing through said first passivation film and said second passivation film to reach said amorphous silicon semiconductor layer, and (e) an opening passing through said second passivation film to reach said drain wiring; wherein (f) a wiring layer extending through said drain opening to said drain wiring and a pixel electrode connected to said source opening are formed by a pixel electrode film disposed on said second passivation film.

71. BOE further infringes the '196 patent via 35 U.S.C. § 271(g) by selling, offering to sell, and/or importing TFT-LCD panels, their components, and/or products containing same, that are made by a process covered by the '196 patent. Upon information and belief, the infringing TFT-LCD panels, their components, and/or products containing same are not materially changed by subsequent processes, and they are neither trivial nor nonessential components of another product.

72. At a minimum, BOE has known of the '196 patent at least as early as the filing date of the complaint. In addition, BOE has known of the '196 patent since September 6, 2018, when BOE was provided access to a data room containing claim charts, including for the '196 patent.

73. Upon information and belief, since at least the above-mentioned date when BOE was on notice of its infringement, BOE has actively induced, under U.S.C. § 271(b), distributors, importers and/or consumers that purchase or sell TFT-LCD panels that include or are made using all of the limitations of one or more claims of the '196 patent to directly infringe one or more claims of the '196 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, BOE does so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '196 patent. Upon information and belief, BOE 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, 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. *See, e.g.*, BOE's 2017 Annual Report at 16 and Interim Report 2018 at 14.

74. On information and belief, despite having knowledge of the '196 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '196 patent, BOE has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. BOE's infringing activities relative to the '196 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.

75. VPV has been damaged as a result of BOE's infringing conduct described in this Count. BOE is, thus, liable to VPV in an amount that adequately compensates VPV for BOE'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

76. Plaintiff seeks preliminary and permanent injunctions as a result of BOE's infringement of the Asserted Patents. Plaintiff is likely to succeed in showing that BOE 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 BOE 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 BOE. Considering the balance of hardships between the Plaintiff and BOE, a remedy in equity is warranted; and the public interest would not be disserved by a permanent or preliminary injunction.

CONCLUSION

77. Plaintiff is entitled to recover from BOE the damages sustained by Plaintiff as a result of BOE'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.

78. 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

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

PRAYER FOR RELIEF

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

1. A judgment that BOE 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 BOE;
3. A preliminary and permanent injunction against BOE, 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 BOE 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 BOE 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 BOE 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: October 18, 2018

Respectfully submitted,

/s/ Patrick J. Conroy by permission Andrea Fair

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