

“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 Xihuanzhong 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 has “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/gsj/s/>). 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.” *See* 2017 Annual Report (*available at* <https://www.boe.com/files/2018/0829/7156784848263569394.pdf>) at 16.

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.

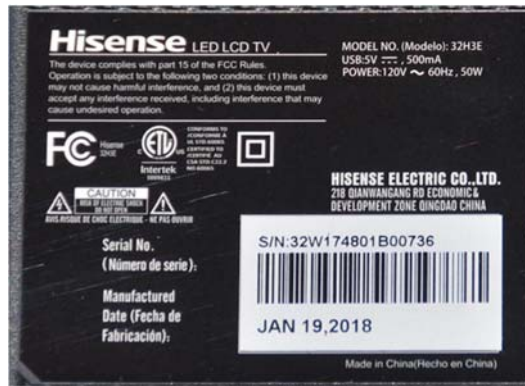
11. On information and belief, BOE has significant ties to, and presence in, the State of Texas and the Eastern District of Texas, making venue in this judicial district both proper and convenient for this action.

THE ASSERTED PATENTS AND TECHNOLOGY

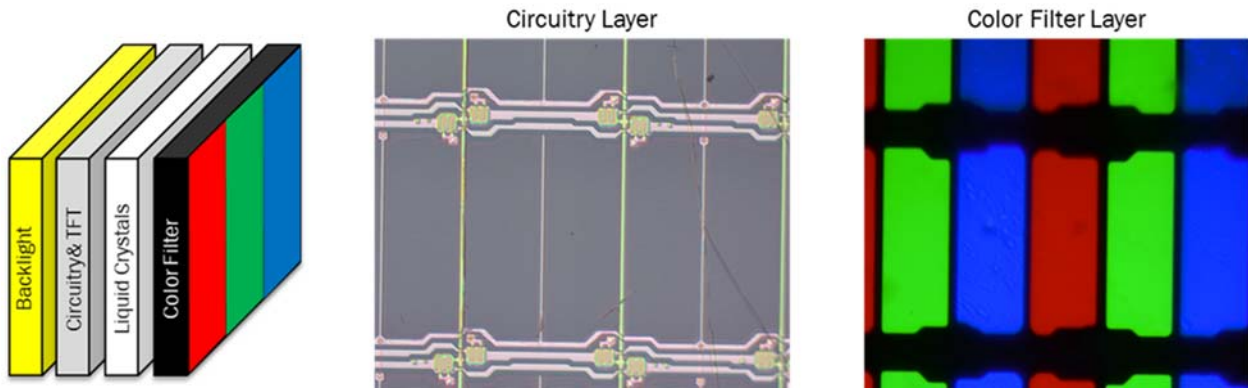
12. Upon information and belief, a significant portion of operating revenue of BOE is derived from the manufacture and sale of TFT-LCD flat panel displays and BOE’s main commodities include large-sized and small-to-medium-sized TFT-LCD related products. BOE asserts that its Display and Sensor Device 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.” *See* 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

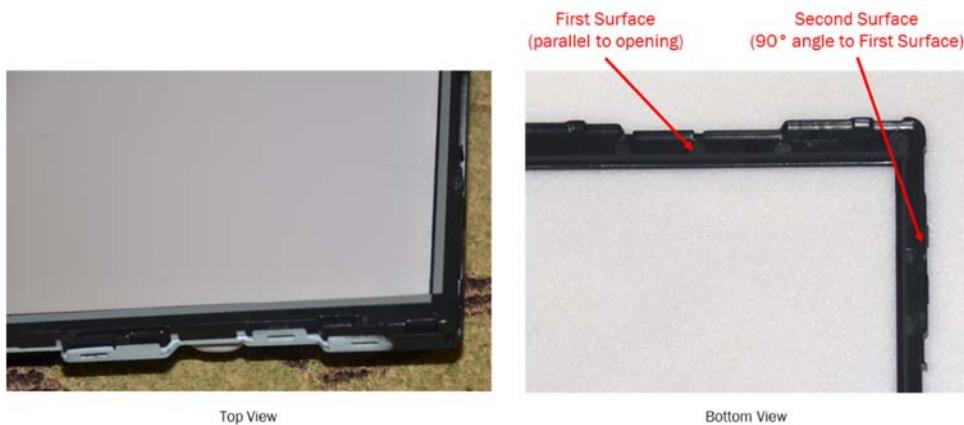
used in end-user products such as Haier TV model no. 32G2000. Another example of a BOE TFT-LCD is model no. BOEI320WX1-01, which is used in end-user products such as Hisense TV model no. 32H3E. That monitor and the label for its BOE TFT-LCD panel are shown below:



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:



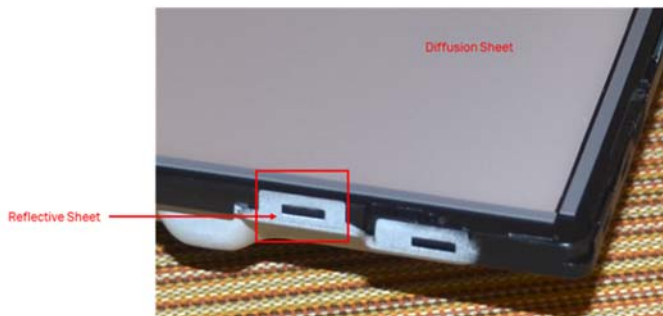
15. As shown above, the TFT-LCD panel contains a backlight unit. A teardown image below from the BOE TFT-LCD model no. BOEI320WX1-01 shows its backlight unit.



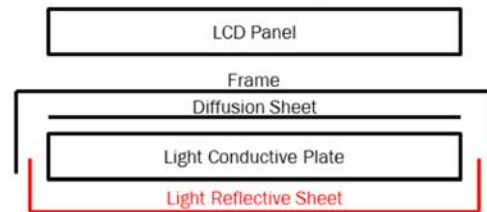
16. A TFT-LCD panel's backlight module contains many components. The image below shows, for example, an illustrative cross-sectional diagram of the BOE TFT-LCD and a part of the backlight unit's frame. The LED backlight has a conductive plate positioned in the opening of the frame, which has surfaces adjacent to the two frame surfaces. The LED backlight also has a light reflective sheet fastened to the second surface of the frame and covers at least a portion of the second surface of the frame and light conductive plate. The diffusion sheet and the light reflective sheet cooperate to fasten the light conductive plate within the frame.



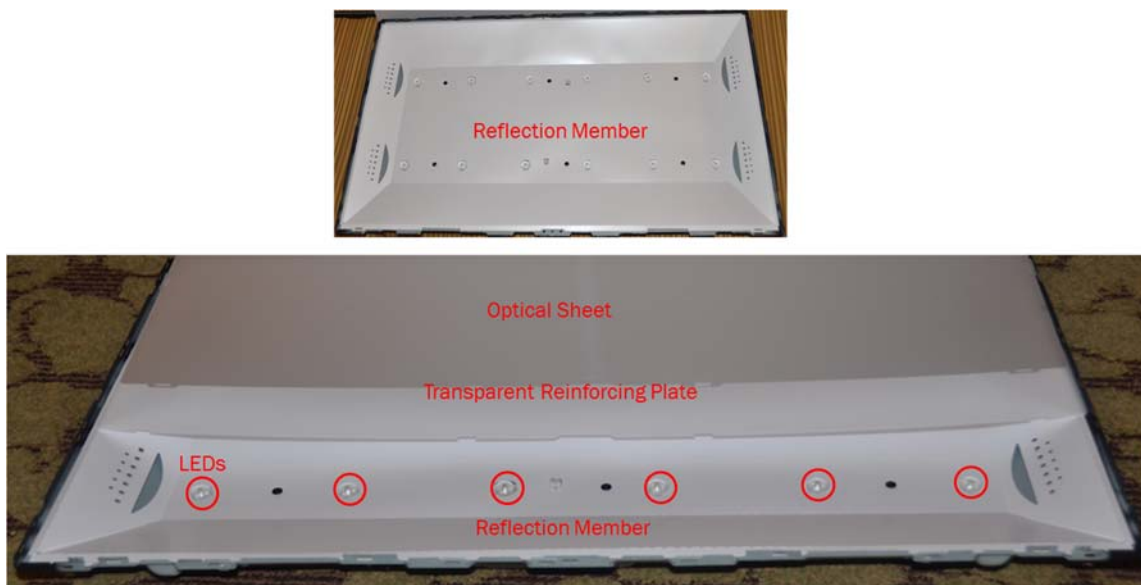
Diffusion Sheet detached from Frame



Cross-Section Diagram



17. The backlight unit also has a transparent reinforcing plate in contact with an optical sheet. The backlight unit has a reflection member that reflects the light emitted from the light source and through the transparent reinforcing plate and optical sheet. The light source is arranged between the reinforcing plate and the reflecting member.




18. The BOEI320WX1-01 LCM has a series chip (the Mstar MSD3553), which includes the MStarACE6 Video Processor.



19. The BOE LCM has a driving circuit for its LCD panel in the video processor chip. Upon information and belief, the MSD3553 Series Chip shown and described below is expected to have features and components similar to (or identical to) other MSD3553 Series chips, including the MStarACE Video Processor.

Mstar MSD3553 Series Chip



Mstar semiconductor

Attention Please: Under the technology license agreement be provide samples that incorporate Dolby/DTS/Microsoft tech
Dolby/DTS/Microsoft respectively.

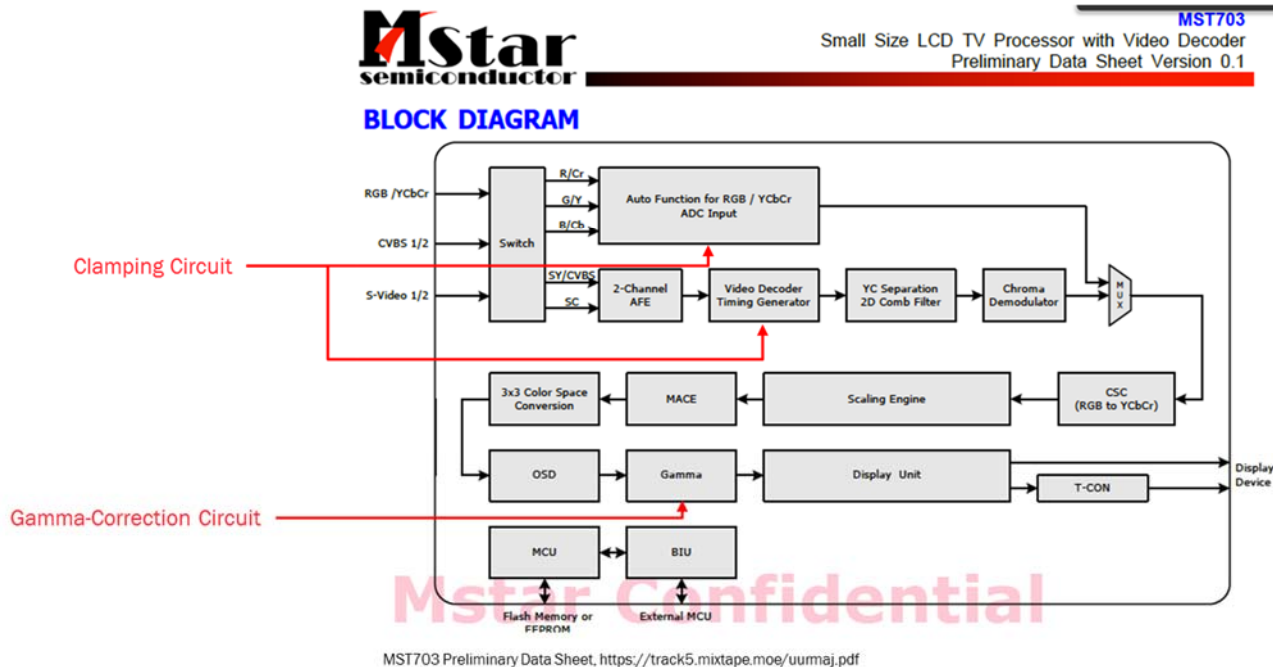
FEATURES

MSD3553NUC is a highly integrated single chip solution for digital ATSC TV system. Key features include:

1. Digital and Analog TV Front-End Demodulator
2. Multi-Standard A/V Format Decoder
3. The MStarACE⁶ Video Processor
4. Home Theater Sound Processor
5. Embedded Memory for optimized BOM cost
6. Multiple HDMI 1.4 Compliant Ports with ARC Support
7. One MHL 2.0 Compliant Port

MStar Co

20. The BOE LCM has a clamping circuit for its LCD panel in the video processor chip. The clamping circuit has gamma-correction circuits connected to the clamp units. The clamping circuit and gamma-correction circuit are shown below in the data sheet for the MST703 video processor, which is a predecessor to the ACE6 video processor. The ACE6 video processor is expected to have similar (or identical components) to its predecessor.



COUNT I

(INFRINGEMENT OF U.S. PATENT NO. 7,593,070)

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

22. VPV is the assignee of the '070 patent, entitled “Optical unit and LCD device using the optical unit,” with ownership of all substantial rights in the '070 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

23. The '070 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '070 patent issued from U.S. Patent Application No. 11/984,403.

24. BOE has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '070 patent in this judicial district and elsewhere in Texas and the United States.

25. 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.

26. BOE directly infringes the '070 patent 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 '070 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, BOE sells and has sold 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 '070 patent.

27. BOE directly infringes the '070 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 '070 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 '070 patent.

28. For example, BOE infringes claim 1 of the '070 patent via its LCD panel model nos. HV320WHB-N86 and BOEI320WX1-01. That product includes a “optical unit, 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 include a frame surrounding an opening, the frame having a first surface and a second surface, placed directly across from the first surface of the frame; a light conductive plate positioned in the opening of the frame, the light conductive plate having a first surface adjacent the first surface of the frame and a second surface adjacent the second surface of the frame; a diffusion sheet fastened to the first surface of the frame in a manner to cover at least a portion of the first surface of the frame and to cover the first surface of the light conductive plate; and a light reflective sheet fastened to the second surface of the frame in a manner to cover at least a portion of the second surface of the frame and to cover the second surface of the light conductive plate, wherein the diffusion sheet and the light reflective sheet cooperate to fasten the light conductive plate within the frame.

29. BOE further infringes the '070 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 '070 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.

30. At a minimum, BOE has known of the '070 patent at least as early as the filing date of the complaint. In addition, BOE has known of the '070 patent since May 3, 2018, when BOE was provided access to a data room containing claim charts, including for the '070 patent.

31. 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 '070 patent to directly infringe one or more claims of the '070 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 '070 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.

32. On information and belief, despite having knowledge of the '070 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '070 patent, BOE has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. BOE's infringing activities relative to the '070 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.

33. 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. 6,513,943)

34. Plaintiff incorporates paragraphs 1 through 33 herein by reference.

35. VPV is the assignee of the '943 patent, entitled "Backlight unit and display device using the same backlight unit," with ownership of all substantial rights in the '943 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

36. The '943 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '943 patent issued from U.S. Patent Application No. 09/810,542.

37. BOE has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '943 patent in this judicial district and elsewhere in Texas and the United States.

38. 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.

39. BOE directly infringes the '943 patent 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 '943 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, BOE sells and has sold 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 '943 patent.

40. BOE directly infringes the '943 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 '943 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 '943 patent.

41. For example, BOE infringes claim 1 of the '943 patent via its LCD panel model nos. HV320WHB-N86 and BOEI320WX1-01. That product includes a "backlight unit, 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 include a light source; an optical sheet for transmitting light from said light source and giving an optical change to the light; a transparent reinforcing plate in intimate contact with a major surface of said optical sheet; and a reflection member for reflecting the light emitted from said light source to said transparent reinforcing plate such that the light from

said light source passed through said transparent reinforcing plate passes through said optical sheet, wherein said light source is arranged immediately below said reinforcing place and between said reflecting member and said reinforcing plate.

42. BOE further infringes the '943 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 '943 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.

43. At a minimum, BOE has known of the '943 patent at least as early as the filing date of the complaint. In addition, BOE has known of the '943 patent since May 3, 2018, when BOE was provided access to a data room containing claim charts, including for the '943 patent.

44. 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 '943 patent to directly infringe one or more claims of the '943 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 '943 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.

45. On information and belief, despite having knowledge of the '943 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '943 patent, BOE has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. BOE's infringing activities relative to the '943 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.

46. 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. 7,006,065)

47. Plaintiff incorporates paragraphs 1 through 46 herein by reference.

48. VPV is the assignee of the '065 patent, entitled "Gamma compensation method and circuit for color liquid crystal display," with ownership of all substantial rights in the '065

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

49. The '065 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '065 patent issued from U.S. Patent Application No. 09/707,816.

50. BOE has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '065 patent in this judicial district and elsewhere in Texas and the United States.

51. 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.

52. BOE directly infringes the '065 patent 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 '065 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, BOE sells and has sold 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 '065 patent.

53. BOE directly infringes the '065 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 '065 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 '065 patent.

54. For example, BOE infringes claim 1 of the '065 patent via its LCD panel model nos. HV320WHB-N86 and BOEI320WX1-01. That product includes a “driving circuit for a color liquid crystal display comprising” each of the limitations of claim 9. 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 include a first gamma compensating circuit for applying a gamma compensation only to a red video signal so as to be suitable only for a red transmittance characteristic for an independently applied voltage in said color liquid crystal display and for outputting only a compensated red video signal; a second gamma compensating circuit for applying a gamma compensation only to a green video signal so as to be suitable only for a green transmittance characteristic for an independently applied voltage in said color liquid crystal display and for outputting only a compensated green video signal; a third gamma compensating circuit for applying a gamma compensation only to a blue video signal so as to be suitable only for a blue transmittance characteristic for an independently applied voltage of said color liquid crystal display and for outputting only a compensated blue video signal; a reference voltage generating circuit for supplying respectively independently generated reference voltages to said first gamma compensating circuit, said second gamma compensating circuit and said third gamma compensating circuit; and a data electrode driving circuit for driving corresponding electrodes of said color liquid crystal display based on said compensated red video signal, said compensated green video signal and said compensated blue video signal, wherein said

reference voltages are generated to provide optimum gamma compensation based on the luminosity characteristics of each color.

55. BOE further infringes the '065 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 '065 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.

56. At a minimum, BOE has known of the '065 patent at least as early as the filing date of the complaint. In addition, BOE has known of the '065 patent since September 6, 2018, when BOE was provided access to a data room containing claim charts, including for the '065 patent.

57. 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 '065 patent to directly infringe one or more claims of the '065 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 '065 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.

58. On information and belief, despite having knowledge of the '065 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '065 patent, BOE has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. BOE's infringing activities relative to the '065 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.

59. 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. 6,657,619)

60. Plaintiff incorporates paragraphs 1 through 59 herein by reference.

61. VPV is the assignee of the '619 patent, entitled "Clamping circuit for liquid crystal display device," with ownership of all substantial rights in the '619 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

62. The '619 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '619 patent issued from U.S. Patent Application No. 09/602,182.

63. BOE has and continues to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '619 patent in this judicial district and elsewhere in Texas and the United States.

64. 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.

65. BOE directly infringes the '619 patent 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 '619 patent, or by having its controlled subsidiaries do the same. Furthermore, upon information and belief, BOE sells and has sold 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 '619 patent.

66. BOE directly infringes the '619 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 '619 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 '619 patent.

67. For example, BOE infringes claim 1 of the '619 patent via its LCD panel model nos. HV320WHB-N86 and BOEI320WX1-01. That product includes a “clamping circuit for a liquid crystal display device 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 include a plurality of clamp units for receiving a plurality of input color signals of an input picture signal after deleting a DC bias from each of said input color signals to produce a plurality of clamped color signals, respectively, by adding a predetermined clamping voltage corresponding to a pedestal level of said input picture signal to each of said input color signals; and a plurality of gamma-correction circuits connected to said clamp units for receiving said clamped color signals, respectively, and for performing a predetermined gamma correction and amplification on each of said clamped color signals to produce output color signals, respectively; each of said clamp units being provided with a clamping portion for receiving said input color signal and a clamping voltage generating circuit for supplying a clamping voltage to said clamping portion so as to be controlled in response to an individual first control signal supplied thereto and generates said clamped color signal such that a black level of said clamped color signal coincides with a black level in an input/output characteristic of said gamma-correction circuit, and said clamping portion being supplied with said clamping voltage so as to add said clamping voltage to said pedestal level in a predetermined timing of said input color signal in response to a second control signal supplied thereto.

68. BOE further infringes the '619 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 '619 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.

69. At a minimum, BOE has known of the '619 patent at least as early as the filing date of the complaint. In addition, BOE has known of the '619 patent since September 6, 2018, when BOE was provided access to a data room containing claim charts, including for the '619 patent.

70. 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 '619 patent to directly infringe one or more claims of the '619 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 '619 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.

71. On information and belief, despite having knowledge of the '619 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '619 patent, BOE has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. BOE's infringing activities relative to the '619 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.

72. 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

73. 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

74. 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.

75. 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

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

PRAYER FOR RELIEF

77. 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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