UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

LONGITUDE LICENSING LIMITED and 138 EAST LCD ADVANCEMENTS LIMITED, Plaintiffs, v. BOE TECHNOLOGY GROUP CO., LTD., HISENSE GROUP HOLDINGS CO., LTD., and HISENSE VISUAL TECHNOLOGY CO., LTD., Defendants.	Civil Action No. 2:25-cv-358 **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Longitude Licensing Limited and 138 East LCD Advancements Limited file this complaint for patent infringement against Defendants BOE Technology Group Co., Ltd., Hisense Group Holdings Co., Ltd., and Hisense Visual Technology Co., Ltd.

INTRODUCTION

1. This is an action for patent infringement under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq*. Plaintiffs allege that Defendants have infringed and continue to infringe, directly and indirectly, three patents: U.S. Patent Nos. 7,636,146 ("the '146 patent"), 8,319,512 ("the '512 patent"), and 8,391,020 ("the '020 patent") (collectively, the "Longitude Patents"). *See* Exs. 1-3.

2. The Longitude Patents are directed to foundational liquid crystal display ("LCD") technologies used in modern display devices, panels, and/or modules.

3. Defendant BOE Technology Group Co., Ltd., has infringed and continues to

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infringe the Longitude Patents, directly and indirectly, by (1) making, using, offering to sell, selling, and/or importing into the United States LCD panels and/or modules that include the claimed inventions of the Longitude Patents; (2) inducing third parties (e.g., BOE customers—including Hisense Group Holdings Co., Ltd., and Hisense Visual Technology Co., Ltd.—and end users) to make, use, offer to sell, sell, and/or import into the United States BOE products (e.g., LCD panels and/or modules) that include the claimed inventions of the Longitude Patents, with knowledge of the Longitude Patents and with specific intent to cause the third parties' infringement; and (3) contributing to third parties' (e.g., BOE customers and end users) direct infringement of the Longitude Patents by offering to sell, selling, and/or importing into the United States components of patented devices, which constitute a material part of the claimed inventions, with knowledge of the Longitude Patents and of the third parties' infringement.

4. Defendants Hisense Group Holdings Co., Ltd., and Hisense Visual Technology Co., Ltd., have infringed and continue to infringe the Longitude Patents, directly and indirectly, by (1) making, using, offering to sell, selling, and/or importing into the United States products that incorporate BOE LCD panels and/or modules that include the claimed inventions of the Longitude Patents; and (2) inducing third parties (e.g., Hisense customers and end users) to use, offer to sell, sell, and/or import into the United States Hisense products (e.g., TVs including a BOE LCD panel and/or module) that include the claimed inventions of the Longitude Patents, with knowledge of the Longitude Patents and with specific intent to cause the third parties' infringement.

5. Plaintiffs seek damages and other relief for Defendants' infringement of the Longitude Patents.

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THE PARTIES

6. Plaintiff Longitude Licensing Limited is a private limited company organized and existing under the laws of the Republic of Ireland, having a principal place of business at Plaza 255, Suite 2A, Blanchardstown Corporate Park 2, Dublin 15, D15 YH6H, Ireland.

7. Plaintiff 138 East LCD Advancements Limited is a private limited company organized and existing under the laws of the Republic of Ireland, having a principal place of business at Plaza 255, Suite 2A, Blanchardstown Corporate Park 2, Dublin 15, D15 YH6H, Ireland.

8. On information and belief, Defendant BOE Technology Group Co., Ltd. ("BOE") is a company organized and existing under the laws of the P.R. China, having a principal place of business at No. 12, Xihuanzhong Road, BDA, Beijing, 100176, P.R. China.

9. On information and belief, Defendant Hisense Group Holdings Co., Ltd. ("Hisense Group"), f/k/a Qingdao Hisense Electronics Industry Holdings Co., Ltd., is a company organized and existing under the laws of the P.R. China, having a principal place of business at Hisense Tower, 17 Donghai Xi Road, Qingdao, 266071, China.

10. On information and belief, Defendant Hisense Visual Technology Co., Ltd. ("Hisense Visual," with Hisense Group, "Hisense"), f/k/a Qingdao Hisense Electronics Co., Ltd., is a company organized and existing under the laws of the P.R. China, having a principal place of business at Hisense Tower, 17 Donghai Xi Road, Qingdao, 266071, China. Hisense Visual is a subsidiary of Hisense Group.

JURISDICTION AND VENUE

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

12. Venue is proper in this District pursuant to 28 U.S.C. § 1391(c)(3) because BOE, Hisense Group, and Hisense Visual do not reside in the United States and thus may be sued in any judicial district in the United States.

I. BOE

13. This Court may exercise general and specific personal jurisdiction over BOE consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. On information and belief, BOE has intentionally manufactured and/or distributed LCD panels and/or modules that infringe the Longitude Patents, and/or caused its subsidiaries, affiliates, or intermediaries to manufacture and/or distribute infringing LCD panels and/or modules, through established distribution channels, intending that those products be sold in the United States, the State of Texas, and this District. BOE holds itself and its subsidiaries out as a single global entity serving the United States. For example, according to BOE's website, its "subsidiaries span 20 countries and regions, including the United States," and "[i]ts service network covers major regions in Europe, the Americas, Asia, Africa and beyond." https://www.boe.com/en/about/index (last accessed Mar. 20, 2025).

14. Further, BOE has (itself and/or through subsidiaries, affiliates, or intermediaries) committed acts of patent infringement in the United States, the State of Texas, and this District, including by offering to sell, selling, and/or importing infringing BOE LCD panels and/or modules in the United States, the State of Texas, and this District and/or inducing others to commit acts of patent infringement and/or contributing to direct infringement in the United States, the State of Texas, and this District.

15. On information and belief, BOE knows or should reasonably expect that the infringing BOE LCD panels and/or modules are incorporated in finished consumer products sold

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in the United States, including in Texas (the U.S. state with the second-highest population) and this District. BOE knows and intends that the infringing BOE LCD panels and/or modules will be incorporated into finished consumer products, such as smartphones, tablets, notebooks, monitors, automotive displays, and TVs, including Hisense TVs. On information and belief, BOE knows or should reasonably expect that finished consumer products, such as Hisense TVs and other consumer electronic devices identified and described *infra*, incorporating infringing BOE LCD panels and/or modules are sold in numerous retail locations throughout the United States, including in Texas and in this District.

16. Accordingly, BOE has established minimum contacts within the forum and purposefully availed itself of the benefits of Texas, and the exercise of personal jurisdiction over BOE would not offend traditional notions of fair play and substantial justice. In addition, or in the alternative, this Court has personal jurisdiction over BOE pursuant to Federal Rule of Civil Procedure 4(k)(2).

II. Hisense

17. This Court may exercise general and specific personal jurisdiction over Hisense Group and Hisense Visual (collectively, "Hisense") consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. On information and belief, Hisense Group, including through its subsidiaries, affiliates, or intermediaries, including subsidiary Hisense Visual, has intentionally manufactured and/or distributed products that incorporate BOE LCD panels and/or modules that infringe the Longitude Patents, through established distribution channels, intending that those products be sold in the United States, the State of Texas, and this District. Hisense Group holds itself and its subsidiaries out as a single global entity serving the United States. For example, according to

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Hisense USA's website, "Hisense USA is the U.S. headquarters that was established by our parent company - Hisense - in Suwanee, GA less than 10 years ago. We are a fast-growing consumer electronics and appliance manufacturer that offers high-quality and cutting-edge TVs and home appliances [and] has built 54 overseas companies and utilizes 14 high-end international production facilities in Europe, Central America and South Africa." https://www.hisense-usa.com/company?sa=X&ved=2ahUKEwjeidCmy6fxAhVviYsKHb12DZAQ9QF6BAgrEAI (last accessed Mar. 20, 2025). Moreover, Hisense Group, together with its subsidiaries including Hisense Visual and other affiliates, operate in agency with each other as a group. https://global.hisense.com/about-hisense/history; https://www.hisense-usa.com/company; https://global.hisense.com/about-hisense/overview/ (last accessed Mar. 20, 2025); Hisense Visual 2023 Annual Report, Section XII, Note 4 (identifying Hisense Group Holdings Co., Ltd., as the controlling shareholder of Hisense Visual), Note 5 (identifying transactions with related entity Hisense Group Holdings Co., Ltd., for goods and services and provision of sales/service in 2023 totaling nearly 40 billion RMB). Furthermore, according to Hisense Visual's 2023 Annual Report, the North America market was Hisense's largest market outside of China in terms of revenue, driven by Hisense's North American R&D and manufacturing centers. 2023 Annual Report, Section III, Note 3. The 2023 Annual Report also reports that Hisense TV's 2023 North American retail market share was 12.76%, and its U.S. market share increased 1.1 percentage points year-on-year. *Id.*

18. On information and belief, Hisense Group and Hisense Visual share common management, common ownership, advertising platforms, facilities, distribution chains, and platforms, and the same accused products and related technologies. Hisense and its subsidiaries

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are an interrelated group of companies which together comprise one of the world's largest manufacturers of televisions and one of the leading sellers of televisions in the United States, including the Hisense brand.

19. Further, Hisense Group and Hisense Visual have (themselves and/or through subsidiaries, affiliates, or intermediaries) committed acts of patent infringement in the United States, the State of Texas, and this District, including by making, using, offering to sell, selling and/or importing products that incorporate infringing BOE LCD panels and/or modules in the United States, the State of Texas, and this District and/or inducing others to commit acts of patent infringement in the United States, the State of Texas, and this District.

20. On information and belief, Hisense knows or should reasonably expect that the accused Hisense TVs incorporating BOE LCD panels and/or modules are sold in the United States, including in Texas (the U.S. state with the second-highest population) and this District. On information and belief, Hisense knows or should reasonably expect that Hisense's distribution channel—comprising its subsidiaries—is arranged in a way that a termination point of the channel includes the State of Texas and/or this District. On information and belief, Hisense knows or should reasonably expect that Hisense TVs incorporating BOE LCD panels and/or modules are sold in numerous retail locations throughout the United States, including in Texas and in this District. On information and belief, Hisense knows or should reasonably expect that it sells Hisense TVs incorporating BOE LCD panels and/or modules through websites controlled by its U.S. affiliates and subsidiaries, for example, Hisense USA Corporation, ("Hisense USA"), accessible by U.S. consumers, including in Texas and in this District.

21. Accordingly, Hisense Group and Hisense Visual have established minimum contacts within the forum and purposefully availed themselves of the benefits of Texas, and the

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exercise of personal jurisdiction over the Hisense entities would not offend traditional notions of fair play and substantial justice. In addition, or in the alternative, this Court has personal jurisdiction over Hisense Group and Hisense Visual pursuant to Federal Rule of Civil Procedure 4(k)(2).

FACTUAL BACKGROUND

I. The Longitude Patents

22. Longitude is a privately owned intellectual property management company. Among other holdings, Longitude manages and licenses a portfolio of approximately 800 active patents worldwide directed to display technologies. Longitude is the exclusive worldwide licensee of the Longitude Patents with exclusive rights to sublicense, enforce, and obtain damages, including past damages, for infringement of the Longitude Patents.

23. The '146 patent, entitled "Electro-Optical Panel, System with Terminals Having Different Corresponding Characteristics," duly and legally issued on December 22, 2009, from a patent application filed August 6, 2004, with Shin Fujita as the sole named inventor. The '146 patent claims priority to Foreign (JP) Patent Application Nos. 2003-290650, filed on August 8, 2003, and 2004-193515, filed June 30, 2004. The claimed inventions relate to an electro-optical panel, for example, an LCD panel, design that optimizes terminal configurations to enhance signal integrity. By employing input terminals of varying sizes—larger terminals for higher-frequency driving signals and smaller terminals for image signals—the invention minimizes contact resistance and prevents signal degradation. This design improves display performance by ensuring precise signal transmission, reducing distortion, and enhancing overall image quality.

24. The '512 patent, entitled "Flexible Substrate Including Inspection Electrode for Outputting Signal Processed in Integrated Circuit, Electro-Optical Device, and Electronic

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Device," duly and legally issued on November 27, 2012, from a patent application filed March 12, 2010, with Katsutoshi Ueno as the sole named inventor. The '512 patent claims priority to Foreign (JP) Patent Application No. 2009-069825, filed on March 23, 2009. The claimed inventions relate to a flexible substrate incorporating an inspection electrode to facilitate signal monitoring and quality control. By electrically connecting the inspection electrode to an integrated circuit, the invention allows for real-time output signal assessment, improving the reliability of circuit performance. This design enhances the manufacturing process by enabling more efficient testing, reducing defects, and ensuring higher-quality electro-optical and electronic devices.

25. The '020 patent, entitled "Electro-Optical Device, Electro-Optical Panel, and Electronic Apparatus" duly and legally issued on March 5, 2013, from a patent application filed December 1, 2010, with Munehide Saimen as the sole named inventor. The '020 patent claims priority to Foreign (JP) Patent Application No. 2009-275218, filed on December 03, 2009, and 2010-214838, filed September 27, 2010. The claimed inventions relate to an electro-optical device featuring an optimized terminal and wiring configuration to enhance electrical connectivity and reliability. By implementing structured terminal groupings and dedicated connection wiring, the invention ensures stable signal transmission between circuit substrates and the electro-optical panel. This design reduces signal degradation, improves device performance, and enhances the durability of electronic apparatuses utilizing the electro-optical panel.

26. Each of the Longitude Patents is valid and enforceable.

27. BOE and Hisense are not authorized to practice the Longitude Patents.

28. The claimed inventions of the Longitude Patents enable BOE and Hisense to sell

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LCD panels and/or modules, and/or TVs that incorporate these LCD panels and/or modules, with improved consumer-facing benefits, including improved image quality and brightness, and to realize improvements in manufacturing yields and costs.

II. The Inventors

29. The Longitude Patents describe and claim inventions developed by Seiko Epson Corporation ("Epson"). Epson is a Japanese electronics company that is a pioneer in the development of LCD technologies and a recognized innovator in the semiconductor and electronics components and devices spaces. The Longitude Patents cover foundational LCD innovations that Epson developed.

III. BOE

30. BOE is a Chinese multinational corporation that designs, manufactures, and sells electronic components. Headquartered in Beijing, BOE operates manufacturing facilities in at least 10 cities across China. According to its annual reports, BOE comprises five core operating divisions: (1) Display Devices, (2) IoT Innovation, (3) Sensors, (4) MLED, and (5) Smart Medical Engineering. BOE's Display Devices business, through which it supplies customers with LCD and OLED display panels and modules for end-device applications including smartphones, tablets, notebooks, monitors, TVs, and automotive displays, accounted for more than 88 percent of BOE's 2022 operating revenue and more than 92 percent of its 2021 operating revenue. BOE's Display Devices business is a world leader in the global semiconductor display industry; for example, BOE's 2023 annual report states that BOE's semiconductor display products rank first in the world in terms of shipment volume, and its LCD panels and modules rank first for the five mainstream applications (end devices) for LCD displays: smartphones, tablets, notebooks, monitors, and TVs. In the first half of 2024, the Display Devices business

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accounted for 83.54 percent of BOE's operating revenue.

31. On information and belief, BOE's Display Devices business provides LCD, OLED, and other display technology components, including display panels and modules, to third parties—including, for example, Hisense—that then incorporate BOE display panels and modules into devices for end users. BOE's 2023 annual report refers to these third parties as its "brand customers."

32. On information and belief, BOE targets the United States for its sales of display panels and modules. For example, BOE's 2023 annual report states that approximately 20 percent of BOE's 2023 operating revenue was from BOE's "America" operating segment, which includes the United States. BOE's 2023 annual report also states that BOE ranked eleventh worldwide in terms of entities with the most U.S. patents granted, and that it has been among the global top 20 U.S. patent grantees for five consecutive years—BOE obtains U.S. patents to protect the U.S. market for its products. Furthermore, in a January 2017 press release, Li Xinguo, BOE Vice President and Director of BOE's Intellectual Property and Technology Management Center, commented on BOE's inclusion in the 2016 top 50 entities granted patent assignments by the USPTO, stating, "[i]n the past, BOE applied for patents mainly to protect our products. Now, we also seek to increase the market shares of our products. Patent grants will not only support our business but also drive development of our business." BOE Press Release, "BOE ranked 40th in the Top 50 USPTO Patent Assignees in 2016," Jan. 12, 2017, available at https://www.boe.com/en/company/dynamic-891ce385fc934f698f223a3072960c7e (last accessed Mar. 20, 2025).

33. On information and belief, BOE targets the U.S. market for its display panels and modules, including through its U.S.-based subsidiary, BOE Technology America, Inc. ("BOE

America"). BOE's global website states that BOE America currently has three offices in the United States. On information and belief, BOE established BOE America for the purpose of strategic brand customer development and support in the United States and North America.

34. BOE America is an extension of BOE. On information and belief, BOE America is controlled by BOE and under common ownership with BOE. According to BOE America's corporate filings, its officers and directors are also high-level BOE (the Chinese parent) employees, indicating that BOE America exists for the purpose of serving BOE's market in the United States for LCD panels and modules.

35. Thus, BOE—directly and/or through its subsidiaries, affiliates, or intermediaries—has imported, offered to sell, and sold, and continues to import, offer to sell, and sell, infringing LCD panels and modules in the United States through established distribution channels. BOE intends to sell and does sell infringing products in the United States, the State of Texas, and this District.

IV. Hisense

36. On information and belief, Hisense Group, including through Hisense Visual, and Hisense Visual manufacture and/or distribute electronic display products (e.g., TVs) that incorporate BOE LCD panels and/or modules for sale to customers and end users in the United States.

37. On information and belief, Hisense targets the United States for its sales. For example, Hisense has established Hisense USA as its U.S. headquarters, located in Suwanee, Georgia, to bring a full range of electronics and appliances into the North American market. Hisense has publicized its plans to win over the United States market. A 2015 press release stated Hisense Group's intent to "gain an upper hand in both North and South America with the

extended market capacity." https://www.prnewswire.com/news-releases/hisenses-major-expansion-acquiring-sharp-america-300121799.html (last accessed Mar. 20, 2025). And Hisense executives have touted its racing sponsorships as "the perfect platform for Hisense to engage with the US market" and having "played a huge role in raising the profile of Hisense in the United States." https://web.archive.org/web/20221001014212/https://jwgrandprix.com/2017/03/19/formula-one-exclusive-hisense-on-motorsport-f1-nascar/ (last accessed Mar. 20, 2025). Indeed, a Formula One car with a Hisense logo raced in the 2017 "Circuit of the Americas" Grand Prix in Austin, Texas. https://www.davewilsonphotography.com/2018/01/10/daniel-ricciardo-2017-us-grand-prix/ (last accessed Mar. 20, 2025). Hisense has also described itself in press releases as a "multinational consumer technology manufacturer and one of the largest television brands in the world, holding the #3 TV share position globally" and as being "committed to advancing the consumer technology industry across North America" with "dedicated R&D centers in Atlanta, Georgia; San Jose, California; and Toronto, Canada to enable localized product development and innovation." https://www.prnewswire.com/news-releases/hisense-to-settle-nascar-dispute-with-high-stakes-video-game-tournament-at-charlotte-motor-speedway-300437517.html (last accessed Mar. 20, 2025).

38. On information and belief, Hisense USA is an extension of Hisense Group. Corporate filings reveal that several of Hisense USA's officers and directors are senior executives from Hisense Group, underscoring the subsidiary's role in executing Hisense Group's U.S. business strategy for consumer electronics.

39. On information and belief, Hisense Group and Hisense Visual, together with subsidiaries and other affiliates of the Hisense group of companies, manufacture and sell TVs

incorporating BOE LCD panels and/or modules across the globe. As of June 2024, global shipments of Hisense TVs for Q1 2024 hit a total of 6.32M, ranking Hisense No. 2 overall in the global market from 2022 to 2024 Q1. https://global.hisense.com/about-hisense/newsroom/hisense-tv-ranked-no-2-globally-in-q1-2024 (last accessed Mar. 20, 2025). Hisense's Q1 2024 global TV shipment volume share was 13.6% with a global shipment revenue share of 12.1%. Hisense is ranked No. 2 globally for TV shipments and No. 1 in 100 inch TVs in both 2023 and Q1 2024. As the technology and market leader in the field of Laser TV, Hisense also enjoyed a Q1 2024 worldwide Laser TV volume share of 53.4%. *Id.*

40. Thus, Hisense—directly and/or through its subsidiaries, affiliates, or intermediaries—has imported, offered to sell, and sold, and continues to import, offer to sell, and sell infringing products in the United States through established distribution channels. Hisense intends to sell and does sell infringing products in the United States, the State of Texas, and this District.

V. BOE's Direct Infringement and Accused Instrumentalities

41. BOE has directly infringed and continues to directly infringe, pursuant to 35 U.S.C. § 271(a), one or more claims of each of the Longitude Patents (as further specified in Counts I-III) by making, using, offering to sell, selling within the United States, and/or importing into the United States, infringing LCD panels and modules (the "BOE Accused Instrumentalities").

42. The BOE Accused Instrumentalities include LCD panels and modules incorporated in third-party products, including smartphones, tablets, notebooks, monitors, TVs, and vehicle infotainment displays.

43. On information and belief, BOE imports, offers to sell, and sells BOE Accused

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Instrumentalities in the United States and provides BOE Accused Instrumentalities to third parties for sale in the United States as part of third-party products, including Hisense TVs, and BOE actively targets the U.S. market for sales of the BOE Accused Instrumentalities. For example, on information and belief, BOE sells BOE Accused Instrumentalities to customers for incorporation into electronic devices, and those sales occur in the United States. For example, BOE sells infringing LCD modules, a subset of the BOE Accused Instrumentalities, to Hisense for incorporation into TVs. On information and belief, a portion of BOE's sales of infringing LCD modules occur in the United States.

44. The above-described acts of direct infringement committed by BOE have caused and will continue to cause injury and damage to Plaintiffs.

VI. Hisense's Direct Infringement and Accused Instrumentalities

45. Hisense has directly infringed and continues to directly infringe, pursuant to 35 U.S.C. § 271(a), one or more claims of each of the Longitude Patents (as further specified in Counts I-III) by making, using, offering to sell, selling within the United States, and/or importing into the United States, products that incorporate infringing BOE LCD panels and modules (the "Hisense Accused Instrumentalities").

46. On information and belief, Hisense imports, offers to sell, and sells Hisense Accused Instrumentalities in the United States and provides Hisense Accused Instrumentalities to third parties for sale in the United States, and Hisense actively targets the U.S. market for sales of the Hisense Accused Instrumentalities. For example, on information and belief, Hisense sells Hisense Accused Instrumentalities to end users and distributors in the United States.

47. The above-described acts of direct infringement committed by Hisense have caused and will continue to cause injury and damage to Plaintiffs.

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VII. Plaintiffs Provided Actual Notice of Infringement to BOE

48. Plaintiffs provided actual notice, pursuant to 35 U.S.C. § 287(a), of two of the Longitude Patents and the alleged infringement over the course of their licensing negotiations with BOE.

49. Plaintiffs' licensing negotiations with BOE began on or around January 2, 2020, when 138 East, the owner of the patent portfolio including the Longitude Patents, sent a letter (the "Initial Notice") to BOE. That letter identified Longitude as the entity that would represent 138 East during licensing negotiations with BOE. Longitude and its licensing representatives then participated in at least sixteen licensing meetings and exchanged with BOE numerous claim charts relating to the Longitude Patents and BOE's infringing products, between approximately September 2020 and January 2024.

50. Over the course of those licensing negotiations, Plaintiffs provided actual notice to BOE of BOE's infringement of the '146 and '512 patents and identified, in claim charts and in letters, exemplary infringing third-party devices incorporating BOE Accused Instrumentalities, including LCD panels or modules used in TVs, monitors, and notebooks.

51. Plaintiffs provided to BOE actual notice of BOE's infringement of the '146 patent on or around January 2, 2020, as part of the Initial Notice.

52. Plaintiffs provided to BOE actual notice of BOE's infringement of the '512 patent on or around April 8, 2021, in technical presentations to BOE during licensing negotiations.

53. Plaintiffs provided to BOE actual notice of BOE's infringement of the '020 patent on or around the filing of this complaint.

54. Plaintiffs proposed reasonable licensing terms to BOE, as part of the parties' ongoing licensing negotiations, but BOE has consistently rejected the offers.

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55. BOE continued to directly and indirectly infringe the Longitude Patents after Plaintiffs provided actual notice of BOE's infringement of the Longitude Patents and identified exemplary third-party devices incorporating BOE Accused Instrumentalities. BOE knew or should have known that its conduct infringed the Longitude Patents. BOE's continued and continuing direct and indirect infringement was and is deliberate and intentional. BOE has therefore willfully infringed each Longitude Patent at least since Plaintiffs identified specific patents and infringement to BOE during the course of the parties' licensing negotiations: BOE has willfully infringed the '146 patent since at least January 2, 2020; and the '512 patent since at least April 8, 2021, or at least as of the filing of the complaint in this case.

56. Plaintiffs provided to BOE actual notice of Hisense's infringement of the '146, '512, and'020 patents on or around the filing of this complaint.

VIII. BOE's Indirect Infringement

57. BOE has indirectly infringed and continues to indirectly infringe the Longitude Patents by inducing infringement by third parties under 35 U.S.C. § 271(b), including BOE's customers (including Hisense) that incorporate the BOE Accused Instrumentalities into other electronic devices, and further including other importers, resellers, and end users in BOE's supply chain, in this District and elsewhere in the United States and the State of Texas. For example, BOE has sold BOE Accused Instrumentalities to Hisense, for incorporation into Hisense TVs, which on information and belief were and are available for sale through Hisense's authorized retailers, including Walmart and Best Buy, in this District, specifically, Walmart Marshall Supercenter, 1701 E End Blvd N., Marshall, TX 75670, and Best Buy, 422 W Loop 281, Ste. 100, Longview, TX 75605.

58. BOE has induced, and continues to induce, others' direct infringement of the

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Longitude Patents by selling BOE Accused Instrumentalities to third-party customers, including consumer electronics manufacturers and/or sellers, who then directly infringe by making, using, offering to sell, and/or selling within the United States, and/or importing into the United States, infringing products.

59. BOE knew and specifically intended that its customers and other importers, resellers, and end users in BOE's supply chain would sell infringing products in the United States and/or cause BOE Accused Instrumentalities to be sold in the United States—or deliberately avoided learning of the infringing circumstances so as to be willfully blind to the infringement that was induced. BOE specifically intended that its customers and other importers, resellers, and end users in BOE's supply chain would make, use, sell, or offer to sell BOE Accused Instrumentalities in the United States, or import BOE Accused Instrumentalities into the United States, as discussed in § V above.

60. BOE has induced others' direct infringement despite actual notice that the BOE Accused Instrumentalities infringe the Longitude Patents, as described herein. BOE therefore has caused its third-party customers and other importers, resellers, and end users in BOE's supply chain to directly infringe the Longitude Patents with knowledge of the Longitude Patents and specific intent that the customers would directly infringe, or deliberately avoided learning of the infringing circumstances so as to be willfully blind to the infringement that was induced.

61. BOE also has contributed to and continues to contribute to direct infringement of the Longitude Patents by third parties, including its customers and other importers, resellers, and end users in BOE's supply chain, in violation of 35 U.S.C. § 271(c). BOE offers to sell, sells, and/or imports into the United States components of patented devices—specifically, certain BOE LCD panels and modules. Those BOE LCD panels and modules constitute a material part of the

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infringing third-party electronic devices into which they are incorporated. BOE knew that those Accused Instrumentalities were especially made for use in infringing the Longitude Patents after receiving actual notice of those patents. The BOE Accused Instrumentalities that are incorporated into these third-party electronic devices have no substantial non-infringing use outside of those devices.

62. BOE specifically intends to cause the acts constituting direct infringement because it derives significant revenue by selling BOE Accused Instrumentalities to third parties who directly infringe one or more claims of the Longitude Patents. On information and belief, BOE's Display Devices business's sales of LCD and OLED display panels and modules to third-party brand customers in the Americas accounted for approximately 20 percent of BOE's 2022 operating revenue, as discussed above in § III. On information and belief, a significant portion of BOE's Americas operating revenue is generated from sales of BOE Accused Instrumentalities to BOE's brand customers in the United States for inclusion in third-party devices, for example, smartphones, tablets, notebooks, monitors, TVs, and automotive displays sold in the United States. And as discussed in § V, BOE specifically targets the United States market as a destination for sales of BOE Accused Instrumentalities, actively seeks to develop strategic brand customer relationships with third parties that sell devices incorporating BOE Accused Instrumentalities to end users in the United States, and provides services to its existing brand costumers in the United States.

63. The above-described acts of indirect infringement committed by BOE have caused and will continue to cause injury and damage to Plaintiffs.

IX. Hisense's Indirect Infringement

64. Hisense has indirectly infringed and continues to indirectly infringe the Longitude

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Patents by inducing infringement by its customers under 35 U.S.C. § 271(b), including other importers, resellers, and end users in Hisense's supply chain, in this District and elsewhere in the United States and the State of Texas.

65. On information and belief, Hisense, through Hisense USA or other subsidiaries, affiliates, intermediaries, representatives, and/or agents, regularly transacts and does business within this District, including researching, designing, importing into, distributing, advertising, promoting, and selling products that incorporate infringing BOE LCD panels and/or modules. Hisense sells the Hisense Accused Instrumentalities to citizens and/or distributors residing within the State of Texas and/or this District. For example, Hisense has authorized retailers that offer to sell and sell products that incorporate BOE LCD panels and/or modules that infringe the Longitude Patents throughout the State of Texas, including in this District and to consumers in this District, including, on information and belief: Walmart Marshall Supercenter, 1701 E End Blvd N., Marshall, TX 75670, and Best Buy, 422 W Loop 281, Ste. 100, Longview, TX 75605.

66. Hisense has induced, and continues to induce, others' direct infringement of the Longitude Patents by selling Accused Instrumentalities to customers, who then directly infringe by using, offering to sell, and/or selling within the United States, and/or importing into the United States, the Hisense Accused Instrumentalities.

67. At least as of the date of this complaint, Hisense knew and specifically intended that its customers and other importers, resellers, and end users in Hisense's supply chain would sell infringing Hisense Accused Instrumentalities in the United States and/or cause Hisense Accused Instrumentalities to be sold in the United States—or deliberately avoided learning of the infringing circumstances so as to be willfully blind to the infringement that was induced. Hisense specifically intended that its customers and other importers, resellers, and end users in Hisense's

supply chain would use, sell, or offer to sell Hisense Accused Instrumentalities in the United States, or import Hisense Accused Instrumentalities into the United States, as discussed in §§ IV, VI above.

68. The above-described acts of indirect infringement committed by Hisense have caused and will continue to cause injury and damage to Plaintiffs.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 7,636,146

69. Pursuant to 35 U.S.C. § 282, the '146 patent is presumed valid.

70. BOE and Hisense have directly infringed and continue to directly infringe one or more claims of the '146 patent, in violation of 35 U.S.C. § 271(a), by making, using, offering to sell, selling, and/or importing the BOE Accused Instrumentalities (BOE) and the Hisense Accused Instrumentalities (Hisense).

71. The BOE Accused Instrumentalities and the Hisense Accused Instrumentalities (which incorporate a BOE Accused Instrumentality) comprise the electro-optical panel of at least claims 10-23 of the '146 patent.

72. The following paragraphs describe how the BOE Accused Instrumentalities and thus the Hisense Accused Instrumentalities practice claim 23 of the '146 patent, using the exemplary BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H). Plaintiffs' allegations of infringement are not limited to claim 23 or to the exemplary product, and Plaintiffs will identify and disclose additional infringement through discovery and in infringement contentions.

73. The Hisense 43" FHD TV (model number 43A45H) is exemplary of other infringing Hisense products, including without limitation the Hisense 75" TV (model number 75R6E), which incorporates a substantially similar BOE LCD panel, and other TVs

incorporating substantially similar BOE LCD panels and/or modules. The 43" TV and 75" TV and substantially similar products incorporating substantially similar BOE LCD panels and/or modules each practice the asserted claims of the '146 patent in the same manner, and infringement by one representative product is indicative of infringement by the others.

74. The LCD panel in the Hisense 43" FHD TV (model number 43A45H) is a BOE LCD panel, as indicated by the "BOE" logo on the printed circuit board:

Hisense 43" FHD TV (Model No. 43A45H), box

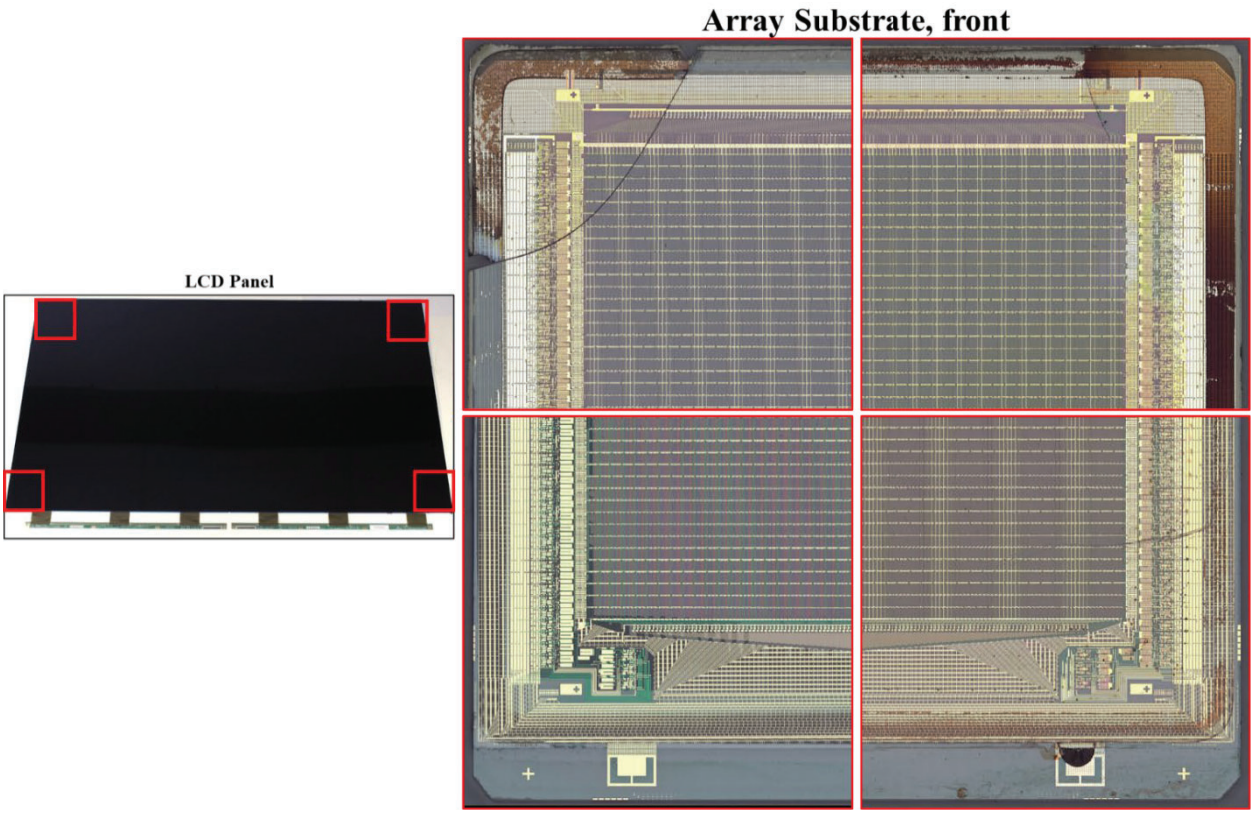


Hisense 43" FHD TV (Model No. 43A45H), LCD Panel

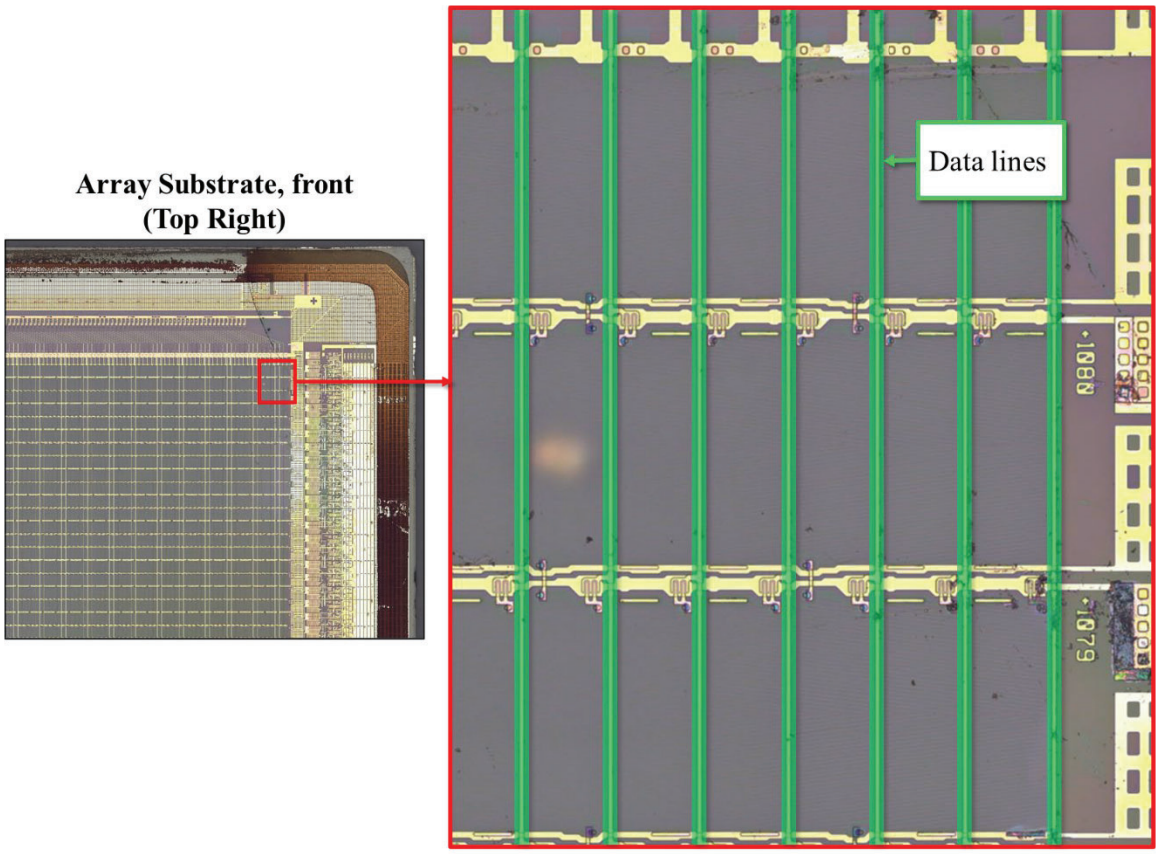




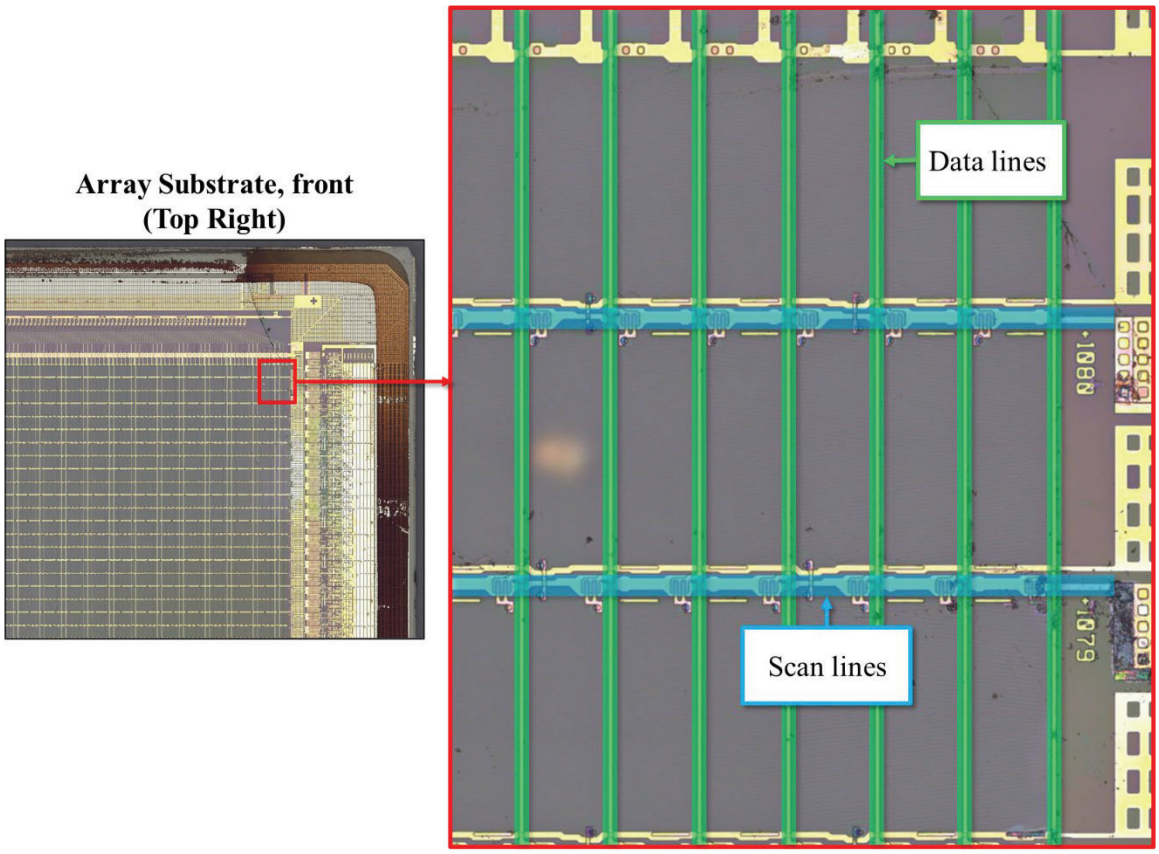
75. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H), comprise a substrate, for example, an array substrate:



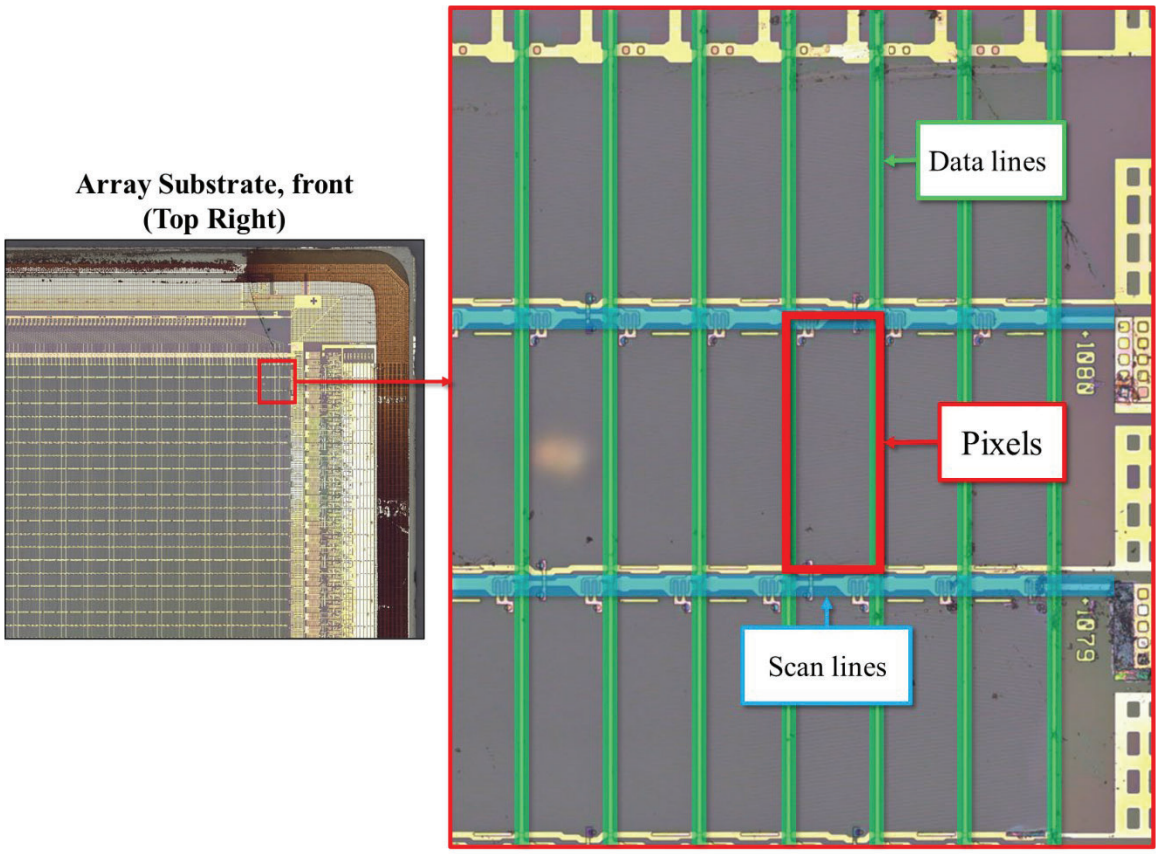
76. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H), comprise data lines. The BOE LCD panel in the Hisense 43" FHD TV comprises data lines located on the array substrate running vertically:



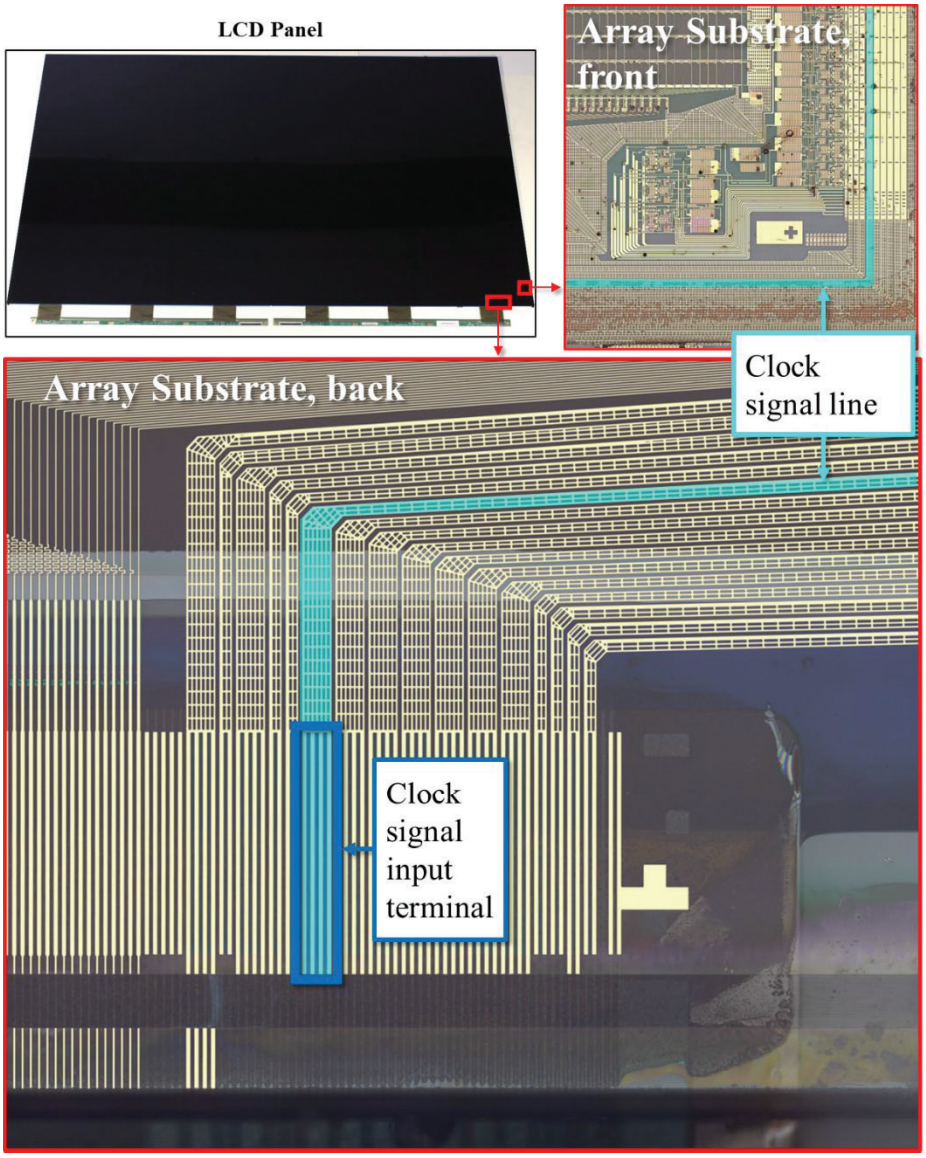
77. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H), comprise scanning lines intersecting the data lines. The BOE LCD panel in the Hisense 43" FHD TV comprises scanning lines located on the array substrate running horizontally and intersecting the data lines:



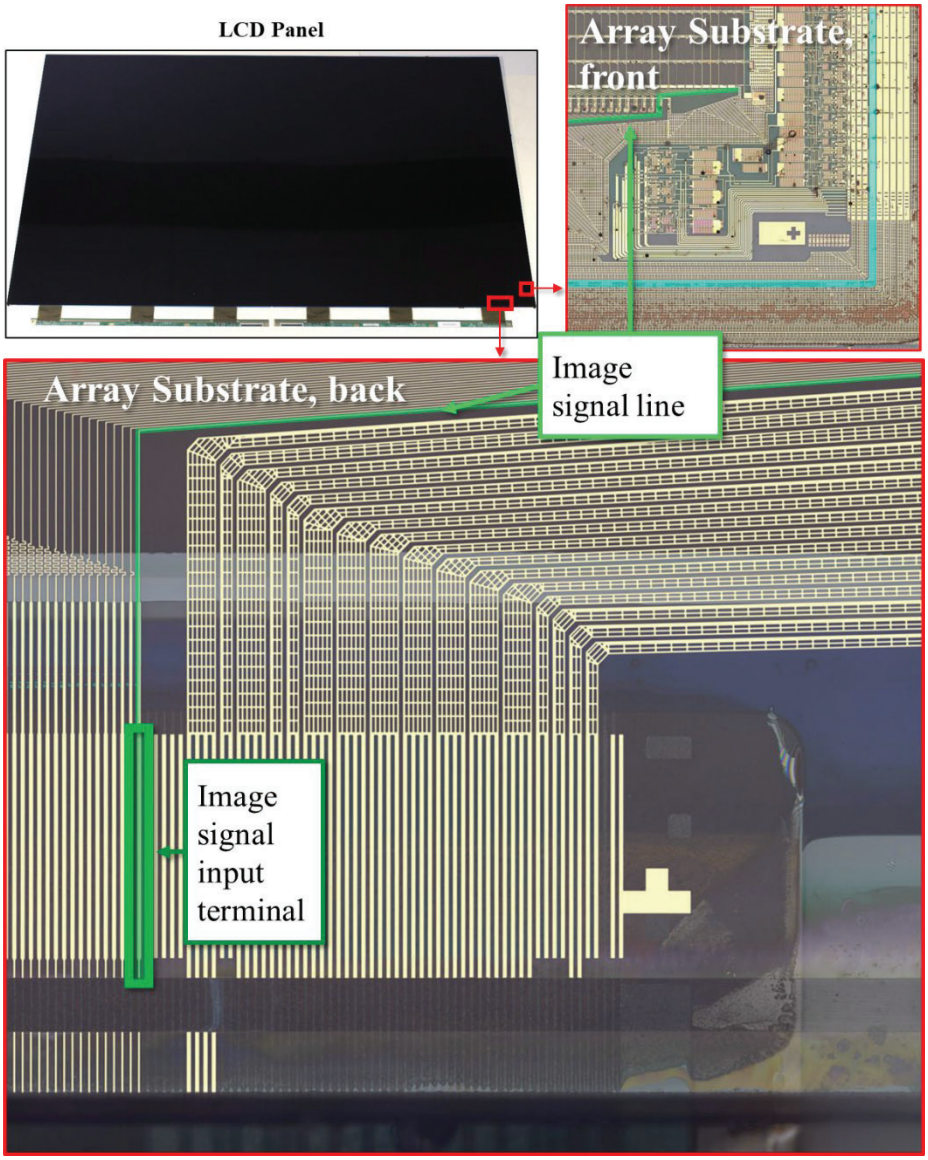
78. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H), comprise pixels disposed corresponding to intersections between the data lines and the scanning lines. The BOE LCD panel in the Hisense 43" FHD TV comprises pixels that are disposed on the array substrate corresponding to intersections between the data lines and scanning lines:



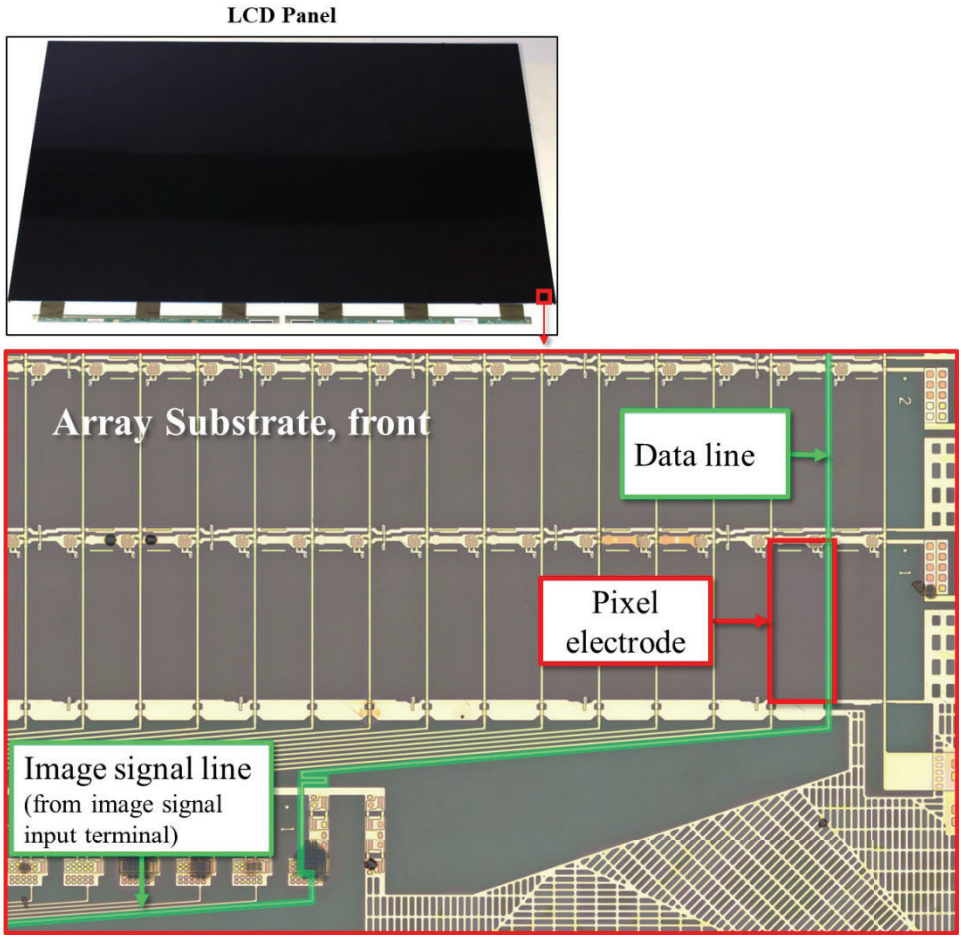
79. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H), comprise a clock signal input terminal supplied with a clock signal. The BOE LCD panel in the Hisense 43" FHD TV comprises a clock signal input terminal implemented on the array substrate that is supplied with a clock signal. On information and belief, the clock signal line provides to the scanning line driving circuitry a signal that identifies a period for selecting individual scanning lines.



80. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H), comprise an image signal input terminal supplied with an image signal. The BOE LCD panel used in the Hisense 43" FHD TV comprises an image signal input terminal implemented on the array substrate that is supplied with an image signal:

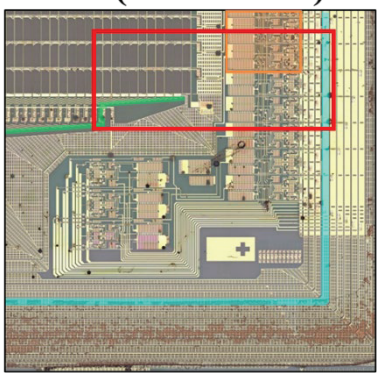


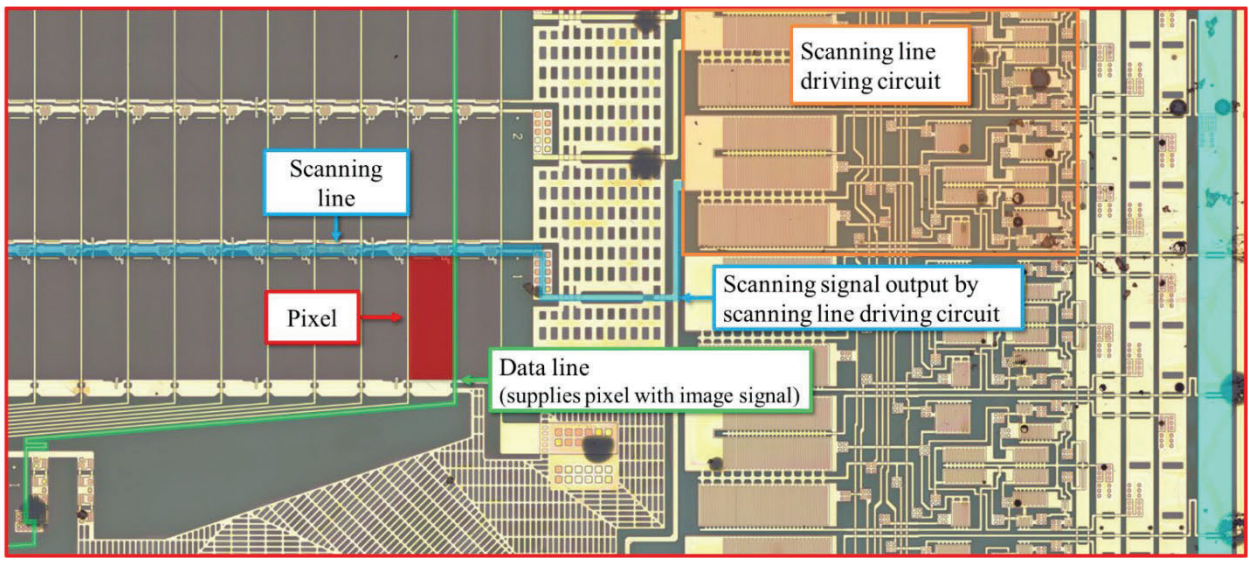
81. On information and belief, the image signal line provides to the pixel electrodes a voltage corresponding to grayscale via the data lines:



82. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H), comprise a scanning line drive circuit that outputs scanning signals to the scanning lines, image signals from the data lines supplied to the pixels are selected by the scanning signals. The BOE LCD panel in the Hisense 43" FHD TV comprises a scanning line drive circuit that outputs scanning signals to the scanning lines, and pixels that are selected by the scanning signals are supplied with image signals from the data lines:

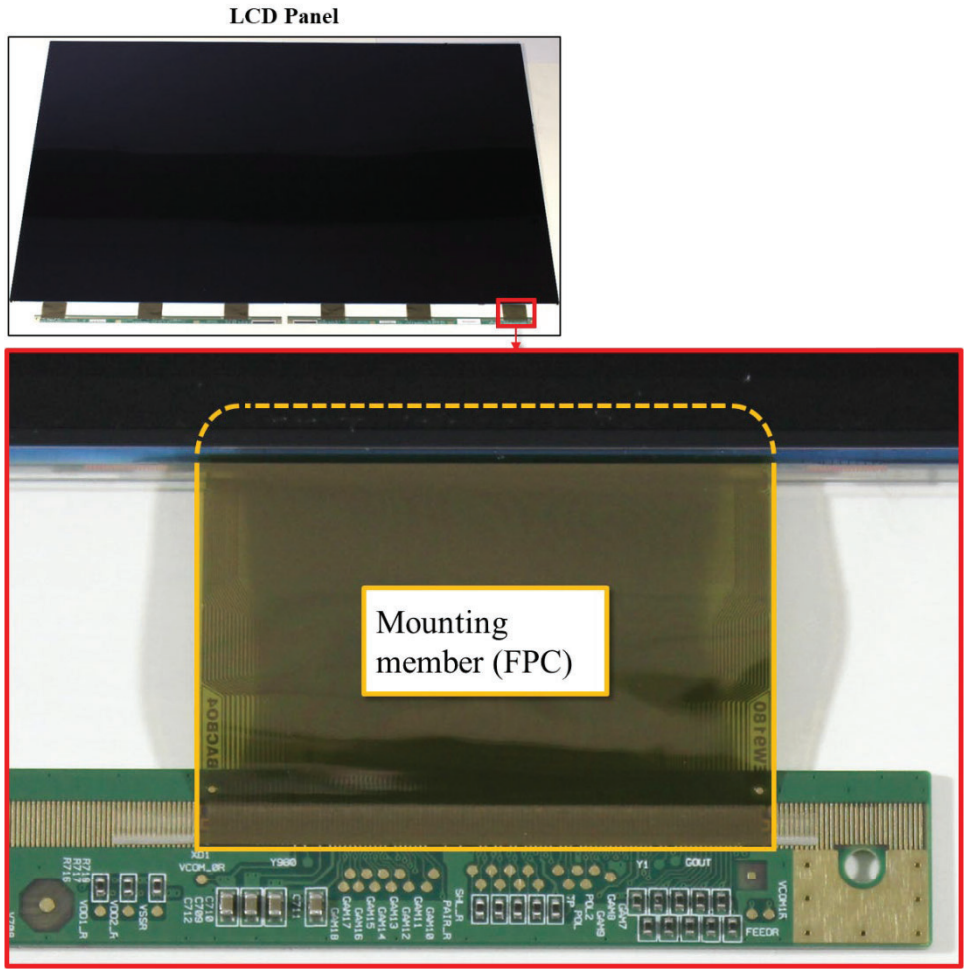
Array Substrate, front (bottom left)





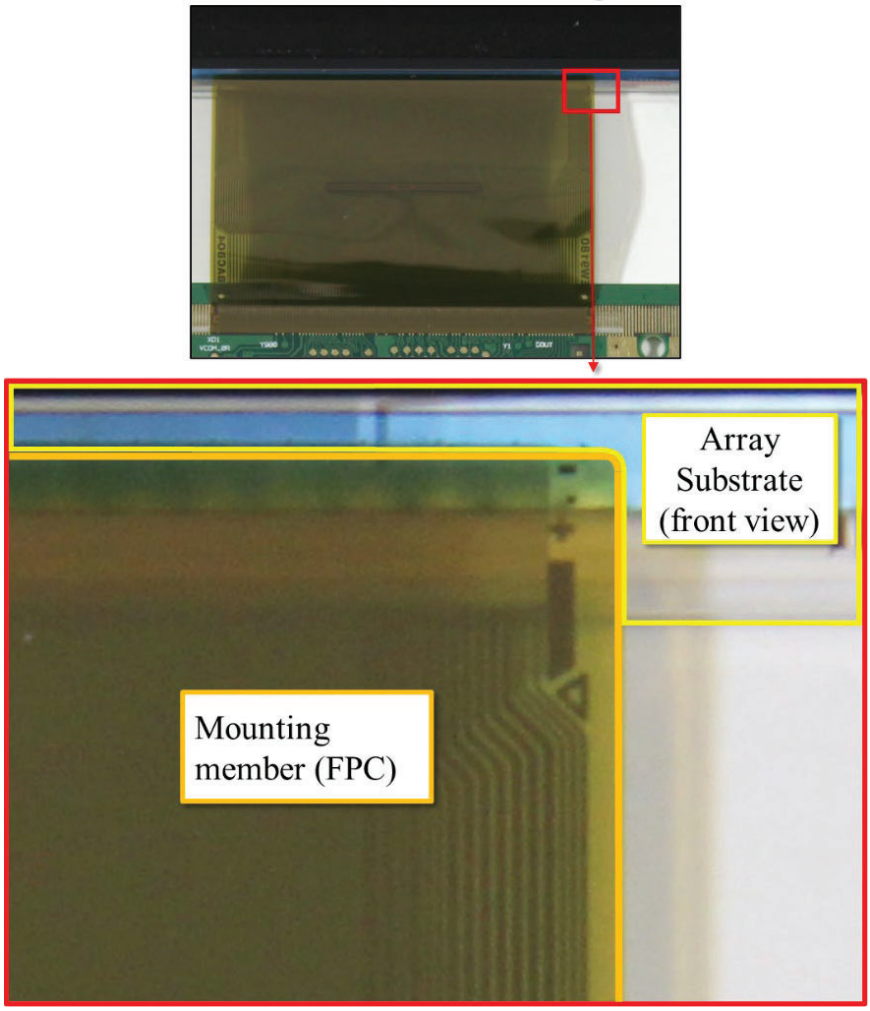
83. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H), comprise electro-optical panels wherein the data lines, the scanning lines, the pixels, the clock signal input terminal and the image signal input terminal are implemented on the substrate. *See supra*.

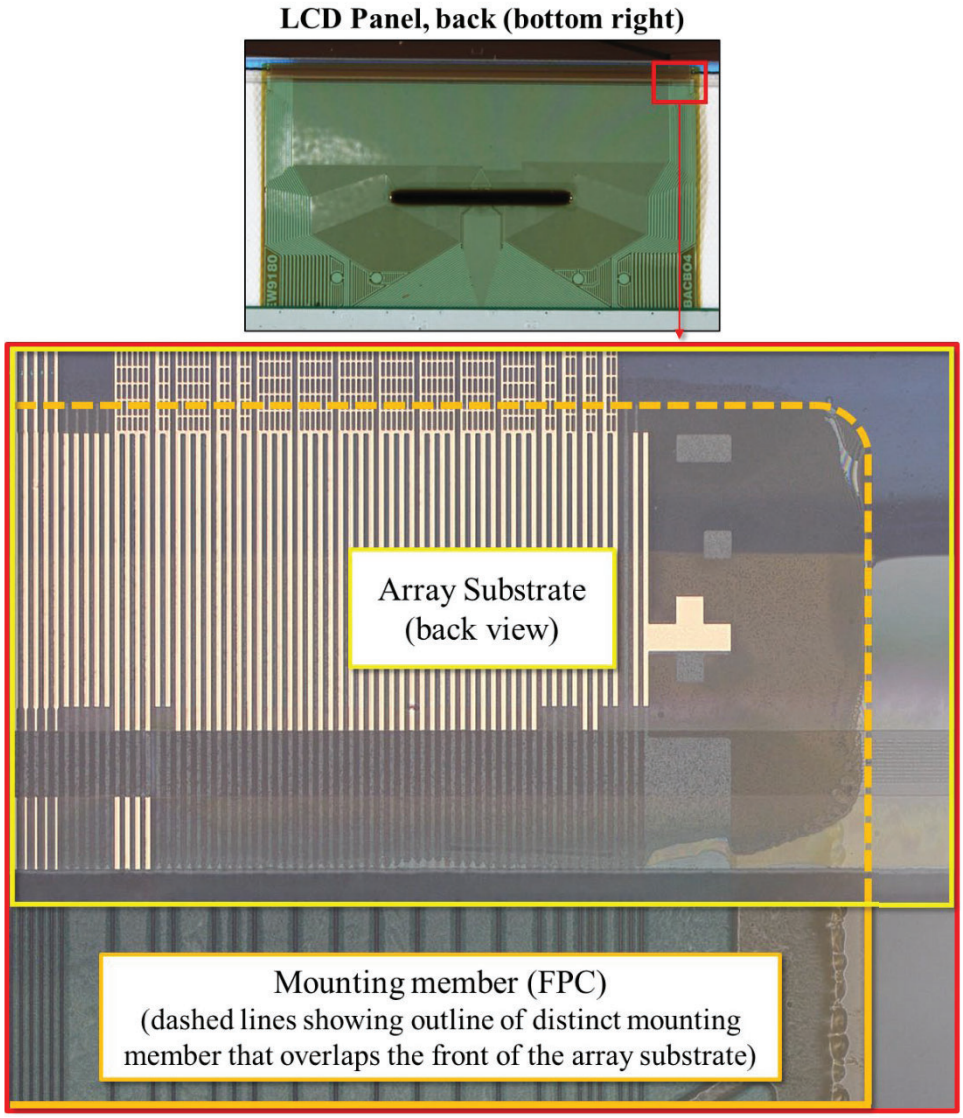
84. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H), comprise a mounting member that is distinct from and connected to the substrate. The BOE LCD panel in the Hisense 43" FHD TV comprises a flexible printed circuit (FPC) mounting member that is distinct from the array substrate:



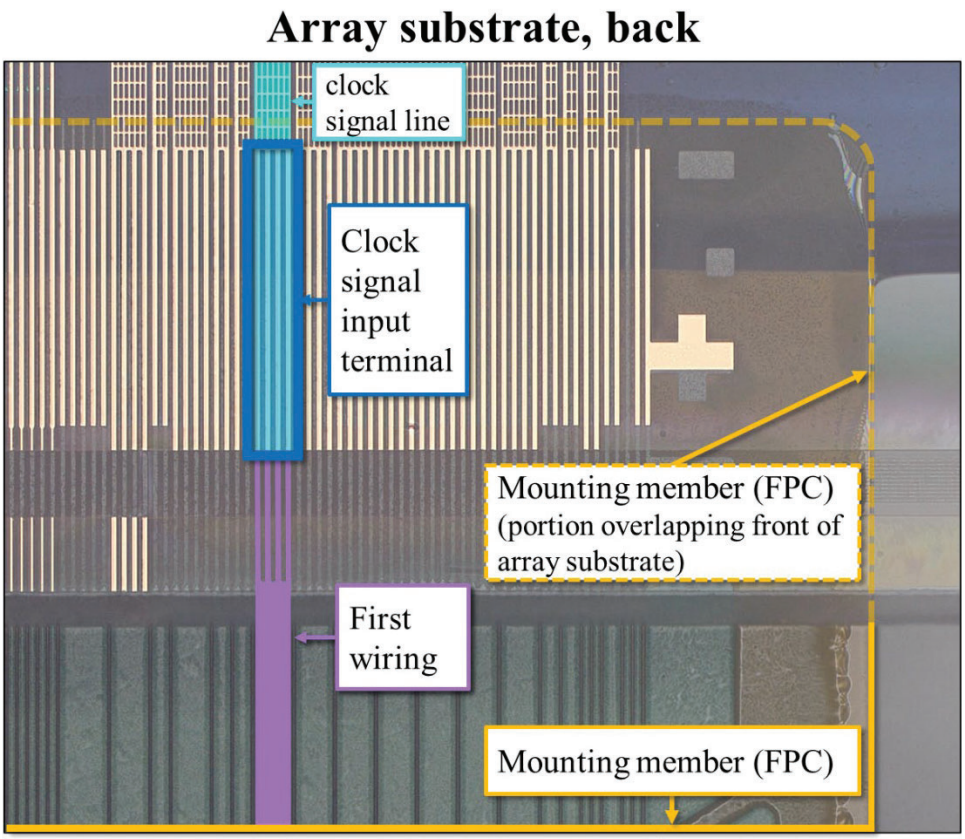
85. The FPC mounting member is distinct from and connected to the array substrate. As shown below (LCD Panel, front (bottom right)), the mounting member (FPC) is a distinct component that overlaps the front of the array substrate, and as shown below (LCD Panel, back (bottom right)) the mounting member is connected to the array substrate:

LCD Panel, front (bottom right)

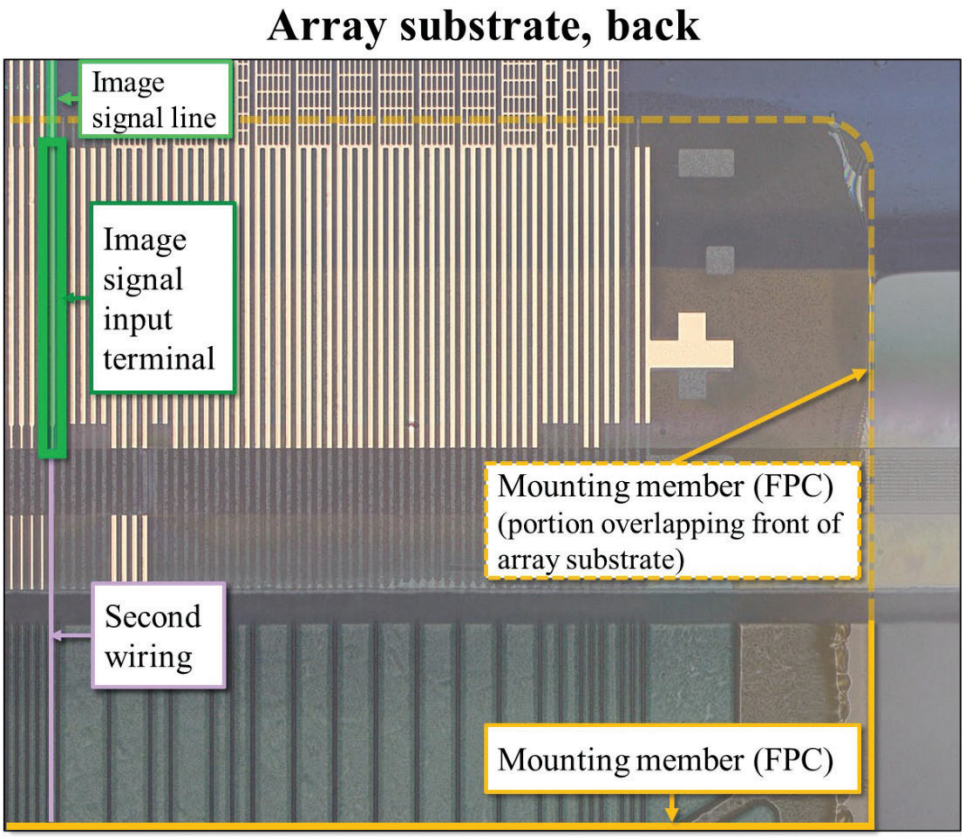




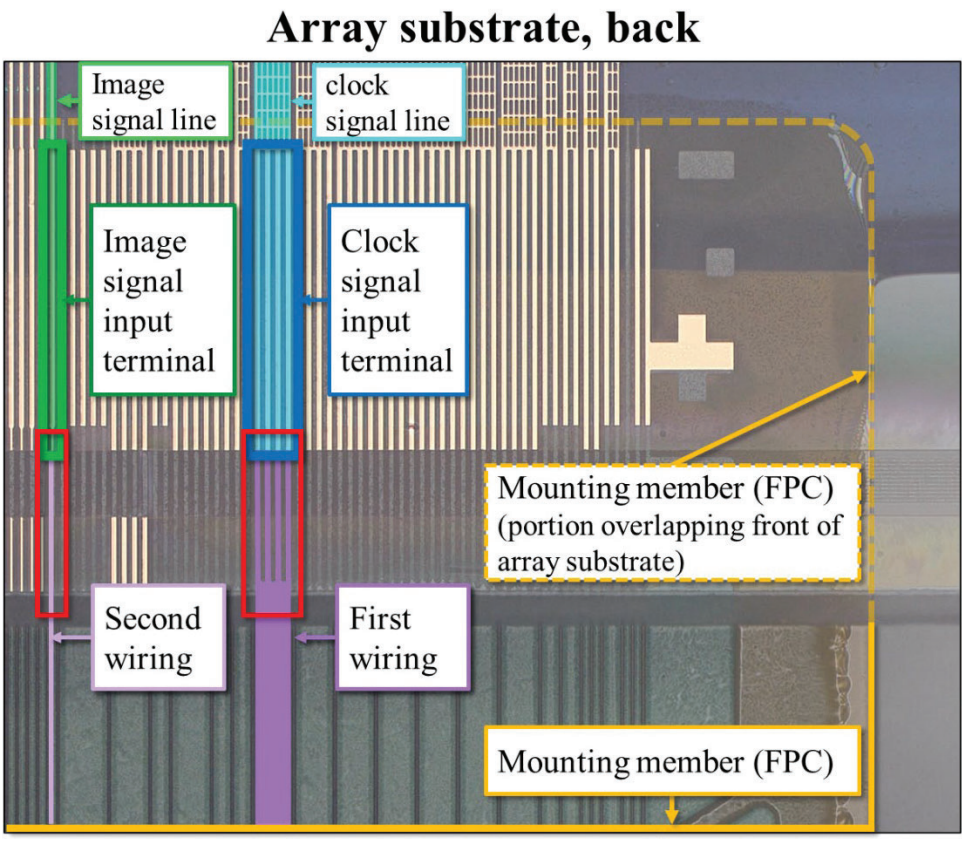
86. BOE LCD panels and modules, including, for example, the BOE LCD panel used in the Hisense 43" FHD TV (model number 43A45H), comprise a mounting member comprising a first wiring that is connected to the clock signal input terminal. The BOE LCD panel used in the Hisense 43" FHD TV comprises a mounting member (FPC) that comprises a first wiring that is connected to the clock signal input terminal:

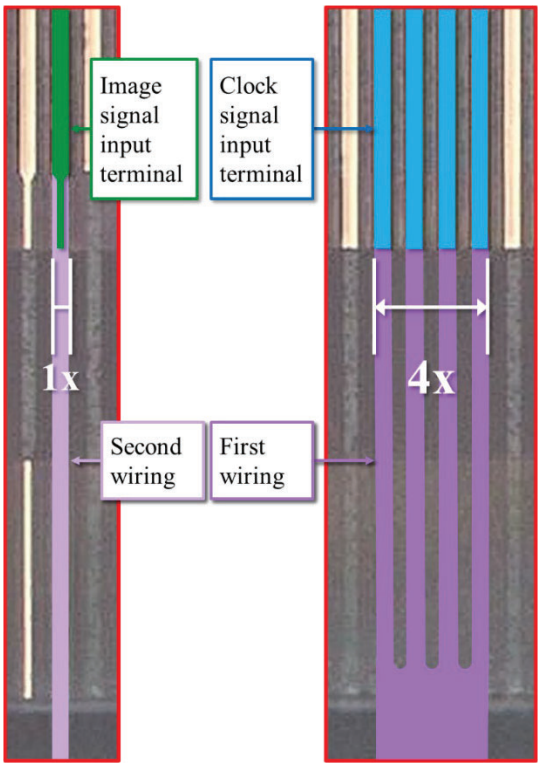


87. BOE LCD panels and modules, including, for example, the BOE LCD panel used in the Hisense 43" FHD TV (model number 43A45H), comprise a mounting member comprising a second wiring that is connected to the image signal input terminal. The BOE LCD panel used in the Hisense 43" FHD TV comprises a mounting member (FPC) that comprises a second wiring that is connected to the image signal input terminal:



88. BOE LCD panels and modules, including, for example, the BOE LCD panel used in the Hisense 43" FHD TV (model number 43A45H), comprise a mounting member wherein the clock signal input terminal overlaps the first wiring of the mounting member by a larger area than an area at which at least one of the image signal input terminals overlaps the second wiring of the mounting member. The BOE LCD panel used in the Hisense 43" FHD TV comprises a mounting member (FPC) wherein the clock signal input terminal overlaps the first wiring of the mounting member (FPC) by an area that is at least four times larger than an area at which the image signal input terminal overlaps the second wiring of the mounting member (FPC):


Array substrate, back
Image signal line
clock signal line
Image signal input terminal
Clock signal input terminal
Mounting member (FPC) (portion overlapping front of array substrate)
Second wiring
First wiring
Mounting member (FPC)


Image signal input terminal
Clock signal input terminal
1x
4x
Second wiring
First wiring

89. BOE and Hisense have indirectly infringed and continue to indirectly infringe the '146 patent by actively inducing, in violation of 35 U.S.C. § 271(b), the direct infringement of the '146 patent by others in the United States, the State of Texas, and the Eastern District of Texas.

90. BOE has induced, and continues to induce, through affirmative acts, its customers, including Hisense, and other third parties, including other importers, resellers, and end users in BOE's supply chain, to directly infringe the '146 patent by making, using, offering to sell, selling within the United States, and/or importing into the United States, products incorporating a BOE Accused Instrumentality that infringes the '146 patent.

91. Hisense has induced, and continues to induce, through affirmative acts, its customers and other third parties, including other importers, resellers, and end users in Hisense's supply chain, to directly infringe the '146 patent by using, offering to sell, selling within the United States, and/or importing into the United States, Hisense Accused Instrumentalities that infringe the '146 patent.

92. On information and belief, BOE and Hisense actively promoted the BOE Accused Instrumentalities and the Hisense Accused Instrumentalities, respectively, for the U.S. market.

93. BOE knew that its customers, including Hisense, would offer to sell and/or sell products incorporating the BOE Accused Instrumentalities in the United States or cause those products to be sold in the United States, and BOE specifically intended its customers to purchase BOE Accused Instrumentalities and offer to sell and/or sell products incorporating the BOE Accused Instrumentalities in the United States or cause those products to be sold in the United States. BOE's direct and indirect purchasers directly infringe the '146 patent by importing the BOE Accused Instrumentalities into the United States, selling the BOE Accused

Instrumentalities in the United States, offering to sell the BOE Accused Instrumentalities in the United States, and/or using the BOE Accused Instrumentalities in the United States.

94. Hisense knew that its customers would offer to sell and/or sell infringing Hisense Accused Instrumentalities in the United States or cause Hisense Accused Instrumentalities to be sold in the United States, and Hisense specifically intended its customers to purchase Hisense Accused Instrumentalities and offer to sell and/or sell the Hisense Accused Instrumentalities in the United States or cause Hisense Accused Instrumentalities to be sold in the United States. Hisense's customers directly infringe the '146 patent by importing the Hisense Accused Instrumentalities into the United States, selling the Hisense Accused Instrumentalities in the United States, offering to sell the Hisense Accused Instrumentalities in the United States, and/or using the Hisense Accused Instrumentalities in the United States.

95. BOE has induced others' direct infringement despite actual notice that the BOE Accused Instrumentalities infringe the '146 patent. As of at least January 2, 2020, BOE knew that the induced conduct would constitute infringement—and intended that infringement at the time of committing the aforementioned affirmative acts, such that the acts and conduct have been and continue to be committed with the specific intent to induce infringement—or deliberately avoided learning of the infringing circumstances at the time of committing these acts so as to be willfully blind to the infringement that was induced.

96. Hisense has induced others' direct infringement despite actual notice that the Hisense Accused Instrumentalities infringe the '146 patent. As of at least the date of this complaint, Hisense knew that the induced conduct would constitute infringement—and intended that infringement at the time of committing the aforementioned affirmative acts, such that the acts and conduct have been and continue to be committed with the specific intent to induce

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infringement—or deliberately avoided learning of the infringing circumstances at the time of committing these acts so as to be willfully blind to the infringement that was induced.

97. BOE's and Hisense's direct and indirect infringement of the '146 patent is ongoing.

98. The above-described acts of infringement have caused and continue to cause injury and damage to Plaintiffs.

99. BOE's infringement has been and continues to be willful. Hisense's ongoing infringement will be willful.

100. Plaintiffs are entitled to recover damages sustained as a result of BOE's and Hisense's willful infringement in an amount subject to proof at trial, but in no event less than a reasonable royalty.

COUNT II: INFRINGEMENT OF U.S. PATENT NO. 8,319,512

101. Pursuant to 35 U.S.C. § 282, the '512 patent is presumed valid.

102. BOE and Hisense have directly infringed and continue to directly infringe one or more claims of the '512 patent, in violation of 35 U.S.C. § 271(a), by making, using, offering to sell, selling, and/or importing the BOE Accused Instrumentalities (BOE) and the Hisense Accused Instrumentalities (Hisense).

103. The BOE Accused Instrumentalities and the Hisense Accused Instrumentalities (which incorporate a BOE Accused Instrumentality) comprise the flexible substrate of at least claims 1 and 3-9 of the '512 patent.

104. The following paragraphs describe how the BOE Accused Instrumentalities and thus the Hisense Accused Instrumentalities practice claim 1 of the '512 patent, using the exemplary BOE LCD panel in the Hisense 75" 4K TV (model number 75R6E). Plaintiffs'

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allegations of infringement are not limited to claim 1 or the exemplary product, and Plaintiffs will identify and disclose additional infringement through discovery and in infringement contentions.

105. On information and belief, the Hisense 75" 4K TV (model number 75R6E) is exemplary of other infringing Hisense products, including without limitation the Hisense 43" FHD TV (model number 43A45H), which incorporates a substantially similar BOE LCD panel, and other TVs incorporating substantially similar BOE LCD panels and/or modules. The 43" TV and 75" TV and substantially similar products incorporating substantially similar BOE LCD panels and/or modules each practice the asserted claims of the '512 patent in the same manner, and infringement by one representative product is indicative of infringement by the others.

106. The LCD panel in the Hisense 75" 4K TV (model number 75R6E) is a BOE LCD panel:

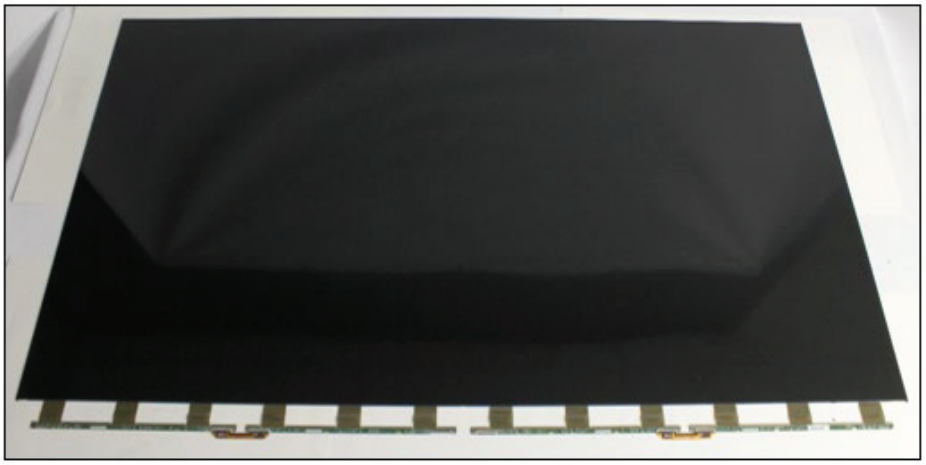
Hisense 75" 4K TV (Model No. 75R6E), Front

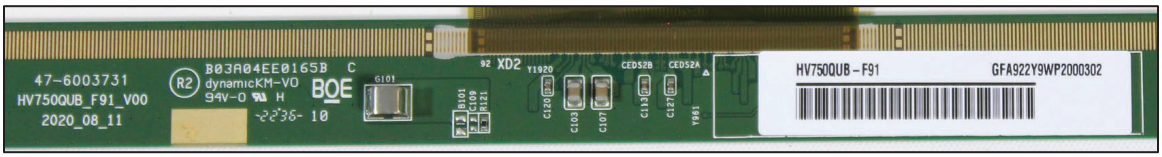


Hisense 75” 4K TV (Model No. 75R6E), Back

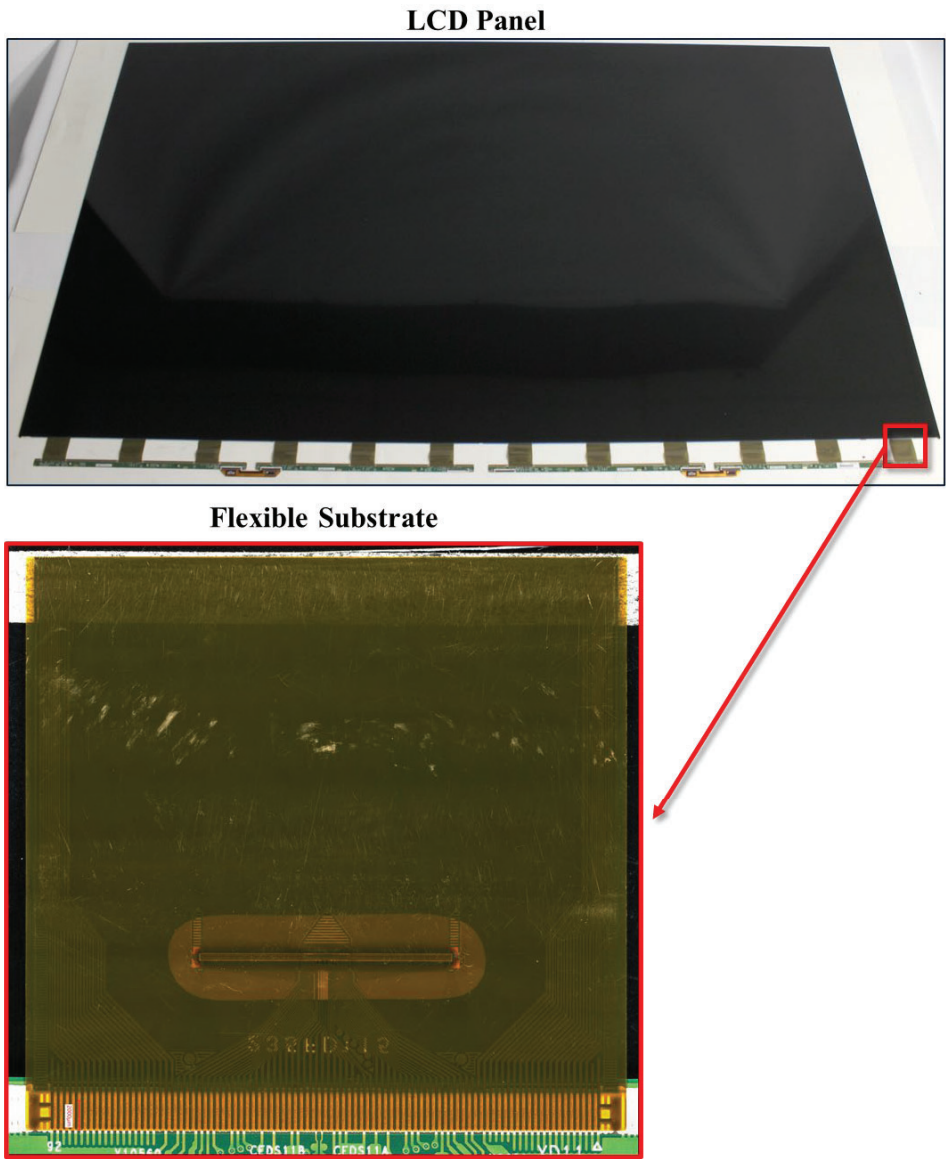


Hisense 75” 4K TV (Model No. 75R6E), LCD Panel



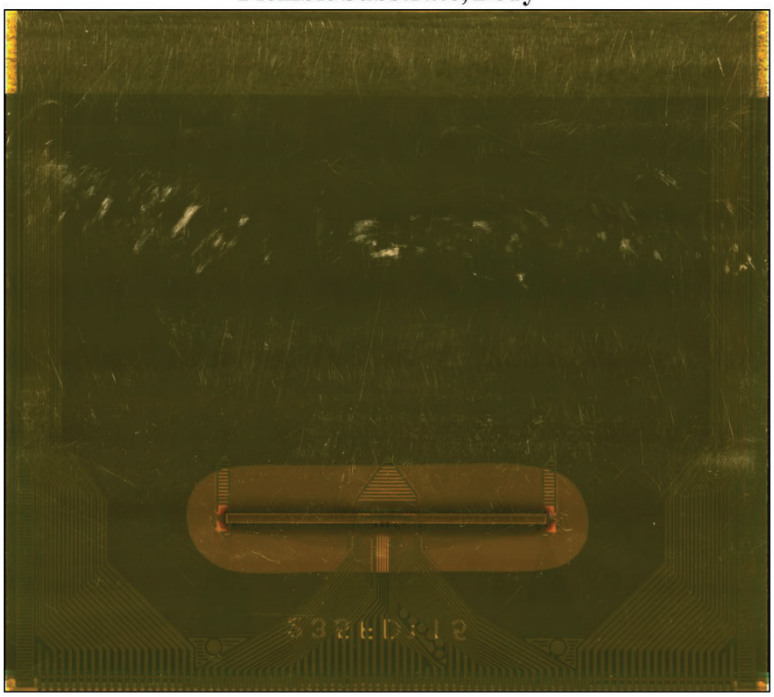


107. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 75” 4K TV (model number 75R6E), include a flexible substrate:



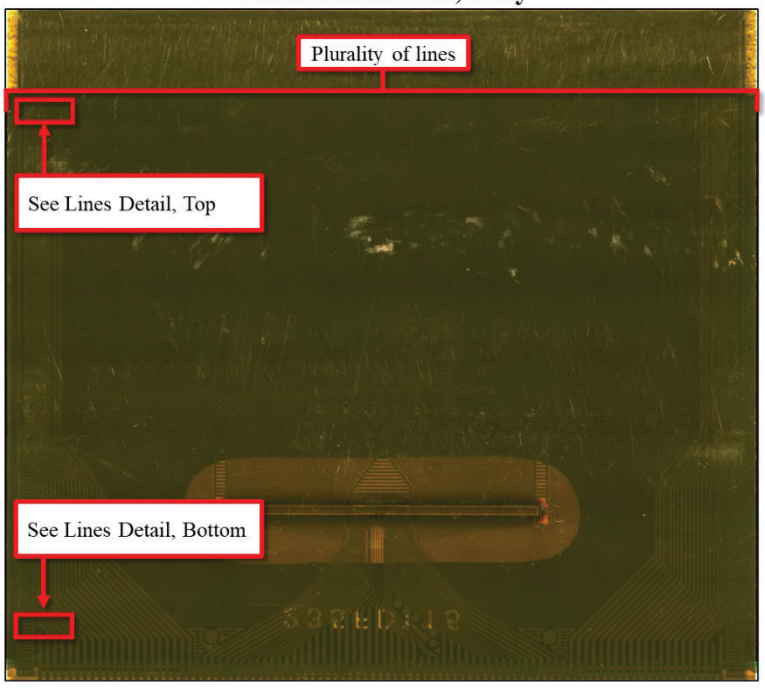
108. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 75" 4K TV (model number 75R6E), include a flexible substrate comprising a substrate body:

Flexible Substrate, Body



109. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 75" 4K TV (model number 75R6E), include a flexible substrate comprising a plurality of lines that are arranged on the substrate body:

Flexible Substrate, Body



Lines Detail, Top

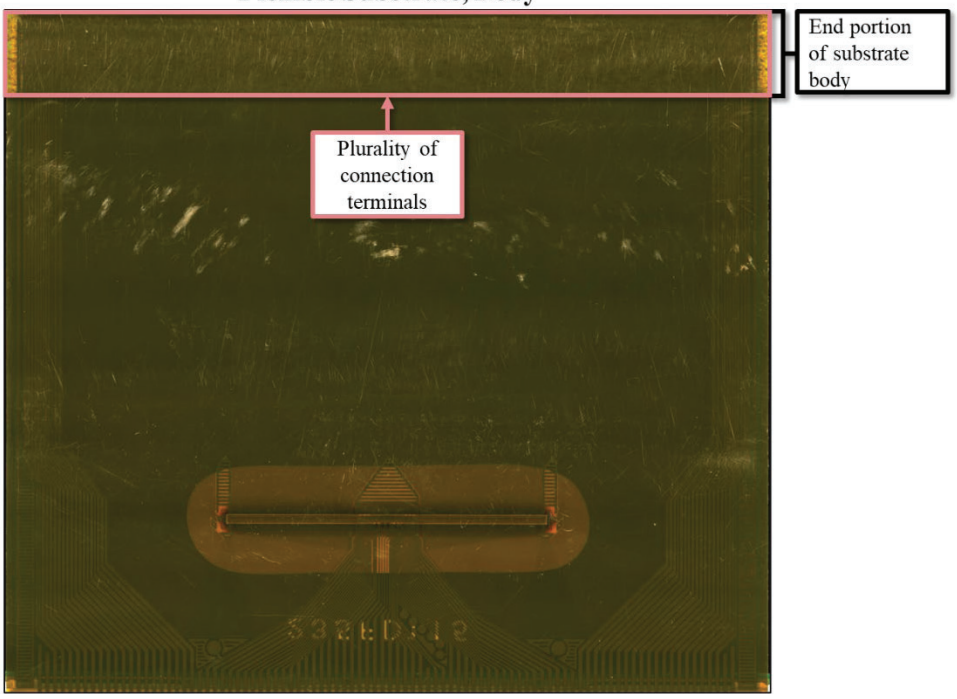


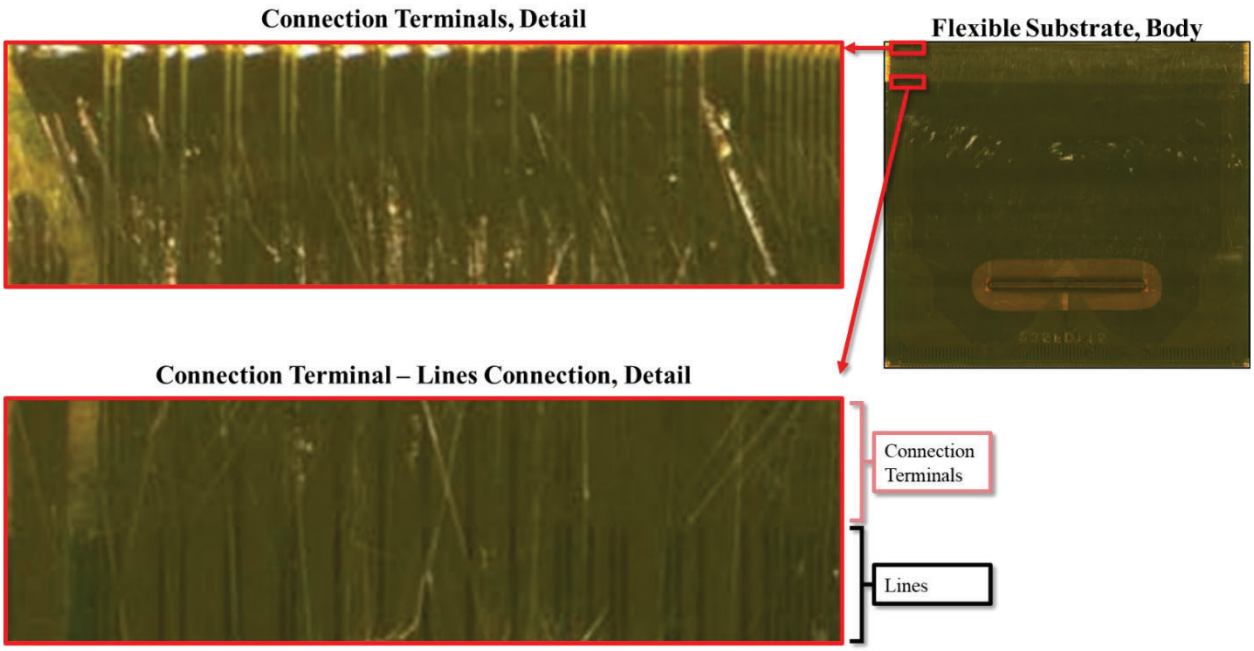
Lines Detail, Bottom



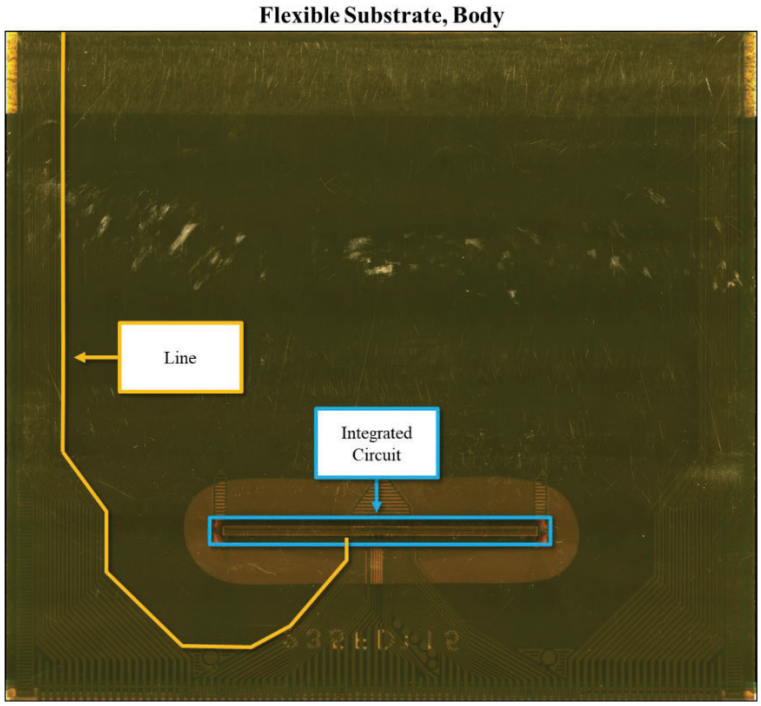
110. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 75" 4K TV (model number 75R6E), include a flexible substrate comprising a plurality of connection terminals that are arranged on an end portion of the substrate body and electrically connected to the respective lines:

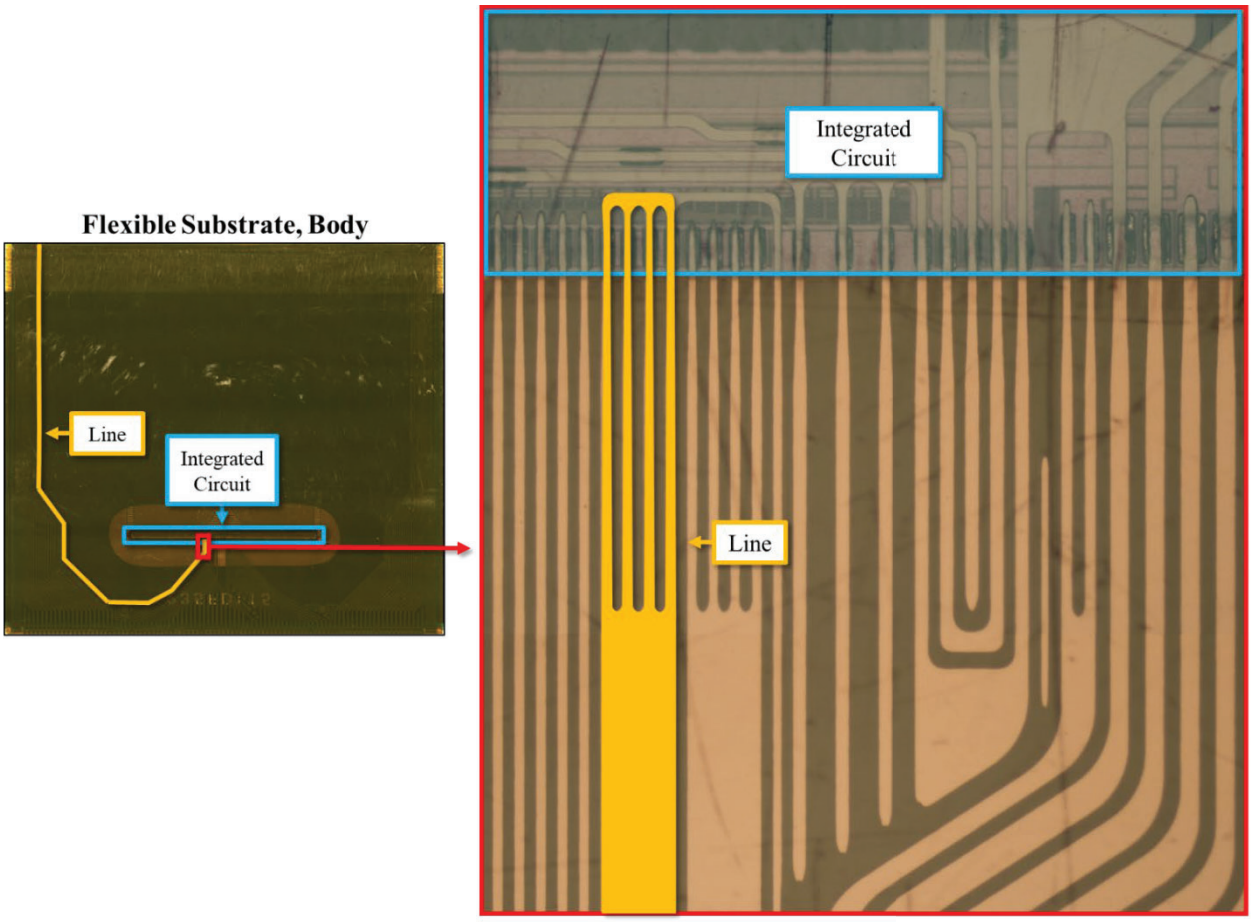
Flexible Substrate, Body





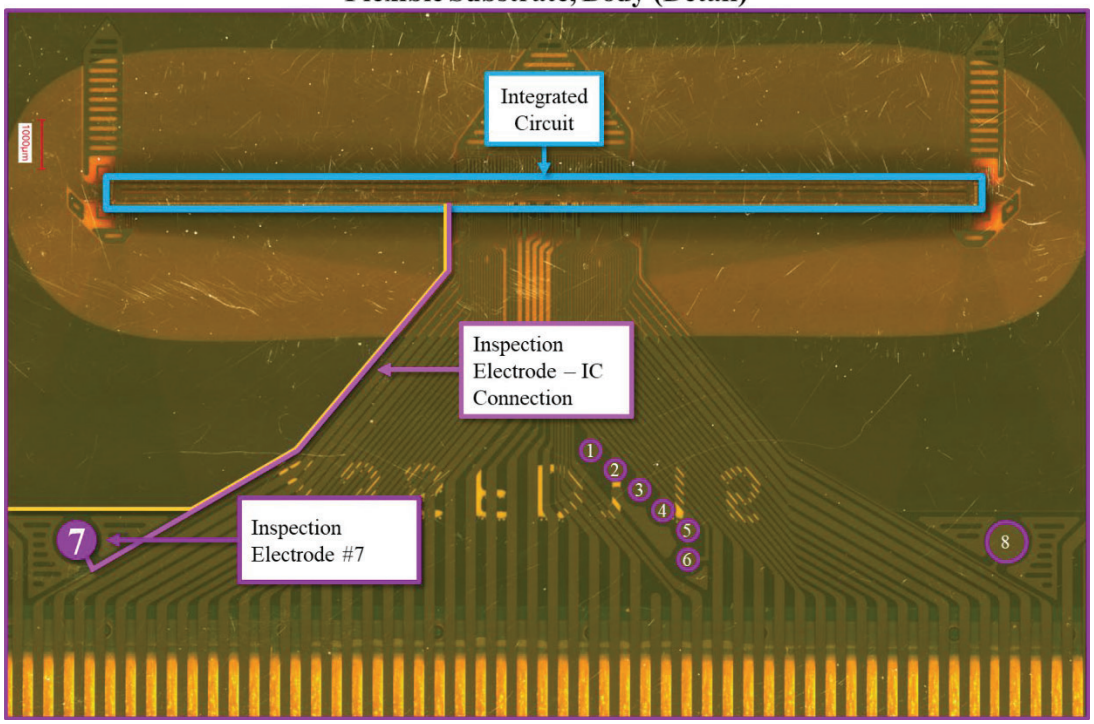
111. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 75" 4K TV (model number 75R6E), include a flexible substrate comprising an integrated circuit that is arranged on the substrate body and electrically connected to at least one of the lines:



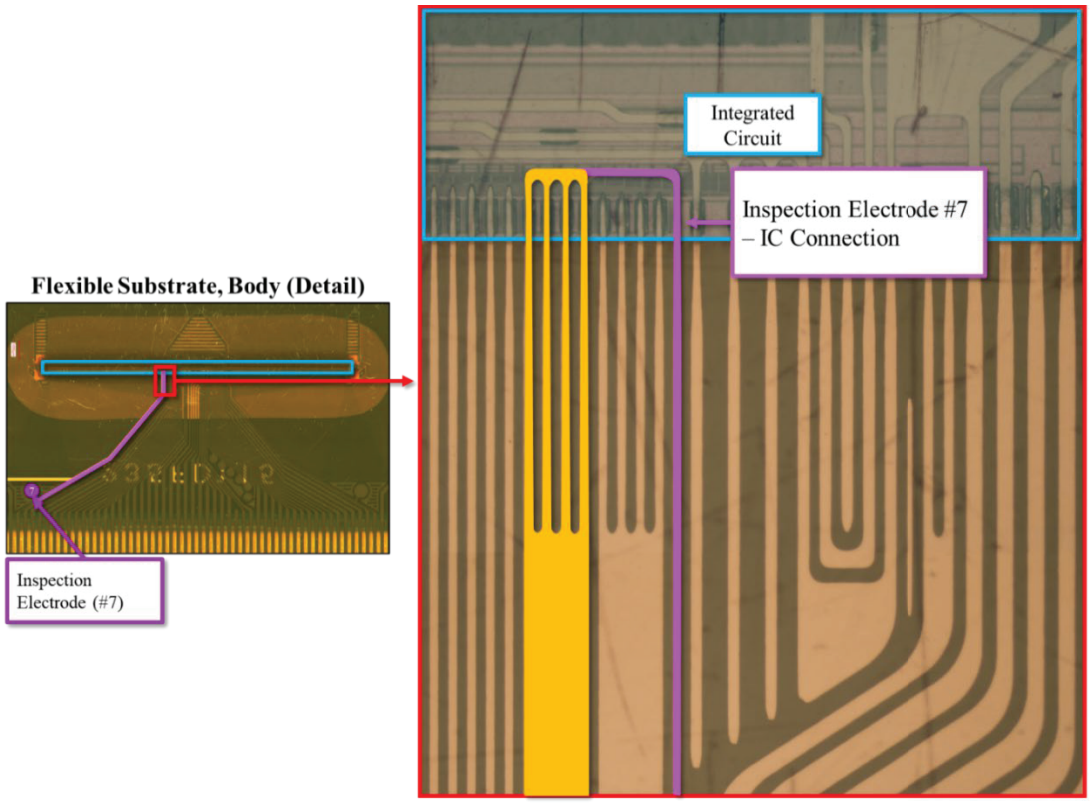


112. BOE LCD panels and modules, including, for example, the BOE panel in the Hisense 75" 4K TV (model number 75R6E), include a flexible substrate comprising an inspection electrode that is arranged on the substrate body and electrically connected to the integrated circuit and capable of outputting a signal processed in the integrated circuit. The flexible substrate body includes eight inspection electrodes arranged on the substrate body:

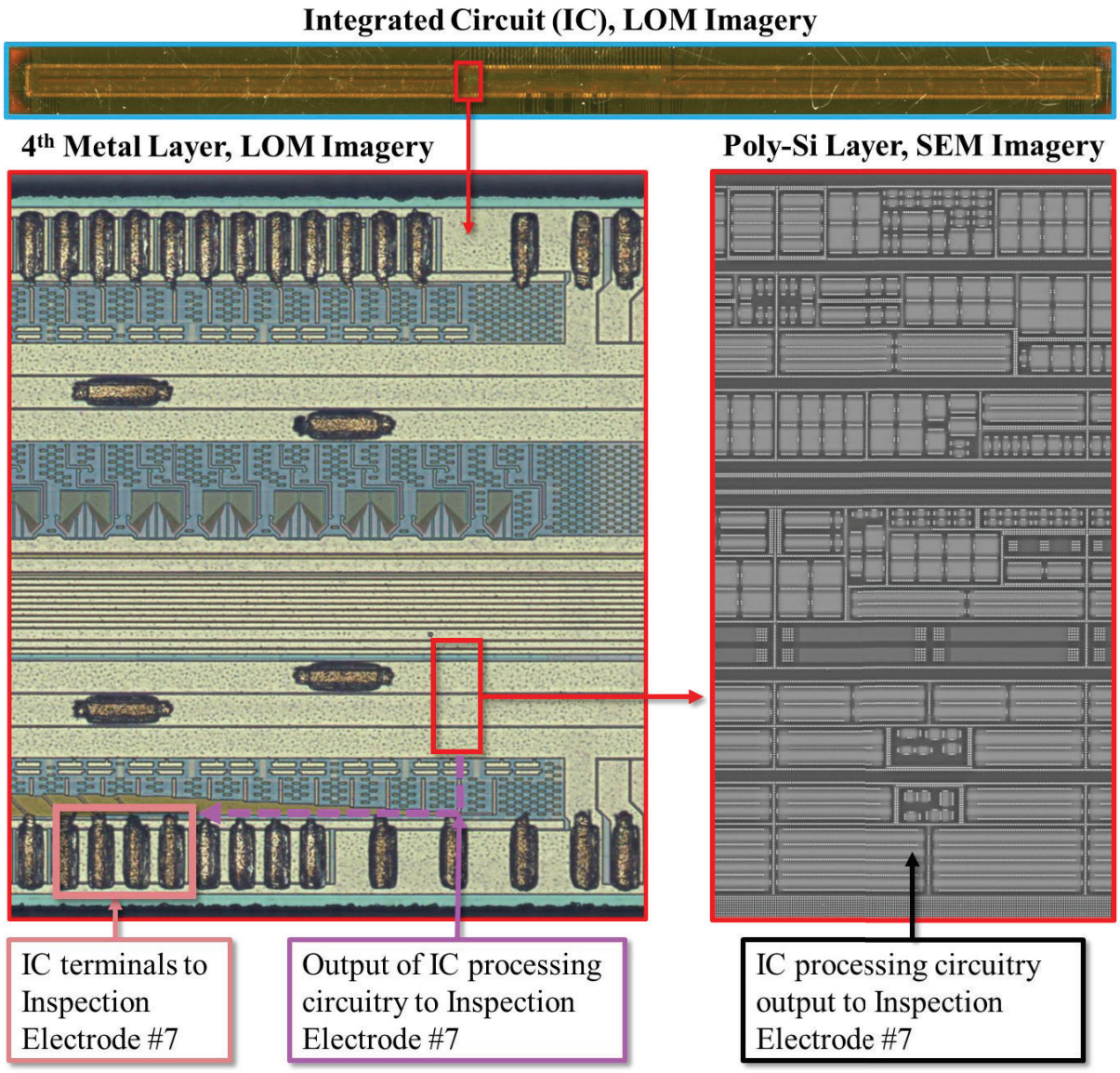
Flexible Substrate, Body (Detail)



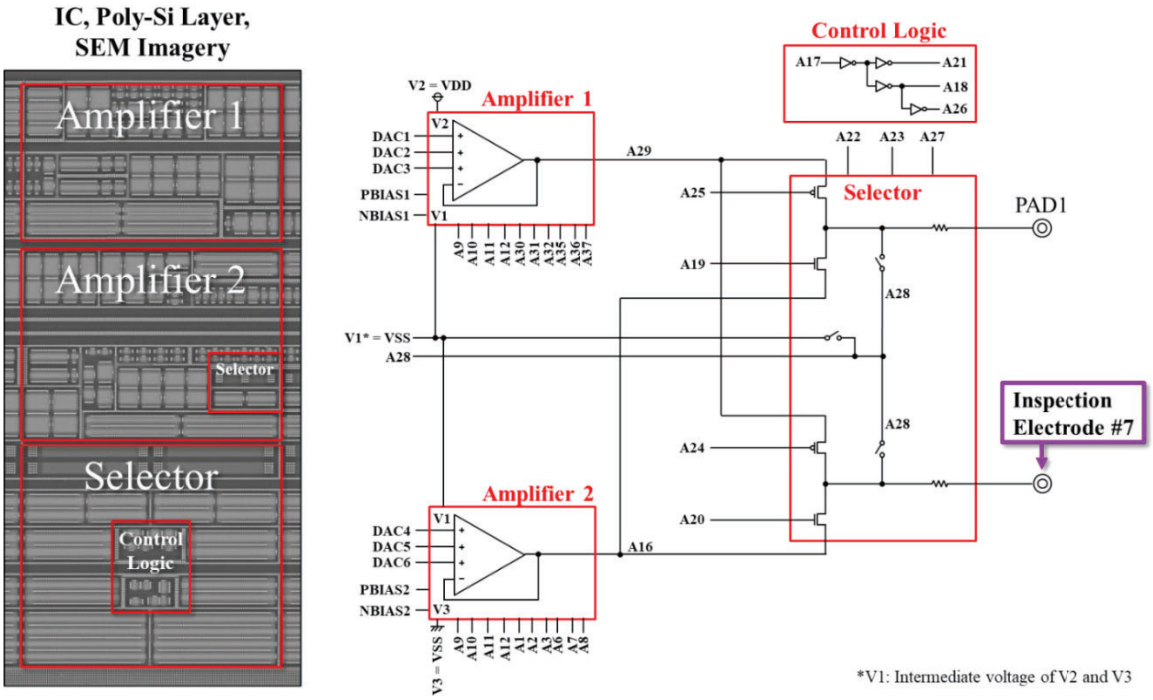
113. Inspection electrode #7 is electrically connected to the IC:



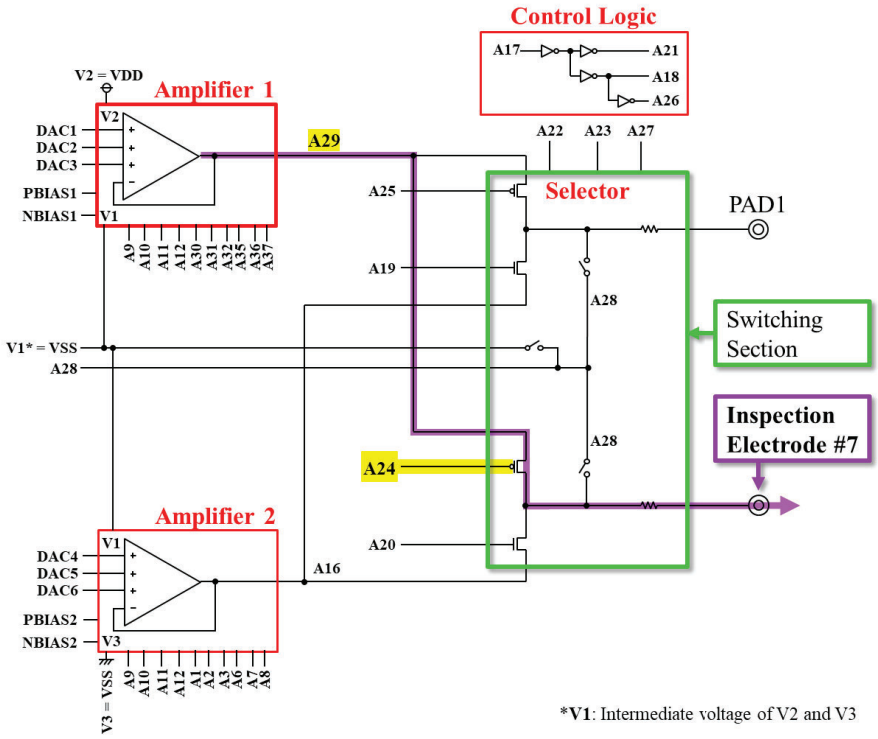
114. Inspection electrode #7 is capable of outputting a signal processed in the IC:



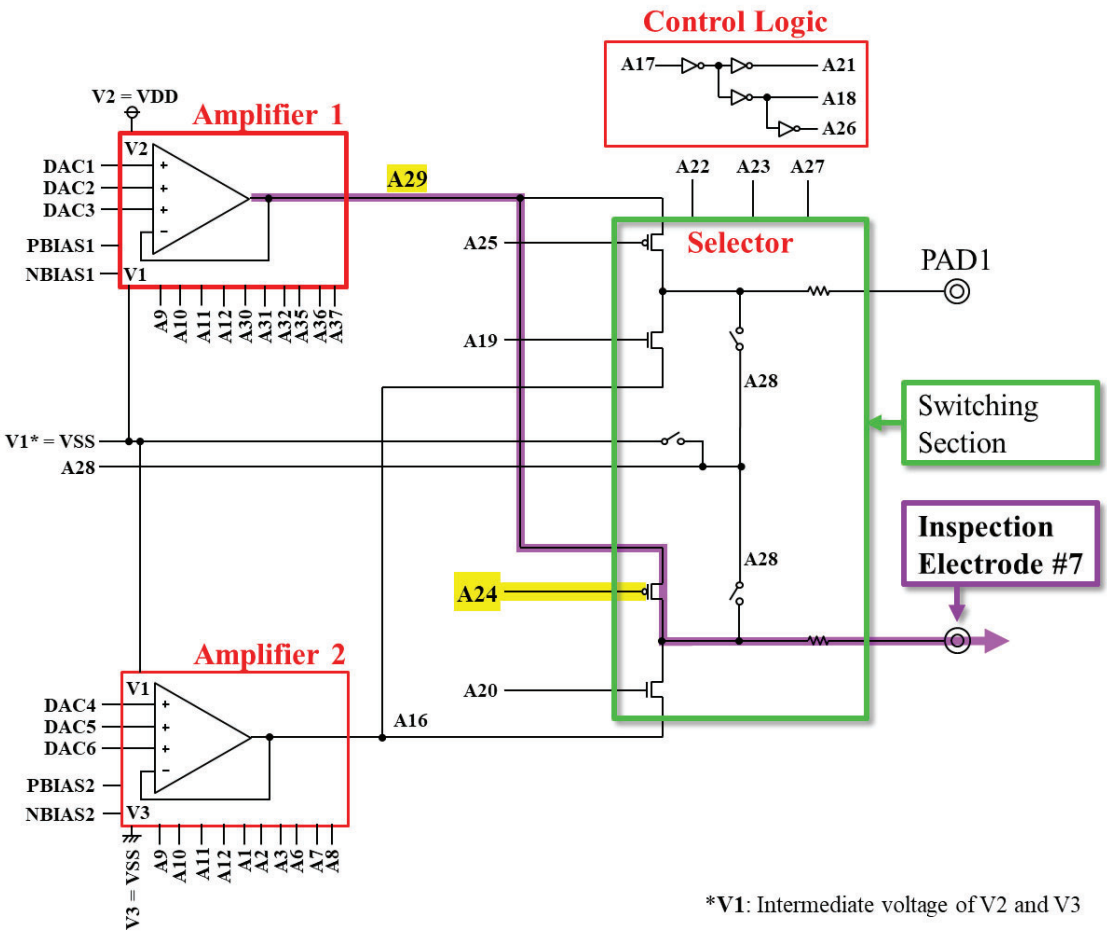
115. Inspection electrode #7 is capable of outputting a signal processed in the IC, for example, the signals processed by Amplifier 1 and Amplifier 2 within the IC:



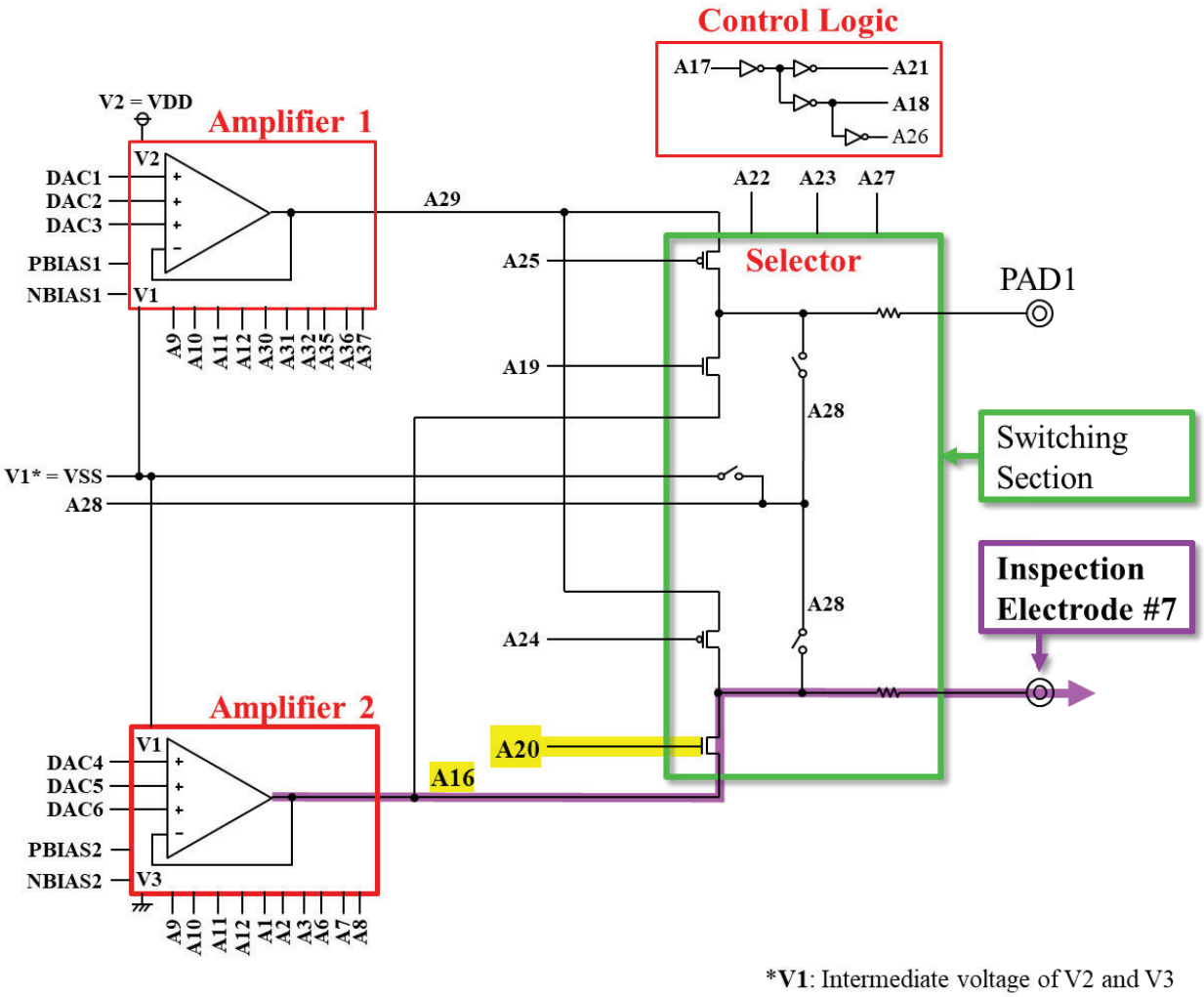
116. For example, when A24 equals 0 (transistor on), the IC selector circuitry connects line A29 to the output to Inspection Electrode #7, and Inspection Electrode #7 outputs the signal processed in the IC from Amplifier 1:



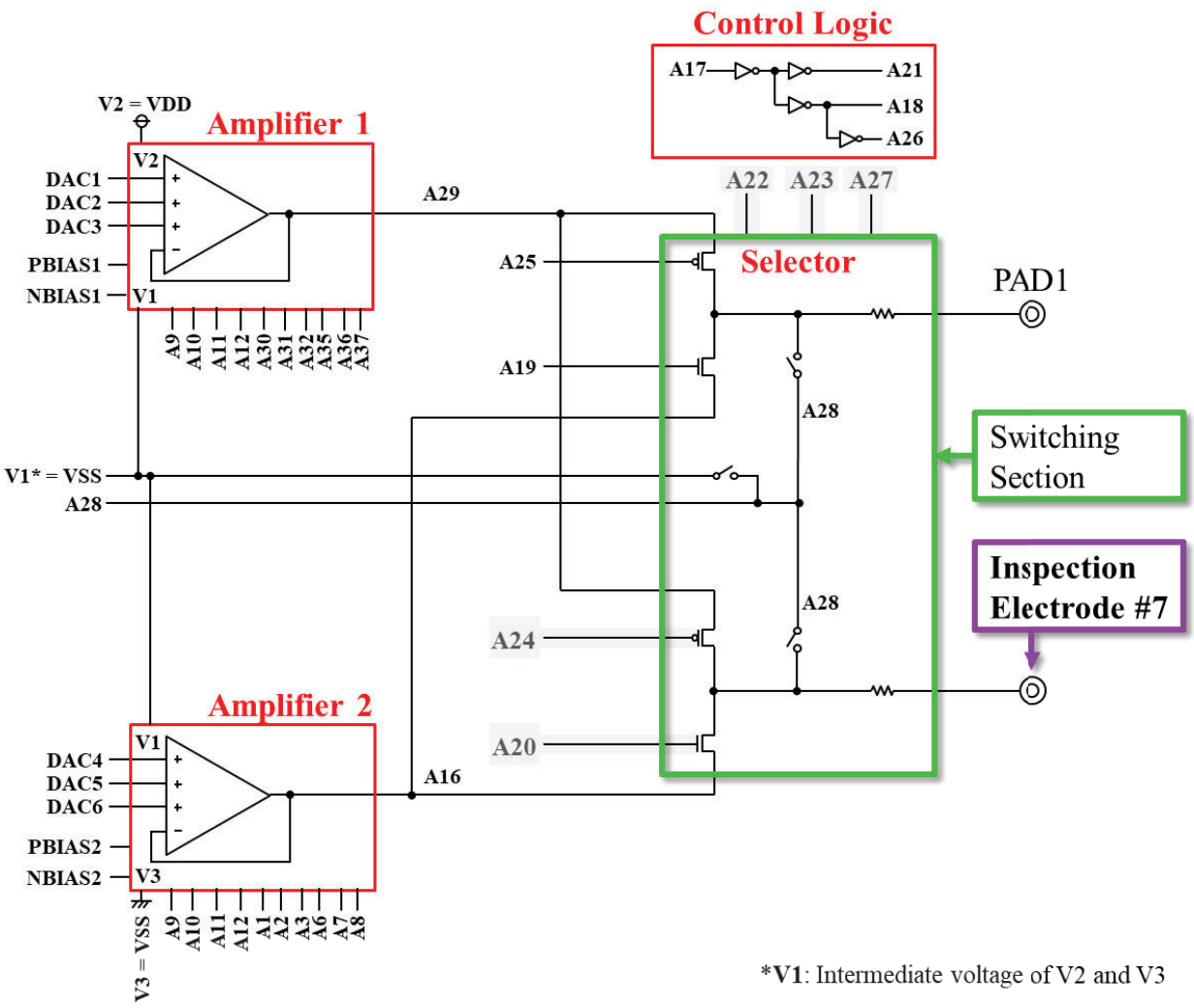
117. BOE LCD panels and modules, including, for example, the BOE LCD panel in the Hisense 75" 4K TV (model number 75R6E), include a flexible substrate comprising a switching section that switches an operation of the inspection electrode on/off to cause the inspection electrode to output or not to output the signal processed in the integrated circuit. The IC arranged on the flexible substrate body comprises a switching section, i.e., selector circuitry, that switches an operation of Inspection Electrode #7 on or off to cause Inspection Electrode #7 to output a signal processed in the IC (the Amplifier 1 or the Amplifier 2 signal) or not to output the signal processed in the IC (no signal). For example, when A24 equals 0 (transistor on), the IC selector circuitry connects line A29 to the output to Inspection Electrode #7, and Inspection Electrode #7 outputs the signal processed in the IC from Amplifier 1:



118. For example, when A20 equals 1 (transistor on), the IC selector circuitry connects line A16 to the output to Inspection Electrode #7, and Inspection Electrode #7 outputs the signal processed in the IC from Amplifier 2:



119. For example, when A24 equals 1 and A20 equals 0 (transistors off) and A22 equals 0, A23 equals 1, and A27 equals 1, the IC selector circuitry does not connect any line to the output to Inspection Electrode #7, and Inspection Electrode #7 does not output a signal processed in the IC:



120. BOE and Hisense have indirectly infringed and continue to indirectly infringe the '512 patent by actively inducing, in violation of 35 U.S.C. § 271(b), the direct infringement of the '512 patent by others in the United States, the State of Texas, and the Eastern District of Texas.

121. BOE has induced, and continues to induce, through affirmative acts, its customers, including Hisense, and other third parties, including other importers, resellers, and end users in BOE's supply chain, to directly infringe the '512 patent by using, offering to sell, selling within the United States, and/or importing into the United States, products incorporating a BOE Accused Instrumentality that infringes the '512 patent.

122. Hisense has induced, and continues to induce, through affirmative acts, its customers and other third parties, including other importers, resellers, and end users in Hisense's supply chain, to directly infringe the '512 patent by using, offering to sell, selling within the United States, and/or importing into the United States, Hisense Accused Instrumentalities that infringe the '512 patent.

123. On information and belief, BOE and Hisense actively promoted the BOE Accused Instrumentalities and the Hisense Accused Instrumentalities, respectively, for the U.S. market.

124. BOE knew that its customers, including Hisense, would offer to sell and/or sell products incorporating the BOE Accused Instrumentalities in the United States or cause those products to be sold in the United States, and BOE specifically intended its customers to purchase BOE Accused Instrumentalities and offer to sell and/or sell products incorporating the BOE Accused Instrumentalities in the United States or cause those products to be sold in the United States. BOE's direct and indirect purchasers directly infringe the '512 patent by importing the BOE Accused Instrumentalities into the United States, selling the BOE Accused Instrumentalities in the United States, offering to sell the BOE Accused Instrumentalities in the United States, and/or using the BOE Accused Instrumentalities in the United States.

125. Hisense knew that its customers would offer to sell and/or sell infringing Hisense Accused Instrumentalities in the United States or cause Hisense Accused Instrumentalities to be sold in the United States, and Hisense specifically intended its customers to purchase Hisense Accused Instrumentalities and offer to sell and/or sell the Hisense Accused Instrumentalities in the United States or cause Hisense Accused Instrumentalities to be sold in the United States. Hisense's customers directly infringe the '512 patent by importing the Hisense Accused Instrumentalities into the United States, selling the Hisense Accused Instrumentalities in the

United States, offering to sell the Hisense Accused Instrumentalities in the United States, and/or using the Hisense Accused Instrumentalities in the United States.

126. BOE has induced others' direct infringement despite actual notice that the BOE Accused Instrumentalities infringe the '512 patent. As of at least April 8, 2021, BOE knew that the induced conduct would constitute infringement—and intended that infringement at the time of committing the aforementioned affirmative acts, such that the acts and conduct have been and continue to be committed with the specific intent to induce infringement—or deliberately avoided learning of the infringing circumstances at the time of committing these acts so as to be willfully blind to the infringement that was induced.

127. Hisense has induced others' direct infringement despite actual notice that the Hisense Accused Instrumentalities infringe the '512 patent. As of at least the date of this complaint, Hisense knew that the induced conduct would constitute infringement—and intended that infringement at the time of committing the aforementioned affirmative acts, such that the acts and conduct have been and continue to be committed with the specific intent to induce infringement—or deliberately avoided learning of the infringing circumstances at the time of committing these acts so as to be willfully blind to the infringement that was induced.

128. BOE has indirectly infringed and continues to indirectly infringe the '512 patent by contributing, in violation of 35 U.S.C. § 271(c), to the direct infringement of the '512 patent by others in the United States, the State of Texas, and the Eastern District of Texas, specifically, by offering to sell, selling, and/or importing into the United States components (BOE Accused Instrumentalities) of a claimed electronic device (see, e.g., claim 7).

129. BOE's and Hisense's direct and indirect infringement of the '512 patent is ongoing.

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130. The above-described acts of infringement have caused and continue to cause injury and damage to Plaintiffs.

131. BOE's infringement has been and continues to be willful. Hisense's ongoing infringement will be willful.

132. Plaintiffs are entitled to recover damages sustained as a result of BOE's and Hisense's willful infringement in an amount subject to proof at trial, but in no event less than a reasonable royalty.

COUNT III: INFRINGEMENT OF U.S. PATENT NO. 8,391,020

133. Pursuant to 35 U.S.C. § 282, the '020 patent is presumed valid.

134. BOE and Hisense have directly infringed and continue to directly infringe one or more claims of the '020 patent, in violation of 35 U.S.C. § 271(a), by making, using, offering to sell, selling, and/or importing the BOE Accused Instrumentalities (BOE) and the Hisense Accused Instrumentalities (Hisense).

135. The BOE Accused Instrumentalities and the Hisense Accused Instrumentalities (which incorporate a BOE Accused Instrumentality) comprise the electro-optical device of at least claims 1-2, 11-13 of the '020 patent.

136. The following paragraphs describe how the BOE Accused Instrumentalities and thus the Hisense Accused Instrumentalities practice claim 1 of the '020 patent, using the exemplary BOE LCD panel in the Hisense 43" FHD TV (model number 43A45H). Plaintiffs' allegations of infringement are not limited to claim 1 or to the exemplary product, and Plaintiffs will identify and disclose additional infringement through discovery and in infringement contentions.

137. The Hisense 43" FHD TV (model number 43A45H) is exemplary of other

infringing Hisense products, including without limitation the Hisense 75" TV (model number 75R6E), which incorporates a substantially similar BOE LCD panel, and other TVs incorporating substantially similar BOE LCD panels and/or modules. The 43" TV and 75" TV and substantially similar products incorporating substantially similar BOE LCD panels and/or modules each practice the asserted claims of the '020 patent in the same manner, and infringement by one representative product is indicative of infringement by the others.

138. The panel in the Hisense 43" FHD TV (model number 43A45H) is a BOE LCD panel (part number HV430FHB-F90):

Hisense 43" FHD TV, box



Hisense 43" FHD TV, back case

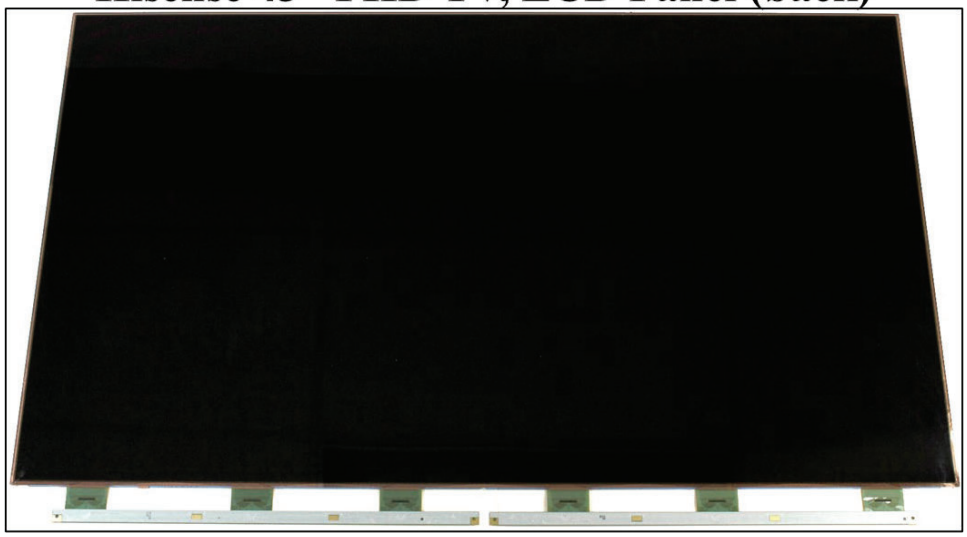


Hisense 43" FHD TV, LCD Panel (front)

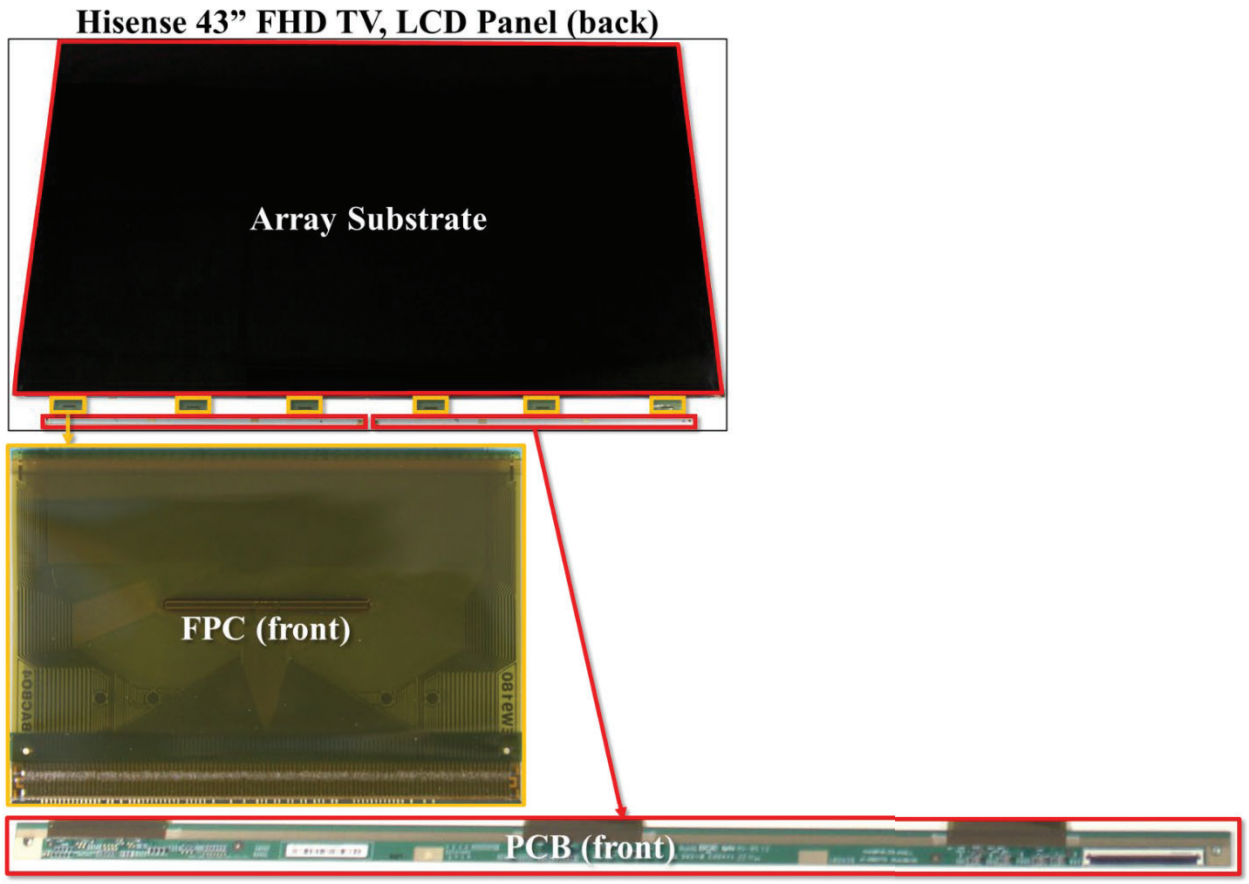


139. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-optical devices:

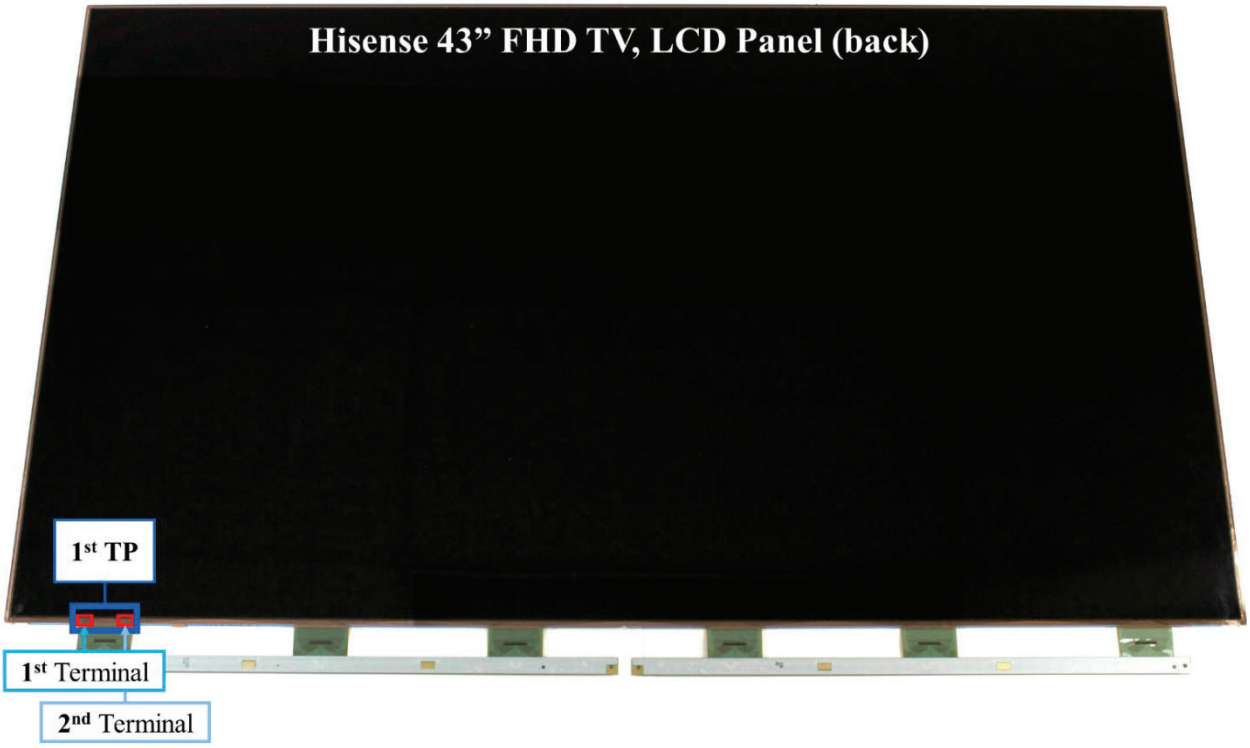
Hisense 43" FHD TV, LCD Panel (back)

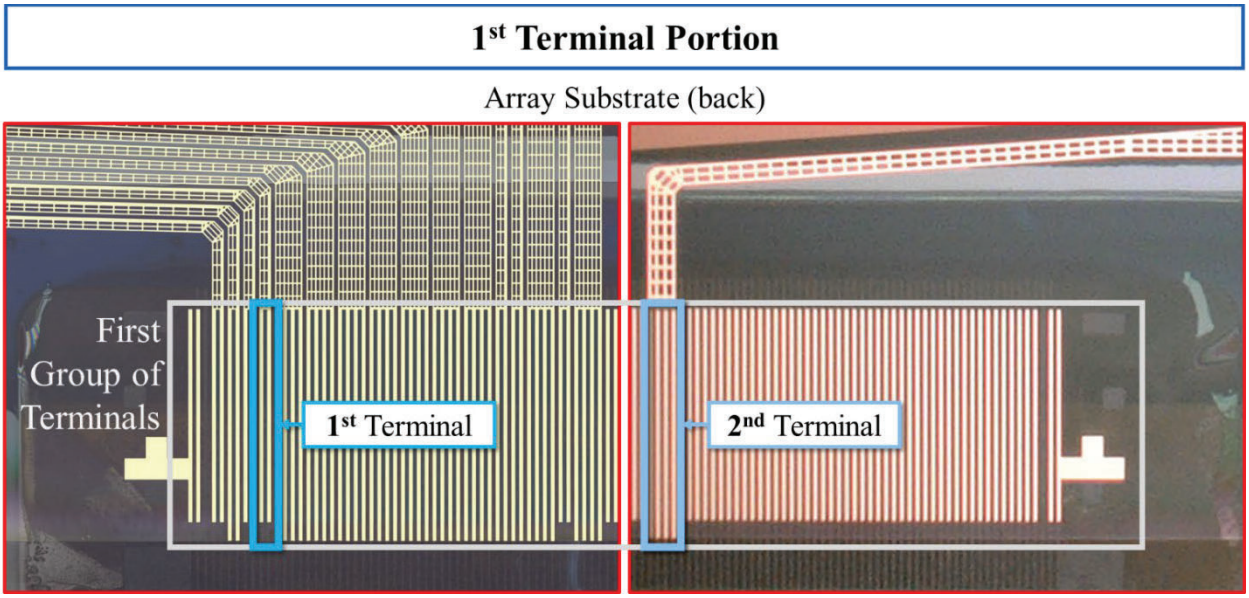


140. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-optical devices that comprise an electro-optical panel ("Array Substrate," outlined in red) and six flexible printed circuits (FPCs) that connect the electro-optical panel to two printed circuit boards:



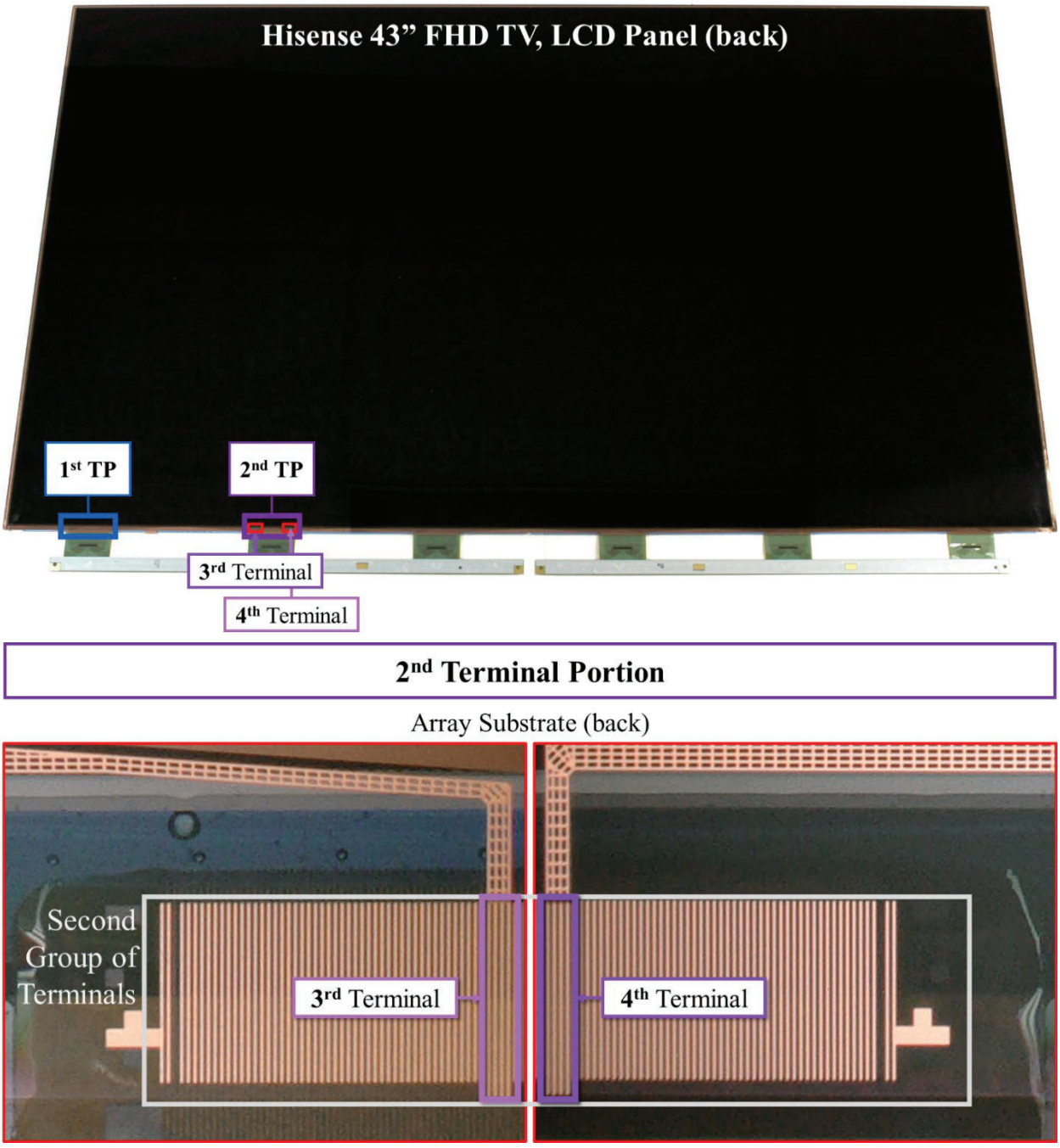
141. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43” FHD TV (model number 43A45H), are electro-optical devices comprising an electro-optical panel including a first terminal portion having a first group of terminals, the first group of terminals including: a first terminal; and a second terminal separated from the first terminal. The BOE LCD panel in the Hisense 43” FHD TV comprises a first terminal portion (“1st TP”) having a first group of terminals, including a first terminal and a second terminal, which is separated from the first terminal:





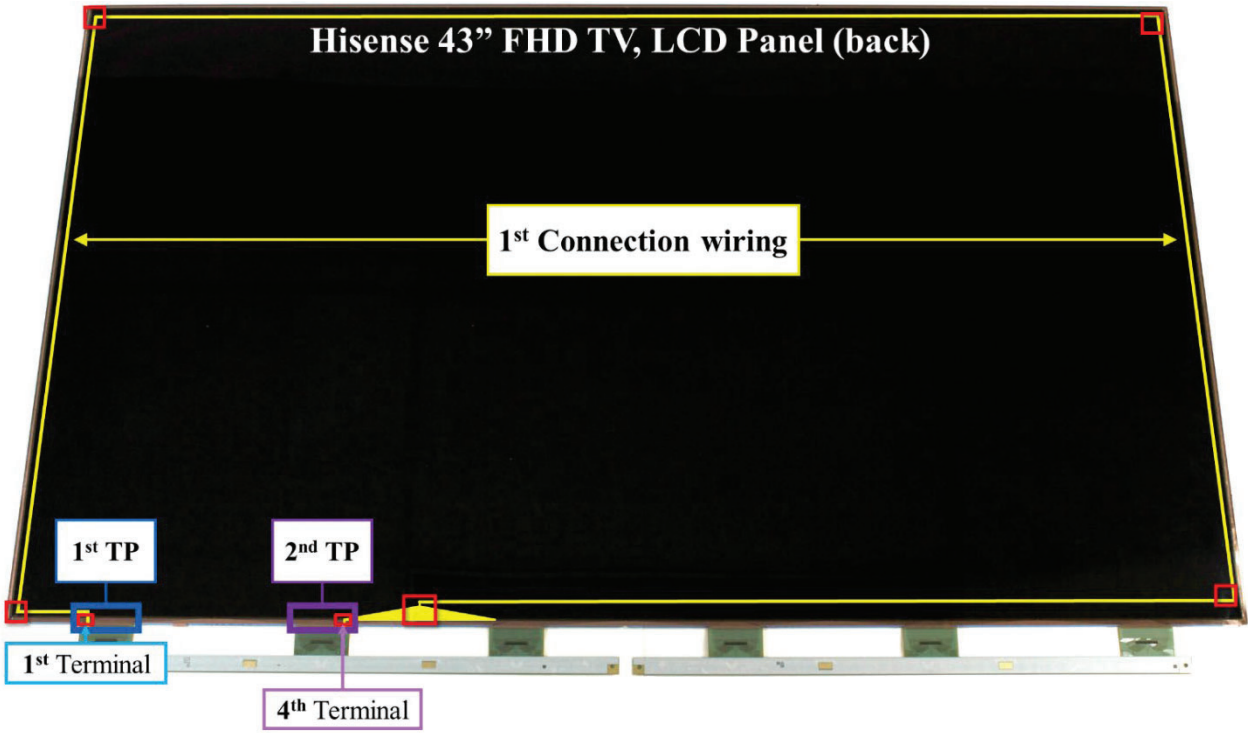
142. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43” FHD TV (model number 43A45H), are electro-optical devices comprising an electro-optical panel including a second terminal portion arranged adjacent to the first terminal portion and having a second group of terminals. The BOE LCD

panel in the Hisense 43" FHD TV comprises a second terminal portion ("2nd TP") arranged adjacent to the first terminal portion and having a second group of terminals, including a third terminal and a fourth terminal:



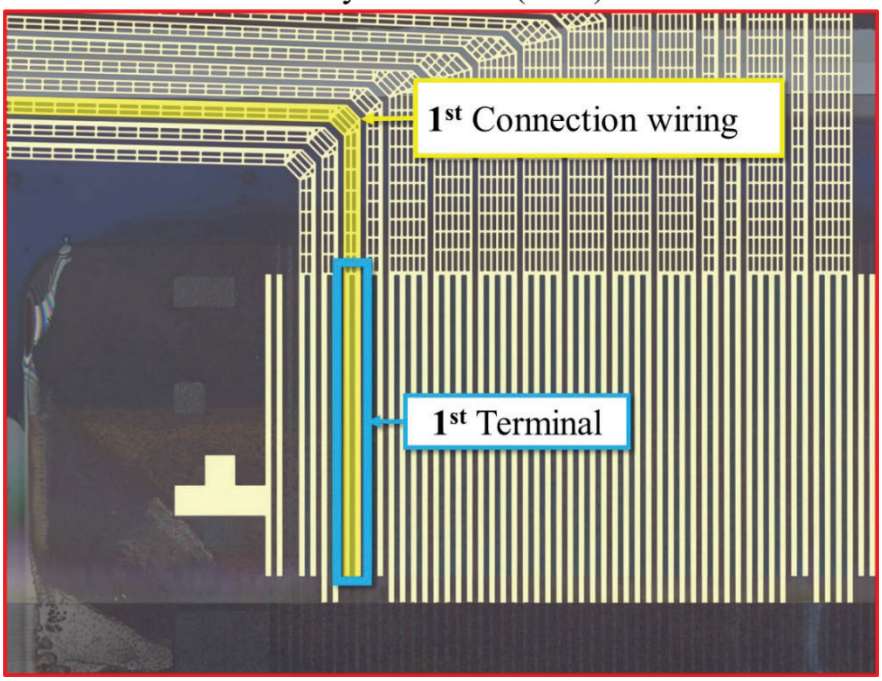
143. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-

optical devices comprising an electro-optical panel including a second terminal portion arranged adjacent to the first terminal portion and having a second group of terminals, the second group of terminals including: a third terminal; and a fourth terminal separated from the third terminal, the first terminal and the fourth terminal being electrically connected through a first connection wiring provided on the electro-optical panel, the second terminal and the third terminal being electrically connected through a second connection wiring provided on the electro-optical panel. The BOE LCD panel in the Hisense 43" FHD TV comprises a first terminal and a fourth terminal, the first terminal and the fourth terminal being electrically connected through a first connection wiring provided on the electro-optical panel. As shown below, the first terminal and the fourth terminal are electrically connected through a first connection wiring that extends around the periphery of the electro-optical panel ("LCD Panel," below). On information and belief, the first connection wiring is a common voltage (VCOM) wiring.



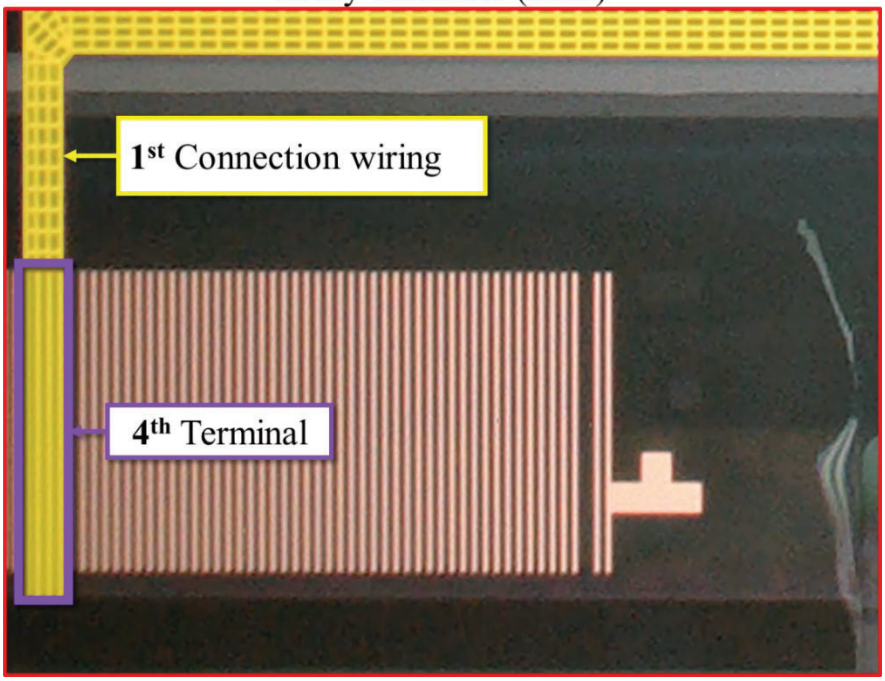
1st TP: First Terminal

Array Substrate (back)

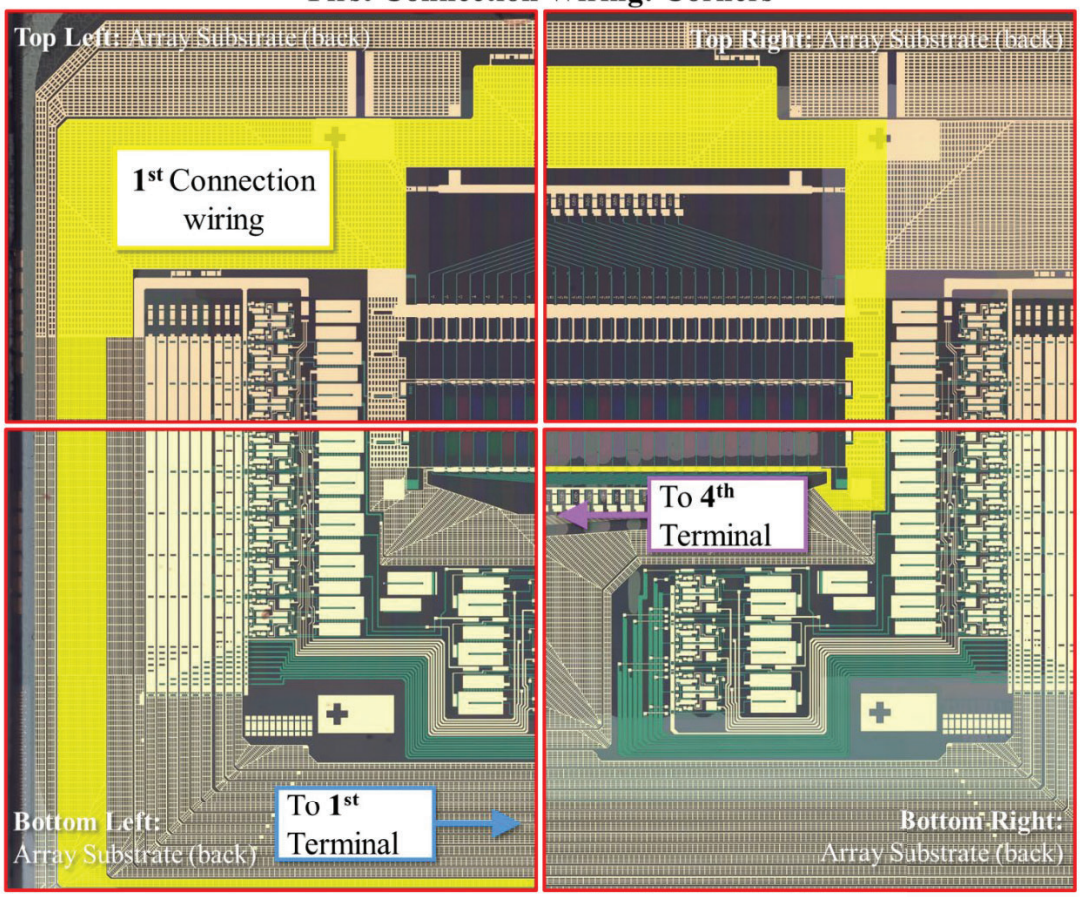


2nd TP: Fourth Terminal

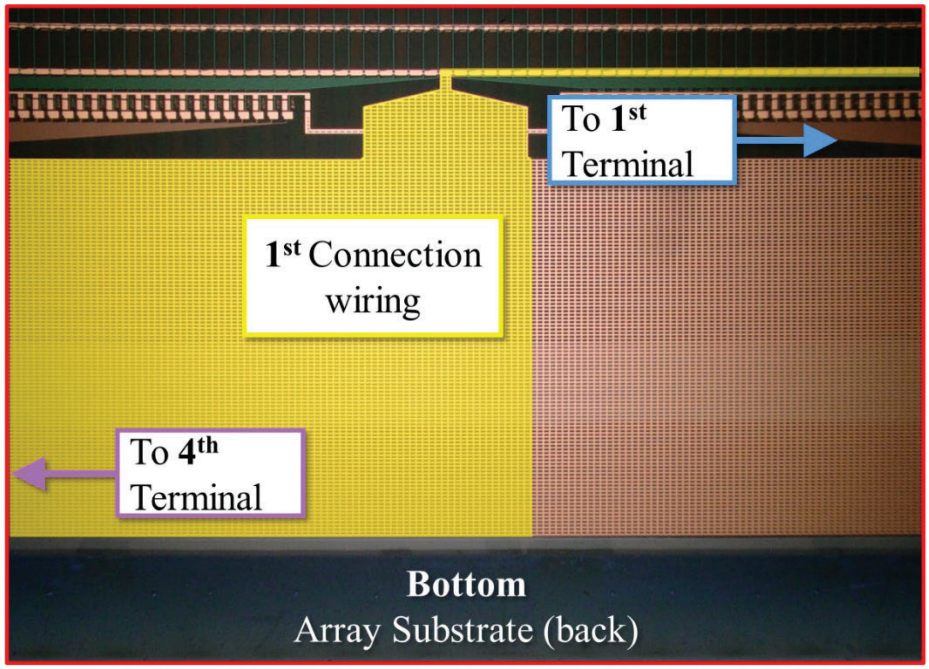
Array Substrate (back)



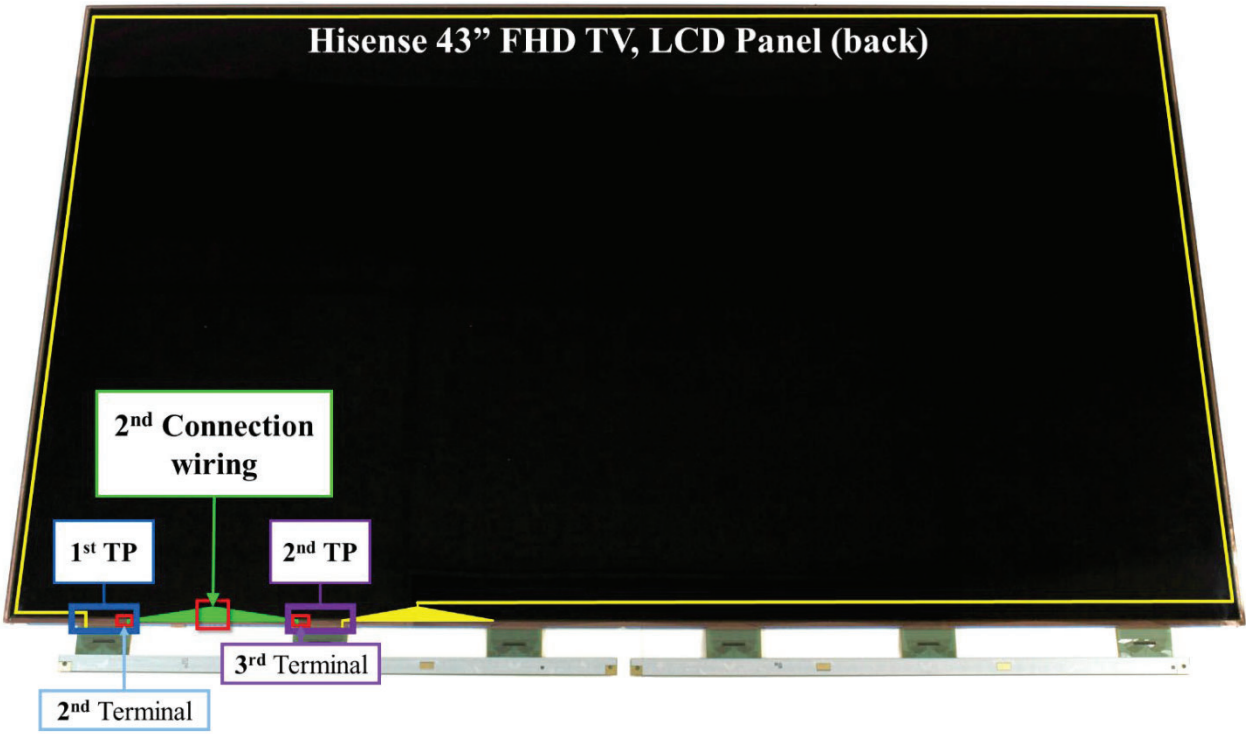
First Connection Wiring: Corners



First Connection Wiring: Bottom

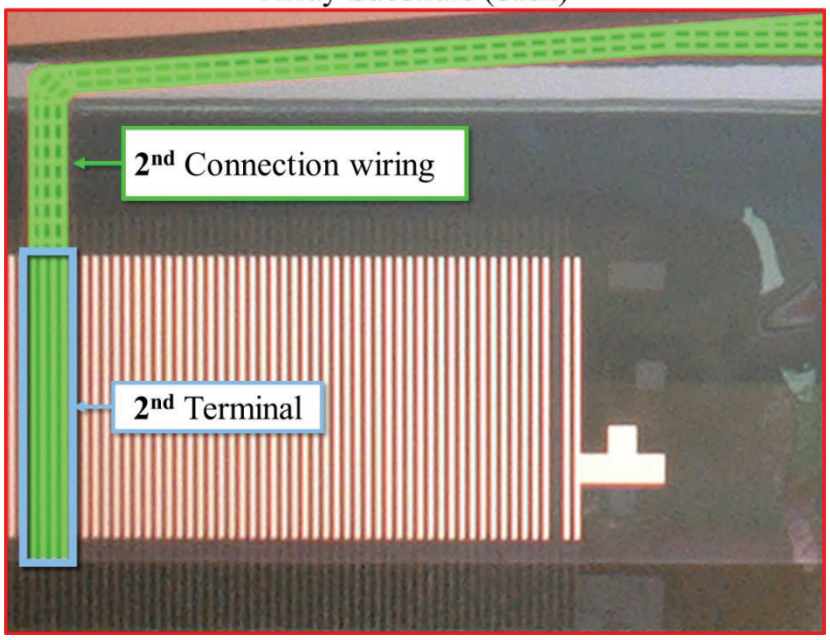


144. The BOE LCD panel in the Hisense 43" FHD TV comprises a second terminal and a third terminal, the second terminal and the third terminal being electrically connected through a second connection wiring provided on the electro-optical panel. As shown below, the second terminal and the third terminal are electrically connected through a second connection wiring that extends around the periphery of the electro-optical panel ("LCD Panel," below). On information and belief, the second connection wiring is a common voltage (VCOM) wiring.



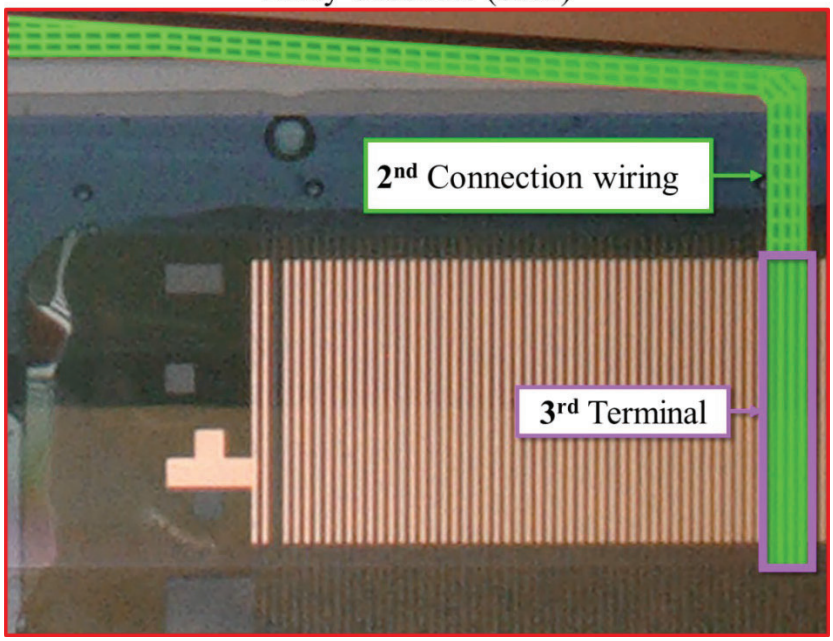
1st TP: Second Terminal

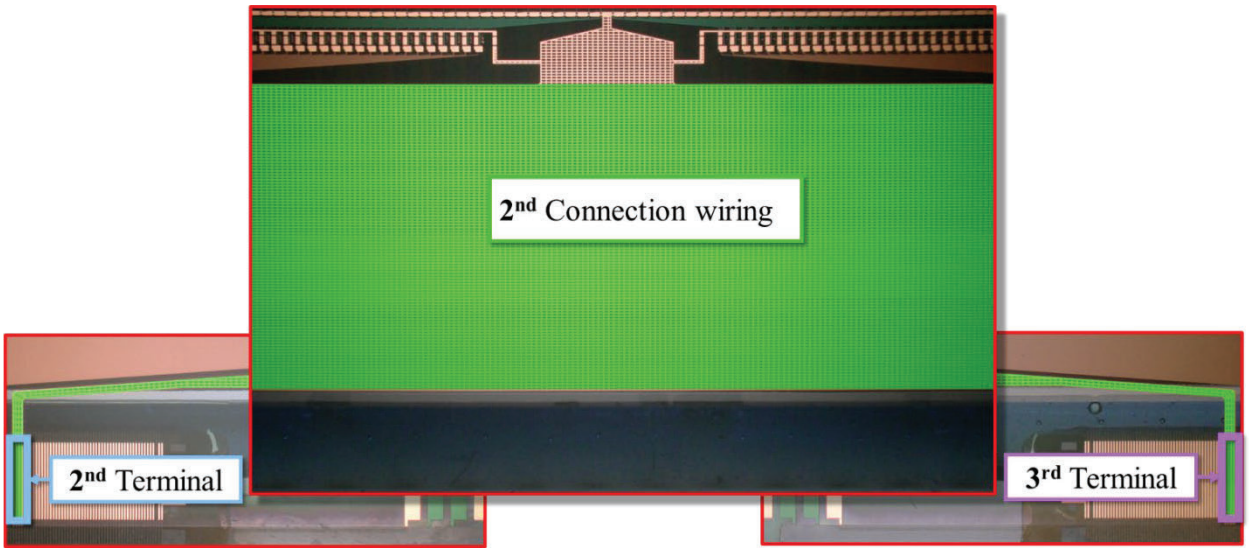
Array Substrate (back)



2nd TP: Third Terminal

Array Substrate (back)

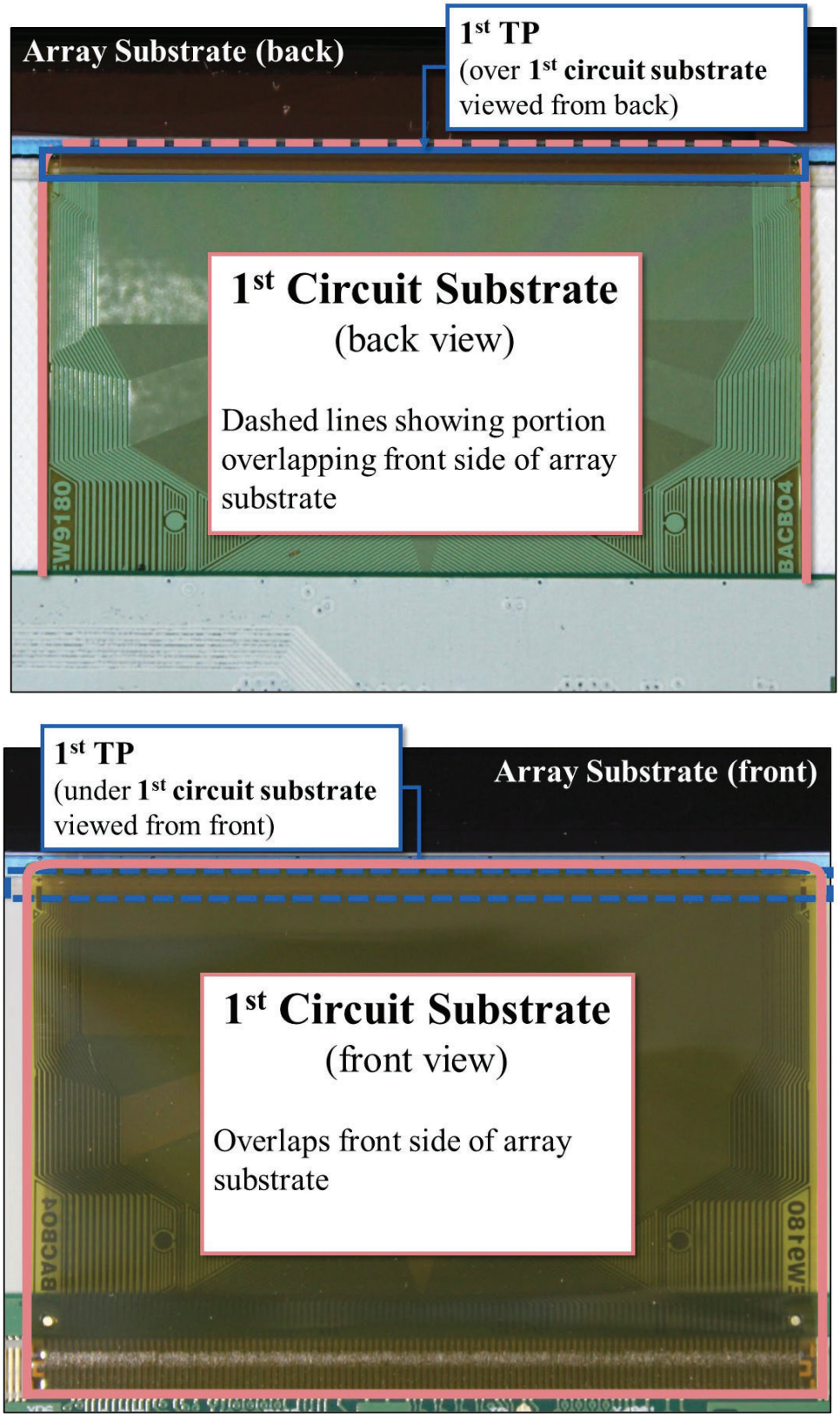




145. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-optical devices comprising a first circuit substrate. The BOE LCD panel in the Hisense 43" FHD TV comprises a first circuit substrate, i.e., the FPC that corresponds to the first terminal portion:

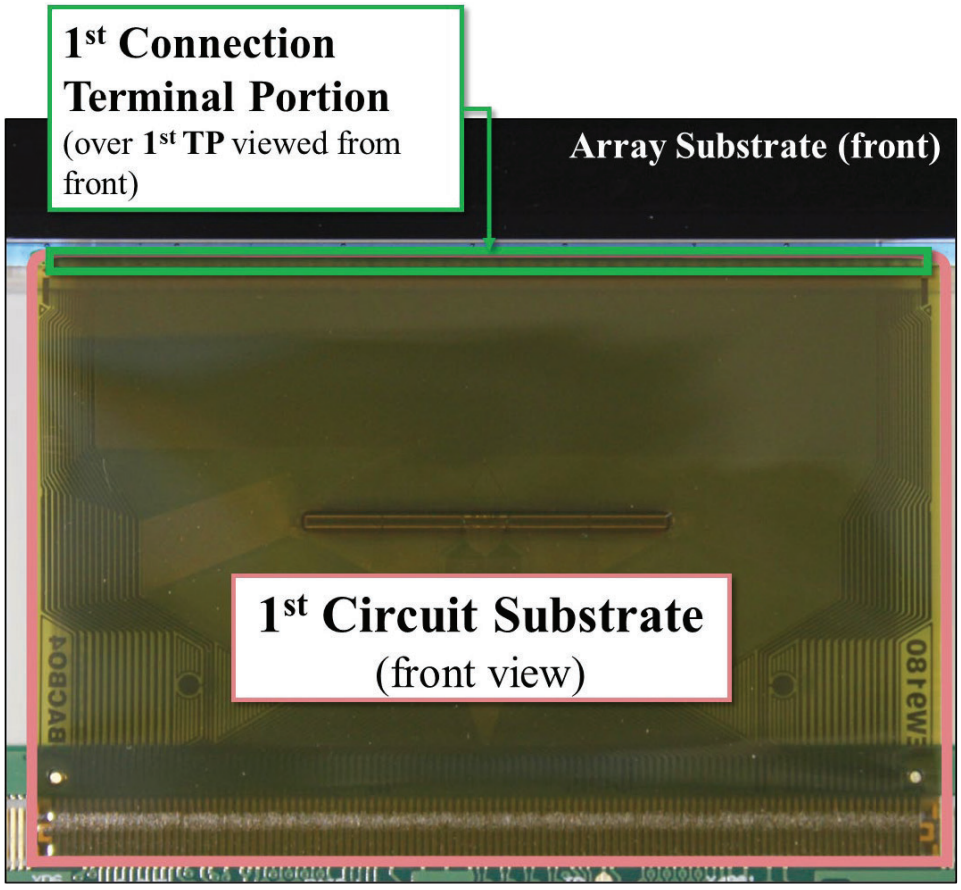


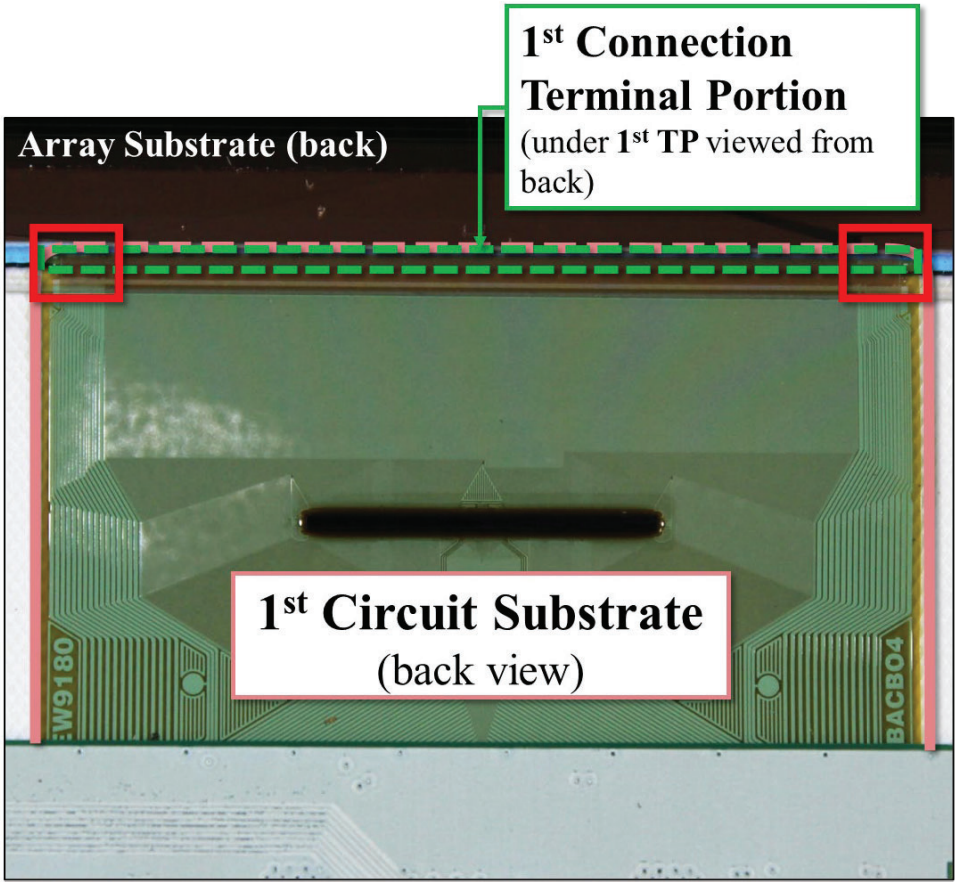
146. The first circuit substrate FPC includes a portion that overlaps the front side of the array substrate to connect the array substrate to the FPC:



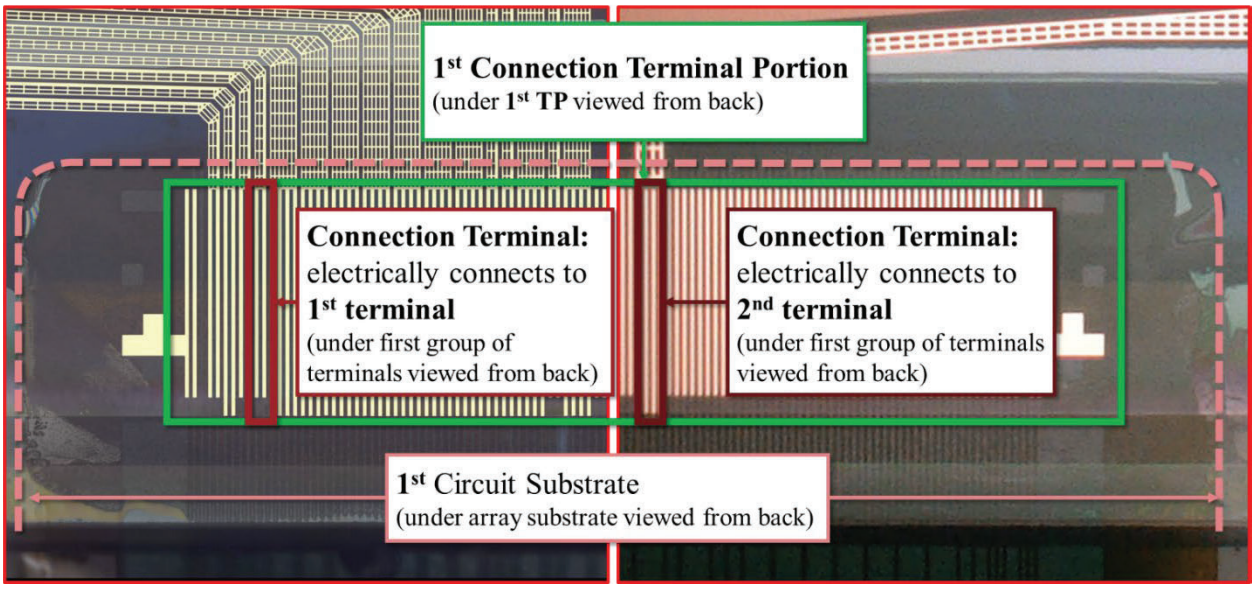
147. BOE LCD panels and modules, including, for example, the BOE LCD panel (part

number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-optical devices comprising a first circuit substrate including: a first connection terminal portion having a first group of connection terminals to be electrically connected to the first terminal portion. The first circuit substrate FPC includes a first connection terminal portion in the portion of the FPC that overlaps the array substrate that has a first group of connection terminals to be electrically connected to the first terminal portion—i.e., the first group of connection terminals includes two connection terminals that are electrically connected to the first and second terminals of the first terminal portion:





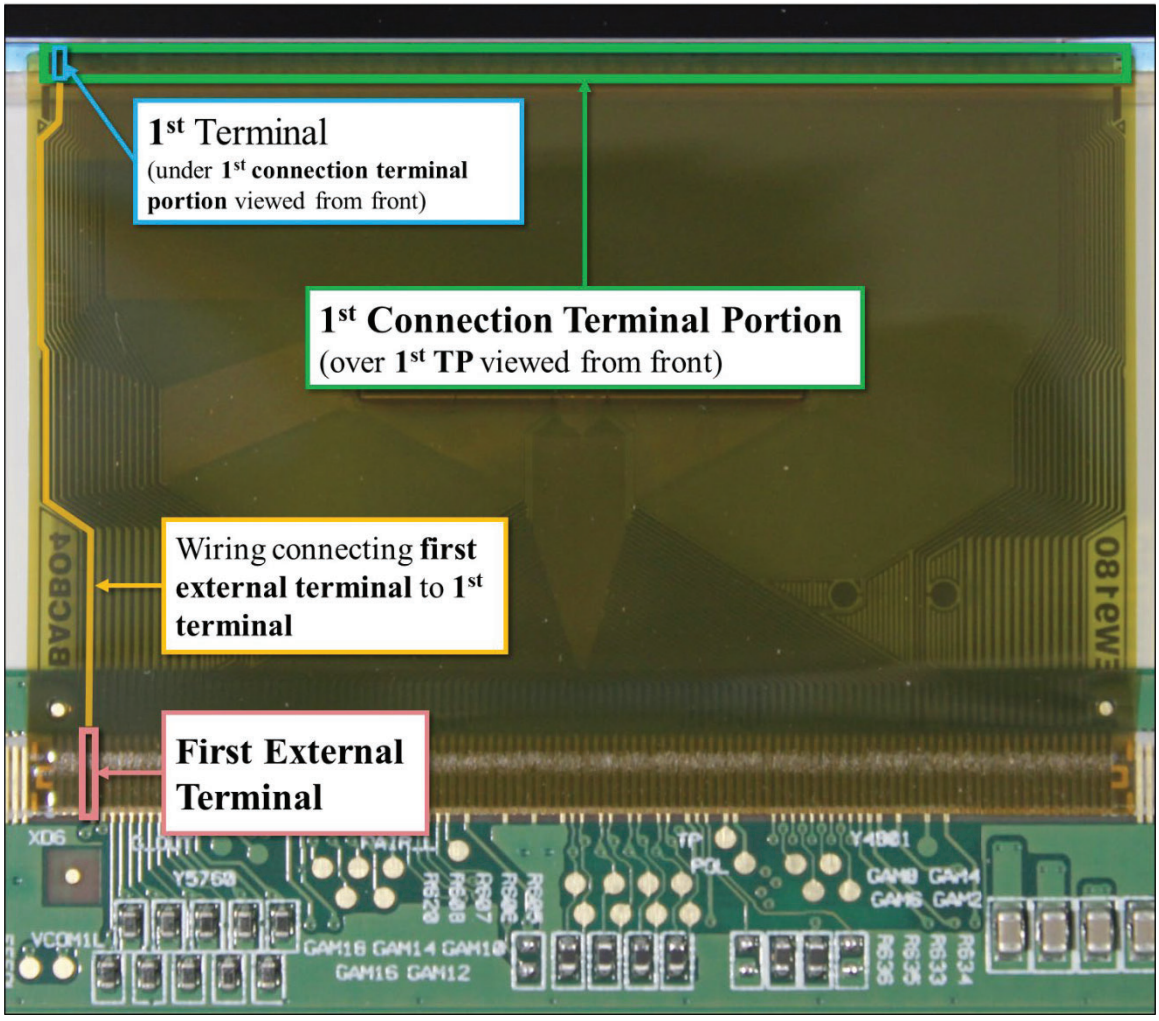
1st Group of Connection Terminals



148. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-

optical devices comprising a first circuit substrate including: a first external terminal connected to the first terminal through the first connection terminal portion. The first circuit substrate FPC includes a first external terminal, located on the bottom end of the first circuit substrate FPC, which is connected to the first terminal through the first connection terminal portion. The first external terminal is connected to the first terminal through the first connection terminal portion via wirings on the first circuit substrate FPC:

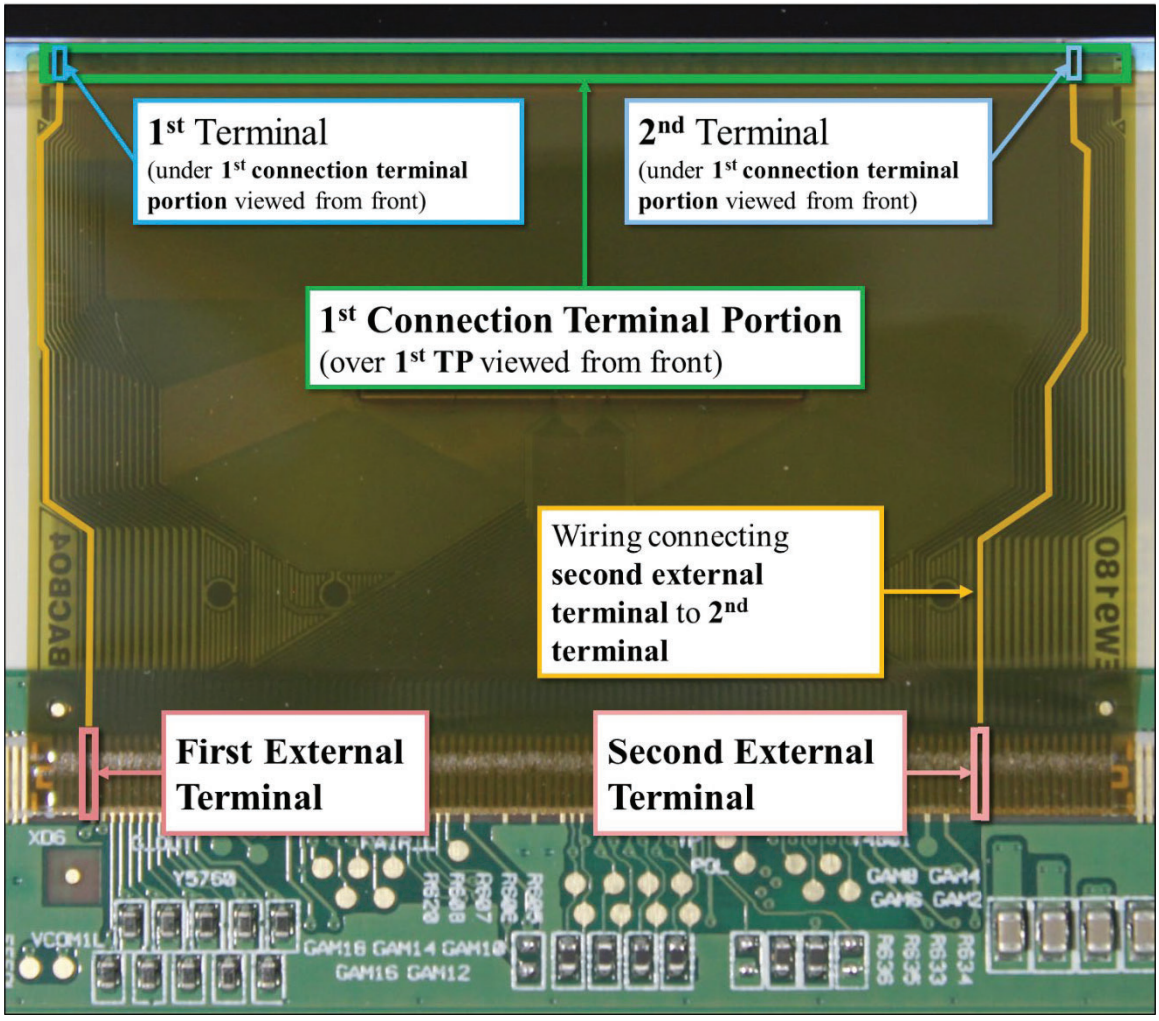
First Circuit Substrate (front)



149. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-

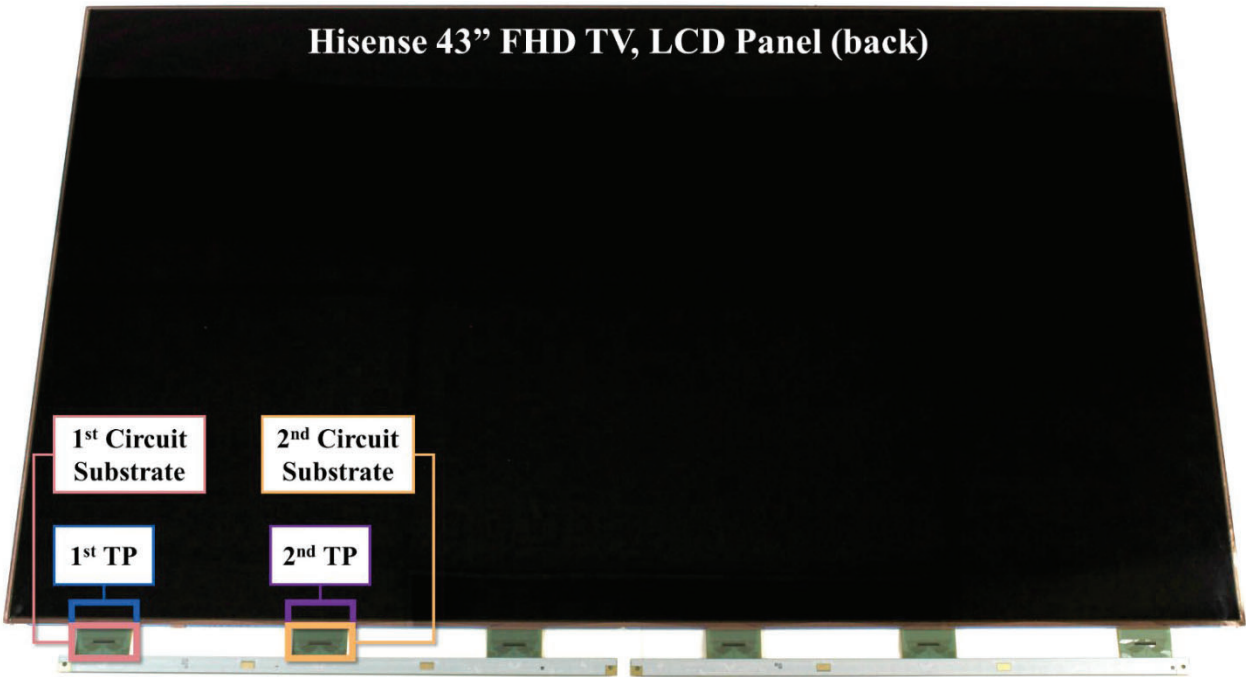
optical devices comprising a first circuit substrate including: a second external terminal connected to the second terminal through the first connection terminal portion. The first circuit substrate FPC includes a second external terminal, located on the bottom end of the first circuit substrate FPC, connected to the second terminal through the first connection terminal portion. The second external terminal is connected to the second terminal through the first connection terminal portion via wirings on the first circuit substrate FPC:

First Circuit Substrate (front)

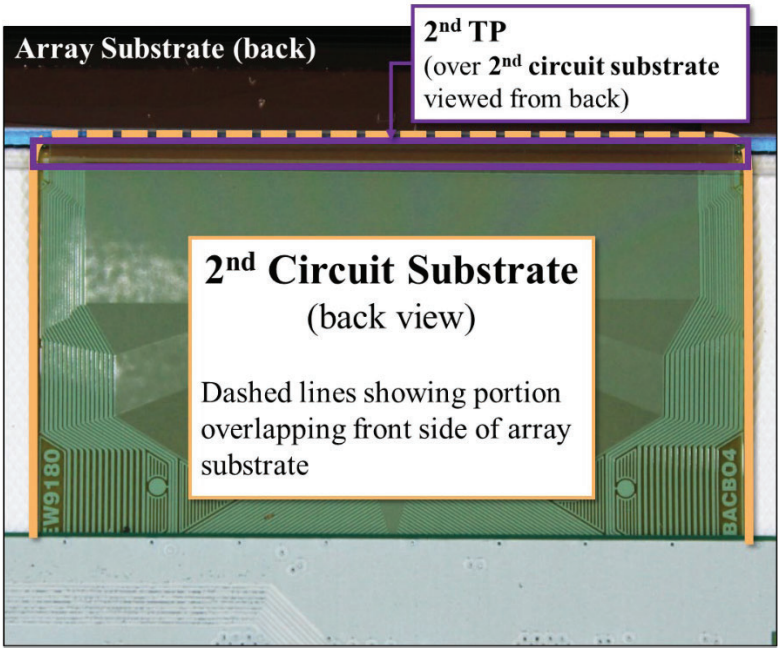


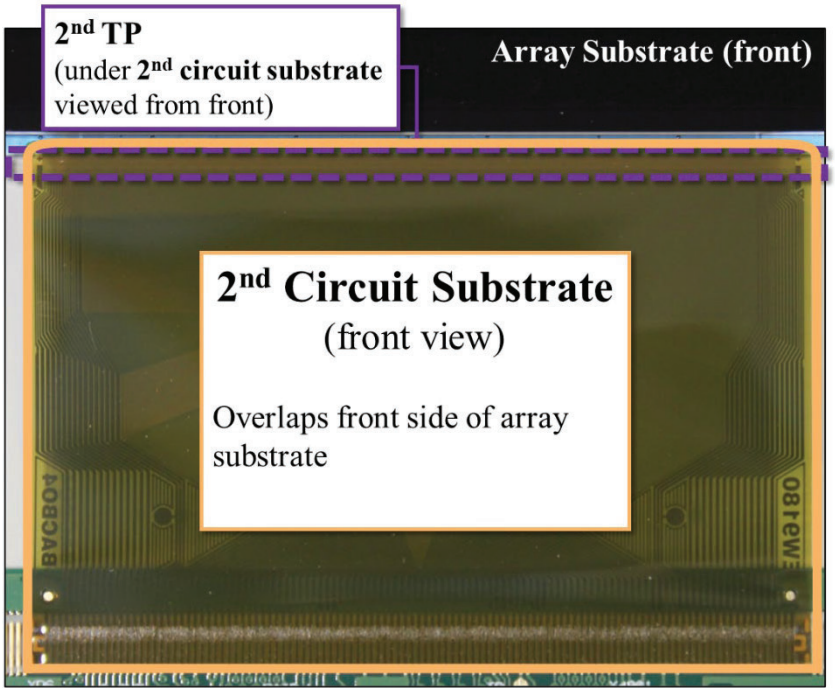
150. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-

optical devices comprising a second circuit substrate. The BOE LCD panel in the Hisense 43" FHD TV comprises a second circuit substrate, i.e., the FPC that corresponds to the second terminal portion:

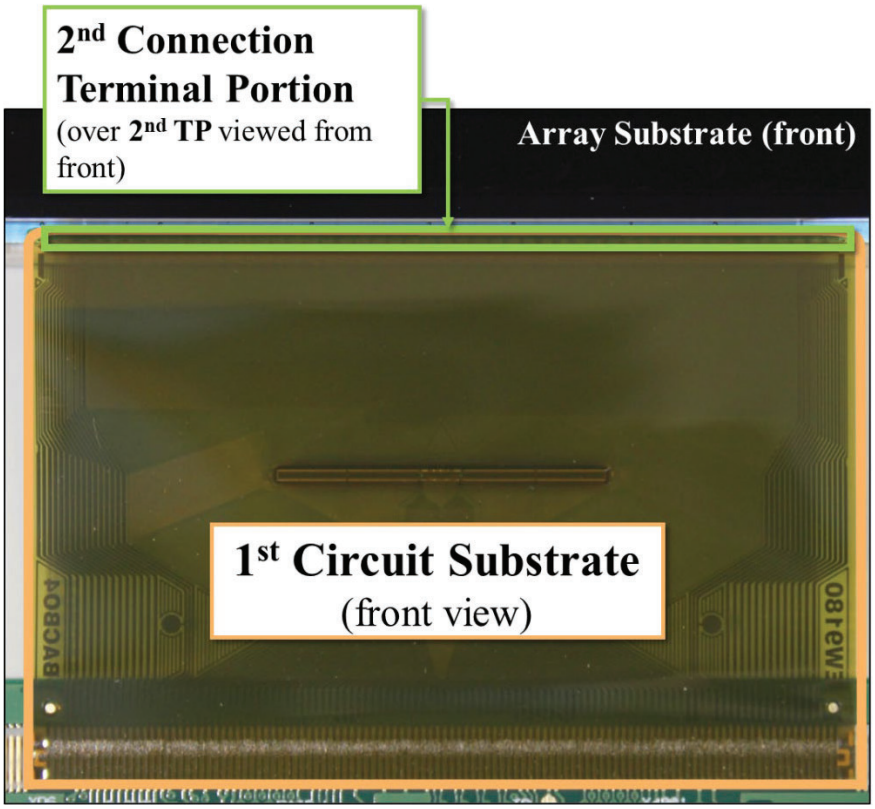


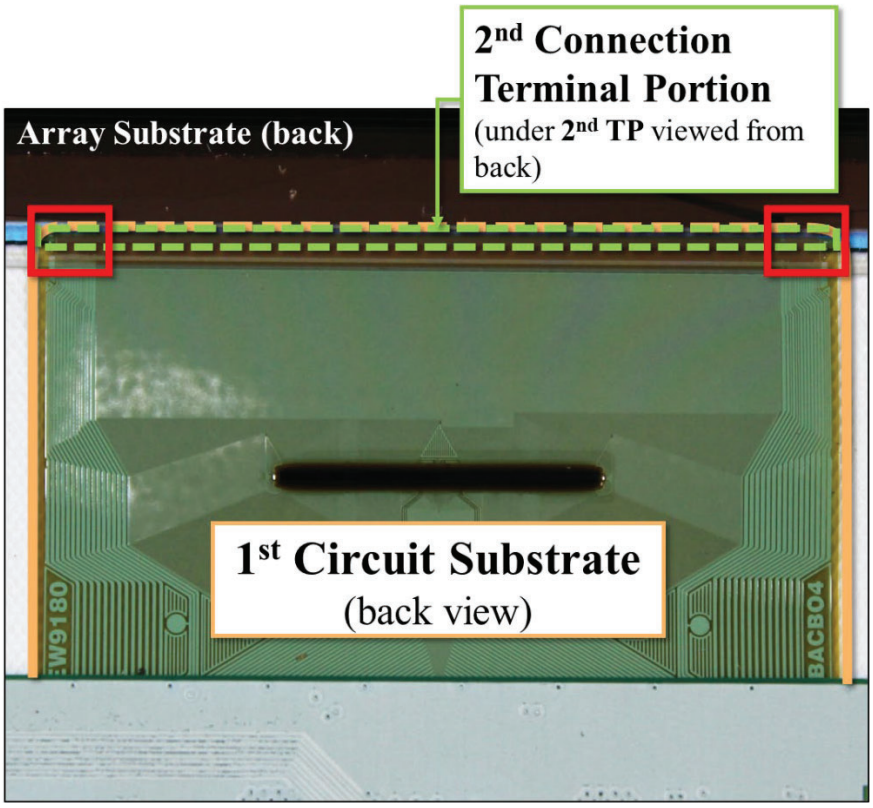
151. The second circuit substrate FPC includes a portion that overlaps the front side of the array substrate to connect the array substrate to the FPC:



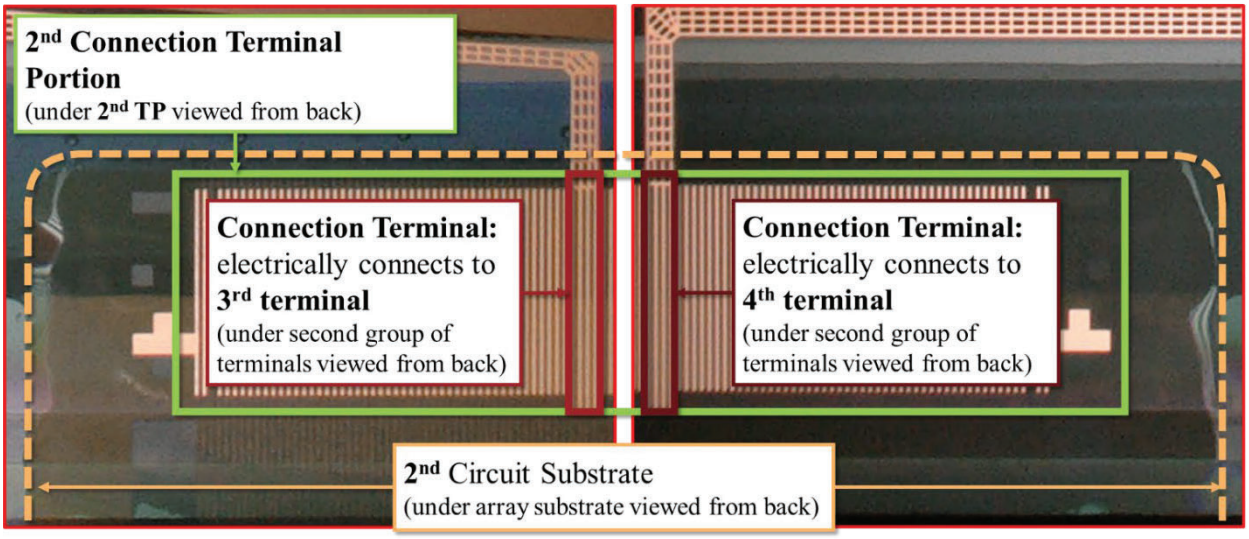


152. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-optical devices comprising a second circuit substrate including: a second connection terminal portion having a second group of connection terminals to be electrically connected to the second terminal portion. The second circuit substrate FPC includes a second connection terminal portion, in the portion of the FPC that overlaps the array substrate, that has a second group of connection terminals to be electrically connected to the second terminal portion—i.e., the second group of connection terminals includes two connection terminals that are electrically connected to the third and fourth terminals of the second terminal portion:


2nd Connection Terminal Portion
(over 2nd TP viewed from front)
Array Substrate (front)
1st Circuit Substrate
(front view)

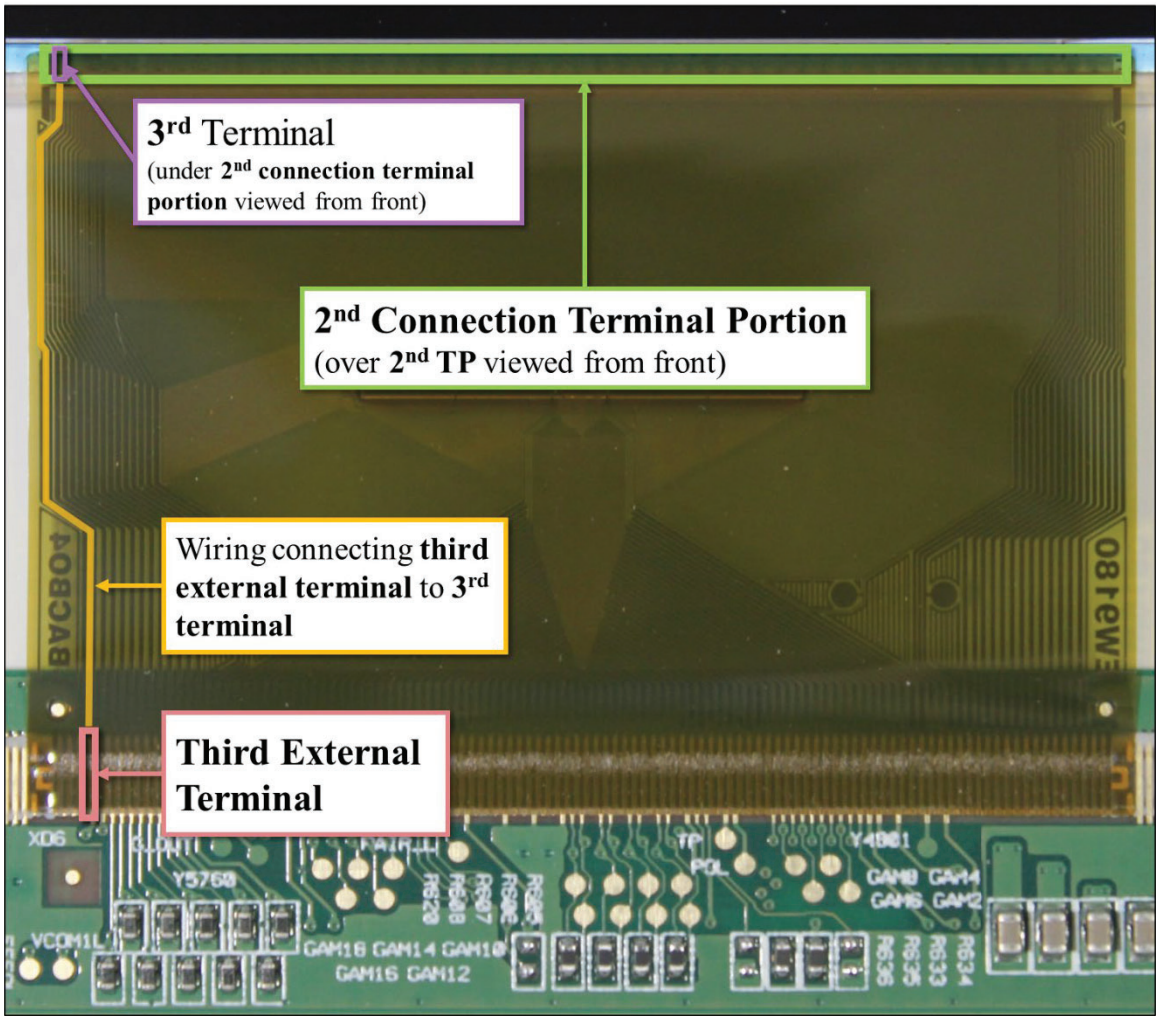

2nd Connection Terminal Portion
(under 2nd TP viewed from back)
Array Substrate (back)
1st Circuit Substrate
(back view)

2nd Group of Connection Terminals



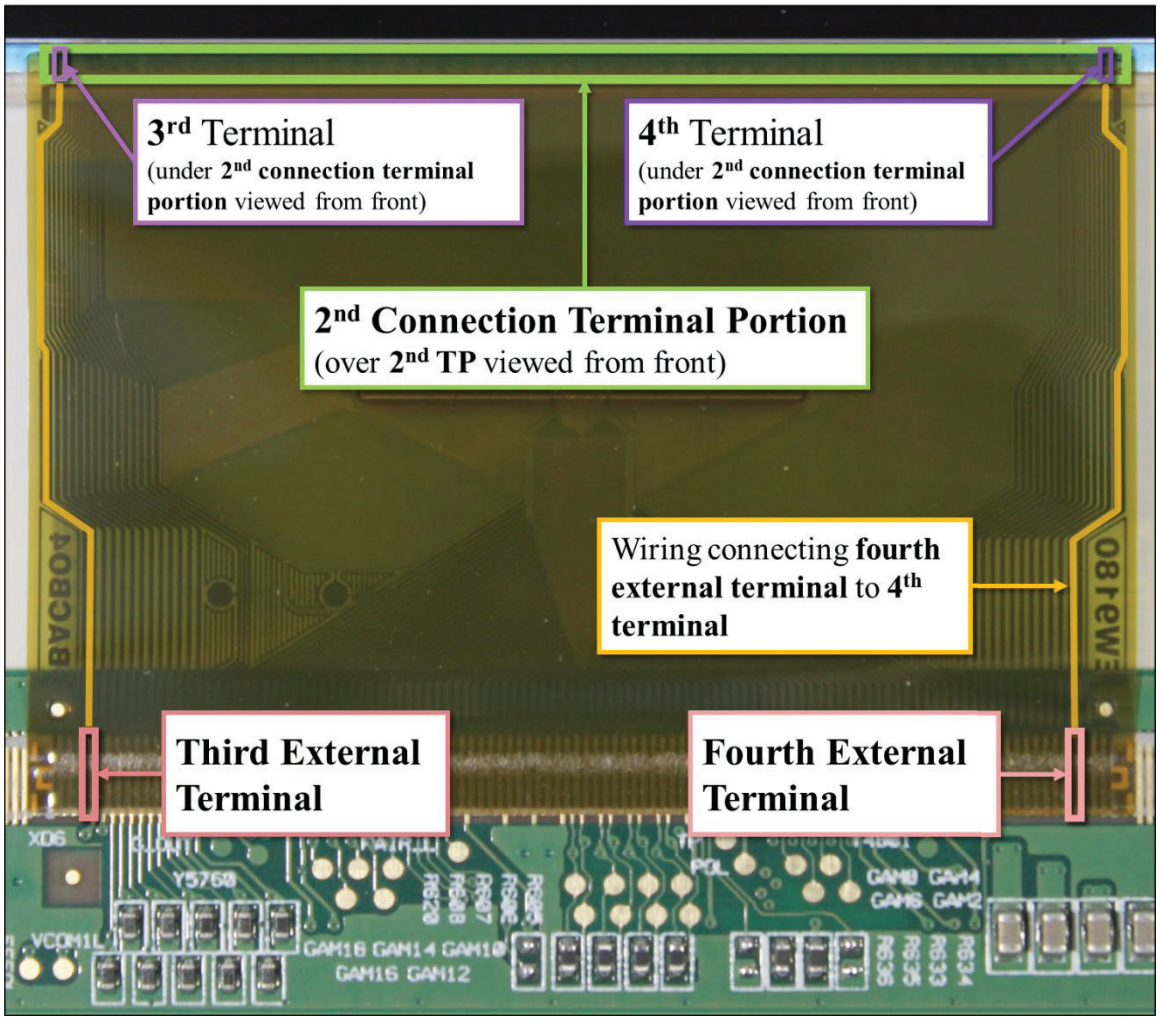
153. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-optical devices comprising a second circuit substrate including: a third external terminal electrically connected to the third terminal through the second connection terminal portion. The second circuit substrate FPC includes a third external terminal, located on the bottom end of the second circuit substrate FPC, which is connected to the third terminal through the second connection terminal portion. The third external terminal is connected to the third terminal through the second connection terminal portion via wirings on the second circuit substrate FPC:

Second Circuit Substrate (front)



154. BOE LCD panels and modules, including, for example, the BOE LCD panel (part number HV430FHB-F90) in the Hisense 43" FHD TV (model number 43A45H), are electro-optical devices comprising a second circuit substrate including: a fourth external terminal electrically connected to the fourth terminal through the second connection terminal portion. The second circuit substrate FPC includes a fourth external terminal, located on the bottom end of the second circuit substrate FPC, which is connected to the fourth terminal through the second connection terminal portion. The fourth external terminal is connected to the fourth terminal through the second connection terminal portion via wirings on the second circuit substrate FPC:

Second Circuit Substrate (front)



155. BOE and Hisense have indirectly infringed and continue to indirectly infringe the '020 patent by actively inducing, in violation of 35 U.S.C. § 271(b), the direct infringement of the '020 patent by others in the United States, the State of Texas, and the Eastern District of Texas.

156. BOE has induced, and continues to induce, through affirmative acts, its customers, including Hisense, and other third parties, including other importers, resellers, and end users in BOE's supply chain, to directly infringe the '020 patent by making, using, offering to sell, selling within the United States, and/or importing into the United States, products

incorporating a BOE Accused Instrumentality that infringes the '020 patent.

157. Hisense has induced, and continues to induce, through affirmative acts, its customers and other third parties, including other importers, resellers, and end users in Hisense's supply chain, to directly infringe the '020 patent by using, offering to sell, selling within the United States, and/or importing into the United States, Hisense Accused Instrumentalities that infringe the '020 patent.

158. On information and belief, BOE and Hisense actively promoted the BOE Accused Instrumentalities and the Hisense Accused Instrumentalities, respectively, for the U.S. market.

159. BOE knew that its customers, including Hisense, would offer to sell and/or sell products incorporating the BOE Accused Instrumentalities in the United States or cause those products to be sold in the United States, and BOE specifically intended its customers to purchase BOE Accused Instrumentalities and offer to sell and/or sell products incorporating the BOE Accused Instrumentalities in the United States or cause those products to be sold in the United States. BOE's direct and indirect purchasers directly infringe the '020 patent by importing the BOE Accused Instrumentalities into the United States, selling the BOE Accused Instrumentalities in the United States, offering to sell the BOE Accused Instrumentalities in the United States, and/or using the BOE Accused Instrumentalities in the United States.

160. Hisense knew that its customers would offer to sell and/or sell infringing Hisense Accused Instrumentalities in the United States or cause Hisense Accused Instrumentalities to be sold in the United States, and Hisense specifically intended its customers to purchase Hisense Accused Instrumentalities and offer to sell and/or sell the Hisense Accused Instrumentalities in the United States or cause Hisense Accused Instrumentalities to be sold in the United States. Hisense's customers directly infringe the '020 patent by importing the Hisense Accused

Instrumentalities into the United States, selling the Hisense Accused Instrumentalities in the United States, offering to sell the Hisense Accused Instrumentalities in the United States, and/or using the Hisense Accused Instrumentalities in the United States.

161. BOE has induced others' direct infringement despite actual notice that the Accused Instrumentalities infringe the '020 patent. As of at least the filing of this complaint, BOE knew that the induced conduct would constitute infringement—and intended that infringement at the time of committing the aforementioned affirmative acts, such that the acts and conduct have been and continue to be committed with the specific intent to induce infringement—or deliberately avoided learning of the infringing circumstances at the time of committing these acts so as to be willfully blind to the infringement that was induced.

162. Hisense has induced others' direct infringement despite actual notice that the Hisense Accused Instrumentalities infringe the '020 patent. As of at least the date of this complaint, Hisense knew that the induced conduct would constitute infringement—and intended that infringement at the time of committing the aforementioned affirmative acts, such that the acts and conduct have been and continue to be committed with the specific intent to induce infringement—or deliberately avoided learning of the infringing circumstances at the time of committing these acts so as to be willfully blind to the infringement that was induced.

163. BOE has indirectly infringed and continues to indirectly infringe the '020 patent by contributing, in violation of 35 U.S.C. § 271(c), to the direct infringement of the '020 patent by others in the United States, the State of Texas, and the Eastern District of Texas, specifically, by offering to sell, selling, and/or importing into the United States components (BOE Accused Instrumentalities) of a claimed electronic apparatus (see, e.g., claim 13).

164. BOE's and Hisense's direct and indirect infringement of the '020 patent is

ongoing.

165. The above-described acts of infringement have caused and continue to cause injury and damage to Plaintiffs.

166. BOE's and Hisense's ongoing infringement will be willful.

167. Plaintiffs are entitled to recover damages sustained as a result of BOE's and Hisense's willful infringement in an amount subject to proof at trial, but in no event less than a reasonable royalty.

JURY TRIAL DEMANDED

168. Plaintiffs demand a trial by jury on all claims and issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs Longitude Licensing Limited and 138 East LCD Advancements Limited respectfully request that this Court:

A. Enter judgment that BOE and Hisense have infringed one or more claims of each of the Longitude Patents, and that such infringement was willful;

B. Enter an order, pursuant to 35 U.S.C. § 284, awarding to Plaintiffs monetary relief in an amount adequate to compensate for BOE's and Hisense's infringement of the Longitude Patents, in an amount to be determined at trial, but not less than a reasonable royalty, as well as pre- and post-judgment interest and costs and enhanced damages for BOE's and Hisense's willful infringement of the Longitude Patents;

C. Enter an order, pursuant to 35 U.S.C. § 285, declaring this to be an exceptional case and thereby awarding to Plaintiffs their reasonable attorneys' fees;

D. Enter an order awarding to Plaintiffs a permanent injunction enjoining BOE's and Hisense's ongoing patent infringement; and

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E. Enter an order awarding to Plaintiffs such other and further relief, whether at law or in equity, that this Court seems just, equitable, and proper.

Dated: April 8, 2025

Respectfully submitted,

s/ Aaron R. Fahrenkrog

Aaron R. Fahrenkrog (admitted in this district)
LEAD ATTORNEY
MN Bar No. 0386673
AFahrenkrog@RobinsKaplan.com
Emily J. Tremblay (*pro hac vice* forthcoming)
MN Bar. No. 0395003
ETremblay@RobinsKaplan.com
Samuel J. LaRoque (*pro hac vice* forthcoming)
MN Bar No. 0504029
SLaRoque@RobinsKaplan.com
William R. Jones (*pro hac vice* forthcoming)
MN Bar No. 0402360
WJones@RobinsKaplan.com
Navin Ramalingam (*pro hac vice* forthcoming)
MN Bar No. 0402799
NRamalingam@RobinsKaplan.com
ROBINS KAPLAN LLP
800 LaSalle Avenue, Ste. 2800
Minneapolis, MN 55402
(612) 349-8500 (telephone)
(612) 339-4181 (facsimile)

Of Counsel:
Andrea L. Fair
Texas State Bar No. 24078488
andrea@millerfairhenry.com
Garrett C. Parish
garrett@millerfairhenry.com
Texas State Bar No. 24125824
MILLER FAIR HENRY, PLLC
1507 Bill Owens Parkway
Longview, TX 75604
(903) 757-6400 (telephone)
(903) 757-2323 (facsimile)

Attorneys for Plaintiffs
LONGITUDE LICENSING LIMITED and
138 EAST LCD ADVANCEMENTS LIMITED