IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PHENIX LONGHORN LLC, Plaintiff, v. AU OPTRONICS CORPORATION, HISENSE ELECTRONICA MEXICO, S.A. DE C.V., HISENSE USA CORPORATION, HISENSE VISUAL TECHNOLOGY CO., LTD., and DOES 1–10. Defendants.	**CIVIL ACTION NO. 2:23-cv-00477-RWS-RSP** **JURY TRIAL DEMANDED**

FIFTH AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Phenix Longhorn, LLC ("Phenix") files this Fifth Amended Complaint for infringement of U.S. Patent No. 7,233,305 ("the '305 Patent") and U.S. Patent No. 7,557,788 ("the '788 Patent") (collectively, the "Asserted Patents") against Defendants AUO Corporation f/k/a AU Optronics Corporation ("AUO"), Hisense Electronica Mexico, S.A. de C.V. ("Hisense Mexico"), Hisense USA Corporation ("Hisense USA"), Hisense Visual Technology Co., Ltd. f/k/a Hisense Electric Co., Ltd. ("Hisense Visual"), and Does 1–10 (collectively, "Defendants") and alleges as follows:

NATURE OF ACTION

1. This is a patent infringement action to remedy Defendants' infringement of the Asserted Patents.

2. Phenix seeks injunctive relief and monetary damages.

THE PARTIES

3. Phenix is a limited liability company organized and existing under the laws of the State of Texas. Phenix maintains a registered agent and office located at 107 Austin Street, Martindale, Texas 78655.

4. On information and belief, Defendant AUO is a multi-national corporation organized under the laws of the Republic of China (R.O.C. or Taiwan), with its principal place of business located at No. 1, Li-Hsin Road 2, Hsinchu Science Park, Hsinchu, 30078 Taiwan. On information and belief, AUO was previously known as "AU Optronics Corporation," the name that appears in the case caption, but changed its name to "AUO Corporation."

5. On information and belief, Defendant AUO manufacturers and sells liquid crystal display ("LCD") panel modules, including the LCD screen and the circuits that control the LCD screen. Defendant AUO sells its panels to manufacturers that incorporate Defendant AUO's panels into television sets sold and/or intended for sale throughout the United States, including the State of Texas and the Eastern District of Texas ("this District").

6. On information and belief, Defendant Hisense Mexico is a corporation organized and existing under the laws of the United Mexican States (Mexico) with a principal place of business at Boulevard Sharp 3510, Parque Industrial Rosarito, Playas de Rosarito, Baja California 22710 Mexico. On information and belief, Hisense Mexico is owned and/or controlled by Hisense Visual and Hisense USA. On information and belief, Hisense USA and Hisense Visual each owns 50% of Hisense Mexico.

7. On information and belief, Defendant Hisense Mexico is a television manufacturer in the business of incorporating LCD panels into its products under at least the Hisense brand. On

information and belief, the majority of Hisense Mexico's manufactured goods are sold in the United States, including throughout the State of Texas, and within this District, and as set forth below, Hisense Mexico has committed and continues to commit, tortious acts of infringement within and outside the State of Texas and within this District.

8. On information and belief, and as admitted by Hisense Mexico in its Renewed Motion to Dismiss (Dkt. 46 at 5), Hisense USA is responsible for U.S.-based activities related to infringing Hisense television products, including importing, pricing, and selling of those products in the United States. On information and belief, Hisense USA distributes infringing Hisense television products manufactured by Hisense Mexico throughout the world, including the United States, and imports those products into the United States. On information and belief, the referenced distribution, selling, and importation into the United States of many or all of the infringing Hisense television products is performed by Hisense USA acting in concert with Hisense Mexico and Hisense Visual, with full knowledge by Hisense USA, Hisense Mexico, and Hisense Visual that the infringing Hisense television products are destined for importation and sale in the United States, including sales in this District. On information and belief, Does 1–10 also distribute, sell, and/or import into the United States infringing Hisense television products.

9. On information and belief, Defendant Hisense USA is a corporation organized and existing under the laws of Georgia. On information and belief, Hisense USA is in the business of researching, designing, importing into, distributing, and selling household electronics, including the infringing Hisense television products, throughout the United States, including in the State of Texas and this District. According to the Texas Comptroller of Public Accounts, Hisense USA is registered to do business in the State of Texas and this District under the tax identification number 32049125076. **Exhibit R**. On information and belief, and according to Denton County Tax Office

and Denton County Appraisal District records, Hisense USA maintains a regular and established place of business within this District at 16600 Victory Circle, Northlake, Texas 76247. **Exhibit S**; **Exhibit T**. On information and belief, Hisense USA carries out its business either on its own or through its agent(s) from its 16600 Victory Circle, Northlake, Texas facility, including distributing goods such as the infringing Hisense television products to its customers in Texas and throughout the United States. **Exhibit U**. On information and belief, Hisense USA maintains employees and/or agents that conduct business for it at the Northlake, Texas location, given the approximately $1.2 million worth of Hisense USA property maintained at the location. **Exhibit S**; **Exhibit V**. Publicly available Google Reviews and a Dallas Business Journal Commercial Real Estate article identify the Northlake, Texas, facility as a distribution center of Hisense USA. **Exhibit V**; **Exhibit W**. On information and belief, Hisense USA stores and distributes the infringing Hisense television products, which are manufactured by Hisense Mexico, at its Northlake, Texas, facility. **Exhibit S**; **Exhibit V**.

10. On information and belief, Defendant Hisense Visual is a foreign corporation duly organized and existing under the laws of the People's Republic of China, with a principal place of business at No. 218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province, 266555, P.R. China. On information and belief, Defendant Hisense Visual is in the business of designing, developing, manufacturing, importing, distributing, offering for sale, and selling household electronics, including the infringing Hisense television products, throughout the world, including the United States, and including the State of Texas and this District.

11. On information and belief based on information provided by Defendants Hisense USA and Hisense Mexico, Defendant Hisense Visual purchases the accused LCD panels from

AUO, and is the Hisense entity that contracts with AUO for the accused panels. On information and belief based on information provided by Defendants Hisense USA and Hisense Mexico, Defendant Hisense Visual is involved in the distribution chain of the accused Hisense televisions incorporating accused LCD panels, and/or their components, that results in their importation into the US.

12. Defendants Hisense Visual, Hisense USA, and Hisense Mexico together manage, operate, and coordinate an established distribution channel into the United States whereby Hisense Mexico manufactures the infringing Hisense television products incorporating the accused LCD panel modules (purchased by Hisense Visual from AUO) in Mexico and places them into the stream of commerce knowing that Hisense USA (among others) imports those products into the United States, which are then stored at, and distributed from, distribution centers in the U.S. including the Hisense USA distribution center in this District.

13. On information and belief, Defendants Does 1–10 distribute, sell, and/or import into the United States finished televisions that incorporate Defendant AUO's LCD panel modules. Pursuant to Rule 11(b)(3), it is likely that discovery will lead to further facts supporting the foregoing allegations, and showing the identity of Does 1–10.

14. On information and belief, Defendants place or contribute to placing infringing products, including one or more of those specifically accused of infringement below, into the stream of commerce via established distribution channels knowing or understanding that such products will be sold and used in the United States, including in this District.

15. On information and belief, Defendants have derived substantial revenue from infringing acts in this District, including from the sale and use of these infringing products like those specifically accused of infringement below.

16. Defendants are properly joined under 35 U.S.C. § 299(a)(2) because Defendants, through their own acts and/or through the acts of each other Defendant acting as its representative, alter ego, or agent, make, use, sell, and/or offer to sell in, and/or import into the United States the same or similar accused LCD panel modules that include a timing and control board and a programmable gamma integrated circuit ("Pgamma chip") with at least two banks for use in the same or similar television sets, such that questions of fact will arise that are common to all Defendants.

JURISDICTION AND VENUE

17. This is a civil action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. § 1, including §§ 271 and 281-285.

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

19. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391(c). Defendants are foreign entities and may be sued in any judicial district under 28 U.S.C. § 1391(c)(3).

20. Personal jurisdiction exists generally over the Defendants because each has sufficient minimum contacts with the forum as a result of business conducted within the State of Texas and the Eastern District of Texas.

21. Personal jurisdiction exists over Defendants because they, directly or through affiliates, agents, subsidiaries, or intermediaries, make, use, sell, offer for sale, import, advertise, make available, and/or market products within the State of Texas and this District that infringe one or more claims of the Asserted Patents, as alleged more particularly below.

22. On information and belief, Defendant AUO owns and controls the subsidiary AU Optronics Corporation America, which maintains an active registration in the State of Texas under registration filing number 0800132316.

23. On information and belief, this Court has jurisdiction over the Defendants by virtue of their systematic and continuous contacts with this jurisdiction, as alleged herein, as well as because the injury to Phenix occurred in the State of Texas and the claim for relief possessed by Phenix against Defendants for this injury arose in the State of Texas. On information and belief, Defendants have purposely availed themselves of the privileges of conducting business within the State of Texas, such business including but not limited to: (i) at least a portion of the infringements alleged herein; (ii) purposely and voluntarily placing one or more infringing products into the stream of commerce through established distribution channels with the expectation, knowledge, and intent that those products be sold throughout the United States, including the State of Texas and this District; (iii) regularly transacting or soliciting business, engaging in other persistent courses of conduct, or deriving or attempting to derive substantial revenue and financial benefits from goods and services provided to individuals in the State of Texas and in this District; and (iv) at least as to Hisense USA, owning property in the State of Texas and this District. Thus, Defendants are subject to the Court's specific and general jurisdiction pursuant to due process and the Texas Long Arm Statute.

24. Personal jurisdiction also exists specifically over Hisense Mexico because Hisense Mexico, directly and through affiliates, subsidiaries, or intermediaries (including customers, distributors, retailers, alter egos, agents, and/or others) ships, distributes, offers for sale, sells, imports, advertises, or markets, or causes to be shipped, distributed, offered for sale, sold, imported, advertised, or marketed, into the United States, including into the State of Texas and

into this District, one or more products that infringe the patents-in-suit, as described particularly below. Hisense Mexico has itself imported infringing Hisense television products into the United States, as described particularly below. Hisense Mexico also has purposefully and voluntarily placed one or more of its infringing Hisense television products, as described below, into the stream of commerce with the awareness and/or intent that these products will be purchased by consumers in this District. Hisense Mexico was established in Rosarito, Baja California, Mexico, to take advantage of Rosarito's proximity to the U.S. border, as described particularly below. Hisense-brand televisions, including those made by Hisense Mexico, are designed to conform, and do conform, with U.S. technical specifications, including FCC regulations, as described particularly below. Hisense Mexico has knowingly and purposefully sent its infringing products into the stream of commerce for sale within this District through an established distribution channel. Hisense Mexico's factory in Rosarito operates with the expectation that millions of the televisions it makes will be shipped into the U.S. each year, as described particularly below. Hisense Mexico knowingly and intentionally places its infringing Hisense television products into the stream of commerce with the awareness and intent that these infringing products will be purchased by consumers in the United States, including in this District, by assembling, manufacturing, testing, distributing, and/or selling televisions designed to conform, and that do conform, with U.S. technical specifications, as described particularly below. Hisense Mexico knowingly and intentionally induces others to directly infringe when it assembles, manufactures, and sells for importation infringing televisions intended for sale, and sold, in the United States, including in this District, as described particularly below. Hisense Mexico knowingly and intentionally induces others to directly infringe when it imports, or causes others to import, infringing products into and within the United States, including in this District, through an

established distribution channel by which infringing products enter and/or have entered the United States, including this District, as described particularly below. Hisense Mexico's infringing products have been and continue to be purchased by consumers in this District.

25. In previous patent litigation in this District against Hisense Visual directed to Hisense televisions, Hisense Visual did not contest personal jurisdiction. *See, e.g.*, *Lone Star Tech. Innovations, LLC v. Qingdao Hisense Elecs. Co. Ltd.*, No. 6:19-cv-00294-JDK, Dkt. 13 (E.D. Tex. Mar. 30, 2020).

26. Venue in this District is proper under 28 U.S.C. §§ 1400(b) and 1391(b) and (c) because Defendants are subject to personal jurisdiction in this District and have committed acts of infringement in this District. Defendants, through their own acts and/or through the acts of others acting as their representatives, alter egos, or agents, make, use, sell, and/or offer to sell infringing products within this District, have a continuing presence within the District, and have the requisite minimum contacts with the District such that this venue is a fair and reasonable one. On information and belief, Defendants have transacted, and at the time of the filing of the original Complaint (Dkt. 1), are continuing to transact business within this District.

THE ASSERTED PATENTS

27. The USPTO duly issued the '305 Patent, entitled "Gamma Reference Voltage Generator," on June 19, 2007, after full and fair examination of Application No. 10/746,333, which was filed on June 11, 2003. Phenix is the owner, by assignment, of all rights, title, and interest in the '305 Patent. A true and accurate copy of the '305 Patent is attached as **Exhibit A**.

28. The '788 Patent is a continuation of the '305 Patent. The USPTO duly issued the '788 Patent, entitled "Gamma Reference Voltage Generator," on July 7, 2009, after full and fair examination of Application No. 11/743,014, which was filed on May 1, 2007. Phenix is the owner,

by assignment, of all rights, title, and interest in the ’788 Patent. A true and accurate copy of the ’788 Patent is attached as **Exhibit B**.

BACKGROUND FACTS

29. The Asserted Patents are directed to LCD panels using gamma reference voltage generator integrated circuits, also known as programmable gamma integrated circuits or “Pgamma chips.” These chips are components of LCD panels and contributed to innovations in manufacturing that brought us the high-quality and low-cost LCD television sets we have today.

30. The co-inventors of the Asserted Patents, Richard V. Orlando and Trevor A. Blyth, founded the semiconductor company Alta Analog, Inc. (“Alta”) in Silicon Valley in March 2002. Alta pioneered and sold the first Pgamma chip capable of generating two or more gamma reference voltage display conditions for LCD displays using an integrated circuit that would be part of a new LCD architecture.

31. When fresh off the production line, the pictures produced from LCD panel displays vary noticeably, not only by batch, but also from display to display within the same batch. The problem is that the brightness of the pixels making up the LCD display is not a linear or straight-line function of the voltages applied. Compounding the problem is that the sensitivity of the human eye to light is also not linear. In order to obtain an acceptable LCD picture, a way is needed to drive the pixels with a voltage to correct for non-linear abnormalities. The correction is controlled by a set of voltages applied to the panel. These are gamma reference voltages, which refer to a gamma function that describes how smoothly black transitions to white on a digital display and serve to improve color and contrast.

32. The gamma reference voltages are fed to column drivers connected to LCD panels. The term column driver is a name used in the industry to refer to a specialized integrated circuit

with two sets of inputs. This first input is for the digital picture data to be converted into analog voltages applied on the display column containing red, green, and blue pixels. The second input is for the gamma reference voltages coming from the gamma circuit that is used to correct or adjust the conversion occurring on the first input, resulting in the desired display condition.

33. The gamma reference voltages produce changes to the example display below using different gamma correction values:

34. Prior to the invention, gamma correction values were generated using a gamma voltage circuit that used resistor ladders. Replacing the gamma voltage circuit that existed in 2002 with an integrated circuit was a significant improvement that streamlined and saved manufacturing costs while also improving picture quality. The ’305 Patent addressed the problem of providing a gamma correction solution to LCD panels by doing away with manually adjusted select-on-test resistors or other discrete components, such as, for example, microcontroller-based solutions, and replacing these components with an integrated circuit. The incorporation of the Pgamma chip also required LCD panel makers to redesign their products to accommodate the new technology and, in addition, allowed panel makers to automate the testing of their LCD products on the production

line, as described in the ’788 Patent. As discussed below, Mr. Orlando made numerous trips to Asia to speak directly to Asian panel makers to promote this new LCD panel architecture.

35. Alta’s innovations in panel architecture design and manufacturing processes were adopted in Japan by Sharp Corporation, also known as Sharp Kabushiki Kaisha (“Sharp Japan”). Between 2010 and 2011, Alta sold over 200,000 units of one type of Pgamma integrated circuit to Sharp Japan for inclusion in panels for LCD television sets sold in Japan.

36. Disruption to the Japanese consumer market for television sets following the March 11, 2011, earthquake, tsunami, and nuclear disaster negatively impacted the sales of Sharp Japan and led to Alta’s bankruptcy in 2014. Alta’s patents, including the ’305 Patent and the ’788 Patent, were subsequently assigned to Phenix, where co-inventor Mr. Orlando serves as the Director and President. The panel design promoted by Mr. Orlando and used by Sharp Japan was eventually adopted by the television industry.

DEFENDANT AUO’S KNOWLEDGE OF THE ASSERTED PATENTS

37. On information and belief, AUO manufactures LCD panel modules in Asia and sells them to Hisense Mexico and others, either directly or through intermediaries. These LCD panel modules are incorporated by Hisense Mexico and other manufacturers into television sets. The LCD panel modules made by AUO include the LCD screen itself and electronic circuits to control the LCD screen. Electronic components that are part of the LCD panel module are mounted on one or more printed circuit boards (“PCBs” or “boards”). One of these PCBs is generally referred to as a timing and control board or “TCON” board, which is specially designed to accept one or more Pgamma integrated circuits. Placed inside the television housing, a TCON board is mated to the LCD display and bundled together. The TCON board connects to a main circuit board and to the LCD screen that displays an image to a user. Most, if not all, of the intricate timing and

data control signals required to form an image on the LCD screen is performed by the TCON board. The TCON board can be a removeable board, but some functions of the TCON board, including Pgamma correction, may be located on boards permanently bonded into the LCD panel and not removeable, depending on the manufacturing process.

38. Defendant AUO's infringement of the '305 Patent and the '788 Patent is willful because Defendant has had knowledge of the Asserted Patents for over ten years.

39. The provisional patent application that became the '305 Patent was filed in June 2003, before Phenix's predecessor-in-interest Alta began to engage AUO and AUO engineers in talks regarding the use of panel architecture using Pgamma devices.

40. Alta engaged with AUO and AUO engineers regarding the use of panel architecture using Pgamma devices in 2003, 2005, 2007, and 2008; at each point, AUO declined to adopt the technology.

41. In November 2007, Alta met with AUO about Alta's efforts to patent its technology in the U.S. and described the '305 Patent.

42. On or about June 12, 2012, AUO received product data sheets from Alta that contained technical information and a list of patents that included the '305 Patent and the '788 Patent.

43. Defendant AUO had knowledge of, or was willfully blind to the knowledge of, the '305 Patent and the '788 Patent and its infringement is willful.

44. On information and belief, despite having knowledge of the Asserted Patents and knowledge that it is infringing one or more claims of the Asserted Patents, Defendant AUO has nevertheless continued its infringing conduct and disregarded an objectively high likelihood of infringement. Defendant AUO's infringing activities relative to the Asserted Patents have been,

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

DEFENDANTS HISENSE MEXICO, HISENSE USA'S, AND HISENSE VISUAL'S HISTORY AND ROLES

45. On information and belief, Hisense USA, a subsidiary of Hisense Group Co., Ltd., and the entity responsible for importing and selling many or all of the infringing Hisense televisions in the U.S., and Hisense Visual, a partial subsidiary of Hisense Group Co., Ltd., and the Hisense entity that contracts with AUO for the accused LCD panels that are incorporated in accused Hisense televisions, acquired Sharp Electronica Mexico S.A. de C.V. ("Sharp Mexico") from a Sharp Japan affiliate in July 2015, and thereafter have used it to manufacture television sets for import into the U.S. market. **Exhibit C**; **Exhibit D**; **Exhibit E**.

46. On information and belief, Sharp Mexico changed its name to "Hisense Electronica Mexico, S.A. de C.V." (Hisense Mexico) following the acquisition of its Rosarito facility. **Exhibit Q**.

47. On information and belief, Sharp Mexico is the same entity as Hisense Mexico or, alternatively, is acting in concert with Hisense Mexico to cause the importation of the infringing Hisense television products into the United States.

48. On information and belief, the acquired facility is located at Boulevard Sharp 3510, Parque Industrial Rosarito, the current address of Hisense Mexico. **Exhibit C**; **Exhibit D**.

49. On information and belief, Hisense USA and Hisense Visual each owns 50% of Hisense Mexico. **Exhibit C**; **Exhibit D**. On information and belief, Hisense Mexico manufactures,

assembles, and sells television sets for import into the U.S. market under the Hisense brand name and, for certain years, under the Sharp brand as well. These television sets have LCD screens and are popular consumer items sold through brick-and-mortar retail stores and over the Internet.

50. On information and belief, Hisense USA and Hisense Visual invested in the Mexican manufacturing facility to target the U.S. consumer market. **Exhibit F**. For example, a Hisense CEO stated in a publicly available article that having a factory close to the U.S. border would shorten delivery times for Mexican-made televisions imported into the United States, which is a real advantage for long-term success in the U.S. market. **Exhibit G**.

51. In a publicly available article published by the China General Chamber of Commerce USA, it was estimated that, following the acquisition, the Hisense owners intended to ship as many as four million televisions into the United States from their factory in Rosarito, Baja California, each year. **Exhibit G**.

52. In a publicly available article, another source estimated that after the Hisense entities acquired the Rosarito factory, it increased its annual production capacity to 2.5 million units and estimated it would quadruple production by 2021 to more than eight million Hisense-brand televisions each year. **Exhibit H**.

RELATED PROCEEDINGS

53. The ’305 Patent was confirmed valid over an obviousness challenge brought before the Patent Trial and Appeal Board (PTAB) at the United States Patent & Trademark Office (USPTO). The challenger contended certain claims of the ’305 Patent were obvious in view of four prior art references, either alone or in combination. The Board denied institution of the *Inter Partes* Review in its entirety. *Wistron Corporation v. Phenix Longhorn, LLC*, IPR2018-01255, Paper 14 (PTAB Jan. 24, 2019).

THE ACCUSED INSTRUMENTALITIES

54. Defendants are involved in the manufacture, use, sale (including sale for importation), offer to sell, and/or importation of LCD televisions that infringe one or more claims of the Asserted Patents.

55. On information and belief, Defendant AUO designs, manufactures, and sells LCD panel modules that include a TCON board with a programmable gamma integrated circuit, *i.e.*, Pgamma chip, with at least two banks, including but not limited to AUO-G201, AUO-G301, and AUO-G1422, which are implemented into LCD televisions. The AUO LCD panel modules that include a TCON board and a Pgamma chip with at least two banks are referred to herein as the "Infringing Panel Modules." On information and belief, Defendant AUO sells some Infringing Panel Modules directly into the United States and some Infringing Panel Modules into foreign countries to be incorporated into finished products intended for importation and sale in the United States.

56. On information and belief, Defendant Hisense Visual purchases accused LCD panels from Defendant AUO and is the Hisense entity that contracts with Defendant AUO for the accused panels. On information and belief, Infringing Panel Modules are sent to Defendant Hisense Mexico (among others), who incorporates the Infringing Panel Modules into certain finished television models intended for sale and sold in the United States, and imports, or causes to be imported, finished television models incorporating the Infringing Panel Modules into the United States, including but not limited to the following: Hisense 50H6D, Hisense 50R6040E, Hisense 50R6E, Hisense 50R7E, Hisense 43H7C, Hisense 43H7C2, Hisense 55H5C, and Hisense 85A76H. All Hisense television models that incorporate the Infringing Panel Modules, including

but not limited to those referenced above, are herein referred to as the "Hisense Infringing Models."

57. On information and belief, Defendant AUO sells certain of the Infringing Panel Modules to Samsung Mexicana S.A. de C.V. ("SAMEX"). On information and belief, SAMEX incorporates the Infringing Panel Modules into finished television models intended for sale and sold in the United States, and/or imports finished television models incorporating the Infringing Panel Modules into the United States, including but not limited to the following: Samsung UN65J6200AFXZA AA03, Samsung UN65J6300AFXZA BH02, Samsung UN65J630DAFXZA BH02, Samsung LH85QMNEBGC/ZA AA01, and Samsung LH85QMFPLGC/ZA AA01.

58. On information and belief, Defendant AUO sells certain of the Infringing Panel Modules to certain other unknown OEMs and manufacturers, who incorporate the Infringing Panel Modules into finished television models intended for, imported into, and sold in the United States, including but not limited to the following: Vizio D55N-E2, Vizio E55-C1, Vizio E55-D0, Vizio E55U-D0, Vizio M55-D0, Vizio M55-E0, Insignia NS55DR710NA17, TCL 50UP120, Westinghouse WD50UT4300, Vizio M50-C1, and Vizio M50-D1 (collectively, the finished televisions that incorporate the Infringing Panel Modules manufactured by Hisense Mexico, SAMEX, and/or other unknown manufacturers are called the "Infringing TV Products").

59. On information and belief, Defendant AUO supplies the Infringing Panel Modules to at least Defendant Hisense Mexico, SAMEX, and other unknown manufacturers that incorporate the Infringing Panel Modules into Infringing TV Products sold throughout the United States, including the State of Texas and this District. On information and belief, the Infringing TV Products, including but not limited to the Hisense Infringing Models, are designed to incorporate

and incorporate receivers (or tuners) that conform with FCC requirements and are sold and/or intended for sale in the United States.[1]

60. On information and belief, Hisense-brand LCD televisions, including without limitation accused model numbers 50R6E and 50R7E, are certified by a Hisense entity for compliance with certain U.S. standards, including Part 15 of the FCC Rules. **Exhibit I**.

61. On information and belief, Defendant AUO tests and calibrates and/or directs and controls others to test and calibrate the AUO LCD panel modules to compensate for panel to panel variations, for incorporation into finished televisions that are imported into the United States.

62. Defendant AUO makes, uses, offers for sale, and sells the Infringing Panel Modules to television manufacturers that incorporate the Infringing Panel Modules into Infringing TV Products, *e.g.*, assembled televisions. Defendant Hisense Mexico, SAMEX, and other unknown television manufacturers incorporate the Infringing Panel Modules into Infringing TV Products, *e.g.*, assembled televisions, that are sold by brick-and-mortar and online retailers throughout the United States, including at least Best Buy and Amazon.

63. On information and belief, and based on Hisense Mexico's admission in its Renewed Motion to Dismiss (Dkt. 46 at 5), Defendant Hisense USA is responsible for importing, pricing, and selling many or all of the Hisense Infringing Models in the United States, including Texas and this District.

[1] The Advanced Television Systems Committee (ATSC) developed technical standards for digital television in the U.S. To comply, an LCD panel manufacturer supplies components designed to interface with an ATSC receiver (or tuner) required for the U.S. market. On information and belief, the Federal Communications Commission (FCC) mandated that after March 1, 2007, all televisions regardless of screen size, and all interfaces that include a tuner (*e.g.*, VCR, DVD player/recorder, DVR) must include a built-in ATSC DTV tuner.

64. On information and belief, Defendant Hisense Visual purchases the accused LCD panels from AUO and is involved in the distribution chain of the accused Hisense televisions incorporating accused LCD panels, and/or their components, that results in their importation into the US.

65. On information and belief, Defendant Hisense Mexico imports, and causes Hisense USA and Does 1–10 to import, the Hisense Infringing Models into the United States, including Texas and this District.

66. For example, publicly available importation records show that Hisense Mexico imported LCD televisions from Ensenada, Baja California, Mexico into the U.S. Port of San Juan, Puerto Rico. **Exhibit J**. In addition, importation records for 2021–2024 show that hundreds of shipments of LCD televisions were imported by Sharp Mexico into the United States from Hisense Mexico's facility located at Boulevard Sharp 3510, Parque Industrial Rosarito. **Exhibit K**.

67. Hisense Infringing Models, including the Hisense 50R7E, are available for purchase in the United States, including in Texas and this District, at Amazon.com. **Exhibit L**.

68. Hisense-brand LCD televisions, including but not limited to Hisense Infringing Models, bearing "Made in Mexico" stickers are available for purchase in the United States, including in Texas and this District at the Walmart located at 6801 South Broadway Avenue, Tyler, Texas 75703. **Exhibit M**.

69. Hisense USA advertises the Hisense Infringing Product Hisense 85A76H on its interactive website which identifies Hisense USA's authorized dealers throughout the United States, including two Best Buy locations in Texas as brick-and-mortar retailer locations where this television is available for purchase. **Exhibit N**.

70. BestBuy.com identifies the Hisense 85A76H as available for purchase and pickup at 5514 South Broadway Avenue, Tyler, Texas 75703. **Exhibit O**.

71. The user manual for the Hisense 85A76H available on Hisense USA's website identifies both Hisense Mexico and Hisense USA as points of contact for customer care, maintenance, and service purposes. **Exhibit P**.

72. In summary, Defendant AUO supplies the Infringing Panel Modules to Defendant Hisense Mexico and other OEMs and manufacturers which: (1) assemble or cause others to assemble the Infringing Panel Modules into Infringing TV Products; (2) test or cause others to test such modules and products, and (3) import or cause others, including Hisense USA and Does 1–10, to import the Infringing TV Products into the United States, including Texas and this District.

COUNT I: INDUCEMENT OF INFRINGEMENT OF THE '305 PATENT BY DEFENDANT AUO

73. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

74. Defendant AUO directly and/or through subsidiaries or intermediaries, has induced and continues to induce infringement (literally or under the doctrine of equivalents) of one or more claims of the '305 Patent. With knowledge of the '305 Patent, Defendant AUO's deliberate and/or willfully blind actions include, but are not limited to, actively marketing to, supplying, causing the supply to, encouraging, and instructing others such as businesses, distributors, agents, channel partners, resellers, sales representatives, and manufacturers to incorporate the Infringing Panel Modules into consumer products, including without limitation LCD televisions. These actions, individually and collectively, have induced and continue to induce the direct infringement of the '305 Patent by others, such as television set manufacturers and assemblers, who import into the

United States Infringing TV Products containing the Infringing Panel Modules. Defendant AUO knew and/or was willfully blind to the fact that the induced parties' use, testing, making available for another's use, promotion, marketing, distributing, importing, selling, and/or offering to sell the Infringing TV Products would infringe one or more claims of the '305 Patent.

75. Phenix is the owner of the '305 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '305 Patent against infringers, and to collect damages for all relevant times.

76. The '305 Patent generally describes an integrated circuit used to calibrate LCDs to compensate for panel-to-panel manufacturing variations. The claims of the '305 Patent, including Claim 1, recite a novel and inventive apparatus for producing voltage signals on a plurality of outputs comprising non-volatile storage cells, programming circuits coupled to a multiplexer that address the many inputs, drivers connected to the storage cells and outputs, and inputs connected to the multiplexer to address the storage cells, where the gamma reference voltage signals determine the driving voltages of columns of a display, the non-volatile storage cells are organized into banks with a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

77. For example, Claim 1 of the '305 Patent recites:

> An integrated circuit for producing Voltage signals on a plurality of outputs comprising:
>
> a plurality of non-volatile storage cells;
>
> circuits for programming coupled to a multiplexer for addressing and programming said storage cells, wherein the addressing is based on a plurality of inputs;
>
> drivers connected to said storage cells and to the plurality of outputs; and

> the plurality of inputs connected to said multiplexer for addressing said storage cells,
>
> wherein said Voltage signals are gamma reference Voltage signals for determining actual driving Voltages of columns of a display, wherein said non-volatile storage cells are organized into two or more banks of cells wherein each bank contains a predetermined gamma reference Voltage signal display condition; and means to switch between the banks based on one or more external signals is provided on said integrated circuit.

78. The Infringing TV Products, including but not limited to Hisense 50R7E, Hisense 85A76H, Vizio D55N-E2, and Samsung UN65J6200AFXZA AA03, contain the Infringing Panel Modules, *i.e.*, AUO LCD panel modules that include a TCON board with an integrated circuit, *i.e.*, Pgamma chip, with at least two banks, including but not limited to AUO-G201, AUO-G301, AUO-G1422, for producing voltage signals on a plurality of outputs with a plurality of non-volatile storage cells and circuits for programming coupled to a multiplexer for addressing and programming said storage cells, where the addressing is based on a plurality of inputs, the drivers connect to the storage cells and the outputs, the inputs connect to the multiplexer for addressing the storage cells, the voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of display, the non-volatile storage cells are organized into banks of cells, each bank contains a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

79. In violation of 35 U.S.C. § 271(b), Defendant AUO has induced infringement and continues to induce infringement of one or more claims of the ’305 Patent by one or more direct infringers, either literally or by the doctrine of equivalents. Defendant AUO supplies, distributes, offers for sale, or sells the Infringing Panel Modules to Hisense Mexico, Hisense USA, Hisense Visual, SAMEX, and others who without authority use, offer to sell, or sell the Infringing Panel

Modules within the United States, or import into the United States, or cause others (such as Does 1–10) to import into the United States, in violation of 35 U.S.C. § 271(a).

80. Defendant AUO has made, and continues to make, unlawful gains and profits from infringing the ’305 Patent.

81. As a consequence of Defendant AUO’s past dealings with Alta that pre-dated the filing and service of the original Complaint (Dkt. 1) as described above, Defendant AUO had knowledge of, or was willfully blind to knowledge of, the ’305 Patent and its infringement of the ’305 Patent before the filing of this lawsuit.

82. Defendant AUO has had knowledge of the ’305 Patent since at least as early as November 2007. Defendant AUO has been willfully infringing the ’305 Patent since it began designing, manufacturing, and selling its Infringing Panels.

83. Since at least as early as November 2007, Defendant AUO has actively, knowingly, and intentionally continued to induce infringement of the ’305 Patent, literally or by the doctrine of equivalents, by selling the Infringing Panel Modules to manufacturers, suppliers and/or distributors for use in the Infringing TV Products and, upon information and belief, distributing literature and materials inducing manufacturers, suppliers and/or distributors to use their Infringing Panel Modules in a manner that infringes one or more claims of the ’305 Patent.

COUNT II: INFRINGEMENT OF THE ’305 PATENT BY DEFENDANT HISENSE MEXICO

84. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

85. Defendant Hisense Mexico makes, uses, sells, and/or offers to sell in, and/or imports into, the United States, and knowingly and intentionally induces others to make, use, sell,

offer to sell, or import into the United States, finished television sets that incorporate AUO LCD panel modules that infringe one or more claims of the Asserted Patents, including at least Claims 1, 2, and 5 of the ’305 Patent.

86. Phenix is the owner of the ’305 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ’305 Patent against infringers, and to collect damages for all relevant times.

87. The ’305 Patent generally describes an integrated circuit used to calibrate LCDs to compensate for panel-to-panel manufacturing variations. The claims of the ’305 Patent, including Claim 1, recite a novel and inventive apparatus for producing voltage signals on a plurality of outputs comprising non-volatile storage cells, programming circuits coupled to a multiplexer that address the many inputs, drivers connected to the storage cells and outputs, and inputs connected to the multiplexer to address the storage cells, where the gamma reference voltage signals determine the driving voltages of columns of a display, the non-volatile storage cells are organized into banks with a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

88. For example, Claim 1 of the ’305 Patent recites:

> An integrated circuit for producing voltage signals on a plurality of outputs comprising:
>
> a plurality of non-volatile storage cells;
>
> circuits for programming coupled to a multiplexer for addressing and programming said storage cells, wherein the addressing is based on a plurality of inputs;
>
> drivers connected to said storage cells and to the plurality of outputs; and
>
> the plurality of inputs connected to said multiplexer for addressing said storage cells,

> wherein said voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of a display, wherein said non-volatile storage cells are organized into two or more banks of cells wherein each bank contains a predetermined gamma reference voltage signal display condition; and means to switch between the banks based on one or more external signals is provided on said integrated circuit.

89. The Hisense Infringing Models each incorporate one of Defendant AUO's LCD panel modules that include a TCON board with an integrated circuit, *i.e.*, Pgamma chip, with at least two banks, for producing voltage signals on a plurality of outputs with a plurality of non-volatile storage cells and circuits for programming coupled to a multiplexer for addressing and programming said storage cells, where the addressing is based on a plurality of inputs, the drivers connect to the storage cells and the outputs, the inputs connect to the multiplexer for addressing the storage cells, the voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of display, the non-volatile storage cells are organized into banks of cells, each bank contains a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

90. In violation of 35 U.S.C. § 271(a), Defendant Hisense Mexico has directly infringed and continues to infringe the '305 Patent, either literally or by the doctrine of equivalents, by making, using, importing, supplying, distributing, offering for sale, or selling the Hisense Infringing Models within the United States.

91. In addition, Defendant Hisense Mexico is liable for inducement of infringement of the '305 Patent under 35 U.S.C. § 271(b), literally or under the doctrine of equivalents, by supplying, distributing, offering for sale, and/or selling the Hisense Infringing Models to others, including but not limited to Defendants Hisense USA and Does 1–10 , who without authority use,

offer to sell, or sell Hisense Infringing Models within the United States, or import into the United States, in violation of 35 U.S.C. § 271(a).

92. Defendant Hisense Mexico has made, and continues to make, unlawful gains and profits from infringing the ’305 Patent.

93. Defendant Hisense Mexico has had knowledge of the ’305 Patent and its infringing activities at least as early as the filing of the original Complaint (Dkt. 1). Nevertheless, Hisense Mexico has continued its infringement and inducement of infringement. Accordingly, Defendant Hisense Mexico has been willfully infringing the ’305 Patent at least since Phenix filed the original Complaint.

COUNT III: INDUCEMENT OF INFRINGEMENT OF THE ’788 PATENT BY DEFENDANT AUO

94. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

95. Defendant AUO directly and/or through subsidiaries or intermediaries, has induced and continues to induce infringement (literally or under the doctrine of equivalents) of one or more claims of the ’788 Patent. With knowledge of the ’788 Patent, Defendant AUO’s deliberate and/or willfully blind actions include, but are not limited to, actively marketing to, supplying, causing the supply to, encouraging, and instructing others such as businesses, distributors, agents, channel partners, resellers, sales representatives, and manufacturers to incorporate the Infringing Panel Modules into consumer products, including without limitation LCD televisions, and to test and use such modules and products. These actions, individually and collectively, have induced and continue to induce the direct infringement of the ’788 Patent by others, such as television set manufacturers and assemblers, who import into the United States Infringing TV Products

containing the Infringing Panel Modules. Defendant AUO knew and/or was willfully blind to the fact that the induced parties' use, testing, making available for another's use, promotion, marketing, distributing, importing, selling and/or offering to sell the Infringing TV Products would infringe one or more claims of the '788 Patent.

96. Phenix is the owner of the '788 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '788 Patent against infringers, and to collect damages for all relevant times.

97. The '788 Patent generally describes a method for calibrating an LCD to a desired gamma curve to compensate for panel-to-panel manufacturing variations. The claims of the '788 Patent, including Claim 1, recite a novel and inventive method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

98. For example, Claim 1 of the '788 Patent recites:

> A method of calibrating a liquid crystal display to a desired gamma curve to compensate for panel to panel manufacturing variations comprising the steps:
>
> providing said display with gamma reference control capability which is electrically reprogrammable and non-volatile;
>
> testing said display with at least one sensor with optical input, wherein said sensor is separate from said display;
>
> varying gamma reference voltage levels on columns of said display by a control circuit, where said control circuit is separate from said display;

> optimizing said gamma reference voltage levels using means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor, wherein said means for executing said predetermined algorithm is separate from said display to achieve the desired gamma curve; and
>
> storing said gamma reference voltage levels in said gamma reference control capability.

99. The Infringing Panel Modules and/or Infringing TV Products are made using a method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

100. In violation of 35 U.S.C. § 271(b), Defendant AUO has induced and continues to induce infringement of one or more claims of the ’788 Patent by one or more direct infringers either literally or by the doctrine of equivalents. By way of Defendant AUO’s designing, making, or testing the Infringing Panel Modules using a process claimed by the ’788 Patent, or causing others to do so, Defendant AUO has induced Hisense Mexico, Hisense USA, Hisense Visual, SAMEX and others to without authority import into the United States, or cause others (such as Does 1–10) to import into the United States, or offer to sell, sell, or use within the United States the Infringing Panel Modules, in violation of 35 U.S.C. § 271(g).

101. Defendant AUO has made, and continues to make, unlawful gains and profits from infringing the ’788 Patent.

102. As a consequence of Defendant AUO's past dealings with Alta that pre-dated the filing and service of the original Complaint (Dkt. 1) as described above, Defendant AUO had knowledge of, or was willfully blind to knowledge of, the '788 Patent and its infringement of the '788 Patent before the filing of this lawsuit.

103. Defendant AUO has had knowledge of the '788 Patent and its infringement activities since at least as early as June 2012. Accordingly, Defendant AUO has been willfully infringing the '788 Patent since at least as early as June 2012.

104. Since at least as early as June 2012, Defendant AUO has actively, knowingly, and intentionally continued to induce infringement of the '788 Patent, literally or by the doctrine of equivalents, by selling the Infringing Panel Modules to manufacturers, suppliers, and/or distributors for use in the Infringing TV Products and, upon information and belief, distributing literature and materials inducing its suppliers and distributors to use their Infringing Panel Modules in a manner that infringes one or more claims of the '788 Patent.

COUNT IV: INFRINGEMENT OF THE '788 PATENT BY DEFENDANT HISENSE MEXICO

105. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

106. Defendant Hisense Mexico makes, uses, sells, and/or offers to sell in, and/or imports into, the United States, and knowingly and intentionally induces others to make, use, sell, offer to sell, or import into the United States, finished television sets that incorporate AUO LCD panel modules that infringe one or more claims of the Asserted Patents, including at least Claim 1 of the '788 Patent.

107. Phenix is the owner of the ’788 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ’788 Patent against infringers, and to collect damages for all relevant times.

108. The ’788 Patent generally describes a method for calibrating an LCD to a desired gamma curve to compensate for panel-to-panel manufacturing variations. The claims of the ’788 Patent, including Claim 1, recite a novel and inventive method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

109. For example, Claim 1 of the ’788 Patent recites:

> A method of calibrating a liquid crystal display to a desired gamma curve to compensate for panel to panel manufacturing variations comprising the steps:
>
> providing said display with gamma reference control capability which is electrically reprogrammable and non-volatile;
>
> testing said display with at least one sensor with optical input, wherein said sensor is separate from said display;
>
> varying gamma reference voltage levels on columns of said display by a control circuit, where said control circuit is separate from said display;
>
> optimizing said gamma reference voltage levels using means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor, wherein said means for executing said predetermined algorithm is separate from said display to achieve the desired gamma curve; and
>
> storing said gamma reference voltage levels in said gamma reference control capability.

110. The Hisense Infringing Models each incorporate one of Defendant AUO's Infringing Panel Modules that are made using a method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

111. In violation of 35 U.S.C. § 271(g), Defendant Hisense Mexico has directly infringed and continues to infringe one or more claims of the '788 Patent, either literally or by the doctrine of equivalents, by without authority importing into the United States, offering to sell, selling, or using within the United States at least the Hisense Infringing Models which are made by a process patented in the '788 Patent.

112. In addition, Defendant Hisense Mexico is liable for inducement of infringement of the '788 Patent under 35 U.S.C. § 271(b), literally or under the doctrine of equivalents, by one or more direct infringers. Hisense Mexico has induced, and continues to induce, others to test and use the Infringing Panel Modules using a process claimed by the '788 Patent, in preparation for their importation into the United States or offers to sell, sales, or use within the United States of Hisense Infringing Models incorporating the Infringing Panel Modules, in violation of 35 U.S.C. § 271(g). Hisense Mexico also induces by supplying, distributing, offering for sale, and/or selling the Hisense Infringing Models (made using a process claimed by the '788 Patent) to others, including but not limited to Defendants Hisense USA and Does 1–10, who without authority use, offer to

sell, or sell Hisense Infringing Models within the United States, or import into the United States, in violation of 35 U.S.C. § 271(g).

113. Defendant Hisense Mexico has made, and continues to make, unlawful gains and profits from infringing the ’788 Patent.

114. Defendant Hisense Mexico has had knowledge of the ’788 Patent and its infringing activities since at least as early as the filing of the original Complaint (Dkt. 1). Nevertheless, Hisense Mexico has continued its infringement and inducement of infringement. Accordingly, Defendant Hisense Mexico has been willfully infringing the ’788 Patent at least since Phenix filed the original Complaint.

COUNT V: DIRECT INFRINGEMENT OF THE ’305 PATENT BY DEFENDANTS DOES 1–10

115. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

116. Defendants Does 1–10 make, use, sell, and/or offer to sell in, and/or import into, the United States Infringing TV Products that incorporate AUO LCD panel modules that infringe one or more claims of the Asserted Patents, including at least Claims 1, 2, and 5 of the ’305 Patent.

117. Phenix is the owner of the ’305 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ’305 Patent against infringers, and to collect damages for all relevant times.

118. The ’305 Patent generally describes an integrated circuit used to calibrate LCDs to compensate for panel-to-panel manufacturing variations. The claims of the ’305 Patent, including Claim 1, recite a novel and inventive apparatus for producing voltage signals on a plurality of outputs comprising non-volatile storage cells, programming circuits coupled to a multiplexer that address the many inputs, drivers connected to the storage cells and outputs, and inputs connected

to the multiplexer to address the storage cells, where the gamma reference voltage signals determine the driving voltages of columns of a display, the non-volatile storage cells are organized into banks with a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

119. For example, Claim 1 of the ’305 Patent recites:

> An integrated circuit for producing voltage signals on a plurality of outputs comprising:
>
> a plurality of non-volatile storage cells;
>
> circuits for programming coupled to a multiplexer for addressing and programming said storage cells, wherein the addressing is based on a plurality of inputs;
>
> drivers connected to said storage cells and to the plurality of outputs; and
>
> the plurality of inputs connected to said multiplexer for addressing said storage cells,
>
> wherein said voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of a display, wherein said non-volatile storage cells are organized into two or more banks of cells wherein each bank contains a predetermined gamma reference voltage signal display condition; and means to switch between the banks based on one or more external signals is provided on said integrated circuit.

120. The Infringing TV Products imported by Defendants Does 1–10 each incorporate one of Defendant AUO’s LCD panel modules that include a TCON board with an integrated circuit, *i.e.*, Pgamma chip, with at least two banks, for producing voltage signals on a plurality of outputs with a plurality of non-volatile storage cells and circuits for programming coupled to a multiplexer for addressing and programming said storage cells, where the addressing is based on a plurality of inputs, the drivers connect to the storage cells and the outputs, the inputs connect to the multiplexer for addressing the storage cells, the voltage signals are gamma reference voltage

signals for determining actual driving voltages of columns of display, the non-volatile storage cells are organized into banks of cells, each bank contains a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

121. In violation of 35 U.S.C. § 271(a), Defendants Does 1–10 have directly infringed and continue to infringe the ’305 Patent, either literally or by the doctrine of equivalents, by making, using, importing, supplying, distributing, offering for sale, or selling the Infringing TV Products within the United States.

122. Defendants Does 1–10 have made, and continue to make, unlawful gains and profits from infringing the ’305 Patent.

COUNT VI: DIRECT INFRINGEMENT OF THE ’788 PATENT BY DEFENDANTS DOES 1–10

123. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

124. Defendants Does 1–10 make, use, sell, and/or offer to sell in, and/or import into, the United States Infringing TV Products that incorporate AUO LCD panel modules that infringe one or more claims of the Asserted Patents, including at least Claim 1 of the ’788 Patent.

125. Phenix is the owner of the ’788 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ’788 Patent against infringers, and to collect damages for all relevant times.

126. The ’788 Patent generally describes a method for calibrating an LCD to a desired gamma curve to compensate for panel-to-panel manufacturing variations. The claims of the ’788 Patent, including Claim 1, recite a novel and inventive method for calibrating LCD to a desired

gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

127. For example, Claim 1 of the ’788 Patent recites:

> A method of calibrating a liquid crystal display to a desired gamma curve to compensate for panel to panel manufacturing variations comprising the steps:
>
> providing said display with gamma reference control capability which is electrically reprogrammable and non-volatile;
>
> testing said display with at least one sensor with optical input, wherein said sensor is separate from said display;
>
> varying gamma reference voltage levels on columns of said display by a control circuit, where said control circuit is separate from said display;
>
> optimizing said gamma reference voltage levels using means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor, wherein said means for executing said predetermined algorithm is separate from said display to achieve the desired gamma curve; and
>
> storing said gamma reference voltage levels in said gamma reference control capability.

128. The Infringing TV Products imported by Defendants Does 1–10 each incorporate Defendant AUO’s Infringing Panel Modules that are made using a method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms,

criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

129. In violation of 35 U.S.C. § 271(g), Defendants Does 1–10 have directly infringed and continue to infringe one or more claims of the ’788 Patent, either literally or by the doctrine of equivalents, by without authority importing into the United States, offering to sell, selling, or using within the United States Infringing TV Products that incorporate Defendant AUO’s Infringing Panel Modules which are made by a process patented in the ’788 Patent.

130. Defendants Does 1–10 have made, and continue to make, unlawful gains and profits from infringing the ’788 Patent.

COUNT VII: INFRINGEMENT OF THE ’305 PATENT BY DEFENDANT HISENSE USA

131. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

132. Defendant Hisense USA makes, uses, sells, and/or offers to sell in, and/or imports into, the United States, and knowingly and intentionally induces others to make, use, sell, offer to sell, or import into the United States, Hisense Infringing Models that infringe one or more claims of the Asserted Patents, including at least Claims 1, 2, and 5 of the ’305 Patent.

133. Phenix is the owner of the ’305 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ’305 Patent against infringers, and to collect damages for all relevant times.

134. The ’305 Patent generally describes an integrated circuit used to calibrate LCDs to compensate for panel-to-panel manufacturing variations. The claims of the ’305 Patent, including Claim 1, recite a novel and inventive apparatus for producing voltage signals on a plurality of

outputs comprising non-volatile storage cells, programming circuits coupled to a multiplexer that address the many inputs, drivers connected to the storage cells and outputs, and inputs connected to the multiplexer to address the storage cells, where the gamma reference voltage signals determine the driving voltages of columns of a display, the non-volatile storage cells are organized into banks with a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

135. For example, Claim 1 of the ’305 Patent recites:

> An integrated circuit for producing voltage signals on a plurality of outputs comprising:
>
> a plurality of non-volatile storage cells;
>
> circuits for programming coupled to a multiplexer for addressing and programming said storage cells, wherein the addressing is based on a plurality of inputs;
>
> drivers connected to said storage cells and to the plurality of outputs; and
>
> the plurality of inputs connected to said multiplexer for addressing said storage cells,
>
> wherein said voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of a display, wherein said non-volatile storage cells are organized into two or more banks of cells wherein each bank contains a predetermined gamma reference voltage signal display condition; and means to switch between the banks based on one or more external signals is provided on said integrated circuit.

136. The Hisense Infringing Models each incorporate one of Defendant AUO’s LCD panel modules that include a TCON board with an integrated circuit, *i.e.*, Pgamma chip, with at least two banks, for producing voltage signals on a plurality of outputs with a plurality of non-volatile storage cells and circuits for programming coupled to a multiplexer for addressing and programming said storage cells, where the addressing is based on a plurality of inputs, the drivers

connect to the storage cells and the outputs, the inputs connect to the multiplexer for addressing the storage cells, the voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of display, the non-volatile storage cells are organized into banks of cells, each bank contains a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

137. In violation of 35 U.S.C. § 271(a), Defendant Hisense USA has directly infringed and continues to infringe the ’305 Patent, either literally or by the doctrine of equivalents, by making, using, importing, supplying, distributing, offering for sale, or selling the Hisense Infringing Models within the United States.

138. In addition, Defendant Hisense USA is liable for inducement of infringement of the ’305 Patent under 35 U.S.C. § 271(b), literally or under the doctrine of equivalents, by supplying, distributing, offering for sale, and/or selling the Hisense Infringing Models to others, including but not limited to its authorized dealers, who without Phenix’s authority use, offer to sell, or sell Hisense Infringing Models within the United States, or import into the United States, in violation of 35 U.S.C. § 271(a).

139. Defendant Hisense USA has made, and continues to make, unlawful gains and profits from infringing the ’305 Patent.

140. Defendant Hisense USA has had knowledge of the ’305 Patent and its infringing activities at least since the filing of the original Complaint (Dkt. 1) when Hisense Mexico, Hisense USA’s subsidiary, was sued for infringement, including because of importation of the Hisense Infringing Models, and thereafter when Hisense Mexico identified Hisense USA as the importer and seller in its Renewed Motion to Dismiss (Dkt. 46 at 5). Nevertheless, Hisense USA has

continued its infringement and inducement of infringement. Accordingly, Defendant Hisense USA has been willfully infringing the ’305 Patent at least since Phenix filed the original Complaint.

COUNT VIII: INFRINGEMENT OF THE ’788 PATENT BY DEFENDANT HISENSE USA

141. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

142. Defendant Hisense USA makes, uses, sells, and/or offers to sell in, and/or imports into, the United States, and knowingly and intentionally induces others to make, use, sell, offer to sell, or import into the United States, Hisense Infringing Models that infringe one or more claims of the Asserted Patents, including at least Claim 1 of the ’788 Patent.

143. Phenix is the owner of the ’788 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ’788 Patent against infringers, and to collect damages for all relevant times.

144. The ’788 Patent generally describes a method for calibrating an LCD to a desired gamma curve to compensate for panel-to-panel manufacturing variations. The claims of the ’788 Patent, including Claim 1, recite a novel and inventive method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

145. For example, Claim 1 of the ’788 Patent recites:

> A method of calibrating a liquid crystal display to a desired gamma curve to compensate for panel to panel manufacturing variations comprising the steps:
>
> providing said display with gamma reference control capability which is electrically reprogrammable and non-volatile;
>
> testing said display with at least one sensor with optical input, wherein said sensor is separate from said display;
>
> varying gamma reference voltage levels on columns of said display by a control circuit, where said control circuit is separate from said display;
>
> optimizing said gamma reference voltage levels using means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor, wherein said means for executing said predetermined algorithm is separate from said display to achieve the desired gamma curve; and
>
> storing said gamma reference voltage levels in said gamma reference control capability.

146. The Hisense Infringing Models each incorporate one of Defendant AUO's Infringing Panel Modules that are made using a method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

147. In violation of 35 U.S.C. § 271(g), Defendant Hisense USA has directly infringed and continues to infringe one or more claims of the '788 Patent, either literally or by the doctrine of equivalents, by without authority importing into the United States, offering to sell, selling, or using within the United States at least the Hisense Infringing Models which are made by a process patented in the '788 Patent.

148. In addition, Defendant Hisense USA is liable for inducement of infringement of the ’788 Patent under 35 U.S.C. § 271(b), literally or under the doctrine of equivalents, by one or more direct infringers. Hisense USA has induced, and continues to induce, others to test and use the Infringing Panel Modules using a process claimed by the ’788 Patent, in preparation for their importation into the United States or offers to sell, sales, or use within the United States of Hisense Infringing Models incorporating the Infringing Panel Modules, in violation of 35 U.S.C. § 271(g). Hisense USA also induces by supplying, distributing, offering for sale, and/or selling the Hisense Infringing Models (made using a process claimed by the ’788 Patent) to others, including but not limited to its authorized dealers, who without Phenix’s authority use, offer to sell, or sell Hisense Infringing Models within the United States, or import into the United States, in violation of 35 U.S.C. § 271(g).

149. Defendant Hisense USA has made, and continues to make, unlawful gains and profits from infringing the ’788 Patent.

150. Defendant Hisense USA has had knowledge of the ’788 Patent and its infringing activities at least since the filing of the original Complaint (Dkt. 1) when Hisense Mexico, Hisense USA’s subsidiary, was sued for infringement, including because of importation of the Hisense Infringing Models, and thereafter when Hisense Mexico identified Hisense USA as the importer and seller in its Renewed Motion to Dismiss (Dkt. 46 at 5). Nevertheless, Hisense USA has continued its infringement and inducement of infringement. Accordingly, Defendant Hisense USA has been willfully infringing the ’788 Patent at least since Phenix filed the original Complaint.

COUNT IX: INDUCEMENT OF INFRINGEMENT OF THE ’305 PATENT BY DEFENDANT HISENSE VISUAL

151. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

152. Defendant Hisense Visual directly and/or through subsidiaries or intermediaries, has knowingly and intentionally induced and continues to induce infringement (literally or under the doctrine of equivalents) of one or more claims of the ’305 Patent. With knowledge of the ’305 Patent, Defendant Hisense Visual’s deliberate and/or willfully blind actions include, but are not limited to, actively marketing to, supplying, causing the supply to, encouraging, and instructing others such as businesses, distributors, agents, channel partners, resellers, sales representatives, manufacturers, and assemblers to incorporate the Infringing Panel Modules into consumer products, including without limitation LCD televisions such as the Hisense Infringing Models, knowing that such products will be imported into the United States. These actions, individually and collectively, have induced and continue to induce the direct infringement of the ’305 Patent by others, such as television set manufacturers, assemblers, importers, and sellers who import into the United States Infringing TV Products containing the Infringing Panel Modules (such as the Hisense Infringing Models). Defendant Hisense Visual knew and/or was willfully blind to the fact that the induced parties’ use, testing, making available for another’s use, promotion, marketing, distributing, importing, selling, and/or offering to sell the Infringing TV Products (such as the Hisense Infringing Models) would infringe one or more claims of the ’305 Patent.

153. Phenix is the owner of the ’305 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ’305 Patent against infringers, and to collect damages for all relevant times.

154. The ’305 Patent generally describes an integrated circuit used to calibrate LCDs to compensate for panel-to-panel manufacturing variations. The claims of the ’305 Patent, including Claim 1, recite a novel and inventive apparatus for producing voltage signals on a plurality of outputs comprising non-volatile storage cells, programming circuits coupled to a multiplexer that address the many inputs, drivers connected to the storage cells and outputs, and inputs connected to the multiplexer to address the storage cells, where the gamma reference voltage signals determine the driving voltages of columns of a display, the non-volatile storage cells are organized into banks with a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

155. For example, Claim 1 of the ’305 Patent recites:

> An integrated circuit for producing voltage signals on a plurality of outputs comprising:
>
> a plurality of non-volatile storage cells;
>
> circuits for programming coupled to a multiplexer for addressing and programming said storage cells, wherein the addressing is based on a plurality of inputs;
>
> drivers connected to said storage cells and to the plurality of outputs; and
>
> the plurality of inputs connected to said multiplexer for addressing said storage cells,
>
> wherein said voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of a display, wherein said non-volatile storage cells are organized into two or more banks of cells wherein each bank contains a predetermined gamma reference voltage signal display condition; and means to switch between the banks based on one or more external signals is provided on said integrated circuit.

156. The Hisense Infringing Models each incorporate one of Defendant AUO’s LCD panel modules that include a TCON board with an integrated circuit, *i.e.*, Pgamma chip, with at

least two banks, for producing voltage signals on a plurality of outputs with a plurality of non-volatile storage cells and circuits for programming coupled to a multiplexer for addressing and programming said storage cells, where the addressing is based on a plurality of inputs, the drivers connect to the storage cells and the outputs, the inputs connect to the multiplexer for addressing the storage cells, the voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of display, the non-volatile storage cells are organized into banks of cells, each bank contains a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

157. In violation of 35 U.S.C. § 271(b), Defendant Hisense Visual has knowingly and intentionally induced infringement and continues to induce infringement of one or more claims of the ’305 Patent by one or more direct infringers, either literally or by the doctrine of equivalents. Defendant Hisense Visual purchases the Infringing Panel Modules from AUO, and supplies, distributes, offers for sale, or sells the Infringing Panel Modules to Hisense Mexico, Hisense USA, and others (including other Hisense entities) who incorporate them or have them incorporated in Hisense Infringing Models and then without authority use, offer to sell, or sell the Hisense Infringing Models within the United States, or import Hisense Infringing Models into the United States, or cause others (such as Does 1–10) to import into the United States, in violation of 35 U.S.C. § 271(a).

158. Defendant Hisense Visual has made, and continues to make, unlawful gains and profits from infringing the ’305 Patent.

159. Defendant Hisense Visual has had knowledge of the ’305 Patent and its infringing activities at least since the filing of the original Complaint (Dkt. 1) when Hisense Mexico, Hisense Visual’s subsidiary, was sued for infringement, including because of importation of the Hisense

Infringing Models, and thereafter when Hisense Mexico identified Hisense Visual as a potential party to this lawsuit in its Initial and Additional Disclosures served on Plaintiff on October 18, 2024. Nevertheless, Hisense Visual has continued its infringement and inducement of infringement. Accordingly, Defendant Hisense Visual has been willfully infringing the ’305 Patent at least since Phenix filed the original Complaint.

COUNT X: INDUCEMENT OF INFRINGEMENT OF THE ’788 PATENT BY DEFENDANT HISENSE VISUAL

160. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

161. Defendant Hisense Visual directly and/or through subsidiaries or intermediaries, has knowingly and intentionally induced and continues to induce infringement (literally or under the doctrine of equivalents) of one or more claims of the ’788 Patent. With knowledge of the ’788 Patent, Defendant Hisense Visual’s deliberate and/or willfully blind actions include, but are not limited to, actively marketing to, supplying, causing the supply to, encouraging, and instructing others such as businesses, distributors, agents, channel partners, resellers, sales representatives, manufacturers, and assemblers to incorporate the Infringing Panel Modules into consumer products, including without limitation LCD televisions such as the Hisense Infringing Models knowing that such products will be imported into the United States, and to test and use such modules and products. These actions, individually and collectively, have induced and continue to induce the direct infringement of the ’788 Patent by others, such as television set manufacturers, assemblers, importers, and sellers who import into the United States Infringing TV Products containing the Infringing Panel Modules (such as the Hisense Infringing Models). Defendant Hisense Visual knew and/or was willfully blind to the fact that the induced parties’ use, testing,

making available for another's use, promotion, marketing, distributing, importing, selling and/or offering to sell the Infringing TV Products (such as the Hisense Infringing Models) would infringe one or more claims of the '788 Patent.

162. Phenix is the owner of the '788 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '788 Patent against infringers, and to collect damages for all relevant times.

163. The '788 Patent generally describes a method for calibrating an LCD to a desired gamma curve to compensate for panel-to-panel manufacturing variations. The claims of the '788 Patent, including Claim 1, recite a novel and inventive method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

164. For example, Claim 1 of the '788 Patent recites:

> A method of calibrating a liquid crystal display to a desired gamma curve to compensate for panel to panel manufacturing variations comprising the steps:
>
> providing said display with gamma reference control capability which is electrically reprogrammable and non-volatile;
>
> testing said display with at least one sensor with optical input, wherein said sensor is separate from said display;
>
> varying gamma reference voltage levels on columns of said display by a control circuit, where said control circuit is separate from said display;
>
> optimizing said gamma reference voltage levels using means for executing a predetermined algorithm according to a predetermined criteria and data

> sensed by said at least one sensor, wherein said means for executing said predetermined algorithm is separate from said display to achieve the desired gamma curve; and
>
> storing said gamma reference voltage levels in said gamma reference control capability.

165. The Hisense Infringing Models each incorporate one of Defendant AUO's Infringing Panel Modules that are made using a method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

166. Defendant Hisense Visual is liable for inducement of infringement of the '788 Patent under 35 U.S.C. § 271(b), literally or under the doctrine of equivalents, by one or more direct infringers. Hisense Visual has knowingly and intentionally induced, and continues to induce, others to test and use the Infringing Panel Modules using a process claimed by the '788 Patent, in preparation for their importation into the United States or offers to sell, sales, or use within the United States of Hisense Infringing Models incorporating the Infringing Panel Modules, in violation of 35 U.S.C. § 271(g). Hisense Visual also induces by supplying, distributing, offering for sale, and/or selling the Infringing Panel Modules (made using a process claimed by the '788 Patent) to others, including but not limited to manufacturers of Hisense Infringing Models and authorized sellers, who without Phenix's authority use, offer to sell, or sell Hisense Infringing Models within the United States, or import into the United States, in violation of 35 U.S.C. § 271(g).

167. Defendant Hisense Visual has made, and continues to make, unlawful gains and profits from infringing the ’788 Patent.

168. Defendant Hisense Visual has had knowledge of the ’788 Patent and its infringing activities at least since the filing of the original Complaint (Dkt. 1) when Hisense Mexico, Hisense Visual’s subsidiary, was sued for infringement, including because of importation of the Hisense Infringing Models, and thereafter when Hisense Mexico identified Hisense Visual as a potential party to this lawsuit in its Initial and Additional Disclosures served on Plaintiff on October 18, 2024. Nevertheless, Hisense Visual has continued its infringement and inducement of infringement. Accordingly, Defendant Hisense Visual has been willfully infringing the ’788 Patent at least since Phenix filed the original Complaint.

COUNT XI: DIRECT INFRINGEMENT OF THE ’305 PATENT BY DEFENDANT AUO

169. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

170. Defendant AUO makes, uses, sells, and/or offers to sell in, and/or imports into, the United States Infringing Panel Modules that infringe one or more claims of the Asserted Patents, including at least Claims 1, 2, and 5 of the ’305 Patent.

171. Phenix is the owner of the ’305 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ’305 Patent against infringers, and to collect damages for all relevant times.

172. The ’305 Patent generally describes an integrated circuit used to calibrate LCDs to compensate for panel-to-panel manufacturing variations. The claims of the ’305 Patent, including Claim 1, recite a novel and inventive apparatus for producing voltage signals on a plurality of

outputs comprising non-volatile storage cells, programming circuits coupled to a multiplexer that address the many inputs, drivers connected to the storage cells and outputs, and inputs connected to the multiplexer to address the storage cells, where the gamma reference voltage signals determine the driving voltages of columns of a display, the non-volatile storage cells are organized into banks with a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

173. For example, Claim 1 of the ’305 Patent recites:

> An integrated circuit for producing voltage signals on a plurality of outputs comprising:
>
> a plurality of non-volatile storage cells;
>
> circuits for programming coupled to a multiplexer for addressing and programming said storage cells, wherein the addressing is based on a plurality of inputs;
>
> drivers connected to said storage cells and to the plurality of outputs; and
>
> the plurality of inputs connected to said multiplexer for addressing said storage cells,
>
> wherein said voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of a display, wherein said non-volatile storage cells are organized into two or more banks of cells wherein each bank contains a predetermined gamma reference voltage signal display condition; and means to switch between the banks based on one or more external signals is provided on said integrated circuit.

174. The Infringing Panel Modules imported by Defendant AUO include a TCON board with an integrated circuit, *i.e.*, Pgamma chip, with at least two banks, for producing voltage signals on a plurality of outputs with a plurality of non-volatile storage cells and circuits for programming coupled to a multiplexer for addressing and programming said storage cells, where the addressing is based on a plurality of inputs, the drivers connect to the storage cells and the outputs, the inputs

connect to the multiplexer for addressing the storage cells, the voltage signals are gamma reference voltage signals for determining actual driving voltages of columns of display, the non-volatile storage cells are organized into banks of cells, each bank contains a predetermined gamma reference voltage signal display condition, and the banks are able to be switched by external signals on the integrated circuit.

175. In violation of 35 U.S.C. § 271(a), Defendant AUO has directly infringed and continues to infringe the ’305 Patent, either literally or by the doctrine of equivalents, by making, using, importing, supplying, distributing, offering for sale, or selling the Infringing Panel Modules within the United States.

176. Defendant AUO has made, and continues to make, unlawful gains and profits from infringing the ’305 Patent.

177. As a consequence of Defendant AUO’s past dealings with Alta that pre-dated the filing and service of the original Complaint (Dkt. 1) as described above, Defendant AUO had knowledge of, or was willfully blind to knowledge of, the ’305 Patent and its infringement of the ’305 Patent before the filing of this lawsuit.

178. Defendant AUO has had knowledge of the ’305 Patent since at least as early as November 2007. Defendant AUO has been willfully infringing the ’305 Patent since it began designing, manufacturing, and selling its Infringing Panels.

179. Since at least as early as November 2007, Defendant AUO has actively, knowingly, and intentionally continued to infringe the ’305 Patent, literally or by the doctrine of equivalents, by selling Infringing Panel Modules directly into the United States.

COUNT XII: DIRECT INFRINGEMENT OF THE ’788 PATENT BY DEFENDANT AUO

180. Phenix realleges and incorporates herein the preceding allegations of this Fifth Amended Complaint as if fully set forth herein.

181. Defendant AUO makes, uses, sells, and/or offers to sell in, and/or imports into, the United States Infringing Panel Modules that infringe one or more claims of the Asserted Patents, including at least Claim 1 of the ’788 Patent.

182. Phenix is the owner of the ’788 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ’788 Patent against infringers, and to collect damages for all relevant times.

183. The ’788 Patent generally describes a method for calibrating an LCD to a desired gamma curve to compensate for panel-to-panel manufacturing variations. The claims of the ’788 Patent, including Claim 1, recite a novel and inventive method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

184. For example, Claim 1 of the ’788 Patent recites:

> A method of calibrating a liquid crystal display to a desired gamma curve to compensate for panel to panel manufacturing variations comprising the steps:
>
> providing said display with gamma reference control capability which is electrically reprogrammable and non-volatile;
>
> testing said display with at least one sensor with optical input, wherein said sensor is separate from said display;

> varying gamma reference voltage levels on columns of said display by a control circuit, where said control circuit is separate from said display;
>
> optimizing said gamma reference voltage levels using means for executing a predetermined algorithm according to a predetermined criteria and data sensed by said at least one sensor, wherein said means for executing said predetermined algorithm is separate from said display to achieve the desired gamma curve; and
>
> storing said gamma reference voltage levels in said gamma reference control capability.

185. The Infringing Panel Modules imported by Defendant AUO are made using a method for calibrating LCD to a desired gamma curve to compensate for manufacturing variations by providing a display with electrically reprogrammable and non-volatile gamma reference control capability, testing the display with a sensor, varying the gamma reference voltage levels on columns of the display with a control circuit, optimizing the gamma reference voltage levels with predetermined algorithms, criteria, and data to achieve the desired gamma curve, and storing the gamma reference voltage levels.

186. In violation of 35 U.S.C. § 271(g), Defendant AUO has directly infringed and continues to infringe one or more claims of the ’788 Patent, either literally or by the doctrine of equivalents, by without authority importing into the United States, offering to sell, selling, or using within the United States Infringing Panel Modules made by a process patented in the ’788 Patent.

187. Defendant AUO has made, and continues to make, unlawful gains and profits from infringing the ’788 Patent.

188. As a consequence of Defendant AUO’s past dealings with Alta that pre-dated the filing and service of the original Complaint (Dkt. 1) as described above, Defendant AUO had

knowledge of, or was willfully blind to knowledge of, the ’788 Patent and its infringement of the ’788 Patent before the filing of this lawsuit.

189. Defendant AUO has had knowledge of the ’788 Patent and its infringement activities since at least as early as June 2012. Accordingly, Defendant AUO has been willfully infringing the ’788 Patent since at least as early as June 2012.

NOTICE

190. Phenix has complied with the marking and notice requirements of 35 U.S.C. § 287, to the extent required. Alta marked datasheets for its products with patent numbers, including those of the Asserted Patents, even though Alta was not required to comply with the marking and notice requirements of 35 U.S.C. § 287 because all of its sales of covered products were made outside of the United States and foreign sales are not subject to the marking requirements of 35 U.S.C. § 287.

191. Phenix has made reasonable efforts to require all potential licensees of the ’305 Patent to mark pursuant to 35 U.S.C. § 287, and the one willing licensee of the ’305 Patent was required to, and did, mark. Further, Phenix continuously monitored and notified the one licensee of the ’305 Patent of its requirement to mark and provided written notifications to the one licensee of the ’305 Patent informing them of the 35 U.S.C. § 287 marking requirements. The marking and notice requirements of 35 U.S.C. § 287 do not apply to the ’788 Patent.

192. In other prior litigation not involving the one licensee, Phenix and the previous defendants entered into arrangements that resulted in the dismissal of Phenix’s claims based on the defendants’ representations, litigation positions, and discovery that they did not infringe the ’305 Patent because they manufactured products that did not practice at least the limitation that required non-volatile memory cells that contain predetermined gamma reference voltage to signal

display condition. Thus, Phenix had no requirement to ensure that those defendants complied with the marking requirements of U.S.C. § 287.

ATTORNEYS' FEES

193. According to 35 U.S.C. § 285, Plaintiff is entitled to, and respectfully requests, its reasonable attorneys' fees in this case.

DEMAND FOR JURY TRIAL

194. According to Fed. R. Civ. P. 38(b), Plaintiff respectfully requests a trial by jury on all issues triable by a jury.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for the following relief:

a. that this Court declare that Defendants Hisense Mexico and Hisense USA have directly infringed and continue to directly infringe one or more claims of the Asserted Patents under 35 U.S.C. §§ 271(a) and (g);

b. that this Court declare that Defendants Hisense Mexico, Hisense USA, and Hisense Visual have indirectly infringed and continue to indirectly infringe one or more claims of the Asserted Patents under 35 U.S.C. § 271(b);

c. that this Court declare that Defendant AUO directly infringed and continues to directly infringe one or more claims of the Asserted Patents under 35 U.S.C. §§ 271(a) and (g);

d. that this Court declare that Defendant AUO has induced the infringement and continues to induce the infringement of one or more claims of the Asserted Patents under 35 U.S.C. § 271(b);

e. that this Court declare that Defendants Does 1–10 have directly infringed and continue to directly infringe one or more claims of the Asserted Patents under 35 U.S.C. §§ 271(a) and (g);

f. that this Court award Plaintiff all damages adequate to compensate Plaintiff for Defendants' above-mentioned infringements; and that interest and costs be assessed against Defendants according to 35 U.S.C. §§ 154(d) and 284;

g. that this Court declare Defendants' infringement was and is willful, and award treble damages for the period of the willful infringement of the Asserted Patents;

h. that this Court declare this an exceptional case and order that Defendants pay Plaintiff its reasonable attorneys' fees and costs according to 35 U.S.C. § 285;

i. that Defendants, their officers, directors, agents, servants, employees, attorneys, affiliates, divisions, branches, parents, and those persons in active concert or participation with any of them, be permanently restrained and enjoined from infringing the Asserted Patents; and

j. that this Court award any additional relief to Plaintiff that this Court deems just and proper.

May 22, 2025

Respectfully submitted,

By: /s/ Eric H. Findlay

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ATTORNEYS FOR PLAINTIFF
PHENIX LONGHORN LLC

CERTIFICATE OF SERVICE

The undersigned counsel hereby certifies that on May 22, 2025, a true and correct copy of the foregoing Fifth Amended Complaint was served on all counsel of record who have appeared in this case via the Court's CM/ECF system.

/s/ Eric H. Findlay
Eric H. Findlay