

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

**VISTA PEAK VENTURES, LLC,**

**Plaintiff,**

**V.**

**XIANYANG CAIHONG  
OPTOELECTRONICS TECHNOLOGY  
CO., LTD., HISENSE CO. LTD.,  
HISENSE VISUAL TECHNOLOGY CO.,  
LTD., HISENSE INTERNATIONAL CO.,  
LTD., HISENSE IMPORT & EXPORT  
CO. LTD., HISENSE INTERNATIONAL  
(HK) CO., LTD., HISENSE  
ELECTRONICA MEXICO S.A. DE C.V.,  
AND HISENSE INTERNATIONAL  
(HONG KONG) AMERICA  
INVESTMENTS CO., LTD.,**

## Defendants.

**§ 87(2)(b)**

## JURY TRIAL DEMANDED

**CIVIL ACTION NO. 2:21-cv-262**

## **PLAINTIFF'S COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Vista Peak Ventures, LLC (“VPV”) files this Complaint against Defendants Xianyang CaiHong Optoelectronics Technology Co., Ltd., Hisense Co. Ltd., Hisense Visual Technology Co., Ltd., Hisense International Co., Ltd., Hisense Import & Export Co. Ltd., Hisense International (HK) Co., Ltd., Hisense Electronica Mexico S.A. de C.V., and Hisense International (Hong Kong) America Investments Co., Ltd. (collectively referred to as the “Defendants”) for infringement of U.S. Patent No. 6,404,474 (“the ’474 patent”), U.S. Patent No. 6,657,699 (“the ’699 patent”), U.S. Patent No. 7,009,673 (“the ’673 patent”), U.S. Patent No. 6,078,375 (“the ’375 patent”), U.S. Patent No. 6,657,619 (“the ’619 patent”), and U.S. Patent No. 7,006,065 (“the ’065 patent”), collectively, the “Asserted Patents.”

### **THE PARTIES AND RELATED BACKGROUND**

1. Vista Peak Ventures, LLC is a Texas limited liability company, located at 1400 Preston Rd, Suite 472, Plano, TX 75093.

2. Upon information and belief, Defendant Xianyang CaiHong Optoelectronics Technology Co., Ltd. (“CHOT”) was established in 2015 as a joint venture of China Electronics Corporation “CEC” and glass substrate maker IRICO Group Electronics Co., Ltd. CHOT is a limited liability company formed under the laws of the People’s Republic of China (“PRC” or “China”). CHOT’s principal place of business is located at No.1, Gaoke Yilu, Qindu District, Xianyang, Shaanxi, China.

3. Upon information and belief, CHOT is engaged in research and development, manufacturing, sales, and related technical services for thin-film transistor liquid-crystal display (“TFT-LCD”) panels and components, such as, but not limited to, device housings, backlight modules, video controllers, and methods and processes related to same (referred to as the “CHOT LCD Products”). These CHOT LCD Products are incorporated into electronic devices such as televisions (TVs) under at least the Polaroid and Hisense brands. These electronic devices are imported into the United States, distributed to retailers, and sold to end-users via the internet and in brick and mortar stores in the Eastern District of Texas. Thus, CHOT does business in the State of Texas and in the Eastern District of Texas.

4. Hisense Co. Ltd. (“Hisense Co.”) is a company formed under the laws of the PRC. Hisense Co.’s principal place of business is located at Hisense Tower, No. 17 Donghaixi Road, Qingdao, Shandong Province, 266071, China. Upon information and belief, Hisense Co. is in the business of designing, developing, manufacturing, importing, distributing, offering for sale, and selling electronic devices incorporating LCD products and components, such as digital televisions under at least the Hisense brand.

5. Hisense Visual Technology Co., Ltd. (“Hisense Visual”), which was formerly known as Qingdao Hisense Electronics Co. Ltd. is a company formed under the laws of the PRC. Hisense Visual’s principal place of business is located at No. 218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province, 266555, China. Upon information and belief, Hisense Visual is in the business of designing, developing, manufacturing, importing, distributing, offering for sale, and selling electronic devices incorporating LCD products and components, such as digital televisions under at least the Hisense brand.

6. Hisense International Co., Ltd. (“Hisense International”) is a company formed under the laws of the PRC. Hisense International’s principal place of business is located at No. 218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province, 266555, China. Upon information and belief, Hisense International is in the business of designing, developing, manufacturing, importing, distributing, offering for sale, and selling electronic devices incorporating LCD products and components, such as digital televisions under at least the Hisense brand.

7. Hisense Import & Export Co. Ltd. (“Hisense I&E”) is a company formed under the laws of the PRC. Hisense I&E’s principal place of business is located at Hisense Tower, No. 17 Donghaixi Road, Qingdao 266071, China. Upon information and belief, Hisense I&E is in the business of designing, developing, manufacturing, importing, distributing, offering for sale, and selling electronic devices incorporating LCD products and components, such as digital televisions under at least the Hisense brand.

8. Hisense International (HK) Co., Ltd. (“Hisense International HK”) is a company formed under the laws of Hong Kong, China. Hisense International HK’s principal place of business is located at Room 3101-3105, Singga Commercial Centre, No. 148 Connaught Road West, Hong Kong, China. Upon information and belief, Hisense International HK is in the business of

designing, developing, manufacturing, importing, distributing, offering for sale, and selling electronic devices incorporating LCD products and components, such as digital televisions under at least the Hisense brand.

9. Hisense Electronica Mexico S.A. de C.V. (“Hisense Mexico”) is a corporation organized and existing under the laws of Mexico with a principal place of business at Blvd. Hisense 3510 Parque Industrial Rosarito Playas de Rosarito, B.C. C.P. 22710 Mexico. Upon information and belief, Hisense Mexico is in the business of designing, developing, manufacturing, importing, distributing, offering for sale, and selling electronic devices incorporating LCD products and components, such as digital televisions under at least the Hisense brand.

10. Hisense International (Hong Kong) America Investments Co., Ltd. (“Hisense International HK America”) is a company formed under the laws of Hong Kong, China. Hisense International HK America’s principal place of business is located at Room 3101-3105, Singa Commercial Centre, No. 148 Connaught Road West, Hong Kong, China. Upon information and belief, Hisense International HK America is in the business of designing, developing, manufacturing, importing, distributing, offering for sale, and selling electronic devices incorporating LCD products and components, such as digital televisions under at least the Hisense brand. Hisense Co., Hisense Visual, Hisense International, Hisense I&E, Hisense International HK, Hisense Mexico, and Hisense International HK America are collectively referred to as the “Hisense Defendants.”

11. Upon information and belief, the Hisense Defendants operate in the U.S. via U.S.-based subsidiaries and/or related companies. For example, Hisense Electronics Manufacturing Company of America Corp. (“Hisense America”) is a company organized under the laws of the state of Georgia, and has a principal place of business at 7310 McGinnis Ferry Road Suwanee, GA

30024. Hisense America has formerly done business as Hisense USA Corporation, and continues to use the name “Hisense USA” to refer to its corporate self, products, and services. *See, e.g., Mission and Vision*, HISENSE, <https://www.hisense-usa.com/company/> (last visited July 12, 2021). Hisense America is a subsidiary of the Hisense Defendants and imports, distributes, offers for sale, and sells televisions including TFT-LCD panels and components, such as, but not limited to, device housings, backlight modules, video controllers, and methods and processes related to same (referred to as the “Hisense LCD Products”) in the United States, including in this judicial district, on behalf of and for the benefit of the Hisense Defendants.

12. Upon information and belief, the Hisense Defendants and their U.S.-based subsidiaries, including but not limited to Hisense America, share the same corporate structure and operate as a part of a related group of parent companies, subsidiaries, and close associates (the “Hisense Group”). The Hisense Defendants, as part of the Hisense Group, design, develop, manufacture, import, distribute, offer to sell, sell, market, and use electronic devices in the United States. Such electronic devices include televisions that incorporate the Hisense LCD Products that are imported into the United States, distributed to retailers, and sold to end-users via the internet and in brick and mortar stores in the Eastern District of Texas. Thus, the Hisense Defendants do business in the State of Texas and in the Eastern District of Texas.

13. Upon information and belief, Defendant CHOT along with its parents, subsidiaries, and other related companies, operate in the U.S. via its associates, business partners, and/or customers, including the Hisense Defendants. The Hisense Defendants, including via their U.S.-based subsidiaries, provide wholesale distribution of CHOT LCD Products in the U.S., and such products are incorporated into at least the Hisense-branded TVs provided to U.S. customers and end user consumers in the U.S., including in the Eastern District of Texas.

14. Upon information and belief, Empire Electronic Corporation (“Empire”) is a corporation organized under the laws of the state of California, with its principal place of business at 2029 S. Business Parkway Building A Ontario California 91761. Empire “specialize[s] in the development, sales, marketing and distribution of both consumer and commercial products such as LED Smart / 4K UHD Televisions, LED Lighting fixtures and a growing assortment of consumer electronic lines.” *Empire Electronic Corporation*, LINKED IN, <https://www.linkedin.com/company/empire-electronic-corporation/about/> (last visited July 12, 2021). Empire brands its products with “international and well-known names such as Makena, Polaroid, JVC & Hillsboro.” *Id.*

15. Upon information and belief, Empire is an authorized licensee of the Polaroid brand. *See TV Brands Aren’t Always What They Seem*, CONSUMER REPORTS, July 9, 2018. <https://web.archive.org/web/20190517015947/https://www.consumerreports.org/lcd-led-oled-tvs/tv-brands-arent-always-what-they-seem/> (last visited July 12, 2021). The Polaroid brand and website is owned by PLR IP Holdings, LLC, a limited liability company organized and existing under the laws of the State of Delaware. *Id.* On its LinkedIn page, Empire lists Polaroid brand as one of its “product Brands” of TVs. *See Empire Electronic Corporation*, LINKED IN, <https://www.linkedin.com/company/empire-electronic-corporation/about/> (last visited July 12, 2021). User manuals and product labels for Polaroid TVs also identify Empire as the manufacturer of Polaroid TVs.

16. Upon information and belief, Defendant CHOT along with its parents, subsidiaries, and other related companies, operate in the U.S. via its associates, business partners, and/or customers, including Empire. Empire provides wholesale distribution of CHOT LCD Products in

the U.S. Such products are incorporated, for example, into Polaroid-branded TVs provided to U.S. customers and end user consumers in the U.S., including in the Eastern District of Texas.

17. Through offers to sell, sales, imports, distributions, and other related agreements to transfer ownership of the CHOT LCD Products and the Hisense LCD Products with subsidiaries, distributors, associates, business partners, and customers operating in and maintaining a significant business presence in the U.S., Defendants do business in the United States, the state of Texas, and in the Eastern District of Texas.

### **JURISDICTION AND VENUE**

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

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

20. Upon information and belief, Defendant CHOT is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to its substantial business in this State and judicial district, including: (A) at least part of its own infringing activities alleged herein; and (B) regularly doing or soliciting business, engaging in other persistent conduct, and/or deriving substantial revenue from infringing goods offered for sale, sold, and imported and services provided to Texas residents vicariously through and/or in concert with its alter egos, intermediaries, connected persons, joint venture parties, agents, associates, distributors, importers, customers, subsidiaries, and/or consumers. For example, CHOT manufactures and supplies the CHOT LCD Products, including, but not limited to, LCD products and components for at least Hisense-branded and Polaroid-branded TVs, for import, distribution, and sale in the U.S. market, including in the Eastern District of Texas.

***CHOT***

21. This Court has personal jurisdiction over CHOT, directly or through alter egos, intermediaries, connected persons, joint venture parties, agents, associates, business partners, distributors, importers, customers, subsidiaries, and/or consumers, such as the Hisense Defendants, and CHOT's customer Empire. CHOT, via at least the activities of the Hisense Defendants and of U.S.-based distributor and customer Empire, has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States giving rise to this action and/or has established minimum contacts with Texas. Upon information and belief, the CHOT LCD Products accused of infringing the Asserted Patents are manufactured, assembled, and/or packaged and tested outside the U.S. by CHOT. Furthermore, CHOT, alone and in consort with others, also imports the accused CHOT LCD Products into the U.S., distributes such products in the U.S., offers to sell such products in the U.S., and/or sells them in the U.S., including selling them prior to importation. CHOT, acting alone or in consort with others, has placed and continues to place the CHOT LCD Products accused of infringing the Asserted Patents into the stream of commerce that ends with sales of those products in the United States. In doing so, CHOT knew or reasonably should have known that its products would be and are now being distributed, marketed, and sold in Texas, including in this District. Personal jurisdiction, therefore, over CHOT would not offend traditional notions of fair play and substantial justice.

22. CHOT has placed and continues to place infringing Polaroid-branded products into the stream of commerce using established distribution channels with the knowledge and understanding that such products are, will be, and continue to be sold, offered for sale, and/or imported into this judicial district and the State of Texas. For example, Polaroid, via its website, touts that its Polaroid TVs, which incorporate LCD products manufactured by CHOT, may be



purchased through a variety of online and brick and mortar retail stores such as Walmart.com, BrandsMart USA, and Amazon.com. *See Products*, POLAROID, <https://polaroidhdtv.com/products/> (last visited July 12, 2021). As part of the Empire's relationship with CHOT, Empire, on behalf of and for the mutual benefit of CHOT, imported, offered for sale, advertised, and sold CHOT LCD Products for LCD TV products, including, but not limited to, CHOT TFT-LCD panel model no. CV500U1-T01 incorporated in at least Polaroid TV model no. 50T7U. Such CHOT LCD Products were sold in retail stores, both brick and mortar and online, within this judicial district and in Texas. *See Litecubes, LLC v. Northern Light Products, Inc.*, 523 F.3d 1353, 1369-70 (Fed. Cir. 2008) ("[T]he sale [for purposes of § 271] occurred at the location of the buyer."); *see also Semcon IP Inc. v. Kyocera Corporation*, No. 2:18-cv-00197-JRG, 2019 WL 1979930, at \*3 (E.D. Tex. May 3, 2019) (denying accused infringer's motion to dismiss because plaintiff sufficiently plead that purchases of infringing products outside of the United States for importation into and sales to end users in the U.S. may constitute an offer to sell under § 271(a)).

23. CHOT has placed and continues to place Hisense products into the stream of commerce using established distribution channels infringing with the knowledge and understanding that such products are, will be, and continue to be sold, offered for sale, and/or imported into this judicial district and the State of Texas. For example, Hisense, via its website, touts that its Hisense TVs, which incorporate LCD products manufactured by CHOT, may be purchased through a variety of online and brick and mortar retail stores such as Walmart, Best Buy, and Amazon.com. *See Televisions*, HISENSE, <https://www.hisense-usa.com/tv-and-audio/televisions/all-tvs/> (providing links for consumers to purchase Hisense TVs from retailers) (last visited July 12, 2021). As part of the Hisense Defendants' relationship with CHOT, the Hisense Defendants, on behalf of and for the mutual benefit of CHOT, imported, offered for sale,

advertised, and sold CHOT LCD Products including CHOT TFT-LCD model no. CV500U1-T01 incorporated in at least Hisense TV model no. 50R6E. Such CHOT LCD Products were sold in retail stores, both brick and mortar and online, within this judicial district and in Texas.

24. In the alternative, the Court has personal jurisdiction over CHOT under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, CHOT is not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over CHOT is consistent with the U.S. Constitution.

25. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, CHOT is not a resident in the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See also In re HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court’s recent decision in *TC Heartland* does not alter” the alien-venue rule.).

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

***Hisense Co.***

27. This Court has personal jurisdiction over Hisense Co., directly or through alter egos, intermediaries, connected persons, joint venture parties, agents, associates, business partners, distributors, importers, customers, subsidiaries, and/or consumers, such as co-defendant CHOT, other Hisense Defendants, and U.S.-based subsidiary Hisense America. Hisense Co., via at least the activities of co-defendants, Hisense America, and other members of the Hisense Group, has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States giving rise to this action and/or has established minimum contacts with Texas.

Upon information and belief, the Hisense LCD Products accused of infringing the Asserted Patents are manufactured, assembled, and/or packaged and tested outside the U.S. by Hisense Co. Hisense Co., alone and in consort with others, also imports the accused Hisense LCD Products into the U.S., distributes such products in the U.S., offers to sell such products in the U.S., and/or sells them in the U.S., including selling them prior to importation. Hisense Co., acting alone or in consort with others, has placed and continues to place the Hisense LCD Products accused of infringing the Asserted Patents into the stream of commerce that ends with sales of those products in the United States. In doing so, Hisense Co. knew or reasonably should have known that its products would be and are now being distributed, marketed, and sold in Texas, including in this District. Personal jurisdiction, therefore, over Hisense Co. would not offend traditional notions of fair play and substantial justice.

28. In the alternative, the Court has personal jurisdiction over Hisense Co. under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, Hisense Co. is not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over Hisense Co. is consistent with the U.S. Constitution.

29. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, Hisense Co. is not a resident in the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See also In re HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court's recent decision in *TC Heartland* does not alter” the alien-venue rule.).

30. Upon information and belief, Hisense Co. has significant ties to, and presence in, the State of Texas and the Eastern District of Texas, making venue in this judicial district both proper and convenient for this action.

***Hisense Visual***

31. This Court has personal jurisdiction over Hisense Visual, directly or through alter egos, intermediaries, connected persons, joint venture parties, agents, associates, business partners, distributors, importers, customers, subsidiaries, and/or consumers, such as co-defendant CHOT, other Hisense Defendants, and U.S.-based subsidiary Hisense America. Hisense Visual, via at least the activities of co-defendants, Hisense America, and other members of the Hisense Group, has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States giving rise to this action and/or has established minimum contacts with Texas. Upon information and belief, the Hisense LCD Products accused of infringing the Asserted Patents are manufactured, assembled, and/or packaged and tested outside the U.S. by Hisense Visual. Hisense Visual, alone and in consort with others, also imports the accused Hisense LCD Products into the U.S., distributes such products in the U.S., offers to sell such products in the U.S., and/or sells them in the U.S., including selling them prior to importation. Hisense Visual, acting alone or in consort with others, has placed and continues to place the Hisense LCD Products accused of infringing the Asserted Patents into the stream of commerce that ends with sales of those products in the United States. In doing so, Hisense Visual knew or reasonably should have known that its products would be and are now being distributed, marketed, and sold in Texas, including in this District. Personal jurisdiction, therefore, over Hisense Visual would not offend traditional notions of fair play and substantial justice.

32. In the alternative, the Court has personal jurisdiction over Hisense Visual under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, Hisense Visual is not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over Hisense Visual is consistent with the U.S. Constitution.

33. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, Hisense Visual is not a resident in the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See also In re HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court's recent decision in *TC Heartland* does not alter” the alien-venue rule.).

34. Upon information and belief, Hisense Visual has significant ties to, and presence in, the State of Texas and the Eastern District of Texas, making venue in this judicial district both proper and convenient for this action.

### ***Hisense International***

35. This Court has personal jurisdiction over Hisense International, directly or through alter egos, intermediaries, connected persons, joint venture parties, agents, associates, business partners, distributors, importers, customers, subsidiaries, and/or consumers, such as co-defendant CHOT, other Hisense Defendants, and U.S.-based subsidiary Hisense America. Hisense International, via at least the activities of co-defendants, Hisense America, and other members of the Hisense Group, has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States giving rise to this action and/or has established minimum contacts with Texas. Upon information and belief, the Hisense LCD Products accused of infringing the Asserted Patents are manufactured, assembled, and/or packaged and tested outside the U.S. by

Hisense International. Hisense International, alone and in consort with others, also imports the accused Hisense LCD Products into the U.S., distributes such products in the U.S., offers to sell such products in the U.S., and/or sells them in the U.S., including selling them prior to importation. Hisense International, acting alone or in consort with others, has placed and continues to place the Hisense LCD Products accused of infringing the Asserted Patents into the stream of commerce that ends with sales of those products in the United States. In doing so, Hisense International knew or reasonably should have known that its products would be and are now being distributed, marketed, and sold in Texas, including in this District. Personal jurisdiction, therefore, over Hisense International would not offend traditional notions of fair play and substantial justice.

36. In the alternative, the Court has personal jurisdiction over Hisense International under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, Hisense International is not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over Hisense International is consistent with the U.S. Constitution.

37. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, Hisense International is not a resident in the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See also In re HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court's recent decision in *TC Heartland* does not alter” the alien-venue rule.).

38. Upon information and belief, Hisense International has significant ties to, and presence in, the State of Texas and the Eastern District of Texas, making venue in this judicial district both proper and convenient for this action.

*Hisense I&E*

39. This Court has personal jurisdiction over Hisense I&E, directly or through alter egos, intermediaries, connected persons, joint venture parties, agents, associates, business partners, distributors, importers, customers, subsidiaries, and/or consumers, such as co-defendant CHOT, other Hisense Defendants, and U.S.-based subsidiary Hisense America. Hisense I&E, via at least the activities of co-defendants, Hisense America, and other members of the Hisense Group, has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States giving rise to this action and/or has established minimum contacts with Texas. Upon information and belief, the Hisense LCD Products accused of infringing the Asserted Patents are manufactured, assembled, and/or packaged and tested outside the U.S. by Hisense I&E. Hisense I&E, alone and in consort with others, also imports the accused Hisense LCD Products into the U.S., distributes such products in the U.S., offers to sell such products in the U.S., and/or sells them in the U.S., including selling them prior to importation. Hisense I&E, acting alone or in consort with others, has placed and continues to place the Hisense LCD Products accused of infringing the Asserted Patents into the stream of commerce that ends with sales of those products in the United States. In doing so, Hisense I&E knew or reasonably should have known that its products would be and are now being distributed, marketed, and sold in Texas, including in this District. Personal jurisdiction, therefore, over Hisense I&E would not offend traditional notions of fair play and substantial justice.

40. In the alternative, the Court has personal jurisdiction over Hisense I&E under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, Hisense I&E is not subject to the jurisdiction of the courts of general

jurisdiction of any state, and exercising jurisdiction over Hisense I&E is consistent with the U.S. Constitution.

41. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, Hisense I&E is not a resident in the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See also In re HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court's recent decision in TC Heartland does not alter” the alien-venue rule.).

42. Upon information and belief, Hisense I&E has significant ties to, and presence in, the State of Texas and the Eastern District of Texas, making venue in this judicial district both proper and convenient for this action.

***Hisense International HK***

43. This Court has personal jurisdiction over Hisense International HK, directly or through alter egos, intermediaries, connected persons, joint venture parties, agents, associates, business partners, distributors, importers, customers, subsidiaries, and/or consumers, such as co-defendant CHOT, other Hisense Defendants, and U.S.-based subsidiary Hisense America. Hisense International HK, via at least the activities of co-defendants, Hisense America, and other members of the Hisense Group, has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States giving rise to this action and/or has established minimum contacts with Texas. Upon information and belief, the Hisense LCD Products accused of infringing the Asserted Patents are manufactured, assembled, and/or packaged and tested outside the U.S. by Hisense International HK. Hisense International HK, alone and in consort with others, also imports the accused Hisense LCD Products into the U.S., distributes such products in the U.S., offers to sell such products in the U.S., and/or sells them in the U.S., including selling



them prior to importation. Hisense International HK, acting alone or in consort with others, has placed and continues to place the Hisense LCD Products accused of infringing the Asserted Patents into the stream of commerce that ends with sales of those products in the United States. In doing so, Hisense International HK knew or reasonably should have known that its products would be and are now being distributed, marketed, and sold in Texas, including in this District. Personal jurisdiction, therefore, over Hisense International HK would not offend traditional notions of fair play and substantial justice.

44. In the alternative, the Court has personal jurisdiction over Hisense International HK under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, Hisense International HK is not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over Hisense International HK is consistent with the U.S. Constitution.

45. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, Hisense International HK is not a resident in the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See also In re HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court’s recent decision in *TC Heartland* does not alter” the alien-venue rule.).

46. Upon information and belief, Hisense International HK has significant ties to, and presence in, the State of Texas and the Eastern District of Texas, making venue in this judicial district both proper and convenient for this action.

#### ***Hisense Mexico***

47. This Court has personal jurisdiction over Hisense Mexico, directly or through alter egos, intermediaries, connected persons, joint venture parties, agents, associates, business partners,

distributors, importers, customers, subsidiaries, and/or consumers, such as co-defendant CHOT, other Hisense Defendants, and U.S.-based subsidiary Hisense America. Hisense Co., via at least the activities of co-defendants, Hisense America, and other members of the Hisense Group, has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States giving rise to this action and/or has established minimum contacts with Texas. Upon information and belief, the Hisense LCD Products accused of infringing the Asserted Patents are manufactured, assembled, and/or packaged and tested outside the U.S. by Hisense Mexico. Hisense Mexico, alone and in consort with others, also imports the accused Hisense LCD Products into the U.S., distributes such products in the U.S., offers to sell such products in the U.S., and/or sells them in the U.S., including selling them prior to importation. Hisense Mexico, acting alone or in consort with others, has placed and continues to place the Hisense LCD Products accused of infringing the Asserted Patents into the stream of commerce that ends with sales of those products in the United States. In doing so, Hisense Mexico knew or reasonably should have known that its products would be and are now being distributed, marketed, and sold in Texas, including in this District. Personal jurisdiction, therefore, over Hisense Mexico would not offend traditional notions of fair play and substantial justice.

48. In the alternative, the Court has personal jurisdiction over Hisense Mexico under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, Hisense Mexico is not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over Hisense Mexico is consistent with the U.S. Constitution.

49. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, Hisense Mexico is not a resident in the United States, and thus may be sued

in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). See also *In re HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court’s recent decision in *TC Heartland* does not alter” the alien-venue rule.).

50. Upon information and belief, Hisense Mexico has significant ties to, and presence in, the State of Texas and the Eastern District of Texas, making venue in this judicial district both proper and convenient for this action.

***Hisense International HK America***

51. This Court has personal jurisdiction over Hisense International HK America, directly or through alter egos, intermediaries, connected persons, joint venture parties, agents, associates, business partners, distributors, importers, customers, subsidiaries, and/or consumers, such as co-defendant CHOT, other Hisense Defendants, and U.S.-based subsidiary Hisense America. Hisense International HK America, via at least the activities of co-defendants, Hisense America, and other members of the Hisense Group, has committed acts of direct and/or indirect patent infringement within Texas, and elsewhere within the United States giving rise to this action and/or has established minimum contacts with Texas. Upon information and belief, the Hisense LCD Products accused of infringing the Asserted Patents are manufactured, assembled, and/or packaged and tested outside the U.S. by Hisense International HK America. Hisense International HK America, alone and in consort with others, also imports the accused Hisense LCD Products into the U.S., distributes such products in the U.S., offers to sell such products in the U.S., and/or sells them in the U.S., including selling them prior to importation. Hisense International HK America, acting alone or in consort with others, has placed and continues to place the Hisense LCD Products accused of infringing the Asserted Patents into the stream of commerce that ends with sales of those products in the United States. In doing so, Hisense International HK America

knew or reasonably should have known that its products would be and are now being distributed, marketed, and sold in Texas, including in this District. Personal jurisdiction, therefore, over Hisense International HK America would not offend traditional notions of fair play and substantial justice.

52. In the alternative, the Court has personal jurisdiction over Hisense International HK America under Federal Rule of Civil Procedure 4(k)(2), because the claims for patent infringement in this action arise under federal law, Hisense International HK America is not subject to the jurisdiction of the courts of general jurisdiction of any state, and exercising jurisdiction over Hisense International HK America is consistent with the U.S. Constitution.

53. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1391 because, among other things, Hisense International HK America is not a resident in the United States, and thus may be sued in any judicial district, including this one, pursuant to 28 U.S.C. § 1391(c)(3). *See also In re HTC Corporation*, 889 F.3d 1349, 1357 (Fed. Cir. 2018) (“The Court's recent decision in *TC Heartland* does not alter” the alien-venue rule.).

54. Upon information and belief, Hisense International HK America has significant ties to, and presence in, the State of Texas and the Eastern District of Texas, making venue in this judicial district both proper and convenient for this action.

55. Upon information and belief, CHOT and the Hisense Defendants (collectively the “Defendants”) along with their parents, subsidiaries, and other related companies (i.e., associates, business partners, distributors and customers which have a significant business presence in the U.S.) engaged and continue to engage in a concerted effort to import, distribute, sell, offer to sell, and use infringing products in the United States, including incorporating CHOT LCD Products and Hisense LCD Products into TVs marketed under at least the Polaroid and Hisense brands

among other brands of LCD products marketed in the United States. *See Litecubes, LLC v. Northern Light Products, Inc.*, 523 F.3d 1353, 1369-70 (Fed. Cir. 2008) (“[T]he sale [for purposes of § 271] occurred at the location of the buyer.”); *see also Semcon IP Inc. v. Kyocera Corporation*, No. 2:18-cv-00197-JRG, 2019 WL 1979930, at \*3 (E.D. Tex. May 3, 2019) (denying accused infringer’s motion to dismiss because plaintiff sufficiently plead that purchases of infringing products outside of the United States for importation into and sales to end users in the U.S. may constitute an offer to sell under § 271(a)). For example, import records show that TV products manufactured by Hisense Defendants are imported into the U.S. via at least its U.S.-based subsidiary “Hisense USA Corp.” *See, e.g., Tv Import Data of Hisense Supplier to USA*, SEAIR: EXIM SOLUTIONS, <https://www.seair.co.in/us-import/product-tv/e-hisense.aspx> (last visited July 12, 2021). Import records also show that Empire imports TV products into the U.S. Empire further touts that it “specialize[s] in the development, sales, marketing and distribution of both consumer and commercial products such as LED Smart / 4K UHD Televisions, LED Lighting fixtures and a growing assortment of consumer electronic lines..” *See Empire Electronic Corporation*, LINKEDIN, <https://www.linkedin.com/company/empire-electronic-corporation/about/> (last visited July 12, 2021). Upon information and belief, such CHOT LCD Products and Hisense LCD Products are imported in the United States are assembled by Defendants, including incorporating the device housing, the LCD panel, the backlight module, and video controllers into a complete electronic device, e.g., a TV. Thus, Defendants have manufactured, imported, distributed, offered for sale, and sold CHOT LCD Products and/or Hisense LCD Products in the U.S.

56. Defendants further have placed and continue to place infringing products into the stream of commerce using established distribution channels with the knowledge and understanding

that such products are, will be, and continue to be sold, offered for sale, and/or imported into this judicial district and the State of Texas. For example, Empire on behalf and for the mutual benefit of CHOT imported, offered for sale, advertised, and sold CHOT LCD Products incorporated into Polaroid-branded TVs, including TFT-LCD panel model no. CV500U1-T01 incorporated in at least Polaroid TV model no. 50T7U. Hisense Defendants and CHOT have imported, offered for sale, advertised, and sold CHOT LCD Products incorporated into Hisense TVs, including Hisense TV Model Nos. 50R6E (incorporating CHOT LCD Panel Model No. CV500U1-T01). The accused LCD products include the device housing, the LCD panel, the backlight module, and video controllers of the TV product. For example, Hisense TV Model Nos. 50R6E, 43R6E, and 55H8F and Polaroid TV model no. 50T7U incorporate infringing device housings, backlight modules, and display controllers. Such accused LCD products of Defendants have been and are sold in retail stores, both brick and mortar and online, within this judicial district and in Texas, including via retailers Amazon, Walmart, Best Buy and on the Hisense Defendants' own website.

### **THE ASSERTED PATENTS AND TECHNOLOGY**

57. Upon information and belief, a significant portion of operating revenue of the Defendant CHOT is derived from the manufacture and sale of TFT-LCD flat panel displays and components, which are imported into the United States by Empire and the Hisense Defendants and ultimately sold to U.S. consumers. For example, Empire “specialize[s] in the development, sales, marketing and distribution of both consumer and commercial products such as LED Smart / 4K UHD Televisions, LED Lighting fixtures and a growing assortment of consumer electronic lines.” *See Empire Electronic Corporation*, LINKEDIN, <https://www.linkedin.com/company/empire-electronic-corporation/about/> (last visited July 12, 2021). Also, Hisense touts that “[i]n the 12 months ending January 2020, Hisense was the fastest growing Top 6 TV brand in the U.S.” *See*

Televisions, HISENSE, <https://web.archive.org/web/20210104015900/https://www.hisense-usa.com/tv-and-audio/televisions/all-tvs/> (last visited July 12, 2021).

58. The Asserted Patents cover at least TFT-LCD TVs, their components, including infringing TFT-LCD panels, device housings, backlight modules, display controllers, and processes related to the same made by CHOT and the Hisense Defendants, and, in some cases, incorporated into Polaroid and Hisense branded TVs (referred to as the “Accused LCD Products”). Examples of CHOT Accused LCD Products include TFT-LCD model no. CV500U1-T01 incorporated in at least Polaroid TV model no. 50T7U. Examples of the Hisense Accused LCD Products include Hisense TV Model Nos. 50R6E (incorporating CHOT LCD Panel Model No. CV500U1-T01), 43R6E, and 55H8F.

59. The labels for CHOT model no. CV500U1-T01 and for the Polaroid TV product are shown below:

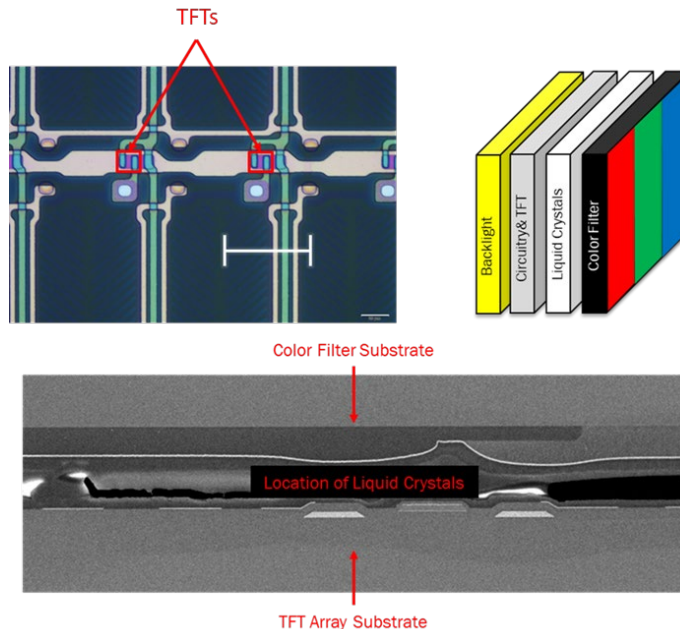


60. The labels for CHOT model no. CV500U1-T01 and for the Hisense TV product are shown below:





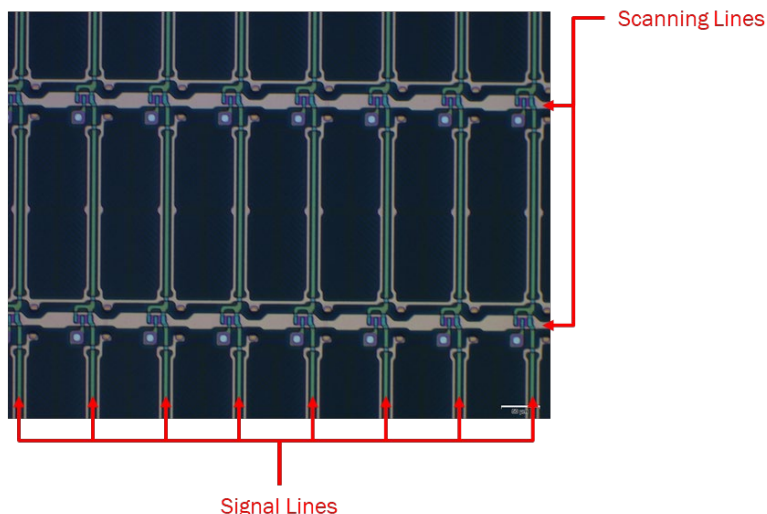
61. Typically, a TFT-LCD has the following structure shown below, comprising of a backlight, a TFT/circuitry layer, a liquid crystal layer, and a color filter of the CHOT model no. CV500U1-T01:



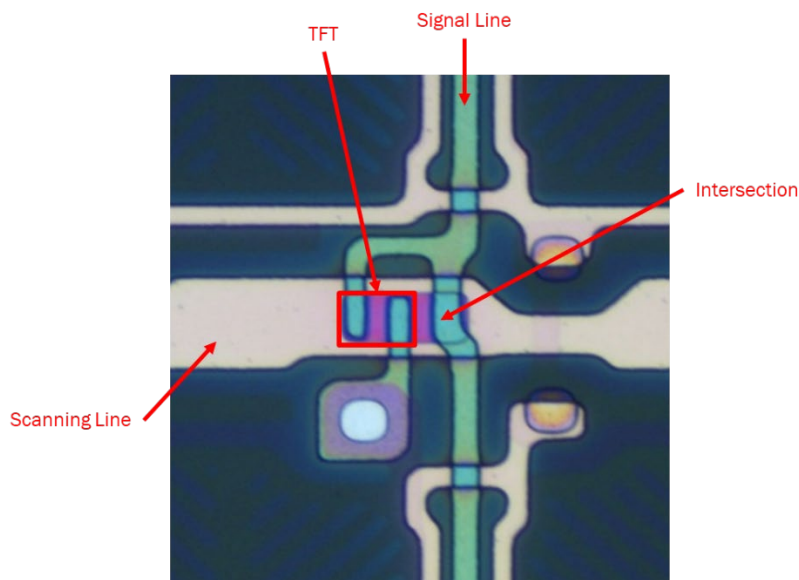
62. As shown above, the TFT-LCD panel contains a TFT array substrate and many TFTs. A teardown image below from the CHOT panel model no. CV500U1-T01 shows that he



Accused LCD Product has scanning lines on the first substrate, orthogonal signal lines, and a TFT near the intersections of scanning and signal lines.

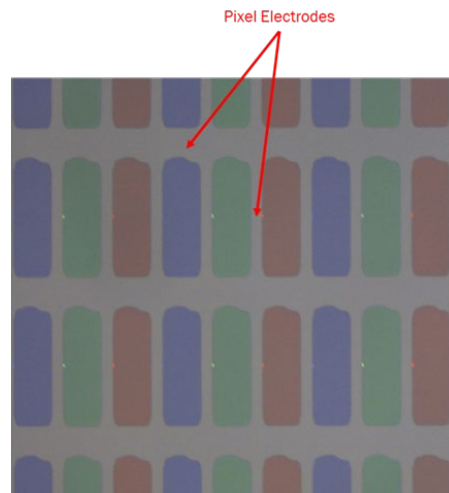


63. Each TFT is arranged near an intersection of signal and scanning lines, as shown below.



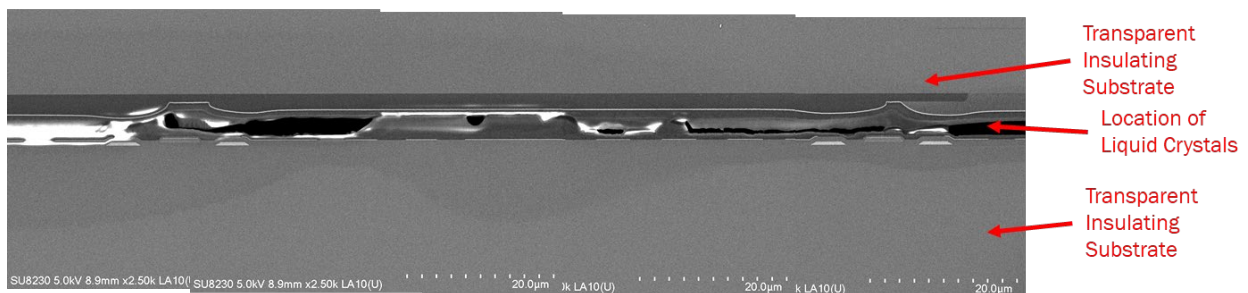
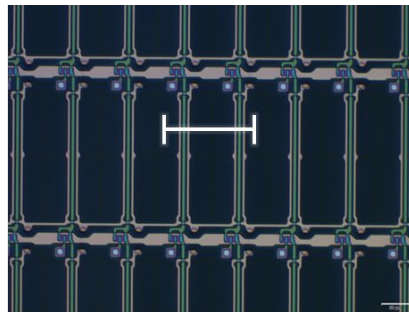
64. Each TFT acts as a switch that operates its respective individual pixel using the circuitry lines. In that way, the pixels can be turned on and off to create an image on an LCD by allowing or preventing light to pass through. The individual pixels are more apparent when a color

filter layer overlays the circuits as shown in the image below for the TFT-LCD panel model no. CV500U1-T01.

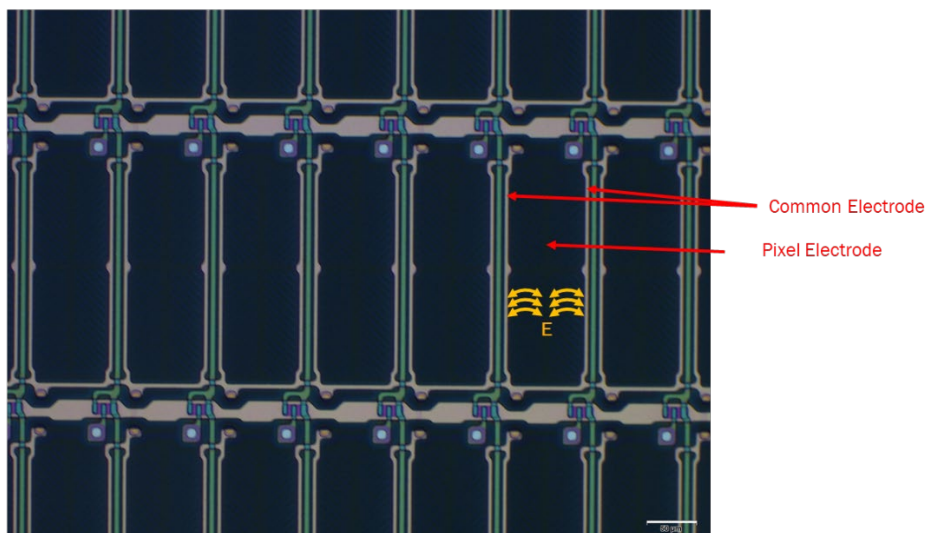


**Color Filter Layer**

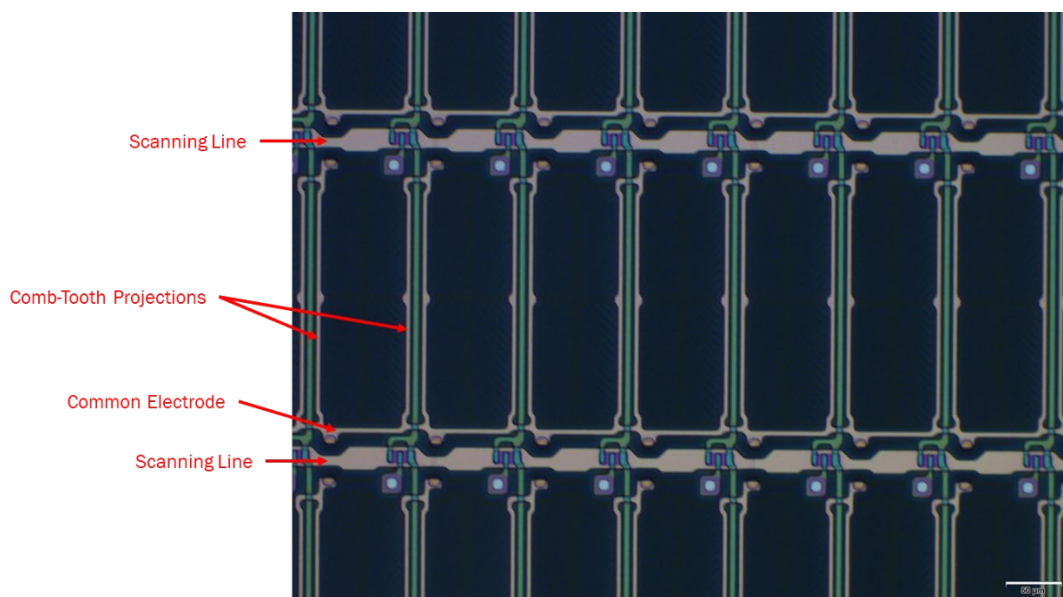
65. The Asserted Patents cover Accused LCD Products that have an active matrix type liquid crystal display device with two opposing insulating substrates and liquid crystal in-between, as illustrated below in reference to model no. CV500U1-T01.



66. The Accused LCD Product referenced above also has a pixel electrode and a common electrode with a common longitudinal axis that generate an electric field in the liquid crystal layer parallel to the substrates, as shown below.

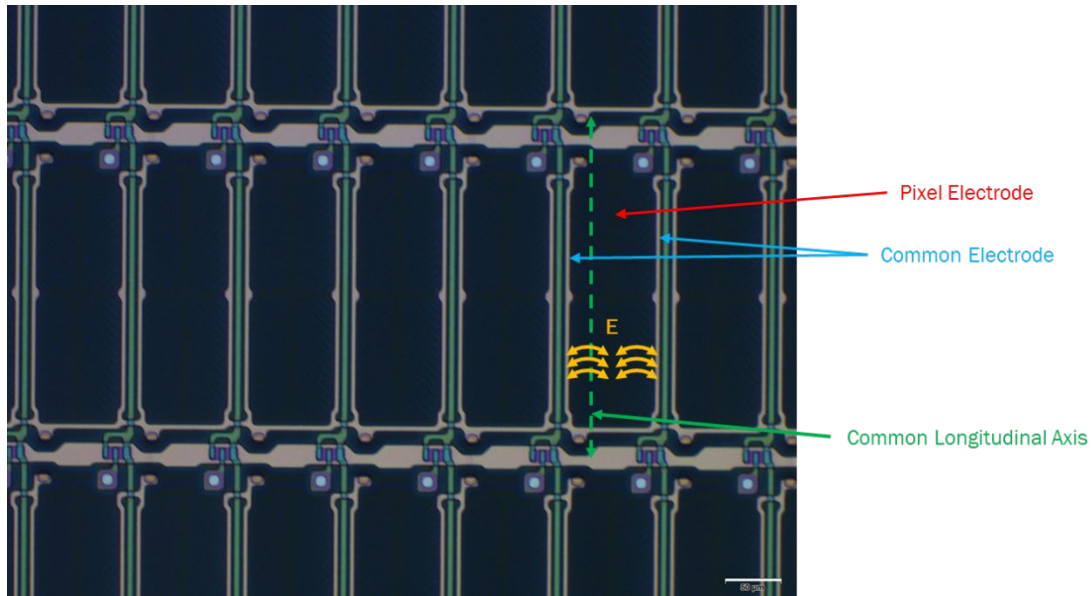


67. The Accused LCD Product also has common electrodes, as shown below, extending substantially parallel to the scanning lines and with comb-tooth projections extending toward the scanning lines.

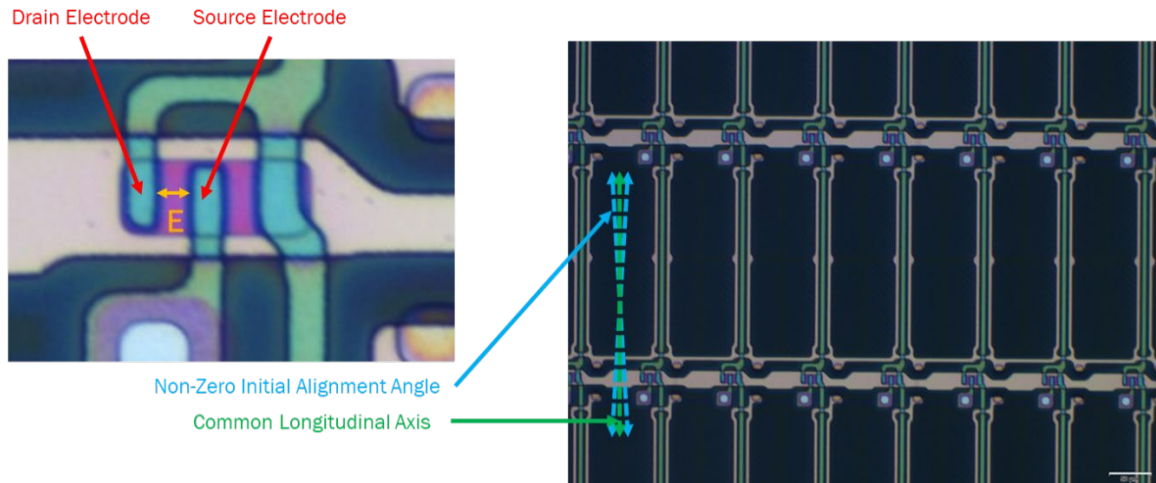


68. As shown below, the pixel electrode and the common electrode have a common longitudinal axis that generate an electric field in the liquid crystal layer parallel to the substrates.

The liquid crystal layer, shown above, has non-zero initial alignment angles relative to the common longitudinal axis.

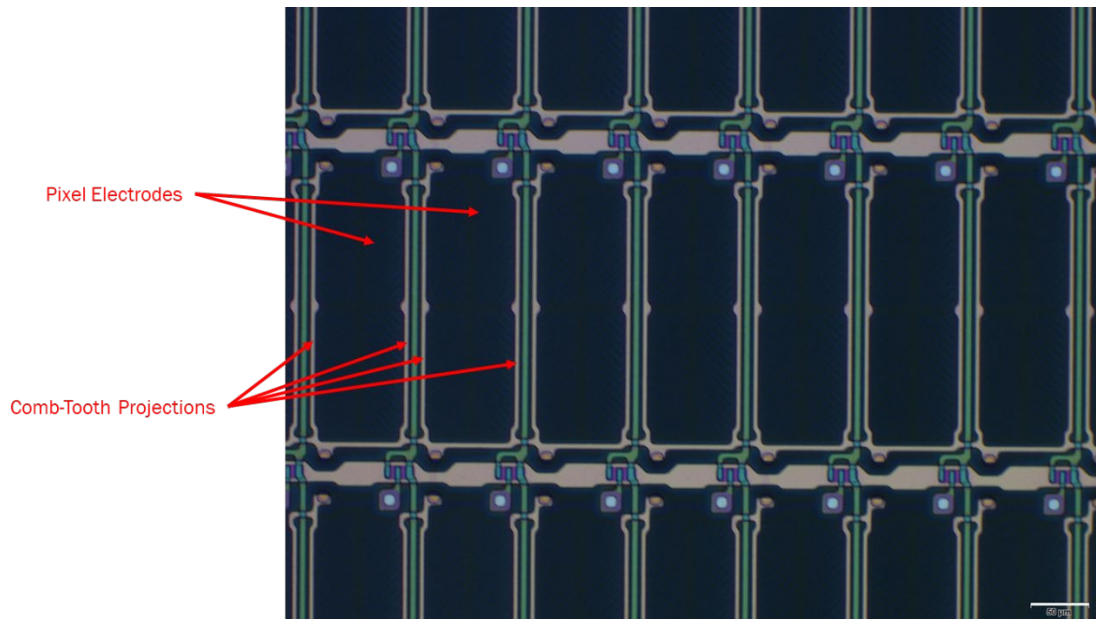


69. The Accused LCD Product, as shown below, has a thin film transistor (TFT) with a source electrode and a drain electrode adjacent to a part of the liquid crystal layer. The electric field generated by the source and drain electrodes is substantially perpendicular to the non-zero initial alignment angle. An alignment of a first part of the liquid crystal layer does not change when an electric field is generated between the source and drain electrodes.

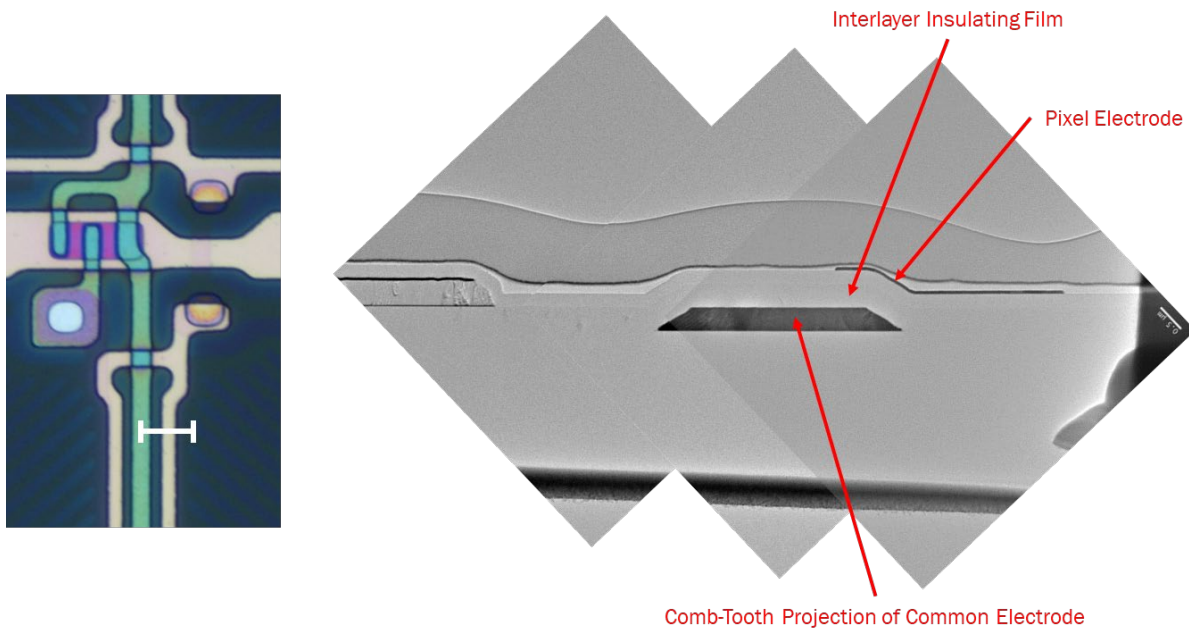




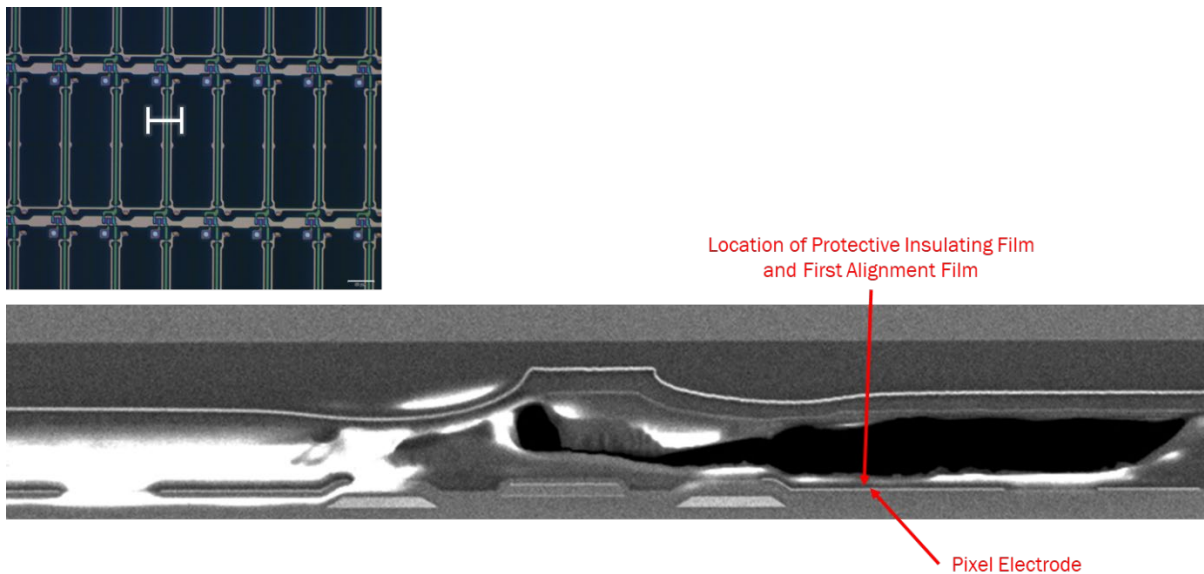
70. As shown below, the Accused LCD Product has pixel electrodes that are substantially parallel to the comb-tooth projections and located in gaps between comb-tooth projections.



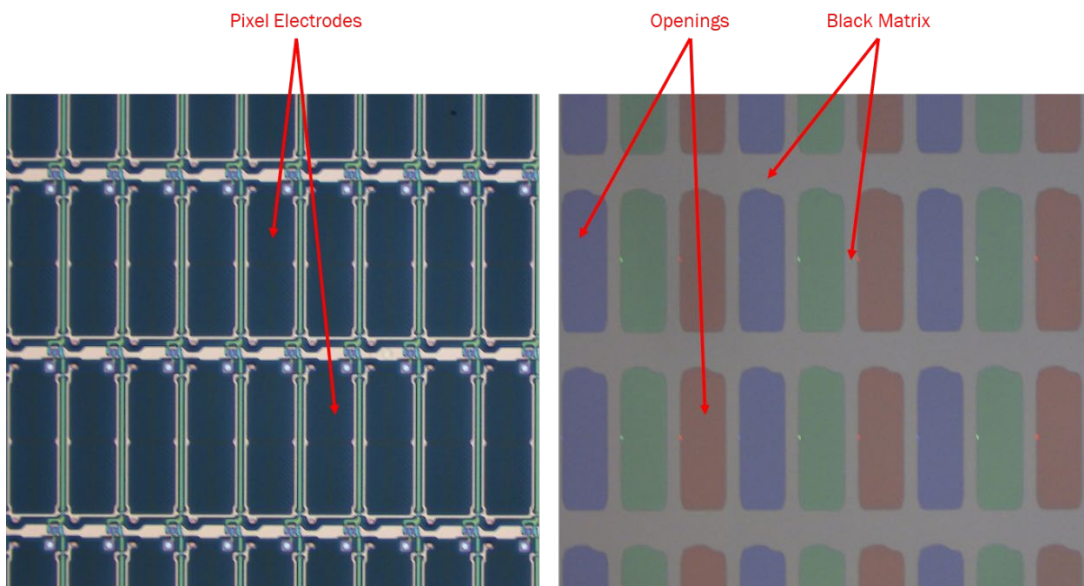
71. As shown below, the Accused LCD Product has pixel electrodes that are each opposite to a common electrode and interposed by an interlayer insulating film. The interlayer insulating film is disposed between the common electrodes and the pixel electrodes.



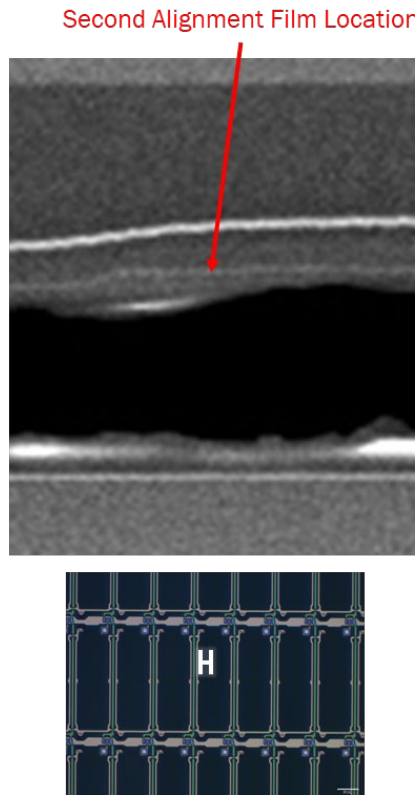
72. A first alignment film, shown below, is formed above the pixel electrodes and is interposed by a protective insulating film.



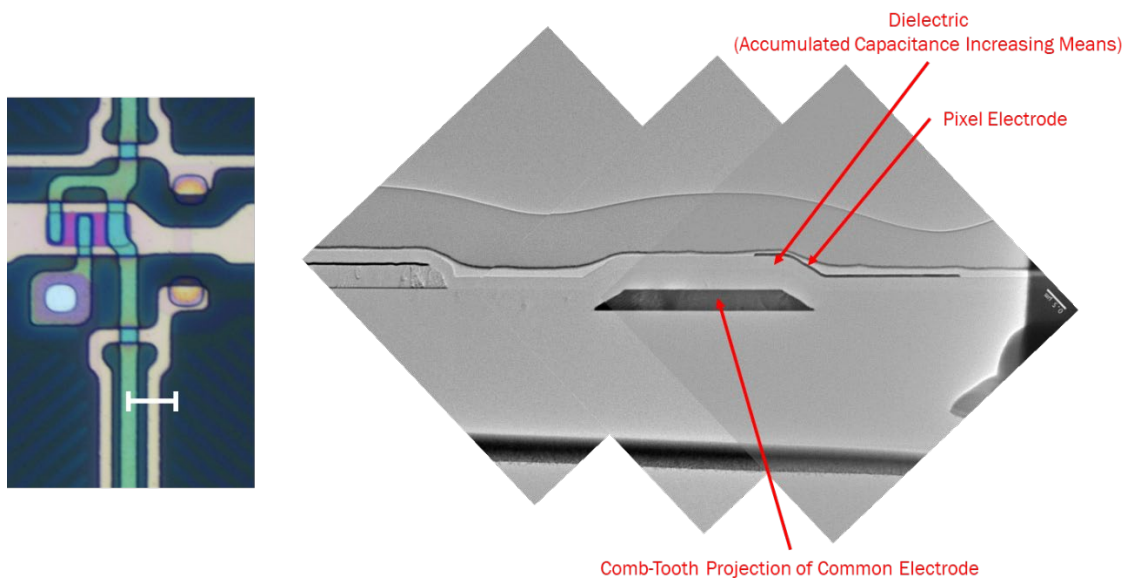
73. The Accused LCD Product, shown below, has a second substrate with a black matrix with opening in areas opposite to the pixel electrodes.



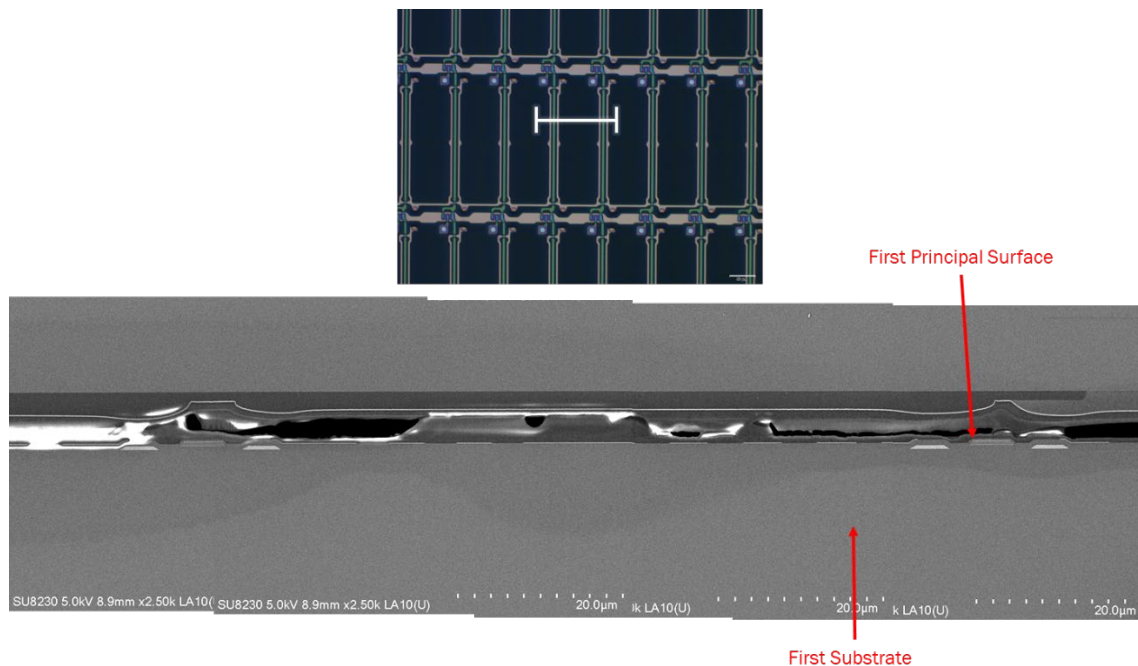
74. The Accused LCD Product, shown below, has a second alignment film is on the second substrate.



75. As shown below, the Accused LCD Product has an accumulated capacitance increasing means (e.g., dielectric between the pixel electrode and comb-tooth projections of a common electrode).

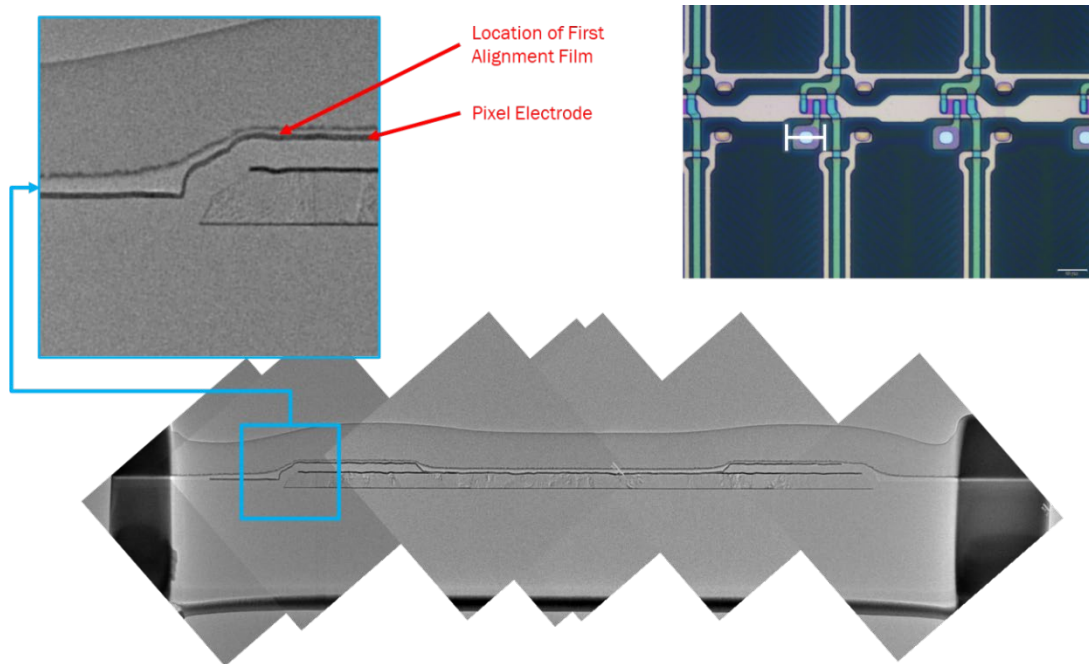


76. The Asserted Patents also cover Accused LCD Products, such as CHOT panel model no. CV500U1-T01 (incorporated in Polaroid and Hisense branded TVs), having a first substrate with a principal surface (e.g., the inner surface).

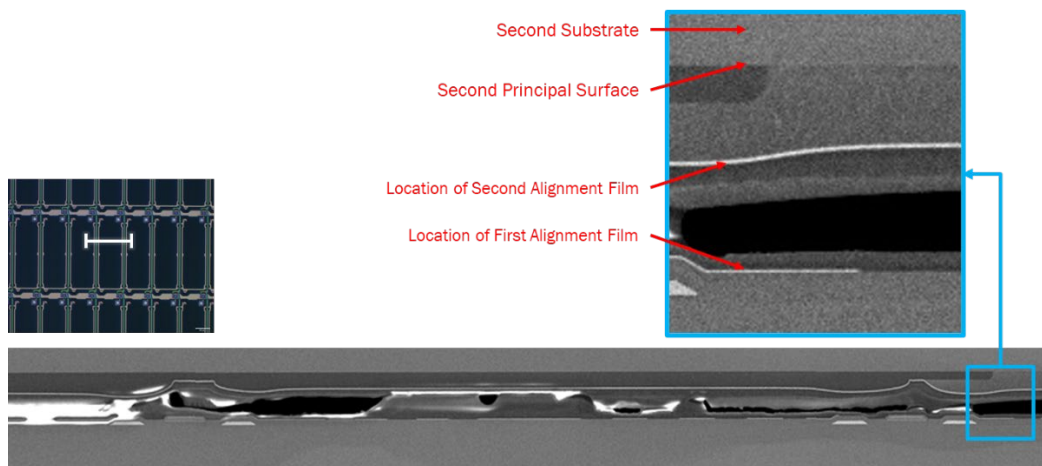


77. The Accused LCD Product, as shown below, has a first alignment film formed on the first principal surface which was subjected to an aligning treatment (necessary to set the direction of the optical/polarizing axis).

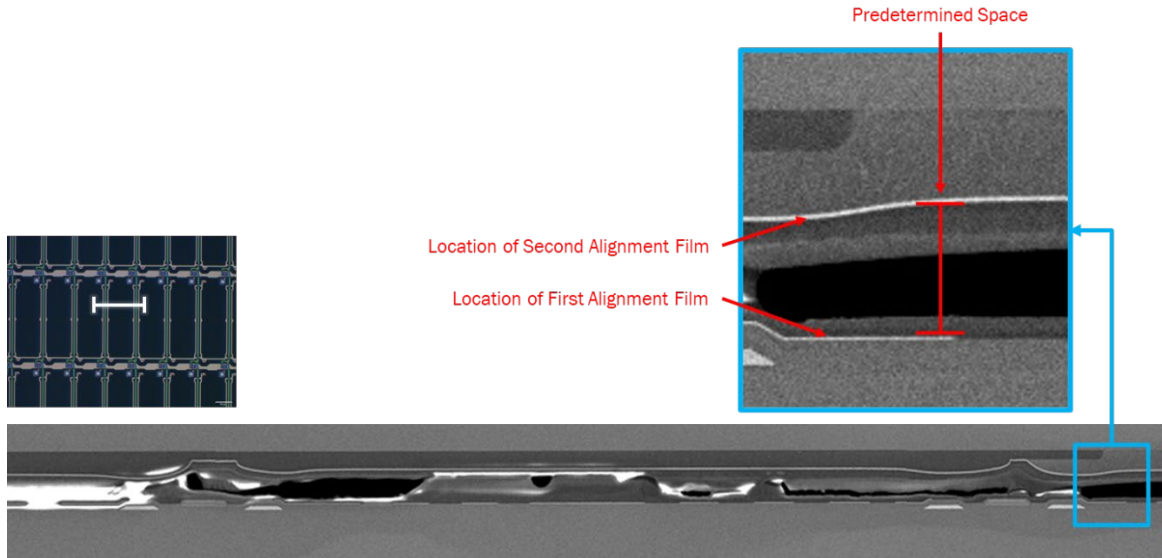




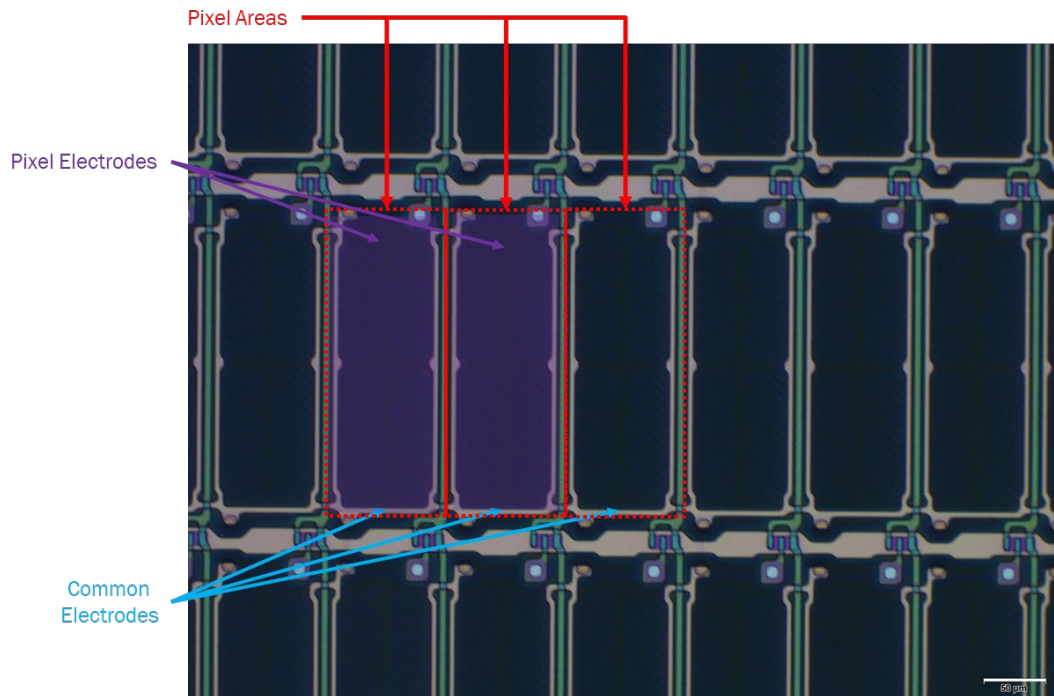
78. As shown below, the Accused LCD Product has a second substrate (e.g., a color filter layer) with a second principal surface (e.g., the inner surface). The LCD has a second alignment film formed on the principal surface of the second substrate and is oppositely disposed to the alignment film on the first substrate. Alignment is done in same direction to allow parallel alignment.



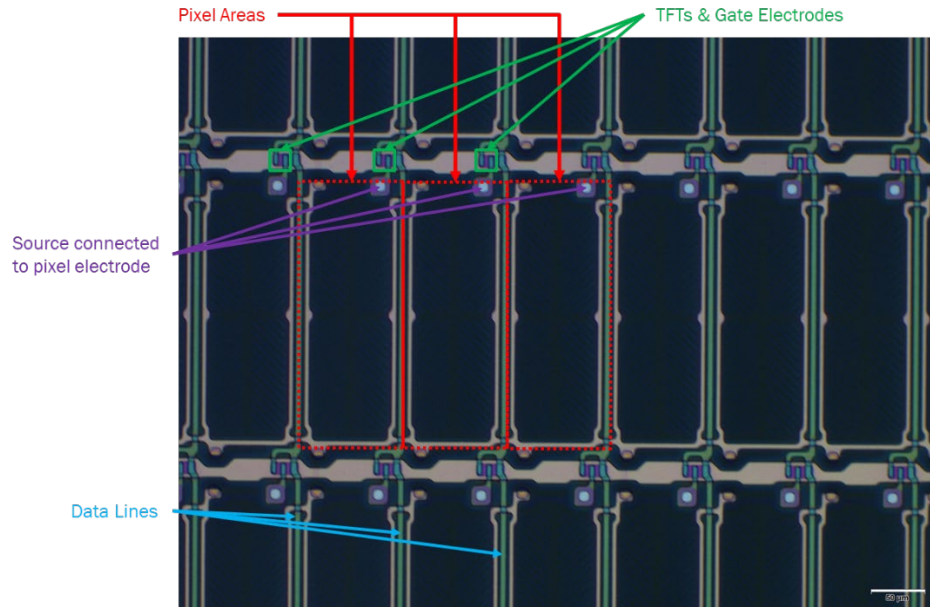
79. As shown below, a predetermined space is between the first and second alignment films in which the liquid crystal resides.



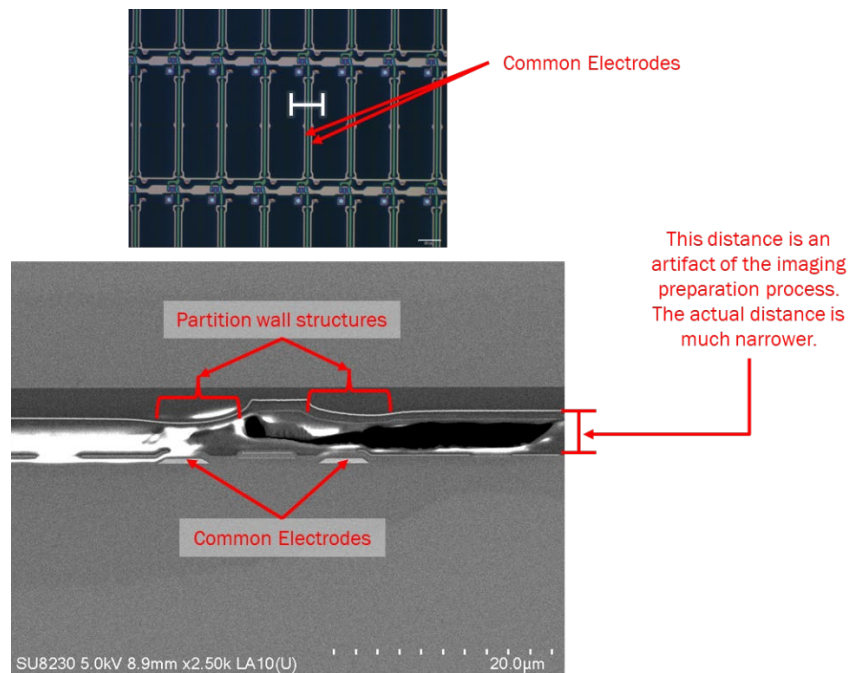
80. The Asserted Patents also cover Accused LCD Products, such as CHOT panel model no. CV500U1-T01 (incorporated in Polaroid and Hisense branded TVs), having pixel electrodes for each pixel area, which are offset from the common electrodes.



81. As shown below, the Accused LCD Product has TFTs on a TFT array substrate with sources connected to the pixel electrodes, data lines extending outside a periphery of the pixel areas, and gate electrodes extending outside the periphery of the pixel areas.



82. As shown below, the Accused LCD Product has a partition wall formed on the common electrodes that separates the optical elements from the liquid crystal.



83. The Asserted Patents also cover Accused LCD Products, such as Mstar LCD Processors such as MStar Display Controller Model No. MSDURP1601-R-0085 incorporated in Hisense LED LCD TV Model No. 50R6E and Hisense TV Model No. 43R6E and MStar Display Controller Model No. MSD6586PYU-8-00C8 incorporated in Polaroid TV Model No. 50T7U.

The labels shown below are for the Hisense TV Model No. 43R6E which utilizes the MStar Model No. MSDURP1601-R-0085 with the CHOT LCD Panel Model No. CV500U1-T01.



84. The Accused LCD Product has an MStar display controller with a clamping circuit for an LCD.



MST703

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## FEATURES

### ■ Video Decoder

- Supports NTSC, PAL and SECAM video input formats
- 2D NTSC and PAL comb-filter for Y/C separation of CVBS input
- Multiple CVBS and S-video inputs
- ACC, AGC, and DCGC (Digital Chroma Gain Control)

### ■ Color Engine

- Brightness, contrast, saturation, and hue adjustment
- 9-tap programmable multi-purpose FIR (Finite Impulse Response) filter
- Differential 3-band peaking engine
- Luminance Transient Improvement (LTI)
- Chrominance Transient Improvement (CTI)
- Black Level Extension (BLE)
- White Level Extension (WLE)
- Favor Color Compensation (FCC)
- 3-channel gamma curve adjustment

30h	<b>CLAMP_CTRL</b>	7:0	Default : 0x01	Access : R/W
	CLAMPDAC_CTRL[7:6]	7:6	00: Auto clamping control. 01: Auto clamping control, but polarity inverted. 10: Force clamping control by bit[5:0]. 11: Auto clamping control.	
	CLAMPDAC_CTRL[5:0]	5:0	Clamping control value.	

MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Mstar/MST703/1>>



85. The clamping circuit has a plurality of clamp units for receiving input signals after a DC bias is deleted.

9Ch	ADC_MD_CTRL	7:0	Default : 0x00	Access : R/W
	ADC_DCTRL	7:6	Reserved for ADC DCTRL.	
	GSHIFT_R	5	1: Enable ADC R Gain Range Shift for VD Mode.	
	GSHIFT_G	4	1: Enable ADC G Gain Range Shift for VD Mode.	
	GSHIFT_B	3	1: Enable ADC B Gain Range Shift for VD Mode.	
	ADC_VCTRL	2:0	ADC Voltage Control (Recommend Setting = 3'b011).	

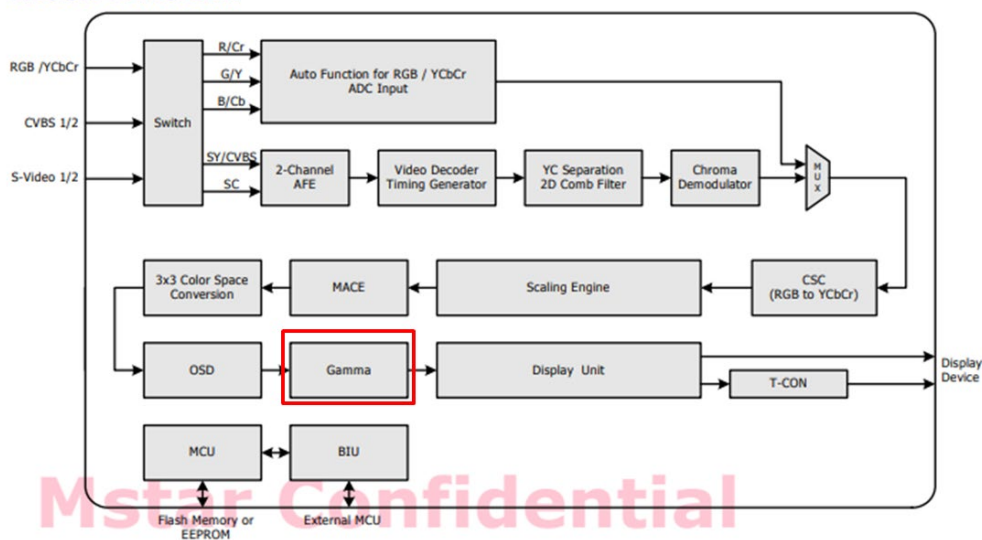
27h	REG_ADC	7:0	Default : 0x05	Access : R/W
	REG_RDAC_ICTRL	7:6	ADC R-DAC current control.	
	REG_ADC_IMODE	5:4	ADC current mode control.	
	-	3	Reserved.	
	REG_ADC_VCTRL	2:0	ADC bias voltage control.	
28h	REG_CLAMP	7:0	Default : 0x05	Access : R/W
	-	7:6	Reserved.	
	REG_REF_TST	5:4	ADC Reference circuit Test mode.	
	REG_VCLAMP_D	3:0	Select VD input Clamp voltage level.	

MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Master/MST703/1>>

86. As shown below, a predetermined clamping voltage is added to each color signal corresponding to a pedestal level (e.g. back porch).

13h (0626h)	REG0626	7:0	Default : 0x00	Access : R/W
	-	7:4	Reserved.	
	ADCB_OCAL_EN	3	1=ADC B offset calibration update enable.	
	ADCG_OCAL_EN	2	1=ADC G offset calibration update enable.	
	ADCR_OCAL_EN	1	1=ADC R offset calibration update enable.	
	RGB_OFFSET_CAL_MODE	0	1=ADCA offset calibration long mode.	
48h	PGA_OFST	7:0	Default : 0x40	Access : R/W
	PGA_OFST	7:0	ADC VREF offset= $VREF\_min/(VREF\_max-VREF\_min)*4096/16$ .	

87. The clamping circuit has gamma-correction circuits connected to the clamp units.

**BLOCK DIAGRAM**

MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Master/MST703/1>>

88. The clamping circuit, as shown below, has gamma-correction circuits connected to the clamp units.

12h (0624h)	REG0624	7:0	Default : 0x00	Access : R/W
	-	7:6	Reserved.	
	BMIDA[1:0]	5:4	0/1=select gnd-clamp/mid-clamp for ADC B. 00: 10h000. 01: 10h040. 10: 10h200.	
	GMIDA[1:0]	3:2	0/1=select gnd-clamp/mid-clamp for ADC G. 00: 10h000. 01: 10h040. 10: 10h200.	
	RMIDA[1:0]	1:0	0/1=select gnd-clamp/mid-clamp for ADC R. 00: 10h000. 01: 10h040. 10: 10h200.	

MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Master/MST703/1>>

89. The clamp units generate a clamped color signal with a black level coinciding with a characteristic of the gamma-correction circuit.

16h	<b>GRADCLR</b>	<b>7:0</b>	<b>Default : 0x00</b>	<b>Access : R/W</b>
	FCLR	7	Gradual color by Frame Color. 0: Use RCLR, GCLR, BCLR as starting gradual color. 1: Use Frame Color as starting gradual color.	
	-	6	Reserved.	
	RCLR[1:0]	5:4	Red starting gradual Color. 00: Red color is 00h. 01: Red color is 55h. 10: Red color is AAh. 11: Red color is FFh.	
	GCLR[1:0]	3:2	Green starting gradual Color. 00: Green color is 00h. 01: Green color is 55h. 10: Green color is AAh. 11: Green color is FFh.	
	BCLR[1:0]	1:0	Blue starting gradual Color. 00: Blue color is 00h. 01: Blue color is 55h. 10: Blue color is AAh. 11: Blue color is FFh.	
4Bh	<b>PGA_OFST</b>	<b>7:0</b>	<b>Default : 0x40</b>	<b>Access : R/W</b>
	PGA_OFST	7:0	ADC VREF offset=VREF_min/(VREF_max-VREF_min)*4096/16.	

MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Master/MST703/1>>

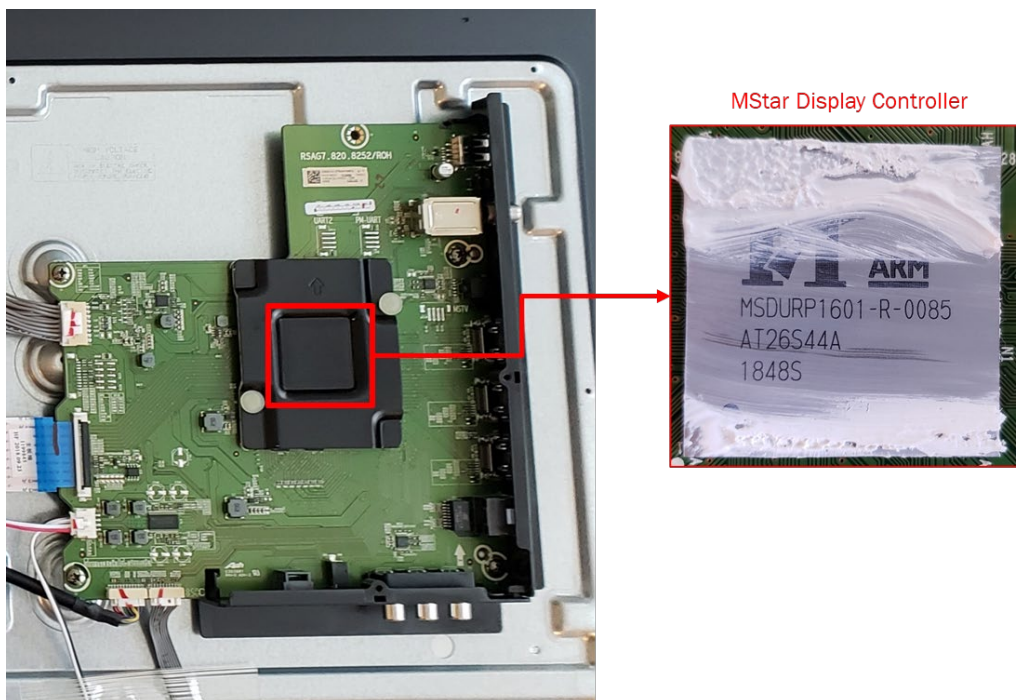
90. Clamping voltage is added to the pedestal level in a predetermined timing of the input color signal in response to a second control signal (e.g., setting a second clamp selection).

12h (0624h)	<b>REG0624</b>	<b>7:0</b>	<b>Default : 0x00</b>	<b>Access : R/W</b>
	-	7:6	Reserved.	
	BMIDA[1:0]	5:4	0/1=select gnd-clamp/mid-clamp for ADC B. 00: 10h000. 01: 10h040. 10: 10h200.	
	GMIDA[1:0]	3:2	0/1=select gnd-clamp/mid-clamp for ADC G. 00: 10h000. 01: 10h040. 10: 10h200.	
	RMIDA[1:0]	1:0	0/1=select gnd-clamp/mid-clamp for ADC R. 00: 10h000. 01: 10h040. 10: 10h200.	

MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Master/MST703/1>>

91. The Asserted Patents also cover Accused LCD Products having a driving circuit for its LCD panel in the display controller chip, for example, the MStar display controller Model No. MSDURP1601-R-0085.



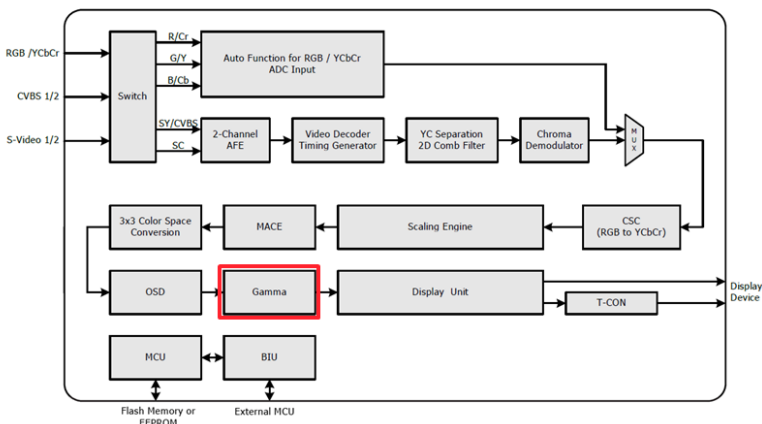


92. The Accused LCD Product has a driving circuit for its LCD panel in the MStar display controller chip.



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#### BLOCK DIAGRAM



#### ■ Color Engine

- Brightness, contrast, saturation, and hue adjustment
- 9-tap programmable multi-purpose FIR (Finite Impulse Response) filter
- Differential 3-band peaking engine
- Luminance Transient Improvement (LTI)
- Chrominance Transient Improvement (CTI)
- Black Level Extension (BLE)
- White Level Extension (WLE)
- Favor Color Compensation (FCC)
- 3-channel gamma curve adjustment

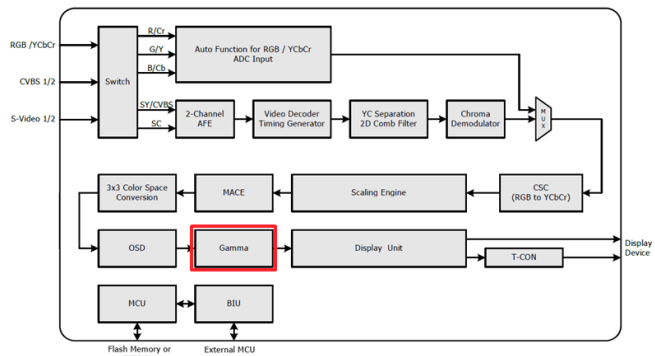
MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Master/MST703/1>>

93. As shown below, the driving circuit has a gamma compensating circuit.



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#### BLOCK DIAGRAM



#### ■ Color Engine

- Brightness, contrast, saturation, and hue adjustment
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- Chrominance Transient Improvement (CTI)
- Black Level Extension (BLE)
- White Level Extension (WLE)
- Favor Color Compensation (FCC)
- 3-channel gamma curve adjustment

MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Mstar/MST703/1>>

94. The driving circuit applies a gamma compensation to a red video signal, a green video signal, and a blue video signal, as shown below.

Scaler Register (Bank=00, Registers 01h ~ 9Fh)				
Index	Name	Bits	Description	
	GAMMA_EN	0	Gamma Enable. 0: Disable. 1: Enable.	
91h	GAMMA_ADR_PORT	7:0	Default : 0x00	Access : R/W
	GMA_ADR_PORT[7:0]	7:0	Gamma Address Port [7:0].	
92h	GAMMA_DAT_PORT	7:0	Default : 0x00	Access : R/W
	GMA_DAT_PORT[7:0]	7:0	Gamma Data Port [7:0].	
93h	R_BIAS	7:0	Default : 0x00	Access : R/W
	R_BIAS[7:0]	7:0	DC level in R channel positive part.	
94h	R_RATIO	7:0	Default : 0x00	Access : R/W
	R_RATIO[7:0]	7:0	Ratio in R channel positive part.	
95h	G_BIAS	7:0	Default : 0x00	Access : R/W
	G_BIAS[7:0]	7:0	DC level in G channel positive part.	
96h	G_RATIO	7:0	Default : 0x00	Access : R/W
	G_RATIO[7:0]	7:0	Ratio in G channel positive part.	
97h	B_BIAS	7:0	Default : 0x00	Access : R/W
	B_BIAS[7:0]	7:0	DC level in B channel positive part.	
98h	B_RATIO	7:0	Default : 0x00	Access : R/W
	B_RATIO[7:0]	7:0	Ratio in B channel positive part.	

MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Mstar/MST703/1>>

95. As indicated below, reference voltages are supplied to the gamma compensating circuits.

Scaler Register (Bank=00, Registers 01h ~ 9Fh)				
Index	Name	Bits	Description	
	GAMMA_EN	0	Gamma Enable. 0: Disable. 1: Enable.	
91h	GAMMA_ADR_PORT	7:0	Default : 0x00	Access : R/W
	GMA_ADR_PORT[7:0]	7:0	Gamma Address Port [7:0].	
92h	GAMMA_DAT_PORT	7:0	Default : 0x00	Access : R/W
	GMA_DAT_PORT[7:0]	7:0	Gamma Data Port [7:0].	
93h	R_BIAS	7:0	Default : 0x00	Access : R/W
	R_BIAS[7:0]	7:0	DC level in R channel positive part.	
94h	R_RATIO	7:0	Default : 0x00	Access : R/W
	R_RATIO[7:0]	7:0	Ratio in R channel positive part.	
95h	G_BIAS	7:0	Default : 0x00	Access : R/W
	G_BIAS[7:0]	7:0	DC level in G channel positive part.	
96h	G_RATIO	7:0	Default : 0x00	Access : R/W
	G_RATIO[7:0]	7:0	Ratio in G channel positive part.	
97h	B_BIAS	7:0	Default : 0x00	Access : R/W
	B_BIAS[7:0]	7:0	DC level in B channel positive part.	
98h	B_RATIO	7:0	Default : 0x00	Access : R/W
	B_RATIO[7:0]	7:0	Ratio in B channel positive part.	

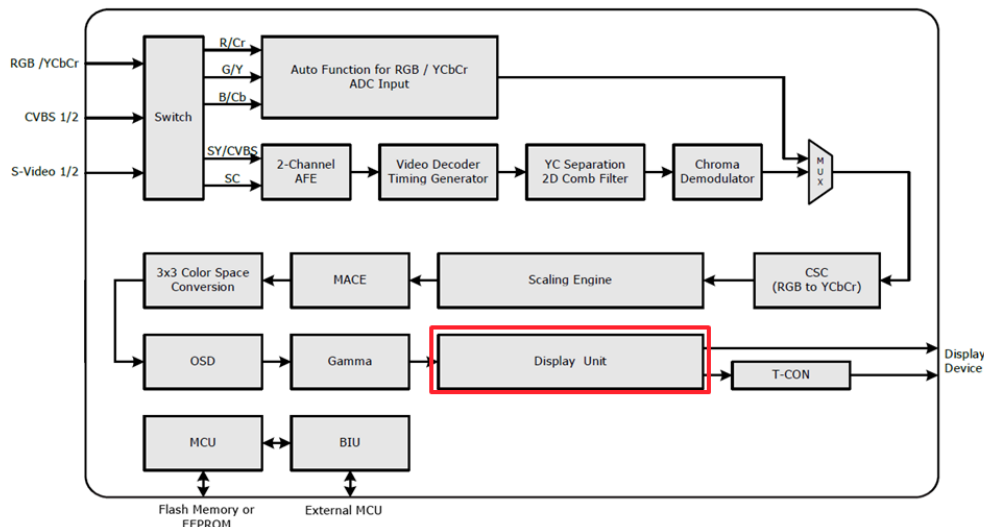
MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Master/MST703/1>>

96. A data electrode driving circuit is present for driving the red, green, and blue video signals.



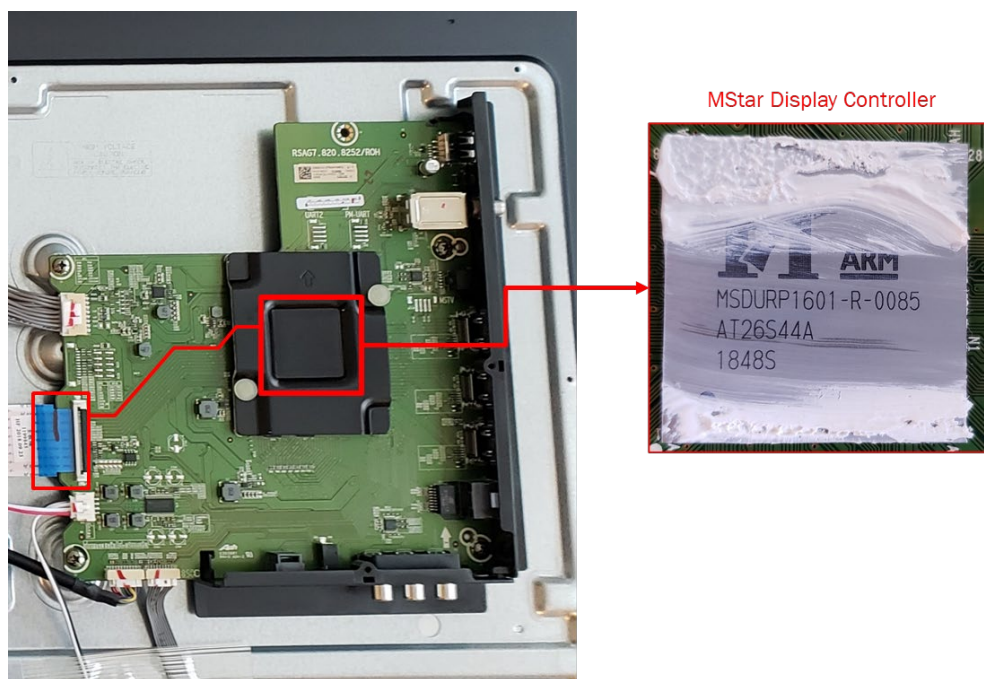
**MST703**  
Small Size LCD TV Processor with Video Decoder  
Preliminary Data Sheet Version 0.1

### BLOCK DIAGRAM




MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Master/MST703/1>>

97. As illustrated below, a data electrode driving circuit is present for driving the red, green, and blue video signals.



98. As indicated below, the reference voltages are generated to provide optimum gamma compensation.



**Mstar**  
semiconductor

**MST703**  
Small Size LCD TV Processor with Video Decoder  
Preliminary Data Sheet Version 0.1

**FEATURES**

- Video Decoder
  - Supports NTSC, PAL and SECAM video input formats
  - 2D NTSC and PAL comb-filter for Y/C separation of CVBS input
  - Multiple CVBS and S-video inputs
  - ACC, AGC, and DCGC (Digital Chroma Gain Control)

- Color Engine
  - Brightness, contrast, saturation, and hue adjustment
  - 9-tap programmable multi-purpose FIR (Finite Impulse Response) filter
  - Differential 3-band peaking engine
  - Luminance Transient Improvement (LTI)
  - Chrominance Transient Improvement (CTI)
  - Black Level Extension (BLE)
  - White Level Extension (WLE)
  - Favor Color Compensation (FCC)
  - 3-channel gamma curve adjustment

Mstar Advanced Color Engine-3®: automatic picture enhancement for brilliant, fresh color; intensified contrast and details; vivid skin tones; sharp edges; enhanced depth of field perception; and accurate and independent color control

<http://www.t-micro.com/PDFs/Claris%2017%20inch%20spec%20sheet.pdf>

MST703 Preliminary Data Sheet, <<https://datasheetspdf.com/pdf-file/770936/Mstar/MST703/1>>

**COUNT I**

(INFRINGEMENT OF U.S. PATENT NO. 6,404,474)

99. Plaintiff incorporates paragraphs 1 through 98 herein by reference.

100. VPV is the assignee of the '474 patent, entitled "Horizontal electric field LCD with increased capacitance between pixel and common electrodes," with ownership of all substantial rights in the '474 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

101. The '474 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '474 patent issued from U.S. Patent Application No. 09/357,060.

102. Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '474 patent in this judicial district and elsewhere in Texas and the United States.

103. Upon information and belief, Defendant CHOT conducts research and development, manufactures, and sells TFT-LCD products, including panels and related components. These products are incorporated into electronic devices such as TVs, including TVs manufactured by Empire and sold in the U.S. under the Polaroid brand. Defendant CHOT further manufactures infringing TFT-LCD panels and related components on behalf of and for the benefit of the Hisense Defendants. These panels and related components are incorporated into electronic devices manufactured by the Hisense Defendants, which are marketed and sold under at least the Hisense brand.

104. Upon information and belief, the Hisense Defendants conduct research and development, manufacture, and sell electronic devices, including TVs marketed and sold under the Hisense brand in the United States. These electronic devices of the Hisense Defendants incorporate

infringing TFT-LCD panels and related components (including those manufactured by Defendant CHOT), device housings, backlight modules, display controllers, and processes related to the same.

105. Defendants directly infringe the '474 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing Accused LCD Products, their components, and/or products containing same that incorporate the fundamental technologies covered by the '474 patent to, for example, alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, upon information and belief, Defendants sell and make Accused LCD Products outside of the United States, deliver those products to their alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers in the United States, or in the case that Defendants deliver the Accused LCD Products outside of the United States, Defendants do so intending and/or knowing that those panels are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '474 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp.2d 653, 658 (E.D. Tex. 2013).

106. Defendant CHOT directly infringes the '474 patent through its direct involvement in the activities of Empire on behalf of and for the benefit of Defendant CHOT. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Empire and importing the Accused LCD Products into the United States for Empire. Upon information and belief, Defendant CHOT and Empire conduct activities that constitute direct infringement of the '474 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. Defendant CHOT is vicariously liable for the infringing conduct of Empire (under both the alter ego and agency theories) because, as an example and, upon



information and belief, Defendant CHOT receives a direct financial benefit from Empire's infringement.

107. The Hisense Defendants directly infringe the '474 patent through their direct involvement in the activities of their U.S.-based subsidiaries, including, but not limited to, Hisense America, conducted on behalf of and for the benefit of the Hisense Defendants. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Hisense America and Hisense America importing the Accused LCD Products into the United States for the Hisense Defendants. Upon information and belief, the Hisense Defendants and Hisense America conduct activities that constitute direct infringement of the '474 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. The Hisense Defendants are vicariously liable for the infringing conduct of Hisense America (under both the alter ego and agency theories). As an example and upon information and belief, the Hisense Defendants and their subsidiaries in the Hisense Group, including Hisense America, are essentially the same company, and the Hisense Defendants have the right and ability to control their associates' and subsidiaries' infringing acts (including those of Hisense America) and receive a direct financial benefit from that infringement.

108. For example, Defendants infringe claim 1 of the '474 patent via the Accused LCD Products such as CHOT TFT-LCD model no. CV500U1-T01 incorporated into Polaroid TV model no. 50T7U and incorporated into Hisense LED LCD TV Model No. 50R6E. That Accused LCD Product includes an "active matrix type liquid crystal display device comprising" each of the limitations of claim 1. The technology discussion above and the example Accused LCD Product provide context for Plaintiff's allegations that each of those limitations are met. For example, the Accused LCD Product includes two opposing transparent insulating substrates and liquid crystal



interposed therebetween, wherein said liquid crystal is controlled by generating an electric field substantially parallel to the liquid crystal layer with a voltage applied between pixel electrodes and common electrodes both disposed on the first of said substrates, said display device further comprising: on said first substrate: a plurality of scanning lines and a plurality of signal lines orthogonal to one another; a thin film transistor provided near each intersection of a scanning line and a signal line; common electrodes extending substantially parallel to said scanning lines and having a plurality of comb-tooth projections extending toward said scanning lines; pixel electrodes formed substantially parallel to the comb-tooth projections in gaps between the adjacent comb-tooth projections of said common electrodes when said substrate is viewed from the normal direction, at least a portion of each pixel electrode being opposite to a common electrode interposed by an interlayer insulating film; an interlayer insulating film disposed between said common electrodes and said pixel electrodes; and a first alignment film formed above said pixel electrodes interposed by a protective insulating film; on said second substrate: a black matrix provided with openings in areas opposite to each of said pixel electrodes; and a second alignment film; and said active matrix type liquid crystal display device further comprising: accumulated capacitance increasing means for obtaining an accumulated capacitance between said pixel electrode and said common electrodes larger than that generated when said interlayer insulating film is of even thickness and flat structure.

109. At a minimum, Defendant CHOT and the Hisense Defendants have known of the '474 patent at least as early as the filing date of the complaint. In addition, CHOT has known about the '474 patent since at least January 24, 2020 when a letter addressed to the General Counsel of CHOT was received by CHOT, where the letter provided CHOT notice of its infringement of the '474 patent. In addition, the Hisense Defendants have known about the '474 patent since at least

as early as July 19, 2018, when the Hisense Defendants had access to a data room providing notice of their infringement. Further, the Hisense Defendants were again notified on October 26, 2020 that they had access to the data room providing notice of their infringement of the '474 patent.

110. Upon information and belief, since at least the above-mentioned date when Defendants were on notice of their infringement, Defendants have actively induced, under U.S.C. § 271(b), distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused LCD Products that include or are made using all of the limitations of one or more claims of the '474 patent to directly infringe one or more claims of the '474 patent by using, offering for sale, selling, and/or importing the Accused LCD Products. Since at least the notice provided on the above-mentioned date, Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '474 patent. Upon information and belief, Defendants intend to cause, and have taken affirmative steps to induce infringement by distributors, importers, customers, subsidiaries, and/or consumers by, inter alia, creating advertisements that promote the infringing use of the Accused LCD Products, creating established distribution channels for the Accused LCD Products into and within the United States, manufacturing the Accused LCD Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States. *See, e.g., Empire Electronic Corporation, LINKEDIN*, <https://www.linkedin.com/company/empire-electronic-corporation/about/> (stating that Polaroid-branded TVs are sold and marketed in the U.S.: “we service some of the largest retailers in the world and partner with leading technology companies to grow our ever expanding [sic] portfolio of products and services”) (last visited on July 12, 2021); *Mission and Vision*, HISENSE,

<https://www.hisense-usa.com/company/> (touting Hisense USA's vision "[t]o become the most trusted company and loved brand in the U.S. Consumer Electronic and Home Appliance industries by offering solutions that customers desire. We also strive to be a company that everyone wants to work for in the U.S.") (last visited on July 12, 2021).

111. Upon information and belief, despite having knowledge of the '474 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '474 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. Defendants' infringing activities relative to the '474 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

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

## **COUNT II**

(INFRINGEMENT OF U.S. PATENT NO. 7,009,673)

113. Plaintiff incorporates paragraphs 1 through 112 herein by reference.

114. VPV is the assignee of the '673 patent, entitled "Active matrix liquid crystal display having a thin film transistor over which alignment of liquid crystal molecules does not change," with ownership of all substantial rights in the '673 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

115. The '673 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '673 patent issued from U.S. Patent Application No. 10/656,138.

116. Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '673 patent in this judicial district and elsewhere in Texas and the United States.

117. Upon information and belief, Defendant CHOT conducts research and development, manufactures, and sells TFT-LCD products, including panels and related components. These products are incorporated into electronic devices such as TVs, including TVs manufactured by Empire and sold in the U.S. under the Polaroid brand. Defendant CHOT further manufactures infringing TFT-LCD panels and related components on behalf of and for the benefit of the Hisense Defendants. These panels and related components are incorporated into electronic devices manufactured by the Hisense Defendants, which are marketed and sold under at least the Hisense brand.

118. Upon information and belief, the Hisense Defendants conduct research and development, manufacture, and sell electronic devices, including TVs marketed and sold under the Hisense brand in the United States. These electronic devices of the Hisense Defendants incorporate infringing TFT-LCD panels and related components (including those manufactured by Defendant CHOT), device housings, backlight modules, display controllers, and processes related to the same.

119. Defendants directly infringe the '673 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing Accused LCD Products, their components, and/or products containing same that incorporate the fundamental technologies covered by the '673 patent

to, for example, alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, upon information and belief, Defendants sell and make Accused LCD Products outside of the United States, deliver those products to their alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers in the United States, or in the case that Defendants deliver the Accused LCD Products outside of the United States, Defendants do so intending and/or knowing that those panels are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '673 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp.2d 653, 658 (E.D. Tex. 2013).

120. Defendant CHOT directly infringes the '673 patent through its direct involvement in the activities of Empire on behalf of and for the benefit of Defendant CHOT. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Empire and importing the Accused LCD Products into the United States for Empire. Upon information and belief, Defendant CHOT and Empire conduct activities that constitute direct infringement of the '673 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. Defendant CHOT is vicariously liable for the infringing conduct of Empire (under both the alter ego and agency theories) because, as an example and, upon information and belief, Defendant CHOT receives a direct financial benefit from Empire's infringement.

121. The Hisense Defendants directly infringe the '673 patent through their direct involvement in the activities of their U.S.-based subsidiaries, including, but not limited to, Hisense America, conducted on behalf of and for the benefit of the Hisense Defendants. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Hisense

America and Hisense America importing the Accused LCD Products into the United States for the Hisense Defendants. Upon information and belief, the Hisense Defendants and Hisense America conduct activities that constitute direct infringement of the '673 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. The Hisense Defendants are vicariously liable for the infringing conduct of Hisense America (under both the alter ego and agency theories). As an example and upon information and belief, the Hisense Defendants and their subsidiaries in the Hisense Group, including Hisense America, are essentially the same company, and the Hisense Defendants have the right and ability to control their associates' and subsidiaries' infringing acts (including those of Hisense America) and receive a direct financial benefit from that infringement.

122. For example, Defendants infringe claim 1 of the '673 patent via the Accused LCD Products such as CHOT TFT-LCD model no. CV500U1-T01 incorporated into Polaroid TV model no. 50T7U and incorporated into Hisense LED LCD TV Model No. 50R6E. That Accused LCD Product include an “active matrix liquid crystal display, comprising” each of the limitations of claim 1. The technology discussion above and the example Accused LCD Product provide context for Plaintiff's allegations that each of those limitations are met. For example, the Accused LCD Product includes a pair of substrates with a liquid crystal layer between said substrates; a pixel electrode and a common electrode having a common longitudinal axis and that are arranged and adapted to generate an electric field parallel to said substrates in said liquid crystal layer, said liquid crystal layer having a non-zero initial alignment angle relative to the common longitudinal axis; and a thin film transistor having a source electrode and a drain electrode adjacent to a first part of said liquid crystal layer, said source and drain electrodes being arranged and adapted so that an electric field generated between said source and drain electrodes is one of substantially

parallel to and perpendicular to the non-zero initial alignment angle, whereby an alignment of the first part of said liquid crystal layer does not change when an electric field is generated between said source and drain electrodes.

123. At a minimum, Defendant CHOT and the Hisense Defendants have known of the '673 patent at least as early as the filing date of the complaint. In addition, CHOT has known about the '673 patent since at least January 24, 2020 when a letter addressed to the General Counsel of CHOT was received by CHOT, where the letter provided CHOT notice of its infringement of the '673 patent. In addition, the Hisense Defendants have known about the '673 patent since at least as early as October 26, 2020, when the Hisense Defendants had access to a data room providing notice of their infringement of the '673 patent.

124. Upon information and belief, since at least the above-mentioned date when Defendants were on notice of their infringement, Defendants have actively induced, under U.S.C. § 271(b), distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused LCD Products that include or are made using all of the limitations of one or more claims of the '673 patent to directly infringe one or more claims of the '673 patent by using, offering for sale, selling, and/or importing the Accused LCD Products. Since at least the notice provided on the above-mentioned date, Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '673 patent. Upon information and belief, Defendants intend to cause, and have taken affirmative steps to induce infringement by distributors, importers, customers, subsidiaries, and/or consumers by, inter alia, creating advertisements that promote the infringing use of the Accused LCD Products, creating established distribution channels for the Accused LCD Products into and within the United States, manufacturing the Accused LCD Products in conformity with U.S. laws and regulations,



distributing or making available instructions or manuals for these products to purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States. *See, e.g., Empire Electronic Corporation*, LINKEDIN, <https://www.linkedin.com/company/empire-electronic-corporation/about/> (stating that Polaroid-branded TVs are sold and marketed in the U.S.: “we service some of the largest retailers in the world and partner with leading technology companies to grow our ever expanding [sic] portfolio of products and services”) (last visited on July 12, 2021); *Mission and Vision*, HISENSE, <https://www.hisense-usa.com/company/> (touting Hisense USA’s vision “[t]o become the most trusted company and loved brand in the U.S. Consumer Electronic and Home Appliance industries by offering solutions that customers desire. We also strive to be a company that everyone wants to work for in the U.S.”) (last visited July 12, 2021).

125. Upon information and belief, despite having knowledge of the ’673 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’673 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. Defendants’ infringing activities relative to the ’673 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

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

**COUNT III**

(INFRINGEMENT OF U.S. PATENT NO. 6,078,375)

127. Plaintiff incorporates paragraphs 1 through 126 herein by reference.

128. VPV is the assignee of the '375 patent, entitled "Liquid crystal display device with wide viewing angle," with ownership of all substantial rights in the '375 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

129. The '375 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '375 patent issued from U.S. Patent Application No. 09/154,039.

130. Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '375 patent in this judicial district and elsewhere in Texas and the United States.

131. Upon information and belief, Defendant CHOT conducts research and development, manufactures, and sells TFT-LCD products, including panels and related components. These products are incorporated into electronic devices such as TVs, including TVs manufactured by Empire and sold in the U.S. under the Polaroid brand. Defendant CHOT further manufactures infringing TFT-LCD panels and related components on behalf of and for the benefit of the Hisense Defendants. These panels and related components are incorporated into electronic devices manufactured by the Hisense Defendants, which are marketed and sold under at least the Hisense brand.

132. Upon information and belief, the Hisense Defendants conduct research and development, manufacture, and sell electronic devices, including TVs marketed and sold under the Hisense brand in the United States. These electronic devices of the Hisense Defendants incorporate infringing TFT-LCD panels and related components (including those manufactured by Defendant

CHOT), device housings, backlight modules, display controllers, and processes related to the same.

133. Defendants directly infringe the '375 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing Accused LCD Products, their components, and/or products containing same that incorporate the fundamental technologies covered by the '375 patent to, for example, alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, upon information and belief, Defendants sell and make Accused LCD Products outside of the United States, deliver those products to their alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers in the United States, or in the case that Defendants deliver the Accused LCD Products outside of the United States, Defendants do so intending and/or knowing that those panels are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '375 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp.2d 653, 658 (E.D. Tex. 2013).

134. Defendant CHOT directly infringes the '375 patent through its direct involvement in the activities of Empire on behalf of and for the benefit of Defendant CHOT. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Empire and importing the Accused LCD Products into the United States for Empire. Upon information and belief, Defendant CHOT and Empire conduct activities that constitute direct infringement of the '375 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. Defendant CHOT is vicariously liable for the infringing conduct of Empire (under both the alter ego and agency theories) because, as an example and, upon

information and belief, Defendant CHOT receives a direct financial benefit from Empire's infringement.

135. The Hisense Defendants directly infringe the '375 patent through their direct involvement in the activities of their U.S.-based subsidiaries, including, but not limited to, Hisense America, conducted on behalf of and for the benefit of the Hisense Defendants. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Hisense America and Hisense America importing the Accused LCD Products into the United States for the Hisense Defendants. Upon information and belief, the Hisense Defendants and Hisense America conduct activities that constitute direct infringement of the '375 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. The Hisense Defendants are vicariously liable for the infringing conduct of Hisense America (under both the alter ego and agency theories). As an example and upon information and belief, the Hisense Defendants and their subsidiaries in the Hisense Group, including Hisense America, are essentially the same company, and the Hisense Defendants have the right and ability to control their associates' and subsidiaries' infringing acts (including those of Hisense America) and receive a direct financial benefit from that infringement.

136. For example, Defendants infringe claim 1 of the '375 patent via the Accused LCD Products such as CHOT TFT-LCD model no. CV500U1-T01 incorporated into Polaroid TV model no. 50T7U and incorporated into Hisense LED LCD TV Model No. 50R6E. The Accused LCD Product includes a "liquid crystal display device comprising" each of the limitations of claim 1. The technology discussion above and the example Accused LCD Product provide context for Plaintiff's allegations that each of those limitations are met. For example, the Accused LCD Product includes a first substrate having a first principal surface; a first alignment film which is

formed on said first principal surface and is subjected to a first aligning treatment; a second substrate having a second principal surface; a second alignment film which is formed on said second principal surface, said second alignment film oppositely disposed to said first alignment film with a predetermined space left between said first alignment film and said second alignment film, and said second alignment film subjected to a second aligning treatment in the same directional orientation as the first aligning treatment; a liquid crystal layer formed by a plurality of liquid crystal molecules which are interposed and sealed between said first and said second alignment films, a part of said molecules adjacent to said first alignment film having a first pretilt angle falling within a first predetermined range which is not smaller than two degrees from said first alignment film due to the influence of said first aligning treatment, the other part of said molecules adjacent to said second alignment film having a second pretilt angle falling within a second predetermined range which is not smaller than two degrees from said second alignment film due to influence of said second aligning treatment; and field generating means for generating an electric field which is substantially parallel to said first and said second principal surfaces in said predetermined space to make said molecules rotate in accordance with said electric field.

137. Defendants further infringe the '375 patent via 35 U.S.C. § 271(g) by selling, offering to sell, and/or importing Accused LCD Products, their components, and/or products containing same, that are made by a process covered by the '375 patent. Upon information and belief, the Accused LCD Products, their components, and/or products containing same are not materially changed by subsequent processes, and they are neither trivial nor nonessential components of another product.

138. Defendants further infringe based on the importation, sale, offer for sale, or use of the Accused LCD Products that are made from a process covered by the '375 patent. To the extent

that Plaintiff VPV made reasonable efforts to determine whether the patented processes of the '375 patent were used in the production of the Accused LCD Products but was not able to so determine, the Accused LCD Products should be presumed by this Court to have been so made, pursuant to 35 U.S.C. § 295.

139. At a minimum, Defendant CHOT and the Hisense Defendants have known of the '375 patent at least as early as the filing date of the complaint. In addition, CHOT has known about the '375 patent since at least January 24, 2020 when a letter addressed to the General Counsel of CHOT was received by CHOT, where the letter provided CHOT notice of its infringement of the '375 patent. In addition, the Hisense Defendants have known about the '375 patent since at least as early as July 19, 2018, when the Hisense Defendants had access to a data room providing notice of their infringement. Further, the Hisense Defendants were again notified on October 26, 2020 that they had access to the data room providing notice of their infringement of the '375 patent.

140. Upon information and belief, since at least the above-mentioned date when Defendants were on notice of their infringement, Defendants have actively induced, under U.S.C. § 271(b), distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused LCD Products that include or are made using all of the limitations of one or more claims of the '375 patent to directly infringe one or more claims of the '375 patent by using, offering for sale, selling, and/or importing the Accused LCD Products. Since at least the notice provided on the above-mentioned date, Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '375 patent. Upon information and belief, Defendants intend to cause, and have taken affirmative steps to induce infringement by distributors, importers (including inducement to import in violation of § 271(g)), customers, subsidiaries, and/or consumers by, inter alia, creating advertisements that promote the infringing

use of the Accused LCD Products, creating established distribution channels for the Accused LCD Products into and within the United States, manufacturing the Accused LCD Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States. *See, e.g., Empire Electronic Corporation*, LINKEDIN, <https://www.linkedin.com/company/empire-electronic-corporation/about/> (stating that Polaroid-branded TVs are sold and marketed in the U.S.: “we service some of the largest retailers in the world and partner with leading technology companies to grow our ever expanding [sic] portfolio of products and services”) (last visited on July 12, 2021); *Mission and Vision*, HISENSE, <https://www.hisense-usa.com/company/> (touting Hisense USA’s vision “[t]o become the most trusted company and loved brand in the U.S. Consumer Electronic and Home Appliance industries by offering solutions that customers desire. We also strive to be a company that everyone wants to work for in the U.S.”) (last visited on July 12, 2021).

141. Upon information and belief, despite having knowledge of the ’375 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’375 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. Defendants’ infringing activities relative to the ’375 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

142. VPV has been damaged as a result of Defendants’ infringing conduct described



in this Count. Defendants are, thus, liable to VPV in an amount that adequately compensates VPV for Defendants' infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

**COUNT IV**

(INFRINGEMENT OF U.S. PATENT NO. 6,657,699)

143. Plaintiff incorporates paragraphs 1 through 142 herein by reference.

144. VPV is the assignee of the '699 patent, entitled "Liquid crystal display unit having pixel electrode encircled with partition wall and process for fabrication thereof," with ownership of all substantial rights in the '699 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

145. The '699 patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code. The '699 patent issued from U.S. Patent Application No. 09/901,034.

146. Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '699 patent in this judicial district and elsewhere in Texas and the United States.

147. Upon information and belief, Defendant CHOT conducts research and development, manufactures, and sells TFT-LCD products, including panels and related components. These products are incorporated into electronic devices such as TVs, including TVs manufactured by Empire and sold in the U.S. under the Polaroid brand. Defendant CHOT further manufactures infringing TFT-LCD panels and related components on behalf of and for the benefit of the Hisense Defendants. These panels and related components are incorporated into electronic

devices manufactured by the Hisense Defendants, which are marketed and sold under at least the Hisense brand.

148. Upon information and belief, the Hisense Defendants conduct research and development, manufacture, and sell electronic devices, including TVs marketed and sold under the Hisense brand in the United States. These electronic devices of the Hisense Defendants incorporate infringing TFT-LCD panels and related components (including those manufactured by Defendant CHOT), device housings, backlight modules, display controllers, and processes related to the same.

149. Defendants directly infringe the '699 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing Accused LCD Products, their components, and/or products containing same that incorporate the fundamental technologies covered by the '699 patent to, for example, alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, upon information and belief, Defendants sell and make Accused LCD Products outside of the United States, deliver those products to their alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers in the United States, or in the case that Defendants deliver the Accused LCD Products outside of the United States, Defendants do so intending and/or knowing that those panels are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '699 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp.2d 653, 658 (E.D. Tex. 2013).

150. Defendant CHOT directly infringes the '699 patent through its direct involvement in the activities of Empire on behalf of and for the benefit of Defendant CHOT. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Empire

and importing the Accused LCD Products into the United States for Empire. Upon information and belief, Defendant CHOT and Empire conduct activities that constitute direct infringement of the '699 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. Defendant CHOT is vicariously liable for the infringing conduct of Empire (under both the alter ego and agency theories) because, as an example and, upon information and belief, Defendant CHOT receives a direct financial benefit from Empire's infringement.

151. The Hisense Defendants directly infringe the '699 patent through their direct involvement in the activities of their U.S.-based subsidiaries, including, but not limited to, Hisense America, conducted on behalf of and for the benefit of the Hisense Defendants. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Hisense America and Hisense America importing the Accused LCD Products into the United States for the Hisense Defendants. Upon information and belief, the Hisense Defendants and Hisense America conduct activities that constitute direct infringement of the '699 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. The Hisense Defendants are vicariously liable for the infringing conduct of Hisense America (under both the alter ego and agency theories). As an example and upon information and belief, the Hisense Defendants and their subsidiaries in the Hisense Group, including Hisense America, are essentially the same company, and the Hisense Defendants have the right and ability to control their associates' and subsidiaries' infringing acts (including those of Hisense America) and receive a direct financial benefit from that infringement.

152. For example, Defendants infringe claim 20 of the '699 patent via the Accused LCD Products such as CHOT TFT-LCD model no. CV500U1-T01 incorporated into Polaroid TV model

no. 50T7U and incorporated into Hisense LED LCD TV Model No. 50R6E. That LCD Product includes an “in-plane switching type liquid crystal display panel having a plurality of pixel areas, the panel comprising” each of the limitations of claim 20. The technology discussion above and the example Accused LCD Product provide context for Plaintiff’s allegations that each of those limitations are met. For example, the Accused LCD Product includes liquid crystals between a pair of substrate structures and comprising optical elements within each of said plurality of pixel areas; a common electrode on one of said substrate structures for each pixel area; a pixel electrode for each pixel area offset from said common electrode on said one of said substrate structures, wherein said common electrode and said pixel electrode define said pixel area; a switching transistor on said one of said substrate structures and having a source connected to said pixel electrode, a data line extending outside a periphery of said pixel area and a gate electrode extending outside of said periphery; and a partition wall structure formed on said common electrode of at least one of said pixel areas for separating said optical elements from the remaining liquid crystal.

153. Defendants further infringe the ’699 patent via 35 U.S.C. § 271(g) by selling, offering to sell, and/or importing Accused LCD Products, their components, and/or products containing same, that are made by a process covered by the ’699 patent. Upon information and belief, the Accused LCD Products, their components, and/or products containing same are not materially changed by subsequent processes, and they are neither trivial nor nonessential components of another product.

154. Defendants further infringe based on the importation, sale, offer for sale, or use of the Accused LCD Products that are made from a process covered by the ’699 patent. To the extent that Plaintiff VPV made reasonable efforts to determine whether the patented processes of the ’699 patent were used in the production of the Accused LCD Products but was not able to so determine,

the Accused LCD Products should be presumed by this Court to have been so made, pursuant to 35 U.S.C. § 295.

155. At a minimum, Defendant CHOT and the Hisense Defendants have known of the '699 patent at least as early as the filing date of the complaint. In addition, CHOT has known about the '699 patent since at least January 24, 2020 when a letter addressed to the General Counsel of CHOT was received by CHOT, where the letter provided CHOT notice of its infringement of the '699 patent. In addition, the Hisense Defendants have known about the '699 patent since at least as early as October 26, 2020, when the Hisense Defendants had access to a data room providing notice of their infringement of the '699 patent.

156. Upon information and belief, since at least the above-mentioned date when Defendants were on notice of their infringement, Defendants have actively induced, under U.S.C. § 271(b), distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused LCD Products that include or are made using all of the limitations of one or more claims of the '699 patent to directly infringe one or more claims of the '699 patent by using, offering for sale, selling, and/or importing the Accused LCD Products. Since at least the notice provided on the above-mentioned date, Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '699 patent. Upon information and belief, Defendants intend to cause, and have taken affirmative steps to induce infringement by distributors, importers (including inducement to import in violation of § 271(g)), customers, subsidiaries, and/or consumers by, inter alia, creating advertisements that promote the infringing use of the Accused LCD Products, creating established distribution channels for the Accused LCD Products into and within the United States, manufacturing the Accused LCD Products in conformity with U.S. laws and regulations, distributing or making available instructions or

manuals for these products to purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States. *See, e.g., Empire Electronic Corporation*, LINKEDIN, <https://www.linkedin.com/company/empire-electronic-corporation/about/> (stating that Polaroid-branded TVs are sold and marketed in the U.S.: “we service some of the largest retailers in the world and partner with leading technology companies to grow our ever expanding [sic] portfolio of products and services”) (last visited on July 12, 2021); *Mission and Vision*, HISENSE, <https://www.hisense-usa.com/company/> (touting Hisense USA’s vision “[t]o become the most trusted company and loved brand in the U.S. Consumer Electronic and Home Appliance industries by offering solutions that customers desire. We also strive to be a company that everyone wants to work for in the U.S.”) (last visited on July 12, 2021).

157. Upon information and belief, despite having knowledge of the ’699 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’699 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. Defendants’ infringing activities relative to the ’699 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

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



**COUNT V**

(INFRINGEMENT OF U.S. PATENT NO. 6,657,619)

159. Plaintiff incorporates paragraphs 1 through 158 herein by reference.

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

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

162. Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '619 patent in this judicial district and elsewhere in Texas and the United States.

163. Upon information and belief, Defendant CHOT conducts research and development, manufactures, and sells TFT-LCD products, including panels and related components. These products are incorporated into electronic devices such as TVs, including TVs manufactured by Empire and sold in the U.S. under the Polaroid brand. Defendant CHOT further manufactures infringing TFT-LCD panels and related components on behalf of and for the benefit of the Hisense Defendants. These panels and related components are incorporated into electronic devices manufactured by the Hisense Defendants, which are marketed and sold under at least the Hisense brand.

164. Upon information and belief, the Hisense Defendants conduct research and development, manufacture, and sell electronic devices, including TVs marketed and sold under the Hisense brand in the United States. These electronic devices of the Hisense Defendants incorporate infringing TFT-LCD panels and related components (including those manufactured by Defendant

CHOT), device housings, backlight modules, display controllers, and processes related to the same.

165. Defendants directly infringe the '619 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing Accused LCD Products, their components, and/or products containing same that incorporate the fundamental technologies covered by the '619 patent to, for example, alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, upon information and belief, Defendants sell and make Accused LCD Products outside of the United States, deliver those products to their alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers in the United States, or in the case that Defendants deliver the Accused LCD Products outside of the United States, Defendants do so intending and/or knowing that those panels are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '619 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp.2d 653, 658 (E.D. Tex. 2013).

166. Defendant CHOT directly infringes the '619 patent through its direct involvement in the activities of Empire on behalf of and for the benefit of Defendant CHOT. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Empire and importing the Accused LCD Products into the United States for Empire. Upon information and belief, Defendant CHOT and Empire conduct activities that constitute direct infringement of the '619 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. Defendant CHOT is vicariously liable for the infringing conduct of Empire (under both the alter ego and agency theories) because, as an example and, upon

information and belief, Defendant CHOT receives a direct financial benefit from Empire's infringement.

167. The Hisense Defendants directly infringe the '619 patent through their direct involvement in the activities of their U.S.-based subsidiaries, including, but not limited to, Hisense America, conducted on behalf of and for the benefit of the Hisense Defendants. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Hisense America and Hisense America importing the Accused LCD Products into the United States for the Hisense Defendants. Upon information and belief, the Hisense Defendants and Hisense America conduct activities that constitute direct infringement of the '619 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. The Hisense Defendants are vicariously liable for the infringing conduct of Hisense America (under both the alter ego and agency theories). As an example and upon information and belief, the Hisense Defendants and their subsidiaries in the Hisense Group, including Hisense America, are essentially the same company, and the Hisense Defendants have the right and ability to control their associates' and subsidiaries' infringing acts (including those of Hisense America) and receive a direct financial benefit from that infringement.

168. For example, Defendants infringe claim 1 of the '619 patent via at least Hisense LED LCD TV Model No. 50R6E and Hisense TV Model No. 43R6E, which each incorporate MStar Display Controller Model No. MSDURP1601-R-0085, and Polaroid TV Model No. 50T7U, which utilizes MStar Display Controller Model No. MSD6586PYU-8-00C8 with CHOT's LCD Panel Model No. CV500U1-T01. Those Accused LCD Products include a "clamping circuit for a liquid crystal display device comprising" each of the limitations of claim 1. The technology discussion above and the example Accused LCD Products provide context for Plaintiff's

allegations that each of those limitations are met. For example, the Accused LCD Products include a plurality of clamp units for receiving a plurality of input color signals of an input picture signal after deleting a DC bias from each of said input color signals to produce a plurality of clamped color signals, respectively, by adding a predetermined clamping voltage corresponding to a pedestal level of said input picture signal to each of said input color signals; and a plurality of gamma-correction circuits connected to said clamp units for receiving said clamped color signals, respectively, and for performing a predetermined gamma correction and amplification on each of said clamped color signals to produce output color signals, respectively; each of said clamp units being provided with a clamping portion for receiving said input color signal and a clamping voltage generating circuit for supplying a clamping voltage to said clamping portion so as to be controlled in response to an individual first control signal supplied thereto and generates said clamped color signal such that a black level of said clamped color signal coincides with a black level in an input/output characteristic of said gamma-correction circuit, and said clamping portion being supplied with said clamping voltage so as to add said clamping voltage to said pedestal level in a predetermined timing of said input color signal in response to a second control signal supplied thereto.

169. At a minimum, Defendant CHOT and the Hisense Defendants have known of the '619 patent at least as early as the filing date of the complaint. In addition, the Hisense Defendants have known about the '619 patent since at least as early as July 19, 2018, when the Hisense Defendants had access to a data room providing notice of their infringement. Further, the Hisense Defendants were again notified on October 26, 2020 that they had access to the data room providing notice of their infringement of the '619 patent.

170. Upon information and belief, since at least the above-mentioned date when Defendants were on notice of their infringement, Defendants have actively induced, under U.S.C. § 271(b), distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused LCD Products that include or are made using all of the limitations of one or more claims of the '619 patent to directly infringe one or more claims of the '619 patent by using, offering for sale, selling, and/or importing the Accused LCD Products. Since at least the notice provided on the above-mentioned date, Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '619 patent. Upon information and belief, Defendants intend to cause, and have taken affirmative steps to induce infringement by distributors, importers, customers, subsidiaries, and/or consumers by, inter alia, creating advertisements that promote the infringing use of the Accused LCD Products, creating established distribution channels for the Accused LCD Products into and within the United States, manufacturing the Accused LCD Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States. *See, e.g., Empire Electronic Corporation, LINKEDIN*, <https://www.linkedin.com/company/empire-electronic-corporation/about/> (stating that Polaroid-branded TVs are sold and marketed in the U.S.: “we service some of the largest retailers in the world and partner with leading technology companies to grow our ever expanding [sic] portfolio of products and services”) (last visited on July 12, 2021); *Mission and Vision, HISENSE*, <https://www.hisense-usa.com/company/> (touting Hisense USA’s vision “[t]o become the most trusted company and loved brand in the U.S. Consumer Electronic and Home Appliance industries

by offering solutions that customers desire. We also strive to be a company that everyone wants to work for in the U.S.”) (last visited on July 12, 2021).

171. Upon information and belief, despite having knowledge of the '619 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '619 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. Defendants' infringing activities relative to the '619 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

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

## **COUNT VI**

### **(INFRINGEMENT OF U.S. PATENT NO. 7,006,065)**

173. Plaintiff incorporates paragraphs 1 through 172 herein by reference.

174. VPV is the assignee of the '065 patent, entitled “Gamma compensation method and circuit for color liquid crystal display,” with ownership of all substantial rights in the '065 patent, including the right to exclude others and to enforce, sue, and recover damages for past and future infringements.

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

176. Defendants have and continue to directly and/or indirectly infringe (by inducing infringement) one or more claims of the '065 patent in this judicial district and elsewhere in Texas and the United States.

177. Upon information and belief, Defendant CHOT conducts research and development, manufactures, and sells TFT-LCD products, including panels and related components. These products are incorporated into electronic devices such as TVs, including TVs manufactured by Empire and sold in the U.S. under the Polaroid brand. Defendant CHOT further manufactures infringing TFT-LCD panels and related components on behalf of and for the benefit of the Hisense Defendants. These panels and related components are incorporated into electronic devices manufactured by the Hisense Defendants, which are marketed and sold under at least the Hisense brand.

178. Upon information and belief, the Hisense Defendants conduct research and development, manufacture, and sell electronic devices, including TVs marketed and sold under the Hisense brand in the United States. These electronic devices of the Hisense Defendants incorporate infringing TFT-LCD panels and related components (including those manufactured by Defendant CHOT), device housings, backlight modules, display controllers, and processes related to the same.

179. Defendants directly infringe the '065 patent via 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing Accused LCD Products, their components, and/or products containing same that incorporate the fundamental technologies covered by the '065 patent to, for example, alter egos, agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers. Furthermore, upon information and belief, Defendants sell and make Accused LCD Products outside of the United States, deliver those products to their alter egos, agents,



intermediaries, distributors, importers, customers, subsidiaries, and/or consumers in the United States, or in the case that Defendants deliver the Accused LCD Products outside of the United States, Defendants do so intending and/or knowing that those panels are destined for the United States and/or designing those products for sale in the United States, thereby directly infringing the '065 patent. *See, e.g., Lake Cherokee Hard Drive Techs., L.L.C. v. Marvell Semiconductor, Inc.*, 964 F. Supp.2d 653, 658 (E.D. Tex. 2013).

180. Defendant CHOT directly infringes the '065 patent through its direct involvement in the activities of Empire on behalf of and for the benefit of Defendant CHOT. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Empire and importing the Accused LCD Products into the United States for Empire. Upon information and belief, Defendant CHOT and Empire conduct activities that constitute direct infringement of the '065 patent under 35 U.S.C. § 271(a) by making, offering for sale, selling, and/or importing those Accused LCD Products. Defendant CHOT is vicariously liable for the infringing conduct of Empire (under both the alter ego and agency theories) because, as an example and, upon information and belief, Defendant CHOT receives a direct financial benefit from Empire's infringement.

181. The Hisense Defendants directly infringe the '065 patent through their direct involvement in the activities of their U.S.-based subsidiaries, including, but not limited to, Hisense America, conducted on behalf of and for the benefit of the Hisense Defendants. Such direct infringement includes selling and offering for sale the Accused LCD Products directly to Hisense America and Hisense America importing the Accused LCD Products into the United States for the Hisense Defendants. Upon information and belief, the Hisense Defendants and Hisense America conduct activities that constitute direct infringement of the '065 patent under 35 U.S.C. § 271(a)

by making, offering for sale, selling, and/or importing those Accused LCD Products. The Hisense Defendants are vicariously liable for the infringing conduct of Hisense America (under both the alter ego and agency theories). As an example and upon information and belief, the Hisense Defendants and their subsidiaries in the Hisense Group, including Hisense America, are essentially the same company, and the Hisense Defendants have the right and ability to control their associates' and subsidiaries' infringing acts (including those of Hisense America) and receive a direct financial benefit from that infringement.

182. For example, Defendants infringe claim 9 of the '065 patent via at least Hisense LED LCD TV Model No. 50R6E and Hisense TV Model No. 43R6E, which each incorporate MStar Display Controller Model No. MSDURP1601-R-0085, Hisense TV Model No. 55H8F, which utilizes Mediatek TV Processor Model No. MT5660HGEJ operating with Hisense LCD Controller HS3710-VP, and Polaroid TV Model No. 50T7U, which utilizes MStar Display Controller Model No. MSD6586PYU-8-00C8 operating with CHOT's LCD Panel Model No. CV500U1-T01. Those Accused LCD Products include a "driving circuit for a color liquid crystal display comprising" each of the limitations of claim 9. The technology discussion above and the example Accused LCD Products provide context for Plaintiff's allegations that each of those limitations are met. For example, the Accused LCD Products include a first gamma compensating circuit for applying a gamma compensation only to a red video signal so as to be suitable only for a red transmittance characteristic for an independently applied voltage in said color liquid crystal display and for outputting only a compensated red video signal; a second gamma compensating circuit for applying a gamma compensation only to a green video signal so as to be suitable only for a green transmittance characteristic for an independently applied voltage in said color liquid crystal display and for outputting only a compensated green video signal; a third gamma

compensating circuit for applying a gamma compensation only to a blue video signal so as to be suitable only for a blue transmittance characteristic for an independently applied voltage of said color liquid crystal display and for outputting only a compensated blue video signal; a reference voltage generating circuit for supplying respectively independently generated reference voltages to said first gamma compensating circuit, said second gamma compensating circuit and said third gamma compensating circuit; and a data electrode driving circuit for driving corresponding electrodes of said color liquid crystal display based on said compensated red video signal, said compensated green video signal and said compensated blue video signal, wherein said reference voltages are generated to provide optimum gamma compensation based on the luminosity characteristics of each color.

183. Defendants further infringe the '065 patent via 35 U.S.C. § 271(g) by selling, offering to sell, and/or importing Accused LCD Products, their components, and/or products containing same, that are made by a process covered by the '065 patent. Upon information and belief, the Accused LCD Products, their components, and/or products containing same are not materially changed by subsequent processes, and they are neither trivial nor nonessential components of another product.

184. Defendants further infringe based on the importation, sale, offer for sale, or use of the Accused LCD Products that are made from a process covered by the '065 patent. To the extent that Plaintiff VPV made reasonable efforts to determine whether the patented processes of the '065 patent were used in the production of the Accused LCD Products but was not able to so determine, the Accused LCD Products should be presumed by this Court to have been so made, pursuant to 35 U.S.C. § 295.

185. At a minimum, Defendant CHOT and the Hisense Defendants have known of the '065 patent at least as early as the filing date of the complaint. In addition, the Hisense Defendants have known about the '065 patent since at least as early as July 19, 2018, when the Hisense Defendants had access to a data room providing notice of their infringement. Further, the Hisense Defendants were again notified on October 26, 2020 that they had access to the data room providing notice of their infringement of the '065 patent.

186. Upon information and belief, since at least the above-mentioned date when Defendants were on notice of their infringement, Defendants have actively induced, under U.S.C. § 271(b), distributors, customers, subsidiaries, importers, and/or consumers that import, purchase, or sell the Accused LCD Products that include or are made using all of the limitations of one or more claims of the '065 patent to directly infringe one or more claims of the '065 patent by using, offering for sale, selling, and/or importing the Accused LCD Products. Since at least the notice provided on the above-mentioned date, Defendants do so with knowledge, or with willful blindness of the fact, that the induced acts constitute infringement of the '065 patent. Upon information and belief, Defendants intend to cause, and have taken affirmative steps to induce infringement by distributors, importers (including inducement to import in violation of § 271(g)), customers, subsidiaries, and/or consumers by, inter alia, creating advertisements that promote the infringing use of the Accused LCD Products, creating established distribution channels for the Accused LCD Products into and within the United States, manufacturing the Accused LCD Products in conformity with U.S. laws and regulations, distributing or making available instructions or manuals for these products to purchasers and prospective buyers, and/or providing technical support, replacement parts, or services for these products to these purchasers in the United States. *See, e.g., Empire Electronic Corporation, LINKEDIN*, <https://www.linkedin.com/company/empire->

electronic-corporation/about/ (stating that Polaroid-branded TVs are sold and marketed in the U.S.: “we service some of the largest retailers in the world and partner with leading technology companies to grow our ever expanding [sic] portfolio of products and services”) (last visited on July 12, 2021); *Mission and Vision*, HISENSE, <https://www.hisense-usa.com/company/> (touting Hisense USA’s vision “[t]o become the most trusted company and loved brand in the U.S. Consumer Electronic and Home Appliance industries by offering solutions that customers desire. We also strive to be a company that everyone wants to work for in the U.S.”) (last visited on July 12, 2021).

187. Upon information and belief, despite having knowledge of the ’065 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’065 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. Defendants’ infringing activities relative to the ’065 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, characteristic of a pirate, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

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

### **INJUNCTIVE RELIEF**

189. Plaintiff seeks preliminary and permanent injunctions as a result of Defendants’ infringement of the Asserted Patents. Plaintiff is likely to succeed in showing that Defendants

infringe the Asserted Patents. Because of that infringement, Plaintiff has suffered an irreparable injury, and the remedies available at law, such as monetary damages, are inadequate to compensate for that injury. For example, if Plaintiff must enforce a judgment against Defendants CHOT and Hisense Co., who are parent entities relative to other defendants, in the PRC, Plaintiff will face a historically challenging burden in persuading courts in these jurisdictions to enforce a judgment from a U.S. court, likely preventing Plaintiff from obtaining any monetary damages from Defendants. Considering the balance of hardships between the Plaintiff and Defendants, a remedy in equity is warranted; and the public interest would not be disserved by a permanent or preliminary injunction.

### **CONCLUSION**

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

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

### **JURY DEMAND**

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

### **PRAYER FOR RELIEF**

193. Plaintiff VPV respectfully requests that the Court find in its favor and against Defendants, and that the Court grant Plaintiff the following relief:

1. A judgment that Defendants have infringed the Asserted Patents as alleged herein, directly and/or indirectly by way of inducing infringement of such patents;
2. A judgment for an accounting of all damages sustained by Plaintiff as a result of the acts of infringement by Defendants;
3. A preliminary and permanent injunction against Defendants, their subsidiaries, or anyone acting on their behalf from making, using, selling, offering to sell, or importing any products that infringe the Asserted Patents, and any other injunctive relief the Court deems just and equitable;
4. A judgment and order requiring Defendants to pay Plaintiff damages under 35 U.S.C. § 284, including up to treble damages as provided by 35 U.S.C. § 284, and any royalties determined to be appropriate;
5. A judgment and order requiring Defendants to pay Plaintiff pre-judgment and post-judgment interest on the damages awarded;
6. A judgment and order finding this to be an exceptional case and requiring Defendants to pay the costs of this action (including all disbursements) and attorneys' fees as provided by 35 U.S.C. § 285; and
7. Such other and further relief as the Court deems just and equitable.



Dated: July 14, 2021

Respectfully submitted,

/s/Patrick J. Conroy

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