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

SINOTECHNIX LLC,	§	
	§	
Plaintiff,	§	
	§	**CIVIL ACTION NO. 2:24-cv-544**
v.	§	
	§	**JURY TRIAL DEMANDED**
SAMSUNG ELECTRONICS CO., LTD.;	§	
SAMSUNG ELECTRONICS AMERICA,	§	
INC.; and SAMSUNG DISPLAY CO., LTD.,	§	
	§	
Defendants.	§	

PLAINTIFF'S ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Sinotechnix LLC ("Sinotechnix" or "Plaintiff") files this Original Complaint against Defendants Samsung Electronics Co., Ltd. ("SEC"), Samsung Electronics America, Inc. ("SEA"), and Samsung Display Co., Ltd. ("SDC") (collectively "Samsung" or "Defendants") for infringement of U.S. Patent No. 7,618,162 (the "'162 patent"), U.S. Patent No. 7,748,873 (the "'873 patent"), U.S. Patent No. 7,901,113 (the "'113 patent"), U.S. Patent No. 7,951,626 (the "'626 patent"), U.S. Patent No. 8,132,952 (the "'952 patent"), and U.S. Patent No. 9,412,913 (the "'913 patent") (collectively, the "Asserted Patents").

THE PARTIES

1. Plaintiff is a Delaware limited liability company with its principal place of business at 8 The Green, Suite A, Dover, Delaware 19901.

2. On information and belief, SEC is a company organized and existing under the laws of the Republic of Korea with its principal place of business located at 129 Samsung-Ro (Maetan-dong), Yeongtong-gu, Suwon-si, Gyeonggi-do, in the Republic of Korea. SEC may be served at least by process under the Hague Convention.

3. On information and belief, SEA does business in the State of Texas and in the Eastern District of Texas, is a New York corporation with its principal place of business at 85 Challenger Road, Ridgefield Park, New Jersey 07660, and is a wholly-owned subsidiary of SEC. SEA has a business location in this District at 6625 Excellence Way, Plano, TX. 75023. SEA may be served in Texas at least via its registered agent, CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

4. On information and belief, SDC is a Korean corporation, and wholly-owned subsidiary of SEC, with its principal place of business located at 95 Samsung 2-ro, Giheung-gu, Yongin-si, Gyeonggi-do in the Republic of Korea.

5. Defendant SDC makes and supplies displays incorporated into the accused products. Defendants SEC and SEA make and supply the accused products.

6. Upon information and belief, SEC, SDC, and SEA, along with other foreign and U.S.-based subsidiaries (which act as part of a global network of overseas sales and manufacturing subsidiaries on behalf of SEC) have operated as agents of one another and vicariously as parts of the same business group to work in concert together and enter into agreements that are nearer than arm's length. For example, SEC and SDC, alone and via at least SEA's activities, conduct business in the United States, including importing, distributing, and selling the accused display products that incorporate devices, systems, and processes that infringe the Asserted Patents in Texas and this judicial district. *See Trois v. Apple Tree Auction Center, Inc.*, 882 F.3d 485, 490 (5th Cir. 2018) ("A defendant may be subject to personal jurisdiction because of the activities of its agent within the forum state…."); s*ee also Cephalon, Inc. v. Watson Pharmaceuticals, Inc*., 629 F. Supp. 2d 338, 348 (D. Del. 2009) ("The agency theory may be applied not only to parents and subsidiaries, but also to companies that are 'two arms of the same business group,' operate in

concert with each other, and enter into agreements with each other that are nearer than arm's length.").

7. Through offers to sell, sales, imports, distributions, and other related agreements to transfer ownership of SEC, SDC, and SEA accused display products with distributors and customers operating in and maintaining a significant business presence in the U.S., SEA, SEC and SDC do business in the U.S., the state of Texas, and in the Eastern District of Texas.

JURISDICTION AND VENUE

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

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

10. With respect to SEC and SDC, venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(c). SEC and SDC are foreign entities and may be sued in any judicial district under 28 U.S.C. § 1391(c)(3).

11. With respect to SEA, venue is proper in this District under 28 U.S.C. § 1400(b). SEA has committed acts of infringement, including by importing, offering for sale, or selling infringing products (as discussed further below), in the District and/or has induced acts of patent infringement by others, including by instructing customers to use infringing products (as discussed further below), in this District and has a regular and established place of business within the District. For example, SEA has offices at 6625 Excellence Way, Plano, TX. 75023.

12. On information and belief, each Defendant 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) performing at least

part of its infringing activities alleged herein; and (B) regularly doing or soliciting business, engaging in other persistent conduct, and/or deriving substantial revenue from goods sold and services provided to Texas residents. Defendants have placed and continue to place infringing products, such as televisions, displays, monitors, and other display devices, into the stream of commerce via an established distribution channel with the knowledge and/or intent that those products were sold and continue to be sold in the United States and Texas, including in this District.

13. On information and belief, Defendants have 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. For Defendants SDC and SEC, venue is proper as to a foreign defendant in any district. Defendant SEA has regular and established places of business in this district at: 6625 Excellence Way, Plano, TX. 75023..

COUNT I
(Infringement of U.S. Patent No. 7,618,162)

14. Plaintiff incorporates paragraphs 1 through 13 herein by reference.

15. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, et seq.

16. Plaintiff is the owner of the ’162 patent with all substantial rights to the ’162 patent including the exclusive right to enforce, sue, and recover damages for past infringement.

17. The ’162 patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

18. Defendants have known of the ’162 patent and their infringement at least as early as the service date of this original complaint. Further, on information and belief, Defendants have known of the ’162 patent and their infringement at least as early as the filing date of the original

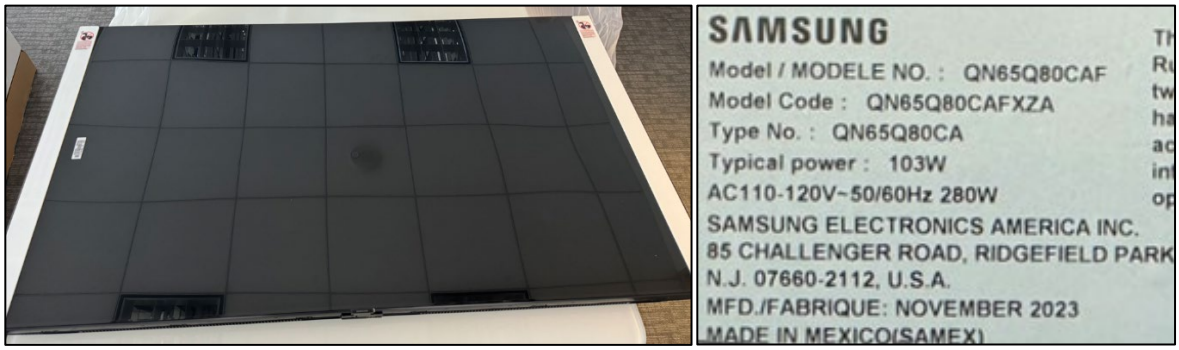
complaint. In addition, Defendants have known about the ’162 patent since at least July 16, 2024, when SEA received a letter notifying them of the ’162 patent and their infringement.

DIRECT INFRINGEMENT (35 U.S.C. §271(a))

19. Defendants infringed literally, and/or under the Doctrine of Equivalents, one or more claims of the ’162 patent in this judicial district and elsewhere in Texas and the United States.

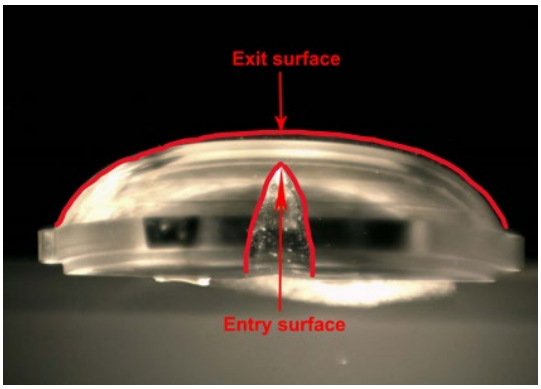
20. On information and belief, Defendants, either by themselves (individually and/or in concert) and/or via an agent, infringe literally, and/or under the Doctrine of Equivalents, at least claim 1 of the ’162 patent by, among other things, making, using, selling, offering for sale, and/or importing infringing products, such as televisions and monitors that meet at least claim 1 of the ’162 patent (the “’162 Patent Accused Products”). The ’162 Patent Accused Products include, as an example only, the QN65Q80CAF model. Further, SEC is vicariously liable for this infringing conduct of SDC and/or SEA, as well as other related Samsung entities, and affiliates, (under both the alter ego and agency theories) because, as an example and upon information and belief, SEC, SDC, and SEA are essentially the same company, and SEC has the right and ability to control SDC’s and SEA’s infringing acts and receives a direct financial benefit from SEA’s and SDC’s infringement.

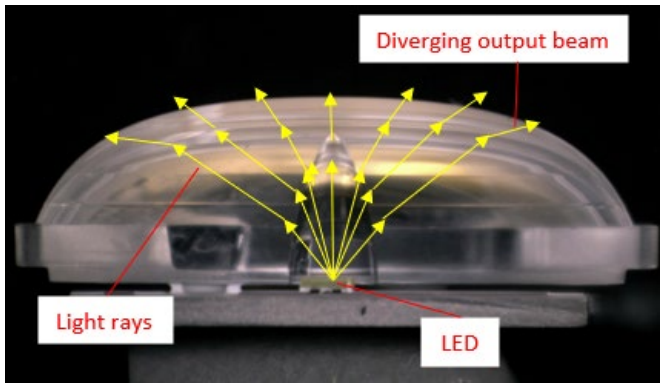
21. The ’162 Patent Accused Products comprise displays such as the QN65Q80CAF model television shown below.



22. The ’162 Patent Accused Products include an irradiance-redistribution illumination lens, such as that shown in the example from the QN65Q80CAF model television below.

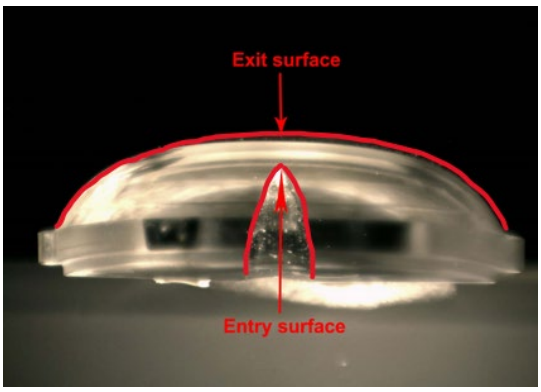
23. The ’162 Patent Accused Products comprise a transparent dielectric solid of revolution with external surface area predominantly comprised of an entry surface that receives light of nonuniform irradiance from a nearby compact light source and of an opposing exit surface that forms from said received light a pre-specified diverging output beam, as shown for example in the images from the QN65Q80CAF model television below.

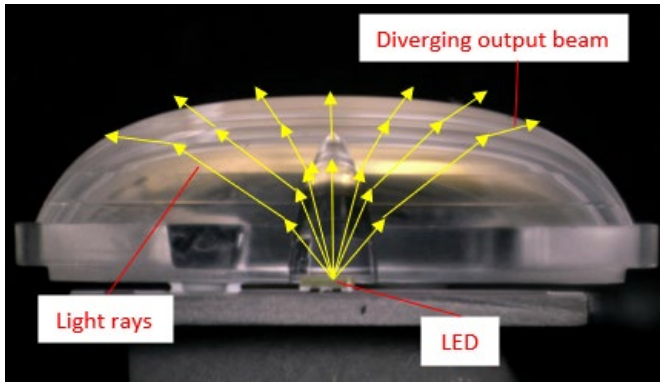




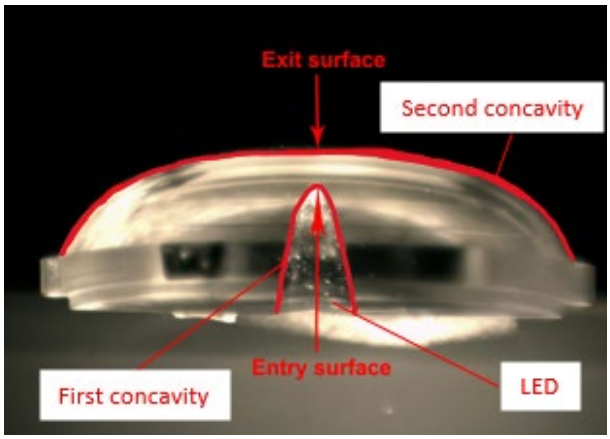
24. The ’162 Patent Accused Products comprise said entry surface given a specific profile that refractively deflects said received light into a different solid angle, said entry surface spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance, said exit surface given a specific shape that refractively deflects said uniform irradiance into said output beam, as shown for example in the images from the QN65Q80CAF

model television below. As shown below, the entry surface in the center of the images refractively deflects said received light into a different solid angle (e.g., when it passes through the edge of the entry surface), said entry surface spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance (e.g., as shown in the light rays spreading after passing through the entry surface).





25. The '162 Patent Accused Products comprise said light source being sufficiently compact for said specific shapes to be calculated by mathematical integration of the slope distributions required by said refractive deflections, said entry surface having first concavity facing toward said light source, and second concavity facing toward the entry surface, said second concavity being substantially greater than said first concavity, as shown for example in the images from the QN65Q80CAF model television below.



INDIRECT INFRINGEMENT (35 U.S.C. §271(b))

26. Based on the information presently available to Plaintiff, absent discovery, Defendants have also indirectly infringed one or more claims of the ’162 patent by inducing infringement, including, at least, the importation and sale of the ’162 Patent Accused Products. For example, Defendants induce and have induced the importation and sale the ’162 Patent Accused Products (e.g., QN65Q80CAF) by retailers. Further, SEC and/or SDC also induce and have induced the importation and sale of the ’162 Patent Accused Products (e.g., QN65Q80CAF) by SEA.

27. On information and belief, despite having knowledge of the ’162 patent and their infringement, Defendants specifically intended and continue to intend for retailers to import and sell the ’162 Patent Accused Products. Further, SEC and/or SDC specifically intended for SEA to import and sell the ’162 Patent Accused Products. On information and belief, Defendants instruct and encourage the importers to import and/or sell the ’162 Patent Accused Products. On information and belief, the purchase and sale agreements between Defendants and the importers provide such instruction and/or encouragement. Further, on information and belief, SEA exists for inter alia, the purpose of importing and selling the ’162 Patent Accused Products in the United States. Moreover, Defendants induce end users of the ’162 Patent Accused Products to use those products in an infringing manner by encouraging the use of those products via marketing and by providing support for the use of those products. *See, e.g.,* https://www.samsung.com/us/support/contact/.

28. Upon information and belief, despite having knowledge of the ’162 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’162 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively

high likelihood of infringement. Defendants' infringing activities relative to the '162 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

29. Each Defendant is liable for these infringements of the '162 patent pursuant to 35 U.S.C. § 271.

30. Plaintiff has been damaged as a result of Defendants' infringing conduct described in this Count. Defendants are, thus, liable to Plaintiff in an amount that adequately compensates Plaintiff 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.

31. Plaintiff has complied with the requirements of 35 U.S.C. § 287, to the extent necessary and/or applicable, and is entitled to collect pre- and post-filing damages for Defendants' infringements of the '162 patent.

COUNT II
(Infringement of U.S. Patent No. 7,748,873)

32. Plaintiff incorporates paragraphs 1 through 13 herein by reference.

33. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, et seq.

34. Plaintiff is the owner of the '873 patent with all substantial rights to the '873 patent including the exclusive right to enforce, sue, and recover damages for past infringement.

35. The '873 patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

36. Defendants have known of the ’873 patent and their infringement at least as early as the service date of this original complaint. Further, on information and belief, Defendants have known of the ’873 patent and their infringement at least as early as the filing date of the original complaint. In addition, Defendants have known about the ’873 patent since at least July 16, 2024, when SEA received a letter notifying them of the ’873 patent and their infringement. Defendants have also known about the ’873 patent since at least April 21, 2016, when US20160109096A1 published to SEC.

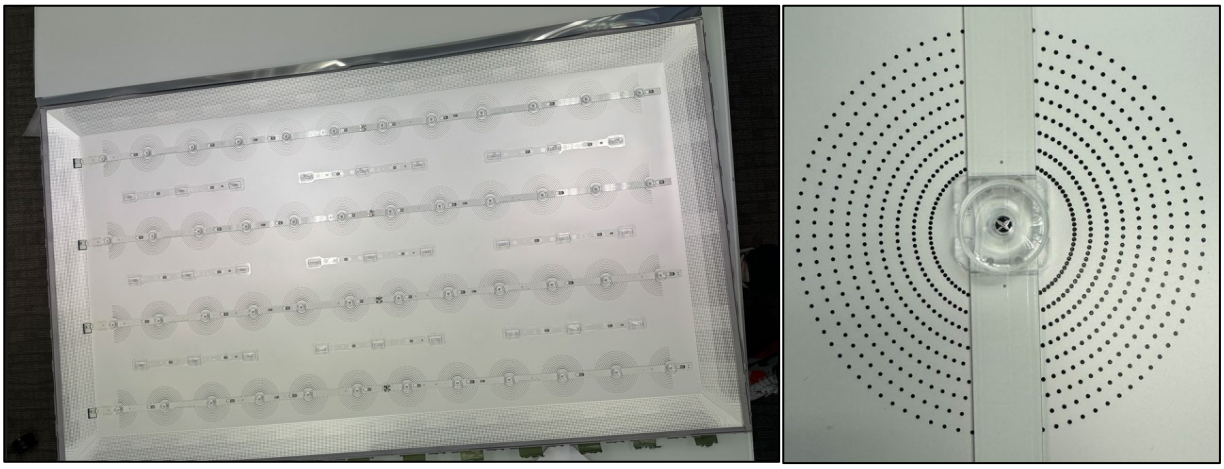
DIRECT INFRINGEMENT (35 U.S.C. §271(a))

37. Defendants infringed literally, and/or under the Doctrine of Equivalents, one or more claims of the ’873 patent in this judicial district and elsewhere in Texas and the United States.

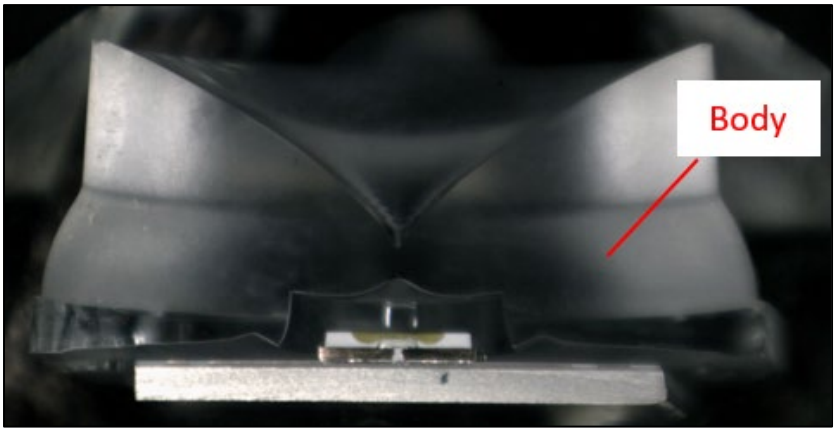
38. On information and belief, Defendants, either by themselves (individually and/or in concert) and/or via an agent, infringe literally, and/or under the Doctrine of Equivalents, at least claim 1 of the ’873 patent by, among other things, making, using, selling, offering for sale, and/or importing infringing products, such as televisions and monitors that meet at least claim 1 of the ’873 patent (the “’873 Patent Accused Products”). The ’873 Patent Accused Products include, as examples only, the UN58CU7000F and UN75TU690TF models. Further, SEC is vicariously liable for this infringing conduct of SDC and/or SEA, as well as other related Samsung entities, and affiliates, (under both the alter ego and agency theories) because, as an example and upon information and belief, SEC, SDC, and SEA are essentially the same company, and SEC has the right and ability to control SDC’s and SEA’s infringing acts and receives a direct financial benefit from SEA’s and SDC’s infringement.

39. The ’873 Patent Accused Products comprise displays such as the UN58CU7000F model television shown below.

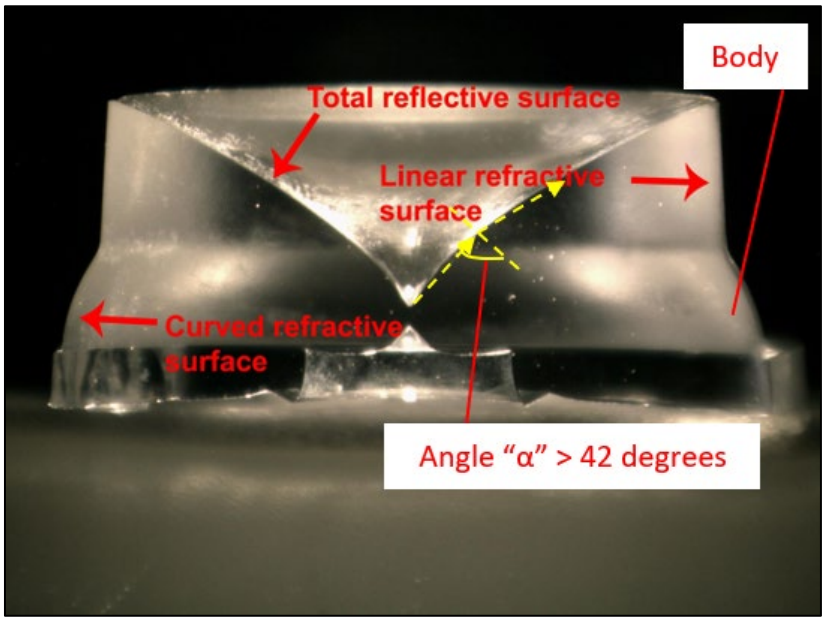
40. The ’873 Patent Accused Products include a lens, such as found in the array of lenses in the UN58CU7000F model television as shown below (array on left, individual lens on right (overhead views)).



41. In the ’873 Patent Accused Products, the lenses each comprise a body, as shown for example in the side view image of a lens from the UN58CU7000F model television below.



42. The ’873 Patent Accused Products comprise a total reflection surface with a total reflection slope with respect to a central axis of the body; and at least one of a linear refractive surface and a curved refractive surface formed to extend away from the central axis and beyond a periphery of the total reflection surface as shown in the image below from the UN58CU7000F model television.



INDIRECT INFRINGEMENT (35 U.S.C. §271(b))

43. Based on the information presently available to Plaintiff, absent discovery, Defendants have also indirectly infringed one or more claims of the ’873 patent by inducing

infringement, including, at least, the importation and sale of the ’873 Patent Accused Products. For example, Defendants induce and have induced the importation and sale the ’873 Patent Accused Products (e.g., UN58CU7000F) by retailers. Further, SEC and/or SDC also induce and have induced the importation and sale of the ’873 Patent Accused Products (e.g., UN58CU7000F) by SEA.

44. On information and belief, despite having knowledge of the ’873 patent and their infringement, Defendants specifically intended and continue to intend for retailers to import and sell the ’873 Patent Accused Products. Further, SEC and/or SDC specifically intended for SEA to import and sell the ’873 Patent Accused Products. On information and belief, Defendants instruct and encourage the importers to import and/or sell the ’873 Patent Accused Products. On information and belief, the purchase and sale agreements between Defendants and the importers provide such instruction and/or encouragement. Further, on information and belief, SEA exists for inter alia, the purpose of importing and selling the ’873 Patent Accused Products in the United States. Moreover, Defendants induce end users of the ’ 873 Patent Accused Products to use those products in an infringing manner by encouraging the use of those products via marketing and by providing support for the use of those products. *See, e.g.,* https://www.samsung.com/us/support/contact/.

45. Upon information and belief, despite having knowledge of the ’873 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’873 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. Defendants’ infringing activities relative to the ’873 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, and an egregious case of misconduct beyond typical infringement such that Plaintiff is

entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

46. Each Defendant is liable for these infringements of the ’873 patent pursuant to 35 U.S.C. § 271.

47. Plaintiff has been damaged as a result of Defendants’ infringing conduct described in this Count. Defendants are, thus, liable to Plaintiff in an amount that adequately compensates Plaintiff 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.

48. Plaintiff has complied with the requirements of 35 U.S.C. § 287, to the extent necessary and/or applicable, and is entitled to collect pre- and post-filing damages for Defendants’ infringements of the ’873 patent.

COUNT III
(Infringement of U.S. Patent No. 7,901,113)

49. Plaintiff incorporates paragraphs 1 through 13 herein by reference.

50. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, et seq.

51. Plaintiff is the owner of the ’113 patent with all substantial rights to the ’113 patent including the exclusive right to enforce, sue, and recover damages for past infringement.

52. The ’113 patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

53. Defendants have known of the ’113 patent and their infringement at least as early as the service date of this original complaint. Further, on information and belief, Defendants have known of the ’113 patent and their infringement at least as early as the filing date of the original complaint. In addition, Defendants have known about the ’113 patent since at least July 16, 2024,

when SEA received a letter notifying them of the ’113 patent and their infringement. Defendants have also known about the ’113 patent since at least December 25, 2014, when US20140376208A published to SDC and June 9, 2015, when U.S. Patent No. 9,052,542 published to SDC.

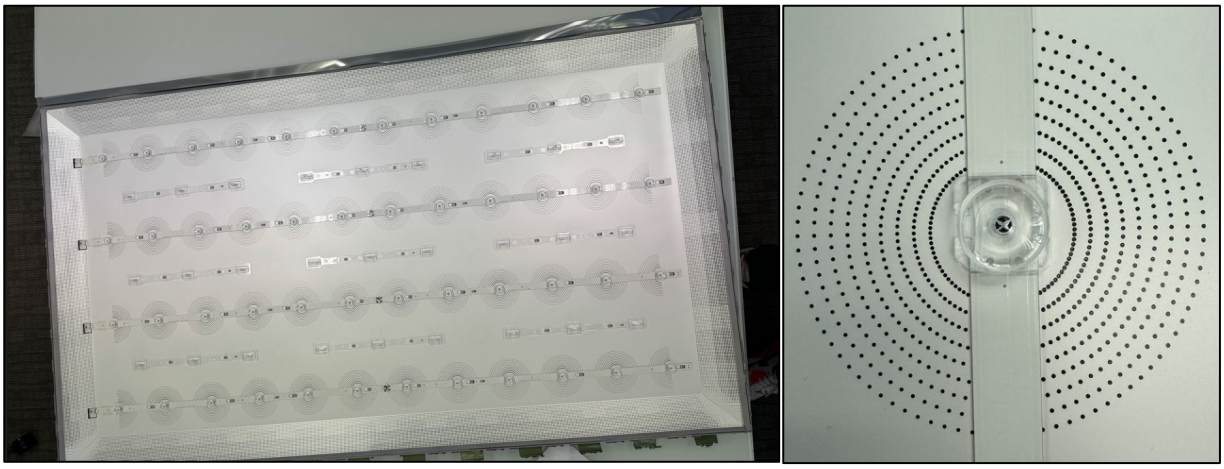
DIRECT INFRINGEMENT (35 U.S.C. §271(a))

54. Defendants infringed literally, and/or under the Doctrine of Equivalents, one or more claims of the ’113 patent in this judicial district and elsewhere in Texas and the United States.

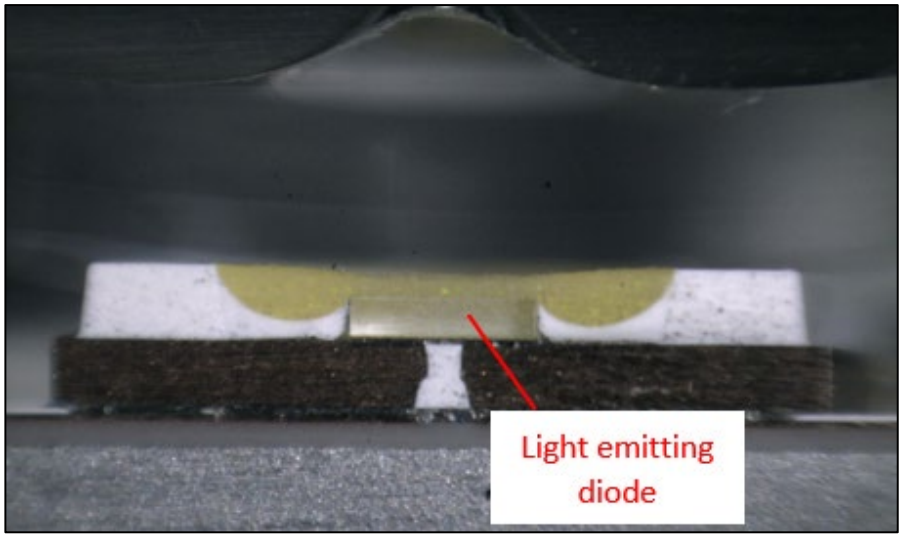
55. On information and belief, Defendants, either by themselves (individually and/or in concert) and/or via an agent, infringe literally, and/or under the Doctrine of Equivalents, at least claim 1 of the ’113 patent by, among other things, making, using, selling, offering for sale, and/or importing infringing products, such as televisions and monitors that meet at least claim 1 of the ’113 patent (the “’113 Patent Accused Products”). The ’113 Patent Accused Products include, as examples only, the UN58CU7000F and UN75TU690TF models. Further, SEC is vicariously liable for this infringing conduct of SDC and/or SEA, as well as other related Samsung entities, and affiliates, (under both the alter ego and agency theories) because, as an example and upon information and belief, SEC, SDC, and SEA are essentially the same company, and SEC has the right and ability to control SDC’s and SEA’s infringing acts and receives a direct financial benefit from SEA’s and SDC’s infringement.

56. The ’113 Patent Accused Products comprise displays such as the UN58CU7000F model television shown below.

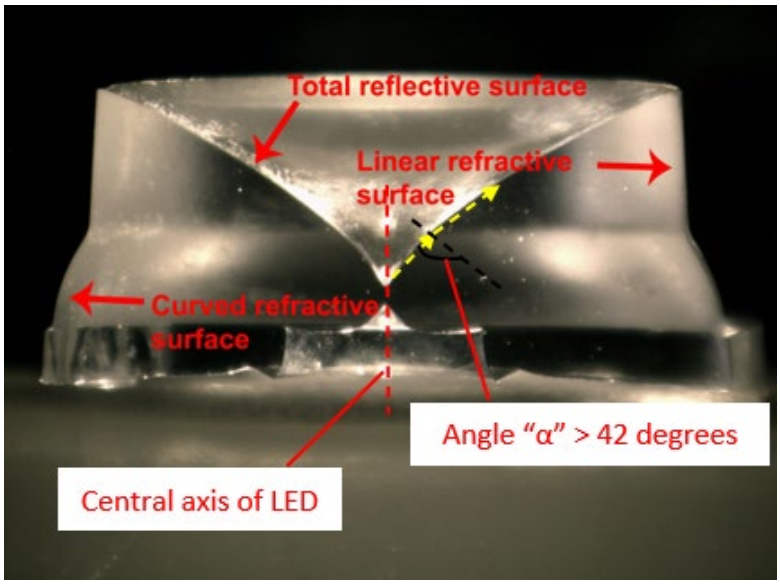
57. The ’113 Patent Accused Products a light emitting device, such as found in the array of light emitting devices in the UN58CU7000F model television as shown below (array on left, individual on right (overhead views)).



58. In the ’113 Patent Accused Products, the light emitting devices each comprise an LED, as shown for example in the side view image of a lens from the UN58CU7000F model television below.

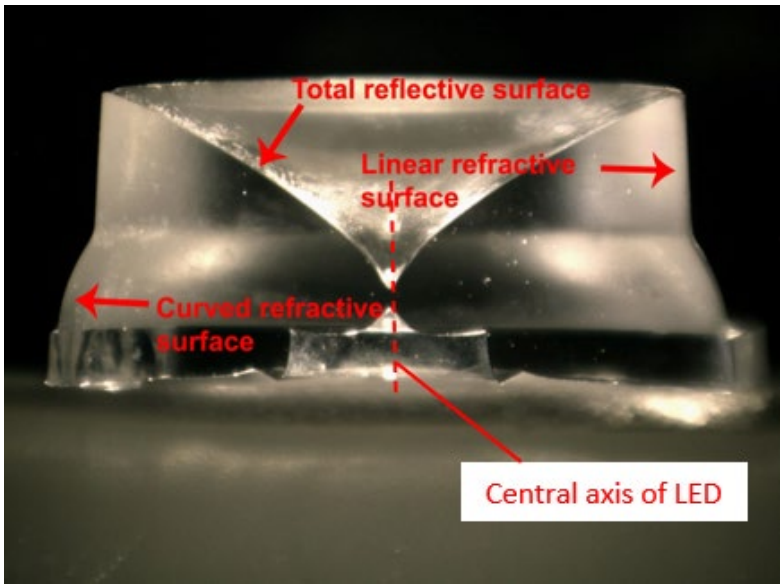


59. The ’113 Patent Accused Products comprise a lens arranged to receive light from the light emitting diode, the lens comprising a total reflection surface having a total reflection slope with respect to a central axis of the light emitting diode as shown in the image below from the UN58CU7000F model television.



60. The ’113 Patent Accused Products comprise at least one of a linear refractive surface and a curved refractive surface formed to extend away from the central axis and beyond a

periphery of the total reflection surface as shown in the image below from the UN58CU7000F model television.



INDIRECT INFRINGEMENT (35 U.S.C. §271(b))

61. Based on the information presently available to Plaintiff, absent discovery, Defendants have also indirectly infringed one or more claims of the ’113 patent by inducing infringement, including, at least, the importation and sale of the ’113 Patent Accused Products. For example, Defendants induce and have induced the importation and sale the ’113 Patent Accused Products (e.g., UN58CU7000F) by retailers. Further, SEC and/or SDC also induce and have induced the importation and sale of the ’113 Patent Accused Products (e.g., UN58CU7000F) by SEA.

62. On information and belief, despite having knowledge of the ’113 patent and their infringement, Defendants specifically intended and continue to intend for retailers to import and sell the ’113 Patent Accused Products. Further, SEC and/or SDC specifically intended for SEA to import and sell the ’113 Patent Accused Products. On information and belief, Defendants instruct and encourage the importers to import and/or sell the ’113 Patent Accused Products. On

information and belief, the purchase and sale agreements between Defendants and the importers provide such instruction and/or encouragement. Further, on information and belief, SEA exists for inter alia, the purpose of importing and selling the ’113 Patent Accused Products in the United States. Moreover, Defendants induce end users of the ’113 Patent Accused Products to use those products in an infringing manner by encouraging the use of those products via marketing and by providing support for the use of those products. *See, e.g.,* https://www.samsung.com/us/support/contact/.

63. Upon information and belief, despite having knowledge of the ’113 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’113 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. Defendants’ infringing activities relative to the ’113 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

64. Each Defendant is liable for these infringements of the ’113 patent pursuant to 35 U.S.C. § 271.

65. Plaintiff has been damaged as a result of Defendants’ infringing conduct described in this Count. Defendants are, thus, liable to Plaintiff in an amount that adequately compensates Plaintiff 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.

66. Plaintiff has complied with the requirements of 35 U.S.C. § 287, to the extent necessary and/or applicable, and is entitled to collect pre- and post-filing damages for Defendants' infringements of the '113 patent.

COUNT IV
(Infringement of U.S. Patent No. 7,951,626)

67. Plaintiff incorporates paragraphs 1 through 13 herein by reference. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, et seq.

68. Plaintiff is the owner of the '626 patent with all substantial rights to the '626 patent including the exclusive right to enforce, sue, and recover damages for past infringement.

69. The '626 patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

70. Defendants have known of the '626 patent and their infringement at least as early as the service date of this original complaint. Further, on information and belief, Defendants have known of the '626 patent and their infringement at least as early as the filing date of the original complaint. In addition, Defendants have known about the '626 patent since at least July 16, 2024, when SEA received a letter notifying them of the '626 patent and their infringement.

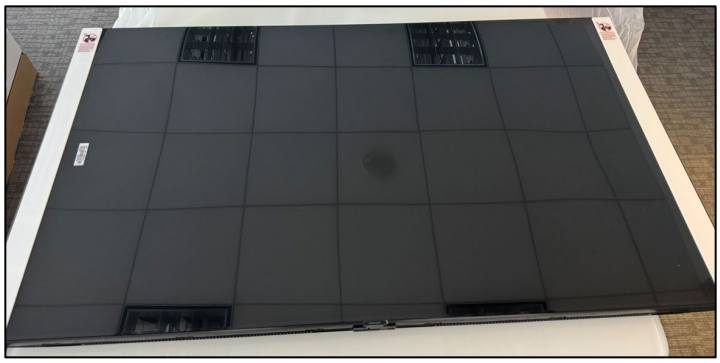
DIRECT INFRINGEMENT (35 U.S.C. §271(a))

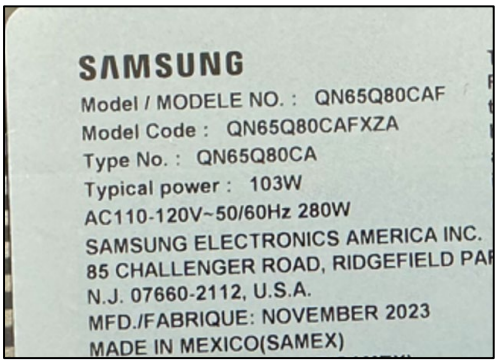
71. Defendants infringed literally, and/or under the Doctrine of Equivalents, one or more claims of the '626 patent in this judicial district and elsewhere in Texas and the United States.

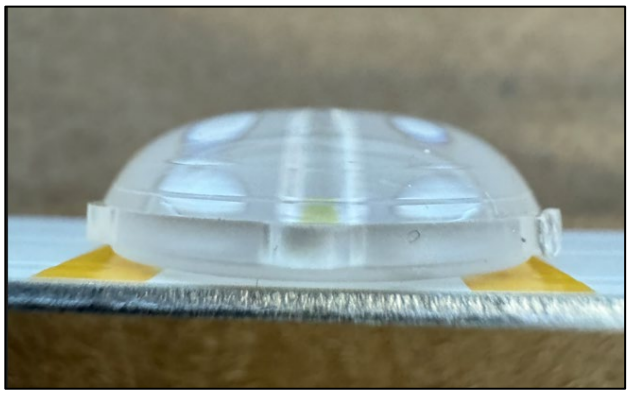
72. On information and belief, Defendants, either by themselves (individually and/or in concert) and/or via an agent, infringe literally, and/or under the Doctrine of Equivalents, at least claim 9 of the '626 patent by, among other things, making, using, selling, offering for sale, and/or importing infringing products, such as televisions and monitors that meet at least claim 9 of the '626 patent (the "'626 Patent Accused Products"). The '626 Patent Accused Products include, as

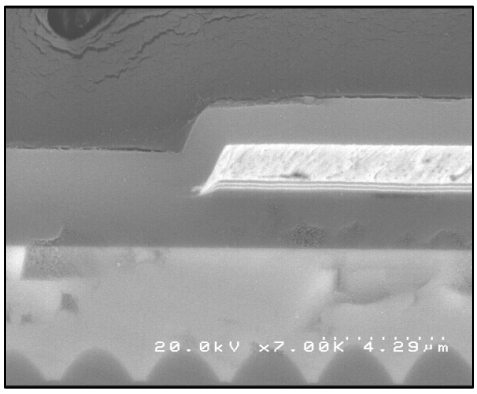
examples only, the QN32Q60CAF, QN43Q60CAF, QN55Q70CAF, QN65Q70CAF, S27CM801UN, S32CM703UN, UN43CU8000F, UN65CU8000F, QN55QN85CAF, QN65Q80CAF, QN65QN90CAF, UN58CU7000F, UN75TU690TF models. Further, SEC is vicariously liable for this infringing conduct of SDC and/or SEA, as well as other related Samsung entities, and affiliates, (under both the alter ego and agency theories) because, as an example and upon information and belief, SEC, SDC, and SEA are essentially the same company, and SEC has the right and ability to control SDC's and SEA's infringing acts and receives a direct financial benefit from SEA's and SDC's infringement.

73. The '626 Patent Accused Products are made according to the method of manufacturing a light emitting device of claim 9 as an example. The QN65Q80CAF model television includes LEDs such as those shown in the side view and SEM views below.

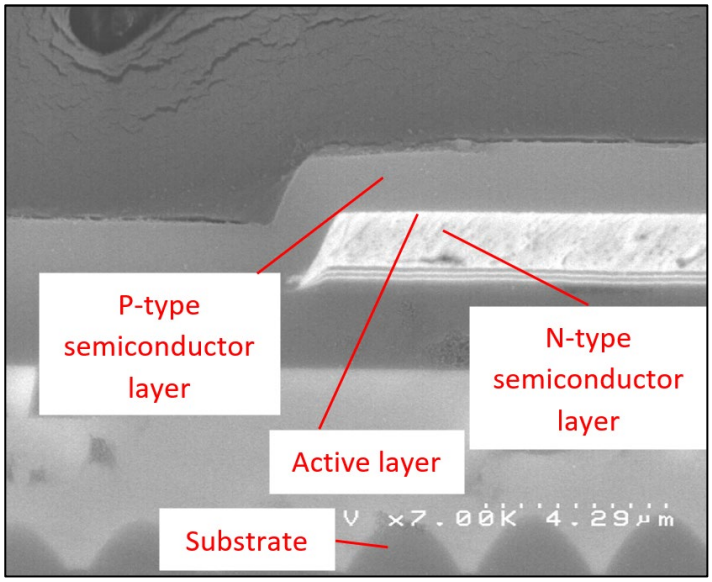




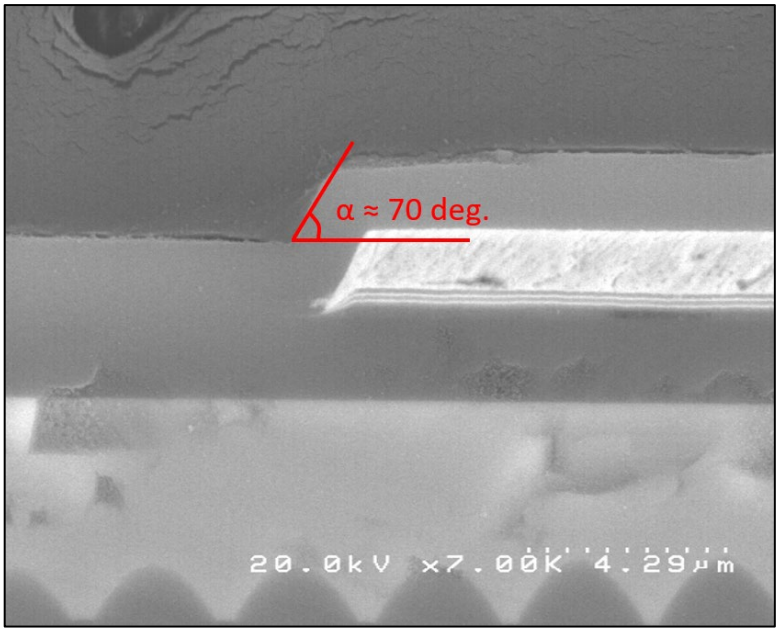




74. The ’626 Patent Accused Products include light emitting devices made by sequentially forming an N-type semiconductor layer, active layer, and P-type semiconductor layer on a substrate as shown in the image below from the QN65Q80CAF model television.



75. The ’626 Patent Accused Products include light emitting devices made by forming an etching mask pattern, of which a side surface is not perpendicular to but inclined at a slope from a horizontal plane, on the P-type semiconductor layer; and removing the etching mask pattern and the P-type semiconductor layer exposed through the etching mask pattern as shown for example in the image from the QN65Q80CAF model television below. As the image below shows, the edge of the P-type semiconductor has an inclined slope angle “α” of approximately 70 degrees. Upon information and belief, the angle occurs because of an etching mask pattern that was formed over the upper surface of the P-type semiconductor layer and removed during the manufacturing process.



76. The ’626 Patent Accused Products include light emitting devices made wherein forming the etching mask pattern comprises: forming a photoresist on the P-type semiconductor layer; by exposing the photoresist to light; hard-baking and developing the photoresist; and etching a side surface of the developed photoresist to have the slope from the horizontal plane. Upon information and belief, the angle of the side surface of the light emitting region of the LEDs of the QN65Q80CAF reflects a substantially similar angle from the etching mask pattern that was formed using a photoresist formed on the P-type semiconductor layer during the manufacturing process. Upon information and belief, the angle from the etching mask pattern was created by exposing the photoresist to light and hard baking and developing the photoresist. More specifically, on information and belief, during the hard baking process, the upper surface of the photoresist was caused to shrink whereas the lower surface did not shrink or shrank less, resulting in an angled edge. Upon information and belief, the angled edge was then etched, which resulted in the side surface of the developed photoresist having a slope from the horizontal plane.

INDIRECT INFRINGEMENT (35 U.S.C. §271(b))

77. Based on the information presently available to Plaintiff, absent discovery, Defendants have also indirectly infringed one or more claims of the ’626 patent by inducing infringement, including, at least, the importation and sale of the ’626 Patent Accused Products. For example, Defendants induce and have induced the importation and sale the ’626 Patent Accused Products (e.g., QN65Q80CAF) by retailers. Further, SEC and/or SDC also induce and have induced the importation and sale of the ’626 Patent Accused Products (e.g., QN65Q80CAF) by SEA.

78. On information and belief, despite having knowledge of the ’626 patent and their infringement, Defendants specifically intended and continue to intend for retailers to import and sell the ’626 Patent Accused Products. Further, SEC and/or SDC specifically intended for SEA to import and sell the ’626 Patent Accused Products. On information and belief, Defendants instruct and encourage the importers to import and/or sell the ’626 Patent Accused Products. On information and belief, the purchase and sale agreements between Defendants and the importers provide such instruction and/or encouragement. Further, on information and belief, SEA exists for inter alia, the purpose of importing and selling the ’626 Patent Accused Products in the United States. Moreover, Defendants induce end users of the ’626 Patent Accused Products to use those products in an infringing manner by encouraging the use of those products via marketing and by providing support for the use of those products. *See, e.g.,* https://www.samsung.com/us/support/contact/.

79. Upon information and belief, despite having knowledge of the ’626 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’626 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively

high likelihood of infringement. Defendants' infringing activities relative to the '626 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

80. Each Defendant is liable for these infringements of the '626 patent pursuant to 35 U.S.C. § 271.

81. Plaintiff has been damaged as a result of Defendants' infringing conduct described in this Count. Defendants are, thus, liable to Plaintiff in an amount that adequately compensates Plaintiff 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.

82. Plaintiff has complied with the requirements of 35 U.S.C. § 287, to the extent necessary and/or applicable, and is entitled to collect pre- and post-filing damages for Defendants' infringements of the '626 patent.

COUNT V
(Infringement of U.S. Patent No. 8,132,952)

83. Plaintiff incorporates paragraphs 1 through 13 herein by reference. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, et seq.

84. Plaintiff is the owner of the '952 patent with all substantial rights to the '952 patent including the exclusive right to enforce, sue, and recover damages for past infringement.

85. The '952 patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

86. Defendants have known of the '952 patent and their infringement at least as early as the service date of this original complaint. Further, on information and belief, Defendants have

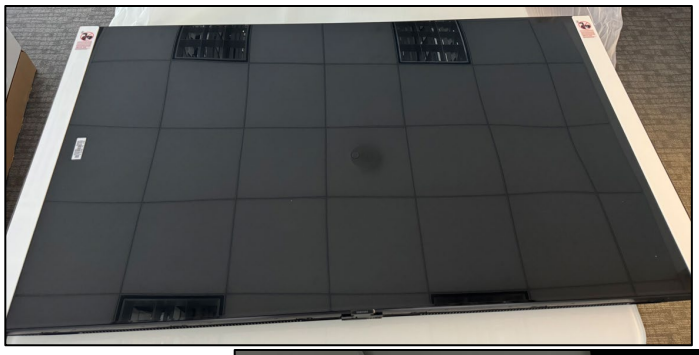
known of the ’952 patent and their infringement at least as early as the filing date of the original complaint. In addition, Defendants have known about the ’952 patent since at least July 16, 2024, when SEA received a letter notifying them of the ’952 patent and their infringement.

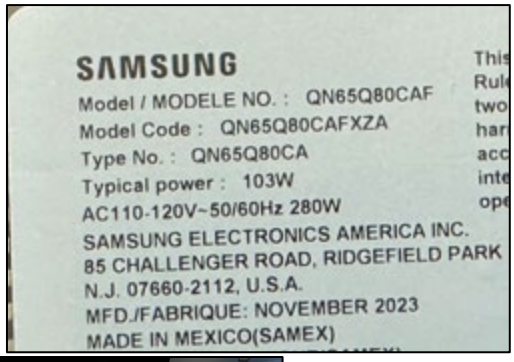
DIRECT INFRINGEMENT (35 U.S.C. §271(a))

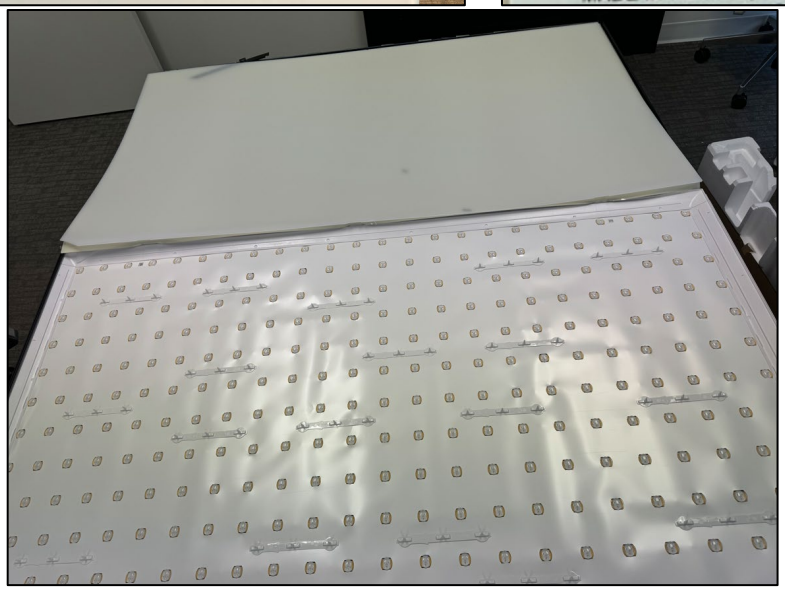
87. Defendants infringed literally, and/or under the Doctrine of Equivalents, one or more claims of the ’952 patent in this judicial district and elsewhere in Texas and the United States.

88. On information and belief, Defendants, either by themselves (individually and/or in concert) and/or via an agent, infringe literally, and/or under the Doctrine of Equivalents, at least claim 1 of the ’952 patent by, among other things, making, using, selling, offering for sale, and/or importing infringing products, such as televisions and monitors that meet at least claim 1 of the ’952 patent (the “’952 Patent Accused Products”). The ’952 Patent Accused Products include, as examples only, the QN65Q80CAF, UN58CU7000F, and UN75TU690TF models. Further, SEC is vicariously liable for this infringing conduct of SDC and/or SEA, as well as other related Samsung entities, and affiliates, (under both the alter ego and agency theories) because, as an example and upon information and belief, SEC, SDC, and SEA are essentially the same company, and SEC has the right and ability to control SDC’s and SEA’s infringing acts and receives a direct financial benefit from SEA’s and SDC’s infringement.

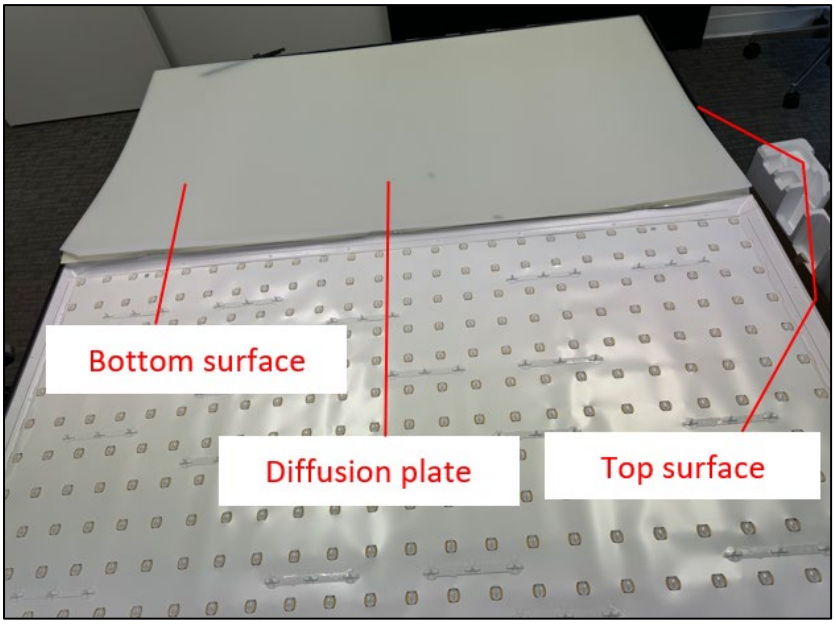
89. The ’952 Patent Accused Products comprise backlight panels such as those in the QN65Q80CAF model television shown below. For example, the backlight panel is shown as torn-down in the bottom image below.



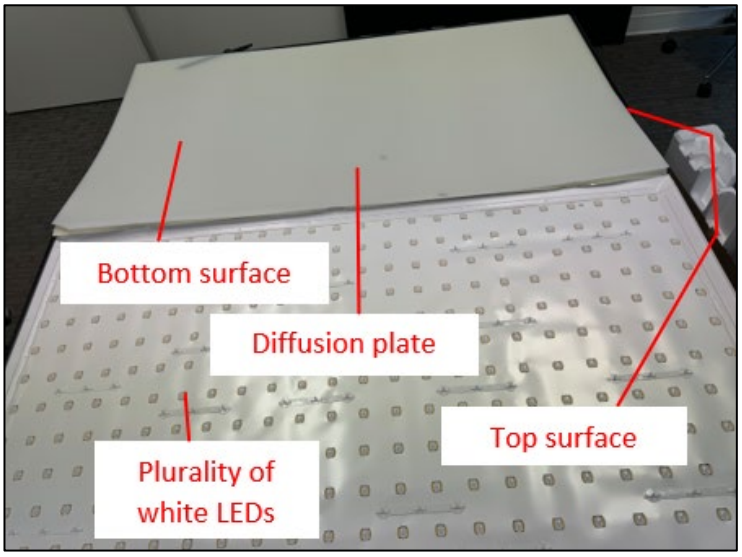




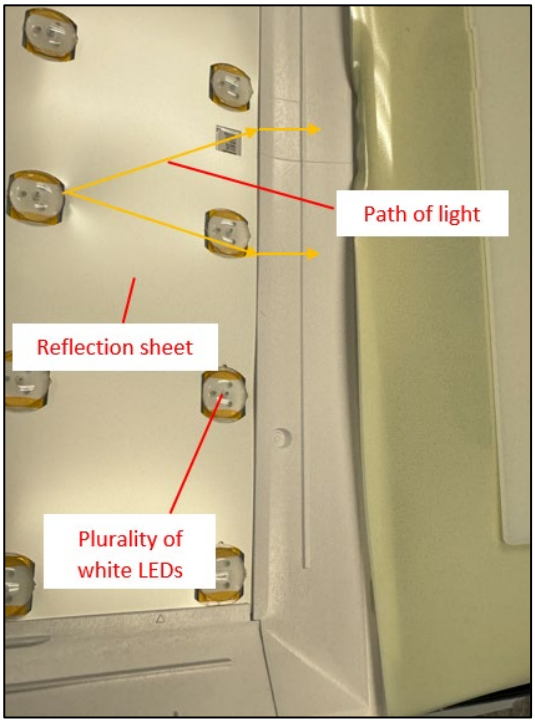
90. The ’952 Patent Accused Products include a diffusion plate comprising a top surface and a bottom surface, such as the example shown in QN65Q80CAF model television below. The bottom surface is shown in the image and the top surface is the opposing side.



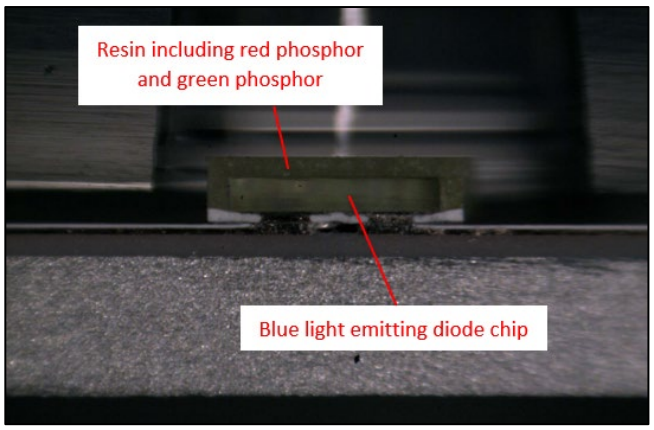
91. The ’952 Patent Accused Products include a plurality of white light emitting diodes arranged below the bottom surface of the diffusion plate, the white light emitting diodes to emit light directly onto the bottom surface of the diffusion plate, such as in the example shown in QN65Q80CAF model television below.

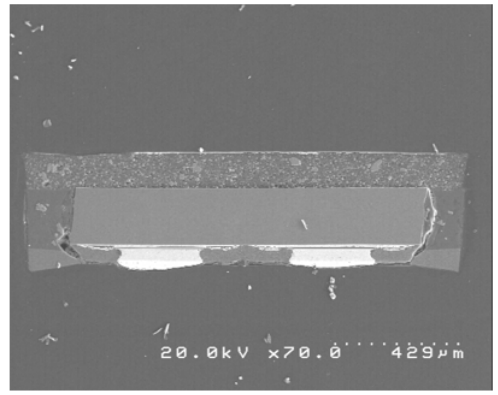


92. The ’952 Patent Accused Products include a reflection sheet arranged below light exit surfaces of the white light emitting diodes, the reflection sheet to reflect light toward the diffusion plate as shown in the image below from the QN65Q80CAF model television.

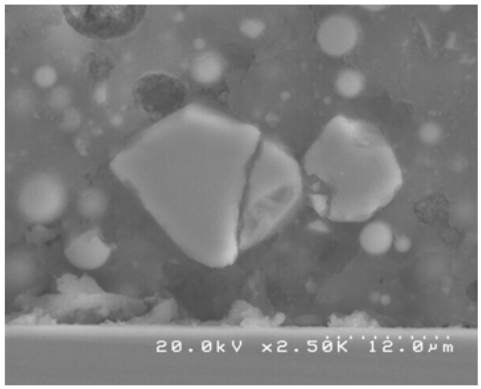


93. In the ’952 Patent Accused Products, each white light emitting diode comprises a blue light emitting diode chip and a red phosphor and a green phosphor arranged on the blue light emitting diode chip. As shown in the optical microscope and SEM images below, the white light emitting diode comprises a blue light emitting diode chip and a red phosphor and a green phosphor arranged on the blue light emitting diode chip.

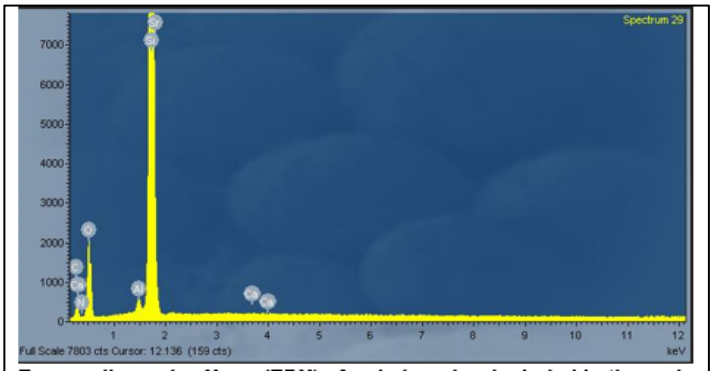




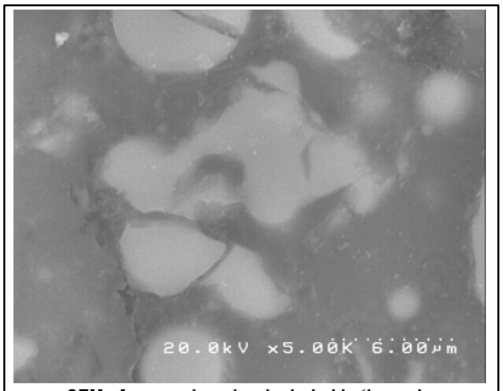
SEM of resin disposed over the blue light emitting diode chip



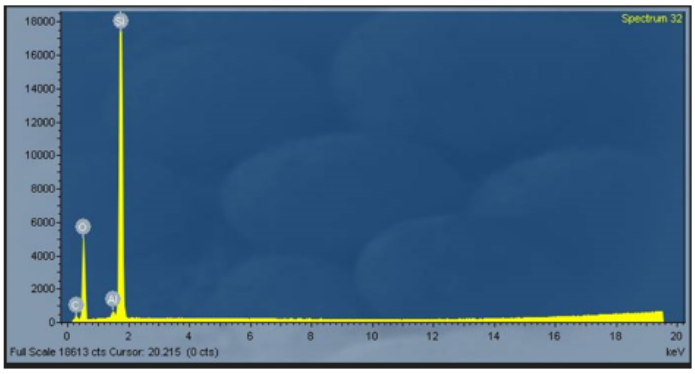
SEM of red phosphor included in the resin



Energy-dispersive X-ray (EDX) of red phosphor included in the resin



SEM of green phosphor included in the resin



EDX of green phosphor included in the resin

INDIRECT INFRINGEMENT (35 U.S.C. §271(b))

94. Based on the information presently available to Plaintiff, absent discovery, Defendants have also indirectly infringed one or more claims of the ’952 patent by inducing infringement, including, at least, the importation and sale of the ’952 Patent Accused Products.

For example, Defendants induce and have induced the importation and sale the ’952 Patent Accused Products (e.g., QN65Q80CAF) by retailers. Further, SEC and/or SDC also induce and have induced the importation and sale of the ’952 Patent Accused Products (e.g., QN65Q80CAF) by SEA.

95. On information and belief, despite having knowledge of the ’952 patent and their infringement, Defendants specifically intended and continue to intend for retailers to import and sell the ’952 Patent Accused Products. Further, SEC and/or SDC specifically intended for SEA to import and sell the ’952 Patent Accused Products. On information and belief, Defendants instruct and encourage the importers to import and/or sell the ’952 Patent Accused Products. On information and belief, the purchase and sale agreements between Defendants and the importers provide such instruction and/or encouragement. Further, on information and belief, SEA exists for inter alia, the purpose of importing and selling the ’952 Patent Accused Products in the United States. Moreover, Defendants induce end users of the ’952 Patent Accused Products to use those products in an infringing manner by encouraging the use of those products via marketing and by providing support for the use of those products. *See, e.g.,* https://www.samsung.com/us/support/contact/.

96. Upon information and belief, despite having knowledge of the ’952 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the ’952 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. Defendants’ infringing activities relative to the ’952 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, and an egregious case of misconduct beyond typical infringement such that Plaintiff is

entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

97. Each Defendant is liable for these infringements of the ’952 patent pursuant to 35 U.S.C. § 271.

98. Plaintiff has been damaged as a result of Defendants’ infringing conduct described in this Count. Defendants are, thus, liable to Plaintiff in an amount that adequately compensates Plaintiff 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.

99. Plaintiff has complied with the requirements of 35 U.S.C. § 287, to the extent necessary and/or applicable, and is entitled to collect pre- and post-filing damages for Defendants’ infringements of the ’952 patent.

COUNT VI
(Infringement of U.S. Patent No. 9,412,913)

100. Plaintiff incorporates paragraphs 1 through 13 herein by reference.

101. This cause of action arises under the patent laws of the United States, and in particular, 35 U.S.C. §§ 271, et seq Plaintiff is the owner of the ’913 patent with all substantial rights to the ’913 patent including the exclusive right to enforce, sue, and recover damages for past infringement.

102. The ’913 patent is valid, enforceable and was duly issued in full compliance with Title 35 of the United States Code.

103. Defendants have known of the ’913 patent and their infringement at least as early as the service date of this original complaint. Further, on information and belief, Defendants have known of the ’913 patent and their infringement at least as early as the filing date of the original complaint. In addition, Defendants have known about the ’913 patent since at least July 16, 2024,

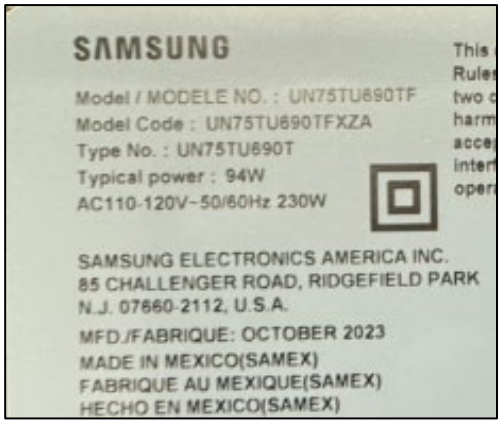
when SEA received a letter notifying them notifying them of the ’913 patent and their infringement.

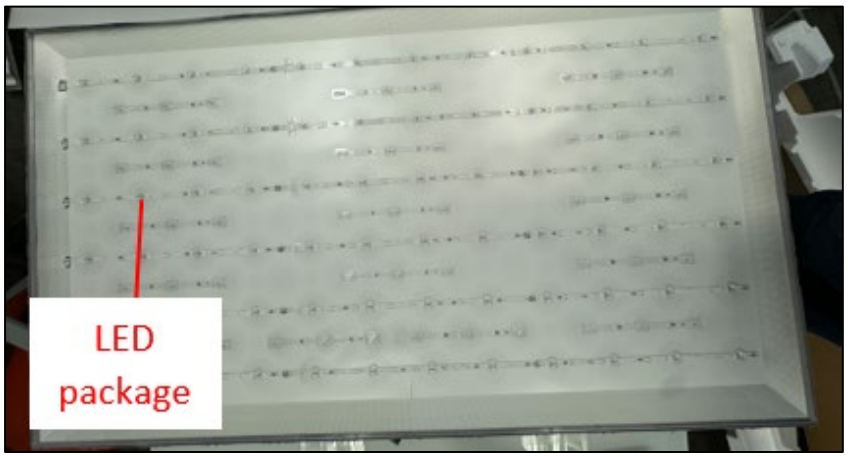
DIRECT INFRINGEMENT (35 U.S.C. §271(a))

104. Defendants infringed literally, and/or under the Doctrine of Equivalents, one or more claims of the ’913 patent in this judicial district and elsewhere in Texas and the United States.

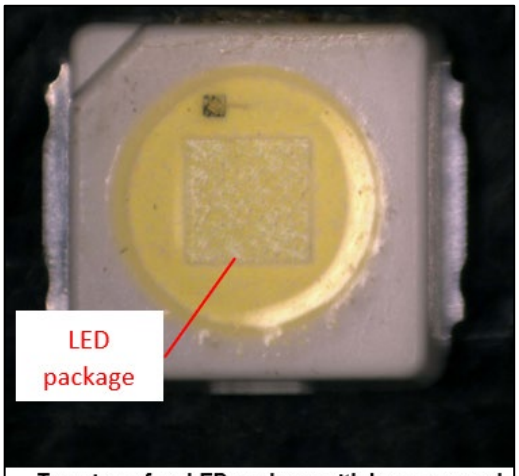
105. On information and belief, Defendants, either by themselves (individually and/or in concert) and/or via an agent, infringe literally, and/or under the Doctrine of Equivalents, at least claim 1 of the ’913 patent by, among other things, making, using, selling, offering for sale, and/or importing infringing products, such as televisions and monitors that meet at least claim 1 of the ’913 patent (the “’913 Patent Accused Products”). The ’913 Patent Accused Products include, as examples only, the QN55Q70CAF, S27CM801UN, S32CM703UN, UN43CU8000F, UN65CU8000F, and UN75TU690TF models. Further, SEC is vicariously liable for this infringing conduct of SDC and/or SEA, as well as other related Samsung entities, and affiliates, (under both the alter ego and agency theories) because, as an example and upon information and belief, SEC, SDC, and SEA are essentially the same company, and SEC has the right and ability to control SDC’s and SEA’s infringing acts and receives a direct financial benefit from SEA’s and SDC’s infringement.

106. The ’913 Patent Accused Products include a light emitting diode (LED) package such as those in the UN75TU690TF model television shown below. For example, LED packages are shown as torn-down from the UN75TU690TF in the bottom images below.



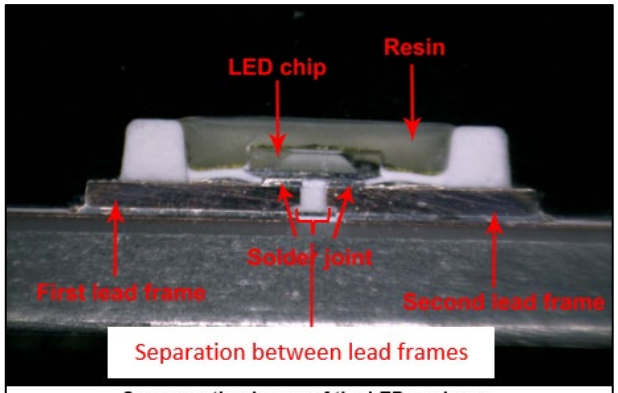


Top view of an LED package



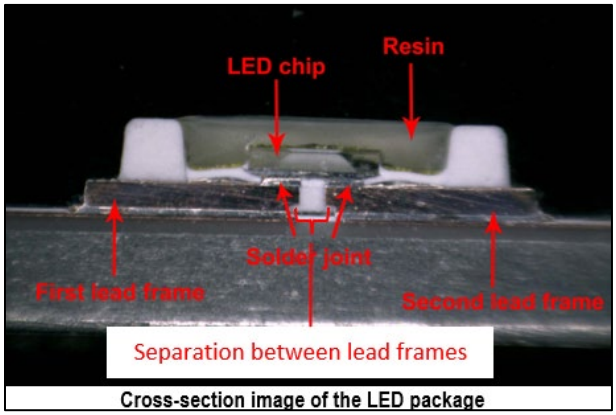
Top view of an LED package with lens removed

107. The ’913 Patent Accused Products include a first lead frame and a second lead frame separated from each other such as those in from the UN75TU690TF model television below.

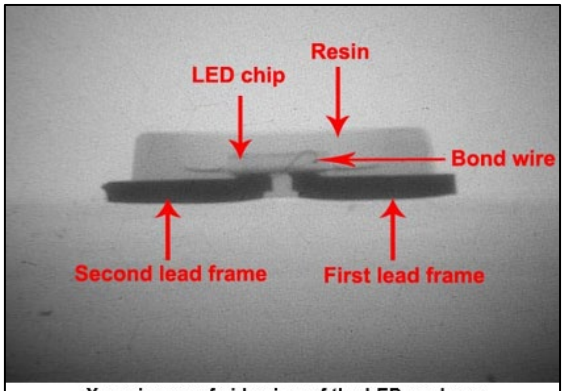


Cross-section image of the LED package

108. The ’913 Patent Accused Products include an LED chip disposed on the first lead frame and electrically connected with second lead frame such as that shown from the UN75TU690TF model television below.

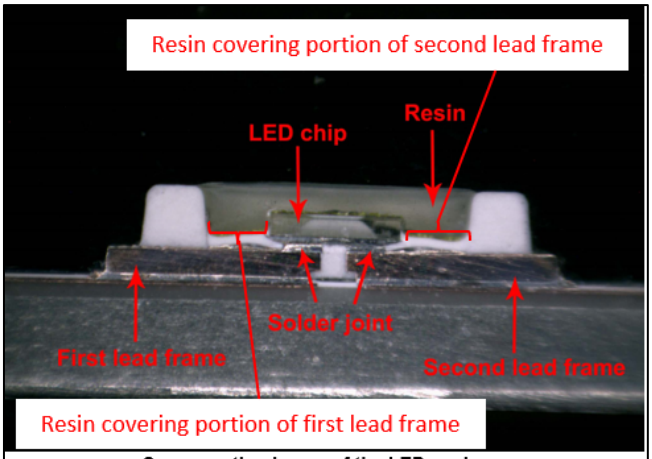


Cross-section image of the LED package



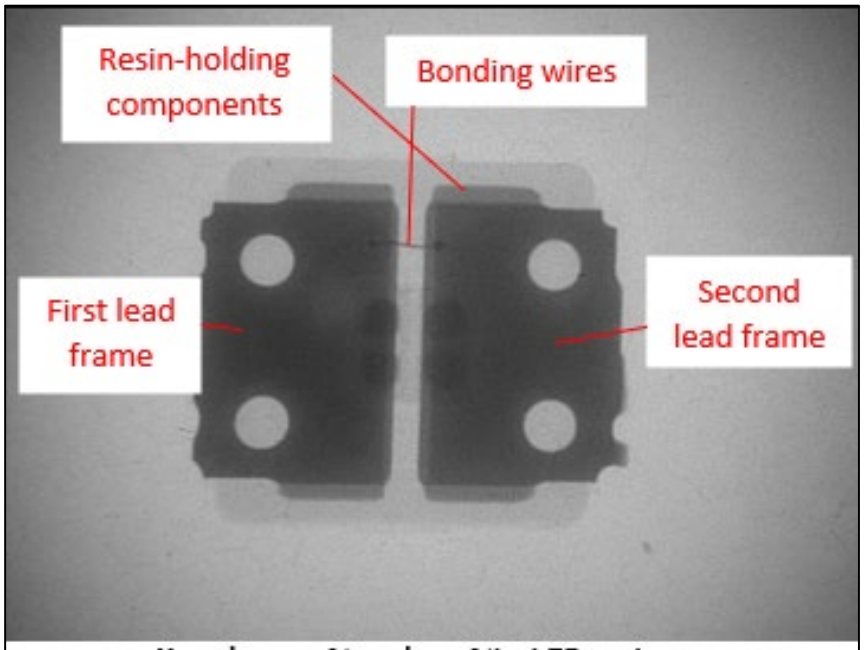
X-ray image of side view of the LED package

109. The ’913 Patent Accused Products include a resin covering at least portions of surfaces of the first and second lead frames as shown in the image below from the UN75TU690TF model television.

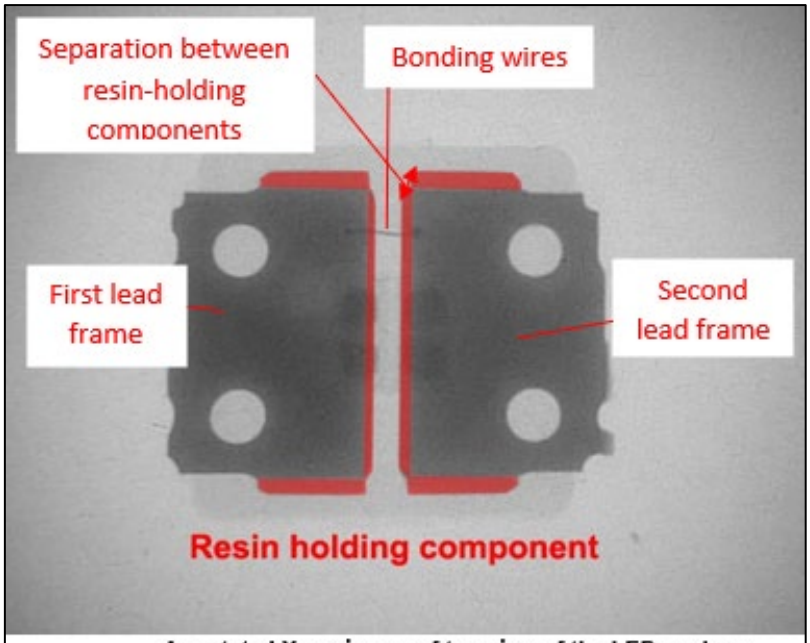


Cross-section image of the LED package

110. In the ’913 Patent Accused Products the products are made wherein: at least one of the first and second lead frames comprises resin-holding components disposed along adjacent sides of one of the first and second lead frames, the resin-holding components being separated from each other at corners of the adjacent sides frames, as shown in the images below from the UN75TU690TF model television.



X-ray image of top view of the LED package



Annotated X-ray image of top view of the LED package

INDIRECT INFRINGEMENT (35 U.S.C. §271(b))

111. Based on the information presently available to Plaintiff, absent discovery, Defendants have also indirectly infringed one or more claims of the ’913 patent by inducing infringement, including, at least, the importation and sale of the ’913 Patent Accused Products. For example, Defendants induce and have induced the importation and sale the ’913 Patent Accused Products (e.g., UN75TU690TF) by retailers. Further, SEC and/or SDC also induce and have induced the importation and sale of the ’913 Patent Accused Products (e.g., UN75TU690TF) by SEA.

112. On information and belief, despite having knowledge of the ’913 patent and their infringement, Defendants specifically intended and continue to intend for retailers to import and sell the ’913 Patent Accused Products. Further, SEC and/or SDC specifically intended for SEA to import and sell the ’913 Patent Accused Products. On information and belief, Defendants instruct and encourage the importers to import and/or sell the ’913 Patent Accused Products. On

information and belief, the purchase and sale agreements between Defendants and the importers provide such instruction and/or encouragement. Further, on information and belief, SEA exists for inter alia, the purpose of importing and selling the '913 Patent Accused Products in the United States. Moreover, Defendants induce end users of the '913 Patent Accused Products to use those products in an infringing manner by encouraging the use of those products via marketing and by providing support for the use of those products. *See, e.g.,* https://www.samsung.com/us/support/contact/.

113. Upon information and belief, despite having knowledge of the '913 patent and knowledge that it is directly and/or indirectly infringing one or more claims of the '913 patent, Defendants have nevertheless continued their infringing conduct and disregarded an objectively high likelihood of infringement. Defendants' infringing activities relative to the '913 patent have been, and continue to be, willful, wanton, malicious, in bad-faith, deliberate, consciously wrongful, flagrant, and an egregious case of misconduct beyond typical infringement such that Plaintiff is entitled under 35 U.S.C. § 284 to enhanced damages up to three times the amount found or assessed.

114. Each Defendant is liable for these infringements of the '913 patent pursuant to 35 U.S.C. § 271.

115. Plaintiff has been damaged as a result of Defendants' infringing conduct described in this Count. Defendants are, thus, liable to Plaintiff in an amount that adequately compensates Plaintiff 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.

116. Plaintiff has complied with the requirements of 35 U.S.C. § 287, to the extent necessary and/or applicable, and is entitled to collect pre- and post-filing damages for Defendants' infringements of the '913 patent.

CONCLUSION

117. Plaintiff is entitled to recover from Defendants the damages sustained by Plaintiff as a result of the 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]

118. 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

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

PRAYER FOR RELIEF

Plaintiff asks that the Court find in its favor and against Defendants and that the Court grant Plaintiff the following relief:

a. Judgment that one or more claims of the Asserted Patents have been infringed, either literally and/or under the doctrine of equivalents, by Defendants;

b. Judgment that Defendants account for and pay to Plaintiff all damages and costs incurred by Plaintiff because of Defendants' infringing activities and other conduct complained of herein, including an accounting for any sales or damages not presented at trial;

c. Judgment that Defendants account for and pay to Plaintiff a reasonable, ongoing, post judgment royalty because of Defendants' infringing activities, including

continuing infringing activities, and other conduct complained of herein;

d. Judgment that Defendants account for and pay to Plaintiff damages arising from their willful infringement under 35 U.S.C. § 284 or any other enhanced damages;

e. That Plaintiff be granted pre-judgment and post-judgment interest on the damages caused by Defendants' infringing activities and other conduct complained of herein;

f. Find this case exceptional under the provisions of 35 U.S.C. § 285 and award enhanced damages; and

g. That Plaintiff be granted such other and further relief as the Court may deem just and proper under the circumstances.

Dated: July 17, 2024

Respectfully submitted,

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