IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Civil Action No. _____

CELLECT, LLC., a Colorado Limited Liability Company,

Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD., a Korean corporation, and SAMSUNG ELECTRONICS AMERICA, INC., a New York corporation,

Defendants.

COMPLAINT AND DEMAND FOR JURY TRIAL

Plaintiff Cellect, LLC. ("Cellect") files this Complaint for Patent Infringement and Demand for Jury Trial against defendants Samsung Electronics Co., LTD., ("SEC") and Samsung Electronics America, Inc.("SEA") (collectively, "Defendants" or "Samsung") and alleges as follows:

THE PARTIES

1. Cellect is a Colorado limited liability company with its principal place of business at 3134 Wyandot St., Denver Colorado 80211-3825. Along with its parent company, Micro-Imaging Solutions LLC ("MIS"), also based in Denver, Colorado, Cellect has invented and developed novel aspects of imaging technology known as Complementary Metal-Oxide Semiconductor ("CMOS"). This patented CMOS camera technology has important applications in modern smartphones and tablets.

2. SEC is a multinational corporation incorporated under the laws of the Republic of Korea and having its headquarters located at 129 Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea. On information and belief, SEC has approximately 263 subsidiaries, including Defendant SEA, which collectively with SEC operate four business divisions: Consumer Electronics ("CE"), which designs, manufactures, and sells products such as digital televisions and computer monitors; Information Technology & Mobile Communications ("IM"), which designs, manufactures, and sells products such as mobile phones, communication systems, and computers; Device Solutions ("DS"), which designs, manufactures, and sells products and services within its Semiconductor Business including memory products, LSI products such as system-on-chip ("SoC") semiconductor devices and image sensors, and foundry services, as well as products within its Display Business such as LCD and OLED panels; and Harman, which designs, manufactures, and sells connected car systems, audio and visual products, enterprise automation solutions, and connected services.

3. SEA is a New York corporation having its principal place of business at 85 Challenger Road, Ridgefield Park, New Jersey, 07660. On information and belief, SEA is a wholly-owned subsidiary of SEC that markets and sells products and services within the United States that are designed, manufactured, and/or provided by SEC and/or one or more of SEC's approximately 263 subsidiaries and that fall within at least one of SEC's CE, IM, and DS business divisions, including Samsung smartphones and tablets. On information and belief, SEA maintains an office at 12101 Airport Way, Broomfield, CO 80021 that is involved in making, using and/or selling Samsung smartphones and tablets.

4. On information and belief, SEC and SEA work collectively with one another, and with SEC's other subsidiaries, in the design, manufacture, importation, distribution, marketing, and selling of Samsung smartphones and tablets.

JURISDICTION AND VENUE

5. This action arises under the Patent Act, 35 U.S.C. § 101 *et seq*. This Court has original jurisdiction over this controversy pursuant to 28 U.S.C. §§ 1331 and 1338.

6. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b) and (c) and/or 1400(b).

7. This Court can exercise personal jurisdiction over Samsung because Samsung maintains substantial operations located in this District, and therefore Samsung's affiliations with this District are so substantial as to render it essentially at home in this District. Additionally, this Court can exercise personal jurisdiction over Samsung in this action because Samsung has committed acts of infringement and/or inducement of infringement in this District, because Plaintiffs' claims arise out of and relate to Samsung's acts of infringement and/or inducement of infringement in this District, and because the exercise of jurisdiction by this Court over Samsung in this action would be reasonable. Accordingly, Samsung has minimum contacts with this District such that the maintenance of this action within this District would not offend traditional notions of fair play and substantial justice.

8. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b) and (c) and/or 1400(b) because Samsung resides in this District and because Samsung's acts of infringement and/or inducement of infringement take place in this District.

CELLECT'S INNOVATIONS

9. Cellect and its parent company, Micro-Imaging Solutions, pioneered and developed complementary metal-oxide semiconductor ("CMOS") imaging sensor technology. For its pioneering development, the United States Patent & Trademark Office has awarded Cellect more than 21 U.S. Patents.

10. MIS was founded in 1994 by Dr. Edwin Adair, a medical doctor and prolific inventor. Dr. Adair founded MIS and focused on designing and enabling high-resolution, disposable endoscopes. Subsequently, Dr. Adair and his two sons, John Adair and Jeff Adair, further developed this technology and came up with revolutionary ideas for physically separating CMOS sensors and processors to enable CMOS sensor technology to be used in micro-sized compact configurations. MIS obtained patents covering this technology, now owned by Cellect.

11. Cellect further developed CMOS technology for use in camera phones to enable these devices to be thinner, more compact, and more efficient. Cellect obtained additional patents which cover technology that is now essential in the design of smartphones and tablets. John and Jeff Adair continue to operate MIS and Cellect in Denver Colorado where the company was founded.

12. MIS has successfully licensed its patented technology to manufacturers in the medical device industry. Several of these licensees contacted MIS on their own initiative to request rights to this patented technology.

CELLECT'S ASSERTED PATENTS

13. On March 28, 2000, the USPTO issued to Edwin L. Adair, Jeffrey L. Adair, and Randall S. Adair U.S. Patent No. 6,043,839 ("the '839 Patent"), titled "Reduced Area Image

Devices." A true and correct copy of the '839 Patent is attached to this Complaint as **Exhibit 1** and is incorporated by reference herein.

14. All rights, title, and interest in the '839 Patent have been assigned to Cellect, who is the sole owner of the '839 Patent.

15. The '839 Patent is generally directed towards a reduced area imaging device in which a CMOS image sensor and circuitry are placed in a stacked fashion at the same location. This patent relates to the use of stacked CMOS technology without the use of an enabling technology. The '839 Patent discloses and specifically claims inventive concepts that represent significant improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

16. On August 14, 2001, the USPTO issued to Edwin L. Adair, Jeffrey L. Adair, and Randall S. Adair U.S. Patent No. 6,275,255 ("the '255 Patent"), titled "Reduced Area Image Devices." A true and correct copy of the '255 Patent is attached to this Complaint as **Exhibit 2** and is incorporated by reference herein.

17. All rights, title, and interest in the '255 Patent have been assigned to Cellect, who is the sole owner of the '255 Patent.

18. The '255 Patent is generally directed towards a reduced area imaging device in which the CMOS image sensor and circuitry are placed in a stacked fashion at the same location. This patent relates to the use of stacked CMOS technology without the use of an enabling technology. The '255 Patent discloses and specifically claims inventive concepts that represent significant improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

19. On July 23, 2002, the USPTO issued to Edwin L. Adair, Jeffrey L. Adair, and Randall S. Adair U.S. Patent No. 6,424,369 ("the '369 Patent"), titled "Hand-Held Computers Incorporating Reduced Area Imaging Devices." A true and correct copy of the '369 Patent is attached to this Complaint as **Exhibit 3** and is incorporated by reference herein.

20. All rights, title, and interest in the '369 Patent have been assigned to Cellect, who is the sole owner of the '369 Patent.

21. The '369 Patent is generally directed towards stacked CMOS technology in a personal data assistant ("PDA"). Specifically, the '369 Patent claims are directed to a CMOS imager and claims directed to the stacked electronics CMOS imager invention in a PDA environment. The '369 Patent discloses and specifically claims inventive concepts that represent significant improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

22. On September 17, 2002, the USPTO issued to Edwin L. Adair, Jeffrey L. Adair, and Randall S. Adair U.S. Patent No. 6,452,626 ("the '626 Patent"), titled "Communication Devices Incorporating Reduced Area Imaging Devices." A true and correct copy of the '626 Patent is attached to this Complaint as **Exhibit 4** and is incorporated by reference herein.

23. All rights, title, and interest in the '626 Patent have been assigned to Cellect, who is the sole owner of the '626 Patent.

24. The '626 Patent is generally directed towards stacked CMOS technology in mobile phones. Specifically, the '626 Patent claims are directed to a CMOS imager and claims directed to the stacked electronics CMOS imager invention in connection with a mobile phone. The '626 Patent discloses and specifically claims inventive concepts that represent significant

improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

25. On March 1. 2005, the USPTO issued to Edwin L. Adair, Jeffrey L. Adair, and Randall S. Adair U.S. Patent No. 6,862,036 ("the '036 Patent"), titled "Communication Devices Incorporating Reduced Area Imaging Devices." A true and correct copy of the '036 Patent is attached to this Complaint as **Exhibit 5** and is incorporated by reference herein.

26. All rights, title, and interest in the '036 Patent have been assigned to Cellect, who is the sole owner of the '036 Patent.

27. The '036 Patent is generally directed towards stacked CMOS technology in mobile phones. Specifically, the '036 Patent claims are directed to a CMOS imager and claims directed to the stacked electronics CMOS imager invention in connection with a mobile phone. The '036 Patent discloses and specifically claims inventive concepts that represent significant improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

28. On January 3, 2006, the USPTO issued to Edwin L. Adair, Jeffrey L. Adair, and Randall S. Adair U.S. Patent No. 6,982,740 ("the '740 Patent"), titled "Reduced Area Imaging Devices Utilizing Selected Charge Integration Periods." A true and correct copy of the '740 Patent is attached to this Complaint as **Exhibit 6** and is incorporated by reference herein.

29. All rights, title, and interest in the '740 Patent have been assigned to Cellect, who is the sole owner of the '740 Patent.

30. The '740 Patent is generally directed towards a reduced area image device which utilizes selected charge integration periods. The '740 Patent discloses and specifically claims

inventive concepts that represent significant improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

31. On January 3, 2006, the USPTO issued to Edwin L. Adair, Jeffrey L. Adair, and Randall S. Adair U.S. Patent No. 6,982,742 ("the '742 Patent"), titled "Hand-Held Computers Incorporating Reduced Area Imaging Devices." A true and correct copy of the '742 Patent is attached to this Complaint as **Exhibit 7** and is incorporated by reference herein.

32. All rights, title, and interest in the '742 Patent have been assigned to Cellect, who is the sole owner of the '742 Patent.

33. The '742 Patent is generally directed towards an image sensor and circuitry means lying in separate planes within a PDA device used for wireless transmission of video images. The '742 Patent discloses and specifically claims inventive concepts that represent significant improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

34. On February 21, 2006, the USPTO issued to Edwin L. Adair, Jeffrey L. Adair, and Randall S. Adair U.S. Patent No. 7,002,621 ("the '621 Patent"), titled "Communication Devices Incorporating Reduced Area Imaging Devices." A true and correct copy of the '621 Patent is attached to this Complaint as **Exhibit 8** and is incorporated by reference herein.

35. All rights, title, and interest in the '621 Patent have been assigned to Cellect, who is the sole owner of the '621 Patent.

36. The '621 Patent is generally directed towards an image sensor and circuitry means lying in separate planes within a wireless/cellular phone used for wireless transmission of video images. The '621 Patent discloses and specifically claims inventive concepts that represent

significant improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

37. On November 17, 2015, the USPTO issued to Edwin L. Adair, Jeffrey L. Adair, and Randall S. Adair U.S. Patent No. 9,186,052 ("the '052 Patent"), titled "Reduced Area Imaging Device Incorporated Within Endoscopic Devices." A true and correct copy of the '052 Patent is attached to this Complaint as **Exhibit 9** and is incorporated by reference herein.

38. All rights, title, and interest in the '052 Patent have been assigned to Cellect, who is the sole owner of the '052 Patent.

39. The '052 Patent is generally directed towards a reduced area imaging device in various configurations, and connections (either wired or wireless) between the imaging device elements and a video display. The '052 Patent discloses and specifically claims inventive concepts that represent significant improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

40. On December 1, 2015, the USPTO issued to Jeffrey L. Adair, and Randall S. Adair U.S. Patent No. 9,198,565 ("the '565 Patent"), titled "Reduced Area Imaging Device Incorporated Within Endoscopic Devices." A true and correct copy of the '565 Patent is attached to this Complaint as **Exhibit 10** and is incorporated by reference herein.

41. All rights, title, and interest in the '565 Patent have been assigned to Cellect, who is the sole owner of the '565 Patent.

42. The '565 Patent is generally directed towards a reduced area imaging device in various configurations, and connections (either wired or wireless) between the imaging device elements and a video display. The '565 Patent discloses and specifically claims inventive

concepts that represent significant improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

43. On May 30, 2017, the USPTO issued to Cellect LLC and John Gregory Adair U.S. Patent No. 9,667,896 ("the '896 Patent"), titled "Reduced Area Imaging Device Incorporated Within Endoscopic Devices." A true and correct copy of the '896 Patent is attached to this Complaint as **Exhibit 11** and is incorporated by reference herein.

44. All rights, title, and interest in the '896 Patent have been assigned to Cellect, who is the sole owner of the '896 Patent.

45. The '896 Patent is generally directed towards a reduced area imaging device in various configuration, and connections (either wired or wireless) between the imaging device elements and a video display. The '896 Patent discloses and specifically claims inventive concepts that represent significant improvements over conventional single-chip imaging devices with the image sensor and image processing on the same plane.

CELLECT'S NOTICE OF INFRINGEMENT TO DEFENDANTS

46. Cellect provided Samsung with notice of its patents, including the Asserted Patents, almost five years ago. Despite this knowledge, Samsung has continued its infringing activity. On or about February 26, 2014, Cellect gave Samsung in-person notice of its infringement of Cellect's patents during a meeting in San Francisco with Junwon Lee, Director of SEC's Licensing Team. During its February 26 meeting, Cellect described to Samsung how the Accused Products infringed Cellect's patents. Specifically, Cellect gave a presentation to Samsung which explicitly disclosed its patent portfolio and explained how the Samsung Galaxy smartphones, among other products, infringed the inventions set forth in Cellect's Asserted

Patents. Samsung was also provided with an exemplary infringement claim chart during this meeting relating to the their Galaxy smartphones.

47. During its February 26, 2014 meeting, Cellect offered Samsung a license under the entire Cellect patent portfolio, including the Asserted Patents.

48. Despite Cellect's best efforts to inform Samsung that its products infringe Cellect's patents and to engage Samsung in good-faith licensing discussions, Defendants refused to take a license to Cellect's patents.

DEFENDANTS' INFRINGING PRODUCTS AND TECHNOLOGIES

49. Defendants make, use, sell, offer for sale, and/or import into the United States and this District products and services that utilize complementary metal-oxide semiconductor ("CMOS") multi-chip and/or stacked image sensor reduced area imaging devices and related technology, including, but not limited to, Samsung tablets and smartphones, among others (collectively, the "Accused Products").

Samsung Tablets

50. Since at least February 26, 2014, when Cellect gave Samsung direct notice of the Asserted Patents, Samsung has made, sold, offered for sale, and/or imported into the United States and this District tablet products which incorporate Cellect's inventions set forth in the Asserted Patents, including but not limited to the Samsung Galaxy Tab 4, Samsung Galaxy TabPro, Samsung Galaxy Tab S, Samsung Galaxy Tab A, Samsung Galaxy Tab S2, Samsung GalaxyTabPro S, Samsung Galaxy TabPro S2, Samsung Galaxy Tab A2, and Samsung Galaxy Tab A3, Samsung Galaxy Tab S3, and Samsung Galaxy Tab S4.

Samsung Smartphones

51. Since at least February 26, 2014, when Cellect gave Samsung direct notice of the Asserted Patents, Samsung has made, sold, offered for sale, and/or imported into the United States and this District wireless phone products which incorporate Cellect's inventions set forth in the Asserted Patents, including but not limited to the Samsung Galaxy S5, Samsung Galaxy S6, Samsung Galaxy S7, Samsung Galaxy S8, Samsung Galaxy S9, Samsung Galaxy Note 3, Samsung Galaxy Note 3 Neo, Samsung Galaxy Note 4, Samsung Galaxy Note 5, Samsung Galaxy Note 7, Samsung Galaxy Note 8, Samsung Galaxy J, and Samsung Galaxy A.

COUNT I
(Direct Infringement of the '839 Patent pursuant to 35 U.S.C. § 271(a))

52. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

53. Defendants infringe at least Claim 1 of the '839 Patent in violation of 35 U.S.C. § 271(a).

54. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

55. Defendants' acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

56. Defendants' infringement included, the manufacture, use, sale, importation and offer for sale of Defendant's products and services that utilize complementary metal-oxide

semiconductor ("CMOS") multi-chip and/or stacked image sensor reduced area imaging devices, including Samsung tablets and smart phones (collectively, the "'839 Accused Products").

57. The '839 Accused Products practice the patented invention of the '839 Patent and infringed the '839 Patent because they make, sell, offer for sale, and/or use the Accused Products which include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals. Using the patented technology, the form factors of the Accused Products can be customized to reduce the surface area and provide more efficient use of multiple CMOS image sensors.

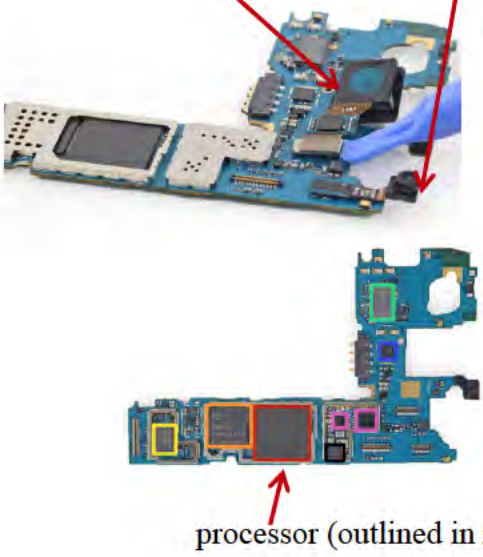
58. To the extent the '839 Accused Products includes components or software owned or manufactured by third parties, the '839 Accused Products still infringed the '839 Patent because Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

59. For example, as shown below, the Accused Products such as the Galaxy S5, includes a front and rear facing cameras including CMOS image sensors in a separate plane and remote from the processor.

Galaxy S5

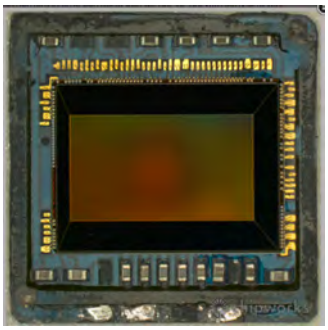
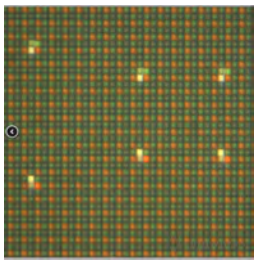
rear CMOS image sensor

front CMOS image sensor



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

60. Each of the CMOS image sensors (front and rear) lay in a first plane and include an array of CMOS pixels. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry:

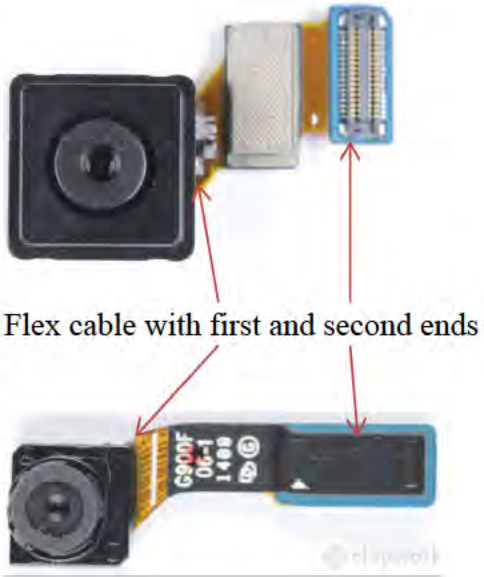
https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

61. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry.

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

62. The image sensors in the Galaxy S5 are connected to the processor's circuit board using a flex cable. On information and belief, the Galaxy S5 flex cable uses a MIPI interface and complies with CSI standards. *See* http://electronicdesign.com/communications/understanding-mipi-alliance-interface-specifications; http://mipi.org/specifications/camera-interface. (Exs. 27-28).

63. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor. On information and belief, the flex cable is transmitting said pre-video signal (e.g., RAW 10 bit RGB) and communicates with the image sensor. *Id.*

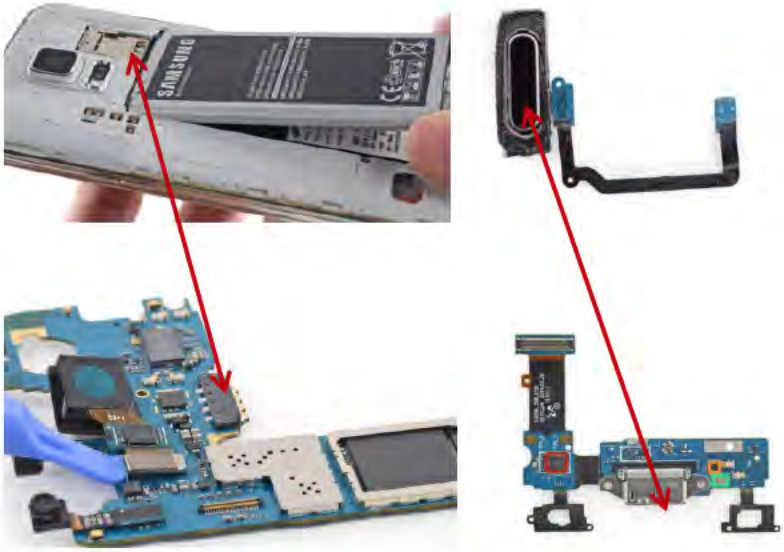


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

64. As shown above, the processor's circuit board lays in a second plane, is longitudinally aligned with the image sensors which are connected using the flex cable.

65. The Galaxy S5 processor (e.g., Snapdragon 801) converts the pre-video signal so it can be viewed on a display.

66. The Galaxy S5 includes a power supply (e.g., battery or USB) that is coupled to the image sensor to power the pixels and time and control circuitry and is also coupled to the processor on the circuit board.



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

67. On information and belief, the all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals as shown in exemplary tear downs in Exhibits 14-24.

68. Defendants' infringement of the '839 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

69. Defendants have been long-aware of Cellect's patents, including the '839 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that

their products infringe Cellect's patents, including the '839 Patent, on information and belief Defendants made no effort to avoid infringement. Instead, Defendants extended the use of infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

70. Despite their knowledge of Cellect's patent portfolio and Asserted Patents, and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '839 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT II
(Indirect Infringement of the '839 Patent pursuant to 35 U.S.C. § 271(b))

71. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

72. In addition to directly infringing the '839 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

73. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the manufacture and use of the Accused Products, either literally or under the doctrine of equivalents.

COUNT III
(Direct Infringement of the '255 Patent pursuant to 35 U.S.C. § 271(a))

74. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

75. Defendants infringe at least Claim 1 of the '255 Patent in violation of 35 U.S.C. § 271(a).

76. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

77. Defendants' acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

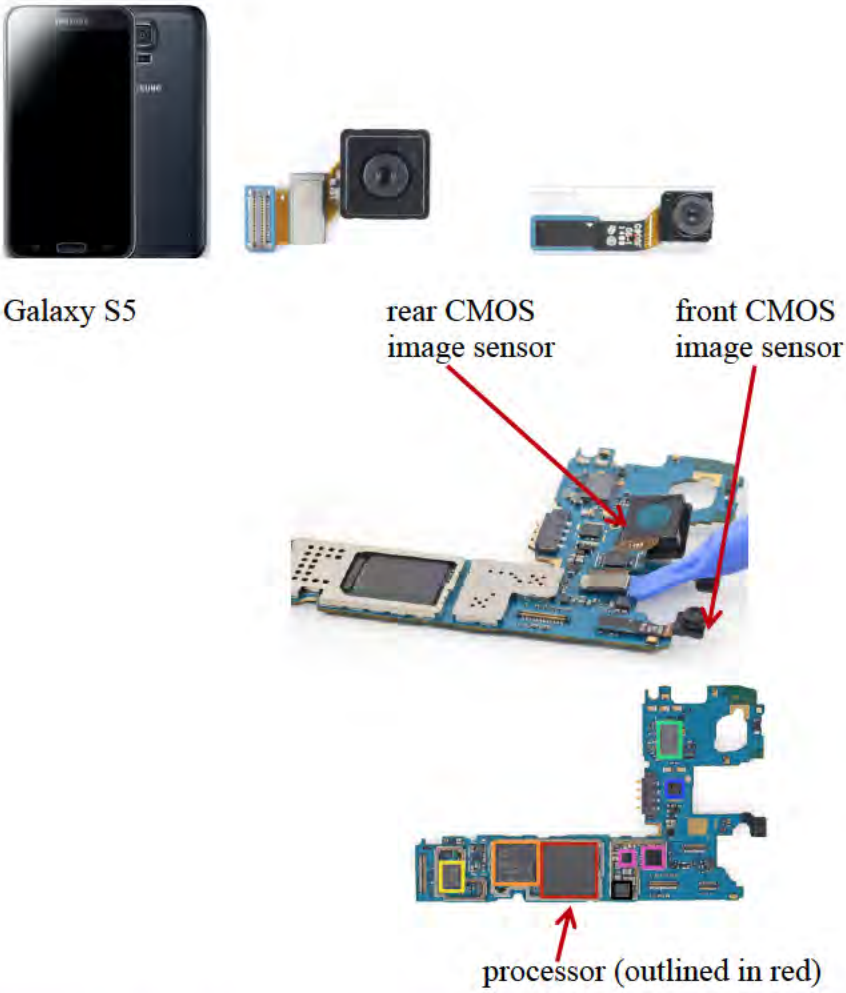
78. Defendants' infringement included, the manufacture, use, sale, importation and offer for sale of Defendant's products and services that utilize CMOS multi-chip and/or stacked image sensor reduced area imaging devices, including Samsung tablets and smart phones (collectively, the "'255 Accused Products").

79. The '255 Accused Products practice the patented invention of the '255 Patent and infringed the '255 Patent because they make, sell, offer for sale, and/or use the Accused Products which include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals. The pre-video signal is capable of being carried for transmission by a single wire conductor. Using the patented technology, the form factors of the Accused Products can be customized to reduce the surface area and provide more efficient use of multiple CMOS image sensors.

80. To the extent the '255 Accused Products includes components or software owned or manufactured by third parties, the Accused Products still infringed the '255 Patent because

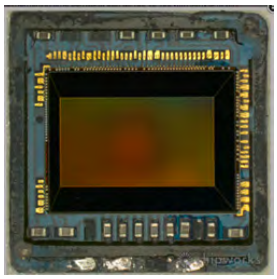
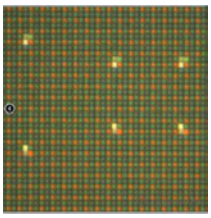
Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

81. For example, as shown below, the Accused Products such as the Galaxy S5, includes a front and rear facing cameras including CMOS image sensors in a separate plane and remote from the processor.



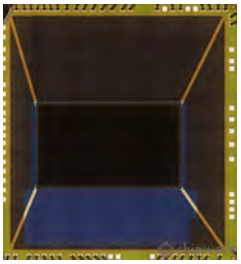
https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

82. Each of the CMOS image sensors (front and rear) lay in a first plane and include an array of CMOS pixels. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry:

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

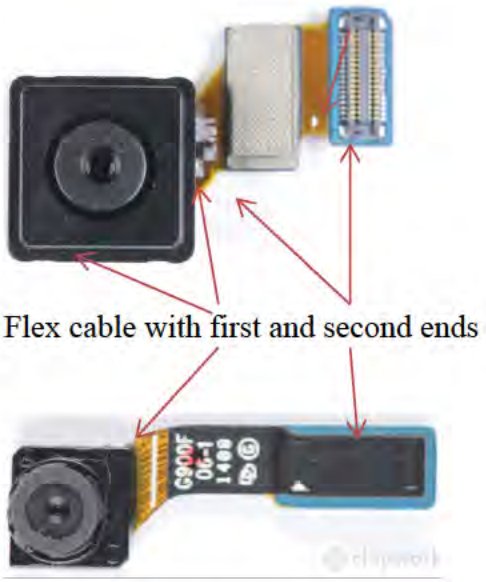
83. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

84. The image sensors in the Galaxy S5 are connected to the processor's circuit board using a flex cable. On information and belief, the Galaxy S5 flex cable uses a MIPI interface and complies with CSI standards. *See* http://electronicdesign.com/communications/understanding-mipi-alliance-interface-specifications; http://mipi.org/specifications/camera-interface. (Exs. 27-28).

85. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor. On information and belief, the flex cable is transmitting said pre-video signal and communicates with the image sensor. *Id.*



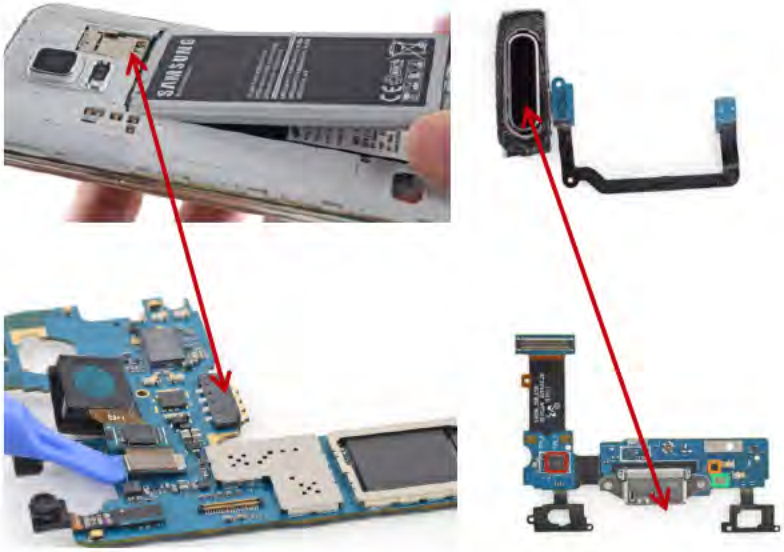
https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

86. On information and belief, the MIPI interface is capable of producing serial formatted data using CSI-2 over C-PHY. Using CSI-2 over C-PHY, each data lane can include an embedded clock, such that a pre-video signal is capable of being carried for transmission by a single wire conductor. http://electronicdesign.com/communications/understanding-mipi-alliance-interface-specifications. *See also*, http://mipi.org/specifications/camera-interface. (Exs. 27-28).

87. As shown above, the processor's circuit board lays in a second plane, is longitudinally aligned with the image sensors which are connected using the flex cable.

88. The Galaxy S5 processor (e.g., Snapdragon 801) converts the pre-video signal so they can be viewed on a display.

89. The Galaxy S5 includes a power supply (e.g., battery or USB) that is coupled to the image sensor to power the pixels and time and control circuitry and is also coupled to the processor on the circuit board.



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

90. On information and belief, all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals, and the pre-video signal is capable of being carried for transmission by a single wire conductor, as shown in exemplary tear downs in Exhibits 14-24.

91. Defendants' infringement of the '255 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

92. Defendants have been long-aware of Cellect's patents, including the '255 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants

regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that their products infringe Cellect's patents, including the '255 Patent, on information and belief Defendants made no effort to avoid infringement. Instead, Defendants extended the use of infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

93. Despite their knowledge of Cellect's patent portfolio and Asserted Patents, and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '255 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT IV
(Indirect Infringement of the '255 Patent pursuant to 35 U.S.C. § 271(b))

94. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

95. In addition to directly infringing the '255 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

96. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the manufacture and use of the Accused Products., either literally or under the doctrine of equivalents.

COUNT V
(Direct Infringement of the '369 Patent pursuant to 35 U.S.C. § 271(a))

97. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

98. Defendants infringe at least Claim 1 of the '369 Patent in violation of 35 U.S.C. § 271(a).

99. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

100. Defendants' acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

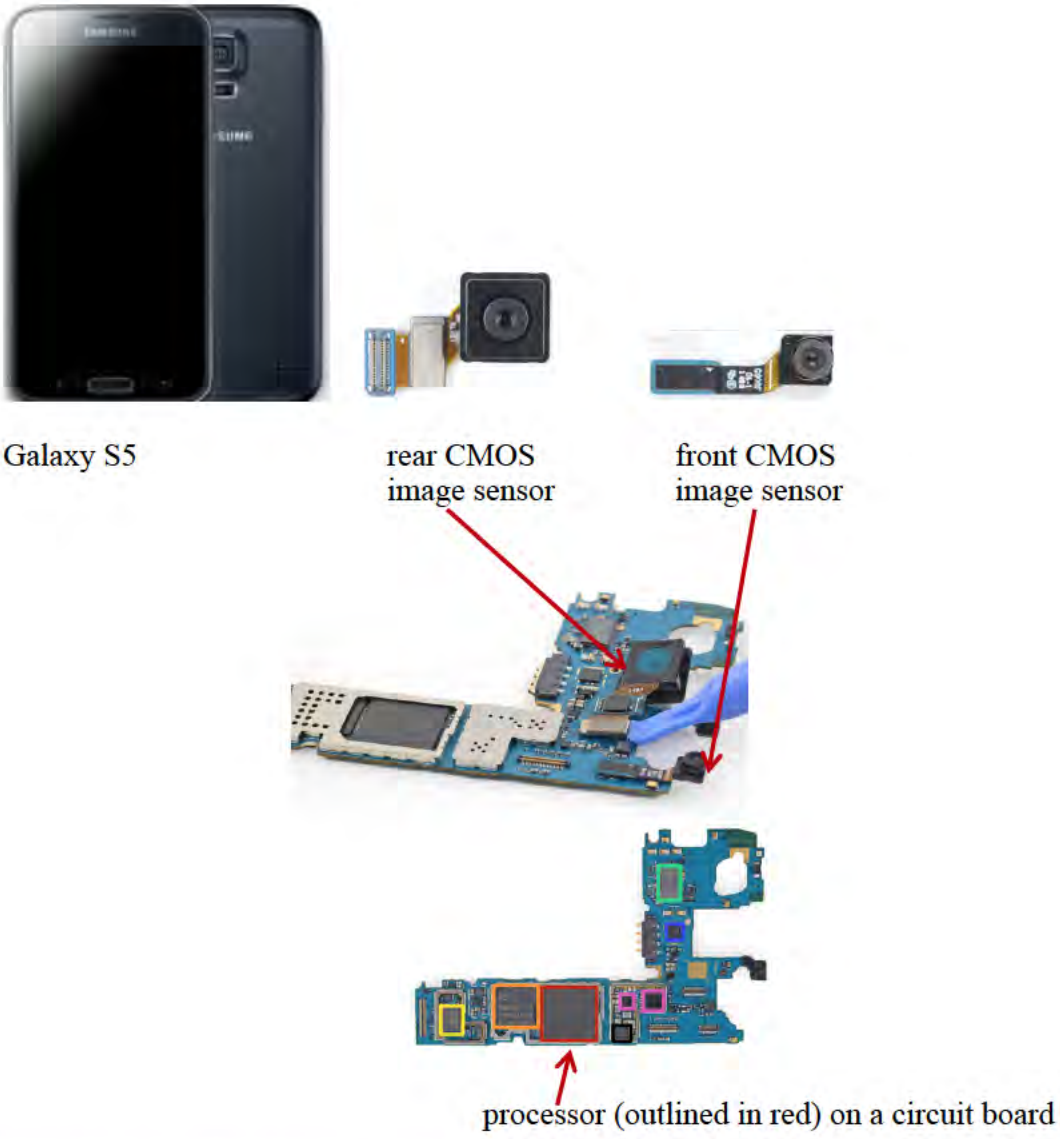
101. Defendants' infringement included, the manufacture, use, sale, importation and offer for sale of Defendant's products that utilize CMOS multi-chip and/or stacked image sensor reduced area imaging devices, including Samsung tablets and smart phones (collectively, the "'369 Accused Products").

102. The '369 Accused Products practice the patented invention of the '369 Patent and infringed the '369 Patent because they make, sell, offer for sale, and/or use the Accused Products which include personal digital assistant PDA devices that receive and transmit video images and include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals.

103. To the extent the '369 Accused Products includes components or software owned or manufactured by third parties, the Accused Products still infringed the '369 Patent because Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used

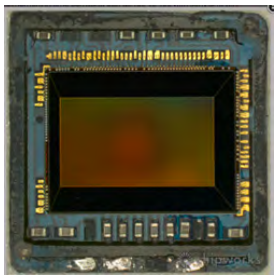
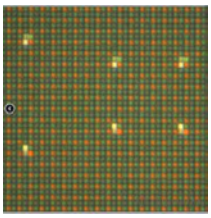
and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

104. For example, as shown below, the Accused Products such as the Galaxy S5, includes a front and rear facing cameras including CMOS image sensors in a separate plane and remote from the processor.



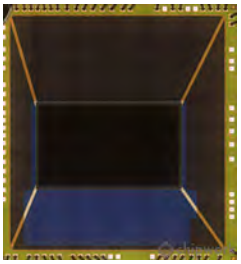
https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

105. Each of the CMOS image sensors (front and rear) lay in a first plane and include an array of CMOS pixels for producing a pre-video signal. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry:

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

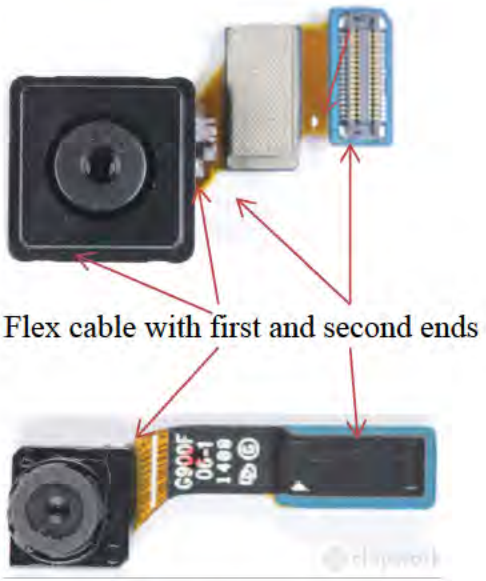
106. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry for producing a pre-video signal.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

107. The image sensors in the Galaxy S5 are connected to the processor's circuit board lying in a second plane using a flex cable. On information and belief, the Galaxy S5 flex cable uses a MIPI interface and complies with CSI standards. *See* http://electronicdesign.com/communications/understanding-mipi-alliance-interface-specifications; http://mipi.org/specifications/camera-interface. (Exs. 27-28).

108. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor. On information and belief, the flex cable is transmitting said pre-video signal and communicates with the image sensor. *Id.*

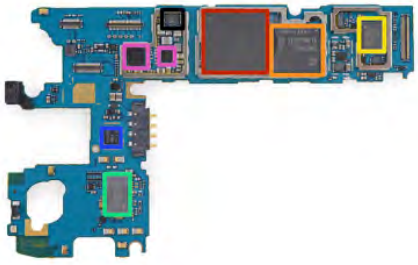


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

109. As shown above, the processor's circuit board lays in a second plane and is longitudinally aligned with said image sensor, is coupled with the image sensors which are connected using the flex cable.

110. The Galaxy S5 processor (e.g., Snapdragon 801) converts the pre-video signal to a post-video using the circuitry shown so they can be viewed on a display attached to the smartphone.

111. The video screen is connected to the first circuit board (and attached to the PDA) to display video images processed on the first circuit board as shown below:


https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

112. On information and belief, all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals as shown in exemplary tear downs in Exhibits 14-24.

113. Defendants' infringement of the '369 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

114. Defendants have been long-aware of Cellect's patents, including the '369 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that their products infringe Cellect's patents, including the '369 Patent, on information and belief Defendants made no effort to avoid infringement. Instead, Defendants extended the use of

infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

115. Despite their knowledge of Cellect's patent portfolio and Asserted Patents, and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '369 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT VI
(Indirect Infringement of the '369 Patent pursuant to 35 U.S.C. § 271(b))

116. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

117. In addition to directly infringing the '369 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

118. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the manufacture and use of the Accused Products., either literally or under the doctrine of equivalents.

COUNT VII
(Direct Infringement of the '626 Patent pursuant to 35 U.S.C. § 271(a))

119. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

120. Defendants infringe at least Claim 1 of the '626 Patent in violation of 35 U.S.C. § 271(a).

121. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

122. Defendants' acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

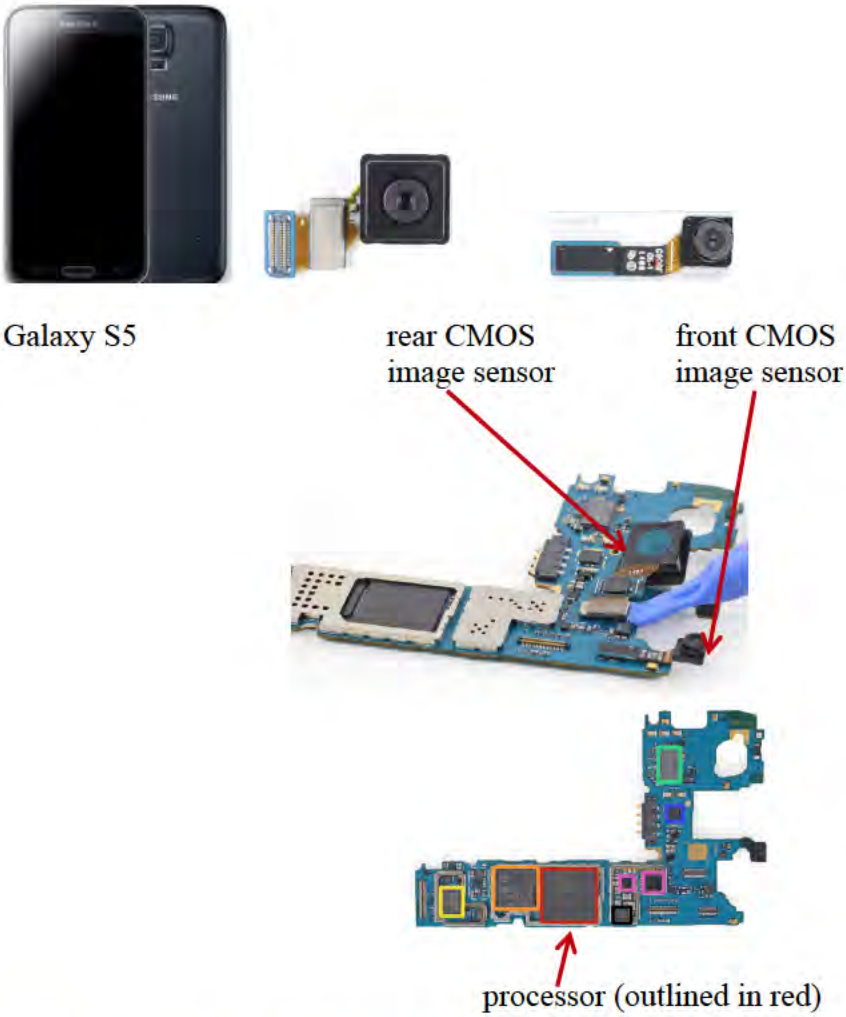
123. Defendants' infringement included, the manufacture, use, sale, importation and offer for sale of Defendant's products and services that utilize CMOS multi-chip and/or stacked image sensor reduced area imaging devices, including all Samsung tablets and smart phones (collectively, the "'626 Accused Products").

124. The '626 Accused Products practice the patented invention of the '626 Patent and infringed the '626 Patent because they make, sell, offer for sale, and/or use the Accused Products which include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals in wireless communication devices. The pre-video signal is capable of being carried for transmission by a single wire conductor. Using the patented technology, the form factors of the Accused Products can be customized to reduce the surface area and provide more efficient use of multiple CMOS image sensors.

125. To the extent the '626 Accused Products includes components or software owned or manufactured by third parties, the Accused Products still infringed the '626 Patent because

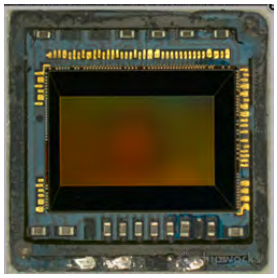
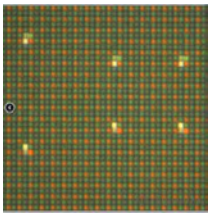
Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

126. For example, as shown below, the Accused Products such as the Galaxy S5, includes a front and rear facing cameras including CMOS image sensors in a separate plane and remote from the processor.



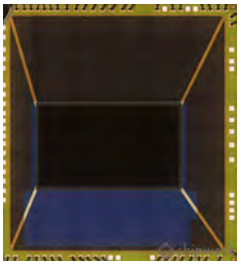
https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

127. Each of the CMOS image sensors (front and rear) lay in a first plane and include an array of CMOS pixels. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry:

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

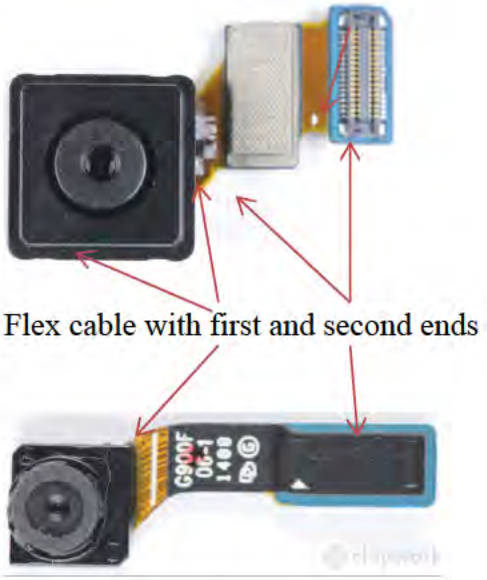
128. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

129. The image sensors in the Galaxy S5 are connected to the processor's circuit board lying in a first plane using a flex cable.

130. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor. On information and belief, the flex cable is transmitting said pre-video signal and communicates with the image sensor. *Id.*



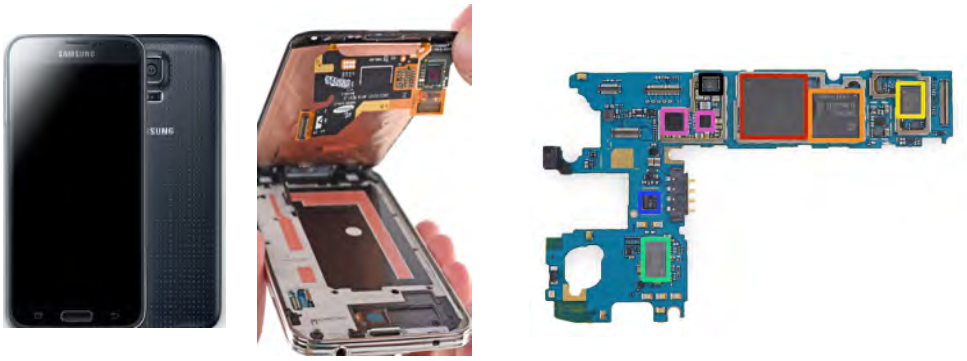
https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

131. As shown below, the processor's circuit board lays in a second plane, is connected to the image sensors using the flex cable.

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

132. The Galaxy S5 processor (e.g., Snapdragon 801) converts the pre-video signal so they can be viewed on a display of the smartphone and tablet with wireless connectivity.

133. The video screen is connected to the first circuit board (and attached to the PDA) to display video images processed on the first circuit board as shown below:



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

134. On information and belief, the all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals as shown in exemplary tear downs in Exhibits 14-24.

135. Defendants' infringement of the '626 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

136. Defendants have been long-aware of Cellect's patents, including the '626 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that their products infringe Cellect's patents, including the '626 Patent, on information and belief Defendants made no effort to avoid infringement. Instead, Defendants extended the use of

infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

137. Despite their knowledge of Cellect's patent portfolio and Asserted Patents, and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '626 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT VIII
(Indirect Infringement of the '626 Patent pursuant to 35 U.S.C. § 271(b))

138. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

139. In addition to directly infringing the '626 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement of at least Claim 1 of the '626 Patent under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

140. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement of the '626 Patent under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the manufacture and use of the Accused Products., either literally or under the doctrine of equivalents.

COUNT IX
(Direct Infringement of the '036 Patent pursuant to 35 U.S.C. § 271(a))

141. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

142. Defendants infringe at least Claim 1 of the '036 Patent in violation of 35 U.S.C. § 271(a).

143. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

144. Defendants' acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

145. Defendants' infringement included, the manufacture, use, sale, importation and offer for sale of Defendant's products and services that utilize CMOS multi-chip and/or stacked image sensor reduced area imaging devices, including all Samsung tablets and smart phones (collectively, the "'036 Accused Products").

146. The '036 Accused Products practice the patented invention of the '036 Patent and infringed the '036 Patent because they make, sell, offer for sale, and/or use the Accused Products which include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals in wireless communication devices. The pre-video signal is capable of being carried for transmission by a single wire conductor. Using the patented technology, the form factors of the Accused Products can be customized to reduce the surface area and provide more efficient use of multiple CMOS image sensors.

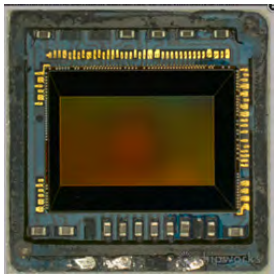
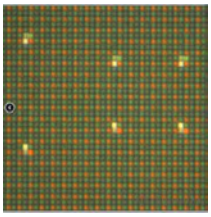
147. To the extent the '036 Accused Products includes components or software owned or manufactured by third parties, the Accused Products still infringed the '036 Patent because

Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

148. For example, as shown below, the Accused Products such as the Galaxy S5, includes a front and rear facing cameras including CMOS image sensors in a separate plane and remote from the processor.

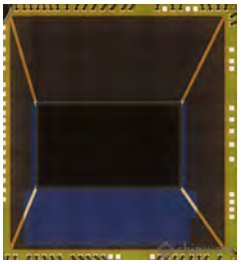
https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

149. Each of the CMOS image sensors (front and rear) lay in a first plane and include an array of CMOS pixels. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry:

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex.13).

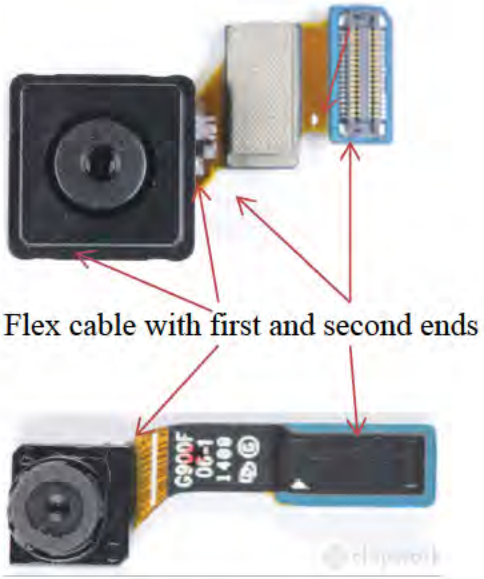
150. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

151. The image sensors in the Galaxy S5 are connected to the processor's circuit board using a flex cable.

152. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor. On information and belief, the flex cable is transmitting said pre-video signal and communicates with the image sensor. *Id.*

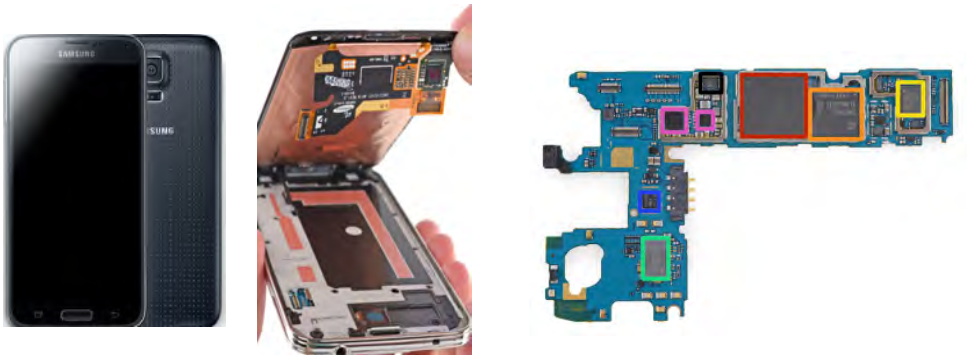


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

153. As shown above, the processor's circuit board lays in a second plane, is longitudinally aligned with the image sensors which are connected using the flex cable.

154. The Galaxy S5 processor (e.g., Snapdragon 801) converts the pre-video signal so they can be viewed on a display.

155. The video screen is connected to the first circuit board (and attached to the PDA) to display video images processed on the first circuit board as shown below:



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

156. On information and belief, the all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals as shown in exemplary tear downs in Exhibits 14-24.

157. Defendants' infringement of the '036 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

158. Defendants have been long-aware of Cellect's patents, including the '036 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that their products infringe Cellect's patents, including the '036 Patent, on information and belief Defendants made no effort to avoid infringement. Instead, Defendants extended the use of infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

159. Despite their knowledge of Cellect's patent portfolio and Asserted Patents, and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '036 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT X
(Indirect Infringement of the '036 Patent pursuant to 35 U.S.C. § 271(b))

160. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

161. In addition to directly infringing the '036 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

162. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the manufacture and use of the Accused Products., either literally or under the doctrine of equivalents.

COUNT XI
(Direct Infringement of the '740 Patent pursuant to 35 U.S.C. § 271(a))

163. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

164. Defendants infringe at least Claim 1 of the ‘740 Patent in violation of 35 U.S.C. § 271(a).

165. Defendants’ infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

166. Defendants’ acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

167. Defendants’ infringement included, the manufacture, use, sale, importation and offer for sale of Defendant’s products and services that utilize CMOS multi-chip and/or stacked image sensor reduced area imaging devices, including Samsung tablets and smart phones (collectively, the “’740 Accused Products”).

168. The ’740 Accused Products practice the patented invention of the ’740 Patent and infringed the ’740 Patent because they make, sell, offer for sale, and/or use the Accused Products which include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals. The pre-video signal is capable of being carried for transmission by a single wire conductor. Using the patented technology, the form factors of the Accused Products can be customized to reduce the surface area and provide more efficient use of multiple CMOS image sensors.

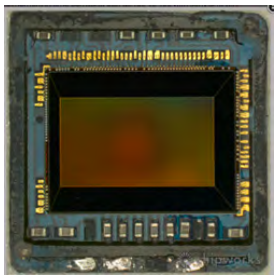
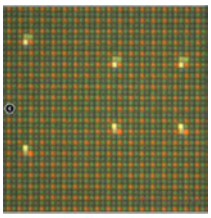
169. To the extent the ’740 Accused Products includes components or software owned or manufactured by third parties, the Accused Products still infringed the ’740 Patent because Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used

and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

170. For example, as shown below, the Accused Products such as the Galaxy S5, includes a front and rear facing cameras including CMOS image sensors in a separate plane and remote from the processor.

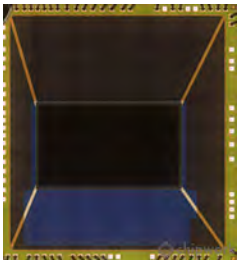
https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

171. Each of the CMOS image sensors (front and rear) lay in a first plane and include an array of CMOS pixels. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry:

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

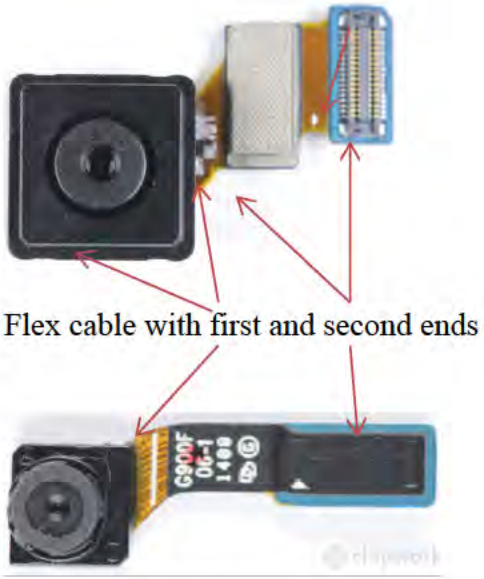
172. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

173. The image sensors in the Galaxy S5 are connected to the processor's circuit board using a flex cable.

174. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor. On information and belief, the flex cable is transmitting said pre-video signal and communicates with the image sensor. *Id.*

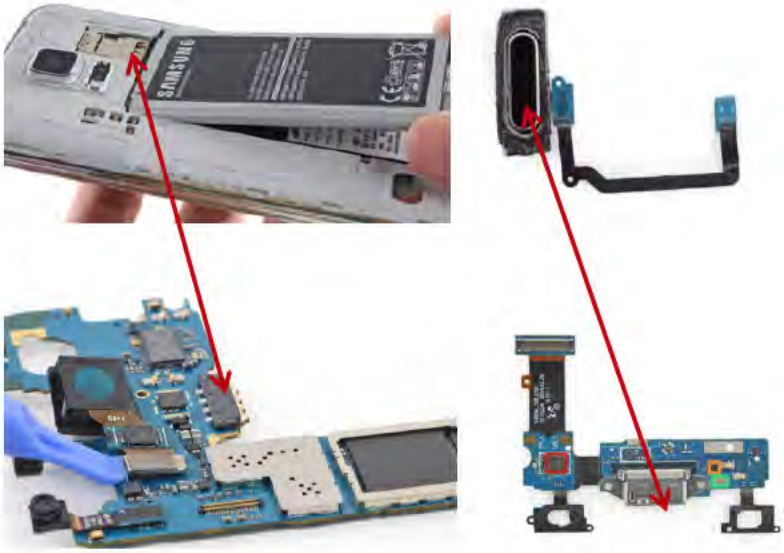


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

175. As shown above, the processor's circuit board lays in a second plane, is longitudinally aligned with the image sensors which are connected using the flex cable.

176. The Galaxy S5 processor (e.g., Snapdragon 801) converts the pre-video signal so they can be viewed on a standard video device.

177. The Galaxy S5 includes a power supply (e.g., battery or USB) that is coupled to the image sensor to power the pixels and time and control circuitry and is also coupled to the processor on the circuit board.



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

178. The Galaxy S5 also includes touch screen display electronically connected to the first circuit board and remote from the first circuit board for controlling digital image processors that enable selective varying and control of integrations periods to produce an image of a desired brightness. For example, ISO settings, exposure, metering modes, and HDR settings may be selected by pressing on the touchscreen display. See http://downloadcenter.samsung.com/content/UM/201606/20160623035152493/VZW_SM-G900V_GalaxyS5_EN_UM_MM_6.0_FINAL_WAC.pdf (Ex. 25).

179. On information and belief, the all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals as shown in exemplary tear downs in Exhibits 14-24.

180. Defendants' infringement of the '740 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

181. Defendants have been long-aware of Cellect's patents, including the '740 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that their products infringe Cellect's patents, including the '740 Patent, on information and belief Defendants made no effort to avoid infringement. Instead, Defendants extended the use of infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

182. Despite their knowledge of Cellect's patent portfolio and Asserted Patents, and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '740 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT XII
(Indirect Infringement of the '740 Patent pursuant to 35 U.S.C. § 271(b))

183. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

184. In addition to directly infringing the '740 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

185. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the manufacture and use of the Accused Products., either literally or under the doctrine of equivalents.

COUNT XIII
(Direct Infringement of the '742 Patent pursuant to 35 U.S.C. § 271(a))

186. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

187. Defendants infringe at least Claim 58 of the '742 Patent in violation of 35 U.S.C. § 271(a).

188. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

189. Defendants' acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

190. Defendants' infringement included, the manufacture, use, sale, importation and offer for sale of Defendant's products and services that utilize CMOS multi-chip and/or stacked image sensor reduced area imaging devices within a PDA and allowing video signals to be transmitted from the camera module to a PC (personal computer), including Samsung tablets and smart phones (collectively, the "'742 Accused Products").

191. The '742 Accused Products practice the patented invention of the '742 Patent and infringed the '742 Patent because they make, sell, offer for sale, and/or use the Accused Products

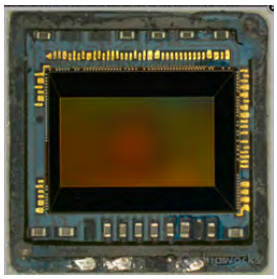
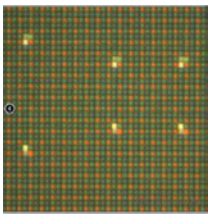
which include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals. The pre-video signal is capable of being carried for transmission by a single wire conductor. Using the patented technology, the form factors of the Accused Products can be customized to reduce the surface area and provide more efficient use of multiple CMOS image sensors.

192. To the extent the '742 Accused Products includes components or software owned or manufactured by third parties, the Accused Products still infringed the '742 Patent because Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

193. For example, as shown below, the Accused Products such as the Galaxy S5, includes a front and rear facing cameras including CMOS image sensors in a first plane and remote from the processor.

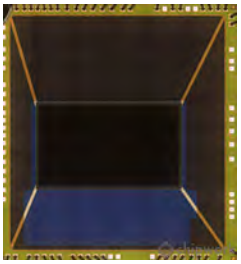
https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

194. Each of the CMOS image sensors (front and rear) lay in a first plane and include an array of CMOS pixels. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry:

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

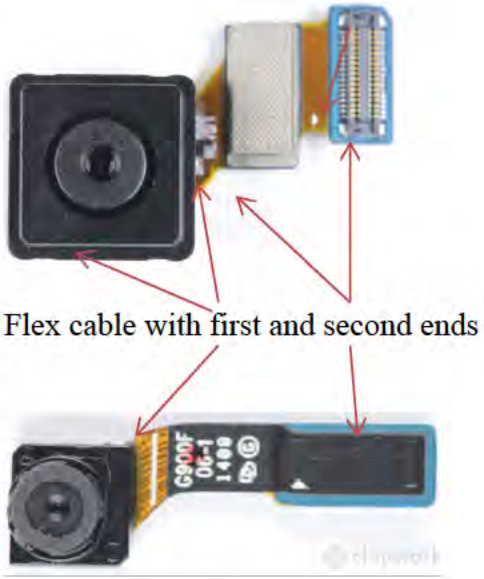
195. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry lying in a second plane.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

196. The image sensors in the Galaxy S5 are connected to the processor's circuit board using a flex cable.

197. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor. On information and belief, the flex cable is transmitting said pre-video signal and communicates with the image sensor. *Id.*

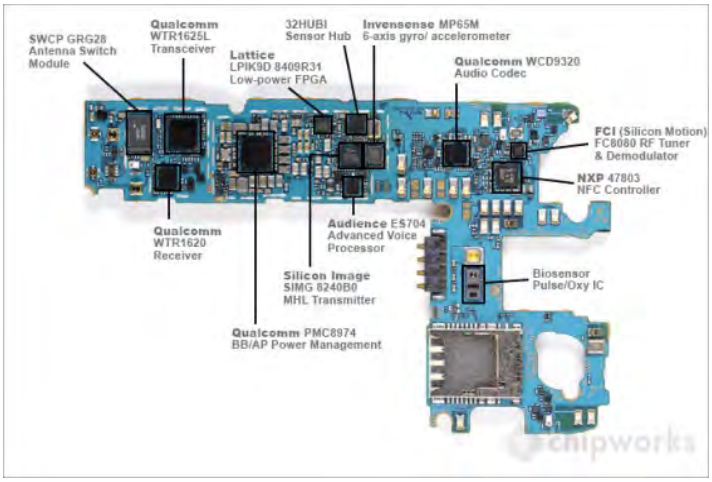


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

198. As shown above, the processor's circuit board lays in a different (third) plane, is and connected using the flex cable.

199. The Galaxy S5 processor (e.g., Snapdragon 801) converts the pre-video signal to a desired format so they can be viewed on a display.

200. The Galaxy S5 also includes Qualcomm WTR1625L transceiver and WFR1620 receiver RF chips for wirelessly transmitting the converted pre-video signal as shown below.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 12).

201. On information and belief, the all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals as shown in exemplary tear downs in Exhibits 14-24.

202. Defendants' infringement of the '742 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

203. Defendants have been long-aware of Cellect's patents, including the '742 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that their products infringe Cellect's patents, including the '742 Patent, on information and belief Defendants made no effort to avoid infringement. Instead, Defendants extended the use of

infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

204. Despite their knowledge of Cellect's patent portfolio and Asserted Patents, and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '742 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT XIV
(Indirect Infringement of the '742 Patent pursuant to 35 U.S.C. § 271(b))

205. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

206. In addition to directly infringing the '742 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

207. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the manufacture and use of the Accused Products., either literally or under the doctrine of equivalents.

COUNT XV
(Direct Infringement of the '621 Patent pursuant to 35 U.S.C. § 271(a))

208. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

209. Defendants infringe at least Claim 45 of the '621 Patent in violation of 35 U.S.C. § 271(a).

210. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

211. Defendants' acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

212. Defendants' infringement included, the manufacture, use, sale, importation and offer for sale of Defendant's products and services that utilize CMOS multi-chip and/or stacked image sensor reduced area imaging devices, including all Samsung tablets and smart phones (collectively, the "'621 Accused Products").

213. The '621 Accused Products practice the patented invention of the '621 Patent and infringed the '621 Patent because they make, sell, offer for sale, and/or use the Accused Products which include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals in video communication devices. The pre-video signal is capable of being carried for transmission by a single wire conductor. Using the patented technology, the form factors of the Accused Products can be customized to reduce the surface area and provide more efficient use of multiple CMOS image sensors.

214. To the extent the '621 Accused Products includes components or software owned or manufactured by third parties, the Accused Products still infringe the '621 Patent because

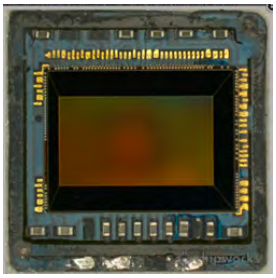
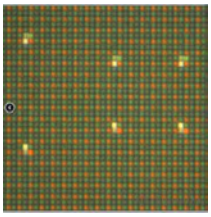
Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

215. For example, as shown below, the Accused Products such as the Galaxy S5, includes a video telephone with front and rear facing cameras including CMOS image sensors and can send and receive video images between two parties of a telephone call (e.g., skype, video messaging).

216. The Galaxy S5 includes image sensors as shown below.

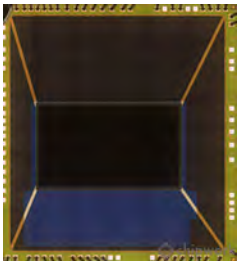
https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

217. Each of the CMOS image sensors (front and rear) lay in a first plane and include an array of CMOS pixels. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry:

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

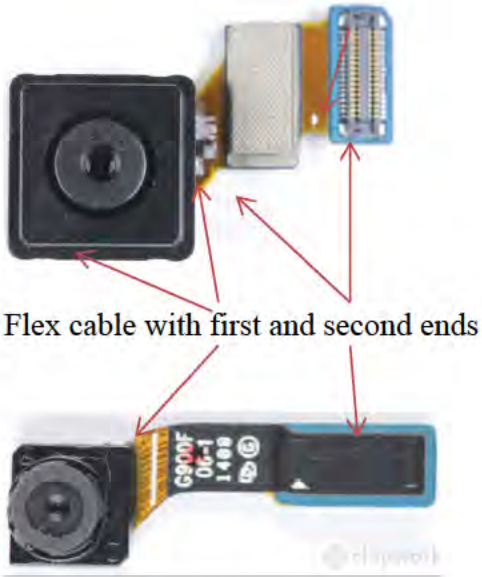
218. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

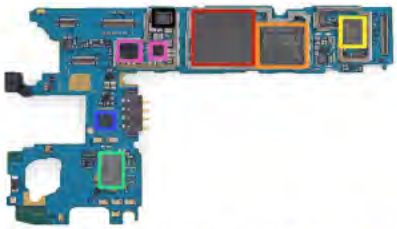
219. The image sensors in the Galaxy S5 are connected to the processor's circuit board using a flex cable. On information and belief, the Galaxy S5 flex cable uses a MIPI interface and complies with CSI standards. *See* http://electronicdesign.com/communications/understanding-mipi-alliance-interface-specifications; http://mipi.org/specifications/camera-interface. (Exs. 27-28).

220. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor. On information and belief, the flex cable is transmitting said pre-video signal and communicates with the image sensor. *Id.*



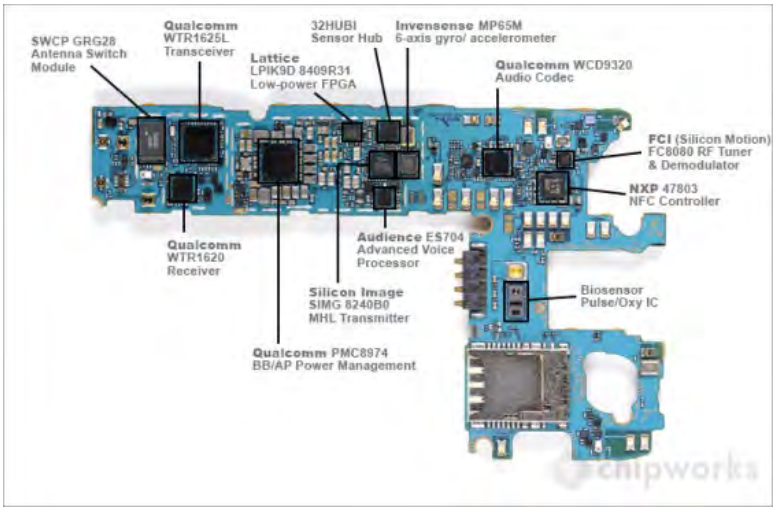
https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

221. As shown above, the processor's circuit board lays and includes circuitry for processing and converting pre-video signals from the CMOS sensors into a desired video format. In particular, the Galaxy S5 processor (e.g., Snapdragon 801) converts the pre-video signal so they can be viewed on a display.



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

222. Inside the Galaxy S5 there are Qualcomm WTR1625L transceiver and WFR1620 receiver RF chips that are mounted and communicates with the circuit board for wirelessly transmitting said converted pre-video signal. These chips amplify the converted pre-video and audio signals so they can be received by other parties to the telephone call and includes digital to analog converters, voice processor and audio codec chips.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

223. The Galaxy S5 contains a digital signal processor that is electrically coupled to said transceiver radio module to further condition said converted pre-video signal which is first conditioned by said first circuit board, and also for conditioning video and audio signals received by said transceiver/ amplifier section from the other party such as the Snapdragon processor, Audience voice processor, and Qualcomm WCD9320 audio codec. The digital signal processor (e.g., Snapdragon 801) can receive a converted pre-video signal, or video and audio signals received from another party, for further conditioning.

224. Samsung Galaxy S5 contains a microphone that electrically communicates with said digital signal processor for receiving sound and converting the sound to audio signals and a speaker electrically communicating with said digital signal processor for broadcasting audio signals.

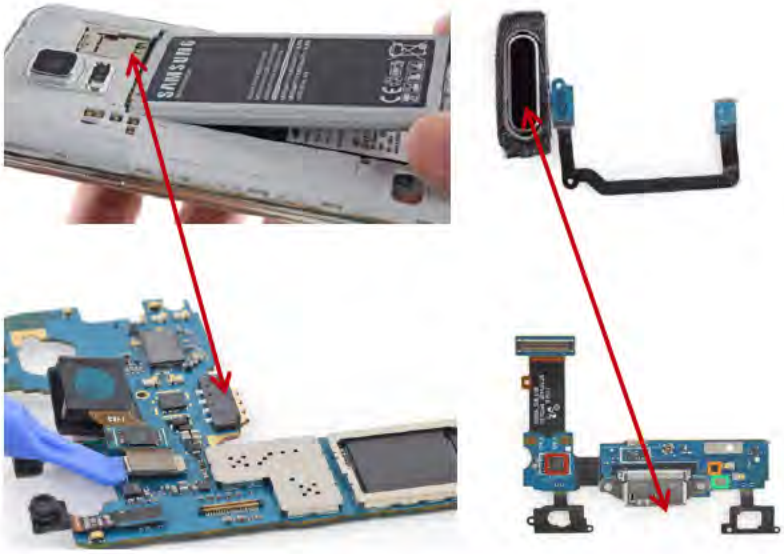
https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

225. The Galaxy S5 has a touchscreen video display attached to the smartphone for selectively displaying images and video received from the transceiver/amplifier.

226. The Galaxy S5 has a video switch that communicates with the circuit board and digital signal processor for switching video images to be viewed on the touchscreen video display. Shown below is the back view of the video display and the first circuit board which connects via flex cable:

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

227. The Galaxy S5 includes a power supply (e.g., battery or USB) that is coupled to the smartphone.



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

228. On information and belief, the all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals as shown in exemplary tear downs in Exhibits 14-24.

229. Defendants' infringement of the '621 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

230. Defendants have been long-aware of Cellect's patents, including the '621 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that their products infringe Cellect's patents, including the '621 Patent, on information and belief

Defendants made no effort to avoid infringement. Instead, Defendants extended the use of infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

231. Despite their knowledge of Cellect's patent portfolio and Asserted Patents, and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '621 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT XVI
(Indirect Infringement of the '621 Patent pursuant to 35 U.S.C. § 271(b))

232. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

233. In addition to directly infringing the '621 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

234. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the manufacture and use of the Accused Products., either literally or under the doctrine of equivalents.

COUNT XVII
(Direct Infringement of the '052 Patent pursuant to 35 U.S.C. § 271(a))

235. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

236. Defendants infringe at least Claim 1 of the '052 Patent in violation of 35 U.S.C. § 271(a).

237. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

238. Defendants' acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

239. Defendants' infringement included, the manufacture, use, sale, importation and offer for sale of Defendant's products and services that utilize CMOS multi-chip and/or stacked image sensor reduced area imaging devices, including Samsung tablets and smart phones (collectively, the "'052 Accused Products").

240. The '052 Accused Products practice the patented invention of the '052 Patent and infringed the '052 Patent because they make, sell, offer for sale, and/or use the Accused Products which include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals. The pre-video signal is capable of being carried for transmission by a single wire conductor. Using the patented technology, the form factors of the Accused Products can be customized to reduce the surface area and provide more efficient use of multiple CMOS image sensors.

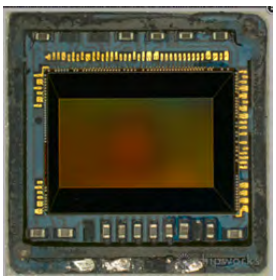
241. To the extent the '052 Accused Products includes components or software owned or manufactured by third parties, the Accused Products still infringed the '052 Patent because

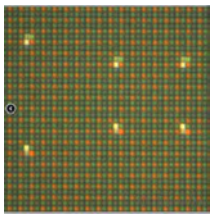
Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

242. As shown below, the Accused Products such as the Galaxy S5, includes a front and rear facing cameras including CMOS image sensors on circuit boards that each have a length and width that define a first plane.

https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

243. Each of the CMOS image sensors (front and rear) lay in a first plane (defined by the length and width) and include an array of CMOS pixels. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry on the first circuit board:



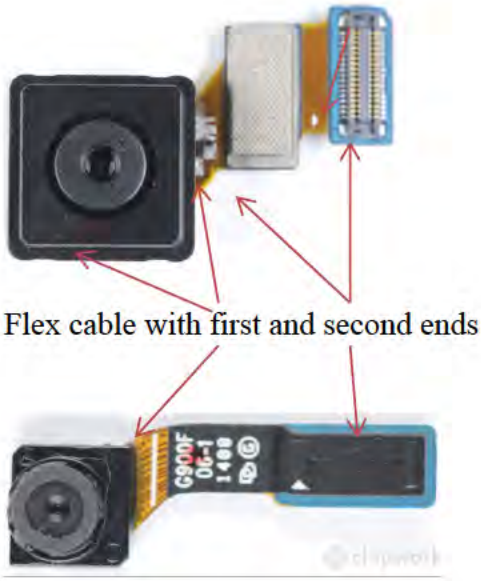


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

244. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry which produce a pre-video signal (e.g., RAW 10-bit RGB).

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

245. The image sensors in the Galaxy S5 are connected to the processor's circuit board (i.e. a second circuit board) using a flex cable. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor. On information and belief, the flex cable is transmitting said pre-video signal and communicates with the image sensor. *Id.*

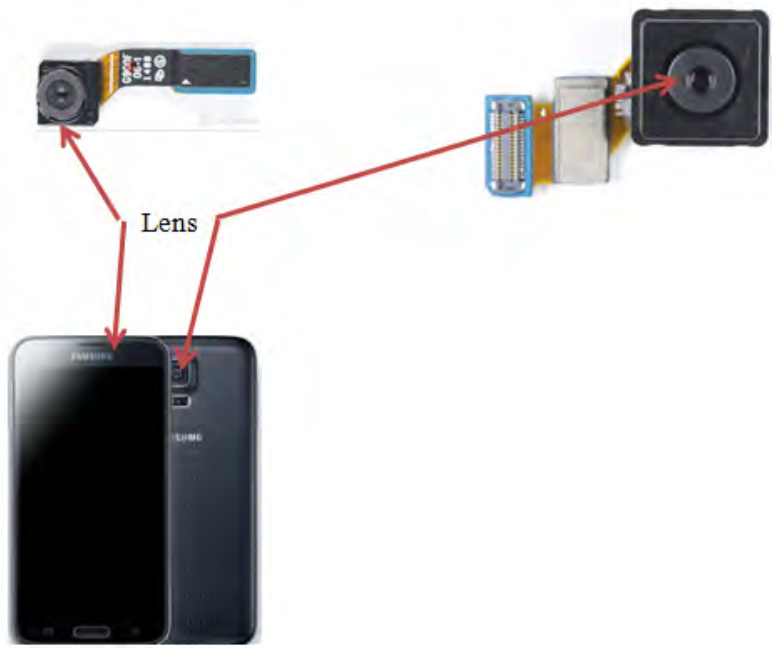


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

246. As shown below, the processor is on a second circuit board that is offset from the first circuit board with the image sensors.

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

247. The image sensor and lenses are mounted in the housing.



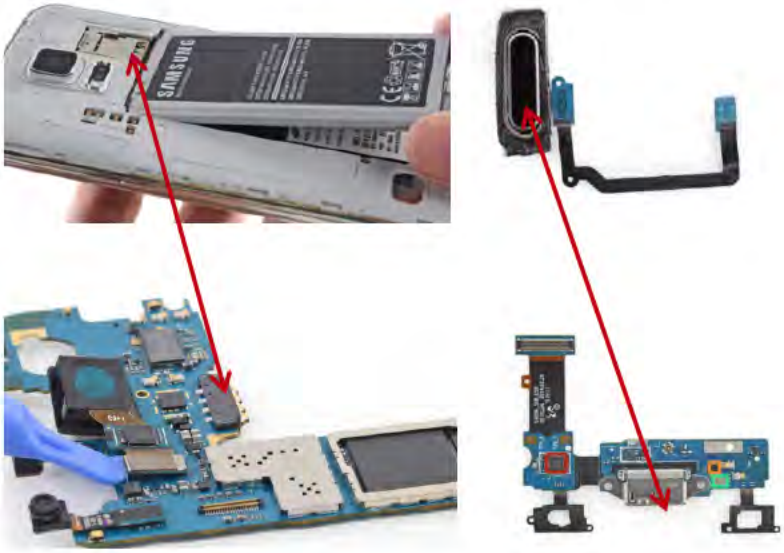
https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

248. The Galaxy S5 processor (e.g., Snapdragon 801) converts the pre-video signal so they can be viewed on a display.

249. The touch screen is connected to the second circuit board and displays video images that have already been processed on the second circuit board by the processor (e.g., Snapdragon 801)

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

250. The Galaxy S5 includes a power supply (e.g., battery or USB) that is coupled to the image sensor on the first circuit board to power array of CMOS pixels and said timing and control circuitry and is also coupled to the processor on the second circuit board.



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

251. The image sensor, as shown above, is generally square shaped and the largest dimension is between 2 and 12 mm.

252. On information and belief, the all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals as shown in exemplary tear downs in Exhibits 14-24.

253. Defendants' infringement of the '052 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

254. Defendants have been long-aware of Cellect's patents, including the '052 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that their products infringe Cellect's patents, including the '052 Patent, on information and belief Defendants made no effort to avoid infringement. Instead, Defendants extended the use of infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

255. Despite their knowledge of Cellect's patent portfolio and Asserted Patents, including pending applications which issued as the '052 Patent, and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '052 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT XVIII
(Indirect Infringement of the '052 Patent pursuant to 35 U.S.C. § 271(b))

256. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

257. In addition to directly infringing the '052 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

258. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the manufacture and use of the Accused Products., either literally or under the doctrine of equivalents.

COUNT XIX
(Direct Infringement of the '565 Patent pursuant to 35 U.S.C. § 271(a))

259. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

260. Defendants infringe at least Claim 1 of the '565 Patent in violation of 35 U.S.C. § 271(a).

261. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

262. Defendants' acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

263. Defendants' infringement included, the manufacture, use, sale, importation and offer for sale of Defendant's products and services that utilize CMOS multi-chip and/or stacked image sensor reduced area imaging devices, including Samsung tablets and smart phones (collectively, the "'565 Accused Products").

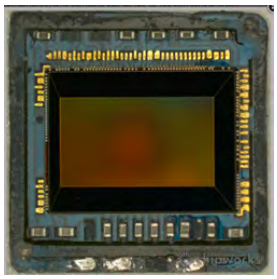
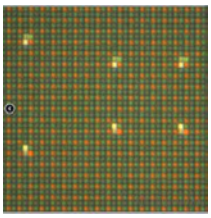
264. The '565 Accused Products practice the patented invention of the '565 Patent and infringed the '565 Patent because they make, sell, offer for sale, and/or use the Accused Products which include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals. The pre-video signal is capable of being carried for transmission by a single wire conductor. Using the patented technology, the form factors of the Accused Products can be customized to reduce the surface area and provide more efficient use of multiple CMOS image sensors.

265. To the extent the '565 Accused Products includes components or software owned or manufactured by third parties, the Accused Products still infringed the '565 Patent because Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

266. As shown below, the Accused Products such as the Galaxy S5, includes a front and rear facing CMOS image sensors mounted in a housing and include a first circuit board with a length and width, defining a first plane.

https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

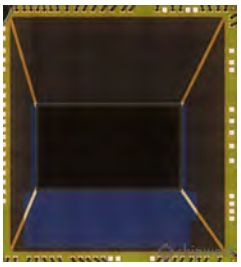
267. Each of the CMOS image sensors (front and rear) lay in a first plane and include an array of CMOS pixels. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry and an amplifier:

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

268. The most popular CMOS designs are built around active pixel sensor (APS) technology in which an amplifier is incorporated into each pixel. https://www.olympus-lifescience.com/en/microscope-resource/primer/digitalimaging/cmosimagesensors/ (Ex. 26).

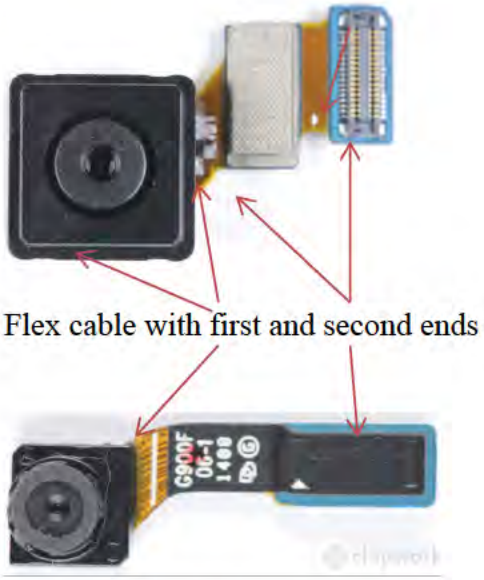
269. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

270. The image sensors in the Galaxy S5 are connected to the processor on a second circuit board using a flex cable.

271. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor. The circuitry on the second circuit board mounted in the housing converts the pre-video signal from the CMOS image sensor to a post-video signal.

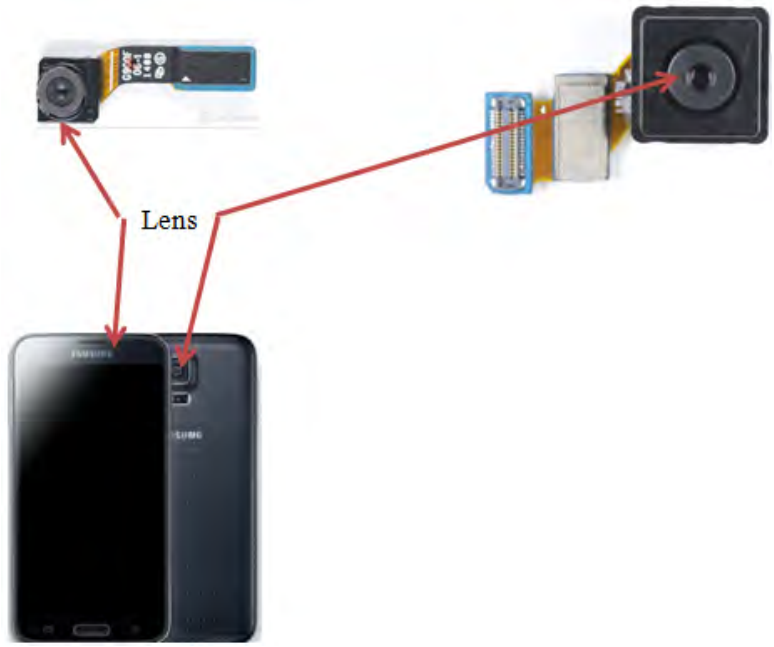


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

272. As shown below, the processor is on a second circuit board that is substantially parallel and offset from the first circuit board with the image sensors mounted in the housing.

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

273. The image sensor and lenses are mounted in the housing.

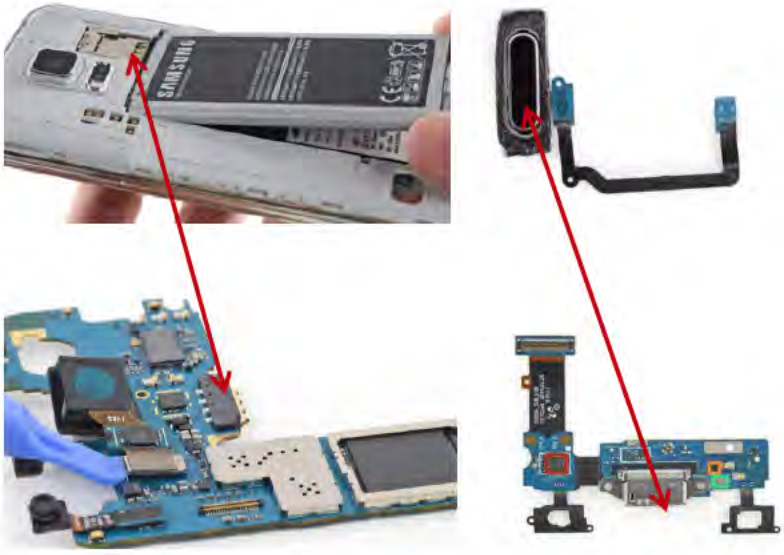


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

274. The touch screen is connected to the second circuit board and displays video images that have already been processed on the second circuit board by the processor (e.g., Snapdragon 801)

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

275. The Galaxy S5 includes a power supply (e.g., battery or USB) that is coupled to the image sensor to power the pixels and time and control circuitry and is also coupled to the processor on the circuit board.



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

276. On information and belief, the all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals as shown in exemplary tear downs in Exhibits 14-24.

277. Defendants' infringement of the '565 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

278. Defendants have been long-aware of Cellect's patents, including the '565 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants

regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that their products infringe Cellect's patents, including the '565 Patent, on information and belief Defendants made no effort to avoid infringement. Instead, Defendants extended the use of infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

279. Despite their knowledge of Cellect's patent portfolio and Asserted Patents, including pending applications which issued as the '565 Patent and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '565 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT XX
(Indirect Infringement of the '565 Patent pursuant to 35 U.S.C. § 271(b))

280. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

281. In addition to directly infringing the '565 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

282. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the

manufacture and use of the Accused Products., either literally or under the doctrine of equivalents.

COUNT XXI
(Direct Infringement of the '896 Patent pursuant to 35 U.S.C. § 271(a))

283. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

284. Defendants infringe at least Claim 1 of the '896 Patent in violation of 35 U.S.C. § 271(a).

285. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

286. Defendants' acts of making, using, importing, selling, and offering for sale infringing products and services were without the permission, consent, authorization, or license of Cellect.

287. Defendants' infringement included, the manufacture, use, sale, importation and offer for sale of Defendant's products and services that utilize CMOS multi-chip and/or stacked image sensor reduced area imaging devices, including Samsung tablets and smart phones (collectively, the "'896 Accused Products").

288. The '896 Accused Products practice the patented invention of the '896 Patent and infringed the '896 Patent because they make, sell, offer for sale, and/or use the Accused Products which include CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals. The pre-video signal is capable of being carried for transmission by a single wire conductor. Using the patented technology, the form factors of the

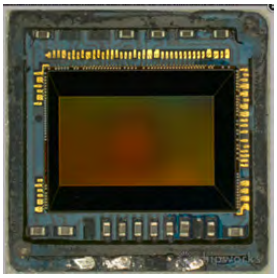
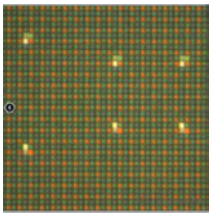
Accused Products can be customized to reduce the surface area and provide more efficient use of multiple CMOS image sensors.

289. To the extent the ’896 Accused Products includes components or software owned or manufactured by third parties, the Accused Products still infringed the ’896 Patent because Defendants are vicariously liable for making, selling, offering for sale, and/or using the patented technology by controlling the design and operation of the Accused Products that are made, used and sold. Further, Defendants derive a benefit from the manufacture and use of every element of the entire system.

290. As shown below, the Accused Products such as the Galaxy S5, includes a front and rear facing cameras including CMOS image sensors mounted in a housing on circuit boards that each have a length and width that define a first plane.

https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

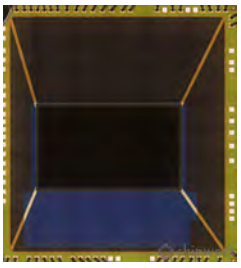
291. Each of the CMOS image sensors (front and rear) lay in a first plane (defined by the length and width) and include an array of CMOS pixels. Shown below is an example of the rear facing CMOS image sensor and array of pixels with timing and control circuitry and amplifier on the first circuit board:

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

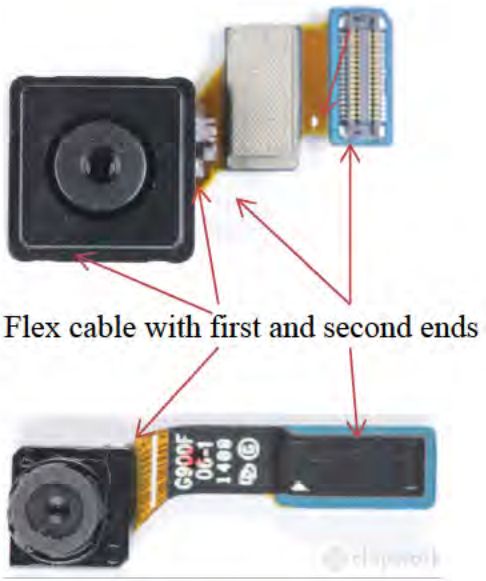
292. The most popular CMOS designs are built around active pixel sensor (APS) technology in which an amplifier is incorporated into each pixel. https://www.olympus-lifescience.com/en/microscope-resource/primer/digitalimaging/cmosimagesensors/ (Ex. 26).

293. Shown below is an expanded view of the front facing CMOS image sensor and array of pixels with timing and control circuitry.



https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

294. The image sensors in the Galaxy S5 are connected to the processor's circuit board (i.e. a second circuit board) using a flex cable. The flex cable has first and second ends and is used to send pre-video signals from the sensor to the processor.

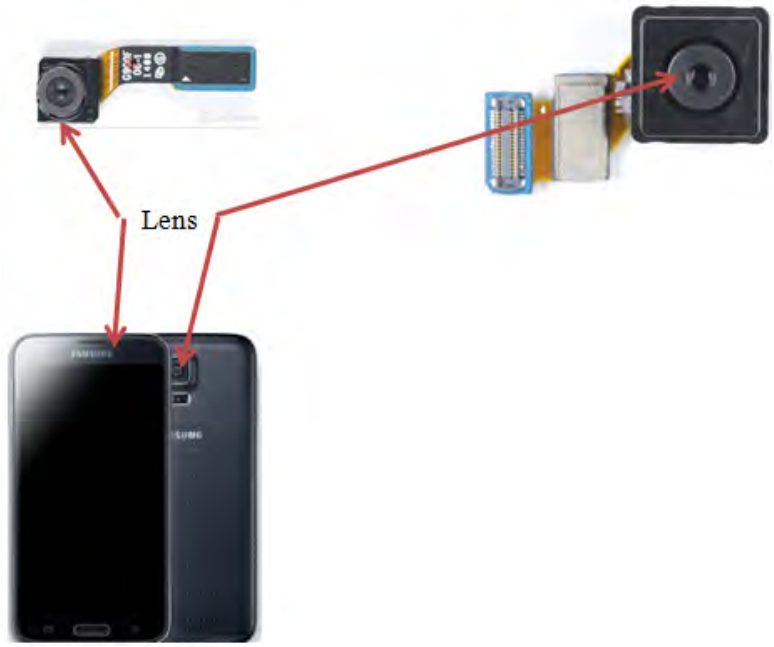


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

295. As shown above, the processor is on a second circuit board that lays in a second plane that is offset and substantially parallel to the first plane of the first circuit board.

296. The Galaxy S5 processor (e.g., Snapdragon 801) converts the pre-video signal so they can be viewed on a display.

297. The image sensor and lenses are mounted in the housing.

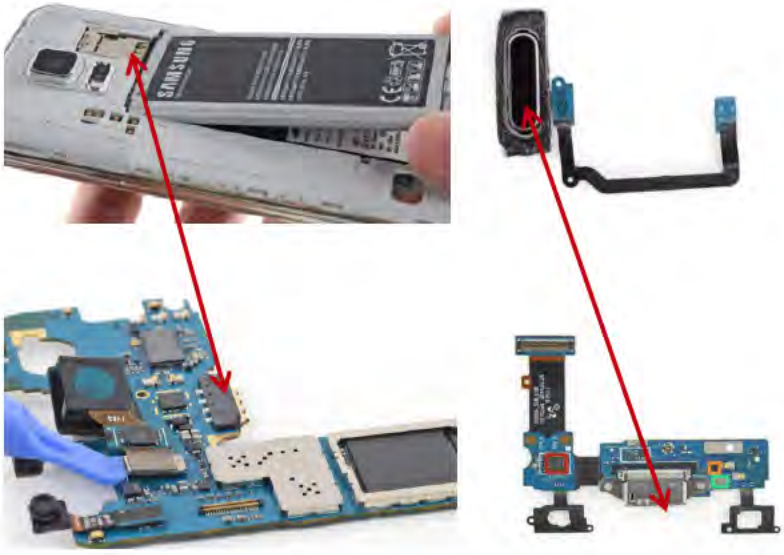


https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

298. The touch screen is connected to the second circuit board and displays video images that have already been processed on the second circuit board by the processor (e.g., Snapdragon 801)

https://www.techinsights.com/about-techinsights/overview/blog/samsung-galaxy-s5-teardown/. (Ex. 13).

299. The Galaxy S5 includes a power supply (e.g., battery or USB) that is coupled to the image sensor on the first circuit board to power array of CMOS pixels and said timing and control circuitry and is also coupled to the processor on the second circuit board.



https://www.ifixit.com/Teardown/Samsung+Galaxy+S5+Teardown/24016. (Ex. 12).

300. The image sensor, as shown above, is generally square shaped and the largest dimension of the second circuit board is greater than a largest dimension of said image sensor along said first plane.

301. On information and belief, the all of the Accused Products have similar designs, including CMOS image sensors lying in a separate plane from the processor which converts pre-video signals to post-video signals as shown in exemplary tear downs in Exhibits 14-24.

302. Defendants' infringement of the '896 Patent injured Cellect in an amount to be proven at trial, but not less than a reasonable royalty.

303. Defendants have been long-aware of Cellect's patents, including the '896 Patent, and continued their unauthorized infringing activity despite this knowledge. As discussed above, Cellect actively and diligently attempted to engage in good faith negotiations with Defendants regarding Defendants' infringement of Cellect's Asserted Patents. Even after being shown that their products infringe Cellect's patents, including the '896 Patent, on information and belief Defendants made no effort to avoid infringement. Instead, Defendants extended the use of infringing technology into additional products, such as those identified in this complaint. All of these actions demonstrate Defendants' blatant and egregious disregard for Cellect's patent rights.

304. Despite their knowledge of Cellect's patent portfolio, including pending applications which issued as the '896 Patent, and their specific knowledge of their own infringement, Defendants continued to sell the Accused Products in complete and reckless disregard of Cellect's patent rights. As such, Defendants acted recklessly, willfully, wantonly, and deliberately engaged in acts of infringement of the '896 Patent, justifying an award to Cellect of increased damages and attorneys' fees and costs.

COUNT XXII
(Indirect Infringement of the '896 Patent pursuant to 35 U.S.C. § 271(b))

305. Cellect repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

306. In addition to directly infringing the '896 Patent, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties on the manufacture and use of the Accused Products.

307. Additionally, Defendants knew or were willfully blind to the fact that they were inducing infringement under 35 U.S.C. § 271(b) by instructing, directing and/or imposing requirement to third parties, including customers, manufactures, suppliers and agents, on the manufacture and use of the Accused Products., either literally or under the doctrine of equivalents.

PRAYER FOR RELIEF

WHEREFORE, Cellect prays for judgment and relief as follows:

A. An entry of judgment holding that Defendants infringed the '839, '255, '369, '626, '036, '740, 742, '621, '052, '565, '896 and '742 Patents; induced infringement of the '839, '255, '369, '626, '036, '740, 742, '621, '052, '565, '896 and '742 Patents.

B. An award to Cellect of such past damages, not less than a reasonable royalty, as it shall prove at trial against Defendants that is adequate to fully compensate Cellect for Defendants' infringement of the '839, '255, '369, '626, '036, '740, 742, '621, '052, '565, and '896 Patents;

C. A finding that this case is "exceptional" and an award to Cellect of its costs and reasonable attorneys' fees, as provided by 35 U.S.C. § 285;

D. An accounting of all infringing sales and revenues, together with post judgment interest and prejudgment interest from the first date of infringement of the '839, '255, '369, '626, '036, '740, 742, '621, '052, '565, and '896 Patents; and

E. Such further and other relief as the Court may deem proper and just.

DEMAND FOR JURY TRIAL

Cellect demands a jury trial on all issues so triable.

DATED this 14th day of February, 2019

Respectfully submitted,

By: *s/ Paul J. Andre*
Paul J. Andre
KRAMER LEVIN NAFTALIS & FRANKEL, LLP
990 Marsh Road
Menlo Park, CA 94025
T: (650) 752-1700
pandre@kramerlevin.com

s/ Jonathan S. Caplan
Jonathan S. Caplan
s/ Marcus A. Colucci
Marcus A. Colucci
KRAMER LEVIN NAFTALIS & FRANKEL, LLP
1177 Avenue of the Americas
New York, NY 10036
(212) 715-9100
jcaplan@kramerlevin.com
mcolucci@kramerlevin.com

s/ Kenneth F. Eichner
Kenneth F. Eichner
THE EICHNER LAW FIRM
3773 Cherry Creek Drive North
West Tower, Suite 900
Denver, CO 80209
ken@eichnerlaw.com

Attorneys for Plaintiff Cellect, LLC