

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

C47 TECHNOLOGIES LLC,

Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD;  
SAMSUNG ELECTRONICS AMERICA,  
INC.,

Defendants.

**Civil Action No. 2:24-cv-372**

**JURY TRIAL DEMANDED**

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff C47 Technologies LLC (“C47” or “Plaintiff”), for its Complaint against Defendants Samsung Electronics Co., Ltd., (“Samsung Electronics”) and Samsung Electronics America, Inc., (“Samsung Electronics America”), referred to herein collectively as “Samsung” or “Defendants”), alleges the following:

**NATURE OF THE ACTION**

1. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq.*

**THE PARTIES**

2. Plaintiff is a limited liability company organized and existing under the laws of the state of Nevada with a principal place of business at 6605 Grand Montecito Parkway, Suite 100, Las Vegas, Nevada 89149.

3. Upon information and belief, defendant Samsung Electronics Co., Ltd. is a corporation organized and existing under the laws of the Republic of Korea with a principal place of business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-Do, Korea 443-742.

4. Upon information and belief, defendant Samsung Electronics America, Inc. is a corporation organized and existing under the laws of the state of New York, having an office at 6625 Excellence Way, Plano, Texas, 75023.

5. Upon information and belief, Samsung imports, sells, offers to sell, and/or uses products and services throughout the United States, including within this judicial district, and introduces infringing products and services into the stream of commerce knowing that they would be sold and/or used in this judicial district and elsewhere in the United States.

### **JURISDICTION AND VENUE**

6. This is an action for patent infringement arising under the Patent Laws of the United States, Title 35 of the United States Code.

7. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

8. This Court has personal jurisdiction over both Samsung defendants under the laws of the State of Texas, due at least to their conducting substantial business in Texas and purposeful availment of conducting such business in the State of Texas, including within this judicial district, directly or through intermediaries, including: (i) at least a portion of the infringing conduct alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct and/or deriving substantial revenue from goods and services provided to individuals in the State of Texas.

9. This Court also has personal jurisdiction over both Samsung defendants based on their introduction and delivery of infringing products and services into the stream of commerce with the expectation that such infringing products would be sold and/or used in this judicial district. *See In re Toyota Hybrid Brake Litig.*, 2021 U.S. District LEXIS 124918 (E.D. Tex. Jul. 6, 2021). Nor would the court's exercise of personal jurisdiction over both Samsung Defendants violate traditional notions of fair play and substantial justice.

10. Defendants Samsung Electronics and Samsung Electronics America have not disputed this judicial district's personal jurisdiction over them in other patent infringement actions. *See, e.g.*, Answer at ¶ 10, *Richardson v. Samsung Electronics Co.*, No. 6-17-cv-428 (E.D. Tex., Oct. 20, 2017); Answer at ¶ 9, *Immersion Corp. v. Samsung Electronics America*, No. 16-cv-572 (E.D. Tex. Oct. 24, 2017).

11. Venue is proper as to defendant Samsung Electronics America, Inc. in this judicial district under 28 U.S.C. § 1400(b). Samsung Electronics America Inc. maintains a regular and established place of business in this judicial district at 6625 Excellence Way, Plano, Texas, 75023. (*See* <https://www.linkedin.com/company/samsung-electronics-america>). At least a portion of Defendants' infringement of U.S. Patent No. 10,984,605 as alleged herein occurs within this judicial district through Defendants' sales, offers to sell, and uses of their products and services within this judicial district, and introduction of their infringing products and services into the stream of commerce knowing that they would be sold and/or used in this judicial district.

12. Venue is proper as to defendant Samsung Electronics Co., Ltd. in this judicial district under 28 U.S.C. §1391(c)(3) because, on information and belief, it is not resident of the United States and therefore may be sued in any judicial district.

## **BACKGROUND**

### **The Invention**

13. Peter R. Rogina is the inventor of several U.S. Patents directed to camera systems for image capturing and processing, including U.S. Patent No. 10,984,605 ("the '605 patent"), titled "Camera Arrangements with Backlighting Detection and Methods of Using Same."

14. The '605 patent resulted from the pioneering efforts of Mr. Rogina (hereinafter "the Inventor") in the area of multicamera systems for image capturing and processing. The Inventor conceived of the inventions claimed in the '605 patent as a way to improve the combining of digital images from multiple cameras and/or other sensors for display of improved-quality and/or novel perspective images from the

merged data. These efforts of the Inventor resulted in the development in the early 2000s of methods and apparatus for multicamera/sensor systems, and methods of using multicamera systems to provide improved-quality and/or novel perspective merged images. At the time of these pioneering efforts, the technology used to combine images for display often resulted in problems such as unnatural brightness when the illumination differed in the images being merged. (*See, e.g.*, '605 patent at 2:20-46.)

15. The Inventor developed a system including an array of multiple digital cameras and/or sensors that captures pixel data and illumination data for each pixel, and creates a data file associated with such pixel and illumination data that allows for more efficient and accurate merging, storage, and display of the merged data as a single image having improved and more realistic image quality. (*Id.* at 1:31-44; 2:41-64.) Such systems can be used in a variety of applications including, for example, the merger of: (1) actual pixel/image data captured by multiple digital cameras capturing data using distinct parameters (*Id.* at 1:31-44; 2:41-44; 3:11-26; 4:38-40); (2) actual pixel/image data from multiple digital cameras along with ambient illumination data (*Id.* at 4:44-48; 4:63-5:7); (3) actual pixel/image and illumination data with virtual image data such as augmented reality and telepresence images. (*Id.* at 2:4-40; 4:52-55.)

16. In addition, the Inventor developed the apparatus and methods for capturing images and data for both static images, as well as dynamic images such as those taken consecutively over time to create a series of images such as, but not limited to, those combined to create a video. (*Id.* at 2:65-3:2.) For such dynamic video images, the data obtained (*e.g.*, pixel and/or illumination data) can be used to adjust the combined series of images for a more realistic video appearance to the observer. (*Id.* at 2:57-64.)

17. The Inventor also developed the system for merging multiple images including a camera array having multiple cameras to capture pixel and illumination data of an image using digital cameras using different parameters, and the associated processors required for the parsing, formatting, synchronizing, storing, and combining of such collected data for display as a single improved image. (*Id.* at 3:2-7.)

**Advantages Over the Prior Art**

18. The patented inventions disclosed in the '605 patent provided many advantages over the prior art, and in particular improved the technology of systems for capturing, merging, and displaying multiple digital images using associated pixel and illumination data obtained from multiple digital cameras and/or sensors in an array, each using distinct parameters for capturing the pixel and/or illumination data. For example, the '605 patent discloses a system including a camera array of multiple cameras and/or sensors mounted in various configurations, each camera or sensor having appropriate circuitry and connectivity with at least one processing chip (processor or application specific IC) used to merge and store pixel and illumination data captured from the individual cameras and/or sensors within the array, in order to create a combined image for display to the observer. (*Id.* at 3:11-4:37; 8:3-16, 8:58-67, 14:8 and 14:19- 20.)

19. Another advantage of the patented invention is that it provides a system and method for providing more realistic combined images by, for example, capturing images using multiple cameras and/or sensors, formatting and storing the captured pixel and illumination data for each pixel in order to improve the processor's ability to control the merger and storage of the multiple images by, for example, the creation of data files associated with the captured pixel and illumination data that can be used to parse, synchronize, and compress the captured pixel and illumination data. (*Id.* at 1:33-44; 2:65-3:7; 4:18-20; 4:63-5:7; 5:50-67; 7:24-33; 7:51-8:16; 8:31-11:16; 11:61-12:16; 12:38-44.)

20. Another advantage of the patented invention is that illumination in a series of images can change over time, and so the present invention can use illumination data—whether as a parameter of the captured pixel data or as ambient illumination collected simultaneously with the capture of pixel data by a camera, in order to adjust the illumination of any superimposed images—whether virtual or real, whether static or dynamic—in order to maintain a consistent illumination over time within the combined images. (*Id.* at 2:58-64; 4:56-5:14 and 11:33-40.)

21. Because of these significant advantages that can be achieved through the use of the multiple camera arrays of the patented invention, Plaintiff believes that the '605 patent presents significant commercial value for companies like Samsung. Indeed, a Samsung internal survey shows that its unauthorized use of multi-camera arrays that infringe the '605 patent have been a key driver of sales of Samsung's mobile products: "It should come as no surprise that, according to a Samsung survey, an overwhelming number of consumers rank the camera and camera-related features among the top three factors that matter most when buying a new smartphone." (See <https://news.samsung.com/global/a-brief-history-of-the-galaxy-s-series-camera-technologies>) "Samsung has remained a leader in the industry by relentlessly advancing the camera phone segment." (*Id.*; see also <https://www.dxomark.com/smartphones-vs-cameras-closing-the-gap-on-image-quality/>)

### **Technological Innovation**

22. The patented invention disclosed in the '605 patent resolves technical problems related to the operations of systems used for the capture, processing, merger, and display of multiple digital images as a single image. In particular, the '605 patent resolves problems related to the utilization of multiple cameras and/or sensors having different parameters to capture, process, and merge multiple digital images for display as a single image. As the '605 patent explains, prior art methods of combining multiple images often resulted in brightness variations of the combined images resulting in an unnatural appearance—whether with respect to combining real and virtual images whose illumination was "assumed" based on modeling, (*see* '605 patent at 2:4-19), or with respect to combining two actual images (*Id.* at 2:41-44)

23. In addition, the claims of the '605 patent recite inventive concepts that improve the functioning of camera systems in products such as cellular phones, tablets, and similar mobile devices that include camera arrays and associated circuitry, software, firmware, processors, and/or applications that enable features that combine multiple digital images that are captured using different parameters including, but

not limited to, Samsung's Dual Capture, Live Focus, Portrait Mode, and/or Portrait Video features found in numerous Samsung Galaxy mobile devices including, but not limited to: (1) the Galaxy A Series line of products; (2) the Galaxy M Series line of products; (3) the Galaxy Note Series line of products; (4) the Galaxy Z Series line of products; (5) the Galaxy S10 Series line of products; (6) the Galaxy S20 Series line of products; (7) the Galaxy S21 Series line of products.

24. Accordingly, the claims in the '605 patent recite a patentable combination of specific structural elements and corresponding methodologies of using those elements to provide specific data files for improving the processing of the obtained pixel or illumination data in order to merge, store, parse, synchronize, compress and ultimately display the merged data from the multiple images as a single image. The '605 patent does so with sufficient disclosure to ensure that the claims in substance and in practice amount to significantly more than a patent-ineligible abstract idea.

**COUNT I – INFRINGEMENT OF U.S. PATENT NO. 10,984,605**

25. The allegations set forth in the foregoing paragraphs 1 through 27 are incorporated into this First Claim for Relief.

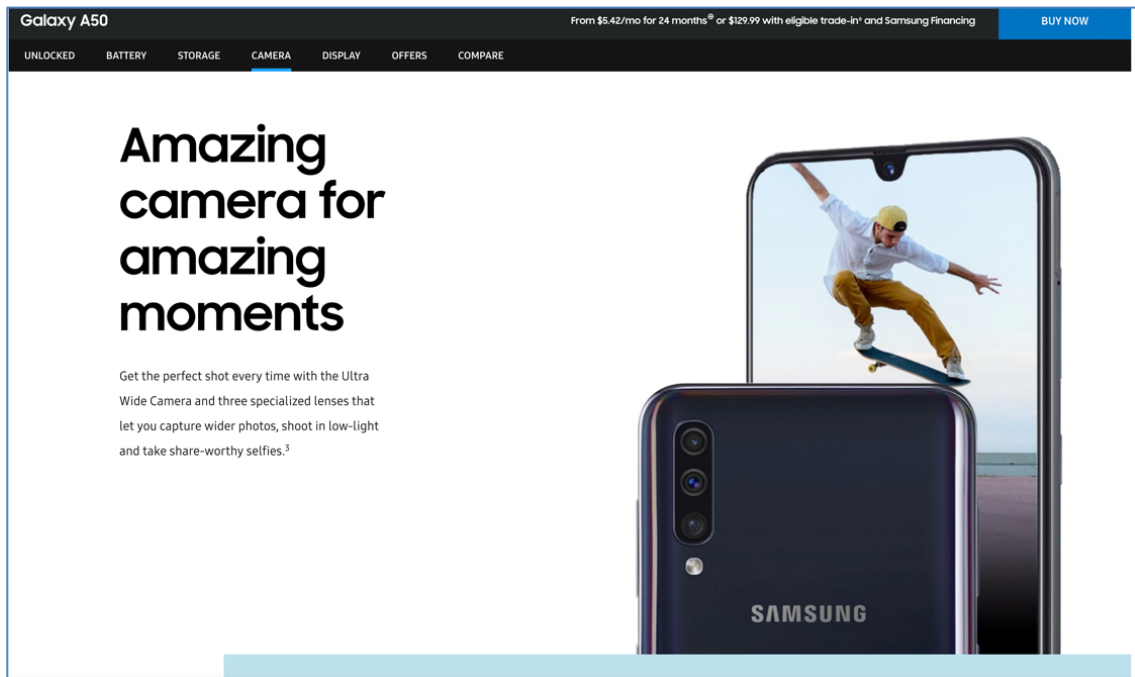
26. On April 20, 2021, the '605 patent was duly and legally issued by the United States Patent and Trademark Office under the title "CAMERA ARRANGEMENTS WITH BACKLIGHTING DETECTION AND METHODS OF USING SAME."

27. Plaintiff is the assignee and owner of the right, title and interest in and to the '605 patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it. Additionally, the assignment for the '605 patent was recorded in the U.S. Patent and Trademark Office on January 23, 2024, at Reel/Frame 066335/0987.

28. Upon information and belief, Samsung has directly infringed one or more claims of the '605 patent by making, using, selling, offering to sell, importing and/or providing and causing to be used, products, specifically one or more cellular phones and other mobile devices containing camera arrays with

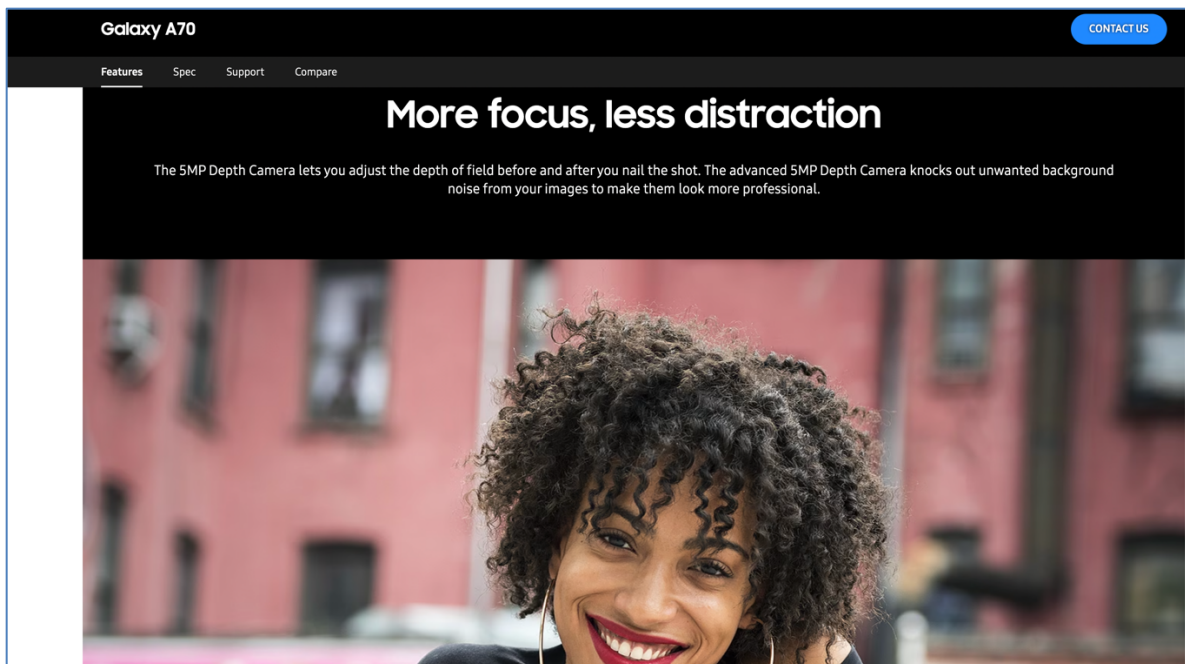
multiple digital cameras and/or sensors, used in conjunction with circuitry, at least one processor, and software/firmware that enable users of the Samsung products to use applications and features including, but not limited to, Samsung’s Dual Capture, Live Focus, Portrait Mode, and Portrait Video features found in numerous Samsung Galaxy mobile devices including, but not limited to: (1) the Galaxy A Series line of products; (2) the Galaxy M Series line of products; (3) the Galaxy Note Series line of products; (4) the Galaxy Z Series line of products; (5) the Galaxy S10 Series line of products; (6) the Galaxy S20 Series line of products; and (7) the Galaxy S21 Series line of products (collectively the “Accused Products”).

29. As shown below, for example, exemplary features of the Accused Products such as the “Dual Capture,” “Live Focus,” “Portrait Mode,” and/or “Portrait Video” features are found in the Accused Products and cause infringement of asserted claims of the ’605 patent.

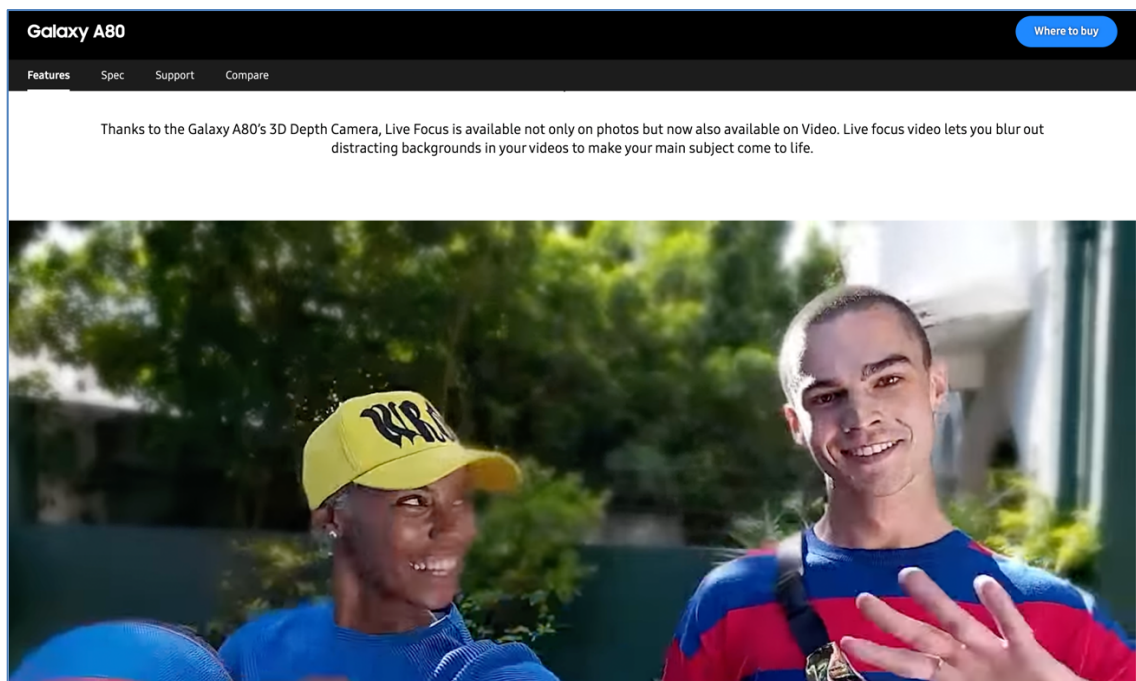


See, <https://www.samsung.com/us/mobile/galaxy-a50/#camera>.





See, <https://www.samsung.com/ie/business/smartphones/galaxy-a/galaxy-a70-sm-a705fzkubtu/#benefit>.



See, [https://www.samsung.com/africa\\_en/smartphones/galaxy-a/samsung-galaxy-a80-black-128gb-sm-a805fzkaxfa/#benefit](https://www.samsung.com/africa_en/smartphones/galaxy-a/samsung-galaxy-a80-black-128gb-sm-a805fzkaxfa/#benefit).

30. The Accused Instrumentalities infringed at least claims 1-3, 5-7, 10-12, 20, 24, 62, and 63 of the '605 patent during the pendency of the '605 patent, and in particular from April 20, 2021 to October

15, 2022. This Complaint is in compliance with 35 U.S.C. §287 as no products have ever been commercialized or licensed by patent owner under the '605 patent.

31. Plaintiff has been harmed by Samsung's infringing activities.

**PRAYER FOR RELIEF**

WHEREFORE, Plaintiff respectfully requests the Court enter judgment against Defendant as follows:

1. Declaring that Defendant has infringed the Patents-in-Suit;
2. Awarding Plaintiff its damages suffered because of Defendant's infringement of the Patents-in-Suit;
3. Awarding Plaintiff its costs, reasonable attorneys' fees, expenses, and interest; and
4. Granting Plaintiff such further relief as the Court finds appropriate.

**JURY DEMAND**

Plaintiff demands trial by jury, under Fed. R. Civ. P. 38.

Respectfully Submitted

/s/ Christopher A. Honea \_\_\_\_\_

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