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

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| MAXELL, LTD.,<br><br>*Plaintiff,*<br><br>v.<br><br>SAMSUNG ELECTRONICS CO., LTD., and SAMSUNG ELECTRONICS AMERICA, INC.,<br><br>*Defendants.* | Civil Action No. _____<br><br>**COMPLAINT AND DEMAND FOR JURY TRIAL** |

## COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Maxell, Ltd. ("Maxell"), by and through its undersigned counsel, files this complaint under 35 U.S.C. § 271 for Patent Infringement against Defendants Samsung Electronics Co., Ltd. ("SEC"), and Samsung Electronics America, Inc. ("SEA") (together, "Samsung" or "Defendants") and further alleges as follows, upon actual knowledge with respect to itself and its own acts, and upon information and belief as to all other matters.

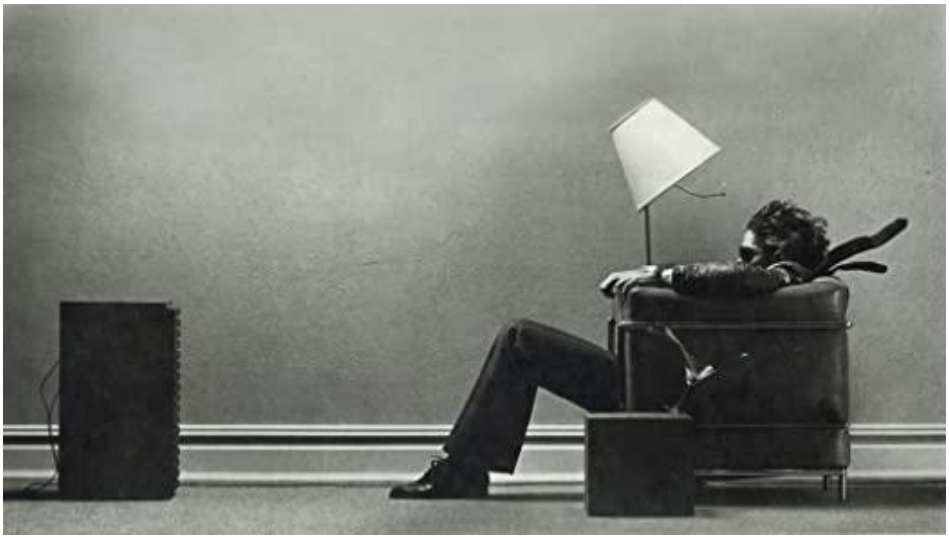
## OVERVIEW

1. This is an action for patent infringement by Maxell. Founded in 1961 as Maxell Electric Industrial Co., Ltd., Maxell is a leading global manufacturer of information storage media products, including magnetic tapes, optical discs, and battery products such as lithium ion rechargeable micro batteries and alkaline dry batteries, and the company has over 50 years of experience producing industry-leading recordable media and energy products for both the consumer and the professional markets. Maxell has also been a leading manufacturer of projectors

and lenses and additionally sells various other devices, such as Bluetooth headsets, wireless charging solutions, etc.

2. Maxell has built up an international reputation for excellence and reliability, for pioneering the power supplies and digital recordings for today's mobile and multi-media devices, and for leading the electronics industry in the fields of storage media and batteries.

3. Since being one of the first companies to develop alkaline batteries and Blu Ray camcorder discs, Maxell has always assured its customers of industry-leading product innovation and is one of the world's foremost suppliers of memory, power, audio, and video goods. Maxell's well-recognized logo and iconic "blown away" image exemplify the reputation Maxell carefully developed in these markets.



4. As more fully described below, in 2009 Hitachi, Ltd. assigned much of its consumer product-facing intellectual property to its consumer product business division, Hitachi Consumer Electronics Co., Ltd. Then, in 2013, the consumer electronics division of Hitachi Consumer Electronics Co., Ltd., was transferred to Hitachi Maxell, Ltd. This involved assigning the intellectual property, including the patents in this case, to Hitachi Maxell, Ltd. In 2017, Hitachi Maxell engaged in a reorganization and name change—to Maxell, Ltd.—in an effort to align its

intellectual property with the business development, and research and development, and licensing efforts of Maxell, including in the mobile and mobile-media device market (Hitachi, Ltd. and Hitachi Consumer Electronics Co., Ltd. are referred to herein collectively as "Hitachi"). Maxell continues to own all rights to the patents-in-suit, as well as the entire Maxell portfolio initially obtained from Hitachi.

5. Today, Maxell maintains a thriving business in the mobile device market including wireless charging solutions, wireless flash drives, multimedia players, storage devices, and headphones. Maxell also maintains intellectual property related to televisions, computer products, tablets, digital cameras, mobile phones, and other consumer electronics. As a mobile technology developer and industry leader, and due to its historical and continuous investment in research and development, including in the state of Texas, Maxell owns a portfolio of patents related to such technologies and actively enforces its patents through licensing and/or litigation. Leading smartphone manufacturers have recognized the value of Maxell's intellectual property and have obtained a license from Maxell in the recent past—including many of the smartphone companies well-known to consumers.

6. Maxell has had regular and continuous business in Texas since 2014. As a result of these business dealings and hopes to expand those and other business dealings, Maxell founded an affiliate, Maxell Research and Development America, LLC ("MRDA"), in Marshall, Texas. MRDA is part of a joint venture with another business in Marshall, and the entities work together on research and development related to IoT, mobile, media, and battery technologies. MRDA's ongoing projects include, for example, the research and development of lensless camera technology, which Maxell hopes will be utilized for sensor and camera technology in smartphones. Maxell has regularly met and continues to regularly meet with MRDA to expand its business, and

investments are being made by Maxell, MRDA, and others in this District to further the goals of these companies.

7. Maxell is forced to bring this action against Samsung as a result of Samsung's knowing and ongoing infringement of Maxell's patents as further described herein.

8. Samsung has been aware of Maxell's patents for well over a decade. In 2011, Samsung entered into a Patent Sale Agreement with Hitachi Consumer Electronics Co., Ltd. ("HCE"). Pursuant to that Agreement, HCE assigned 10 patent families to Samsung. At least one of these patents was later asserted by Samsung against Apple in litigation. The Patent Sale Agreement also provided Samsung a license to HCE's patents. This license is now expired. Though Samsung previously recognized the value of Maxell's patents, upon expiration of that prior license, Samsung has refused to take a new license. Maxell has made several attempts over the last few years to engage Samsung in negotiations for a new license. Specifically, since at least July 2021, Maxell has provided Samsung with specific notice of its patents and the parties have had numerous discussions and interrogations regarding its infringement of these patents. Samsung's representatives have been provided with detailed information regarding Maxell's patents, the developed technology, and Samsung's ongoing use of this patented technology. Through this process, Samsung's representatives requested and received detailed explanations regarding Maxell's patents and allegations. Maxell believed that a mutually beneficial agreement could be reached between the parties and continued to communicate with Samsung since informing Samsung about its infringement in July 2021. Maxell had hoped that the parties could reach a mutually beneficial solution, but Samsung elected not to enter into an agreement with Maxell or license Maxell's patents, even though many of the smartphone companies well-known to consumers have already entered into a license agreement with Maxell. Instead, Samsung

continued, and continues today, to make, use, sell, and offer for sale Maxell's patented technology without a license. Accordingly, Maxell filed a Complaint of patent infringement in this District on September 7, 2023, in hopes of obtaining a patent license agreement shortly thereafter.

9. Even after filing of the Complaint, Maxell continued to exchange correspondence, including numerous additional notice letters with Samsung, and engaged in further discussions to enter into a license agreement like Samsung's competitors, but Samsung continues to infringe Maxell's global patent rights and refuses to license Maxell's global patent portfolio. Thus, to protect its infringement rights, Maxell has been forced to file a Section 337 Complaint in the United States International Trade Commission (*see* Inv. No. 337-TA-1432); three separate Unified Patent Court Infringement Actions in Germany to seek injunctions against Samsung's Galaxy products in certain European Union member countries; four separate patent infringement actions in Tokyo District Courts to seek injunctions against Samsung's Galaxy products in Japan; and now files this additional complaint of patent infringement.

## PARTIES

10. Plaintiff Maxell, Ltd. is a Japanese corporation with a registered place of business at 1 Koizumi, Oyamazaki, Oyamazaki-cho, Otokuni-gun, Kyoto, Japan.

11. On information and belief, Defendant SEC is a Korea corporation with its principal place of business at 129 Samsung-Ro Yeongtong-gu, Gyeonggi-do 16677 Suwon-Shi, Republic of Korea. SEC may be served pursuant to FED. R. CIV. P. 4(f)(1).

12. Defendant SEA is a New York corporation. SEA is a wholly owned subsidiary of SEC. SEA may be served through its registered agent CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201. SEA is registered to do business in the State of Texas and has been since at least June 10, 1996.

13. SEC exercises direction and control over the performance of SEA. Alternatively, Defendants form a joint business enterprise such that the performance by one Defendant is each attributable to the other Defendant.

14. SEC and SEA, individually and collectively as a common business enterprise, conduct business operations in the Eastern District of Texas at facilities located at 6625 Excellence Way, Plano, TX 75023 ("Plano Facility").

15. Upon information and belief, Samsung employs full-term personnel such as sales personnel and engineers in this District.

16. In addition, Samsung has authorized sellers and sales representatives that offer and sell products pertinent to this Complaint throughout the State of Texas, including in this District, and to consumers throughout this District, such as: Best Buy, 422 West TX-281 Loop, Suite 100, Longview, TX 75605; T-Mobile, 1806 East End Boulevard North, Suite 100, Marshall, TX 75670; Verizon authorized retailers, including Russell Cellular, 1111 East Grand Avenue, Marshall, TX 75670; Victra, 1006 East End Boulevard, Marshall, Texas 75670; and Cricket Wireless authorized retailer, 120 East End Boulevard South, Marshall, TX 75670.

17. Samsung offers its products and services, including the products accused of infringement in this Complaint, to customers and potential customers located in the Eastern District of Texas.

## NATURE OF THE ACTION, JURISDICTION, AND VENUE

18. Maxell brings this action for patent infringement under the patent laws of the United States, 35 U.S.C. § 271 *et seq*.

19. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the action arises under the patent laws of the United States.

20. This Court has personal jurisdiction over Samsung in this action pursuant to due process and/or the Texas Long Arm Statute, by virtue of at least the substantial business each Defendant conducts in this forum, directly and/or through intermediaries, including, but not limited to: (1) having committed acts within the Eastern District of Texas giving rise to this action and having established minimum contacts with this forum such that the exercise of jurisdiction over each Defendant would not offend traditional notions of fair play and substantial justice; (2) having directed its activities to customers in the State of Texas and this District, solicited business in the State of Texas and this District, transacted business within the State of Texas and this District and attempted to derive financial benefit from residents of the State of Texas and this District, including benefits directly related to the instant patent infringement causes of action set forth herein; (3) having placed their products and services into the stream of commerce throughout the United States and having been actively engaged in transacting business in Texas and in this District; and (4) either individually, as members of a common business enterprise, and/or in conjunction with third parties, having committed acts of infringement within Texas and in this District.

21. For example, SEA maintains regular and established offices in the Eastern District of Texas, including at 6625 Excellence Way, Plano, TX 75023. Further, on information and belief, SEC directs and controls the actions of SEA, or acts in consort with SEA, such that it too maintains regular and established offices in the Eastern District of Texas, including at 6625 Excellence Way, Plano, TX 75023. Furthermore, the purposeful contacts by SEA are imputable to SEC.

22. Upon information and belief, Samsung's Plano office serves as a hub for its smartphone product line with divisions, including networks, marketing, wearables, and product management being located in the Plano facilities in this District. Samsung has described this 216,000 square foot "flagship" Plano office, with over 1,000 employees, as part of its "continued

investment in our Texas roots." *See* https://news.samsung.com/us/samsung-electronics-america-open-flagship-north-texas-campus/. In Samsung's words, "Samsung's move to Plano further demonstrates the company's dedication to Texas . . . [and the Plano facility] is home to Samsung Electronics America's second biggest employee population in the U.S. across multiple divisions – Customer Care, Mobile, Mobile R&D and Engineering." *Id.* In all, "more than 1,000 regional employees" were relocated to work out of the Plano facility. *Id.*

23. Both SEC and SEA, directly or through their distribution network, have purposefully and voluntarily placed infringing products in the stream of commerce knowing and expecting them to be purchased and used by consumers in the United States, including in the Eastern District of Texas.

24. On information and belief, Samsung has also derived substantial revenues from infringing acts in the Eastern District of Texas, including from the sale and use of infringing products (including the Accused Products, to be defined below).

25. Venue is proper in this District pursuant to 28 U.S.C. § 1391 and 28 U.S.C. § 1400.

26. Venue is proper against SEC in this District pursuant to 28 U.S.C. § 1391(c)(3) because SEC is a foreign corporation not resident in the United States, and venue is proper in any district against a foreign corporation. Venue is further proper as to SEC under 28 U.S.C. § 1391(b)(2) because SEC performs a substantial part of its infringing acts in this District by making, using, selling, offering to sell, and importing infringing products in this District. Thus, SEC has committed, and continues to commit, acts of patent infringement within the District.

27. Venue is proper against SEA in this District pursuant to 28 U.S.C. § 1400(b) because SEA has a regular and established places of business in this District, including a 216,000-square-foot facility at 6625 Excellence Way, Plano, TX 75023. *See In re HTC Corp.*, 889 F.3d

1349, 1354 (Fed. Cir. 2018), *In re Cray Inc.*, 871 F.3d 1355, 1362–63 (Fed. Cir. 2017).

28. Defendants are properly joined under 35 U.S.C. § 299(a)(1) because Defendants, through their own acts and/or through the acts of other entities acting as their agent, representative, or alter ego, commonly and/or jointly design and/or sell accused products such that at least one right to relief is asserted against Defendants jointly, severally, and in the alternative with respect to the same transactions, occurrences, or series of transactions or occurrences relating to the making, using, selling and/or offering to sell in, and/or importing into the United States the same accused products.

29. Defendants are properly joined under 35 U.S.C. § 299(a)(2) because Defendants, through their own acts and/or through the acts of other entities acting as their agent, representative, or alter ego, make, use, sell, and/or offer to sell in, and/or import into the United States the same or similar accused products, such that questions of fact will arise that are common to all Defendants.

30. Upon information and belief, SEC and SEA, acting in consort, have placed the accused products in the stream of commerce, knowing the likely destination of the products in the United States and this District. Upon information and belief, SEC has further purposefully availed itself of the United States and this District by directing SEA to take action in the United States and this District.

31. Upon information and belief, each Defendant serves as agent, representative, and/or alter ego of each other Defendant for the purposes of conducting business in the United States and this District in relation to making, using, selling, offering to sell, and importing into the United States the accused products.

32. Upon information and belief, each Defendant exercises direction and control over

the performance of each other Defendant, or the Defendants form a joint enterprise such that the performance by one Defendant is attributable to the other Defendant.

**COUNT 1 – INFRINGEMENT OF U.S. PATENT NO. 11,026,088**

33. Maxell incorporates paragraphs 1-32 above by reference.

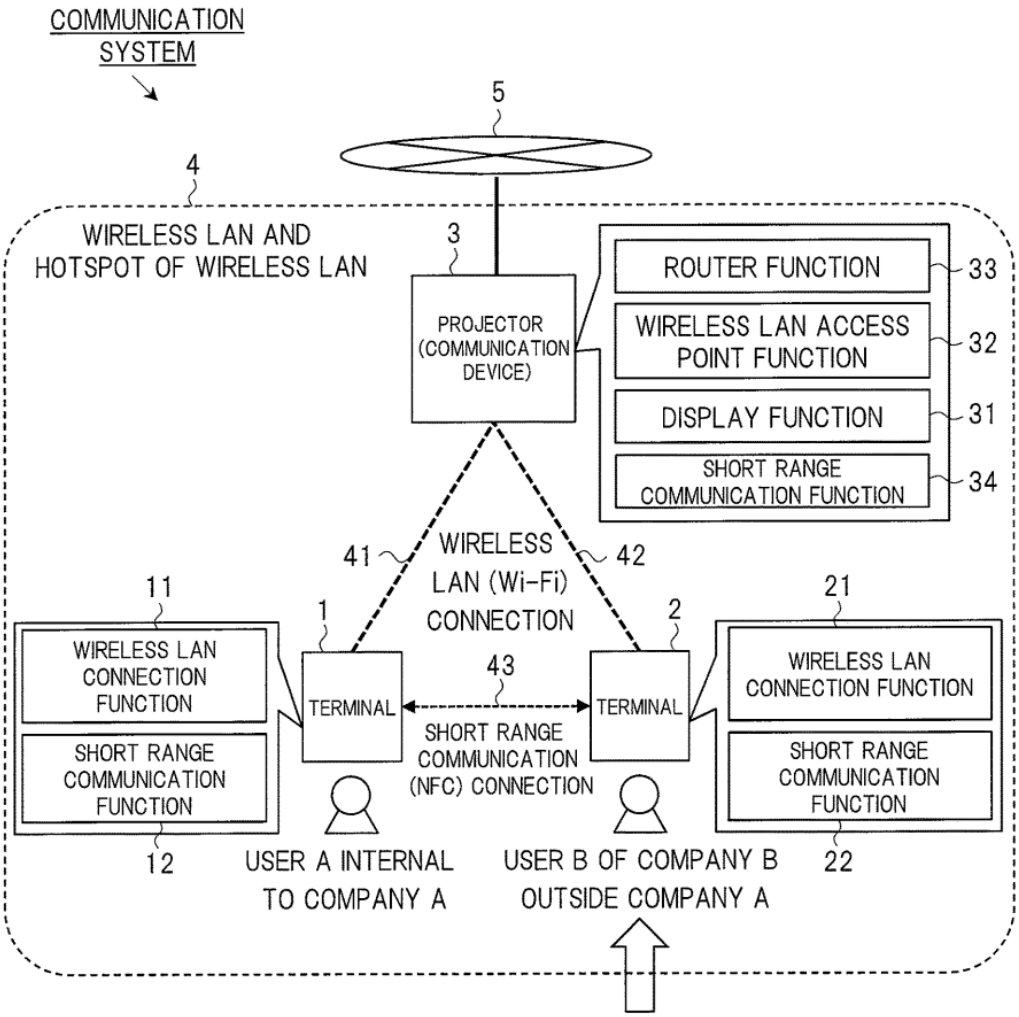
34. U.S. Patent No. 11,026,088 (the "'088 Patent," attached hereto at Exhibit 1) duly issued on June 1, 2021, and is entitled *Communication System, Communication Device, And Communication Terminal Device*.

35. Maxell is the owner by assignment of the '088 Patent and possesses all rights under the '088 Patent, including the exclusive right to recover for past and future infringement.

36. The '088 Patent is directed to establishing and managing a network of devices, including, for example, a communication device, an access point device, and/or one or more communication terminals. In particular, the system and apparatus disclosed in the '088 Patent ensure that communication device and communication terminals connect to each other via an access point device and enable communication terminal to permit another communication terminal to establish a connection with another communication terminal in the communication system. Further, the system and apparatus disclosed in the '088 Patent "provide a technology pertaining to a wireless LAN communication system, a communication device in the system, and the like, which can achieve convenience for a terminal of a user who is external to an organization to temporarily use the system and ensure security in such a case." '088 Patent, 2:4-9

37. Specifically, the '088 Patent discloses an exemplary communication system including "a communication device," "a first communication terminal," "a second communication terminal," and "an access point device" that all work in conjunction to provide permission to a second communication terminal to establish a connection with a communication device if the first

communication terminal provides the permission. Further, the first communication device is configured to control displaying of data received from the second communication terminal and also the first communication terminal is configured to remotely control a display operation on the communication device. An exemplary configuration is shown below in Figure 1 of the '088 Patent:




38. Samsung has directly infringed one or more claims of the '088 Patent in this District and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its home networking technology, including at least Samsung products having materially similar functionality while implementing a SmartThings network using Samsung smartphones, tablets, laptops, watches,

SmartThings Cloud, SmartThings Station, SmartThings Hubs, refrigerators, ranges, washers, dryers, air dressers, dishwashers, vacuums, air purifiers, microwaves, and wall ovens.

39. For example, Samsung has literally and/or under the doctrine of equivalents directly infringed at least claim 1 of the ’088 Patent in this District and elsewhere in Texas by or through making, using, importing, offering for sale, and/or selling at least the following: **smartphones** including the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A36 5G, Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10 5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S25, Galaxy S25+, Galaxy S25 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6 Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy

Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy Z Fold6, Galaxy A15 5G, Galaxy A25 5G, Galaxy A35 5G, Galaxy Z Fold6, Galaxy Z Flip6; **tablets** including Galaxy Tab Active Pro, Galaxy Tab Active3, Galaxy Tab Active4 Pro, Galaxy Tab S5e, Galaxy Tab S6, Galaxy Tab S6 5G, Galaxy Tab S7, Galaxy Tab S7+, Galaxy Tab S8, Galaxy Tab S8 Ultra, Galaxy Tab S8+, Galaxy Tab S9, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S9 Ultra, Galaxy Tab S9+, Galaxy Tab A9+ 5G, Galaxy Tab Active5 5G, Galaxy Tab S10 Ultra, Galaxy Tab S10+, Galaxy Tab S10 FE+, Galaxy Tab S10 FE; **laptops** including Galaxy Book2 360, 13", Intel Core i5, 256GB, Galaxy Book2 360, 13", Intel Core i7, 512GB, Galaxy Book2 Pro 360, 13", Intel Core i7, 256GB, Galaxy Book2 Pro 360, 13", Intel Core i7, 512GB, Galaxy Book2 Pro 360, 15", Intel Core i7, 1TB, Galaxy Book2 Pro 360, 15", Intel Core i7, 512GB, Galaxy Book2 Pro, 13", Intel Core i5, 256GB, Galaxy Book2 Pro, 13", Intel Core i7, 512GB, Galaxy Book2 Pro, 15", Intel Core i5, 512 GB, Galaxy Book2 Pro, 15", Intel Core i7, 512GB, Galaxy Book2 Pro, 15", Intel Core i7, Intel ARC Discrete Graphics, 1TB, Galaxy Book3 360, 13", Intel Core i7, 512GB, Galaxy Book3 360, 15", Intel Core i7, 512GB, Galaxy Book3 Pro 360, 16", Intel Core i7, 1TB, Galaxy Book3 Pro, 14", Intel Core i7, 512 GB, Galaxy Book3 Pro, 16" Intel Core i7, 1TB, Galaxy Book3 Ultra, 16" Intel Core i7, 1TB, Galaxy Book3 Ultra, 16" Intel Core i9, 1TB, and Galaxy Book3, 15", Intel Core i7, 512GB, Galaxy Book4 360, Galaxy Book4 Pro, Galaxy Book4 Pro 360, Galaxy Book4 Ultra, Galaxy Book S, Galaxy Book5 360, Galaxy Book5 Pro, Galaxy Book5 Pro 360; **watches** including Galaxy Watch Ultra, Galaxy Watch 7, Galaxy Watch 6, Galaxy Watch5 Pro Golf Edition, Galaxy Watch5 Pro, Galaxy Watch5, Galaxy Watch4, Galaxy Watch4 Classic; **SmartThings Station** with Travel Adapter, SmartThings Station, SmartThings Hub, Samsung SmartThings WIFI Mesh Router with SmartThings Hub Functionality, SmartThings Hub Dongle; **refrigerators** including Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in Matte Black Steel,

Bespoke Counter Depth 4-Door Flex™ Refrigerator (23 cu. ft.) in Matte Black Steel, 25 cu. ft. 33" 3-Door French Door Refrigerator with Dual Auto Ice Maker in Stainless Steel, 25 cu. ft. 33" 3-Door French Door Refrigerator with Beverage Center in Stainless Steel, Bespoke Side-by-Side 28 cu. ft. Refrigerator with Beverage Center in White Glass, Bespoke Counter Depth Side-by-Side 23 cu. ft. Refrigerator with Beverage Center in Stainless Steel, Bespoke Counter Depth 4-Door Flex™ Refrigerator (23 cu. ft.) with Family Hub™ + in Charcoal Glass Top and Stainless Steel Bottom Panels, Bespoke 3-Door French Door Refrigerator (30 cu. ft.) with AutoFill Water Pitcher in White Glass, Bespoke 4-Door French Door Refrigerator (29 cu. ft.) with AutoFill Water Pitcher in Stainless Steel, Bespoke 3-Door French Door Refrigerator (24 cu. ft.) with AutoFill Water Pitcher in White Glass, Bespoke 4-Door French Door Refrigerator (29 cu. ft.) – with Top Left and Family Hub™ Panel in Charcoal Glass - and Matte Black Steel Middle and Bottom Door Panels, Bespoke 3-Door French Door Refrigerator (30 cu. ft.) with Beverage Center in Stainless Steel, Bespoke 4-Door French Door Refrigerator (23 cu. ft.) with AutoFill Water Pitcher in Stainless Steel, Bespoke 4-Door French Door Refrigerator (29 cu. ft.) with Beverage Center in Morning Blue Glass Top Panels and White Glass Middle and Bottom Panels, Bespoke 3-Door French Door Refrigerator (30 cu. ft.) – with Top Left and Family Hub™ Panel in White Glass - and Matte Grey Glass Bottom Door Panel, Bespoke 3-Door French Door Refrigerator (24 cu. ft.) with Beverage Center in White Glass, Bespoke 4-Door French Door Refrigerator (23 cu. ft.) with Beverage Center in White Glass, Bespoke 4-Door French Door Refrigerator (23 cu. ft.) – with Top Left and Family Hub™ Panel in Charcoal Glass - and Matte Black Steel Middle and Bottom Panels, Bespoke 3-Door French Door Refrigerator (24 cu. ft.) – with Top Left and Family Hub™ Panel in White Glass - and Matte Grey Glass Bottom Door Panel, 18 cu. ft. Smart Counter Depth 3-Door French Door Refrigerator in Black Stainless Steel, 17.3 cu. ft. Smart Kimchi & Specialty 4-Door French Door Refrigerator in

White-Navy Glass, 22 cu. ft. Smart 3-Door French Door Refrigerator in Stainless Steel, 26.5 cu. ft. Large Capacity 3-Door French Door Refrigerator with Family Hub™ and External Water & Ice Dispenser in Black Stainless Steel, 23 cu. ft. Smart Counter Depth Side-by-Side Refrigerator in Stainless Steel, 28 cu. ft. Smart Side-by-Side Refrigerator in Stainless Steel, 23 cu. ft. Counter Depth 4-Door French Door Refrigerator with FlexZone Drawer in Black Stainless Steel, 28 cu. ft. 4-Door French Door Refrigerator with FlexZone Drawer in Stainless Steel, 23 cu. ft. Smart Counter Depth 4-Door Flex™ Refrigerator with Beverage Center and Dual Ice Maker in Stainless Steel, 29 cu. ft. Smart 4-Door Flex™ Refrigerator with Family Hub™ and Beverage Center in Stainless Steel, 29 cu. ft. Smart 4-Door Flex™ Refrigerator with AutoFill Water Pitcher and Dual Ice Maker in Stainless Steel, 23 cu. ft. Smart Counter Depth 4-Door Flex™ refrigerator with Family Hub™ and Beverage Center in Black Stainless Steel, 29 cu. ft. Smart 4-Door Flex™ Refrigerator with Beverage Center and Dual Ice Maker in Stainless Steel, 22 cu. ft. Counter Depth Side-by-Side Refrigerator with Touch Screen Family Hub™ in Stainless Steel, 22 cu. ft. Smart 3-Door French Door Refrigerator with External Water Dispenser in Fingerprint Resistant Stainless Steel, 22 cu. ft. Counter Depth Side-by-Side Refrigerator in Stainless Steel, 26.7 cu. ft. Large Capacity Side-by-Side Refrigerator with Touch Screen Family Hub™ in Stainless Steel, 23 cu. ft. Smart Counter Depth 4-Door Flex™ refrigerator with AutoFill Water Pitcher and Dual Ice Maker in Stainless Steel, 15.6 cu. ft. Top Freezer Refrigerator with All-Around Cooling in Stainless Steel, 19.5 cu. ft. Smart 3-Door French Door Refrigerator in White, 29 cu. ft. Smart BESPOKE 4-Door Flex™ Refrigerator with Customizable Panel Colors in White Glass, Bespoke 3-Door French Door Refrigerator (30 cu. ft.) – with Family Hub™ in Charcoal Glass, Bespoke 3-Door French Door Refrigerator (24 cu. ft.) – with Family Hub™ in Charcoal Glass, Bespoke 4-Door French Door Refrigerator (23 cu. ft.) with Customizable Door Panel Colors and Beverage Center in Rose Pink

Glass, Bespoke 4-Door French Door Refrigerator (23 cu. ft.) with Customizable Door Panel Colors and Beverage Center in Morning Blue Glass, Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in Charcoal Glass, Bespoke 4-Door Flex™ Refrigerator (23 cu. ft.) in Charcoal Glass, Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in White Glass (2022), Bespoke 4-Door Flex™ Refrigerator (23 cu. ft.) in White Glass (2022), Bespoke 4-Door Flex™ Refrigerator (23 cu. ft.) in Sunrise Yellow Glass, Bespoke 4-Door Flex™ Refrigerator (23 cu. ft.) in Stainless Steel, Bespoke 4-Door Flex™ Refrigerator (23 cu. ft.) in Pink Glass (2022), Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in Emerald Green Steel, Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in Sunrise Yellow Glass, Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in Stainless Steel, Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in Clementine Glass, Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in Pink Glass (2022), Bespoke 4-Door Flex™ Refrigerator (23 cu. ft.) in Emerald Green Steel, Bespoke 4-Door Flex™ Refrigerator (23 cu. ft.) in Clementine Glass, Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in Morning Blue Glass, Bespoke 4-Door Flex™ Refrigerator (23 cu. ft.) in Morning Blue Glass, Bespoke 3-Door French Door Refrigerator (30 cu. ft.) - with Family Hub™ in White Glass, Bespoke 4-Door French Door Refrigerator (23 cu. ft.) with Customizable Door Panel Colors and Beverage Center in Emerald Green Steel, Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in White Glass Top and Grey Glass Bottom, Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in White Glass Top and Matte Black Steel Bottom, Bespoke 4-Door Flex™ Refrigerator (29 cu. ft.) in Matte Black Steel, Bespoke Counter Depth 4-Door Flex™ Refrigerator (23 cu. ft.) in White Glass Top and Grey Glass Bottom, Bespoke Counter Depth 4-Door Flex™ Refrigerator (23 cu. ft.) in White Glass Top and Matte Black Steel Bottom, 23 cu. ft. Smart Counter Depth BESPOKE 4-Door Flex™ Refrigerator with Customizable Panel Colors in White Glass, Bespoke 4-Door Flex™ Refrigerator (23 cu. ft.) in Matte Black Steel, 27 cu. ft. Mega Capacity Counter

Depth 3-Door French Door Refrigerator with Dual Auto Ice Maker in Stainless Steel, 26 cu. ft. Mega Capacity Counter Depth 3-Door French Door Refrigerator with Four Types of Ice in Stainless Steel, 32 cu. ft. Mega Capacity 3-Door French Door Refrigerator with Dual Auto Ice Maker in Matte Black Steel, 25 cu. ft. Mega Capacity Counter Depth 4-Door French Door Refrigerator with Four Types of Ice in Stainless Steel, 25 cu. ft. Mega Capacity Counter Depth 3-Door French Door Refrigerator with Family Hub™ in Stainless Steel, 30 cu. ft. Mega Capacity 4-Door French Door Refrigerator with Four Types of Ice in Matte Black Steel, 32 cu. ft. Mega Capacity 3-Door French Door Refrigerator with Dual Auto Ice Maker in Stainless Steel, 31 cu. ft. Mega Capacity 3-Door French Door Refrigerator with Four Types of Ice in Matte Black Steel, 30 cu. ft. Mega Capacity 4-Door French Door Refrigerator with Four Types of Ice in Stainless Steel; **ranges** including 6.3 cu. ft. Smart Freestanding Electric Range with No-Preheat Air Fry & Convection in Stainless Steel, 6.3 cu. ft. Smart Slide-in Electric Range with Convection in Stainless Steel, 6.0 cu. ft. Smart Slide-in Gas Range with Air Fry in Stainless Steel, 6.0 cu. ft. Smart Freestanding Gas Range with 18K BTU Dual Power Burner & Self Clean in Stainless Steel, 6.0 cu. ft. Smart Freestanding Gas Range with No-Preheat Air Fry, Convection+ & Stainless Cooktop in Stainless Steel, 6.3 cu. ft. Smart Slide-in Electric Range with Air Fry in Stainless Steel, 6.3 cu ft. Smart Slide-in Electric Range with Smart Dial & Air Fry in Stainless Steel, 6.0 cu. ft. Smart Freestanding Gas Range with No-Preheat Air Fry & Convection in Stainless Steel, 6.3 cu. ft. Smart Freestanding Electric Range with No-Preheat Air Fry, Convection+ & Griddle in Black Stainless Steel, Bespoke Smart Slide-in Gas Range 6.0 cu. ft. with Smart Dial, Air Fry & Wi-Fi in Navy Steel, 6.3 cu. ft. Smart Slide-in Electric Range in Stainless Steel, 6.0 cu. ft. Smart Slide-in Gas Range in Stainless Steel, 6.3 cu. ft. Flex Duo™ Front Control Slide-in Dual Fuel Range with Smart Dial, Air Fry, and Wi-Fi in Black Stainless Steel, 6.0 cu ft. Smart Slide-in Gas Range with

Smart Dial & Air Fry in Black Stainless Steel, 6.0 cu ft. Smart Slide-in Gas Range with Flex Duo™, Smart Dial & Air Fry in Stainless Steel, 6.3 cu. ft. Smart Slide-in Induction Range with Flex Duo™, Smart Dial & Air Fry in Stainless Steel, 6.3 cu. ft. Smart Slide-in Induction Range with Smart Dial & Air Fry in Stainless Steel, 6.0 cu. ft. Smart Slide-in Gas Range with Convection in Stainless Steel, 6.3 cu ft. Smart Slide-in Electric Range with Smart Dial, Air Fry, & Flex Duo™ in Stainless Steel, 6.3 cu. ft. Smart Freestanding Electric Range with Rapid Boil™ & Self Clean in Stainless Steel, 6.3 cu ft. Smart Slide-in Electric Range with Smart Dial & Air Fry in Stainless Steel, 6.3 cu. ft. Smart Freestanding Electric Range with Steam Clean in Stainless Steel, 6.0 cu. ft. Smart Freestanding Gas Range with Flex Duo™ & Air Fry in Black Stainless Steel, 6.0 cu. ft. Smart Freestanding Gas Range with Integrated Griddle in Stainless Steel, 6.3 cu. ft. Smart Freestanding Electric Range with Flex Duo™, No-Preheat Air Fry & Griddle in Black Stainless Steel, 6.3 cu. ft. Smart Rapid Heat Induction Slide-in Range with Air Fry & Convection+ in Black Stainless Steel, 6.3 cu. ft. Smart Slide-in Electric Range with Air Fry & Convection in Stainless Steel, Bespoke 6.3 cu. ft. Smart Slide-in Electric Range with Air Fry & Convection in White Glass, 6.0 cu. ft. Smart Slide-in Gas Range with Air Fry & Convection in Fingerprint Resistant Stainless Steel, Bespoke 6.0 cu. ft. Smart Slide-in Gas Range with Air Fry & Convection in White Glass, Bespoke 6.3 cu. ft. Smart Front Control Slide-In Electric Range with Air Fry & Wi-Fi in White Glass, Bespoke 6.3 cu. ft. Smart Rapid Heat Induction Slide-in Range with Air Fry & Convection+ in White Glass, Bespoke 6.0 cu. ft. Smart Front Control Slide-In Gas Range with Air Fry & Wi-Fi in White Glass, Bespoke Smart Slide-in Electric Range 6.3 cu. ft. with Smart Dial & Air Fry in White Glass; **washing machines** including Bespoke 5.3 cu. ft. Ultra Capacity Front Load Washer with AI OptiWash™ and Auto Dispense in Brushed Navy, 4.5 cu. ft. Large Capacity Smart Front Load Washer with Super Speed Wash - Champagne, Bespoke 5.3 cu. ft. Ultra Capacity Front Load

Washer with Super Speed Wash and AI Smart Dial in Silver Steel, 5.0 cu. ft. Extra Large Capacity Smart Front Load Washer with Super Speed Wash and Steam in Ivory, 4.6 cu. ft. Large Capacity AI Smart Dial Front Load Washer with Auto Dispense and Super Speed Wash in Brushed Black, 5.5 cu. ft. Extra-Large Capacity Smart Top Load Washer with Auto Dispense System in Brushed Black, 5.5 cu. ft. Extra-Large Capacity Smart Top Load Washer with Super Speed Wash in Ivory, 5.1 cu. ft. Smart Top Load Washer with ActiveWave™ Agitator and Super Speed Wash in Brushed Black, 5.0 cu. ft. Extra-Large Capacity Smart Dial Front Load Washer with MultiControl™ in Brushed Black, 5.0 cu. ft. Extra-Large Capacity Smart Dial Front Load Washer with OptiWash™ in Brushed Black, 4.5 cu. ft. Front Load Washer with Vibration Reduction Technology+ in White, 6.0 cu. ft. Total Capacity Smart Dial Washer with FlexWash™ and Super Speed Wash in Brushed Black, 5.0 cu. ft. Extra-Large Capacity Smart Front Load Washer with Super Speed Wash in Brushed Black, 2.5 cu. ft. Compact Front Load Washer with AI Smart Dial and Super Speed Wash in White, 5.1 cu. ft. Extra-Large Capacity Smart Front Load Washer with Vibration Reduction Technology+ in Brushed Black, 4.6 cu. ft. Large Capacity Smart Top Load Washer with ActiveWave™ Agitator and Active WaterJet in Brushed Black, 4.7 cu. ft. Large Capacity Smart Top Load Washer with Active WaterJet in Brushed Black, 5.4 cu. ft. Extra-Large Capacity Smart Top Load Washer with ActiveWave™ Agitator and Super Speed Wash in Brushed Black, 5.4 cu. ft. Smart Top Load Washer with Pet Care Solution and Super Speed Wash in Brushed Navy; **dryers** including Smart Gas Dryer with Steam Sanitize+ in Champagne, Bespoke 7.6 cu. Ft. Ultra Capacity Gas Dryer with Super Speed Dry and AI Smart Dial in Silver Steel, Bespoke 7.6 cu. Ft. Ultra Capacity Electric Dryer with AI Optimal Dry and Super Speed Dry in Silver Steel, 7.5 cu. Ft. AI Smart Dial Electric Dryer with Super Speed Dry and MultiControl™ in Brushed Black, Bespoke 7.6 cu. Ft. Ultra Capacity Gas Dryer with AI Optimal Dry and Super Speed Dry in Silver

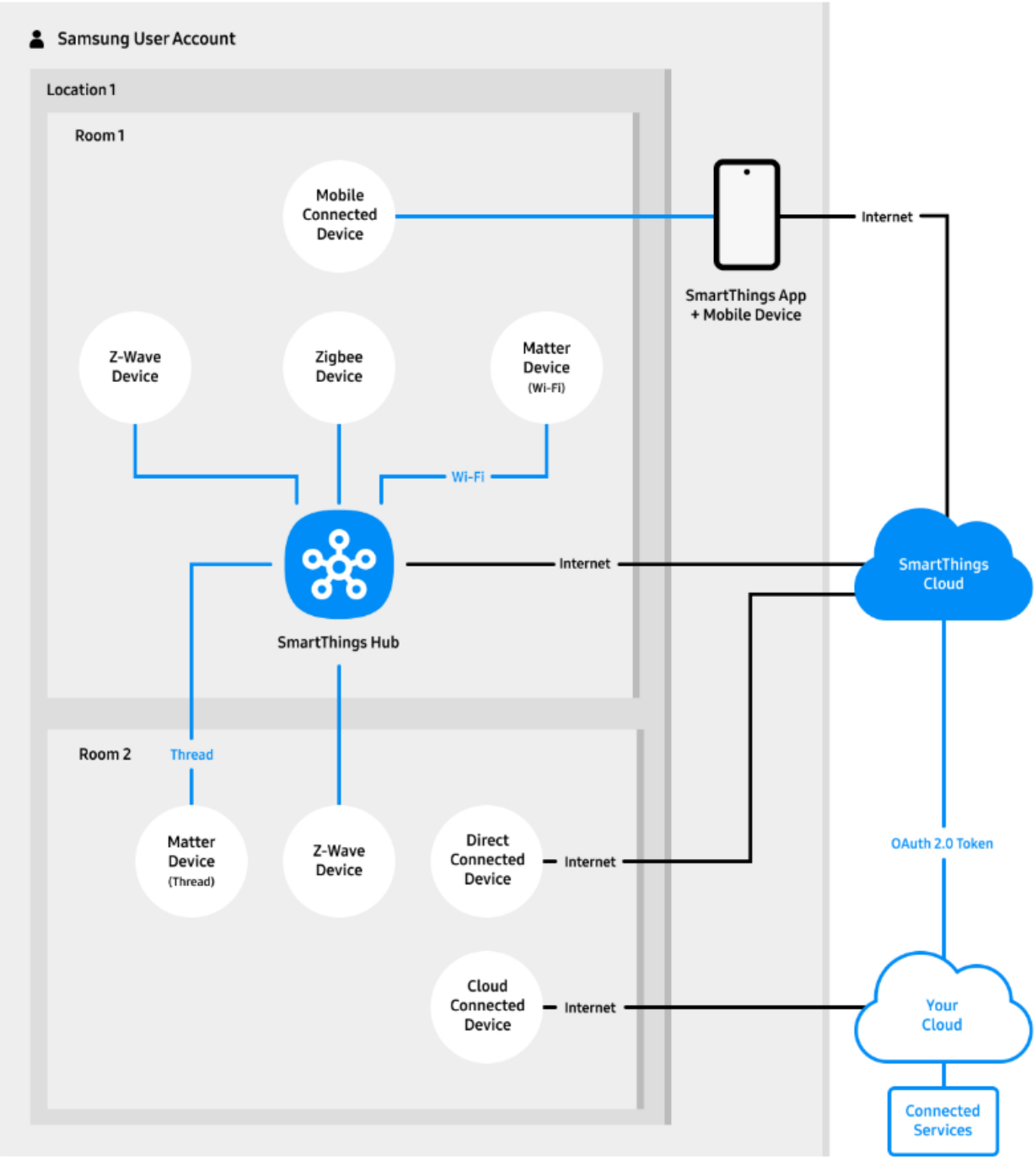
Steel, 7.5 cu. Ft. Smart Electric Dryer with Steam Sanitize+ and Sensor Dry in Ivory, Bespoke 7.6 cu. Ft. Ultra Capacity Electric Dryer with Super Speed Dry and AI Smart Dial in Silver Steel, 7.5 cu. Ft. Smart Gas Dryer with Steam Sanitize+ in White, 7.5 cu. Ft. AI Smart Dial Gas Dryer with Super Speed Dry and MultiControl™ in Brushed Black, 7.5 cu. Ft. Smart Gas Dryer with Steam Sanitize+ in Platinum, 7.5 cu. Ft. Smart Gas Dryer with Steam Sanitize+ and Sensor Dry in Brushed Black, 7.5 cu. Ft. Smart Electric Dryer with Steam Sanitize+ in Champagne, 7.4 cu. Ft. Smart Electric Dryer with Steam Sanitize+ in Brushed Black, 7.5 cu. Ft. Smart Dial Electric Dryer with FlexDry™ and Super Speed Dry in Brushed Black, 7.4 cu. Ft. Smart Electric Dryer with Steam Sanitize+ in Ivory, 7.4 cu. Ft. Smart Gas Dryer with Steam Sanitize+ in Brushed Black, 7.4 cu. Ft. Smart Electric Dryer with Steam Sanitize+ in White, 7.4 cu. Ft. Smart Gas Dryer with Steam Sanitize+ in Ivory, 7.5 cu. Ft. Smart Dial Gas Dryer with FlexDry™ and Super Speed Dry in Brushed Black, 7.4 cu. Ft. Smart Gas Dryer with Steam Sanitize+ in White, 7.4 cu. Ft. Smart Gas Dryer with Steam Sanitize+ in Champagne, 7.4 cu. Ft. Smart Electric Dryer with Steam Sanitize+ in Brushed Black, 7.4 cu. Ft. Smart Gas Dryer with Steam Sanitize+ in Brushed Black, 7.5 cu. Ft. Electric Dryer with Sensor Dry in Brushed Black, 7.5 cu. Ft. Smart Electric Dryer with Steam Sanitize+ in Brushed Black, 7.5 cu. Ft. Smart Dial Electric Dryer with Super Speed Dry in Ivory, 7.5 cu. Ft. Smart Dial Electric Dryer with Super Speed Dry in Brushed Black, 7.4 cu. Ft. Smart Electric Dryer with Steam Sanitize+ in Champagne, 7.5 cu. Ft. Smart Dial Electric Dryer with Super Speed Dry in Brushed Black, 4.0 cu. Ft. Electric Dryer with AI Smart Dial and Wi-Fi Connectivity in White, 7.5 cu. ft. Smart Electric Dryer with Sensor Dry in Brushed Black, 7.4 cu. ft. Smart Electric Dryer with Sensor Dry in Brushed Black, 7.4 cu. ft. Smart Electric Dryer with Pet Care Dry and Steam Sanitize+ in Brushed Navy, 7.4 cu. ft. Smart Gas Dryer with Sensor Dry in Brushed Black, 7.4 cu. ft. Smart Gas Dryer with Pet Care Dry and Steam Sanitize+ in Brushed

Navy, Bespoke 7.8 cu. ft. Ultra Capacity Ventless Hybrid Heat Pump Dryer with AI Optimal Dry in Brushed Navy; **AirDressers** including Bespoke AirDresser Grand Clothing Care System with Steam Refresh in Crystal Mirror Finish, Bespoke AirDresser Clothing Care System with Steam Refresh in Crystal Mirror Finish; **Dishwashers** including Smart Linear Wash 39dBA Dishwasher in Stainless Steel, Bespoke Smart 39dBA Dishwasher with Linear Wash in Fingerprint Resistant Navy Steel, Smart 44dBA Dishwasher with StormWash+™ in Black Stainless Steel, Smart 44dBA Dishwasher with StormWash+™ in Stainless Steel, Smart 42dBA Dishwasher with StormWash+™ and Smart Dry in Black Stainless Steel, Smart 42dBA Dishwasher with StormWash+™ and Smart Dry in Black Stainless Steel, Smart Linear Wash 39dBA Dishwasher in Stainless Steel, Bespoke Smart 39dBA Dishwasher with Linear Wash in Fingerprint Resistant Navy Steel, Smart 44dBA Dishwasher with StormWash+™ in Black Stainless Steel, Smart 44dBA Dishwasher with StormWash+™ in Stainless Steel, Smart 42dBA Dishwasher with StormWash+™ and Smart Dry in Black Stainless Steel, Smart 42dBA Dishwasher with StormWash+™ and Smart Dry in Black Stainless Steel, Bespoke AutoRelease Smart 46dBA Dishwasher with StormWash™ in White Glass, AutoRelease Smart 46dBA Dishwasher with StormWash™ in Fingerprint Resistant Matte Black Steel, AutoRelease Smart 42dBA Dishwasher with StormWash+™ and Smart Dry in Black Stainless Steel, Bespoke AutoRelease 39dBA Dishwasher with Linear Wash in Fingerprint Resistant Navy Steel, AutoRelease Smart 39dBA Dishwasher with Linear Wash in Black Stainless Steel; **Vacuums** including Jet Bot AI+ Robot Vacuum with Object Recognition, Jet Bot+ Robot Vacuum with Clean Station, Bespoke Jet™ AI Cordless Stick Vacuum with All-in-One Clean Station® in Satin Black; **Air Purifiers** including Bluesky Compact Air Purifier, Bespoke Cube Air Purifier, Cube Air Purifier with Wind-Free Air Purification; **Microwaves and/or Microwave combinations** including 1.1 cu. ft. Smart SLIM

Over-the-Range Microwave with 400 CFM Hood Ventilation, Wi-Fi & Voice Control in Black Stainless Steel, 1.1 cu. ft. Smart SLIM Over-the-Range Microwave with 550 CFM Hood Ventilation, Wi-Fi & Voice Control in Stainless Steel, Bespoke Smart 1.9 cu. ft. Over-the-Range Microwave with Sensor Cook in White Glass, 30" Smart Single Wall Oven in Stainless Steel, 30" Smart Microwave Combination Wall Oven in Stainless Steel, 30" Smart Double Wall Oven in Black Stainless Steel, 30" Smart Double Wall Oven with Flex Duo™ in Stainless Steel, 30" Smart Microwave Combination Wall Oven with Flex Duo™ in Black Stainless Steel, 30" Smart Single Wall Oven with Steam Cook in Black Stainless Steel, 30" Smart Microwave Combination Wall Oven with Steam Cook in Black Stainless Steel, 30" Smart Single Wall Oven with Flex Duo™ in Black Stainless Steel, 30" Smart Single Wall Oven in Stainless Steel, 30" Smart Microwave Combination Wall Oven in Stainless Steel, 30" Smart Double Wall Oven in Black Stainless Steel, 30" Smart Double Wall Oven with Flex Duo™ in Stainless Steel, 30" Smart Microwave Combination Wall Oven with Flex Duo™ in Black Stainless Steel, 30" Smart Single Wall Oven with Steam Cook in Black Stainless Steel, 30" Smart Microwave Combination Wall Oven with Steam Cook in Black Stainless Steel, 30" Smart Single Wall Oven with Flex Duo™ in Black Stainless Steel, , Bespoke 30" Microwave Combination Wall Oven with Flex Duo™ in White Glass, Bespoke 30" White Glass Double Wall Oven with AI Pro Cooking™ Camera, Bespoke 30" White Glass Single Wall Oven with AI Pro Cooking™ Camera, 30" Double Wall Oven with Steam Cook in Matte Black Steel, 30" Single Wall Oven with Steam Cook in Matte Black, 24" 3.1 cu. ft. Single Electric Wall Oven with Convection and Wi-Fi in Stainless Steel, 30" Smart Electric Wall Oven with Microwave Combination in Stainless Steel, SmartThings cloud, and other Samsung devices with the ability to be a communication device or communication terminal in a SmartThings network (collectively, "the '088 Accused Products"). *See* https://www.smartthings.com/. Maxell

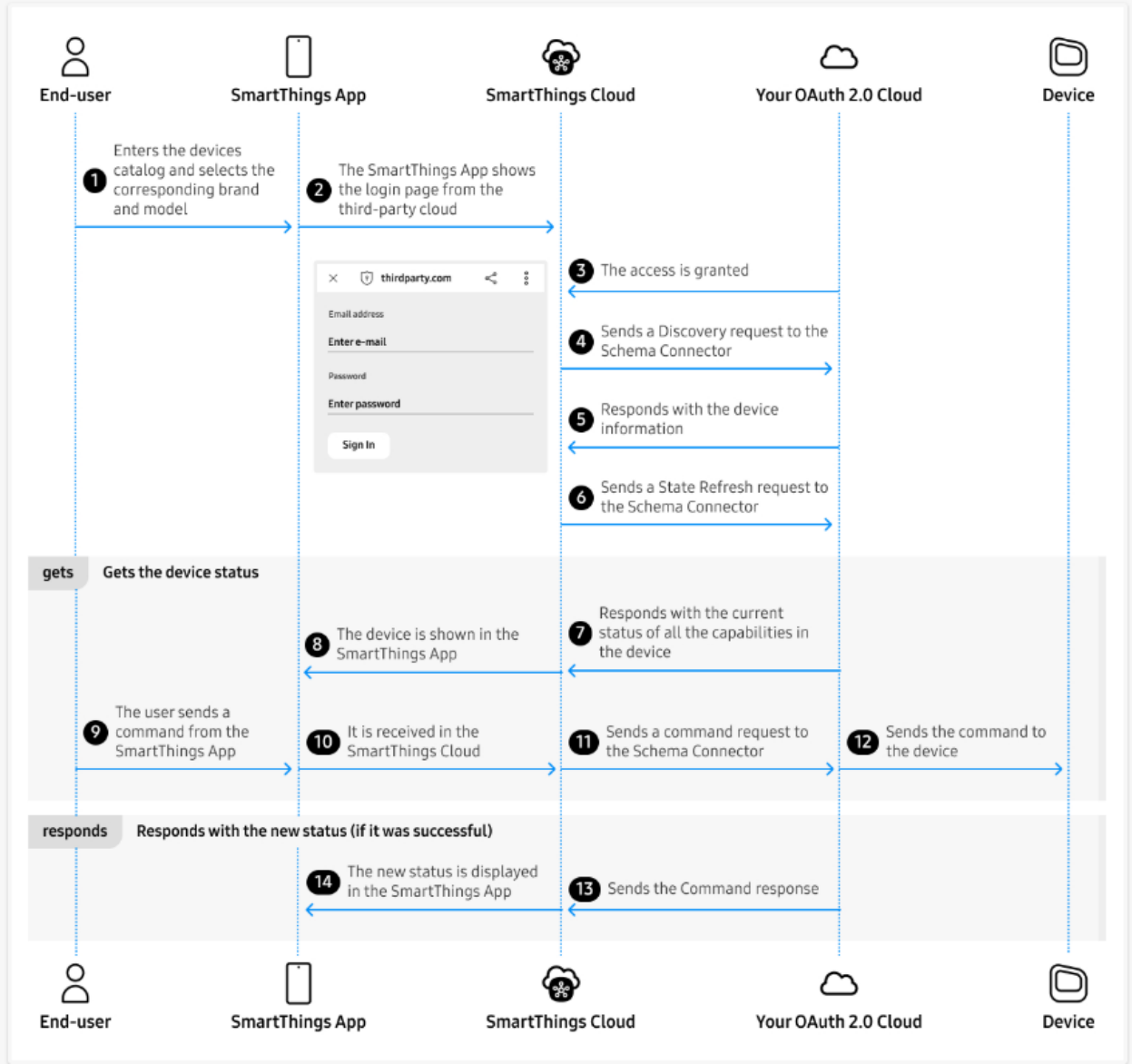
reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the ’088 Accused Products are identified to describe Samsung’s infringement and in no way limit the discovery and infringement allegations against Samsung concerning other devices that incorporate the same or reasonably similar functionalities.

40. Each of the ’088 Accused Products is one of a communication device and/or a communication terminal that is connected via an access point device (*e.g.*, SmartThings cloud, Samsung router, and/or Samsung hub or SmartThings station) based on being a node within the SmartThings ecosystems. *See* https://www.smartthings.com/. Further, each of the ’088 Accused Products with a display (*e.g.*, Galaxy smartphones, tablets, laptops, and watches) are an example of a communication device that is configured to control how to display data received from a second communication terminal (*e.g.*, SmartThings appliances and/or Galaxy smartphones, tablets, laptops, and watches) providing events, notifications, Favorites modifications, health check, device status, diagnostics, and/or device on boarding information. Further, each of the ’088 Accused Products used for onboarding (*e.g.*, Galaxy smartphones, tablets, laptops, watches, SmartThings cloud, Hub refrigerator) provide an example of a first communication terminal configured to connect to a communication device via an access point device, transmit a command to remotely control a display operation on the communication device, and/or providing permission to the second communication terminal to establish a connection with the communication device as part of onboarding.




*See, e.g.*, https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings#the-smartthings-cloud.

41. Examples of communications/permissions/controlling display/establishing connections between each of the ’088 Accused Products is shown on Samsung’s website:




*See* https://developer.smartthings.com/docs/devices/cloud-connected/get-started

42. Further, each of the ’088 Accused Products functions in a similar manner as related to the claimed language because they are required to communicate with each other using specific protocols, workflows, and/or communication schemes. *See* https://developer.smartthings.com/docs/devices/device-basics. Further, Samsung’s SmartThings

requirements dictates that each of the ’088 Accused Products implement certain “Interaction Types,” as noted below. *See* https://developer.smartthings.com/docs/devices/cloud-connected/interaction-types/ (excerpted below).

### Interaction Types

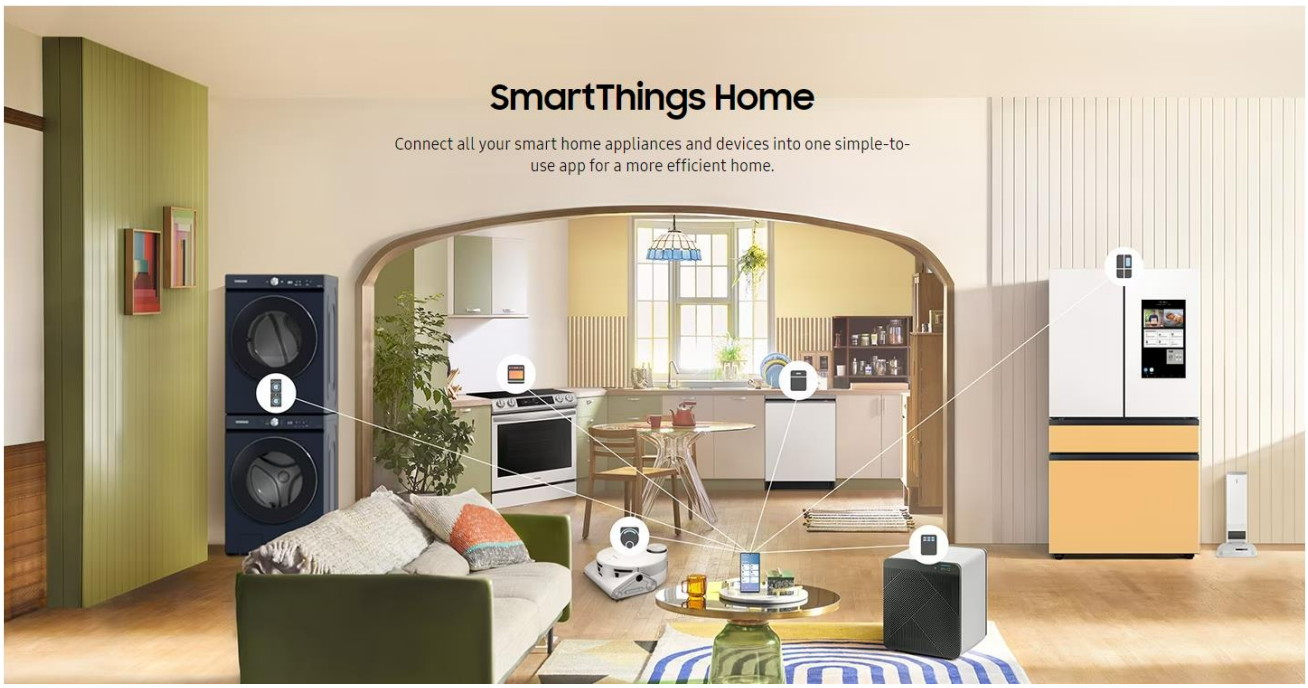
The interaction type is located in the payload `headers.interactionType`. The token context for the request is indicated in `authentication.token`.

For WWST approval, you must implement the following SmartThings interaction types:

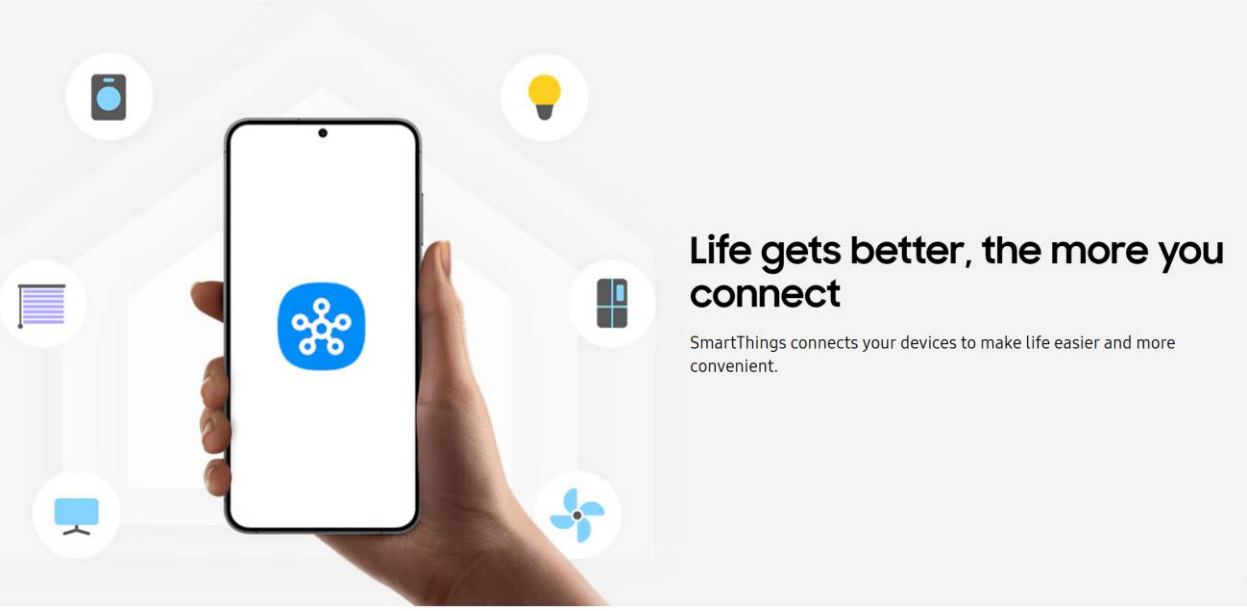
- `discoveryRequest`: SmartThings requests a list of devices. Automatic polling occurs every ~24 hours. The Discovery request is followed by the State Refresh request.
- `stateRefreshRequest`: SmartThings requests the states of the indicated devices.
- `commandRequest`: SmartThings requests that you issue commands for the indicated devices.
- Callbacks allow your Cloud Connector to push a device's state to SmartThings:
  - Reciprocal Access Token Callbacks: Receive and refresh access tokens for use with a Callback interaction. Consists of the following interaction types:
    - `grantCallbackAccess`: Originates from SmartThings. Involved in initial token exchange.
    - `accessTokenRequest`: Originates from your Cloud Connector. Involved in initial token exchange.
    - `accessTokenResponse`: Originates from SmartThings. Involved in initial token exchange + refreshing the SmartThings token.
    - `refreshAccessTokens`: Originates from your Cloud Connector. Involved in refreshing the SmartThings token.
  - `stateCallback` is used by your Cloud Connector to update the state of a device that changed as a result of an interaction that did not originate from SmartThings.
  - `discoveryCallback` allows your Cloud Connector to perform on-demand discovery.
- `interactionResult` notifies you of where issues were found in the response on a request from SmartThings Schema.
- `integrationDeleted` notifies you when a connected service is deleted.
- Error Responses can be appended with `globalError` or `deviceError` in your interaction type response.

43. These “Interaction Types” include, for example, “discoveryRequest” that confirms that the ’088 Accused Products function as one or more of a communication terminal, communication device, and/or access point because “SmartThings requests a list of devices [and a]utomatic polling occurs every ~24 hours.” *Id.* “Discovery is the first SmartThings request . . . [and] this request is [handled] by retrieving a list of devices.” *Id.* Further, the ’088 Accused Products implement the interaction of “stateRefreshRequest” that require the devices to provide their states, favorites lists, events, and/or notification, which, upon information and belief, are provided to control the display of ’088 Accused Products that include a display.

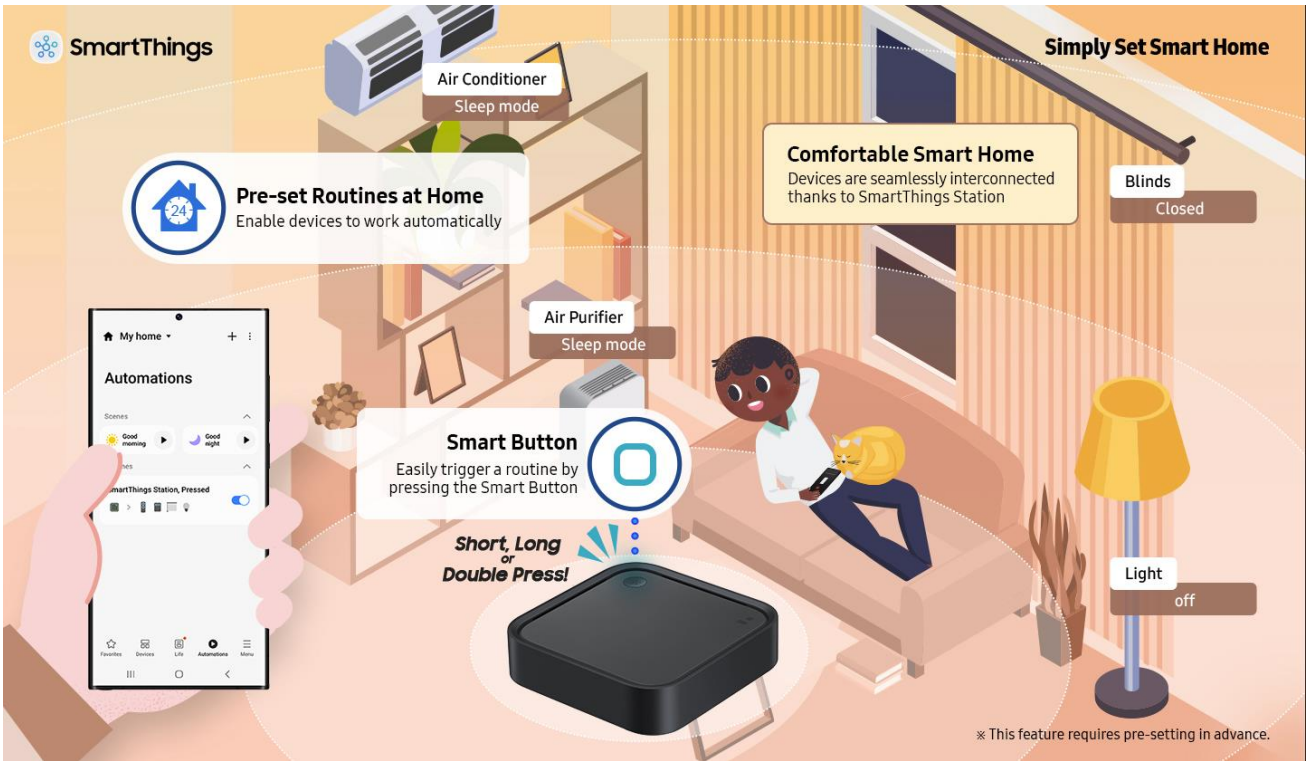
44. Similarly, the following excerpts from Samsung's websites provide non-limiting examples of the '088 Accused Products infringing at least claim 1 of the '088 Patent:




https://www.samsung.com/us/home-appliances/smartthings/

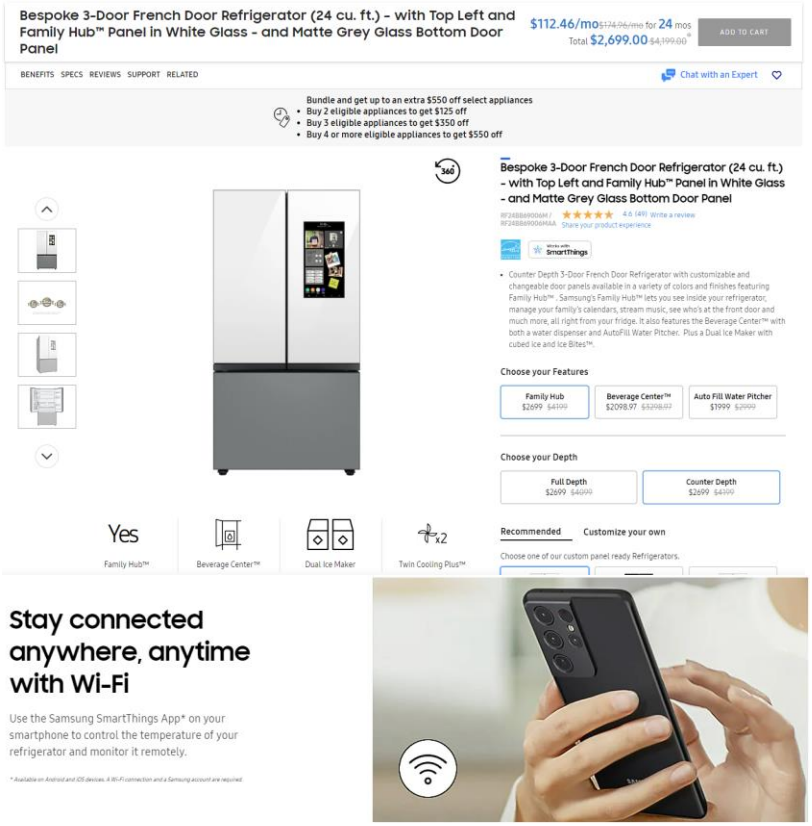



https://www.samsung.com/us/smartthings/



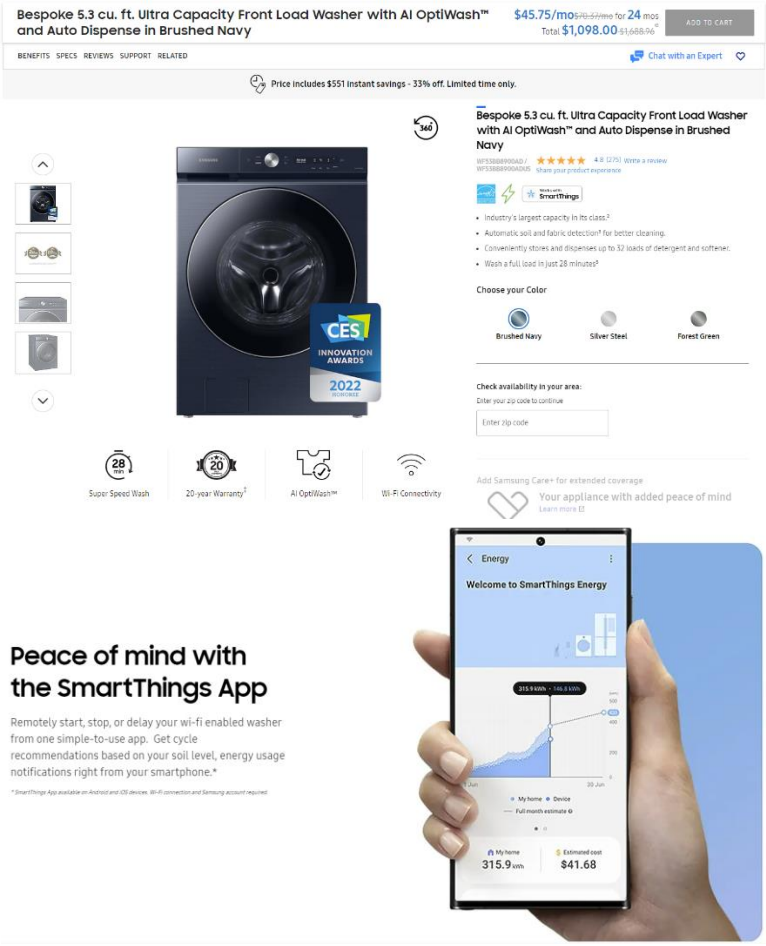

https://news.samsung.com/us/samsung-unveils-smartthings-station-making-smarter-homes-accessible-ces-2023/?utm_source=twitter&utm_medium=usnews&utm_campaign=ces

https://news.samsung.com/us/samsung-unveils-smartthings-station-making-smarter-homes-accessible-ces-2023/?utm_source=twitter&utm_medium=usnews&utm_campaign=ces

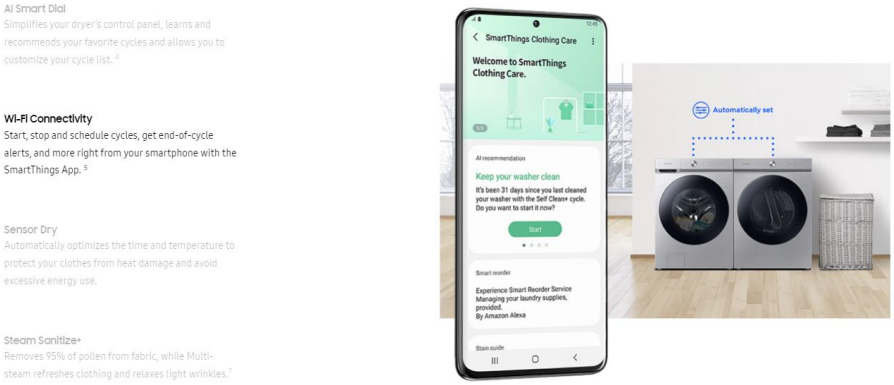



https://www.samsung.com/us/home-appliances/refrigerators/bespoke/bespoke-3-door-french-door-refrigerator-24-cu-ft-with-top-left-and-family-hub-panel-in-white-glass-and-matte-grey-glass-bottom-door-panel-rf24bb69006maa/

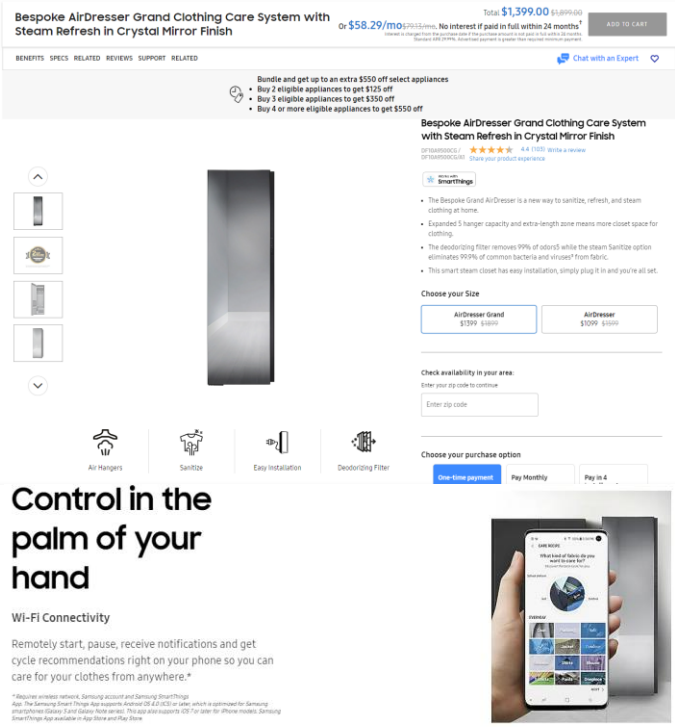
https://www.samsung.com/us/home-appliances/ranges/gas/6-0-cu-ft-front-control-slide-in-gas-range-with-smart-dial-air-fry-wi-fi-in-tuscan-stainless-steel-nx60t8711st-aa/



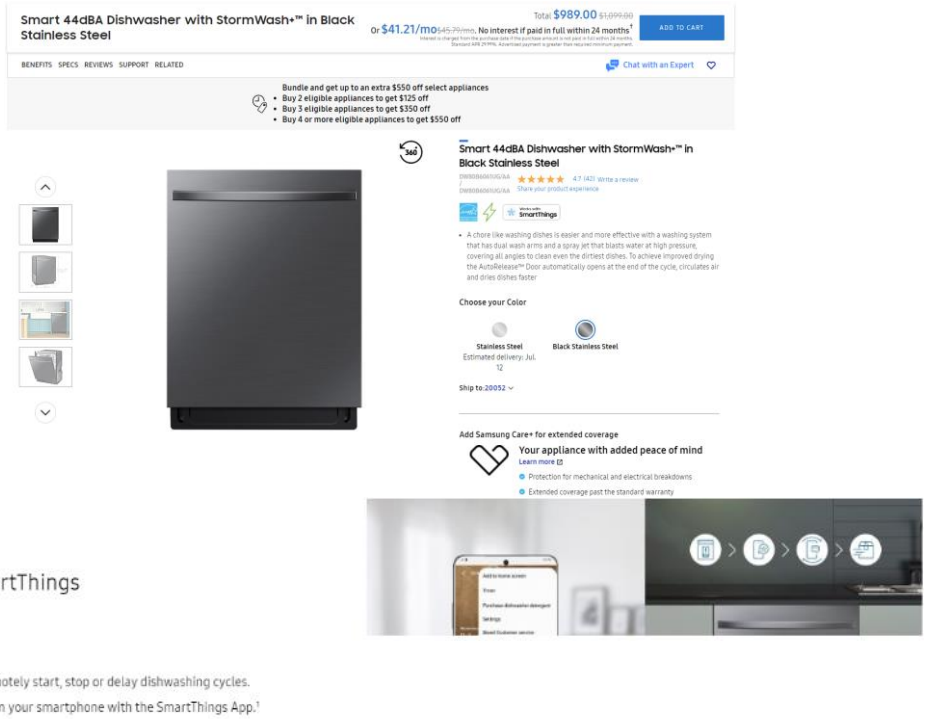

https://www.samsung.com/us/home-appliances/washers/bespoke/bespoke-5-3-cu-ft-ultra-capacity-front-load-washer-with-ai-optiwash-and-auto-dispense-in-brushed-navy-wf53bb8900adus/



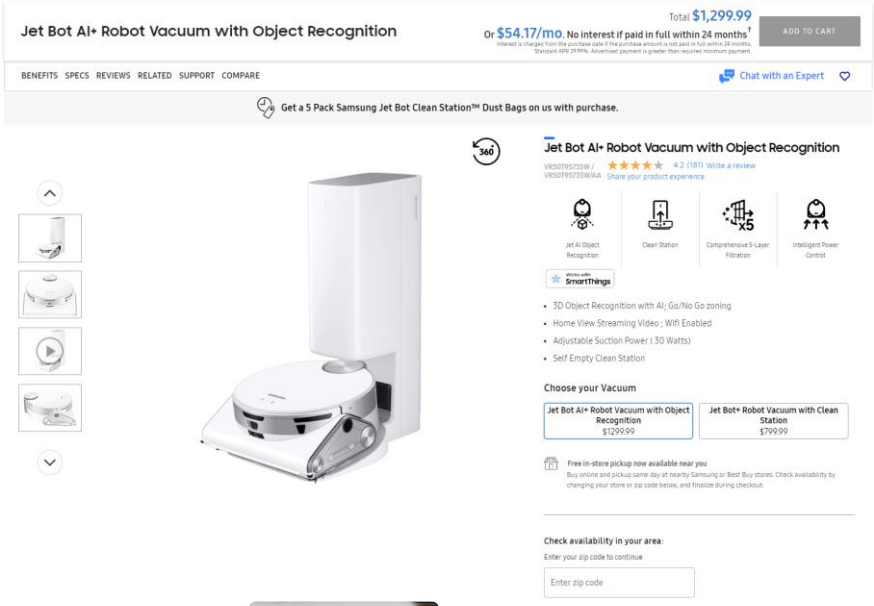

https://www.samsung.com/us/home-appliances/dryers/gas/bespoke-7-6-cu-ft-ultra-capacity-gas-dryer-with-super-speed-dry-and-ai-smart-dial-in-silver-steel-dvg53bb8700ta3/




https://www.samsung.com/us/home-appliances/air-dresser/air-dresser/airdresser-grand-clothing-care-system-with-steam-refresh-and-sanitize-in-mirror-finish-df10a9500cg-a1/




https://www.samsung.com/us/home-appliances/dishwashers/rotary/smart-44dba-dishwasher-with-stormwash-in-black-stainless-steel-dw80b6061ug-aa/



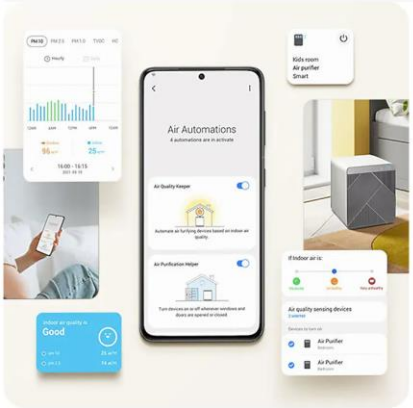
## Monitor your home

### Jet Live Home Monitoring

Monitor the status of your home. Jet Bot AI+'s front camera can live stream real time video images using the SmartThings App.*

*Available on Android and iOS devices. A Wi-Fi connection and a Samsung account are required.

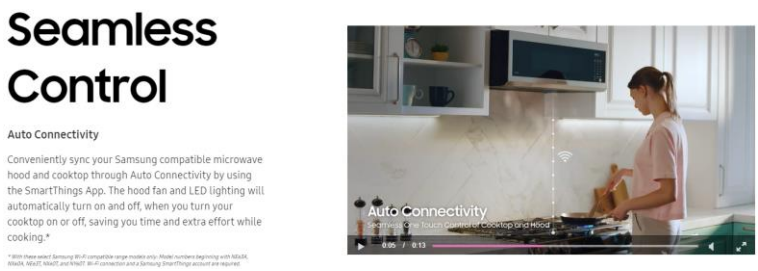
https://www.samsung.com/us/home-appliances/vacuums/jet-bot-robot/jet-bot-ai-plus-robot-vacuum-with-object-recognition-vr50t95735w-aa/



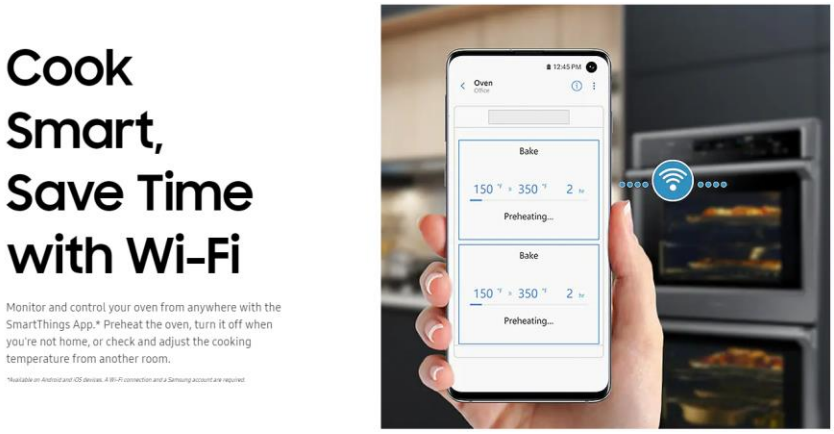

## Peace of mind with the SmartThings App

Remotely start, stop, or check the air quality with the SmartThings App. The app alerts you when it is time to buy a replacement filter and notifies you of your energy usage.

https://www.samsung.com/us/home-appliances/air-purifiers/cube-air-purifier/bespoke-air-purifier-in-grey-ax350a9350g-aa/




https://www.samsung.com/us/home-appliances/microwaves/over-the-range/1-1-cu--ft--smart-slim-over-the-range-microwave-with-550-cfm-hood-ventilation--wi-fi---voice-control-in-stainless-steel-me11a7710ds-aa/




https://www.samsung.com/us/home-appliances/wall-ovens/microwave-combination-oven/30-microwave-combination-wall-oven-in-stainless-steel-nq70t5511ds-aa/

45. The foregoing features and capabilities of the ’088 Accused Products and Samsung’s description and/or demonstration thereof, including in user manuals and advertising, reflect Samsung’s direct infringement by satisfying every element of at least claim 1 of the ’088 Patent, under 35 U.S.C. § 271(a).

46. Samsung has indirectly infringed at least claim 1 of the ’088 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the ’088 Accused Products. Samsung’s customers who purchase devices and components thereof and operate such devices and components in accordance with Samsung’s instructions directly infringe one or more claims of the ’088 Patent in violation of 35 U.S.C. § 271. Samsung instructs its customers through at least user guides or websites, such as those located at:

https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf, https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf, and https://www.samsung.com/us/smartthings/.

47. For example, as shown above, Samsung instructs its customers to "Build a smart home to uplift your everyday," "Be kind to the planet and your wallet by automating your energy and appliances," "Check the front door from your fridges, sofa, wherever," "Monitor your home, inside and out, all from your TV or tablet," "Use the SmartThings App* on your smartphone to control the temperature of your refrigerator and monitor it remotely," "Monitor your cooktop and adjust cook time and temperature of your oven right from your smartphone through the SmartThings™ App," "Remotely start, stop, or delay your wi-fi enabled washer from one simple-to-use app," "Start, stop and schedule cycles, get end-of-cycle alerts, and more right from your smartphone with the SmartThings App." *See* https://www.samsung.com/us/smartthings/, *see also* https://www.samsung.com/us/computing/monitors/smart-monitors/32-m80c-smart-monitor-4k-uhd-with-streaming-tv-usb-c-ergonomic-stand-and-slimfit-camera-ls32cm80bunxza/#benefits, https://www.samsung.com/us/home-appliances/refrigerators/bespoke/bespoke-3-door-french-door-refrigerator-24-cu-ft-with-top-left-and-family-hub-panel-in-white-glass-and-matte-grey-glass-bottom-door-panel-rf24bb69006maa/, https://www.samsung.com/us/home-appliances/ranges/gas/6-0-cu-ft-front-control-slide-in-gas-range-with-smart-dial-air-fry-wi-fi-in-tuscan-stainless-steel-nx60t8711st-aa/, https://www.samsung.com/us/home-appliances/washers/bespoke/bespoke-5-3-cu-ft-ultra-capacity-front-load-washer-with-ai-optiwash-and-auto-dispense-in-brushed-navy-wf53bb8900adus/,

https://www.samsung.com/us/home-appliances/dryers/gas/bespoke-7-6-cu-ft-ultra-capacity-gas-dryer-with-super-speed-dry-and-ai-smart-dial-in-silver-steel-dvg53bb8700ta3/, https://www.samsung.com/us/home-appliances/air-dresser/air-dresser/airdresser-grand-clothing-care-system-with-steam-refresh-and-sanitize-in-mirror-finish-df10a9500cg-a1/, https://www.samsung.com/us/home-appliances/dishwashers/rotary/smart-44dba-dishwasher-with-stormwash-in-black-stainless-steel-dw80b6061ug-aa/, https://www.samsung.com/us/home-appliances/vacuums/jet-bot-robot/jet-bot-ai-plus-robot-vacuum-with-object-recognition-vr50t95735w-aa/, https://www.samsung.com/us/home-appliances/air-purifiers/cube-air-purifier/bespoke-air-purifier-in-grey-ax350a9350g-aa/, https://www.samsung.com/us/home-appliances/microwaves/over-the-range/1-1-cu--ft--smart-slim-over-the-range-microwave-with-550-cfm-hood-ventilation--wi-fi---voice-control-in-stainless-steel-me11a7710ds-aa/, https://www.samsung.com/us/home-appliances/wall-ovens/microwave-combination-oven/30-microwave-combination-wall-oven-in-stainless-steel-nq70t5511ds-aa/.

48. Samsung is thereby liable for infringement of the ’088 Patent pursuant to 35 U.S.C. § 271(b).

49. Samsung has indirectly infringed at least claim 1 of the ’088 Patent, by, among other things, contributing to the direct infringement of others, including customers of the ’088 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the ’088 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

50. For example, the ’088 Accused Products include hardware and software for implementing SmartThings functionality. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, these components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Samsung is liable for infringement of the ’088 Patent pursuant to 35 U.S.C. § 271(c).

51. Samsung has been on notice of the ’088 Patent since, at least, December 29, 2021, based on correspondence directed to Mr. Daejin Jeon of SEC’s IP Center from Mr. T. Yamamoto of Maxell (Exhibit 2). That correspondence set forth Maxell’s belief that Samsung makes, uses, sells, offers to sell, or imports products that infringe certain of Maxell’s patents, and specifically identified the ’088 Patent as well as exemplary claims and exemplary accused products for that patent including SmartThings network. By the time of trial, Samsung will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the ’088 Patent.

52. Samsung undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the ’088 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least December 29, 2021, Samsung has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the ’088 Patent, and that the ’088 Patent is valid. On information and belief, Samsung could not reasonably, subjectively believe that its actions do not constitute infringement of the ’088 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement,

Samsung continued its infringing activities. As such, Samsung has willfully infringed and continues to willfully infringe the ’088 Patent.

53. Maxell has been and continues to be damaged by Samsung’s infringement of the ’088 Patent.

**COUNT 2 - INFRINGEMENT OF U.S. PATENT NO. 11,277,650**

54. Maxell incorporates paragraphs 1-53 above by reference.

55. U.S. Patent No. 11,277,650 (the “’650 Patent,” attached hereto at Exhibit 3) duly issued on March 15, 2022, and is entitled *Contents Receiving System And Client*.

56. Maxell is the owner by assignment of the ’650 Patent and possesses all rights under the ’650 Patent, including the exclusive right to recover for past and future infringement.

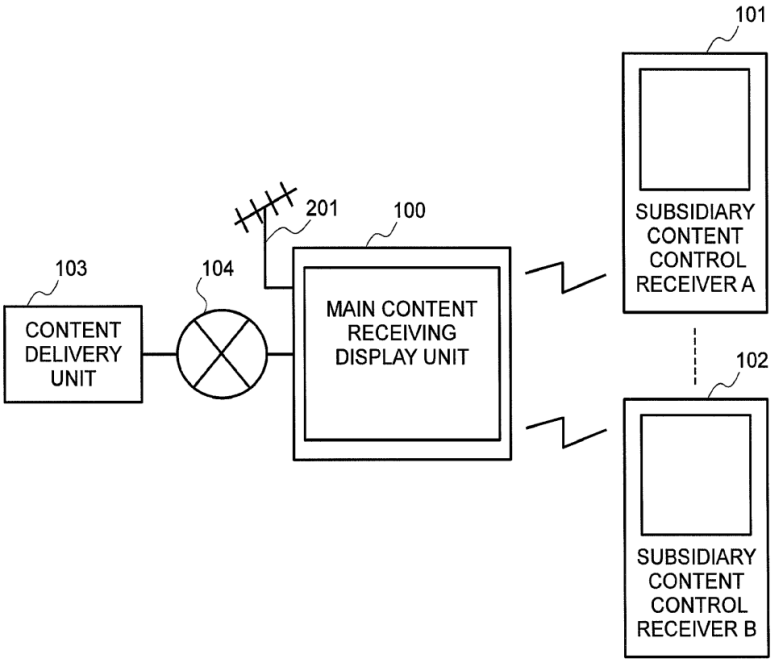
57. The ’650 Patent is directed to system of content reproduction and management, including, for example, a main terminal and a plurality of subsidiary terminals. In particular, the content reproducing system disclosed in the ’650 Patent ensure that a main terminal comprising a storage, display, and a controller that communicates with a plurality of subsidiary terminals to be able to control reproduction of content on the displays of the subsidiary terminals. Accordingly, “it becomes possible to personalize subsidiary content in response to user’s taste, and to provide each user with the subsidiary content.” ’650 Patent, 2:24-27.

58. Specifically, the ’650 Patent discloses a contents reproducing system having a “main terminal” that comprises a storage storing contents, a display displaying contents, a first controller controlling transmission/reception with subsidiary terminals, and the main terminal storing a plurality of device specific identification (ID) information of the subsidiary terminals, plurality of content information for identifying each of the contents, and association information for transmitting one of the contents to one of the subsidiary terminals, wherein the association

information defines that one of the contents identified by the content information is associated with one of the device specific ID information. Further, the contents reproducing system also includes "a plurality of subsidiary terminals" that comprise a display for displaying content, a second controller controlling transmission/reception with the main terminal, the second controller storing device specific ID information for identifying the subsidiary terminal and transmitting the device specific ID information to the main terminal when connecting to the main terminal such that the main terminal determines whether it is possible to connect to the subsidiary terminal storing the device specific ID information, and transmits the content stored in the storage to the subsidiary terminal which can be connected, based on the association information then the subsidiary terminal reproduces the received content on the second display.

59. An exemplary configuration of a content reproducing system is shown below in Figure 1 of the '650 Patent:

FIG.1



60. Samsung has directly infringed one or more claims of the ’650 Patent in this District and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale and/or selling its home networking technology, including at least Samsung products having materially similar functionality while implementing a SmartThings network using Samsung smartphones, tablets, laptops, watches, SmartThings Cloud, and SmartThings Hub refrigerators.

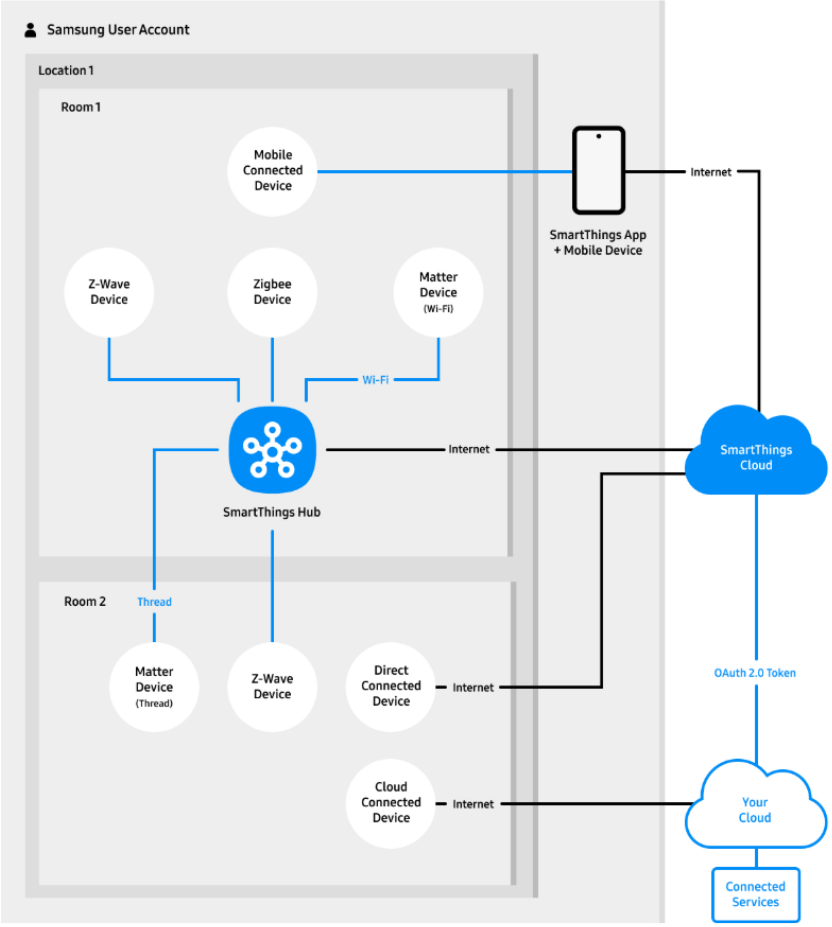
61. For example, Samsung has literally and/or under the doctrine of equivalents directly infringed at least claim 1 of the ’650 Patent in this District and elsewhere in Texas by or through making, using, importing, offering for sale and/or selling at least the following: **smartphones** including the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A36 5G, Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10 5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy

S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S25, Galaxy S25+, Galaxy S25 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6 Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy Z Fold6, Galaxy A15 5G, Galaxy A25 5G, Galaxy A35 5G, Galaxy Z Fold6, Galaxy Z Flip6; **tablets** including Galaxy Tab Active Pro, Galaxy Tab Active3, Galaxy Tab Active4 Pro, Galaxy Tab S5e, Galaxy Tab S6, Galaxy Tab S6 5G, Galaxy Tab S7, Galaxy Tab S7+, Galaxy Tab S8, Galaxy Tab S8 Ultra, Galaxy Tab S8+, Galaxy Tab S9, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S9 Ultra, Galaxy Tab S9+, Galaxy Tab A9+ 5G, Galaxy Tab Active5 5G, Galaxy Tab S10 Ultra, Galaxy Tab S10+, Galaxy Tab S10 FE+, Galaxy Tab S10 FE; **laptops** including Galaxy Book2 360, 13", Intel Core i5, 256GB, Galaxy Book2 360, 13", Intel Core i7, 512GB, Galaxy Book2 Pro 360, 13", Intel Core i7, 256GB, Galaxy Book2 Pro 360, 13", Intel Core i7, 512GB, Galaxy Book2 Pro 360, 15", Intel Core i7, 1TB, Galaxy Book2 Pro 360, 15", Intel Core i7, 512GB, Galaxy Book2 Pro, 13", Intel Core i5, 256GB, Galaxy Book2 Pro, 13", Intel Core i7, 512GB, Galaxy Book2 Pro, 15", Intel Core i5, 512 GB, Galaxy Book2 Pro, 15", Intel Core i7, 512GB, Galaxy Book2 Pro, 15", Intel Core i7, Intel ARC Discrete Graphics, 1TB, Galaxy Book3 360, 13", Intel Core i7, 512GB, Galaxy Book3 360, 15", Intel Core i7, 512GB, Galaxy Book3 Pro 360, 16", Intel Core i7, 1TB, Galaxy Book3 Pro, 14", Intel Core i7, 512 GB, Galaxy Book3 Pro, 16" Intel Core i7, 1TB, Galaxy Book3 Ultra, 16" Intel Core i7, 1TB, Galaxy Book3 Ultra, 16" Intel Core i9, 1TB, and Galaxy Book3, 15", Intel Core i7, 512GB, Galaxy Book4 360, Galaxy Book4 Pro, Galaxy Book4 Pro 360, Galaxy Book4 Ultra, Galaxy Book S, Galaxy Book5 360, Galaxy Book5 Pro, Galaxy Book5 Pro 360; **watches** including Galaxy Watch Ultra, Galaxy Watch 7, Galaxy Watch 6, Galaxy Watch5

Pro Golf Edition, Galaxy Watch5 Pro, Galaxy Watch5, Galaxy Watch4, Galaxy Watch4 Classic; **refrigerators** including Bespoke 3-Door French Door Refrigerator (30 cu. ft.) – with Top Left and Family Hub™ Panel in White Glass - and Matte Grey Glass Bottom Door Panel, Bespoke 4-Door French Door Refrigerator (23 cu. ft.) – with Top Left and Family Hub™ Panel in Charcoal Glass - and Matte Black Steel Middle and Bottom Panels, Bespoke 3-Door French Door Refrigerator (24 cu. ft.) – with Top Left and Family Hub™ Panel in White Glass - and Matte Grey Glass Bottom Door Panel, 17.3 cu. ft. Smart Kimchi & Specialty 4-Door French Door Refrigerator in White-Navy Glass, 22 cu. ft. Smart 3-Door French Door Refrigerator in Stainless Steel, 26.5 cu. ft. Large Capacity 3-Door French Door Refrigerator with Family Hub™ and External Water & Ice Dispenser in Black Stainless Steel, 23 cu. ft. Smart Counter Depth 4-Door Flex™ Refrigerator with Beverage Center and Dual Ice Maker in Stainless Steel, 29 cu. ft. Smart 4-Door Flex™ Refrigerator with Family Hub™ and Beverage Center in Stainless Steel, 23 cu. ft. Smart Counter Depth 4-Door Flex™ refrigerator with Family Hub™ and Beverage Center in Black Stainless Steel, 29 cu. ft. Smart 4-Door Flex™ Refrigerator with Beverage Center and Dual Ice Maker in Stainless Steel, 22 cu. ft. Counter Depth Side-by-Side Refrigerator with Touch Screen Family Hub™ in Stainless Steel, 22 cu. ft. Smart 3-Door French Door Refrigerator with External Water Dispenser in Fingerprint Resistant Stainless Steel, 22 cu. ft. Counter Depth Side-by-Side Refrigerator in Stainless Steel, 26.7 cu. ft. Large Capacity Side-by-Side Refrigerator with Touch Screen Family Hub™ in Stainless Steel, Bespoke 3-Door French Door Refrigerator (30 cu. ft.) – with Family Hub™ in Charcoal Glass, Bespoke 3-Door French Door Refrigerator (24 cu. ft.) – with Family Hub™ in Charcoal Glass, Bespoke 3-Door French Door Refrigerator (30 cu. ft.) - with Family Hub™ in White Glass, 25 cu. ft. Mega Capacity Counter Depth 3-Door French Door Refrigerator with Family Hub™ in Stainless Steel, SmartThings cloud, and other Samsung devices

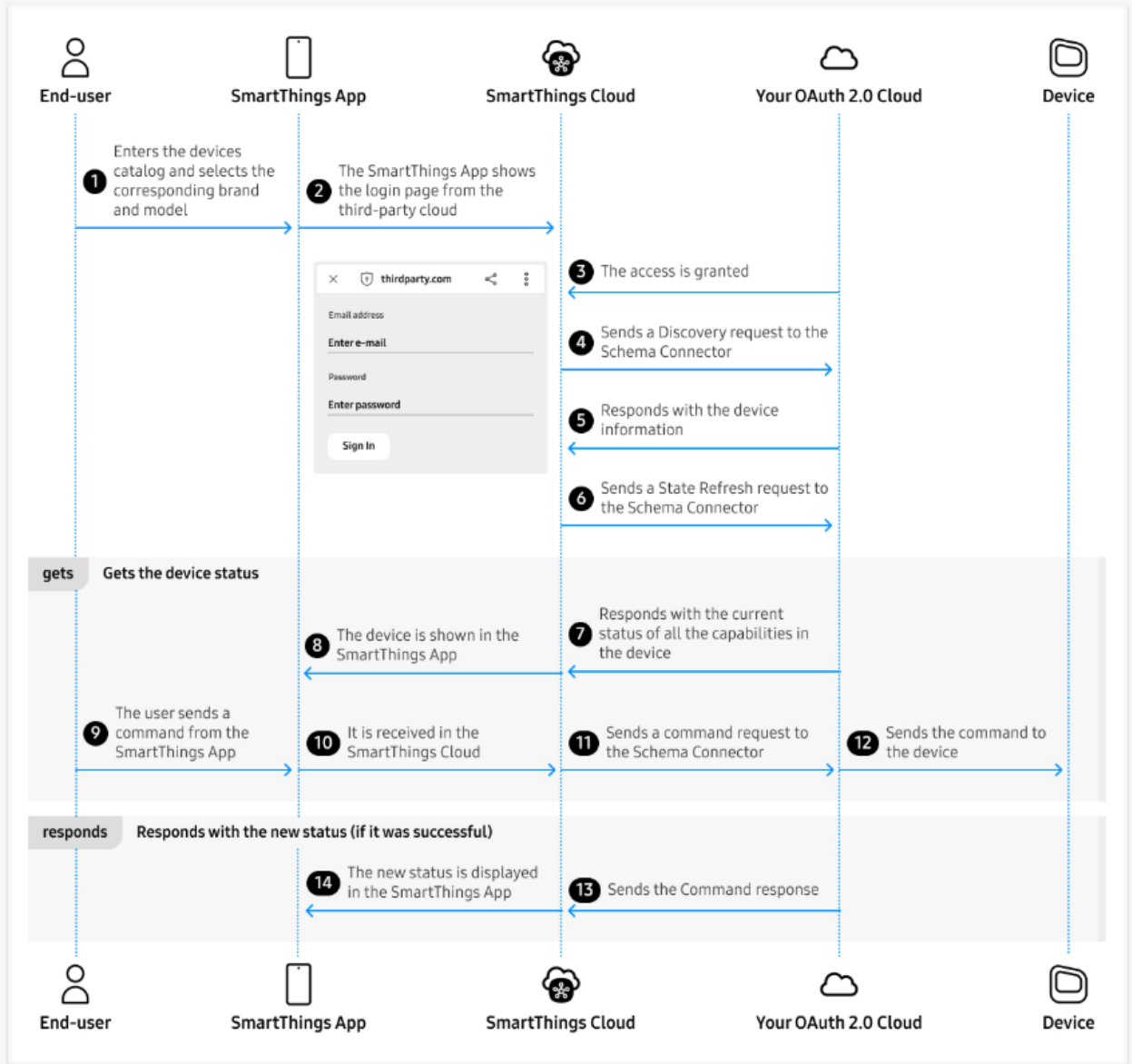
with the ability to be a main terminal or subsidiary terminal in a SmartThings network (collectively, "the '650 Accused Products"). *See* https://www.smartthings.com/. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '650 Accused Products are identified to describe Samsung's infringement and in no way limit the discovery and infringement allegations against Samsung concerning other devices that incorporate the same or reasonably similar functionalities.

62. Each of the '650 Accused Products is one of a main terminal (*e.g.*, Galaxy smartphone, tablet, laptop, Family Hub refrigerator, SmartThings cloud) or a subsidiary terminal (*e.g.*, Family Hub refrigerator, watch, tablet, laptop) within the SmartThings ecosystems. *See* https://www.smartthings.com/. Further, each of the '650 Accused Products include a storage (*e.g.*, memory), a display, and a controller (*e.g.*, CPU executing an operating system) that store content, *e.g.*, "Events," "Favorites list," "Notifications," or "My Devices," such that, upon information and belief, the main terminal in the SmartThings network stores device identification information and association information for subsidiary terminals (*e.g.*, identifiers and/or descriptive information associated with "Events," "Favorites list," "Notifications," or "My Devices") such that information is transmitted/received between the main and subsidiary terminals (*e.g.*, providing events, notifications, Favorites modifications, health check, device status, diagnostics, and/or device on boarding information) and displayed on the subsidiary terminals. Further, the '650 Accused Products determine whether it is possible to connect to the subsidiary terminal as part of onboarding and/or as part of determining the status of the subsidiary terminal in the SmartThings network (*e.g.*, online/offline).




*See, e.g.*, https://developer.smartthings.com/docs/getting-started/architecture-of-smartthings#the-smartthings-cloud.

63. Examples of transmission/reception/possibility for connection/providing content to display in the '650 Accused Products is shown on Samsung's website:




*See* https://developer.smartthings.com/docs/devices/cloud-connected/get-started

64. Further, each of the ’650 Accused Products functions in a similar manner as related to the claimed language because they are required to communicate with each other using specific protocols, workflows, and/or communication schemes. *See* https://developer.smartthings.com/docs/devices/device-basics. Further, Samsung’s SmartThings requirements dictates that each of the ’650 Accused Products implement certain “Interaction

Types," as noted below. *See* https://developer.smartthings.com/docs/devices/cloud-connected/interaction-types/ (excerpted below).

### Interaction Types

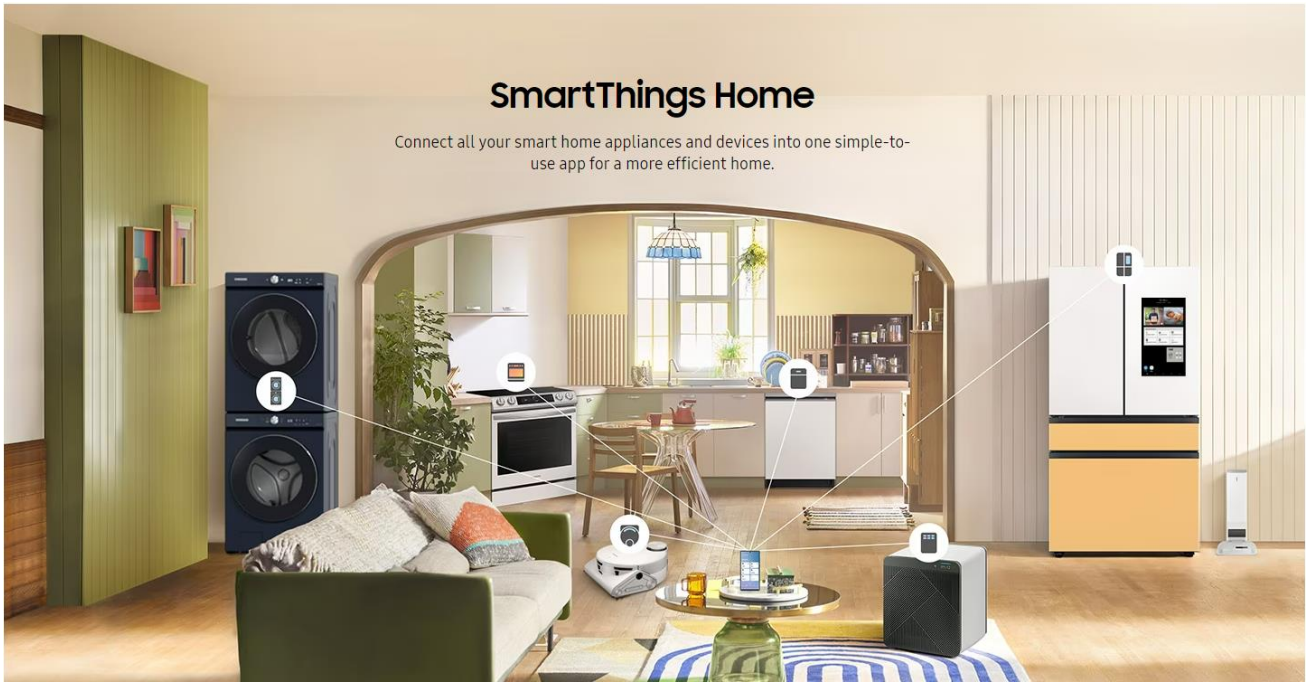
The interaction type is located in the payload `headers.interactionType`. The token context for the request is indicated in `authentication.token`.

For WWST approval, you must implement the following SmartThings interaction types:

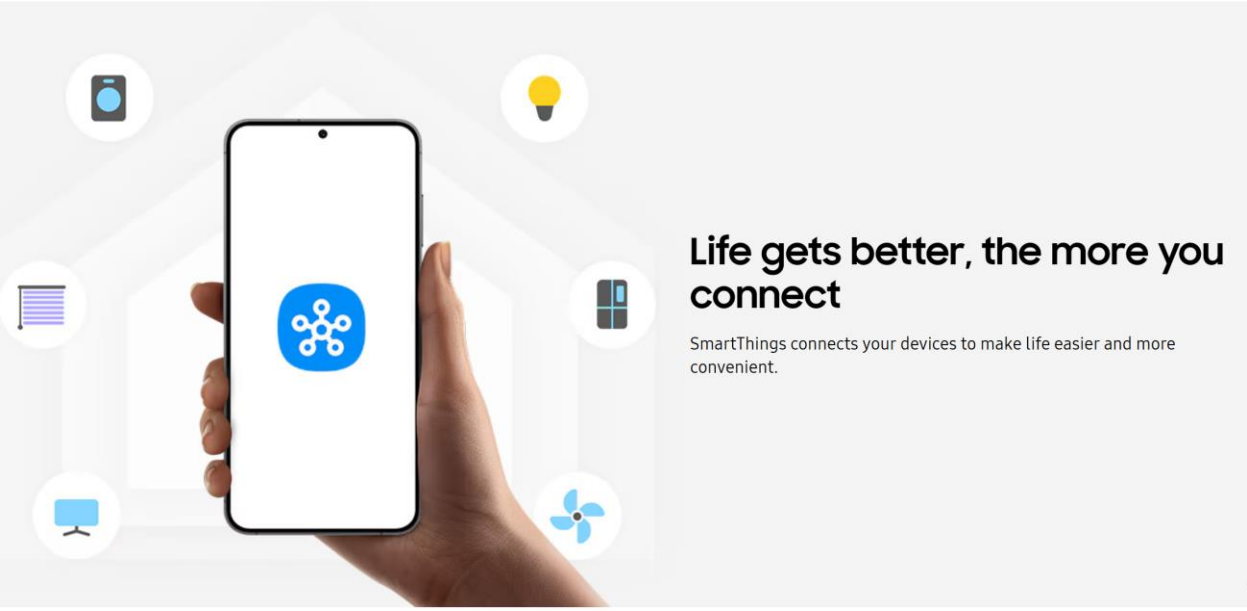
- `discoveryRequest`: SmartThings requests a list of devices. Automatic polling occurs every ~24 hours. The Discovery request is followed by the State Refresh request.
- `stateRefreshRequest`: SmartThings requests the states of the indicated devices.
- `commandRequest`: SmartThings requests that you issue commands for the indicated devices.
- Callbacks allow your Cloud Connector to push a device's state to SmartThings:
  - Reciprocal Access Token Callbacks: Receive and refresh access tokens for use with a Callback interaction. Consists of the following interaction types:
    - `grantCallbackAccess`: Originates from SmartThings. Involved in initial token exchange.
    - `accessTokenRequest`: Originates from your Cloud Connector. Involved in initial token exchange.
    - `accessTokenResponse`: Originates from SmartThings. Involved in initial token exchange + refreshing the SmartThings token.
    - `refreshAccessTokens`: Originates from your Cloud Connector. Involved in refreshing the SmartThings token.
  - `stateCallback` is used by your Cloud Connector to update the state of a device that changed as a result of an interaction that did not originate from SmartThings.
  - `discoveryCallback` allows your Cloud Connector to perform on-demand discovery.
- `interactionResult` notifies you of where issues were found in the response on a request from SmartThings Schema.
- `integrationDeleted` notifies you when a connected service is deleted.
- Error Responses can be appended with `globalError` or `deviceError` in your interaction type response.

65. These "Interaction Types" include, for example, "discoveryRequest" that confirms that the '650 Accused Products function as one or more of a main terminal and/or subsidiary terminal because "SmartThings requests a list of devices [and a]utomatic polling occurs every ~24 hours." *Id.* "Discovery is the first SmartThings request . . . [and] this request is [handled] by retrieving a list of devices." *Id.* Further, the '650 Accused Products implement the interaction of "stateRefreshRequest" that require the devices to provide their states, favorites lists, events, and/or notification, which, upon information and belief, are transmitted/received with identifier information display content on the display of '650 Accused Products that include a display.

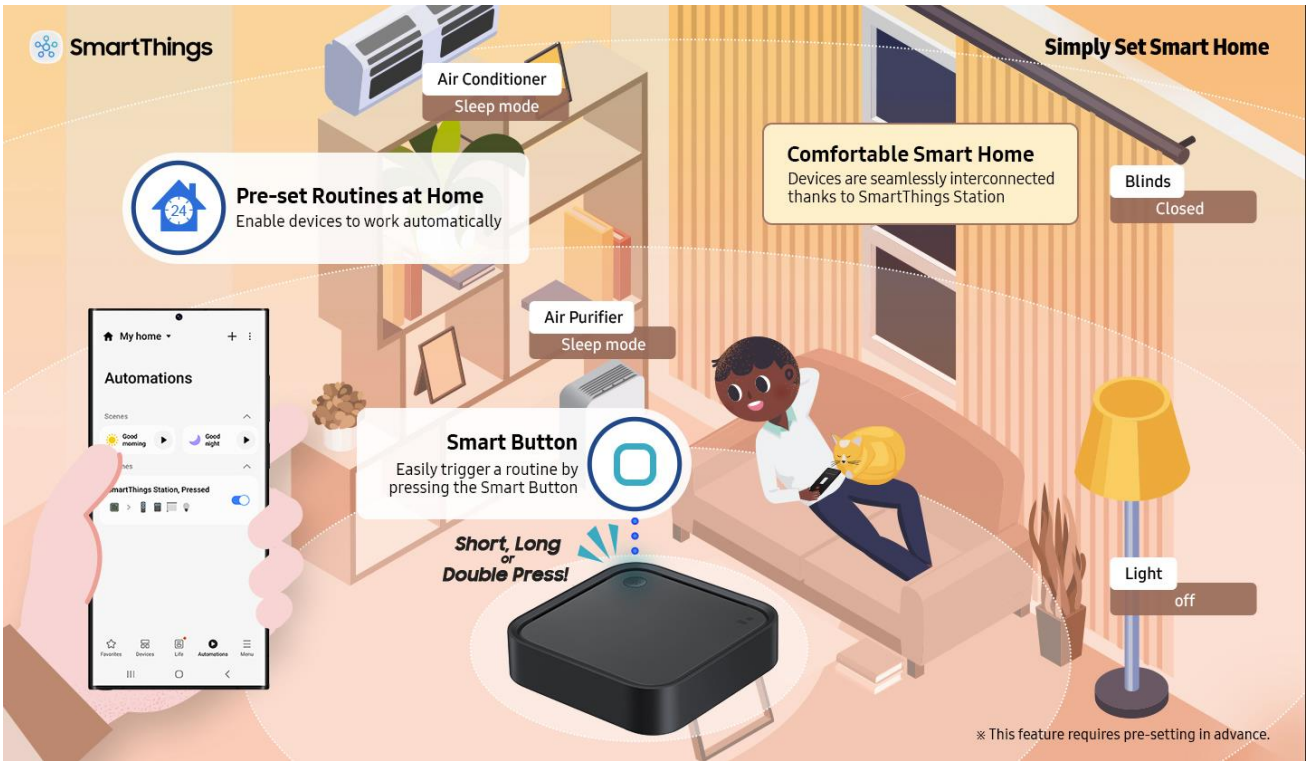
66. Similarly, the following excerpts from Samsung's websites provide non-limiting examples of the '650 Accused Products infringing at least claim 1 of the '650 Patent:




https://www.samsung.com/us/home-appliances/smartthings/

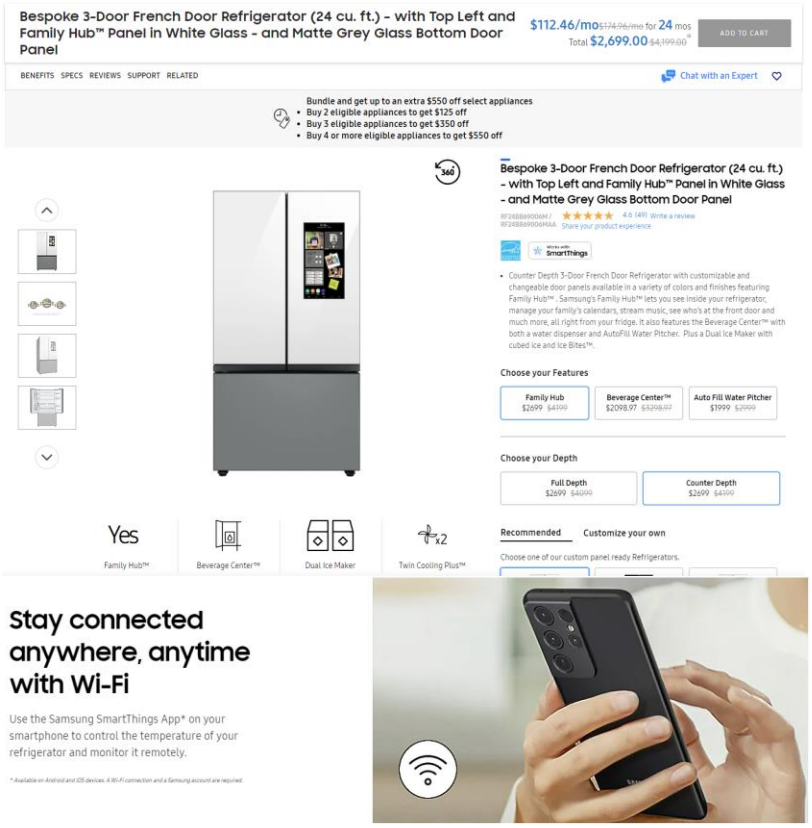



https://www.samsung.com/us/smartthings/




https://news.samsung.com/us/samsung-unveils-smartthings-station-making-smarter-homes-accessible-ces-2023/?utm_source=twitter&utm_medium=usnews&utm_campaign=ces

https://news.samsung.com/us/samsung-unveils-smartthings-station-making-smarter-homes-accessible-ces-2023/?utm_source=twitter&utm_medium=usnews&utm_campaign=ces




https://www.samsung.com/us/home-appliances/refrigerators/bespoke/bespoke-3-door-french-door-refrigerator-24-cu-ft-with-top-left-and-family-hub-panel-in-white-glass-and-matte-grey-glass-bottom-door-panel-rf24bb69006maa/

67. The foregoing features and capabilities of the ’650 Accused Products and Samsung’s description and/or demonstration thereof, including in user manuals and advertising, reflect Samsung’s direct infringement by satisfying every element of at least claim 1 of the ’650 Patent, under 35 U.S.C. § 271(a).

68. Samsung has indirectly infringed at least claim 1 of the ’650 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the ’650 Accused Products. Samsung’s customers who purchase devices and components thereof and operate such devices and components in accordance with Samsung’s instructions directly infringe one or more claims of the ’650 Patent in violation of

35 U.S.C. § 271. Samsung instructs its customers through at least user guides or websites, such as those located at:

https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf, https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf, and https://www.samsung.com/us/smartthings/.

69. For example, as shown above Samsung instructs its customers to "Build a smart home to uplift your everyday," "Be kind to the planet and your wallet by automating your energy and appliances," "Check the front door from your fridges, sofa, wherever," "Monitor your home, inside and out, all from your TV or tablet." *See* https://www.samsung.com/us/smartthings/.

70. Samsung is thereby liable for infringement of the '650 Patent pursuant to 35 U.S.C. § 271(b).

71. Samsung has indirectly infringed at least claim 1 of the '650 Patent by, among other things, contributing to the direct infringement of others, including customers of the '650 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '650 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

72. For example, the '650 Accused Products include hardware and software for implementing SmartThings functionality. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore,

these components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Samsung is liable for infringement of the ’650 Patent pursuant to 35 U.S.C. § 271(c).

73. Samsung has been on notice of the ’650 Patent since, at least, December 29, 2021, based on correspondence directed to Mr. Daejin Jeon of SEC’s IP Center from Mr. T. Yamamoto of Maxell (Exhibit 2). That correspondence set forth Maxell’s belief that Samsung makes, uses, sells, offers to sell, or imports products that infringe certain of Maxell’s patents, and specifically identified the ’650 Patent as well as exemplary claims and exemplary accused products for that patent including SmartThings network. By the time of trial, Samsung will thus have known and intended (since receiving such notice), that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the ’650 Patent.

74. Samsung undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the ’650 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least December 29, 2021, Samsung has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the ’650 Patent, and that the ’650 Patent is valid. On information and belief, Samsung could not reasonably, subjectively believe that its actions do not constitute infringement of the ’650 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Samsung continued its infringing activities. As such, Samsung has willfully infringed and continues to willfully infringe the ’650 Patent.

75. Maxell has been and continues to be damaged by Samsung’s infringement of the ’650 Patent.

**COUNT 3 - INFRINGEMENT OF U.S. PATENT NO. 7,577,417**

76. Maxell incorporates paragraphs 1-75 above by reference.

77. U.S. Patent No. 7,577,417 (the "'417 Patent," attached hereto as Exhibit 4) duly issued on August 18, 2009, and is entitled *Mobile Terminal*.

78. Maxell is the owner by assignment of the '417 Patent and possesses all rights under the '417 Patent, including the exclusive right to recover for past and future infringement.

79. At the time of the invention of the '417 Patent (which claims priority to April 3, 2002), conventional mobile devices did not account for battery depletion when enhancing processing speed. '417 Patent, 1:15-39. To improve processing power, mobile devices switched a clock frequency to a high-speed mode frequency higher than a normal frequency based on internal conditions, such as power source voltage and ambient temperature. *Id.* at 1:21-25. Such conditions left no room for interposition of the will of a user in switching the speed of the clock signal and drove the central processing unit (CPU) at a higher frequency—increasing the device's current consumption. *Id.* at 1:27-34. The '417 Patent provided a new power management solution and taught a controlled clock signal frequency fed to the CPU. *Id.* at 3:3-6. This clock frequency-based power management provided a mechanism to control processing speed and to reduce current consumption, which thereby prevented battery depletion. *Id.* at 1:44-52.

80. Other inventors had proposed particular solutions in the field of power management, but these alternative solutions did not solve all of the problems that would face a person of ordinary skill in the art. For example, inventors at Nokia Mobile Phones, Ltd. disclosed adjusting the operating voltage and the clock frequency simultaneously on the basis of the performance required by the application used at a given time. See U.S. Patent No. 6,484,041 at 3:30-4:3. This solution was not sufficient at least because it failed to adjust the frequency of the

clock signal when a specific processing is executed when the mobile terminal is in a closed condition (*i.e.*, standby or waiting for cellular phone communication), which would lead to slower processing speed paired with an increase in current consumption. Thus, other solutions in this field had been proposed, but were inadequate.

81. As part of its solution, the ’417 Patent teaches at least the use of a clock manipulation unit and/or an operation panel and a clock controller able to change a clock frequency to be fed to the CPU. ’417 Patent at 3:2-13. The ’417 Patent provided a practical and desirable concrete way of allowing the user to change the frequency of the clock signal in every processing, even with the device in a closed condition. Thus, the ’417 Patent is directed to a specific improvement of the power management capabilities of a cellular phone and ties this improvement to the additional inventive concept of user-directed clock frequency manipulation.

82. The ’417 Patent is directed to power management and specifically teaches changing clock frequencies to lower a device’s current consumption. The frequency of the clock signal delivered to the second CPU is raised when the user requests specific processing and then lowered upon completion to reduce current consumption. *Id.* at 4:32-40. The ’417 Patent teaches and claims a clock controller changing the clock frequency fed to the processor by increasing the frequency during the execution of a specific processing, even if the mobile device is in a closed condition, and then decreasing the frequency once completed. *Id*. at claim 1. Thus, the invention of the ’417 Patent allows a mobile device to operate in a more efficient manner and improves battery life by controlling clock frequency.

83. Samsung has directly infringed one or more claims of the ’417 Patent in this District and elsewhere in Texas, including at least claims 1 and 3 of the ’417 Patent in this District and elsewhere in Texas by or through making, using, importing, offering for sale, and/or selling at least

the following smartphones, including the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10 5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6 Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy A15 5G, Galaxy A25 5G, and Galaxy A35 5G; and other Samsung devices with the ability to perform similar power management techniques (collectively, "the '417 Accused Products").

84. For example, each of these products also includes hardware (*e.g.*, Application Processor, CPU, clock controller, and/or camera) and software (*e.g.*, Phone and Camera

applications) as advertised on Samsung's website. Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '417 Accused Products are identified to describe Samsung's infringement and in no way limit the discovery and infringement allegations against Samsung concerning other devices that incorporate the same or reasonably similar functionalities.

85. Each of the '417 Accused Products is a mobile terminal capable of being changed from an open condition to a closed condition and include a processor (*e.g.*, CPU or Application Processor) which executes program processing and operates at different frequencies based on a variable clock signal. Further, each of the '417 Accused Products includes a clock controller capable of changing a frequency of a clock signal to be fed to the processor (*e.g.*, clock circuitry external or internal to the CPU). Further, the clock circuitry in each of the '417 Accused Products controls the frequency of the clock signal so as to become a first frequency when the mobile terminal is in the open condition, and controls the frequency of the clock signal so as to become a second frequency lower than the first frequency when the mobile terminal is in the closed condition. Further, the clock circuitry in each of the '417 Accused Product controls the frequency of the clock signal so as to become a frequency higher than the second frequency when a specific processing is executed even if the mobile terminal is in the closed condition, and controls the frequency of the clock signal so as to become the second frequency after the execution of the specific processing is completed. For example, each of the '417 Accused Products include a camera to execute a specific processing of image decoding while in closed condition.

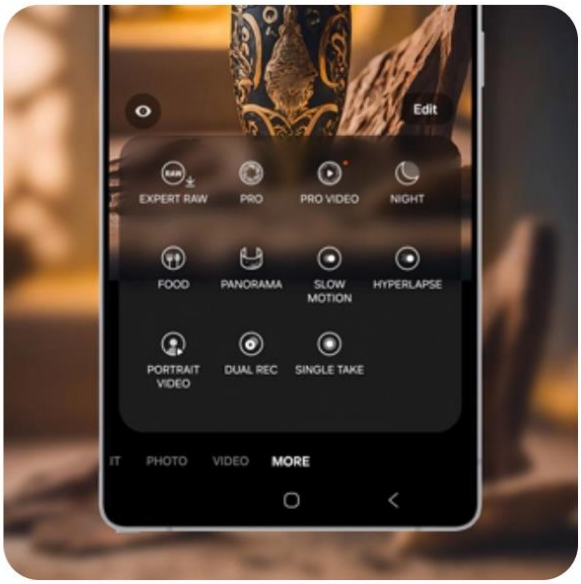
86. For example, the following excerpts from Samsung's websites provide non-limiting examples of the '417 Accused Products infringing at least claims 1 and 3 of the '417 Patent by performing specific processing of imaging decoding using the Camera application:

# Camera modes and settings on Galaxy phones and tablets

The cameras on Galaxy **phones** and **tablets** come with a variety of shooting modes and camera settings that make it easy to capture and add flair to your pictures and videos. AR Doodle, Super slow-mo, Director's view, and Portrait mode are just a few of the options the camera has to offer. You can take things a step further by adjusting the camera's available settings, such as changing the video size or adding grid lines.

Selfies

- **Use wide angle for group selfies:** Automatically switches to wide-angle when there are two or more people in the selfie.
- **Save selfies as previewed:** Save selfies as they appear in the preview without flipping them.
- **Selfie color tone:** Set the color tone for your selfies to Natural or Bright.




https://www.samsung.com/us/support/answer/ANS10001353/

87. The foregoing features and capabilities of the '417 Accused Products and Samsung's description and/or demonstration thereof, including in user manuals and advertising, reflect Samsung's direct infringement by satisfying every element of at least claims 1 and 3 of the '417 Patent, under 35 U.S.C. § 271(a).

88. Samsung has indirectly infringed at least claims 1 and 3 of the ’417 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the ’417 Accused Products. Samsung’s customers who purchase devices and components thereof and operate such devices and components in accordance with Samsung’s instructions directly infringe one or more claims of the ’417 Patent in violation of 35 U.S.C. § 271. Samsung instructs its customers through at least user guides or websites, such as those located at: https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf and https://www.samsung.com/us/support/answer/ANS10001353/ .

89. For example, as shown above, Samsung instructs its customers to captures photos and use a “variety of shooting modes and camera settings”, which would require adjusting the frequency of the clock signal by the clock controller. *See* https://www.samsung.com/us/support/answer/ANS10001353/; *see also* User manuals on downloadcenter.samsung.com where each User Manual includes a section on “Camera and Gallery.”

90. Samsung is thereby liable for infringement of the ’417 Patent pursuant to 35 U.S.C. § 271(b).

91. Samsung has indirectly infringed at least claims 1 and 3 of the ’417 Patent by, among other things, contributing to the direct infringement of others, including customers of the ’417 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be

especially made or especially adapted for use in infringement of the ’417 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

92. For example, the ’417 Accused Products include hardware and software for implementing one or more clock controllers capable of changing a frequency for specific processes. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, these components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Samsung is liable for infringement of the ’417 Patent pursuant to 35 U.S.C. § 271(c).

93. Samsung has been on notice of the ’417 Patent since, at least, July 7, 2021, based on correspondence directed to Mr. I. Lee of SEC from Mr. T. Yamamoto of Maxell. *See* Letter from T. Yamamoto to I. Lee dated July 7, 2021. *See* Exhibit 5. That correspondence sets forth Maxell’s belief that Samsung makes, uses, sells, offers to sell, or imports products that infringe certain of Maxell’s patents, and specifically identified the ’417 Patent as well as exemplary claims and exemplary accused products for that patent including SmartThings network. By the time of trial, Samsung will thus have known and intended (since receiving such notice) that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the ’417 Patent.

94. Samsung undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the ’417 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least July 7, 2021, Samsung has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the ’417 Patent, and that the ’417 Patent is valid. On information and belief, Samsung could not

reasonably, subjectively believe that its actions do not constitute infringement of the ’417 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Samsung continued its infringing activities. As such, Samsung has willfully infringed and continues to willfully infringe the ’417 Patent.

95. Maxell has been and continues to be damaged by Samsung’s infringement of the ’417 Patent.

**COUNT 4 - INFRINGEMENT OF U.S. PATENT NO. 8,180,198**

96. Maxell incorporates paragraphs 1-95 above by reference.

97. U.S. Patent No. 8,180,198 (the “’198 Patent,” attached hereto as Exhibit 6) duly issued on May 15, 2012, and is entitled *Playlist creating apparatus and method, and dubbing list creating apparatus and method*.

98. Maxell is the owner by assignment of the ’198 Patent and possesses all rights under the ’198 Patent, including the exclusive right to recover for past and future infringement.

99. The ’198 Patent is directed to a digital image recording and reproducing apparatus that includes an output module and control module to provide a playlist creating apparatus that “allows a user to select desired digital images from a plurality of programs and use the digital images to create a simple playlist or to select digital images to be dubbed to another recording medium.” ’198 Patent, 1:42-46.

100. For example, the ’198 Patent discloses a digital image recording and reproducing apparatus and methods that includes an output module that displays a plurality of digital images and a plurality of related information concerning said digital images recorded in a recording medium on the display module, each digital image corresponding to one of said plurality of related

information. Further, the ’198 Patent discloses that the digital image recording and reproducing apparatus and methods include a control module which selects a digital image to add in a playlist, based on one of the plurality of information concerning the digital image recorded in said recording medium such that additional digital images whose related information is the same as the selected digital image are identified, retrieved, and output as part of the playlist. Further, the playlist includes outputting the playlist in a specific format such that additional digital images are produced next to the digital images selected by the user. Further, the ’198 Patent discloses that the digital image recording and reproducing apparatus and methods also include techniques to provide dubbing functionality as part of playlist generation.

101. Samsung has directly infringed one or more claims of the ’198 Patent in this District and elsewhere in Texas, including at least claims 1-16 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale, and/or selling its consumer electronic devices, including at least Samsung products having materially similar functionality while implementing various playlist generation, recording, and recommendation functions in Samsung smartphones and tablets. For example, Samsung has literally and/or under the doctrine of equivalents directly infringed at least claims 1-16 of the ’198 Patent in this District and elsewhere in Texas by or through making, using, importing, offering for sale, and/or selling at least the following: **smartphones** including the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A36 5G, Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G

UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10 5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S25, Galaxy S25+, Galaxy S25 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6 Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy Z Fold6, Galaxy A15 5G, Galaxy A25 5G, Galaxy A35 5G, Galaxy Z Fold6, Galaxy Z Flip6; **tablets** including Galaxy Tab Active Pro, Galaxy Tab Active3, Galaxy Tab Active4 Pro, Galaxy Tab S5e, Galaxy Tab S6, Galaxy Tab S6 5G, Galaxy Tab S7, Galaxy Tab S7+, Galaxy Tab S8, Galaxy Tab S8 Ultra, Galaxy Tab S8+, Galaxy Tab S9, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S9 Ultra, Galaxy Tab S9+, Galaxy Tab A9+ 5G, Galaxy Tab Active5 5G, Galaxy Tab S10 Ultra, Galaxy Tab S10+, Galaxy Tab S10 FE+, Galaxy Tab S10 FE; and other Samsung devices with the ability to generate playlists and recommendations for the playlist (collectively, "the '198 Accused Products"). Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '198 Accused Products are identified to describe Samsung's infringement and in no way

limit the discovery and infringement allegations against Samsung concerning other devices that incorporate the same or reasonably similar functionalities.

102. The ’198 Accused Products each include a display, processor, and various programs including applications that infringe at least claims 1-16 of the ’198 Patent. For example, upon information and belief, each of the ’198 Accused Products are sold with Netflix and Gallery applications. *See* https://techcrunch.com/2020/02/13/netflix-fends-off-new-streaming-rivals-by-way-of-samsung-partnership/?guccounter=1#:~:text=At%20Samsung's%20Unpacked%20event%20this,streaming%20service%20with%20Samsung%20devices; *see also* https://www.samsung.com/us/support/answer/ANS00079026/. Each of the ’198 Accused Products includes a playlist generation function with a recommendation engine that provides an enhanced playlist generation function. *See* https://help.netflix.com/en/node/100639. Similarly, each of the ’198 Accused Products executes a face-recognition process and includes a Samsung Gallery application that registers albums for specific person based on the face-recognition and generates an “Auto-updating albums” to generate an enhanced playlist. *See* https://www.samsung.com/us/support/answer/ANS10002535/.

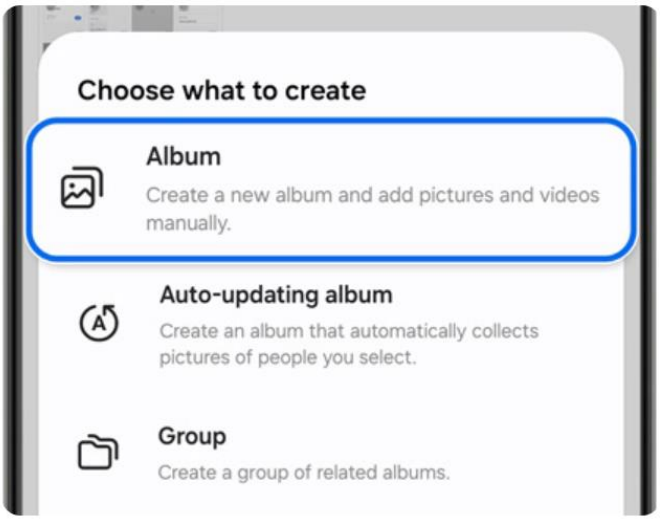
103. For example, the following excerpts from Samsung’s websites provide non-limiting examples of the ’198 Accused Products infringing at least claims 1-16 of the ’198 Patent:

# Use the Gallery app on your Galaxy phone or tablet

Leave that bulky photo album at home and use your Galaxy **phone** or **tablet** instead to relive all those precious memories. With the Gallery app, you can view, edit, and manage your pictures, videos, and albums right on your Galaxy device.

https://www.samsung.com/us/support/answer/ANS00079026/

**1** From **Gallery**, tap the **Albums** tab, and then tap **Add** (the plus sign). You can select from the following album types:



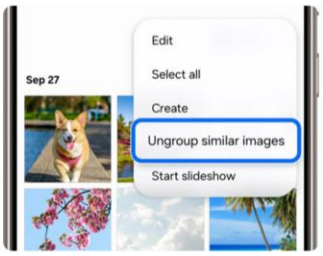

- **Album**: Create a standard album.
- **Auto-updating album**: Create an album that will automatically update to include pictures of people that you select.
- **Group**: Create a group, and then add albums to the group. You can view the next section for more information.

https://www.samsung.com/us/support/answer/ANS00079026/

You can prevent the Gallery app from automatically organizing your photos into new albums and stories. Although this option can be helpful if you have a lot of similar photos, you can still turn it off if you'd rather not use it.

**1** Navigate to and open the **Gallery** app, and then make sure you are on the **Pictures** tab.

**2** Tap **More options** (the three vertical dots), and then tap **Ungroup similar images**. This will prevent the Gallery app from automatically organizing your pictures.




**3** If available, you can also tap the **Similar images** icon (the square in the top right corner) to disable image grouping. The icon will be black when disabled. However, this icon may not be available on certain models.

https://www.samsung.com/us/support/answer/ANS00079026/

104. The foregoing features and capabilities of the ’198 Accused Products and Samsung’s description and/or demonstration thereof, including in user manuals and advertising, reflect Samsung’s direct infringement by satisfying every element of at least claims 1-16 of the ’198 Patent, under 35 U.S.C. § 271(a).

105. Samsung has indirectly infringed at least claims 1-16 of the ’198 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the ’198 Accused Products. Samsung’s customers who purchase devices and components thereof and operate such devices and components in accordance with Samsung’s instructions directly infringe one or more claims of the ’198 Patent in violation of 35 U.S.C. § 271. Samsung instructs its customers through at least user guides or websites, such as those located at:

https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf and https://www.samsung.com/us/support/answer/ANS10001353/; https://www.samsung.com/us/support/answer/ANS00079026/.

106. For example, as shown above, Samsung instructs its customers to “Use the Gallery app on your Galaxy phone or tablet,” “View and edit pictures and videos,” “Create an album that will automatically update to include pictures of people that you select,” and/or “Manage Stories.” *See* https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf and https://www.samsung.com/us/support/answer/ANS10001353/; https://www.samsung.com/us/support/answer/ANS00079026/

107. Samsung is thereby liable for infringement of the ’198 Patent pursuant to 35 U.S.C. § 271(b).

108. Samsung has indirectly infringed at least claims 1-16 of the ’198 Patent, by, among other things, contributing to the direct infringement of others, including customers of the ’198 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the ’198 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

109. For example, the ’198 Accused Products each include hardware and software for implementing playlist generation, recommendation engine, and dubbing functions by Samsung Gallery and/or Netflix application. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, these components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Samsung is liable for infringement of the ’198 Patent pursuant to 35 U.S.C. § 271(c).

110. Samsung has been on notice of the ’198 Patent since, at least, July 7, 2021, based on correspondence directed to Mr. I. Lee of SEC from Mr. T. Yamamoto of Maxell. *See* Letter from T. Yamamoto to I. Lee dated July 7, 2021. *See* Exhibit 5. This correspondence sets forth Maxell’s belief that Samsung makes, uses, sells, offers to sell, or imports products that infringe certain of Maxell’s patents, and specifically identified the ’198 Patent as well as exemplary claims and exemplary accused products for that patent. By the time of trial, Samsung will thus have known and intended (since receiving such notice), that its continued actions would actively induce and

contribute to actual infringement of at least claims 1-16 of the ’198 Patent.

111. Samsung undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the ’198 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least July 7, 2021, Samsung has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the ’198 Patent, and that the ’198 Patent is valid. On information and belief, Samsung could not reasonably, subjectively believe that its actions do not constitute infringement of the ’198 Patent, nor could it reasonably, subjectively believe that the ’198 Patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Samsung continued its infringing activities. As such, Samsung has willfully infringed and continues to willfully infringe the ’198 Patent.

112. Maxell has been and continues to be damaged by Samsung’s infringement of the ’198 Patent.

**COUNT 5 - INFRINGEMENT OF U.S. PATENT NO. 11,812,091**

113. Maxell incorporates paragraphs 1-112 above by reference.

114. U.S. Patent No. 11,812,091 (the “’091 Patent,” attached hereto at Exhibit 7) duly issued on November 7, 2023, and is entitled *Multimedia player displaying operation panel depending on contents*.

115. Maxell is the owner by assignment of the ’091 Patent and possesses all rights under the ’091 Patent, including the exclusive right to recover for past and future infringement.

116. The ’091 Patent is directed to a digital content reproducing apparatus having “image rendering techniques for reproduction control of digital contents by using user operation interfaces.” ’091 Patent, 1:26-28. The digital content reproducing apparatus described includes

network communication circuitry to receive digital content and related information from an external server, a decoder to decode the received content, a display, and a controller to manage the reproduction and display of the decoded content. The controller can alternatively display either a first operation panel with linear operation buttons for user instructions on linear reproduction functions or a second operation panel with interactive operation buttons for user instructions on interactive functions to the external server, alongside the reproduced content. The related information includes time-related information indicating when the interactive buttons should be displayed and panel-related information determining whether to display the first or second operation panel. The controller is configured to display interactive buttons during the specified time and, outside of that time, to display either linear or interactive buttons based on the panel-related information.

117. Samsung has directly infringed one or more claims of the ’091 Patent in this District and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale, and/or selling its consumer electronic devices, including at least Samsung products having materially similar functionality while implementing one or more of Samsung TV application and/or preinstalled Netflix application that, upon information and belief, can alternatively display either a first operation panel with linear operation buttons for user instructions on linear reproduction functions or a second operation panel with interactive operation buttons for user instructions on interactive functions to the external server, alongside the reproduced content. The related information includes time-related information indicating when the interactive buttons should be displayed and panel-related information determining whether to display the first or second operation panel.

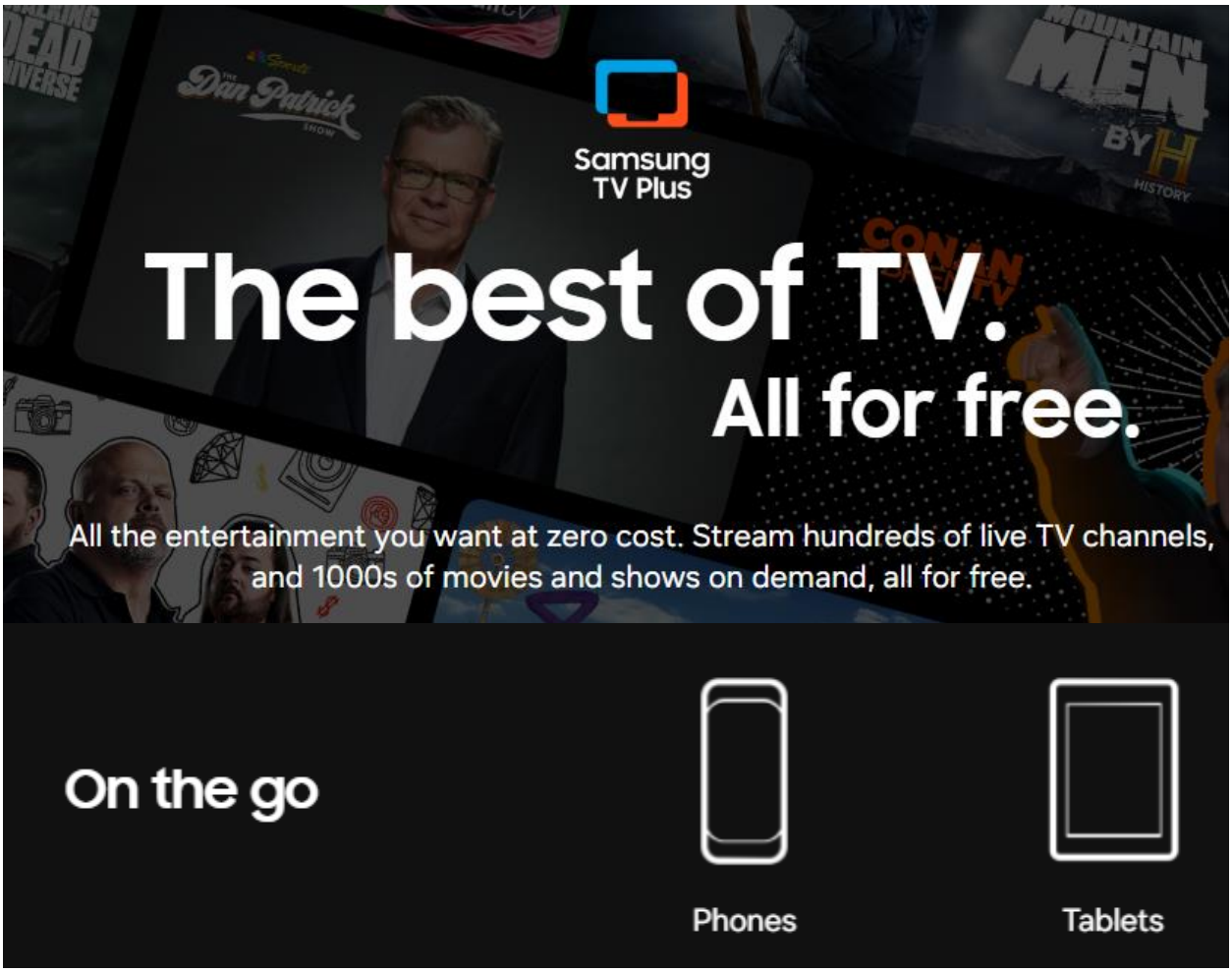
118. For example, Samsung has literally and/or under the doctrine of equivalents directly infringed at least claim 1 of the ’091 Patent in this District and elsewhere in Texas by or through making, using, importing, offering for sale, and/or selling at least the following: **smartphones** including the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A36 5G, Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10 5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S25, Galaxy S25+, Galaxy S25 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6 Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy Z Fold6, Galaxy A15 5G, Galaxy A25 5G, Galaxy A35 5G, Galaxy Z Fold6, Galaxy Z Flip6; **tablets**

including Galaxy Tab Active Pro, Galaxy Tab Active3, Galaxy Tab Active4 Pro, Galaxy Tab S5e, Galaxy Tab S6, Galaxy Tab S6 5G, Galaxy Tab S7, Galaxy Tab S7+, Galaxy Tab S8, Galaxy Tab S8 Ultra, Galaxy Tab S8+, Galaxy Tab S9, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S9 Ultra, Galaxy Tab S9+, Galaxy Tab A9+ 5G, Galaxy Tab Active5 5G, Galaxy Tab S10 Ultra, Galaxy Tab S10+, Galaxy Tab S10 FE+, Galaxy Tab S10 FE; and other Samsung devices with Samsung TV and/or Netflix applications (collectively, "the '091 Accused Products"). Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '091 Accused Products are identified to describe Samsung's infringement and in no way limit the discovery and infringement allegations against Samsung concerning other devices that incorporate the same or reasonably similar functionalities.

119. Each of the '091 Accused Products includes network communication circuitry (*e.g.*, Wi-Fi chipset and cellular modem) that received digital content from a server (*e.g.*, Samsung TV server and/or Netflix server). Further, each of the '091 Accused Products includes a decoder (e.g., video decoder and/or codecs) to decode digital content, a display, and a controller that work in conjunction with various programs including applications that infringe at least claim 1 of the '091 Patent. For example, upon information and belief, each of the '091 Accused Products is sold with Samsung TV and Netflix application. *See* https://techcrunch.com/2020/02/13/netflix-fends-off-new-streaming-rivals-by-way-of-samsung-partnership/?guccounter=1#:~:text=At%20Samsung's%20Unpacked%20event%20this,streaming%20service%20with%20Samsung%20devices; *see also* https://www.samsungtvplus.com/. Each of the '091 Accused Products includes a controller that displays digital contents while generating specific user interfaces with interactive operation buttons and time related information, receiving

user-instructions of interactive functions to the outside server (*e.g.*, next episode function or functions to connect to Netflix or Samsung TV server for different language settings and/or to obtain additional information about the content being displayed). Further, each of the ’091 Accused Products includes a controller that displays digital contents while generating specific user interfaces with linear operation buttons (*e.g.*, fast forward, rewind, skip content etc.).

120. For example, the following excerpts from Samsung’s websites provide non-limiting examples of the ’091 Accused Products infringing at least claim 1 of the ’091 Patent:




https://www.samsungtvplus.com/

TV

Enjoy free news, entertainment, and more on your Samsung TV and mobile devices.

https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf

121. The foregoing features and capabilities of the '091 Accused Products and Samsung's description and/or demonstration thereof, including in user manuals and advertising, reflect Samsung's direct infringement by satisfying every element of at least claim 1 of the '091 Patent, under 35 U.S.C. § 271(a).

122. Samsung has indirectly infringed at least claim 1 of the '091 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the '091 Accused Products. Samsung's customers who purchase devices and components thereof and operate such devices and components in accordance with Samsung's instructions directly infringe one or more claims of the '091 Patent in violation of 35 U.S.C. § 271. Samsung instructs its customers through at least user guides or websites, such as those located at:

https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf, https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf; *see also* https://www.samsungtvplus.com/.

123. For example, as shown above Samsung instructs its customers to "Enjoy free news, entertainment, and more on your Samsung TV an mobile devices." *See* https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf,

https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf; *see also* https://www.samsungtvplus.com/.

124. Samsung is thereby liable for infringement of the ’091 Patent pursuant to 35 U.S.C. § 271(b). Samsung has indirectly infringed at least claim 1 of the ’091 Patent by, among other things, contributing to the direct infringement of others, including customers of the ’091 Accused Products by making, offering to sell, or selling, in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the ’091 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

125. For example, the ’091 Accused Products each include hardware and software for implementing Samsung TV and/or Netflix application for receiving digital content, decoding digital content, displaying digital content, and rendering specific user interfaces with the digital content. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, these components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Samsung is liable for infringement of the ’091 Patent pursuant to 35 U.S.C. § 271(c).

126. Samsung has been on notice of the ’091 Patent since, at least, September 8, 2023, based on correspondence directed to Mr. D. Jeon from Mr. J. Beaber. *See* Exhibit 8. This correspondence sets forth Maxell’s belief that Samsung makes, uses, sells, offers to sell, or imports products that infringe certain of Maxell’s patents, and specifically identified the allowed patent

application that issued as the ’091 Patent as well as exemplary allowed claims and exemplary accused products for that patent. By the time of trial, Samsung will thus have known and intended (since receiving this notice) that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the ’091 Patent.

127. Samsung undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the ’091 Patent, which has been duly issued by the USPTO, and is presumed valid. For example, since at least September 8, 2023, Samsung has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the ’091 Patent, and that the ’091 Patent is valid. On information and belief, Samsung could not reasonably, subjectively believe that its actions do not constitute infringement of the ’091 Patent, nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief, and the objectively high likelihood that its actions constitute infringement, Samsung continued its infringing activities. As such, Samsung has willfully infringed and continues to willfully infringe the ’091 Patent.

128. Maxell has been and continues to be damaged by Samsung’s infringement of the ’091 Patent.

**COUNT 6 - INFRINGEMENT OF U.S. PATENT NO. 7,952,645**

129. Maxell incorporates paragraphs 1-128 above by reference.

130. U.S. Patent No. 7,952,645 (the “’645 Patent,” attached hereto as Exhibit 9) duly issued on May 31, 2011, and is entitled *Video processing apparatus and mobile terminal apparatus*.

131. Maxell is the owner by assignment of the ’645 Patent and possesses all rights under the ’645 Patent, including the exclusive right to recover for past and future infringement.

132. At the time of the invention of the ’645 Patent (which claims priority to November 24, 2005), visual display signal processing posed unique problems in the field of mobile apparatuses, which were limited in both processing power and, critically, battery life. ’645 Patent at 1:31-37. Furthermore, the nature of use of mobile apparatuses meant that they might be viewed outdoors, in the sun, which could pose other problems not typically present for indoor computers. *Id*. at 1:37-40. Finally, images viewed on mobile apparatuses may be difficult to view if particular images are focused on but the surrounding areas are not color-corrected in accordance with optimal viewing conditions. *Id*. at 1:45-56.

133. Conventional solutions for visual display signal processing were not well suited for these circumstances. For example, as disclosed in JP-A-2002-132225, an input RGB signal might be converted to a luminance signal and a color-difference signal every frame, a characteristic data point may be extracted from each frame, and the luminance signal and a color-difference signal might be corrected according to a user’s preference. However, this is an energy intensive process, and does not solve the issue of the difference between color-correcting an overall image. ’645 Patent at 1:31-37. In another example, JP-A-2005-026814 discloses the use of a side panel detection circuit which detects a side panel and conducts picture quality according to a result of the side panel detection and a result of video luminance level detection, but this too did not solve the problems facing users of a mobile apparatus that displayed a visual signal at least because such an invention was limited to side panels for the use of a static digital broadcast receiver, which would not have faced users of mobile apparatuses, and if applied to mobile apparatuses, would create an output that would be difficult for users to view. ’645 Patent at 1:41-50.

134. Other inventors had proposed other solutions to problems arising for visual display signal processing, but none were adequate to address the problems that the inventors of the ’645

Patent were considering. For example, U.S. Patent No. 5,298,995 to Monta et al., filed by the Panasonic Corporation, discusses a solution in the field of visual display signal processing, but this solution was directed to detecting and moving subtitles, for example for a television receiver, and would not apply to the types of visual display signals frequently viewed on a mobile apparatus. As another example, U.S. Patent No. 7,046,302 to Konuma, filed by the Sony Corporation, discloses a signal processing method for multiple images shown in combination, but this would not solve the problems viewing a single image in the context of a mobile apparatus.

135. These particular solutions to problems arising in mobile apparatuses that capture and display visual signals, like the solutions disclosed and claimed in the ’645 Patent, enhance the capabilities of mobile apparatuses and perform types of operations (visual signal processing) that are unique to computers and incapable of being performed by hand or without computers.

136. The ’645 Patent discloses and claims a particular solution to these problems that arise in the field of mobile apparatuses. For example, the ’645 Patent discloses an energy efficient manner of processing a signal such that it can be optimally viewed by a user of a mobile apparatus. One solution that the ’645 Patent proposes is the use of a controller to distinguish between pattern portions, including in a no-picture area, and thereby control the visual display signal processing to focus on the single image of importance to the user of the mobile apparatus. This may limit the use of processing power but also create an optimal aesthetic to the user. Such an invention improved the then-capabilities of mobile apparatuses and enabled better devices to be available in the growing field of mobile apparatuses.

137. Samsung has directly infringed one or more claims of the ’645 Patent in this District and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale, and/or selling its telecommunications

technology, including at least Samsung products having materially similar functionality while implementing color correction and image processing, including in Gallery application and Portrait mode, including offering for sale and/or selling at least the following: **smartphones,** including the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A36 5G, Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10 5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S25, Galaxy S25+, Galaxy S25 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6 Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy Z Fold6, Galaxy A15 5G, Galaxy A25 5G, Galaxy A35 5G, Galaxy Z Fold6, and Galaxy Z Flip6; **tablets,** including Galaxy Tab

Active Pro, Galaxy Tab Active3, Galaxy Tab Active4 Pro, Galaxy Tab S5e, Galaxy Tab S6, Galaxy Tab S6 5G, Galaxy Tab S7, Galaxy Tab S7+, Galaxy Tab S8, Galaxy Tab S8 Ultra, Galaxy Tab S8+, Galaxy Tab S9, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S9 Ultra, Galaxy Tab S9+, Galaxy Tab A9+ 5G, Galaxy Tab Active5 5G, Galaxy Tab S10 Ultra, Galaxy Tab S10+, Galaxy Tab S10 FE+, Galaxy Tab S10 FE; and other Samsung devices with Samsung Gallery application, including Portrait mode (collectively, "the '645 Accused Products"). Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '645 Accused Products are identified to describe Samsung's infringement and in no way limit the discovery and infringement allegations against Samsung concerning other devices that incorporate the same or reasonably similar functionalities.

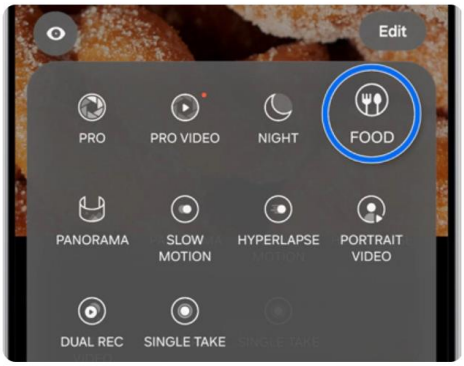
138. Each of the '645 Accused Products is observed to include an input unit to which a video signal is input. For example, each of the '645 Accused Products includes an image sensor and/or a cellular or Wi-Fi circuit for receiving a video signal. Further, each of the '645 Accused Products is observed to include a detector which detects whether pattern portions other than contents are contained in the video signal input to the input unit. For example, the '645 Accused Products include an image signal processor (ISP) and/or a CPU. The '645 Accused Products are further observed to include a corrector which corrects the video signal input to the input unit and a controller which controls the corrector to cause the corrector to correct the video signal input to the input unit when the pattern portions are not contained and which controls the corrector to cause the corrector not to correct the video signal when the pattern portions are contained. For example, in Portrait Mode, the '645 Accused Products do not perform certain color corrections to the pattern portions in Portrait mode, Motion photo (*e.g.*, fireworks), Food mode, and Portrait video. Similarly, the '645 Accused Products do not perform certain corrections to the pattern portions

when performing the scanning of documents, Portrait mode, Motion photo (*e.g.*, fireworks), Food mode, and Portrait video. *See*, *e.g.*, https://www.samsung.com/us/support/answer/ANS10001377/; *see also* https://www.samsung.com/us/support/answer/ANS10003225/; https://www.samsung.com/us/support/answer/ANS00092489/.

139. For example, the following excerpt from Samsung's website provides non-limiting examples of the '645 Accused Products infringing at least claim 1 of the '645 Patent by implementing Food mode, Portrait Mode, Motion photo, and/or document scanning via the camera:

## Capture the flavor with Food mode on your Galaxy phone or tablet

Foodies and aspiring food photographers, rejoice. **Galaxy phones** and **tablets** now have Food mode! Take pictures of your favorite dishes and put them in the spotlight. Food mode will automatically adjust the coloring to make your dishes look even more delicious. Bon appétit!




Don't hide a stunning dish from the camera. Give it the photographic justice it deserves!

1. Navigate to and open the **Camera** app, then tap **MORE**, and then tap **FOOD**. Make sure your dish is in the highlighted area.
2. To adjust the color temperature, tap the **Quick controls** icon (the four dots), then tap the **Thermometer** icon, and then adjust the **slider** at the bottom of the screen.
3. You can also tap the **Blur effect** icon (the teardrop) to blur the sides and background of your dish.
4. Then, tap **Capture**.

https://www.samsung.com/us/support/answer/ANS10001377/

# Use Portrait mode or Live Focus on your Galaxy phone

You know that Samsung's innovative cameras are fun to use and always include multiple options for getting your shots just right. The Live Focus feature has been a part of **Galaxy phone** cameras for a while and is known for its iconic filters. The original Live Focus is still great, but it has been added to Portrait mode on phones with One UI 4 and later software. With Portrait mode, you can use brand-new filters and effects to truly transform your selfies.

Portrait mode includes Live Focus and many additional effects and filters to take your pictures to the next level. Your selfies will look better than ever before!

Open the **Camera** app, then tap **PORTRAIT**, and then tap the **circle** in the bottom right of the viewfinder. The options can be altered using the **slider**. On some devices, PORTRAIT will be available at the bottom of the screen after opening the Camera app.

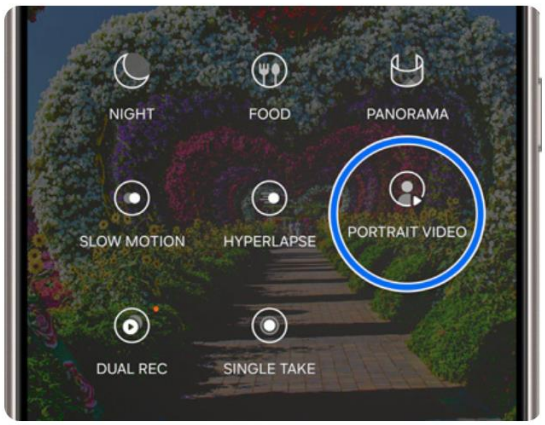
https://www.samsung.com/us/support/answer/ANS10003225/

- **Blur**: This will blur the background around the subject, like Live Focus on previous devices.
- **Studio**: This applies a brightening effect to the subject but does not brighten the background, making the subject the main focal point.
- **High-key mono**: Creates a monochromatic effect with a high brightness level. The entire picture and subject will appear in black and white.
- **Low-key mono**: Similar to High-key mono where the picture appears in black and white. However, it uses low brightness instead.
- **Backdrop**: Grays out the background around the subject with a gradient effect, while the subject itself still has color.
- **Color point**: Changes the sharpness of the colors directly around your subject, so everything else looks darker and the subject stands out.

https://www.samsung.com/us/support/answer/ANS10003225/

Although their names are different, Live focus video and Portrait video use the same options, whether you have a slightly older phone or a brand new Galaxy S24. Just like their picture alternatives, these modes add an effect to whatever you're recording using either the rear or front cameras.

Open the **Camera** app, and then tap **MORE**. Tap **PORTRAIT VIDEO**, and then tap the **circle** in the bottom right of the viewfinder. There are four options to choose from, and each can be altered using the **slider**.




- **Blur**: This will blur the background around the subject that you're filming.
- **Big circle**: Creates a focused circle around your subject while severely blurring the background.
- **Color point**: Changes the sharpness of the colors directly around your subject, so everything else becomes black and white.

https://www.samsung.com/us/support/answer/ANS10003225/

## Scan and edit documents on your Galaxy phone or tablet

If you need to bring an important document with you but don't want to carry a heavy book or stack of files, you can scan and save the document using your Galaxy phone or tablet. Your device will create an exact replica of the document, so you'll always have access to it in your Gallery app when you need to view it. Your document can also be edited using the Samsung Notes app and exported as a PDF.

https://www.samsung.com/us/support/answer/ANS10003225/

**Use the Gallery app to scan documents**

Scanning a document, whether you're using a book or a piece of paper, will automatically remove unwanted shadows, hands, and other items that may be on the document itself. Scanning will also align rectangular shapes so your document will appear perfectly straight and legible. Once you're finished scanning, you can edit the document in the Samsung Notes app.

1. To begin, navigate to and open the **Camera** app on your phone or tablet, and then line up the viewfinder with the document.
2. Tap **Scan** when it appears. Your device will begin scanning the document.

https://www.samsung.com/us/support/answer/ANS00092489/

140. The foregoing features and capabilities of each of the '645 Accused Products and Samsung's description and/or demonstration thereof, including in user manuals and advertising, reflect Samsung's direct infringement by satisfying every element of at least claim 1 of the '645 Patent under 35 U.S.C. § 271(a).

141. Samsung has indirectly infringed at least claim 1 of the '645 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the '645 Accused Products. Samsung's customers who purchase devices and components thereof and operate such devices and components in accordance with Samsung's instructions directly infringe one or more claims of the '654 Patent in violation of 35 U.S.C. § 271. Samsung instructs its customers through at least user guides or websites, such as those located at:

https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf;https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_

02072025.pdf; *see also* https://www.samsungtvplus.com/; https://www.samsung.com/us/support/answer/ANS10001377/; https://www.samsung.com/us/support/answer/ANS10003225/; and https://www.samsung.com/us/support/answer/ANS00092489/.

142. For example, as shown above, Samsung instructs its customers to "Capture the flavor with Food mode on your Galaxy phone or tablet," "Use Portrait mode or Live Focus on your Galaxy phone," and "Scan and edit documents on your Galaxy phone or tablet." *See* https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf; https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf; *see also* https://www.samsung.com/us/support/answer/ANS10001377/; https://www.samsung.com/us/support/answer/ANS10003225/; and https://www.samsung.com/us/support/answer/ANS00092489/.

143. Samsung is thereby liable for infringement of the '645 Patent pursuant to 35 U.S.C. § 271(b). Samsung has indirectly infringed at least claim 1 of the '645 Patent by, among other things, contributing to the direct infringement of others, including customers of the '645 Accused Products by making, offering to sell, or selling in the United States, or by importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '645 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

144. For example, the ’645 Accused Products each include hardware and software for implementing various image capture and correction processes. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, these components are a material part of the invention and upon information and belief are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Samsung is liable for infringement of the ’645 Patent pursuant to 35 U.S.C. § 271(c).

145. Samsung has been on notice of the ’645 Patent since at least July 7, 2021, based on correspondence directed to Mr. I. Lee of SEC from Mr. T. Yamamoto of Maxell. *See* Letter from T. Yamamoto to I. Lee dated July 7, 2021. *See* Exhibit 5. This correspondence sets forth Maxell’s belief that Samsung makes, uses, sells, offers to sell, or imports products that infringe certain of Maxell’s patents and specifically identified the claims of the ’645 Patent and exemplary accused products for that patent. By the time of trial, Samsung will thus have known and intended (since receiving this notice) that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the ’645 Patent.

146. Samsung undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the ’645 Patent, which has been duly issued by the USPTO and is presumed valid. For example, since at least July 7, 2021, Samsung has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the ’645 Patent and that the ’645 Patent is valid. On information and belief, Samsung could not reasonably, subjectively believe that its actions do not constitute infringement of the ’645 Patent nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief and the objectively high likelihood that its actions constitute infringement, Samsung continued its infringing activities. As such, Samsung has willfully infringed and

continues to willfully infringe the ’645 Patent.

147. Maxell has been and continues to be damaged by Samsung’s infringement of the ’645 Patent.

**COUNT 7 - INFRINGEMENT OF U.S. PATENT NO. 8,471,950**

148. Maxell incorporates paragraphs 1-147 above by reference.

149. U.S. Patent No. 8,471,950 (the “’950 Patent,” attached hereto as Exhibit 10) duly issued on June 25, 2013 and is entitled *Signal processor for adjusting image quality of an input picture signal*.

150. Maxell is the owner by assignment of the ’950 Patent and possesses all rights under the ’950 Patent, including the exclusive right to recover for past and future infringement.

151. The ’950 Patent discloses and claims a particular solution of “an automatic control system in an apparatus such as a video camera, digital still camera” that includes a signal processor which can detect specific features. ’950 Patent, 1:8-11. The signal processor includes, for example, a feature detection unit that identifies changes in pixel features within an input picture signal, a region creation unit that forms a region by excluding pixels with these features from an evaluated value extraction region, and an evaluated value extraction unit that extracts a value based on the remaining region. Additionally, there is a processing unit that performs specific processing on the picture signal and a control unit that manages the processing unit based on the extracted evaluated value. The control unit uses the evaluated value from the region where pixels with certain features have been removed to guide the processing unit’s actions.

152. Samsung has directly infringed one or more claims of the ’950 Patent in this District and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale, and/or selling its telecommunications

technology, including at least Samsung products having materially similar functionality while implementing color correction and image processing, including in Gallery application and Portrait mode, including offering for sale and/or selling at least the following: **smartphones**, including the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A36 5G, Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10 5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S25, Galaxy S25+, Galaxy S25 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6 Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy Z Fold6, Galaxy A15 5G, Galaxy A25 5G, Galaxy A35 5G, Galaxy Z Fold6, and Galaxy Z Flip6; **tablets,** including Galaxy Tab

Active Pro, Galaxy Tab Active3, Galaxy Tab Active4 Pro, Galaxy Tab S5e, Galaxy Tab S6, Galaxy Tab S6 5G, Galaxy Tab S7, Galaxy Tab S7+, Galaxy Tab S8, Galaxy Tab S8 Ultra, Galaxy Tab S8+, Galaxy Tab S9, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S9 Ultra, Galaxy Tab S9+, Galaxy Tab A9+ 5G, Galaxy Tab Active5 5G, Galaxy Tab S10 Ultra, Galaxy Tab S10+, Galaxy Tab S10 FE+, Galaxy Tab S10 FE, and other Samsung devices with Samsung Gallery application that, upon information and belief, implements face detection, eye detection, lip detection, pet detection, and/or Portrait mode (collectively, "the '950 Accused Products"). Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '950 Accused Products are identified to describe Samsung's infringement and in no way limit the discovery and infringement allegations against Samsung concerning other devices that incorporate the same or reasonably similar functionalities.

153. Each of the '950 Accused Products is observed to include a feature detection unit which detects a position where features of each pixel of an input picture signal have changed by, for example, implementing image sensors, camera application, image signal processor, and/or additional hardware and software to implement face detection, eye detection, lip detection, pet detection, and/or Portrait mode. Further, each of the '950 Accused Products is observed to include a region creation unit which creates a region by removing pixels with the features from an evaluated value extraction region, an evaluated value extraction unit, and a processing unit by, for example, implementing image sensors, camera application, image signal processor, and/or additional hardware and software to implement face detection, eye detection, lip detection, pet detection, and/or Portrait mode that includes removing pixels from specific regions to perform a value extraction and predetermined processing (*e.g.*, specific processing based on the detected

feature in the image). Further, each of the ’950 Accused Products is observed to include a control unit which controls the processing unit in accordance with the evaluated value and controls the processing unit by using an evaluated value of a region from which pixels having an extracted predetermined feature are removed by, for example, implementing image sensors, camera application, image signal processor, and/or additional hardware and software to implement face detection, eye detection, lip detection, pet detection, and/or Portrait mode that includes the control unit controlling processing of the processing unit based on the evaluated value and a region from which pixels are extracted. *See, e.g.*, https://www.samsung.com/us/support/answer/ANS10003225/; *see also* https://r2.community.samsung.com/t5/CamCyclopedia/ISP-Image-Signal-Processor/ba-p/13485145.

154. For example, the following excerpts provide non-limiting examples of the ’950 Accused Products infringing at least claim 1 of the ’950 Patent by implementing Portrait Mode and/or additional ISP detections and correction:

## Use Portrait mode or Live Focus on your Galaxy phone

You know that Samsung’s innovative cameras are fun to use and always include multiple options for getting your shots just right. The Live Focus feature has been a part of **Galaxy phone** cameras for a while and is known for its iconic filters. The original Live Focus is still great, but it has been added to Portrait mode on phones with One UI 4 and later software. With Portrait mode, you can use brand-new filters and effects to truly transform your selfies.

Portrait mode includes Live Focus and many additional effects and filters to take your pictures to the next level. Your selfies will look better than ever before!

Open the **Camera** app, then tap **PORTRAIT**, and then tap the **circle** in the bottom right of the viewfinder. The options can be altered using the **slider**. On some devices, PORTRAIT will be available at the bottom of the screen after opening the Camera app.

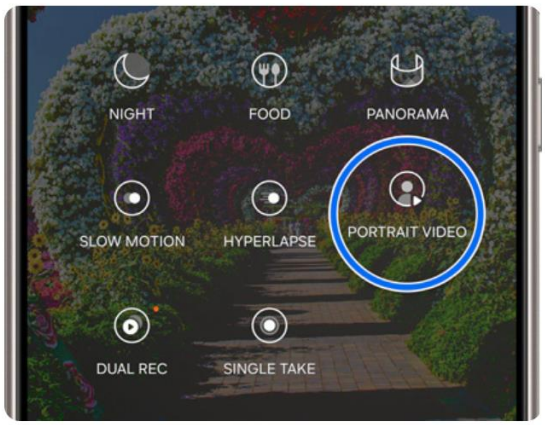
https://www.samsung.com/us/support/answer/ANS10003225/

- **Blur**: This will blur the background around the subject, like Live Focus on previous devices.
- **Studio**: This applies a brightening effect to the subject but does not brighten the background, making the subject the main focal point.
- **High-key mono**: Creates a monochromatic effect with a high brightness level. The entire picture and subject will appear in black and white.
- **Low-key mono**: Similar to High-key mono where the picture appears in black and white. However, it uses low brightness instead.
- **Backdrop**: Grays out the background around the subject with a gradient effect, while the subject itself still has color.
- **Color point**: Changes the sharpness of the colors directly around your subject, so everything else looks darker and the subject stands out.

https://www.samsung.com/us/support/answer/ANS10003225/

Although their names are different, Live focus video and Portrait video use the same options, whether you have a slightly older phone or a brand new Galaxy S24. Just like their picture alternatives, these modes add an effect to whatever you're recording using either the rear or front cameras.

Open the **Camera** app, and then tap **MORE**. Tap **PORTRAIT VIDEO**, and then tap the **circle** in the bottom right of the viewfinder. There are four options to choose from, and each can be altered using the **slider**.




- **Blur**: This will blur the background around the subject that you're filming.
- **Big circle**: Creates a focused circle around your subject while severely blurring the background.
- **Color point**: Changes the sharpness of the colors directly around your subject, so everything else becomes black and white.

https://www.samsung.com/us/support/answer/ANS10003225/

Face recognition management

Customize how face recognition works.

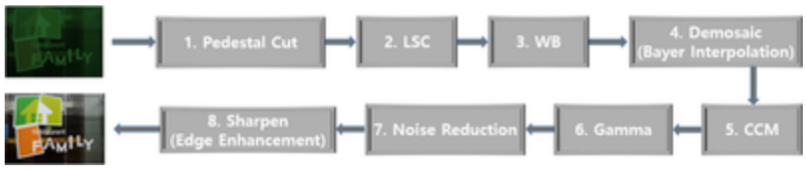
- From Settings, tap **Security and privacy** > **Screen lock and biometrics** > **Face recognition**.
  - **Remove face data:** Delete existing faces.
  - **Add alternative appearance to enhance recognition:** Enhance face recognition by adding an alternative appearance.
  - **Face unlock:** Enable or disable face recognition security.
  - **Stay on Lock screen until swipe:** When you unlock your device with face recognition, stay on the Lock screen until you swipe the screen.
  - **Require open eyes:** Facial recognition will only recognize your face when your eyes are open.
  - **Brighten screen:** Increase the screen brightness temporarily so that your face can be recognized in dark conditions.
  - **About face recognition:** Learn additional information about securing your device with face recognition.

https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf

**Default structure of ISP**

Every AP Chip manufacturer has their unique ISP structure. We will introduce the most basic structure here.

- Basic ISP block diagram




https://r2.community.samsung.com/t5/CamCyclopedia/ISP-Image-Signal-Processor/ba-p/13485145

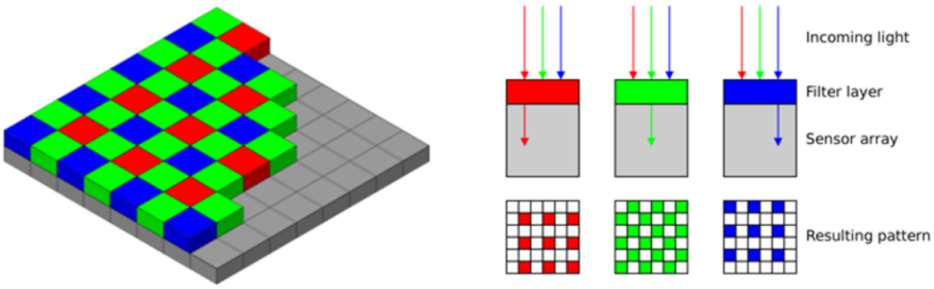
**3. WB (White Balance)**[3]

This block helps the camera adjust the color balance and render them accurately. It ensures that an image has a uniform WB Gain and that the RGB of the grey (achromatic) areas are adjusted to the same value (to depict the grey as grey).

The sensor output fed to ISP has twice as many green channels as any other. This is the reason why the raw image before the application of WB Gain looks green overall. (Refer to 'De-mosaic' below)

**4. De-mosaic (= Bayer Interpolation, Color Interpolation)**

Most smartphone cameras use the Bayer type (or pattern) sensor. The Bayer sensor, as illustrated below [2] is 3 color filter combination sensor mounted on top of a photodiode array.




https://r2.community.samsung.com/t5/CamCyclopedia/ISP-Image-Signal-Processor/ba-p/13485145

**FD (Face Detection)**

This block detects faces in an image/video and passes their coordinates to the next block. The face coordinates can be used in other algorithms or solutions to implement different features.

**[Example of application] Using FD information in AWB (Auto White Balance) and AE (Auto Exposure) algorithm blocks**

1. When a face is detected, it compares and corrects the difference between the face brightness and the targeted brightness of the whole image. It utilizes the face coordinates received, to adjust the face brightness, etc.
2. When multiple sources are detected illuminating a face and the face is overly affected by these lights, this FD data can be used to correct the color on it. For example, if a face is detected in a low-color temperature light setup giving off a slightly reddish glow, the face coordinates are used to adjust the color of the face.

https://r2.community.samsung.com/t5/CamCyclopedia/ISP-Image-Signal-Processor/ba-p/13485145

155. The foregoing features and capabilities of each of the ’950 Accused Products and Samsung’s description and/or demonstration thereof, including in user manuals and advertising, reflect Samsung’s direct infringement by satisfying every element of at least claim 1 of the ’950 Patent under 35 U.S.C. § 271(a).

156. Samsung has indirectly infringed at least claim 1 of the ’950 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the ’950 Accused Products. Samsung’s customers who purchase devices and components thereof and operate such devices and components in accordance with Samsung’s instructions directly infringe one or more claims of the ’950 Patent in violation of 35 U.S.C. § 271. Samsung instructs its customers through at least user guides or websites, such as those located at:

https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf;

https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S9

36_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf; *see also* https://www.samsung.com/us/support/answer/ANS10003225/.

157. For example, as shown above Samsung instructs its customers to "Use Portrait mode or Live Focus on your Galaxy phone" and "Customize how face recognition works." *See* https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf; https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf; *see also* https://www.samsung.com/us/support/answer/ANS10003225/.

158. Samsung is thereby liable for infringement of the '950 Patent pursuant to 35 U.S.C. § 271(b). Samsung has indirectly infringed at least claim 1 of the '950 Patent by, among other things, contributing to the direct infringement of others, including customers of the '950 Accused Products by making, offering to sell, or selling in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '950 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

159. For example, the '950 Accused Products each include hardware and software for implementing various image capture, feature detection, and image processing functions. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, these components are a material part of the invention and, upon information and belief, are not a staple article or commodity of commerce suitable for

substantial non-infringing use. Thus, Samsung is liable for infringement of the ’950 Patent pursuant to 35 U.S.C. § 271(c).

160. Samsung has been on notice of the ’950 Patent since at least December 29, 2021, based on correspondence directed to Mr. Daejin Jeon of SEC’s IP Center from Mr. T. Yamamoto of Maxell. *See* Exhibit 2. This correspondence sets forth Maxell’s belief that Samsung makes, uses, sells, offers to sell, or imports products that infringe certain of Maxell’s patents and specifically identified the claims of the ’950 Patent and exemplary accused products for that patent. By the time of trial, Samsung will thus have known and intended (since receiving this notice) that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the ’950 Patent.

161. Samsung undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the ’950 Patent, which has been duly issued by the USPTO and is presumed valid. For example, since at least December 29, 2021, Samsung has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the ’950 Patent and that the ’950 Patent is valid. On information and belief, Samsung could not reasonably, subjectively believe that its actions do not constitute infringement of the ’950 Patent nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief and the objectively high likelihood that its actions constitute infringement, Samsung continued its infringing activities. As such, Samsung has willfully infringed and continues to willfully infringe the ’950 Patent.

162. Maxell has been and continues to be damaged by Samsung’s infringement of the ’950 Patent.

**COUNT 8 - INFRINGEMENT OF U.S. PATENT NO. 10,783,228**

163. Maxell incorporates paragraphs 1-162 above by reference.

164. U.S. Patent No. 10,783,228 (the "'228 Patent," attached hereto as Exhibit 11) duly issued on September 22, 2020 and is entitled *Information processing device, application software start-up system, and application software start-up method*.

165. Maxell is the owner by assignment of the '228 Patent and possesses all rights under the '228 Patent, including the exclusive right to recover for past and future infringement.

166. The '228 Patent discloses a system that includes a first information processing device and a second infringement processing device such that the first information processing device includes a dynamic biometric acquisition sensor and a first communication interface. Further, the second information processing device includes a static biometric information acquisition sensor to gather static biometric data for user authentication, a processor to authenticate the user based on this data, and obtain an authentication result and a second communication interface to communicate the authentication result with another device and receive dynamic biometric information from it. The second information processing device also features a display screen to show information based on the user's state as determined by the dynamic biometric information received from the first information processing device.

167. Samsung has directly infringed one or more claims of the '228 Patent in this District and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale, and/or selling its telecommunications technology, including at least Samsung products having materially similar functionality while implementing Samsung Health application, Samsung Galaxy Wearable application, and/or fingerprint or face unlock operations, including, offering for sale and/or selling

at least the following: **smartphones**, including the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A36 5G, Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10 5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S25, Galaxy S25+, Galaxy S25 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6 Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy Z Fold6, Galaxy A15 5G, Galaxy A25 5G, Galaxy A35 5G, Galaxy Z Fold6, and Galaxy Z Flip6; **watches**, including Galaxy Watch Ultra, Galaxy Watch 7, Galaxy Watch 6, Galaxy Watch5 Pro Golf Edition, Galaxy Watch5 Pro, Galaxy Watch5, Galaxy Watch4, and Galaxy Watch4 Classic; Galaxy **Ring**; and other Samsung systems, upon

information and belief, that implement biometric tracking and emergency notification functions, such as Detect fall feature, Irregular Heart Rhythm Notification, and/or SOS requests (collectively, "the '228 Accused Products"). Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '228 Accused Products are identified to describe Samsung's infringement and in no way limit the discovery and infringement allegations against Samsung concerning other devices that incorporate the same or reasonably similar functionalities.

168. Each of the '228 Accused Products is observed to form a system with a first information processing device (*e.g.*, Samsung Galaxy Watch or Samsung Galaxy Ring), including one or more dynamic sensors (*e.g.*, heart rate sensors) and a communication interface (*e.g.*, Bluetooth and/or Wi-Fi circuit), and a second information processing device, including one or more static biometric information acquisition sensors (*e.g.*, Face detection sensor or fingerprint detection sensor), a processor (*e.g.*, CPU), and a second communication interface (*e.g.*, Bluetooth circuit and/or Wi-Fi circuit) that work in conjunction to perform various communications and implement functions such as authentication, biometric tracking, and emergency notification/display (*e.g.*, Detect fall feature, Irregular Heart Rhythm Notification, SOS notification). *See, e.g.*, https://www.samsung.com/us/support/answer/ANS10001579/; https://www.samsung.com/us/support/owners/app/samsung-health; *see also* https://www.samsung.com/us/apps/samsung-health-monitor/; https://www.samsung.com/us/support/answer/ANS10003423/; https://www.samsung.com/us/support/answer/ANS10002904/.

169. For example, the following excerpts provide non-limiting examples of the '228 Accused Products infringing at least claim 1 of the '228 Patent by implementing biometric tracking

and emergency notification functions, such as Detect fall feature, Irregular Heart Rhythm Notification, and/or SOS requests:

## Irregular heart rhythm notifications

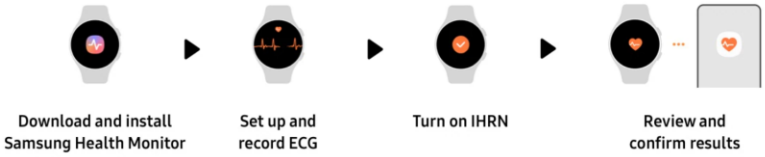
Proactively monitor for irregular heart rhythms suggestive of atrial fibrillation (AFib).[1,2]

## Find a Galaxy Device that fits your needs

https://www.samsung.com/us/apps/samsung-health-monitor/

https://www.samsung.com/us/apps/samsung-health-monitor/

## How do I use ECG with Irregular Heart Rhythm Notification?




https://www.samsung.com/us/apps/samsung-health-monitor/

## Samsung Health

PRIVACY NOTICE
Visit the app store for more information

Google Play Store ↗ Apple App Store ↗

## About Samsung Health

Samsung Health supports over 70 languages, including English, French, and Chinese. An English language version is available for the rest of the world. Please note that Samsung Health is intended for fitness and wellness purposes only and is not intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease. Samsung Health protects your private health data securely and requires all users to to set up 2-step verification process with a password and phone number.

https://www.samsung.com/us/support/owners/app/samsung-health

# Use the Detect fall feature on your Samsung smart watch

Whether you're adventurous and accident-prone or just cautious and safety-conscious, you can get some peace of mind with a **Samsung Galaxy watch**. The Galaxy Watch Active2, Galaxy Watch3, and all Wear OS models include a hard fall detection feature that will send out an SOS if it ever detects a hard fall. With this setting enabled, your emergency contacts can be notified immediately if you fall and need a little help.

https://www.samsung.com/us/support/answer/ANS10003423/

The fall detection feature is not turned on by default on the watch; therefore, you'll need to turn it on manually if you want to use it. It can only be enabled through the Galaxy Wearable app, so make sure the watch is connected first.

1. When you're ready, open the **Galaxy Wearable** app.
2. Next, tap **Watch settings** or **Band settings**, and then tap **Safety and emergency**.
3. Tap the **switch** next to Hard fall detection. If you don't have any emergency contacts listed, you will need to add them for this feature to work.
4. To select what to do when a fall is detected, tap **Hard fall detection**. Tap the **switch** next to Share info with emergency contacts if you want your watch to automatically text your loved ones your location information after a fall. You can also select an emergency call option if you would like.

https://www.samsung.com/us/support/answer/ANS10003423/

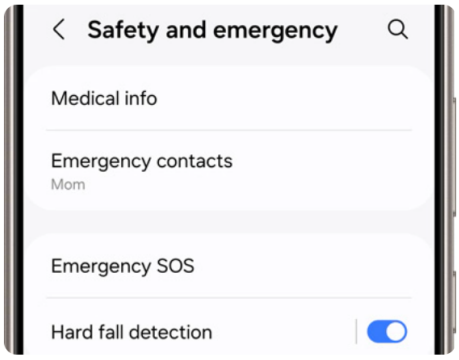
# Use your Samsung smart watch in an emergency situation

It's best to always be prepared. If you ever need emergency assistance, your Samsung smart watch has features capable of helping, such as fall detection and SOS messages. Hopefully, you'll never find yourself in a real crisis, but if you do, you can send SOS messages to assigned contacts to let them know where you are and how to track you down. In the event you need medical assistance, your medical information can be quickly accessed to help first responders. Review the information below to learn about using your Samsung smart watch in emergency situations.

https://www.samsung.com/us/support/answer/ANS10002904/

You can easily enable SOS features on your Galaxy Watch7, Watch Ultra, or Fit3.

Navigate to and open the **Galaxy Wearable** app on your connected phone, and tap **Watch settings** or **Band settings**. Swipe to and tap **Safety and emergency**. From here you can add your Medical info, select Emergency contacts, adjust Emergency SOS settings, and enable Hard fall detection.




- **Medical info**: This is where you can enter your name and any conditions or allergies you may have, what medications you're taking, your blood type, notes, and more.
- **Emergency contacts**: You can select your closest contacts here. These are the people who will be contacted if you begin emergency sharing.
- **Emergency SOS**: Tap this to adjust your emergency settings. You can enable the swipe to call option, select which emergency number to contact, and turn on info sharing with emergency contacts.
- **Hard fall detection**: From here you can enable hard fall detection, turn on the option to require a swipe before calling an emergency number, select when to detect falls, what emergency number to contact, whether to play a warning sound, and share info with emergency contacts.

https://www.samsung.com/us/support/answer/ANS10002904/

## Use your Galaxy phone or tablet in emergency situations

In a critical situation, your **Galaxy phone** or **tablet** can make all the difference. You can use it to make emergency calls or contact loved ones in a time of need. And if you have to act quickly, you can dial right from the Lock screen. Even your medical information can be righ at your fingertips. Plus, your device can help keep you safe by silencing notifications while you're driving and alerting you to potentially dangerous situations, such as earthquakes and unknown Bluetooth trackers.

https://www.samsung.com/us/support/answer/ANS10001579/

170. The foregoing features and capabilities of each of the '228 Accused Products and Samsung's description and/or demonstration thereof, including in user manuals and advertising, reflect Samsung's direct infringement by satisfying every element of at least claim 1 of the '228 Patent under 35 U.S.C. § 271(a).

171. Samsung has indirectly infringed at least claim 1 of the '228 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the '228 Accused Products. Samsung's customers who purchase devices and components thereof and operate such devices and components in accordance with Samsung's instructions directly infringe one or more claims of the '228 Patent in violation of 35 U.S.C. § 271. Samsung instructs its customers through at least user guides or websites, such as those located at:

https://www.samsung.com/us/support/answer/ANS10001579/;

https://www.samsung.com/us/support/owners/app/samsung-health; *see also*

https://www.samsung.com/us/apps/samsung-health-monitor/;

https://www.samsung.com/us/support/answer/ANS10003423/;

https://www.samsung.com/us/support/answer/ANS10002904/.

172. For example, as shown above, Samsung instructs its customers to "Set up and record an ECG with your Galaxy Watch," "Use the Detect fall feature on your Samsung smart watch," "Use your Samsung smart watch in an emergency situation," and "Use your Galaxy phone or tablet in emergency situations." *See* https://www.samsung.com/us/support/answer/ANS10001579/; *see also* https://www.samsung.com/us/apps/samsung-health-monitor/; https://www.samsung.com/us/support/answer/ANS10003423/; https://www.samsung.com/us/support/answer/ANS10002904/.

173. Samsung is thereby liable for infringement of the '228 Patent pursuant to 35 U.S.C. § 271(b). Samsung has indirectly infringed at least claim 1 of the '228 Patent by, among other things, contributing to the direct infringement of others, including customers of the '228 Accused Products by making, offering to sell, or selling in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the '228 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

174. For example, the '228 Accused Products each include hardware and software for implementing various biometric tracking and emergency notification functions, such as Detect fall feature, Irregular Heart Rhythm Notification, and/or SOS requests. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, these components are a material part of the invention and, upon information and belief, are not a staple article or commodity of commerce suitable for substantial non-

infringing use. Thus, Samsung is liable for infringement of the ’228 Patent pursuant to 35 U.S.C. § 271(c).

175. Samsung has been on notice of the ’228 Patent since at least, July 7, 2021, based on correspondence directed to Mr. I. Lee of SEC from Mr. T. Yamamoto of Maxell. *See* Letter from T. Yamamoto to I. Lee dated July 7, 2021. *See* Exhibit 5. This correspondence sets forth Maxell’s belief that Samsung makes, uses, sells, offers to sell, or imports products that infringe certain of Maxell’s patents and specifically identified the claims of the ’228 Patent and exemplary accused products for that patent. By the time of trial, Samsung will thus have known and intended (since receiving this notice) that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the ’228 Patent.

176. Samsung undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the ’228 Patent, which has been duly issued by the USPTO and is presumed valid. For example, since at least July 7, 2021, Samsung has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the ’228 Patent and that the ’228 Patent is valid. On information and belief, Samsung could not reasonably, subjectively believe that its actions do not constitute infringement of the ’228 Patent nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief and the objectively high likelihood that its actions constitute infringement, Samsung continued its infringing activities. As such, Samsung has willfully infringed and continues to willfully infringe the ’228 Patent.

177. Maxell has been and continues to be damaged by Samsung’s infringement of the ’228 Patent.

**COUNT 9 - INFRINGEMENT OF U.S. PATENT NO. 10,812,646**

178. Maxell incorporates paragraphs 1-177 above by reference.

179. U.S. Patent No. 10,812,646 (the "'646 Patent," attached hereto as Exhibit 12) duly issued on October 20, 2020 and is entitled *Portable terminal apparatus*.

180. Maxell is the owner by assignment of the '646 Patent and possesses all rights under the '646 Patent, including the exclusive right to recover for past and future infringement.

181. The '646 Patent is directed to a portable terminal apparatus described to include a display, an operation input interface for user inputs, a wireless communication interface for wireless LAN communication, and a processor to manage state transitions to and from a sleep state and various display modes. The display modes include: a first mode, where a screen for authentication to unlock is shown without a control icon when waking from sleep if no control screen for an external device was displayed before sleep; a second mode, where the same screen is shown without a control icon if the wireless interface cannot communicate with the external device and the control screen was displayed before sleep; and a third mode, where both a control icon and the authentication screen are shown if the wireless interface can communicate with the external device and the control screen was displayed before sleep. The control screen allows for remote control of the external device based on user inputs and, in the third mode, selecting the control icon without unlocking sends a remote control signal to the external device.

182. Samsung has directly infringed one or more claims of the '646 Patent in this District and elsewhere in Texas, including at least claims 1-8 literally and/or under the doctrine of equivalents by or through making, using, importing, offering for sale, and/or selling its consumer electronic devices, including at least Samsung products having materially similar functionality while implementing one or more of Samsung Music application, Samsung TV application, Netflix

application, Casting functions, and/or any additional application that, upon information and belief, can implement a plurality of display modes, including displaying control icons on locked screen to communicate with an external device.

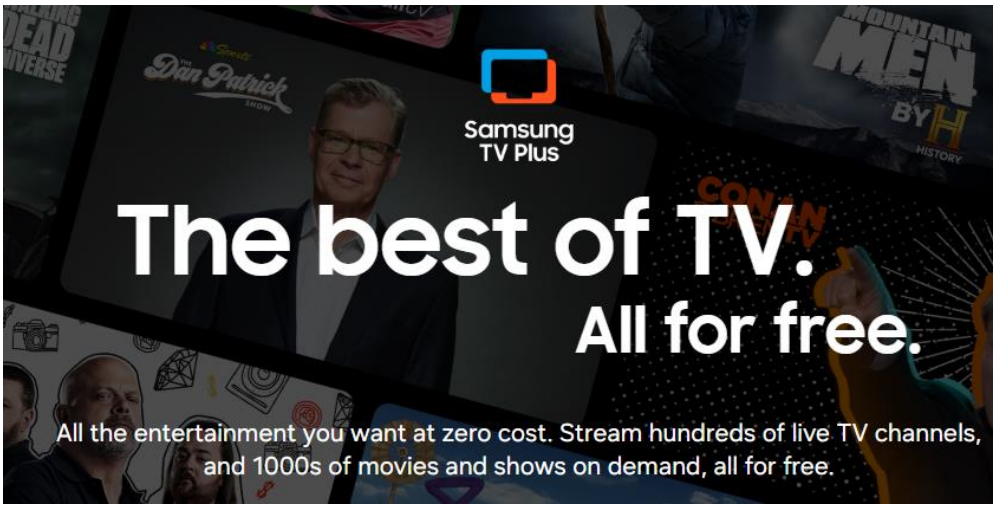
183. For example, Samsung has literally and/or under the doctrine of equivalents directly infringed at least claims 1-8 of the ’646 Patent in this District and elsewhere in Texas by or through making, using, importing, offering for sale, and/or selling at least the following: **smartphones**, including the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A36 5G, Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10 5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S25, Galaxy S25+, Galaxy S25 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6

Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy Z Fold6, Galaxy A15 5G, Galaxy A25 5G, Galaxy A35 5G, Galaxy Z Fold6, and Galaxy Z Flip6; **tablets**, including Galaxy Tab Active Pro, Galaxy Tab Active3, Galaxy Tab Active4 Pro, Galaxy Tab S5e, Galaxy Tab S6, Galaxy Tab S6 5G, Galaxy Tab S7, Galaxy Tab S7+, Galaxy Tab S8, Galaxy Tab S8 Ultra, Galaxy Tab S8+, Galaxy Tab S9, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S9 Ultra, Galaxy Tab S9+, Galaxy Tab A9+ 5G, Galaxy Tab Active5 5G, Galaxy Tab S10 Ultra, Galaxy Tab S10+, Galaxy Tab S10 FE+, Galaxy Tab S10 FE; and other Samsung devices with Smart View, Samsung Music application, Samsung TV application, Netflix application, and/or Casting function (collectively, "the '646 Accused Products"). Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '646 Accused Products are identified to describe Samsung's infringement and in no way limit the discovery and infringement allegations against Samsung concerning other devices that incorporate the same or reasonably similar functionalities.

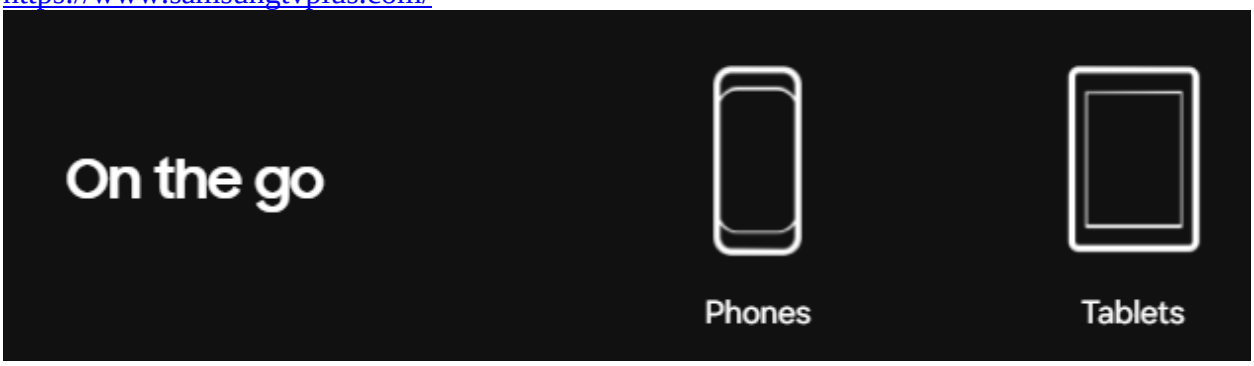
184. Each of the '646 Accused Products includes a display, an operating input interface (*e.g.*, touch screen), a wireless communication interface (*e.g.*, Wi-Fi circuit), and a processor (*e.g.*, CPU) that work in conjunction to implement a first, second, and third display modes when executing one or more applications or functions, such as Samsung Music application, Samsung TV application, Netflix application, and Casting functions. For example, upon information and belief, each of the '646 Accused Products are sold with Samsung Music, Samsung TV, and Netflix application that implement the claimed display modes. *See* https://www.samsung.com/us/support/owners/app/samsung-music; *see also* https://techcrunch.com/2020/02/13/netflix-fends-off-new-streaming-rivals-by-way-of-samsung-

partnership/?guccounter=1#:~:text=At%20Samsung's%20Unpacked%20event%20this,streaming%20service%20with%20Samsung%20devices; and/or https://www.samsungtvplus.com/.

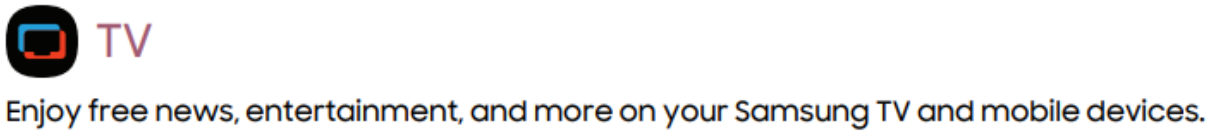
185. For example, the following excerpts from Samsung's websites provide non-limiting examples of the '646 Accused Products infringing at least claims 1-8 of the '646 Patent:




https://www.samsungtvplus.com/



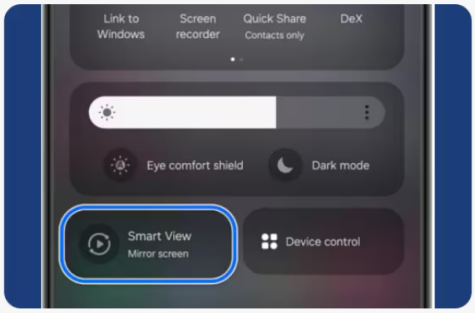

https://www.samsungtvplus.com/




https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf

# How to connect mobile device and TV with Smart View

Last Update date : Sep 28. 2024




## Troubleshooting

If your Galaxy device displays a message that the S Pen is disconnected, you need to check some external factors that may be interfering with the function of the S Pen. Magnetic phone cases or covers, old software versions, or Air Action settings could be the cause of the disruption. Follow the guide below to troubleshoot the S Pen connection issues you are experiencing.

https://www.samsung.com/latin_en/support/tv-audio-video/how-to-connect-mobile-device-and-tv-with-smart-view/

**Make a big statement by projecting photos or videos from your phone or tablet onto your TV. You can also do the opposite and stream your TV to your phone's or tablet's screen!**

1. Open the Quick settings panel by swiping down from the top of the screen using two fingers. Tap Smart View.
2. Tap your TV from the list of Available devices, and then tap Start now. If prompted, enter a PIN or allow access to complete the connectior
3. Your device's screen will now appear on the TV.
4. If you want to stream the TV's screen to your phone or tablet, you can do just that if the TV supports it. Navigate back to the Smart View main page, tap Other device → Phone, and then select your TV.
5. To switch back, tap Phone → Other device.

https://www.samsung.com/latin_en/support/tv-audio-video/how-to-connect-mobile-device-and-tv-with-smart-view/

186. The foregoing features and capabilities of the ’646 Accused Products and Samsung’s description and/or demonstration thereof, including in user manuals and advertising, reflect Samsung’s direct infringement by satisfying every element of at least claims 1-8 of the ’646 Patent under 35 U.S.C. § 271(a).

187. Samsung has indirectly infringed at least claims 1-8 of the ’646 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use,

offering for sale, selling, or importation of at least the '646 Accused Products. Samsung's customers who purchase devices and components thereof and operate such devices and components in accordance with Samsung's instructions directly infringe one or more claims of the '646 Patent in violation of 35 U.S.C. § 271. Samsung instructs its customers through at least user guides or websites, such as those located at: https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf; https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf; *see also* https://www.samsungtvplus.com/.

188. For example, as shown above, Samsung instructs its customers to "Enjoy free news, entertainment, and more on your Samsung TV an mobile devices." *See* https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf; https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf; *see also* https://www.samsungtvplus.com/; https://www.samsung.com/us/support/owners/app/samsung-music.

189. Samsung is thereby liable for infringement of the '646 Patent pursuant to 35 U.S.C. § 271(b). Samsung has indirectly infringed at least claims 1-8 of the '646 Patent by, among other things, contributing to the direct infringement of others, including customers of the '646 Accused Products by making, offering to sell, or selling in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented

process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in infringement of the ’646 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

190. For example, the ’646 Accused Products each include hardware and software for having Smart View, Samsung Music application, Samsung TV application, Netflix application, and Casting functions for implementing three display modes. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, these components are a material part of the invention and, upon information and belief, are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Samsung is liable for infringement of the ’646 Patent pursuant to 35 U.S.C. § 271(c).

191. Samsung has been on notice of the ’646 Patent since at least, July 7, 2021 based on correspondence directed to Mr. I. Lee of SEC from Mr. T. Yamamoto of Maxell. *See* Letter from T. Yamamoto to I. Lee dated July 7, 2021. *See* Exhibit 5. This correspondence sets forth Maxell’s belief that Samsung makes, uses, sells, offers to sell, or imports products that infringe certain of Maxell’s patents and specifically identified the allowed patent application that issued as the ’646 Patent, as well as exemplary allowed claims and exemplary accused products for that patent. By the time of trial, Samsung will thus have known and intended (since receiving this notice) that its continued actions would actively induce and contribute to actual infringement of at least claims 1-8 of the ’646 Patent.

192. Samsung undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the ’646 Patent, which has been duly issued by the USPTO and is presumed valid. For example, since at least July 7, 2021, Samsung has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of

the ’646 Patent and that the ’646 Patent is valid. On information and belief, Samsung could not reasonably, subjectively believe that its actions do not constitute infringement of the ’646 Patent nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief and the objectively high likelihood that its actions constitute infringement, Samsung continued its infringing activities. As such, Samsung has willfully infringed and continues to willfully infringe the ’646 Patent.

193. Maxell has been and continues to be damaged by Samsung’s infringement of the ’646 Patent.

**COUNT 10 - INFRINGEMENT OF U.S. PATENT NO. 12,160,681**

194. Maxell incorporates paragraphs 1-193 above by reference.

195. U.S. Patent No. 12,160,681 (the “’681 Patent,” attached hereto as Exhibit 13) duly issued on December 3, 2024 and is entitled *Video transmitter apparatus and video receiver apparatus*.

196. Maxell is the owner by assignment of the ’681 Patent and possesses all rights under the ’681 Patent, including the exclusive right to recover for past and future infringement.

197. The ’681 Patent is directed to a video transmitting apparatus that includes wireless communication circuitry to connect and communicate with a display apparatus, audio/video signal generation circuitry to create an audio/video signal stream, a memory, and control circuitry to manage these components. Upon establishing a new connection with the display apparatus, the control circuitry sends a first request message with a first number and receives capability information from the display apparatus, which is stored in the memory. Based on this capability information, the control circuitry determines parameters for the audio/video signal stream and directs the audio/video signal generation circuitry to produce the stream accordingly. The

generated stream is then transmitted to the display apparatus. Additionally, when a predetermined condition is met, the control circuitry sends a second request message with a second number, which is different from the first number and is generated by incrementing the first number by an arbitrary value.

198. Samsung has directly infringed one or more claims of the '681 Patent in this District and elsewhere in Texas, including at least claim 1 literally and/or under the doctrine of equivalents, by or through making, using, importing, offering for sale, and/or selling its consumer electronic devices, including at least Samsung products having materially similar functionality while implementing one or more of Smart View, Samsung TV application, Netflix application, and/or any additional application that, upon information and belief, can use Wi-Fi Direct communications to perform screen mirroring. *See* https://www.samsung.com/us/support/answer/ANS10001896/.

199. For example, Samsung has literally and/or under the doctrine of equivalents directly infringed at least claim 1 of the '681 Patent in this District and elsewhere in Texas by or through making, using, importing, offering for sale, and/or selling at least the following: **smartphones**, including the Galaxy A Quantum, Galaxy A03s, Galaxy A04s, Galaxy A10s, Galaxy A11, Galaxy A12, Galaxy A12s (aka Nacho), Galaxy A13, Galaxy A13 5G, Galaxy A14, Galaxy A14 5G, Galaxy A20, Galaxy A20e, Galaxy A20s, Galaxy A21, Galaxy A21s, Galaxy A22, Galaxy A22s 5G, Galaxy A23, Galaxy A23 5G, Galaxy A24 4G, Galaxy A30, Galaxy A30s, Galaxy A32, Galaxy A32 5G, Galaxy A33 5G, Galaxy A34, Galaxy A36 5G, Galaxy A40, Galaxy A42 5G, Galaxy A50, Galaxy A50s, Galaxy A51, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A52, Galaxy A52 5G, Galaxy A53 5G, Galaxy A54 5G, Galaxy A60, Galaxy A70, Galaxy A70s, Galaxy A71, Galaxy A71 5G, Galaxy A71 5G UW, Galaxy A72, Galaxy A73 5G, Galaxy A8, Galaxy A8+, Galaxy A80, Galaxy A90 5G, Galaxy Fold, Galaxy Fold 5G, Galaxy Note10, Galaxy Note10

5G, Galaxy Note10 Lite, Galaxy Note10+, Galaxy Note10+ 5G, Galaxy Note20, Galaxy Note20 5G, Galaxy Note20 Ultra, Galaxy Note20 Ultra 5G, Galaxy Note9, Galaxy S10, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10+, Galaxy S10e, Galaxy S20, Galaxy S20 5G, Galaxy S205G UW, Galaxy S20 FE, Galaxy S20 FE 5G, Galaxy S20 Ultra, Galaxy S20 Ultra 5G, Galaxy S20+, Galaxy S20+ 5G, Galaxy S21 5G, Galaxy S21 FE 5G, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S22 5G, Galaxy S22 Ultra 5G, Galaxy S22+ 5G, Galaxy S23, Galaxy S23 FE, Galaxy S23 Ultra, Galaxy S23+, Galaxy S24, Galaxy S24+, Galaxy S24 Ultra, Galaxy S25, Galaxy S25+, Galaxy S25 Ultra, Galaxy S9, Galaxy S9+, Galaxy Xcover FieldPro, Galaxy Xcover Pro, Galaxy Xcover6 Pro, Galaxy Z Flip, Galaxy Z Flip 5G, Galaxy Z Flip3 5G, Galaxy Z Flip4, Galaxy Z Flip5, Galaxy Z Flip6, Galaxy Z Fold2 5G, Galaxy Z Fold3 5G, Galaxy Z Fold4, Galaxy Z Fold5, Galaxy Z Fold6, Galaxy A15 5G, Galaxy A25 5G, Galaxy A35 5G, Galaxy Z Fold6, and Galaxy Z Flip6; **tablets**, including Galaxy Tab Active Pro, Galaxy Tab Active3, Galaxy Tab Active4 Pro, Galaxy Tab S5e, Galaxy Tab S6, Galaxy Tab S6 5G, Galaxy Tab S7, Galaxy Tab S7+, Galaxy Tab S8, Galaxy Tab S8 Ultra, Galaxy Tab S8+, Galaxy Tab S9, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S9 Ultra, Galaxy Tab S9+, Galaxy Tab A9+ 5G, Galaxy Tab Active5 5G, Galaxy Tab S10 Ultra, Galaxy Tab S10+, Galaxy Tab S10 FE+, Galaxy Tab S10 FE; and other Samsung devices with Smart View, Samsung TV application, Netflix application, and/or Screen Mirroring function (collectively, "the '681 Accused Products"). Maxell reserves the right to discover and pursue any additional infringing devices that incorporate infringing functionalities. For the avoidance of doubt, the '681 Accused Products are identified to describe Samsung's infringement and in no way limit the discovery and infringement allegations against Samsung concerning other devices that incorporate the same or reasonably similar functionalities.

200. Each of the ’681 Accused Products includes a wireless communication circuity (*e.g.*, Wi-Fi circuit), audio/video signal generation circuits (*e.g.*, display signal processor and/or image signal processer), memory (*e.g.*, storage), and control circuitry (*e.g.*, CPU) that work in conjunction to use Wi-Fi Direct communications and perform screen mirroring. *See* https://www.samsung.com/us/support/answer/ANS10001896/; *see also* https://www.samsung.com/latin_en/support/tv-audio-video/how-to-connect-mobile-device-and-tv-with-smart-view/; https://techcrunch.com/2020/02/13/netflix-fends-off-new-streaming-rivals-by-way-of-samsung-partnership/?guccounter=1#:~:text=At%20Samsung's%20Unpacked%20event%20this,streaming%20service%20with%20Samsung%20devices; and/or https://www.samsungtvplus.com/.

201. For example, the following excerpts from Samsung’s websites provide non-limiting examples of the ’681 Accused Products infringing at least claim 1 of the ’681 Patent:

**Screen mirroring to your Samsung TV**

With compatible Samsung devices, you can share your content on the big screen! Rather than sending a stunning photo you recently took to a house full of people, just put it up on the TV and show everyone at once. The possibilities don’t end there. You can also cast videos, presentations, and even games onto a larger screen. View our website to see which compatible **Samsung TVs** and **Smart Monitors** are available.

https://www.samsung.com/us/support/answer/ANS10001896/

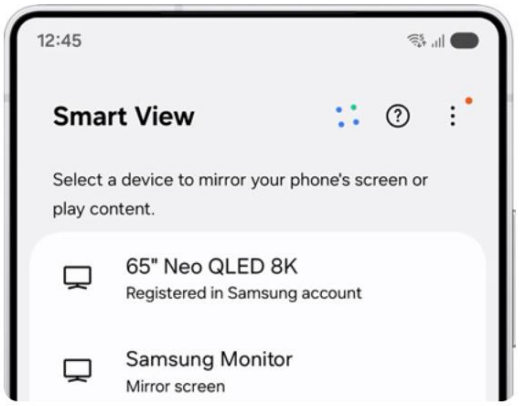
## What is screen mirroring?

Screen mirroring lets you mirror your phone's screen to a bigger screen, like a Smart TV. Exactly what's showing on your phone will appear on the TV, whether it's an app, a photo, or a video. Whenever you do something on your phone (like navigating to a different app), that action will also be shown on the other screen as well.

On Galaxy devices the screen mirroring feature is called **Smart View**. You can easily mirror your screen with Smart View by just tapping the Smart View icon and performing a few simple steps.

For iPhones, the screen mirroring feature is called AirPlay, and it does the same exact thing - mirror images, videos, or other media. **Using AirPlay** is similar, but a little different from using Smart View.

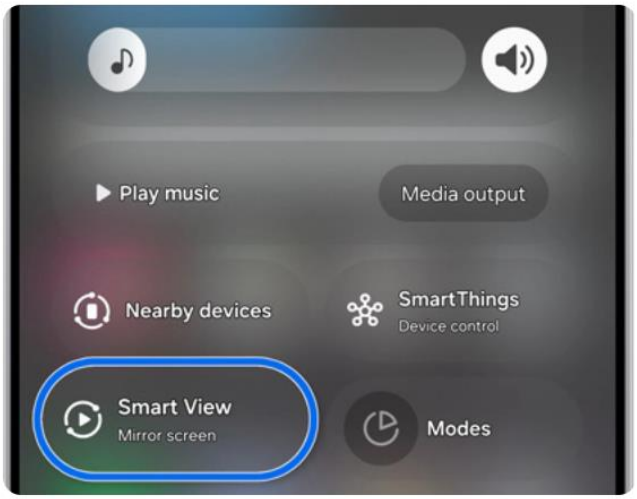
No matter which one you have, it's a great way to share videos, photos, or other things on your phone right on your Smart TV.




https://www.samsung.com/us/support/answer/ANS10001896/

Make a big statement by projecting photos or videos from your phone or tablet onto your TV. You can also do the opposite and stream your TV to your phone or tablet's screen!

1 Open the Quick settings panel by swiping down from the top right of the screen. Tap **Smart View**.




2 Select your TV from the list of Available devices, and then tap **Start now**. If prompted, enter a PIN or allow access to complete the connection.

3 Your device's screen will now appear on the TV.

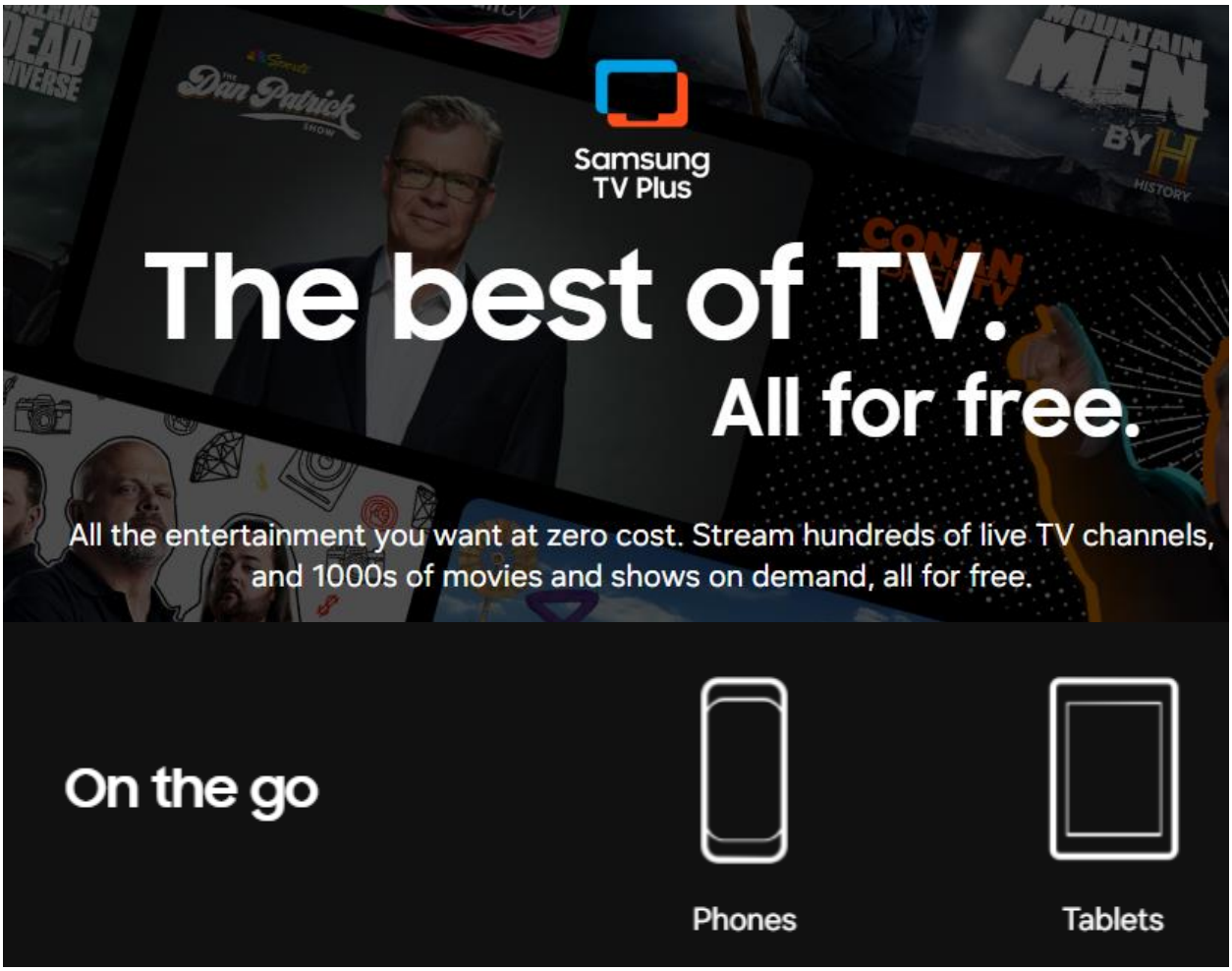
https://www.samsung.com/us/support/answer/ANS10001896/

4 If you want to stream the TV's screen to your phone or tablet, you can do just that if the TV supports it. Navigate back to the Smart View main page, tap **Other device** → **Phone**, and then select your TV.

5 To switch back, tap **Phone** → **Other device**.

When you are done using Smart View, tap the **Smart View** icon on your phone, and then tap **Disconnect**. If you need help editing the icons in the Quick settings panel, check out our **guide**.

https://www.samsung.com/us/support/answer/ANS10001896/




https://www.samsungtvplus.com/

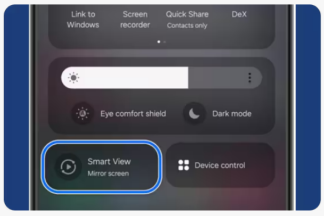
TV

Enjoy free news, entertainment, and more on your Samsung TV and mobile devices.

https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf

# How to connect mobile device and TV with Smart View

Last Update date : Sep 28, 2024




## Troubleshooting

If your Galaxy device displays a message that the S Pen is disconnected, you need to check some external factors that may be interfering with the function of the S Pen. Magnetic phone cases or covers, old software versions, or Air Action settings could be the cause of the disruption. Follow the guide below to troubleshoot the S Pen connection issues you are experiencing.

https://www.samsung.com/latin_en/support/tv-audio-video/how-to-connect-mobile-device-and-tv-with-smart-view/

**Make a big statement by projecting photos or videos from your phone or tablet onto your TV. You can also do the opposite and stream your TV to your phone's or tablet's screen!**

1. Open the Quick settings panel by swiping down from the top of the screen using two fingers. Tap Smart View.
2. Tap your TV from the list of Available devices, and then tap Start now. If prompted, enter a PIN or allow access to complete the connection
3. Your device's screen will now appear on the TV.
4. If you want to stream the TV's screen to your phone or tablet, you can do just that if the TV supports it. Navigate back to the Smart View main page, tap Other device → Phone, and then select your TV.
5. To switch back, tap Phone → Other device.

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202. The foregoing features and capabilities of the ’681 Accused Products and Samsung’s description and/or demonstration thereof, including in user manuals and advertising, reflect Samsung’s direct infringement by satisfying every element of at least claim 1 of the ’681 Patent under 35 U.S.C. § 271(a).

203. Samsung has indirectly infringed at least claim 1 of the ’681 Patent in this District and elsewhere in the United States by, among other things, actively inducing the use, offering for sale, selling, or importation of at least the ’681 Accused Products. Samsung’s customers who

purchase devices and components thereof and operate such devices and components in accordance with Samsung's instructions directly infringe one or more claims of the '681 Patent in violation of 35 U.S.C. § 271. Samsung instructs its customers through at least user guides or websites, such as those located at:

https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf; https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf; *see also* https://www.samsung.com/us/support/answer/ANS10001896/.

204. For example, as shown above, Samsung instructs its customers that "Rather than sending a stunning photo you recently took to a house full of people, just put it up on the TV and show everyone at once." *See* https://downloadcenter.samsung.com/content/UM/202302/20230207045923682/SAM_S911_S916_S918_EN_UM_OS13_020223_FINAL.pdf; https://downloadcenter.samsung.com/content/UM/202502/20250222041039901/SAM_S931_S936_S938_EN_UG_OS15_012425_FINAL_AC_02072025.pdf; *see also* https://www.samsungtvplus.com/; https://www.samsung.com/us/support/answer/ANS10001896/.

205. Samsung is thereby liable for infringement of the '681 Patent pursuant to 35 U.S.C. § 271(b). Samsung has indirectly infringed at least claim 1 of the '681 Patent by, among other things, contributing to the direct infringement of others, including customers of the '681 Accused Products by making, offering to sell, or selling in the United States, or importing a component of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or

especially adapted for use in infringement of the ’681 Patent, and not a staple article or commodity of commerce suitable for substantial non-infringing use.

206. For example, the ’681 Accused Products each include hardware and software for having Screen mirroring, Smart View, Samsung TV application, and/or Netflix application, each of which use Wi-Fi Direct to perform screen mirroring. These are components of a patented machine, manufacture, or combination, or an apparatus for use in practicing a patented process. Furthermore, these components are a material part of the invention and, upon information and belief, are not a staple article or commodity of commerce suitable for substantial non-infringing use. Thus, Samsung is liable for infringement of the ’681 Patent pursuant to 35 U.S.C. § 271(c).

207. Samsung has been on notice of the ’681 Patent since at least November 28, 2024, based on correspondence directed to Mr. H. Lee of SEC from Mr. T. Yamamoto of Maxell. *See* Exhibit 14. This correspondence sets forth Maxell’s belief that Samsung makes, uses, sells, offers to sell, or imports products that infringe certain of Maxell’s patents and specifically identified the allowed patent application that issued as the ’681 Patent, as well as exemplary allowed claims and exemplary accused products for that patent. By the time of trial, Samsung will thus have known and intended (since receiving this notice) that its continued actions would actively induce and contribute to actual infringement of at least claim 1 of the ’681 Patent

208. Samsung undertook and continued its infringing actions despite an objectively high likelihood that such activities infringed the ’681 Patent, which has been duly issued by the USPTO and is presumed valid. For example, since at least November 28, 2024, Samsung has been aware of an objectively high likelihood that its actions constituted and continue to constitute infringement of the ’681 Patent and that the ’681 Patent is valid. On information and belief, Samsung could not reasonably, subjectively believe that its actions do not constitute infringement of the ’681 Patent

nor could it reasonably, subjectively believe that the patent is invalid. Despite that knowledge and subjective belief and the objectively high likelihood that its actions constitute infringement, Samsung continued its infringing activities. As such, Samsung has willfully infringed and continues to willfully infringe the ’681 Patent.

209. Maxell has been and continues to be damaged by Samsung’s infringement of the ’681 Patent.

## PRAYER FOR RELIEF

WHEREFORE, Maxell prays for relief as follows:

210. A judgment declaring that Samsung has infringed and is infringing one or more claims of the ’088, ’650, ’417, ’198, ’091, ’645, ’950, ’228, ’646, and ’681 Patents.

211. A judgment awarding Maxell compensatory damages as a result of Samsung’s infringement of one or more claims of the ’088, ’650, ’417, ’198, ’091, ’645, ’950, ’228, ’646, and ’681 Patents, together with interest and costs, consistent with lost profits and in no event less than a reasonable royalty.

212. A judgment awarding Maxell treble damages and pre-judgment interest under 35 U.S.C. § 284 as a result of Samsung’s willful and deliberate infringement of one or more claims of the ’088, ’650, ’417, ’198, ’091, ’645, ’950, ’228, ’646 and ’681 Patents.

213. A judgment declaring that this case is exceptional and awarding Maxell its expenses, costs, and attorneys’ fees in accordance with 35 U.S.C. §§ 284 and 285 and Rule 54(d) of the Federal Rules of Civil Procedure.

214. A grant of preliminary and permanent injunctions enjoining Defendants from further acts of infringement of one or more claims of the ’088, ’650, ’417, ’198, ’091, ’645, ’950, ’228, ’646, and ’681 Patents.

215. Such other and further relief as the Court deems just and proper.

**JURY TRIAL DEMANDED**

Maxell hereby demands a trial by jury.

Dated: April 21, 2025

By: */s/ Geoffrey Culbertson*

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