

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

COLLISION COMMUNICATIONS, INC.,

Plaintiff,

v.

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

Defendants.

Case No. 2:23-cv-00587

JURY TRIAL DEMANDED

**PLAINTIFF COLLISION COMMUNICATIONS, INC.'S
COMPLAINT FOR PATENT INFRINGEMENT**

Collision Communications, Inc. brings this action for patent infringement under 35 U.S.C. § 271 against Defendants Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “Samsung” or “Defendants”) and alleges as follows:

PARTIES

1. Plaintiff Collision Communications, Inc. (“Collision” or “Plaintiff”) is a Delaware corporation with its principal place of business at 20 Depot St., Suite 2A, Peterborough, New Hampshire 03458. Collision was formed in 2011 and is a telecommunications research and development company that creates and implements proprietary methods for reducing signal interference in networks.

2. On information and belief, Defendant Samsung Electronics Co., Ltd. is a foreign corporation organized and existing under the laws of the Republic of Korea. SEC has a principal place of business located at 129 Samsung-ro, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, 443-742, Republic of Korea.

3. Samsung Electronics Co., Ltd. may be served at least by process under the Hague

Convention.

4. Samsung Electronics Co., Ltd.’s “Information Technology & Mobile Communications” division is responsible for the design, manufacture, and sale of mobile devices, such as smartphones, and related software, applications, and services that operate on cellular networks around the world and in the United States.

5. On information and belief, Defendant Samsung Electronics America, Inc. is a wholly owned subsidiary corporation of Samsung Electronics Co., Ltd. and is organized and existing under the laws of New York with a principal place of business at 85 Challenger Road, Ridgefield Park, New Jersey 07660 and offices and/or other facilities in Texas at least at 6625 Excellence Way, Plano, Texas 75023 and 12100 Samsung Boulevard, Austin, Texas 78754.

6. Samsung Electronics America, Inc. is registered to do business in Texas and has maintained regular and established places of business with offices and/or other facilities in this District at least at 6625 Excellence Way Plano, Texas 75023 and 1301 E. Lookout Drive, Richardson, Texas 75082.

7. Samsung Electronics America, Inc. may be served through its registered agent for service of process, CT Corporation System, 1999 Bryan St., Suite. 900, Dallas, Texas 75201.

8. Defendant Samsung Electronics America, Inc. oversees domestic sales and distribution of Samsung’s consumer electronics products, including the products accused of infringement in this case.

9. Defendants Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc., have acted in concert with respect to the facts alleged herein such that any act of Samsung Electronics Co., Ltd., is attributable to Samsung Electronics America, Inc., and vice versa.

JURISDICTION AND VENUE

10. This action arises under the Patent Act, 35 U.S.C. § 1 *et seq.*

11. Subject matter jurisdiction is proper in this Court under 28 U.S.C. §§ 1331 and 1338(a).

12. This Court has personal jurisdiction over Defendants because each Defendant has sufficient minimum contacts and/or has engaged in continuous and systematic activities in the forum as a result of business conducted within the State of Texas and the Eastern District of Texas. Personal jurisdiction also exists over each Defendant because each, directly or through subsidiaries, makes, uses, sells, offers for sale, imports, advertises, makes available, and/or markets products within the State of Texas and the Eastern District of Texas that infringe one or more claims Asserted Patents. Further, on information and belief, Defendants have placed or contributed to placing infringing products into the stream of commerce knowing or understanding that such products would be sold and used in the United States, including in this District.

13. On information and belief, Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc. also have each derived substantial revenues from infringing acts in the Eastern District of Texas, including from the sale and use of infringing products.

14. Samsung Electronics America, Inc. maintains regular and established offices in the Eastern District of Texas, including at 6625 Excellence Way, Plano, Texas 75023. Further, on information and belief, Samsung Electronics Co., Ltd. directs and controls the actions of Samsung Electronics America, Inc. such that it also maintains regular and established offices in the Eastern District of Texas, including at 6625 Excellence Way, Plano, Texas 75023.

15. The Samsung Plano office includes, for example, its Networks Innovation Center,

which helps Samsung and its partners optimize, test, and showcase advanced network technologies, including 5G technologies.¹ And Samsung's Plano location houses its second-biggest employee population in the US across multiple divisions, including customer care, mobile, mobile research and development, and engineering.²

16. Venue in this District is proper under 28 U.S.C. § 1391(c)(3) and 28 U.S.C. § 1400(b). Samsung maintains a regular and established place of business in this judicial district at 625 Excellence Way, Plano, Texas 75023, and has committed acts of infringement in this district.

17. Samsung Electronics, Co., Ltd. is not a resident of the United States and may be sued in this District because suits against foreign entities are proper in any judicial district where they are subject to personal jurisdiction.

THE ASSERTED PATENTS

18. Collision is the sole owner of, and possesses all rights, interests, and title of U.S. Patents 7,463,703 (the '703 patent), 7,920,651 (the '651 patent), 8,089,946 (the '946 patent), 7,593,492 (the '492 patent), 9,814,071 (the '071 patent), and 6,947,505 (the '505 patent) (collectively, the "Asserted Patents"). These patents are attached to as **Exhibits A–F**, respectively. Each patent is valid and enforceable.

19. Collision began as a product company. The patents-in-suit stem from work at BAE Systems ("BAE"). BAE is a multinational defense, security, and aerospace company, which develops solutions for the British and U.S. Armed Forces. At the time of the inventions at issue in

¹ <https://www.samsung.com/global/business/networks/insights/blog/0613-samsung-networks-innovation-center-opens-its-doors-offering-a-close-look-at-advanced-network-connectivity/>; <https://www.fiercewireless.com/5g/samsung-boosts-n-american-presence-5g-innovation-center-sangam>; <https://telecomtalk.info/samsung-unveils-state-of-the-art-networks/716318/>

² <https://news.samsung.com/us/samsung-electronics-america-open-flagship-north-texas-campus/>

this case, BAE was working on multi-user detection techniques to solve a wide variety of problems in then-existing communications technology. Military communications use cases generally prefer ad hoc and other decentralized communication networks: in the battlefield, a single point of failure is unacceptable. But such networks have their own challenges compared to then-existing traditional communication networks such as increased interference and noise. In a telecommunications network, “noise” is where a device receives interfering signals, such as signals transmitted from base stations as noise. Noise decreases network quality and bandwidth efficiency. The Asserted Patents address how to address this interference to improve overall network efficiency.

20. The Asserted Patents address many of those hurdles, particularly with respect to interference and noise.

21. Collision itself was created with the goal of developing products and software to implement the Asserted Patents’ technology commercially.

22. One potential commercial partner was Samsung. On information and belief, Samsung engaged in discussions with Collision beginning around 2011 regarding Collision’s patented technology and how that technology could form the basis of a business partnership. On information and belief, Samsung received actual notice of the Asserted Patents through those discussions and/or obtained information sufficient that it should have known of or was willfully blinding itself to its current infringement.

23. Additionally, Collision’s patents and related patents have been cited during prosecution of Samsung’s own patent applications. And Collision’s patents are readily available from public sources such as the U.S. Patent Office and Google Patents.

24. The ’703 patent is titled “Joint Symbol, Amplitude, and Rate Estimator.” The claims are drawn to apparatuses for processing digital data streams from multiple users which

follow this general scheme: (1) an initial amplitude estimation unit processes the data stream and producing initial amplitude estimates on a first iteration; (2) a joint amplitude estimator produces updated amplitude estimates; (3) a symbol estimator also produces symbol estimates; and (4) a bank of decoders produces a plurality of symbol likelihood estimates for each user, where those estimates are iteratively fed back to the symbol and joint amplitude estimator. *See generally* '703 patent, claim 1.

25. The '703 patent describes advancements in communications technology and signal processing to provide high quality, real-time processing for multiple access and overloaded systems. Specifically, as communication networks and the wireless sector grew, many users would transmit energy on the same communications channel, making it difficult for receivers to detect information associated with a particular user. *Id.* 1:49–61. The signal of interest could not be received or the quality of its reception would be significantly degraded. *Id.* 1:59–1. Attempts to solve these problems were unsatisfactory: One of the primary disadvantages of prior art implementations was their inability to handle overloaded conditions. *Id.* 5:50–53. Multiuser detection systems emerged, which are able to take full advantage of all information available at the receiver, by making use of any “knowledge” that the receiver has about the interfering signals, to cancel interference. *Id.* 5:58–66. But multiuser detection, too, had challenges: the computations could be complex and time-consuming, making real-time operation impossible. *Id.* 6:45–49; 8:28–35. The inventors thus proposed a system that provided an efficient means for jointly estimating symbols, channel amplitude, and data rate transmitted in a super saturated communications channel. *Id.* 8:42–51. The invention’s approach—where likelihood estimates are iteratively fed back into the symbol and joint amplitude estimator—dramatically reduces the number of computations needed, such that reliable operation can be achieved in a real-time implementation. *Id.* 25:42–54.

And the claim limitations themselves are unconventional, considered both individually and as an ordered combination.

26. The '651 patent, a divisional in the same family as the '703 patent, is also titled "Joint Symbol, Amplitude, and Rate Estimator." Drawn to the same problem in the art, the '651 patent offers a different solution. The invention claimed therein is a joint amplitude estimator that, like the apparatus claimed in the '703 patent, iteratively processes a data stream. But the '651 patent computes a filter that is used to compute individual amplitude estimates. *See generally* '651 patent, claim 1. An analogous method is also claimed. *See id.* at claim 6. As with the '703 patent, the '651 claim limitations themselves are unconventional, considered both individually and as an ordered combination.

27. The '946 patent is titled "Bandwidth Efficient Wireless Network Modem." It is drawn to a modem that provides efficient use of wireless network bandwidth in multi-user interference environments. In the art, multiuser receivers had been attempted but had general deficiencies—in some cases distorting the residual signal and sometimes rendering the signal of interest unrecoverable. '946 patent 3:48–3:3. The '946 patent describes creating a bandwidth-efficient wireless network model that could exploit the channel densities possible with multiuser receivers. *Id.* 3:4–9. Here, too, the claim limitations are unconventional, considered both individually and as an ordered combination.

28. The '492 patent, titled "Combinational Hybrid Turbo-MUD" is generally directed to addressing problems associated with multi-user detection within a multiuser wireless network where noise is present. Existing systems were not able to keep up with real-time transmissions or had poor quality output when there were many users or too much interference. *See, e.g.,* '492 at 4:48–5:4, 6:43–63 (high complexity MUDs might "require too many computations to keep up with

real time transmissions,” while faster, lower- complexity MUDs could have “poor quality output when there are many or strongly correlated interferers or users.”). The inventions of the ’492 patent improve telecommunications technology by using a decision unit to select, for a given situation based on a set of decision criteria, particular MUDs as appropriate. The ’492 claim limitations are also unconventional, considered both individually and as an ordered combination.

29. The ’071 patent is titled “Media Access Control Protocol for Multiuser Detection Enabled Ad-Hoc Wireless Communications.” Shared, multiuser networks allow a plurality of users—or a “node”—to share a common communication medium, reducing costs and improving scalability. But if more than one node tries to transmit at the same time, a “collision” occurs, rendering the transmitted information unintelligible and requiring it to be sent again. ’071 patent 1:37–48. Collisions could be mitigated by managing a shared network, where a central controller or access point manages the use of the shared communication medium, or on an ad hoc basis, where the nodes must negotiate with one another to avoid collisions. *Id.* 1:49–58. But, even with collision mitigation strategies, *id.* 1:65–3:3, these systems are generally limited both because only one node can transmit at a given time and because of the added overhead of the various protocols that can be used to avoid and recover from packet collisions, *id.* 3:4–13. The inventors thus proposed a method that uses multiuser detection technology to let a “plurality of nodes transmit simultaneously over a shared communication channel in a wireless ad hoc digital network.” *Id.* 3:18–21. “The communication capacity of the wireless ad hoc network is thereby increased by up to an order of magnitude or more.” *Id.* 3:21–23. The claims are generally drawn to systems that permit multiple simultaneous transmissions to be decoded by a receiving node simultaneously by separating out parameter-detecting signals into separate unshared channels while allowing data signals to be carried in shared channels. *See generally id.* at claim 1. And the claim limitations of the

'071 patent are unconventional, considered both individually and as an ordered combination.

30. The '505 patent is titled "System For Parameter Estimation and Tracking of Interfering Digitally Modulated Signals." The '505 specification explains that parameter estimation units are able to "derive channel parameters which uniquely distinguish the characteristics of each individual signal regardless of the fact that the signals exist in the same communications bandwidth and at the same instant in time." '505 patent 1:19–25. In reality, however, accurate parameter estimation is difficult in a multiuser environment because of the co-channel multiuser interference and because the received power and phase of a signal vary from burst to burst, making parameter estimation difficult. *Id.* 1:32–41. Conventional parameter estimation also requires a serial approach, creating blanks and blackout periods where simultaneously occurring signals are being ignored and not tracked. *Id.* 1:46–57. To address these issues, the inventors devised a system that could simultaneously track all of the interfering signals in real time by providing ultra-fast parameter estimation:

In order to be able to accommodate multiple interfering signals on the same communication channel in which the signals are purposely allowed to interfere with one another to be able to make maximum utilization of a traffic channel, in the subject invention, initial estimates are made of various parameters utilizing the interference-free received signal on the acquisition channel and the usual traffic channel training sequences which are transmitted to identify each mobile user and to set up timing for the burst transmission from the mobile phone. Thereafter, when a first user or corner exists and is assigned a particular traffic channel, initial parameter values from the acquisition channel are utilized in the tracking of the channel transfer function, including power, multipath structure, timing offset and frequency of this first corner or first signal in the traffic channel.

Thereafter, when a second interfering signal exists on the traffic channel, the system recreates the training sequence portion of every signal on the traffic channel prior to the last signal entering, and subtracts this from the training signal portion of the received signal to provide an interference-free signal from which to calculate estimates of the parameters for a newcomer to the channel. The above

utilizes the training signal portions of the received signals. What this does in essence is to single out the signal of the newcomer.

Having estimates of the various parameters of the newcomer to the channel and assuming that there are two or more interfering signals on the channel, parallel processing is then utilized to isolate each of the signals assigned to the same channel by utilizing the previously described method of recreating then subtracting training sequence portions of the signals. A slightly modified version of the parallel processing portion which utilizes cascaded processing steps is also offered in the event parallel processing is not desirable.

The result is that the system can simultaneously track all of the interfering signals in realtime by providing ultra-fast parameter estimation, with these estimated values utilized by the signal separation algorithm.

Id. 2:8–46. The limitations recited in the claims are also unconventional when considered alone or in an ordered combination.

ALLEGATIONS OF PATENT INFRINGEMENT

A. The Accused Products

31. On information and belief, Samsung makes, uses, sells, offers for sale, and/or imports, in/into the United States, products that implement and practice Collision’s proprietary wireless technologies. On information and belief, Samsung products that provide 4G, 5G and Wi-Fi connectivity infringe at least one claim of the Asserted Patents and comprise the “Accused Products” in this case.³

32. Exemplary Accused Products with 4G capabilities include, but are not limited to:

- Galaxy Z Flip series including Galaxy Z Flip 5, Galaxy Z Flip4, Galaxy Z Flip 3, Galaxy Z Flip; Galaxy Z Fold series including Galaxy Z Fold5, Galaxy Z Fold4, Galaxy ZFold3, Galaxy Z Fold 2, Galaxy Z Fold;

³ The Accused Products include all configuration, colors, sizes, and variations.

- Galaxy A series including Galaxy A80, Galaxy A73 5G, Galaxy A72, Galaxy A71, Galaxy A70s, Galaxy A70, Galaxy A60, Galaxy A54 5G, Galaxy A53 5G, Galaxy A52s 5G, Galaxy A52, Galaxy A51, Galaxy A50, Galaxy A50s, Galaxy A42 5G, Galaxy A42, Galaxy A41, Galaxy A40, Galaxy A34 5G, Galaxy A33 5G, Galaxy A32 5G, Galaxy A32, Galaxy A31, Galaxy A30, Galaxy A30s, Galaxy A23, Galaxy A23 5G, Galaxy A22 5G, Galaxy A22, Galaxy A21, Galaxy A20s, Galaxy A20e, Galaxy A14, Galaxy A14 5G, Galaxy A13, Galaxy A12, Galaxy A11, Galaxy A10e, Galaxy A10s, Galaxy A10, Galaxy A9, Galaxy A9 Pro, Galaxy A8Star, Galaxy A8s, Galaxy A8+, Galaxy A8, Galaxy A7, Galaxy A6, Galaxy A6+, Galaxy A6s, Galaxy A5, Galaxy A3, Galaxy A2core, Galaxy A04e, Galaxy A04s, Galaxy A04, Galaxy A03s, Galaxy A03, Galaxy A02s, Galaxy A02; Galaxy A01;
- Galaxy S Series including Galaxy S6, Galaxy S6 Edge, Galaxy S6 Edge+, Galaxy S6 Active, Galaxy S7, Galaxy S7 Edge, Galaxy S7 Active, Galaxy S8, Galaxy S8+, Galaxy S8 Active, Galaxy S9, Galaxy S9+, Galaxy S10, Galaxy S10+, Galaxy S10 5G, Galaxy S10 Lite, Galaxy S10e, Galaxy S20, Galaxy S20+, Galaxy S20+ BTS Edition, Galaxy S20 Ultra, Galaxy S20 FE, Galaxy S20 Tactical Edition, Galaxy S21, Galaxy S21+, Galaxy S21 Ultra, Galaxy S21 FE, Galaxy S22, Galaxy S22+, Galaxy S22 Ultra, Galaxy S23, Galaxy S23+, and Galaxy S23 Ultra;
- Galaxy M Series including Galaxy M62, Galaxy M51, Galaxy M40, Galaxy M32, Galaxy M31s, Galaxy M31, Galaxy M30s, Galaxy M30, Galaxy

M23, Galaxy M22, Galaxy M21s, Galaxy M21, Galaxy M20, Galaxy M13, Galaxy M12, Galaxy M11, Galaxy M10s, Galaxy M10, Galaxy M04, Galaxy M02s, Galaxy M02, Galaxy M01s, Galaxy M01;

- Galaxy J Series including Galaxy J8, Galaxy J7, Galaxy J6, Galaxy J5, Galaxy J4, Galaxy J3, Galaxy J2;
- Galaxy Note series including Galaxy Note20, Galaxy Note 20 Ultra, Galaxy Note 10+, Galaxy Note 10, Galaxy Note9, Galaxy Note 8, Galaxy Note FE, Galaxy Note 7, Galaxy S6 Edge+, Galaxy Note 5;
- Galaxy Tab series including Galaxy Tab S9, Galaxy Tab S9+, Galaxy Tab 29 Ultra, Galaxy Tab S9 Ultra, Galaxy Tab S8+, Galaxy TabS8 Ultra, Galaxy Tab S8, Galaxy TabS7+, Galaxy TabS7, Galaxy Tab S7 FE, Galaxy Tab S6, Galaxy TabS5e, Galaxy Tab S6 Lite, Galaxy Tab S6 5G, Galaxy Tab S4, Galaxy TabS3, Galaxy Tab S 8.4, Galaxy Tab S 10.5, Galaxy Tab S2 8.0, Galaxy Tab S2 9.7;
- Galaxy Tab A 8.0, Galaxy Tab A 10.5, Galaxy Tab A 10.1, Galaxy Tab A8.4, Galaxy Tab A7, Galaxy Tab A7 Lite, Galaxy TabA8;
- Galaxy Watch series including Galaxy Watch 6, Galaxy Watch 5, Galaxy Watch 4, Galaxy Watch 3, Galaxy Watch Active 2, Galaxy Watch Active, Galaxy Watch;
- Galaxy XCover series including Galaxy XCover 6 Pro, Galaxy XCover5, Galaxy XCover4, Galaxy XCover Pro, Galaxy XCover FieldPro;
- and other Samsung devices with 4G capabilities made, used, offered for sale, or sold by Samsung during the damages period.

33. Exemplary Accused Products with 5G capabilities include, but are not limited to:
- Galaxy Z Fold series including Galaxy Z Fold5, Galaxy Z Fold4, Galaxy Z Fold2 5G, Galaxy Z Fold 5G; Galaxy Z Flip series including Galaxy Z Flip5, Galaxy Z Flip4, Galaxy Z Flip 3 5G, Galaxy Z Flip 5G;
 - Galaxy S series including Galaxy S23 Ultra, Galaxy S23+, Galaxy S22 Ultra, GalaxyS22+, Galaxy S22, Galaxy S21 Ultra 5G, Galaxy S21+ 5G, Galaxy S21, Galaxy S20 FE 5G, Galaxy S20 FE 5G UW, Galaxy S20 Ultra 5G, Galaxy S20+ 5G, Galaxy S20 5G, Galaxy S10 5G;
 - Galaxy Note series including Galaxy Note20 Ultra 5G, Galaxy Note20 5G, Galaxy Note 10+ 5G;
 - Galaxy A series including Galaxy A90 5G, Galaxy A73 5G, A71 5G, Galaxy A71 5G UW, Galaxy A54 5G, Galaxy A53 5G, Galaxy A52s 5G, Galaxy A52 5G, Galaxy A51 5G, Galaxy A51 5G UW, Galaxy A42 5G, Galaxy A34 5G, Galaxy A33 5G, Galaxy A32 5G, Galaxy A24 5G, Galaxy A23 5G, Galaxy A22 5G, Galaxy A14 5G, Galaxy A13 5G;
 - Galaxy Tab series including Galaxy Tab S9+, Galaxy Tab S8+ 5G, Galaxy Tab S8, Galaxy TabS8 Ultra, Galaxy Tab S7 5G, Galaxy Tab S7+ 5G, Galaxy Tab S7 FE 5G, Galaxy Tab 6 5G;
 - Galaxy M Series including Galaxy M54 5G, Galaxy M53 5G, Galaxy M52 5G, Galaxy M42 5G, Galaxy M34 5G, Galaxy M33 5G, Galaxy M32 5G, Galaxy M23 5G, Galaxy M14 5G, Galaxy M13 5G;
 - Galaxy XCover series including Galaxy XCover 6 Pro; and

- and other Samsung devices with 5G capabilities made, used, offered for sale, or sold by Samsung during the damages period.

34. On information and belief, all Samsung Accused Products with Accused 5G Instrumentalities also have Accused 4G Instrumentalities.

35. On information and belief, the Accused Products also include Samsung base stations.⁴

36. Exemplary Wi-Fi Accused Products include, but are not limited to:

- Samsung Wi-Fi mobile devices, including the aforementioned 4G and 5G products, and including the following:
 - Galaxy A52s 5G
 - Galaxy A73 5G
 - Galaxy M52 5G
 - Galaxy Fold
 - Galaxy Fold 5G
 - Galaxy Note 10
 - Galaxy Note 10+
 - Galaxy Note 20
 - Galaxy Note 20 Ultra
 - Galaxy S10e
 - Galaxy S10
 - Galaxy S10+

⁴ <https://www.samsung.com/global/business/networks/insights/blog/persistence-pays-off-for-samsung-networks-in-becoming-a-major-5g-radio-access-network-vendor/>

- Galaxy S10 5G
- Galaxy S20
- Galaxy S20 5G UW
- Galaxy S20+
- Galaxy S20 Ultra
- Galaxy S20 FE (Exynos & Snapdragon 865 versions)
- Galaxy S20 FE 5G
- Galaxy S21
- Galaxy S21+
- Galaxy S21 FE
- Galaxy S22
- Galaxy Tab Active 3
- Galaxy Tab S7
- Galaxy Tab S7+
- Galaxy Xcover FieldPro
- Galaxy Z Flip 5G
- Galaxy Z Flip 3
- Galaxy Z Fold 2
- Galaxy Z Fold 3
- Galaxy A54 5G
- Galaxy S21 Ultra
- Galaxy S22+
- Galaxy S22 Ultra

- Galaxy Tab S8
- Galaxy Tab S8+
- Galaxy Tab S8 Ultra
- Samsung laptops with Wi-Fi features, including but not limited to the following product lines (in all configurations): Galaxy Tab Pro S, Galaxy Book, Galaxy Book S, Galaxy Book Ion, Galaxy Book Ion2, Galaxy Book Pro, Galaxy Book Odyssey, Galaxy Book Go, Galaxy Book2 Pro, Galaxy Book2, Galaxy Book2 360; Galaxy Book2 Pro 360; Galaxy Book2 Pro, Galaxy Book3 360, Galaxy Book3 Pro 360, Galaxy Book3 Pro, Galaxy Book3 Ultra, Galaxy Book3, Samsung Notebook 9, Galaxy Book Flex, Galaxy Book Flex alpha, Galaxy Book Flex2 alpha, Galaxy Book Pro 360;
- Samsung Wi-Fi connected refrigerators, including but not limited to: 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, Be-

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, 6.3 cu. ft.;

- Samsung Wi-Fi connected ranges, including but not limited to: 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-Pre-heat 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 5.3 cu. ft.;

- Samsung Wi-Fi connected washing machines, including but not limited to: 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 Opti-Wash™ 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, 7.5 cu. ft.;

- Samsung Wi-Fi connected dryers, including but not limited to: 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;

- Samsung Wi-Fi connected AirDressers, including but not limited to: 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;

- Samsung Wi-Fi connected Dishwashers, including but not limited to:
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,
- Samsung Wi-Fi connected microwaves, including but not limited to: 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,

- Samsung Wi-Fi connected vacuums, including but not limited to: Jet Bot AI+ Robot Vacuum with Object Recognition, Jet Bot+ Robot Vacuum with Clean Station;
- Samsung Wi-Fi connected televisions, including but not limited to QLED TVs, Neo QLED TVs, OLED TVs, The Frame, The Serif, The Sero, The Terrace, Samsung 8K & 4K TVs, Samsung HD & Full HD TVs, and Samsung Crystal UHD TVs, in all sizes;
- Bluesky Compact Air Purifier, Bespoke Cube Air Purifier;
- and other Samsung devices with Wi-Fi capabilities made, used, offered for sale, or sold by Samsung during the damages period.

37. On information and belief, Samsung 4G and 5G products also have infringing Wi-Fi capabilities.

38. On information and belief, Samsung makes, uses, sells, offers for sale, and/or imports, in/into the United States, routers that implement and practice Collision's wireless technologies, (the "Accused Routers"). Such products include but are not limited to Samsung's SmartThings Wifi.

39. The exemplary products listed in this complaint are nonexhaustive and nonlimiting. Collision's allegations include all Samsung products with the Accused Instrumentalities that infringed spanning the entire damages period of this case.

B. Acts of Patent Infringement

40. Collision incorporates by reference the preceding paragraphs as if fully set forth herein.

41. As set forth below, Samsung's Accused Products incorporate, without any license

from Collision, 4G, 5G, and Wi-Fi technology protected by Collision's Asserted Patents.

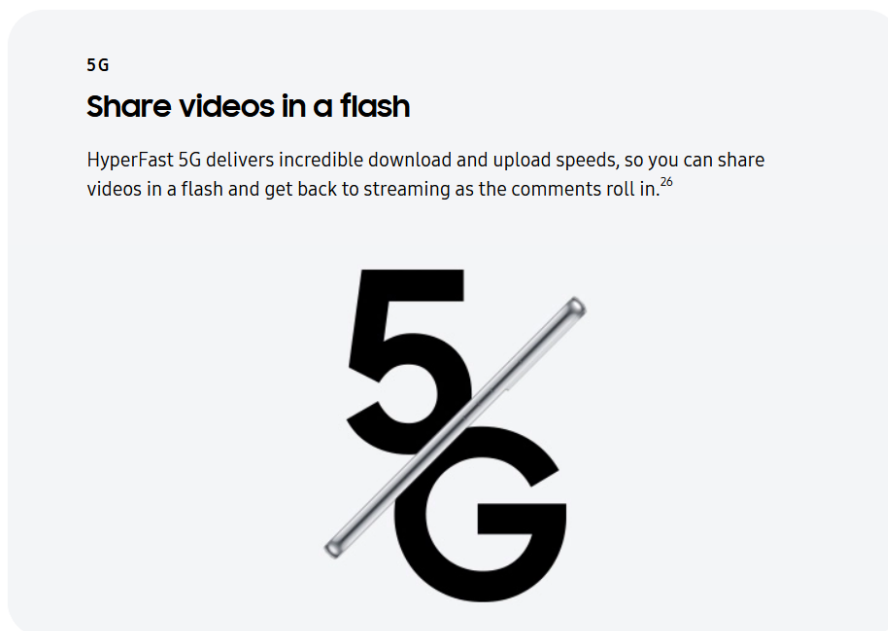
42. Samsung, directly or by controlling the activities of its subsidiaries, has directly infringed, and continues to directly infringe, the Asserted Patents under 35 U.S.C. § 271(a) by making, using, selling and/or offering to sell, in this District and elsewhere in the United States, and/or importing into this District and elsewhere in the United States, one or more of its Accused Products.

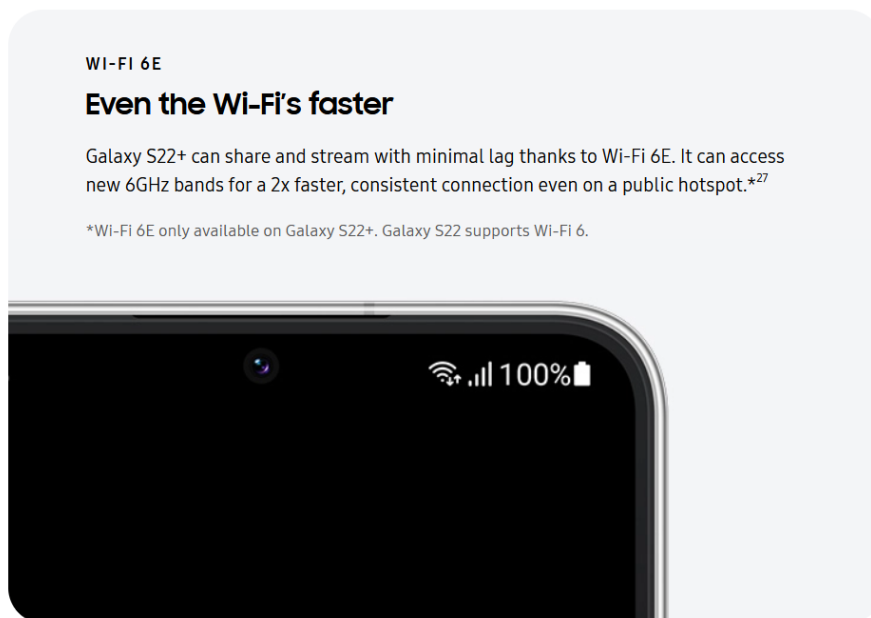
43. For example, Samsung sells, and offers for sale infringing devices to its customers, subsidiaries, distributors, retailers, partners, cell-service providers, and/or end users in the United States.

44. On information and belief, Samsung Electronics USA, Inc. engages in the designing, developing, and manufacturing of the Accused Products sold, used, and offered for sale in the United States. On information and belief, Samsung Electronics USA, Inc. is involved in sales of the Accused Products, as well as the after sales and corporate functions pertaining to the Accused Products.

45. Samsung has indirectly infringed the Asserted Patents under 35 U.S.C. § 271(b) by actively inducing infringement by others, such as its subsidiaries, distributors, retailers, partners, cell-service providers, and end-user customers, by, for example, implementing the infringing features in its cellular and Wi-Fi products, encouraging its users to take advantage of those features within the United States. Because Samsung performed these acts with full knowledge of the Asserted Patents and their infringement thereof, it has specifically intended others, including its subsidiaries, distributors, retailers, partners, cell-service providers, and end-user customers to infringe the Asserted Patents knowing its subsidiaries, distributors, retailers, partners, cell-service providers, and end-user customers' acts constitute infringement.

46. For example, Samsung's advertising, sales, and/or technical materials related to the Accused Products contained and continue to contain instructions, directions, suggestions, and/or invitations that invite, entice, lead on, influence, encourage, prevail on, move by persuasion, and/or cause its subsidiaries, distributors, retailers, partners, cell-service providers, and end-user customers to directly infringe at least one claim of each of the Asserted Patents, either literally or under the doctrine of equivalents. Samsung's activities also encourage Samsung's subsidiaries, distributors, retailers, partners, cell-service providers, and end-user customers to use features that infringe Collision's Asserted Patents. By way of example, Samsung's website expressly highlights the 5G and Wi-Fi functionality within its Galaxy S22 and S22+ Accused Products:





<https://www.samsung.com/us/smartphones/galaxy-s22/>. By way of another example, Samsung also expressly highlights its smart TV functionality and its TVs' ability to connect wirelessly. See <https://www.samsung.com/us/tvs/tv-buying-guide/what-is-smart-tv/>.

47. On information and belief, Samsung has provided technical documentation and training materials to its subsidiaries, distributors, retailers, partners, cell-service providers, and end-user customers, and the public that cause end users of the Accused Products to utilize the products in a manner that directly infringe on one or more claims of the Asserted Patents, and engaged in such inducement to promote the sales of the Accused Products (i.e. through user manuals, product support, marketing materials, technical materials, and training materials) to actively induce the end users of the Accused Products to infringe the Asserted Patents.

48. Further, Samsung has made, used, sold, offered to sell, imported and/or encouraged the making, using, selling, offering to sell, or importing of the Accused Products despite knowing of an objectively high likelihood that its actions constituted infringement of the Asserted Patents at all times relevant to this suit.

49. Collision engaged in discussions with Samsung that, *inter alia*, constitute notice of the Asserted Patents and Samsung's infringement in 2011.

50. For the reasons described above, Samsung's infringement of the Asserted Patents has been willful and egregious.

51. Samsung's acts of infringement have caused damage to Collision, and Collision is entitled to recover damages incurred as a result of Samsung's wrongful acts.

COUNT I: INFRINGEMENT OF THE '703 PATENT

52. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

53. Defendants were aware of this Asserted Patent and of its infringement at least as early as their communications with Collision on or around 2011. Defendants have and currently continue to willfully infringe the '703 patent.

54. Defendants have directly infringed, and continue to directly infringe, the '703 patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '703 Patent including, but not limited to 4G UE devices and 5G UE devices, which are equipped with interference cancellation technology ("Accused 4G and 5G UE Instrumentalities"), and Wi-Fi devices, which are equipped with interference cancellation technology ("Accused WiFi Instrumentalities") as described in the chart attached as **Exhibit G**. As shown in **Exhibit G**, for example, the Accused Instrumentalities and materially similar instrumentalities infringe at least claim one of the '703 patent. Plaintiff reserves the right to identify any other claims of the '703 patent in the disclosure of infringement contentions in this action.

55. Further discovery may reveal additional infringing products.

56. Defendants also indirectly infringe the '703 Patent by inducing infringement by others, such as end-user customers, by, for example, encouraging its users to take advantage of the

4G, 5G, and Wi-Fi capabilities of the Accused Products.

57. Defendants' continued infringement of the '703 patent has damaged and will continue to damage Plaintiff.

58. Plaintiff is entitled to recover damages adequate to compensate it for Defendants' infringement or at minimum a reasonable royalty. Plaintiff is also entitled to equitable and injunctive relief (with injunctive relief limited to the patent term). Due to the willful nature of Samsung's infringement, Collision is also entitled to enhanced damages.

59. To the extent applicable, Collision has complied with the marking requirements set forth in 35 U.S.C. § 287.

COUNT II: INFRINGEMENT OF THE '651 PATENT.

60. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

61. Defendants were aware of this Asserted Patent and of its infringement at least as early as their communications with Collision on or around 2011. Defendants have and currently continue to willfully infringe the '651 patent.

62. Defendants have directly infringed, and continue to directly infringe, the '651 patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '651 Patent including, but not limited to 4G UE devices and 5G UE devices, which are equipped with interference cancellation technology ("Accused 4G and 5G UE Instrumentalities"), and Wi-Fi devices, which are equipped with interference cancellation technology ("Accused WiFi Instrumentalities") as described in the chart attached as **Exhibit H**. As shown in **Exhibit H**, for example, the Accused Instrumentalities and materially similar instrumentalities infringe at least claim one of the '651 patent. Plaintiff reserves the right to identify any other claims of the '651 patent in the disclosure of infringement contentions in this action.

63. Further discovery may reveal additional infringing products.

64. Defendants also indirectly infringe the '651 Patent by inducing infringement by others, such as end-user customers, by, for example, encouraging its users to take advantage of the 4G, 5G, and Wi-Fi capabilities of the Accused Products.

65. Defendants' continued infringement of the '651 patent has damaged and will continue to damage Plaintiff.

66. Plaintiff is entitled to recover damages adequate to compensate it for Defendants' infringement or at minimum a reasonable royalty. Plaintiff is also entitled to equitable and injunctive relief (with injunctive relief limited to the patent term). Due to the willful nature of Samsung's infringement, Collision is also entitled to enhanced damages.

67. To the extent applicable, Collision has complied with the marking requirements set forth in 35 U.S.C. § 287.

COUNT III: INFRINGEMENT OF THE '946 PATENT.

68. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

69. Defendants were aware of this Asserted Patent and of its infringement at least as early as their communications with Collision on or around 2011. Defendants have and currently continue to willfully infringe the '946 patent.

70. Defendants have directly infringed, and continue to directly infringe, the '946 patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '946 Patent including, but not limited to 4G UE devices and 5G UE devices, which are equipped with hot spot functionality and interference cancellation technology ("Accused '946 Instrumentalities") as described in the chart attached as **Exhibit I**. As shown in **Exhibit I**, for example, the Accused '946 Instrumentalities and materially similar instrumentalities infringe at

least claim one of the '946 patent. Plaintiff reserves the right to identify any other claims of the '946 patent in the disclosure of infringement contentions in this action.

71. Further discovery may reveal additional infringing products.

72. Defendants also indirectly infringe the '946 Patent by inducing infringement by others, such as end-user customers, by, for example, encouraging its users to take advantage of the 4G, 5G, and Wi-Fi capabilities of the Accused Products.

73. Defendants' continued infringement of the '946 patent has damaged and will continue to damage Plaintiff.

74. Plaintiff is entitled to recover damages adequate to compensate it for Defendants' infringement or at minimum a reasonable royalty. Plaintiff is also entitled to equitable and injunctive relief (with injunctive relief limited to the patent term). Due to the willful nature of Samsung's infringement, Collision is also entitled to enhanced damages.

75. To the extent applicable, Collision has complied with the marking requirements set forth in 35 U.S.C. § 287.

COUNT IV: INFRINGEMENT OF THE '492 PATENT.

76. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

77. Defendants were aware of this Asserted Patent and of its infringement at least as early as their communications with Collision on or around 2011. Defendants have and currently continue to willfully infringe the '492 patent.

78. Defendants have directly infringed, and continue to directly infringe, the '492 patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '492 Patent including, but not limited to 4G UE and 5G UE devices, which are

equipped with interference cancellation technology (“Accused ’492 Instrumentalities”) as described in the chart attached as **Exhibit J**. As shown in **Exhibit J**, for example, the Accused ’492 Instrumentalities and materially similar instrumentalities infringe at least claim one of the ’492 patent. Plaintiff reserves the right to identify any other claims of the ’492 patent in the disclosure of infringement contentions in this action.

79. Further discovery may reveal additional infringing products.

80. Defendants also indirectly infringe the ’492 patent by inducing infringement by others, such as end-user customers, by, for example, encouraging its users to take advantage of the 4G, 5G, and Wi-Fi capabilities of the Accused Products.

81. Further discovery may reveal additional infringing products.

82. Defendants also indirectly infringe the ’492 patent by inducing infringement by others, such as end-user customers, by, for example, encouraging its users to take advantage of the 4G and 5G capabilities of the Accused 4G and 5G products.

83. Defendants’ continued infringement of the ’492 patent has damaged and will continue to damage Plaintiff.

84. Plaintiff is entitled to recover damages adequate to compensate it for Defendants’ infringement or at minimum a reasonable royalty. Plaintiff is also entitled to equitable and injunctive relief (with injunctive relief limited to the patent term). Due to the willful nature of Samsung’s infringement, Collision is also entitled to enhanced damages.

85. To the extent applicable, Collision has complied with the marking requirements set forth in 35 U.S.C. § 287.

COUNT V: INFRINGEMENT OF THE ’071 PATENT.

86. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

87. Defendants were aware of this Asserted Patent and of its infringement at least as early as their communications with Collision on or around 2011. Defendants have and currently continue to willfully infringe the '071 patent.

88. Defendants have directly infringed, and continue to directly infringe, the '071 patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '071 Patent including, but not limited to WiFi routers (“Accused WiFi Router Instrumentalities”) and base stations as described in the chart attached as **Exhibit K**. As shown in **Exhibit K**, for example, the Accused WiFi Router Instrumentalities and base stations and materially similar instrumentalities/products infringe at least claim one of the '071 patent. Plaintiff reserves the right to identify any other claims of the '071 patent in the disclosure of infringement contentions in this action.

89. Further discovery may reveal additional infringing products.

90. Defendants also indirectly infringe the '071 Patent by inducing infringement by others, such as end-user customers, by, for example, encouraging its users to take advantage of the Wi-Fi capabilities of the Accused Routers.

91. Defendants' continued infringement of the '071 patent has damaged and will continue to damage Plaintiff.

92. Plaintiff is entitled to recover damages adequate to compensate it for Defendants' infringement or at minimum a reasonable royalty. Plaintiff is also entitled to equitable and injunctive relief (with injunctive relief limited to the patent term). Due to the willful nature of Samsung's infringement, Collision is also entitled to enhanced damages.

93. To the extent applicable, Collision has complied with the marking requirements set forth in 35 U.S.C. § 287.

COUNT VI: INFRINGEMENT OF THE '505 PATENT.

94. Plaintiff incorporates the allegations of all of the foregoing paragraphs as if fully restated herein.

95. Defendants were aware of this Asserted Patent and of its infringement at least as early as their communications with Collision on or around 2011. Defendants have and currently continue to willfully infringe the '505 patent.

96. Defendants have directly infringed, and continue to directly infringe, the '505 patent by making, using, selling, offering for sale, or importing into the United States products that infringe the '505 Patent including, but not limited to 4G UE devices and 5G UE devices, which are equipped with interference cancellation technology ("Accused 4G and 5G UE Instrumentalities") as described in the chart attached as **Exhibit L**. As shown in **Exhibit L**, for example, the Accused Instrumentalities and materially similar instrumentalities infringe at least claim one of the '505 patent. Plaintiff reserves the right to identify any other claims of the '505 patent in the disclosure of infringement contentions in this action.

97. Further discovery may reveal additional infringing products.

98. Defendants also indirectly infringe the '505 Patent by inducing infringement by others, such as end-user customers, by, for example, encouraging its users to take advantage of the 4G, 5G, and Wi-Fi capabilities of the Accused Products.

99. Plaintiff is entitled to recover damages adequate to compensate it for Defendants' infringement or at minimum a reasonable royalty. Plaintiff is also entitled to equitable and injunctive relief (with injunctive relief limited to the patent term). Due to the willful nature of Samsung's infringement, Collision is also entitled to enhanced damages.

100. Plaintiff is entitled to recover damages adequate to compensate it for Defendants'

infringement or at minimum a reasonable royalty. Plaintiff is also entitled to equitable and injunctive relief (with injunctive relief limited to the patent term). Due to the willful nature of Samsung's infringement, Collision is also entitled to enhanced damages.

101. To the extent applicable, Collision has complied with the marking requirements set forth in 35 U.S.C. § 287.

PRAYER FOR RELIEF

102. WHEREFORE, Plaintiff respectfully requests the following relief:

- a. a judgment in favor of Plaintiff that Defendants have infringed, either literally and/or under the doctrine of equivalents, at least one claim of each of the Asserted Patents;
- b. a judgment that Defendants' infringement has been and is willful;
- c. a judgment and order requiring Defendants to pay Plaintiff its damages, costs, expenses, and any enhanced damages to which Plaintiff is entitled for Defendant's infringement;
- d. a judgment and order requiring Defendants to provide an accounting and to pay supplemental damages to Plaintiff, including without limitation, pre-judgment and post-judgment interest;
- e. a judgment and order requiring Defendants to pay ongoing royalties;
- f. a judgment pursuant to 35 U.S.C. § 283 permanently enjoining Defendants and any of its officers, directors, agents, servants, subsidiaries, affiliates, divisions, branches, parents, and/or those in association with them from further infringing the Asserted Patents during the duration of their patent term;
- g. a judgment and order finding that this is an exceptional case within the meaning of

35 U.S.C. § 285 and awarding Plaintiff its reasonable attorney fees against Defendants; and

- h. any and all other relief as the Court may deem appropriate and just under the circumstances.

DEMAND FOR JURY TRIAL

103. Pursuant to Fed. R. Civ. P. 38, Plaintiff hereby demands trial by jury on all claims and issues so triable.

DATED: December 12, 2023

Respectfully submitted,

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