

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

FREEDOM PATENTS LLC,

Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA,
INC. F/K/A SAMSUNG
TELECOMMUNICATIONS AMERICA
LLC, and HARMAN INTERNATIONAL
INDUSTRIES, INC.,

Defendants.

CIVIL ACTION NO. 4:24-cv-540

ORIGINAL COMPLAINT FOR
PATENT INFRINGEMENT

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Freedom Patents LLC (“Freedom Patents” or “Plaintiff”) files this original complaint against Defendants Samsung Electronics Co., Ltd., Samsung Electronics America, Inc. f/k/a Samsung Telecommunications America LLC, and Harman International Industries, Inc. (collectively, “Samsung” or “Defendants”), alleging, based on its own knowledge as to itself and its own actions and based on information and belief as to all other matters, as follows:

PARTIES

1. Freedom Patents is a limited liability company formed under the laws of the State of Texas, with its principal place of business at 2325 Oak Alley, Tyler, Texas, 75703.

2. Defendant Samsung Electronics Co., Ltd. (“Samsung Electronics”) is a corporation duly organized and existing under the laws of the Republic of Korea. It has a place of business at 129 Samsung-Ro Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, 433-742, South Korea. Samsung Electronics may also be served with process by serving the Texas Secretary of State,

1019 Brazos Street, Austin, Texas 78701, as its agent for service because it engages in business in Texas but has not designated or maintained a resident agent for service of process or a regular place of business in Texas as required by statute. This action arises out of that business.

3. Samsung Electronics—together with its subsidiaries and other affiliates—is one of the world’s largest manufacturers of consumer electronics.

4. Defendant Samsung Electronics America, Inc. f/k/a Samsung Telecommunications America LLC (“Samsung America”) is a corporation duly organized and existing under the laws of the State of New York. It has a place of business at 6625 Excellence Way, Plano, Texas 75023. Samsung America may be served with process through its registered agent CT Corporation System at 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

5. Samsung America is a wholly owned subsidiary of Samsung Electronics. Samsung America is involved in the importation of consumer electronics, such as smartphones, tablets, TVs, laptops, and portable audio players, into the United States.

6. Defendant Harman International Industries, Inc. (“Harman”) is a corporation duly organized and existing under the laws of the State of Delaware. It has a place of business at 3000 Research Drive, Richardson, Texas 75082. Harman may be served with process through its registered agent, CT Corporation System, at 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

7. Harman is a wholly owned subsidiary of Samsung Electronics. Harman is involved in the manufacture and sale of audio electronics under brands such as JBL, Harman Kardon, etc.

8. The Defendants identified in paragraphs 27 above (collectively, “Samsung”) are an interrelated group of companies which together comprise one of the largest providers of wireless devices in the United States, including at least under the Samsung and JBL brands.

9. The Samsung defendants named above and their affiliates are part of the same corporate structure and distribution chain for the making, importing, offering to sell, selling, and/or using of the accused devices in the United States, including in the State of Texas generally and this judicial district in particular.

10. The Samsung defendants named above and their affiliates share the same management, common ownership, advertising platforms, facilities, distribution chains and platforms, and accused product lines and products involving related technologies.

11. The Samsung defendants named above and their affiliates regularly contract with customers regarding products made for or on behalf of those customers.

12. Thus, the Samsung defendants named above and their affiliates operate as a unitary business venture and are jointly and severally liable for the acts of patent infringement alleged herein.

13. The parties to this action are properly joined under 35 U.S.C. § 299 because the right to relief asserted against Defendants jointly and severally arises out of the same series of transactions or occurrences relating to the making and using of the same products or processes, including wireless electronics and related processes bearing at least the Samsung or JBL brands or that are otherwise made for use with services provided by Samsung. Additionally, questions of fact common to all defendants will arise in this action.

JURISDICTION AND VENUE

14. This is an action for infringement of United States patents arising under 35 U.S.C. §§ 271, 281, and 284–85, among others. This Court has subject matter jurisdiction of the action under 28 U.S.C. § 1331 and § 1338(a).

15. This Court has personal jurisdiction over Samsung Electronics pursuant to due process and/or the Texas Long Arm Statute because, *inter alia*, (i) Samsung Electronics has done

and continues to do business in Texas; and (ii) Samsung Electronics has committed and continues to commit acts of patent infringement in the State of Texas, including making, using, offering to sell, and/or selling accused products in Texas, and/or importing accused products into Texas, including by Internet sales and/or sales via retail and wholesale stores, inducing others to commit acts of patent infringement in Texas, and/or committing at least a portion of any other infringements alleged herein in Texas. In addition, or in the alternative, this Court has personal jurisdiction over Samsung Electronics pursuant to Fed. R. Civ. P. 4(k)(2) because: (1) it has substantial contacts with the United States and committed and/or induced acts of patent infringement in the United States; and (2) it is not subject to jurisdiction in any state's courts of general jurisdiction.

16. This Court has personal jurisdiction over Samsung America pursuant to due process and/or the Texas Long Arm Statute because, *inter alia*, (i) Samsung America has done and continues to do business in Texas; and (ii) Samsung America has committed and continues to commit acts of patent infringement in the State of Texas, including making, using, offering to sell, and/or selling accused products in Texas, and/or importing accused products into Texas, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in Texas, and/or committing a least a portion of any other infringements alleged herein; and (iii) Samsung America is registered to do business in Texas.

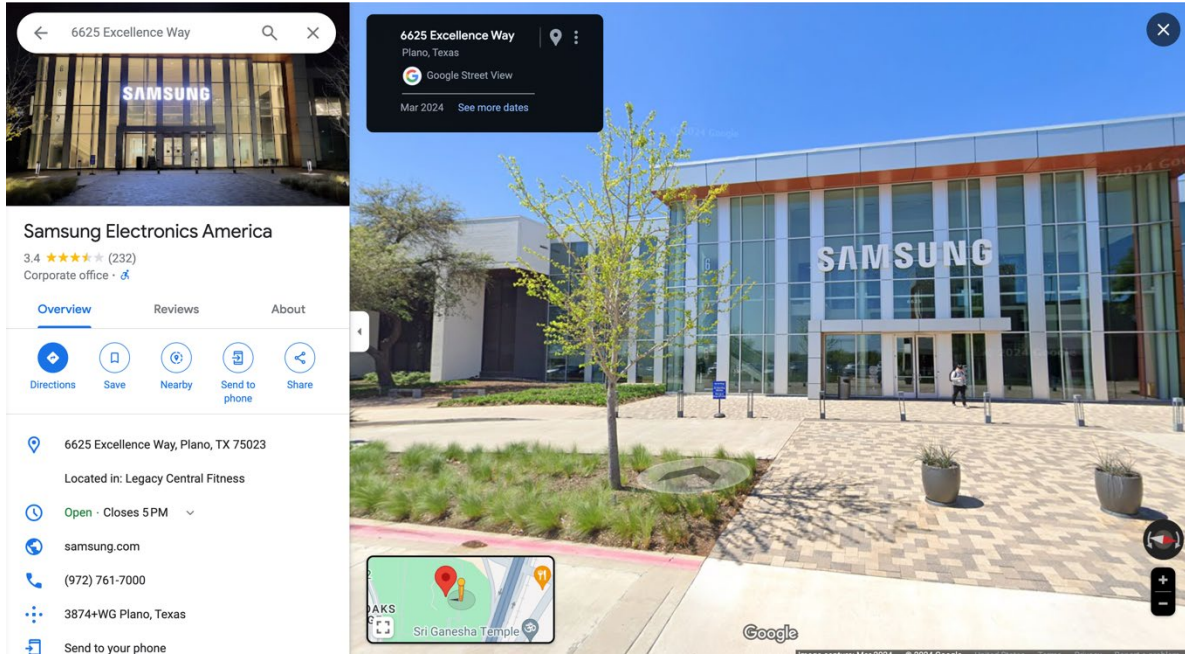
17. This Court has personal jurisdiction over Harman pursuant to due process and/or the Texas Long Arm Statute because, *inter alia*, (i) Harman has done and continues to do business in Texas; and (ii) Harman has committed and continues to commit acts of patent infringement in the State of Texas, including making, using, offering to sell, and/or selling accused products in Texas, and/or importing accused products into Texas, including by Internet

sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in Texas, and/or committing a least a portion of any other infringements alleged herein; and (iii) Harman is registered to do business in Texas.

18. Venue is proper in this district as to Samsung Electronics, which is organized under the laws of a foreign jurisdiction. 28 U.S.C. § 1391(c)(3) provides that “a defendant not resident in the United States may be sued in any judicial district, and the joinder of such a defendant shall be disregarded in determining where the action may be brought with respect to other defendants.” *See also In re HTC Corp.*, 889 F.3d 1349 (Fed. Cir. 2018).

19. Venue is proper in this district as to Samsung America pursuant to 28 U.S.C. § 1400(b). Venue is further proper because Samsung America has committed and continues to commit acts of patent infringement in this district, including making, using, offering to sell, and/or selling accused products in this district, and/or importing accused products into this district, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in Texas, and/or committing at least a portion of any other infringements alleged herein in this district. Samsung America has regular and established places of business in this district, including at least at 6625 Excellence Way, Plano, Texas 75023.¹

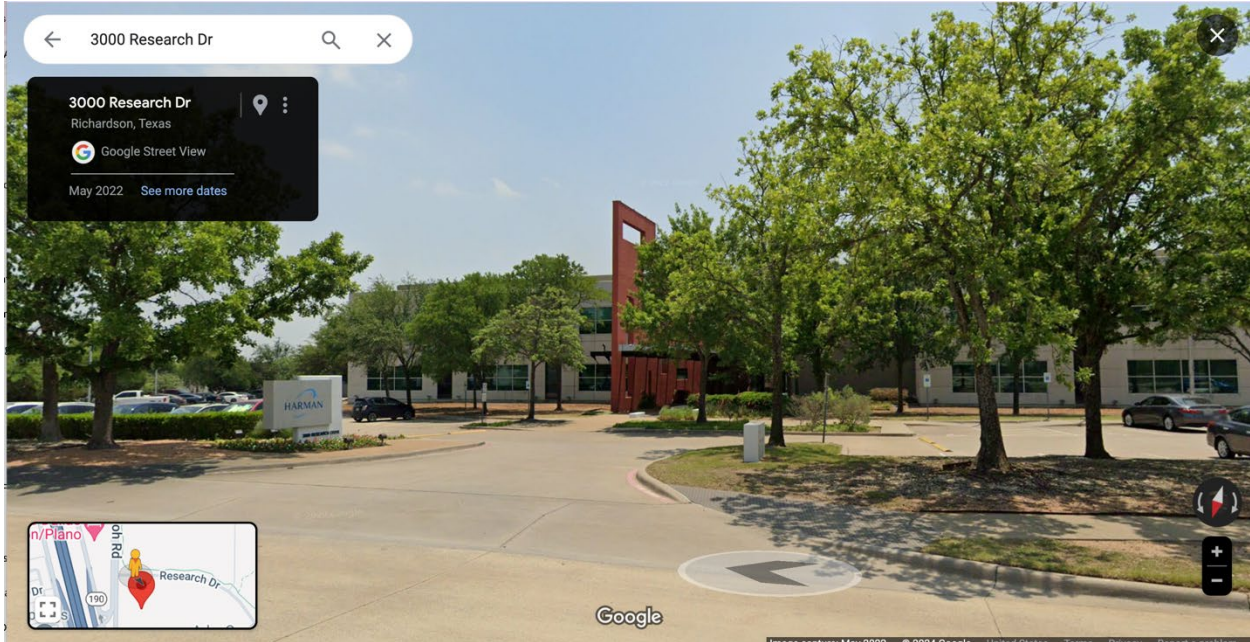
¹ <https://news.samsung.com/us/samsung-electronics-america-open-flagship-north-texas-campus/>



Source: https://www.google.com/maps/place/Samsung+Electronics+America/@33.0647094,-96.6929921,3a,75y,234.63h,95.61t/data=!3m6!1e1!3m4!1sl_4nY2re2zTLYYr8aDx3dw!2e0!7i16384!8i8192!4m16!1m9!3m8!1s0x864c19c452cb15a7:0xb116d5661a65436a!2s6625+Excellence+Way,+Plano,+TX+75023!3b1!8m2!3d33.0648165!4d-96.6937334!10e5!16s%2Fg%2F11jb7pqtgd!3m5!1s0x864c1ed568b9f137:0x4180099a597d7780!8m2!3d33.064814!4d-96.693733!16s%2Fg%2F1tj91yvm?coh=205409&entry=ttu

20. Venue is proper in this district as to Harman pursuant to 28 U.S.C. § 1400(b).

Venue is further proper because Harman has committed and continues to commit acts of patent infringement in this district, including making, using, offering to sell, and/or selling accused products in this district, and/or importing accused products into this district, including by Internet sales and sales via retail and wholesale stores, inducing others to commit acts of patent infringement in Texas, and/or committing at least a portion of any other infringements alleged herein in this district. Harman has regular and established places of business in this district, including at least at 3000 Research Drive, Richardson, Texas 75082.



Source: https://www.google.com/maps/place/HARMAN+International+Ind./@32.9886384,-96.6640259,3a,75y,234.98h,89.91t/data=!3m7!1e1!3m5!1sGv4u0rXY0leDj5jJGzfr0Q!2e0!6shttps:%2F%2Fstreetviewpixels-pa.googleapis.com%2Fv1%2Fthumbnail%3Fpanoid%3DGv4u0rXY0leDj5jJGzfr0Q%26cb_client%3Dsearch.gws-prod.gps%26w%3D211%26h%3D120%26yaw%3D181.56198%26pitch%3D0%26thumbfov%3D100!7i16384!8i8192!4m14!1m7!3m6!1s0x864c1eaa8712c911:0x4079a1aeb393dac5!2sHARMAN+International+Ind.!8m2!3d32.9874799!4d-96.6640626!16s%2Fg%2F1tdbld66!3m5!1s0x864c1eaa8712c911:0x4079a1aeb393dac5!8m2!3d32.9874799!4d-96.6640626!16s%2Fg%2F1tdbld66?coh=205409&entry=ttu

BACKGROUND

21. The patents-in-suit generally relate to improvements in wireless communication technology that allow users to communicate over a wireless network. In particular, the patents are directed to methods and systems for selecting antennas in multiple-input, multiple-output (MIMO) wireless networks.

22. The technology of the patents-in-suit was developed by engineers at the Mitsubishi Electric Research Laboratories (MERL), which is the North American arm of Mitsubishi Electric. MERL was founded in 1991 in Cambridge, Massachusetts, and has been

known for its focus on innovation and long-range research.² From its beginning, MERL was focused on pioneering new technologies in various industries, including computer graphics, digital communication, medical imaging, transportation etc.³ In the early 2000s, for example, “MERL focused on standardization and developments of new emerging technologies,” such as “antenna selection, channel equalization, efficient channel state estimation, and Orthogonal Frequency Division Multiplexing (OFDM).”⁴

23. The inventions disclosed in the patents-in-suit have been cited during patent prosecution multiple times by electronics companies, including Apple, Broadcom, Cisco, Ericsson, Fujitsu, Hewlett Packard, Hitachi, Huawei, Intel, Kyocera, LG Electronics, Marvell, MediaTek, Motorola Mobility, Nokia, NTT Docomo, Panasonic, Philips, Qualcomm, Siemens, Samsung, Sharp, Sony, Toshiba, and ZTE.

COUNT I

DIRECT INFRINGEMENT OF U.S. PATENT NO. 8,284,686

24. On October 9, 2012, United States Patent No. 8,284,686 (“the ’686 Patent”) was duly and legally issued by the United States Patent and Trademark Office for an invention entitled “Antenna/Beam Selection Training in MIMO Wireless LANS with Different Sounding Frames.”

25. Freedom Patents is the owner of the ’686 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the ’686 Patent against infringers, and to collect damages for all relevant times.

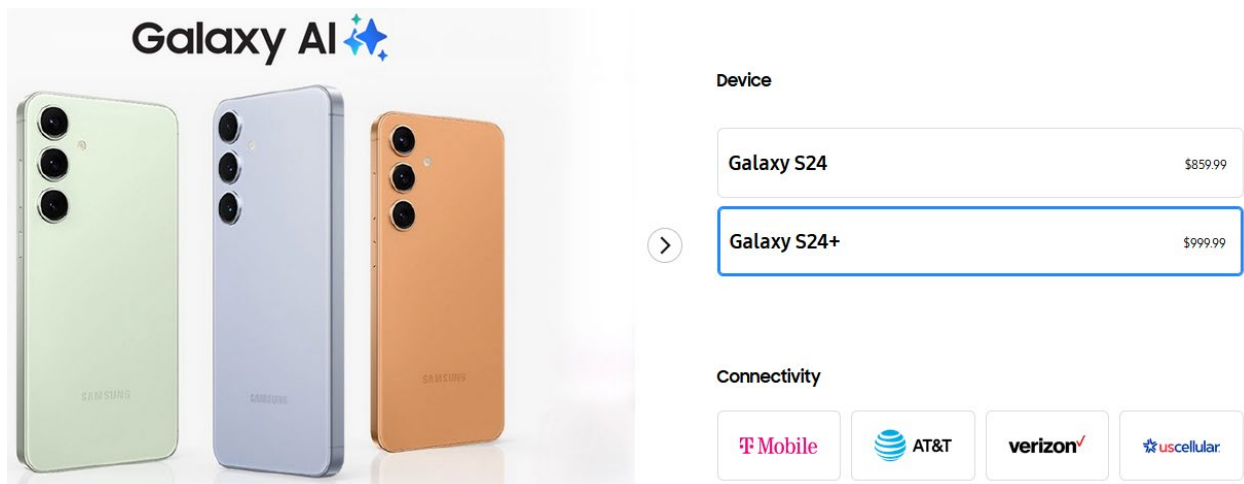
² See <https://www.merl.com/company/history>.

³ See <https://www.merl.com/public/MERL-30Years.pdf>.

⁴ *Id.* at 22.

26. Samsung made, had made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or systems including, for example, its Samsung Galaxy S24+ smartphone, Galaxy Tab S9+, Neo QLED 65” Smart TV (QN800C), Galaxy Book4 Pro, JBL Authentics 300 Smart Home Speaker, and other products⁵ that comply with the IEEE 802.11ax-2021 standard and implement MIMO Wi-Fi capabilities (“accused products”).

⁵ See, e.g., Galaxy A52s 5G, Galaxy A73 5G, Galaxy A35 5G (256 GB), Galaxy A35 5G (128 GB), Galaxy A55 5G, Galaxy A54 5G, Galaxy S24 5G, Galaxy S24+ 5G, Galaxy S24 ultra 5G, Galaxy S23 FE, Galaxy S23 5G, Galaxy S23+ 5G, Galaxy S23 ultra 5G, Galaxy S21 5G (G991U1), Galaxy S21 Plus 5G (G996U), Galaxy S21 Ultra, Galaxy S21 FE, Galaxy S20 FE, Galaxy S20 5G (SM-G981U), Galaxy S20 Ultra 5G (G988U), Galaxy S20+ 5G (SM-G986U), Galaxy S10 (SM-G973W), Galaxy S10+ (SM-G975U), Galaxy S10e (SM-G970U), Galaxy S10 5G (G977U), Galaxy Z Flip5, Galaxy Z Fold5, Galaxy Z Fold4, Galaxy Z Flip4, Galaxy Z Flip3 5G, Galaxy Z Fold 3 (256GB), Galaxy Z Fold 3 (512GB), Galaxy Z Fold2, Galaxy Note10+ 256GB (N975U1), Galaxy S10 International Variant (G973F), Galaxy Note10+ (SM-N976U), Galaxy S10 US Cellular (SM-G973U), Galaxy S10+ Unlocked (G975U1), Galaxy Note10 (N970U), Galaxy Note 20 5G, Galaxy Note 20 Ultra 5G, Galaxy XCover Field Pro (G889A), Galaxy Tab S9 Plus, Galaxy Tab S9, Galaxy Tab S9 Ultra, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S8 Plus 5G, Galaxy Tab S8 WiFi, Galaxy Tab S8 Ultra WiFi, Galaxy Tab S8+ WiFi, Galaxy Tab S7 FE (WiFi), Samsung Galaxy Tab S7+ (128GB), Samsung Galaxy Tab S7+ (256GB), Samsung Galaxy Tab S7+ (512GB), QN85QN900DFXZA, QN65QN900DFXZA, QN75QN900DFXZA, QN65QN800DFXZA, QN75QN800DFXZA, QN85QN800DFXZA, QN65QN900CFXZA, QN75QN900CFXZA, QN85QN900CFXZA, QN65QN800CFXZA, QN75QN800CFXZA, QN85QN800CFXZA, QN98QN990CFXZA, NP750XGK-KS2US / NP750XGK-KS2US, NP750XGL-XS2US / NP750XGL-XS2US, NP750QGK / NP750QGK-KG3US, NP750QGK / NP750QGK-KG1US, NP750QGK / NP750QGK-KG2US, NP940XGK / NP940XGK-KG1US, NP960XGK / NP960XGK-KG1US, NP960QGK / NP960QGK-KG1US, NP960XGL / NP960XGL-XG2US, NP960XGL / NP960XGL-XG1US, NP754XFG-KB2US, NP754XFG-KB3US, NP754XFG-KB1US, NP960XFG-KA1US, NP940XFG-KA1US, NP940XFG-KA2US, NP960XFG-KC1US, NP940XFG-KC1US, NP940XFG-KC2US, NP964XFG-KC1US, NP961XFG-KC1US, NP964XFG-KC2US, NP944XFG-KC2US, NP941XFG-KC1US, Galaxy Book3 Pro 360, Galaxy Book3 360 - 512GB, Galaxy Book3 360 - 2TB, Galaxy Book3 360 - 1TB, Galaxy Book 3 ultra, Galaxy Book2 Pro 13.3" i5/8G/256G Graphite, Galaxy Book2 Pro 15.6" i7/16G/512G Graphite, Galaxy Book2 360, XE530QDA-KA1US, XE530QDA-KA2US, XE530QDA-KA3US, XE530QDA-KB1US, XE530QDA-KB2US, XE530QDA-KB3US, Samsung Galaxy Chromebook Touchscreen Laptop 360 Convertible (8GB RAM | 128GB eMMC+128G SD Card), Samsung Galaxy Chromebook Touchscreen Laptop 360 Convertible (8GB RAM | 128GB eMMC+256G SD Card), Samsung Galaxy Chromebook Touchscreen Laptop 360 Convertible (8GB RAM | 128GB eMMC+32G SD Card), Galaxy Chromebook Google Laptop (8GB RAM| 128GB Storage), Galaxy Chromebook Google Laptop (8GB RAM| 256GB SSD+128G SD



Source: <https://www.samsung.com/us/smartphones/galaxy-s24/buy/galaxy-s24-plus-256gb-unlocked-sm-s926uzkaxaa>

Additional spec details

Battery Description

4900 mAh

Ports

USB Type-C

Connectivity

Wi-Fi 802.11a/b/g/n/ac/ax,WiFi 6E, UMTS,HSDPA,HSPA+,LTE,5G, Bluetooth 5.3, NFC

Source: <https://www.t-mobile.com/commerce/cell-phone/samsung-galaxy-s24-plus>

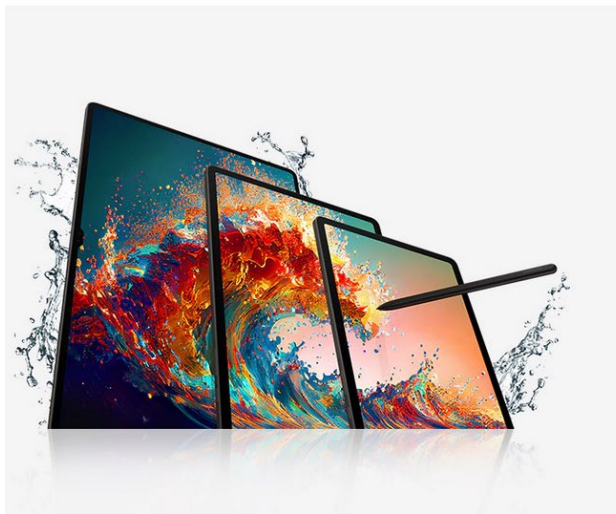
Card), Galaxy Chromebook Google Laptop (8GB RAM| 256GB SSD+256G SD Card), XE340XDA-KA6US, SAMSUNG Galaxy Chromebook Go (4GB Memory, 32GB), SAMSUNG Galaxy Chromebook Go Wi-Fi/LTE (Verizon) (4GB Memory, 32GB), SAMSUNG Galaxy Chromebook Go 14" Laptop Computer, Wi-Fi/LTE (AT&T) (GB Memory, 32GB), XE520QAB-K01US, XE310XBA-K01US, JBL PartyBox Ultimate, JBL Authentics 500, JBL Authentics 300, BAR 1300X, BAR 500, etc.



Model

Galaxy Book4 Laptop Full HD	\$899.99
Galaxy Book4 360 2-in-1 Laptop Full HD Touchscreen	\$1,349.99
Galaxy Book4 Pro Laptop 3K AMOLED Touchscreen	\$1,749.99
Galaxy Book4 Pro 360 2-in-1 Laptop 3K AMOLED S Pen Included	\$1,899.99
Galaxy Book4 Ultra Laptop 3K AMOLED Touchscreen NVIDIA GPU	\$2,399.99

Source: <https://www.samsung.com/us/computing/galaxy-books/galaxy-book4-series/buy/galaxy-book4-pro-16-intel-core-ultra-7-1tb-moonstone-gray-np960xgk-kg1us>



Galaxy Tab S9 Series

Galaxy Tab S9 FE Series

Models

Galaxy Tab S9	\$799.99 \$919.99
Galaxy Tab S9+	\$899.99 \$999.99
Galaxy Tab S9 Ultra	\$1,049.99 \$1199.99

Memory and Storage

12GB (RAM) + 256GB (SSD) \$899.99 \$999.99	12GB (RAM) + 512GB (SSD) \$999.99 \$1199.99
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Source: <https://www.samsung.com/us/tablets/galaxy-tab-s9/buy/galaxy-tab-s9-plus-256gb-graphite-wi-fi-sm-x810nzaaxar/?modelCode=SM-X810NZAAXAR>

03 **Multitask with 5G connectivity**

Enjoy smooth streaming and gaming with virtually no lag with reliable, fast Wi-Fi 6E.[®] Plus, optional 5G connectivity on Galaxy Tab S9+.⁹

Source: <https://www.samsung.com/us/tablets>



65" Class QN800C Samsung Neo QLED 8K Smart TV (2023)

QN65QN800CF / QN65QN800CFXA ★★★★★ 4.2 (106) Write a review



Quantum Matrix Pro with Mini LEDs Neural Quantum Processor 8K Infinity One Design with Slim One Connect Neo Quantum HDR 8K+

- See worlds within worlds with unparalleled 8K precision made possible by a universe of tiny lights with Quantum Matrix Pro with Mini LEDs.
- Upscale every movie night—and be ready for the future of 8K TV—with our prestigiously detail-oriented Neural Quantum Processor 8K.
- The Infinity One Design with Slim One Connect provides a sleek, slim, impossibly thin and clutter-free experience.
- Don't let your content fall flat. Bring huge contrast to even the smallest details with Neo Quantum HDR 8K+.

Series

Source: <https://www.samsung.com/us/televisions-home-theater/tvs/samsung-neo-qled-8k/65-class-qn800c-samsung-neo-qled-8k-smart-tv-2023-qn65qn800cfxa/>

USB ? 3	USB-C 1	Ethernet (LAN) ? Yes
Digital Audio Out (Optical) ? 1	RF In (Terrestrial / Cable input / Satellite Input) 1/1(Common Use for Terrestrial)/0	Ex-Link (RS-232C) 1
WiFi <u>Yes (WiFi6E)</u>	Bluetooth ? Yes (BT5.2)	Anynet+ (HDMI-CEC) Yes

Source: <https://www.samsung.com/us/televisions-home-theater/tvs/samsung-neo-qled-8k/65-class-qn800c-samsung-neo-qled-8k-smart-tv-2023-qn65qn800cfxa/>



Seamless connectivity

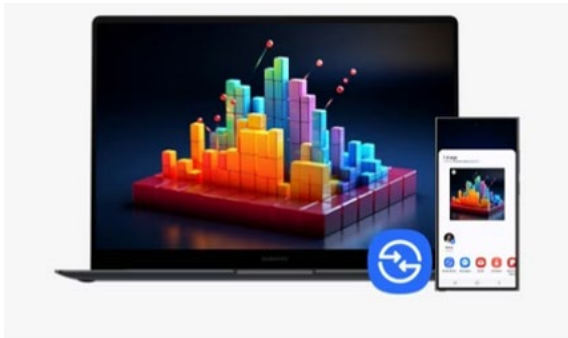
No matter which laptop you choose, sync your Galaxy Book4 Series PC with your other Galaxy devices to do more than you ever thought possible.

Source: <https://www.samsung.com/us/computing/galaxy-books/galaxy-book4-series>

Network Connectivity

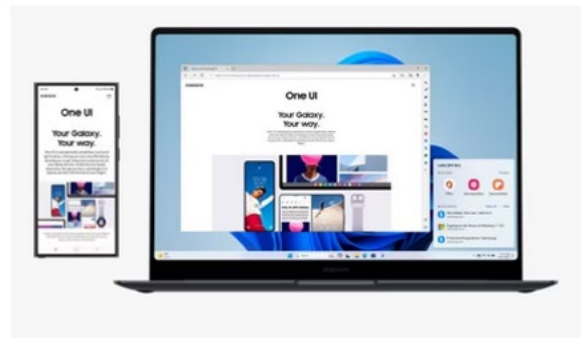
Wi-Fi 6E (Gig+)802.11 abgn / ac / ax

Source: <https://www.samsung.com/us/televisions-home-theater/tvs/samsung-neo-qlcd-8k/65-class-qn800c-samsung-neo-qlcd-8k-smart-tv-2023-qn65qn800cfza/>



Share files in a snap with Quick Share

Sharing files has never been easier. Quick Share easily sends large files like photos and videos to nearby devices, including Galaxy PCs — or an Android or iOS device.⁸



Connect your phone and PC for one experience

Link to Windows connects your Galaxy Book4 Pro with your phone so you can call, text and even mirror your phone's screen from the comfort of your laptop.⁹

⁸Quick Share between Galaxy devices available with the following OS: smartphones and tablets with Android OS version 10.0 (Q) and One UI 2.1 or above, PCs running Windows 10 or later. Requires Samsung account and Wi-Fi and Bluetooth connection. Quick Share to iOS and Android devices available by sending shared link: individual files shared cannot exceed 3GB (for a total of 5GB per day) and link will expire after two days; requires a Samsung account and internet connection.

⁹Compatible only with Tab S Series.

¹⁰Multi Control available between Galaxy PCs with Windows 10 or later (2021 or later) and either a compatible Galaxy Tablet (Android 12, One UI 4.1 or later) or a compatible smartphone (Android 13, One UI 5.1 or later). Devices must have Bluetooth and be signed in to same Samsung account and Wi-Fi network.

¹¹Devices must be on same Samsung account and Wi-Fi network; to connect from a Galaxy Smartphone to Galaxy Book, requires Galaxy Smartphone with One UI 5.0 or above and Galaxy Book running Windows 10 v. 1809 or later.

Source: <https://www.samsung.com/us/computing/galaxy-books/galaxy-book4>



JBL AUTHENTICS 300

★★★★★ 4.8 (131) Write a review

\$449.99

- 1 + **Add To Cart**

Source: <https://www.jbl.com/home-speakers/AUTHENTICS-300.html>



Music streaming services via built-in Wi-Fi

Experience everything from podcasts to internet radio in stunning high definition. Or stream music through AirPlay, Alexa Multi-Room Music (MRM), Chromecast built-in™, and Spotify Connect and leave the room or take a call without the music being interrupted. The Wi-Fi connection ensures your speaker gets automatic software and feature updates.

Source: <https://www.jbl.com/home-speakers/AUTHENTICS-300.html>

Control and Connection Specifications

Bluetooth version	5.3
Bluetooth profile	A2DP 1.3.2, AVRCP 1.5
Bluetooth transmitter frequency range:	2400 MHz - 2483.5 MHz
Bluetooth transmitter power:	<13 dBm (EIRP)
Wi-Fi network:	IEEE 802.11 a/b/g/n/ac/ax (2.4GHz/5GHz)
2.4G Wi-Fi transmitter frequency range	2412 - 2472 MHz (2.4 GHz ISM Band, USA 11 Channels, Europe and others 13 Channels)
2.4G Wi-Fi transmitter power	<20 dBm (EIRP)
5G Wi-Fi transmitter frequency range	5.15 - 5.35GHz, 5.470 - 5.725GHz, 5.725 - 5.825GHz
5G Wi-Fi transmitter power	5.15 - 5.25GHz <23dBm, 5.25 - 5.35GHz & 5.470 - 5.725GHz <23dBm, 5.725 - 5.825GHz <14dBm (EIRP)

Source: <https://www.jbl.com/home-speakers/AUTHENTICS-300.html>

27. By doing so, Samsung has directly infringed (literally and/or under the doctrine of equivalents) at least Claims 1 and 21 of the '686 Patent. *See* Exhibit A. Samsung's infringement in this regard is ongoing.

28. The Samsung Galaxy S24+ smartphone, Galaxy Tab S9+, Neo QLED 65" Smart TV (QN800C), JBL Authentics 300 Smart Home Speaker, and Galaxy Book4 Pro are exemplary accused products.

29. Samsung directly infringes the '686 Patent when, for example, it and/or its agents use the accused products, including during testing of the accused products. Samsung also directly infringes the '686 Patent when the accused products are used after purchase by a customer or end user. For example, the accused products are built with hardware and/or software components that control the operation of the accused products. These components cause the accused products to perform the steps of the claimed invention after, for example, receiving sounding packets. Samsung also directly infringes the '686 Patent by exercising direction or control over the use of the accused products by others, including its affiliates, its subsidiaries, its business partners (including certification and testing organizations), and/or its customers and end-users. Samsung contracts with, advises, and/or encourages such persons to engage in conduct satisfying one or more elements of the asserted claims, deriving a financial or other benefit (e.g., improved wireless communications) from doing so. Samsung conditions these benefits on, for example, such persons performing certain activities involving the accused products during specified conditions that cause the accused products to perform the steps of the claimed method (e.g., after receiving sounding packets).

30. Samsung has had knowledge of the '686 Patent at least as of the date when it was notified of the filing of this action.

31. In addition, Samsung has had knowledge of the '686 Patent at least as of February 20, 2013, when it was cited in an IDS (as U.S. Publication No. 2009/0290563) during prosecution of U.S. Patent No. 9,137,698, which is assigned to Samsung. Samsung employees, Ying Li, Zhouyue Pi, Shadi Abu-Surra, Sridhar Rajagopal, and Kaushik Josiam—who are named as inventors of U.S. Patent No. 9,137,698—and others involved in the prosecution of the patent, have had knowledge of the '686 Patent well before this lawsuit was filed.

32. Freedom Patents has been damaged as a result of the infringing conduct by Samsung alleged above. Thus, Samsung is liable to Freedom Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

33. Freedom Patents has neither made nor sold unmarked articles that practice the '686 Patent, and is entitled to collect pre-filing damages for the full period allowed by law for infringement of the '686 Patent.

COUNT II

DIRECT INFRINGEMENT OF U.S. PATENT NO. 8,374,096


34. On February 12, 2013, United States Patent No. 8,374,096 (“the '096 Patent”) was duly and legally issued by the United States Patent and Trademark Office for an invention entitled “Method for Selecting Antennas and Beams in MIMO Wireless LANs.”

35. Freedom Patents is the owner of the '096 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '096 Patent against infringers, and to collect damages for all relevant times.

36. Samsung used products and/or systems including, for example, its Samsung Galaxy S24+ smartphone, Galaxy Tab S9+, Neo QLED 65” Smart TV (QN800C), Galaxy

Book4 Pro, JBL Authentics 300 Smart Home Speaker, and other products⁶ that comply with the IEEE 802.11ax-2021 standard and implement MIMO Wi-Fi capabilities (“accused products”).

⁶ See, e.g., Galaxy A52s 5G, Galaxy A73 5G, Galaxy A35 5G (256 GB), Galaxy A35 5G (128 GB), Galaxy A55 5G, Galaxy A54 5G, Galaxy S24 5G, Galaxy S24+ 5G, Galaxy S24 ultra 5G, Galaxy S23 FE, Galaxy S23 5G, Galaxy S23+ 5G, Galaxy S23 ultra 5G, Galaxy S21 5G (G991U1), Galaxy S21 Plus 5G (G996U), Galaxy S21 Ultra, Galaxy S21 FE, Galaxy S20 FE, Galaxy S20 5G (SM-G981U), Galaxy S20 Ultra 5G (G988U), Galaxy S20+ 5G (SM-G986U), Galaxy S10 (SM-G973W), Galaxy S10+ (SM-G975U), Galaxy S10e (SM-G970U), Galaxy S10 5G (G977U), Galaxy Z Flip5, Galaxy Z Fold5, Galaxy Z Fold4, Galaxy Z Flip4, Galaxy Z Flip3 5G, Galaxy Z Fold 3 (256GB), Galaxy Z Fold 3 (512GB), Galaxy Z Fold2, Galaxy Note10+ 256GB (N975U1), Galaxy S10 International Variant (G973F), Galaxy Note10+ (SM-N976U), Galaxy S10 US Cellular (SM-G973U), Galaxy S10+ Unlocked (G975U1), Galaxy Note10 (N970U), Galaxy Note 20 5G, Galaxy Note 20 Ultra 5G, Galaxy XCover Field Pro (G889A), Galaxy Tab S9 Plus, Galaxy Tab S9, Galaxy Tab S9 Ultra, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S8 Plus 5G, Galaxy Tab S8 WiFi, Galaxy Tab S8 Ultra WiFi, Galaxy Tab S8+ WiFi, Galaxy Tab S7 FE (WiFi), Samsung Galaxy Tab S7+ (128GB), Samsung Galaxy Tab S7+ (256GB), Samsung Galaxy Tab S7+ (512GB), QN85QN900DFXZA, QN65QN900DFXZA, QN75QN900DFXZA, QN65QN800DFXZA, QN75QN800DFXZA, QN85QN800DFXZA, QN65QN900CFXZA, QN75QN900CFXZA, QN85QN900CFXZA, QN65QN800CFXZA, QN75QN800CFXZA, QN85QN800CFXZA, QN98QN990CFXZA, NP750XGK-KS2US / NP750XGK-KS2US, NP750XGL-XS2US / NP750XGL-XS2US, NP750QGK / NP750QGK-KG3US, NP750QGK / NP750QGK-KG1US, NP750QGK / NP750QGK-KG2US, NP940XGK / NP940XGK-KG1US, NP960XGK / NP960XGK-KG1US, NP960QGK / NP960QGK-KG1US, NP960XGL / NP960XGL-XG2US, NP960XGL / NP960XGL-XG1US, NP754XFG-KB2US, NP754XFG-KB3US, NP754XFG-KB1US, NP960XFG-KA1US, NP940XFG-KA1US, NP940XFG-KA2US, NP960XFG-KC1US, NP940XFG-KC1US, NP940XFG-KC2US, NP964XFG-KC1US, NP961XFG-KC1US, NP964XFG-KC2US, NP944XFG-KC2US, NP941XFG-KC1US, Galaxy Book3 Pro 360, Galaxy Book3 360 - 512GB, Galaxy Book3 360 - 2TB, Galaxy Book3 360 - 1TB, Galaxy Book 3 ultra, Galaxy Book2 Pro 13.3" i5/8G/256G Graphite, Galaxy Book2 Pro 15.6" i7/16G/512G Graphite, Galaxy Book2 360, XE530QDA-KA1US, XE530QDA-KA2US, XE530QDA-KA3US, XE530QDA-KB1US, XE530QDA-KB2US, XE530QDA-KB3US, Samsung Galaxy Chromebook Touchscreen Laptop 360 Convertible (8GB RAM | 128GB eMMC+128G SD Card), Samsung Galaxy Chromebook Touchscreen Laptop 360 Convertible (8GB RAM | 128GB eMMC+256G SD Card), Samsung Galaxy Chromebook Touchscreen Laptop 360 Convertible (8GB RAM | 128GB eMMC+32G SD Card), Galaxy Chromebook Google Laptop (8GB RAM| 128GB Storage), Galaxy Chromebook Google Laptop (8GB RAM| 256GB SSD+128G SD Card), Galaxy Chromebook Google Laptop (8GB RAM| 256GB SSD+256G SD Card), XE340XDA-KA6US, SAMSUNG Galaxy Chromebook Go (4GB Memory, 32GB), SAMSUNG Galaxy Chromebook Go Wi-Fi/LTE (Verizon) (4GB Memory, 32GB), SAMSUNG Galaxy Chromebook Go 14" Laptop Computer, Wi-Fi/LTE (AT&T) (GB Memory, 32GB), XE520QAB-K01US, XE310XBA-K01US, JBL PartyBox Ultimate, JBL Authentics 500, JBL Authentics 300, BAR 1300X, BAR 500, etc.



Galaxy AI ✨

Device

Galaxy S24	\$859.99
Galaxy S24+	\$999.99

Connectivity

T-Mobile AT&T verizon uscellular

Source: <https://www.samsung.com/us/smartphones/galaxy-s24/buy/galaxy-s24-plus-256gb-unlocked-sm-s926uzkaxaa>

Additional spec details

Battery Description

4900 mAh


Ports

USB Type-C

Connectivity

Wi-Fi 802.11a/b/g/n/ac/ax, WiFi 6E, UMTS, HSDPA, HSPA+, LTE, 5G, Bluetooth 5.3, NFC

Source: <https://www.t-mobile.com/commerce/cell-phone/samsung-galaxy-s24-plus>



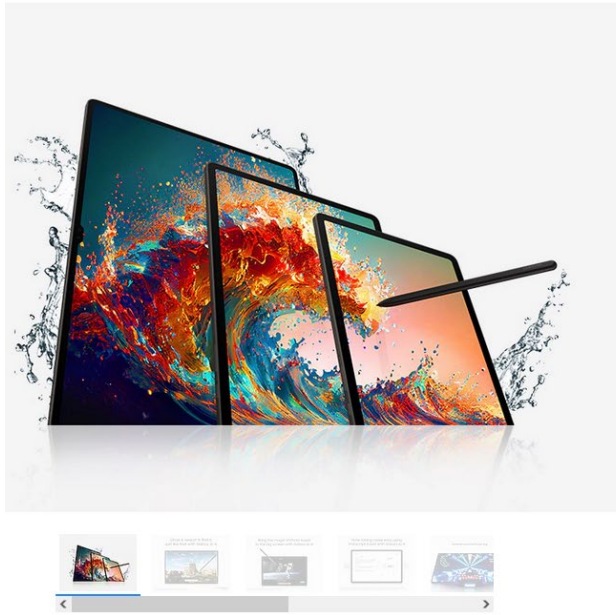
Galaxy Book4 Series

Model

Galaxy Book4 Laptop Full HD	\$899.99
Galaxy Book4 360 2-in-1 Laptop Full HD Touchscreen	\$1,349.99
Galaxy Book4 Pro Laptop 3K AMOLED Touchscreen	\$1,749.99
Galaxy Book4 Pro 360 2-in-1 Laptop 3K AMOLED S Pen Included	\$1,899.99
Galaxy Book4 Ultra Laptop 3K AMOLED Touchscreen NVIDIA GPU	\$2,399.99

Features available only on select Galaxy Book4 models as follows: (A) Book 360: S Pen (Included), rotating screen, touchscreen; (B) 360: S Pen (Gold) (separately), rotating screen, touchscreen; (C) Ultra and Pro: touchscreen.

Source: <https://www.samsung.com/us/computing/galaxy-books/galaxy-book4-series/buy/galaxy-book4-pro-16-intel-core-ultra-7-1tb-moonstone-gray-np960xgk-kg1us>



Galaxy Tab S9 Series Galaxy Tab S9 FE Series

Models

Galaxy Tab S9	\$799.99 \$919.99
Galaxy Tab S9+	\$899.99 \$999.99
Galaxy Tab S9 Ultra	\$1,049.99 \$1199.99

Memory and Storage

12GB (RAM) + 256GB (SSD) \$899.99 \$999.99	12GB (RAM) + 512GB (SSD) \$999.99 \$1199.99
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Source: <https://www.samsung.com/us/tablets/galaxy-tab-s9/buy/galaxy-tab-s9-plus-256gb-graphite-wi-fi-sm-x810nzaaxar/?modelCode=SM-X810NZAAXAR>

03 Multitask with 5G connectivity

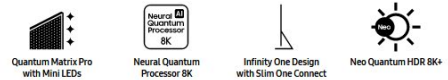
Enjoy smooth streaming and gaming with virtually no lag with reliable, fast Wi-Fi 6E.⁸ Plus, optional 5G connectivity on Galaxy Tab S9+.⁹

Source: <https://www.samsung.com/us/tablets>



65" Class QN800C Samsung Neo QLED 8K Smart TV (2023)

QN65QN800CF / QN65QN800CFZA ★★★★★ 4.2 (106) Write a review



- See worlds within worlds with unparalleled 8K precision made possible by a universe of tiny lights with Quantum Matrix Pro with Mini LEDs.
- Upscale every movie night—and be ready for the future of 8K TV—with our prestigiously detail-oriented Neural Quantum Processor 8K.
- The Infinity One Design with Slim One Connect provides a sleek, slim, impossibly thin and clutter-free experience.
- Don't let your content fall flat. Bring huge contrast to even the smallest details with Neo Quantum HDR 8K+.

Series

Source: <https://www.samsung.com/us/televisions-home-theater/tvs/samsung-neo-qled-8k/65-class-qn800c-samsung-neo-qled-8k-smart-tv-2023-qn65qn800cfza/>

USB ? 3	USB-C 1	Ethernet (LAN) ? Yes
Digital Audio Out (Optical) ? 1	RF In (Terrestrial / Cable input / Satellite Input) 1/1(Common Use for Terrestrial)/0	Ex-Link (RS-232C) 1
WiFi <u>Yes (WiFi6E)</u>	Bluetooth ? Yes (BT5.2)	Anynet+ (HDMI-CEC) Yes

Source: <https://www.samsung.com/us/televisions-home-theater/tvs/samsung-neo-qled-8k/65-class-qn800c-samsung-neo-qled-8k-smart-tv-2023-qn65qn800cfxa/>



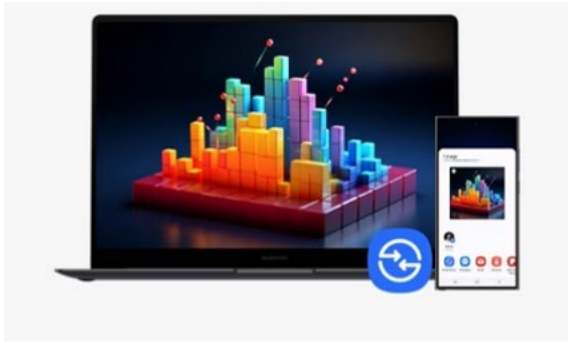
Seamless connectivity

No matter which laptop you choose, sync your Galaxy Book4 Series PC with your other Galaxy devices to do more than you ever thought possible.

Source: <https://www.samsung.com/us/computing/galaxy-books/galaxy-book4-series>

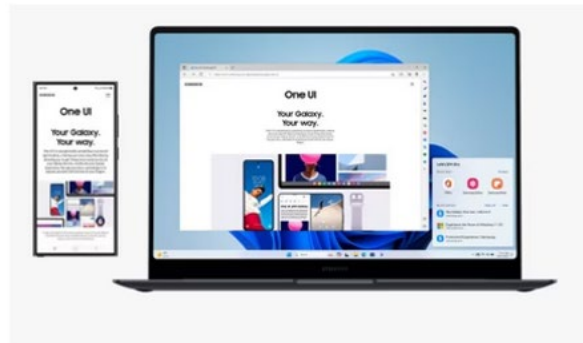
Network Connectivity **Wi-Fi 6E (Gig+)802.11 abgn / ac / ax**

Source: <https://www.samsung.com/us/televisions-home-theater/tvs/samsung-neo-qled-8k/65-class-qn800c-samsung-neo-qled-8k-smart-tv-2023-qn65qn800cfxa/>



Share files in a snap with Quick Share

Sharing files has never been easier. Quick Share easily sends large files like photos and videos to nearby devices, including Galaxy PCs — or an Android or iOS device.⁸



Connect your phone and PC for one experience

Link to Windows connects your Galaxy Book4 Pro with your phone so you can call, text and even mirror your phone's screen from the comfort of your laptop.⁹

⁸Quick Share between Galaxy devices available with the following OS: smartphones and tablets with Android OS version 10.0 (Q) and One UI 2.1 or above, PCs running Windows 10 or later. Requires Samsung account and Wi-Fi and Bluetooth connection. Quick Share to iOS and Android devices available by sending shared link. Individual files shared cannot exceed 3GB (for a total of 5GB per day) and link will expire after two days; requires a Samsung account and internet connection.

⁹Compatible only with Tab S Series.

¹⁰Multi Control available between Galaxy PCs with Windows 10 or later (2021 or later) and either a compatible Galaxy Tablet (Android 12, One UI 4.1 or later) or a compatible smartphone (Android 13, One UI 5.1 or later). Devices must have Bluetooth and be signed in to same Samsung account and Wi-Fi network.

¹¹Devices must be on same Samsung account and Wi-Fi network; to connect from a Galaxy Smartphone to Galaxy Book, requires Galaxy Smartphone with One UI 5.0 or above and Galaxy Book running Windows 10 v. 1809 or later.

Source: <https://www.samsung.com/us/computing/galaxy-books/galaxy-book4>



JBL AUTHENTICS 300

★★★★★ 4.8 (131) Write a review

\$449.99

— 1 + Add To Cart

Source: <https://www.jbl.com/home-speakers/AUTHENTICS-300.html>



Music streaming services via built-in Wi-Fi

Experience everything from podcasts to internet radio in stunning high definition. Or stream music through AirPlay, Alexa Multi-Room Music (MRM), Chromecast built-in™, and Spotify Connect and leave the room or take a call without the music being interrupted. The Wi-Fi connection ensures your speaker gets automatic software and feature updates.

Source: <https://www.jbl.com/home-speakers/AUTHENTICS-300.html>

Control and Connection Specifications

Bluetooth version	5.3
Bluetooth profile	A2DP 1.3.2, AVRCP 1.5
Bluetooth transmitter frequency range	2400 MHz - 2483.5 MHz
Bluetooth transmitter power	<13 dBm (EIRP)
Wi-Fi network	IEEE 802.11 a/b/g/n/ac/ax (2.4GHz/5GHz)
2.4G Wi-Fi transmitter frequency range	2412 - 2472 MHz (2.4 GHz ISM Band, USA 11 Channels, Europe and others 13 Channels)
2.4G Wi-Fi transmitter power	<20 dBm (EIRP)
5G Wi-Fi transmitter frequency range	5.15 - 5.35GHz, 5.470 - 5.725GHz, 5.725 - 5.825GHz
5G Wi-Fi transmitter power	5.15 - 5.25GHz <23dBm, 5.25 - 5.35GHz & 5.470 - 5.725GHz <23dBm, 5.725 - 5.825GHz <14dBm (EIRP)

Source: <https://www.jbl.com/home-speakers/AUTHENTICS-300.html>

37. By doing so, Samsung has directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the '096 Patent. *See* Exhibit B. Samsung's infringement in this regard is ongoing.

38. The Samsung Galaxy S24+ smartphone, Galaxy Tab S9+, Neo QLED 65" Smart TV (QN800C), JBL Authentics 300 Smart Home Speaker, and Galaxy Book4 Pro are exemplary accused products.

39. Samsung directly infringes the '096 Patent when, for example, it and/or its agents use the accused products, including during testing of the accused products. Samsung also directly infringes the '096 Patent when the accused products are used after purchase by a

customer or end user. For example, the accused products are built with hardware and/or software components that control the operation of the accused products. These components cause the accused products to perform the steps of the claimed invention after, for example, receiving sounding packets. Samsung also directly infringes the '096 Patent by exercising direction or control over the use of the accused products by others, including its affiliates, its subsidiaries, its business partners (including certification and testing organizations), and/or its customers and end-users. Samsung contracts with, advises, and/or encourages such persons to engage in conduct satisfying one or more elements of the asserted claims, deriving a financial or other benefit (e.g., improved wireless communications) from doing so. Samsung conditions these benefits on, for example, such persons performing certain activities involving the accused products during specified conditions that cause the accused products to perform the steps of the claimed method (e.g., after receiving sounding packets).

40. Samsung has had knowledge of the '096 Patent at least as of the date when it was notified of the filing of this action.

41. In addition, Samsung has had knowledge of the '096 Patent at least as of February 20, 2013, when it was cited in an IDS (as U.S. Publication No. 2009/0086690) during prosecution of U.S. Patent No. 9,137,698, which is assigned to Samsung. Samsung employees, Ying Li, Zhouyue Pi, Shadi Abu-Surra, Sridhar Rajagopal, and Kaushik Josiam—who are named as inventors of U.S. Patent No. 9,137,698—and others involved in the prosecution of the patent, have had knowledge of the '096 Patent well before this lawsuit was filed.

42. Freedom Patents has been damaged as a result of the infringing conduct by Samsung alleged above. Thus, Samsung is liable to Freedom Patents in an amount that

adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

43. Freedom Patents has neither made nor sold unmarked articles that practice the '096 Patent, and is entitled to collect pre-filing damages for the full period allowed by law for infringement of the '096 Patent.

COUNT III

DIRECT INFRINGEMENT OF U.S. PATENT NO. 8,514,815

44. On August 20, 2013, United States Patent No. 8,514,815 (“the '815 Patent”) was duly and legally issued by the United States Patent and Trademark Office for an invention entitled “Training Signals for Selecting Antennas and Beams in MIMO Wireless LANs.”


45. Freedom Patents is the owner of the '815 Patent, with all substantive rights in and to that patent, including the sole and exclusive right to prosecute this action and enforce the '815 Patent against infringers, and to collect damages for all relevant times.

46. Samsung used products and/or systems including, for example, its Samsung Galaxy S24+ smartphone, Galaxy Tab S9+, Neo QLED 65” Smart TV (QN800C), Galaxy Book4 Pro, JBL Authentics 300 Smart Home Speaker, and other products⁷ that comply with the

⁷ See, e.g., Galaxy A52s 5G, Galaxy A73 5G, Galaxy A35 5G (256 GB), Galaxy A35 5G (128 GB), Galaxy A55 5G, Galaxy A54 5G, Galaxy S24 5G, Galaxy S24+ 5G, Galaxy S24 ultra 5G, Galaxy S23 FE, Galaxy S23 5G, Galaxy S23+ 5G, Galaxy S23 ultra 5G, Galaxy S21 5G (G991U1), Galaxy S21 Plus 5G (G996U), Galaxy S21 Ultra, Galaxy S21 FE, Galaxy S20 FE, Galaxy S20 5G (SM-G981U), Galaxy S20 Ultra 5G (G988U), Galaxy S20+ 5G (SM-G986U), Galaxy S10 (SM-G973W), Galaxy S10+ (SM-G975U), Galaxy S10e (SM-G970U), Galaxy S10 5G (G977U), Galaxy Z Flip5, Galaxy Z Fold5, Galaxy Z Fold4, Galaxy Z Flip4, Galaxy Z Flip3 5G, Galaxy Z Fold 3 (256GB), Galaxy Z Fold 3 (512GB), Galaxy Z Fold2, Galaxy Note10+ 256GB (N975U1), Galaxy S10 International Variant (G973F), Galaxy Note10+ (SM-N976U), Galaxy S10 US Cellular (SM-G973U), Galaxy S10+ Unlocked (G975U1), Galaxy Note10 (N970U), Galaxy Note 20 5G, Galaxy Note 20 Ultra 5G, Galaxy XCover Field Pro (G889A), Galaxy Tab S9 Plus, Galaxy Tab S9, Galaxy Tab S9 Ultra, Galaxy Tab S9 FE, Galaxy Tab S9 FE+, Galaxy Tab S8 Plus 5G, Galaxy Tab S8 WiFi, Galaxy Tab S8 Ultra WiFi, Galaxy

IEEE 802.11ax-2021 standard and implement MIMO Wi-Fi capabilities (“accused products”).

Tab S8+ WiFi, Galaxy Tab S7 FE (WiFi), Samsung Galaxy Tab S7+ (128GB), Samsung Galaxy Tab S7+ (256GB), Samsung Galaxy Tab S7+ (512GB), QN85QN900DFXZA, QN65QN900DFXZA, QN75QN900DFXZA, QN65QN800DFXZA, QN75QN800DFXZA, QN85QN800DFXZA, QN65QN900CFXZA, QN75QN900CFXZA, QN85QN900CFXZA, QN65QN800CFXZA, QN75QN800CFXZA, QN85QN800CFXZA, QN98QN990CFXZA, NP750XGK-KS2US / NP750XGK-KS2US, NP750XGL-XS2US / NP750XGL-XS2US, NP750QGK / NP750QGK-KG3US, NP750QGK / NP750QGK-KG1US, NP750QGK / NP750QGK-KG2US, NP940XGK / NP940XGK-KG1US, NP960XGK / NP960XGK-KG1US, NP960QGK / NP960QGK-KG1US, NP960XGL / NP960XGL-XG2US, NP960XGL / NP960XGL-XG1US, NP754XFG-KB2US, NP754XFG-KB3US, NP754XFG-KB1US, NP960XFG-KA1US, NP940XFG-KA1US, NP940XFG-KA2US, NP960XFG-KC1US, NP940XFG-KC1US, NP940XFG-KC2US, NP964XFG-KC1US, NP961XFG-KC1US, NP964XFG-KC2US, NP944XFG-KC2US, NP941XFG-KC1US, Galaxy Book3 Pro 360, Galaxy Book3 360 - 512GB, Galaxy Book3 360 - 2TB, Galaxy Book3 360 - 1TB, Galaxy Book 3 ultra, Galaxy Book2 Pro 13.3" i5/8G/256G Graphite, Galaxy Book2 Pro 15.6" i7/16G/512G Graphite, Galaxy Book2 360, XE530QDA-KA1US, XE530QDA-KA2US, XE530QDA-KA3US, XE530QDA-KB1US, XE530QDA-KB2US, XE530QDA-KB3US, Samsung Galaxy Chromebook Touchscreen Laptop 360 Convertible (8GB RAM | 128GB eMMC+128G SD Card), Samsung Galaxy Chromebook Touchscreen Laptop 360 Convertible (8GB RAM | 128GB eMMC+256G SD Card), Samsung Galaxy Chromebook Touchscreen Laptop 360 Convertible (8GB RAM | 128GB eMMC+32G SD Card), Galaxy Chromebook Google Laptop (8GB RAM| 128GB Storage), Galaxy Chromebook Google Laptop (8GB RAM| 256GB SSD+128G SD Card), Galaxy Chromebook Google Laptop (8GB RAM| 256GB SSD+256G SD Card), XE340XDA-KA6US, SAMSUNG Galaxy Chromebook Go (4GB Memory, 32GB), SAMSUNG Galaxy Chromebook Go Wi-Fi/LTE (Verizon) (4GB Memory, 32GB), SAMSUNG Galaxy Chromebook Go 14" Laptop Computer, Wi-Fi/LTE (AT&T) (GB Memory, 32GB), XE520QAB-K01US, XE310XBA-K01US, JBL PartyBox Ultimate, JBL Authentics 500, JBL Authentics 300, BAR 1300X, BAR 500, etc.



Galaxy AI ✨

Device

Galaxy S24	\$859.99
Galaxy S24+	\$999.99

Connectivity

T-Mobile AT&T verizon uscellular

Source: <https://www.samsung.com/us/smartphones/galaxy-s24/buy/galaxy-s24-plus-256gb-unlocked-sm-s926uzkaxaa>

Additional spec details

Battery Description

4900 mAh


Ports

USB Type-C

Connectivity

Wi-Fi 802.11a/b/g/n/ac/ax, WiFi 6E, UMTS, HSDPA, HSPA+, LTE, 5G, Bluetooth 5.3, NFC

Source: <https://www.t-mobile.com/commerce/cell-phone/samsung-galaxy-s24-plus>



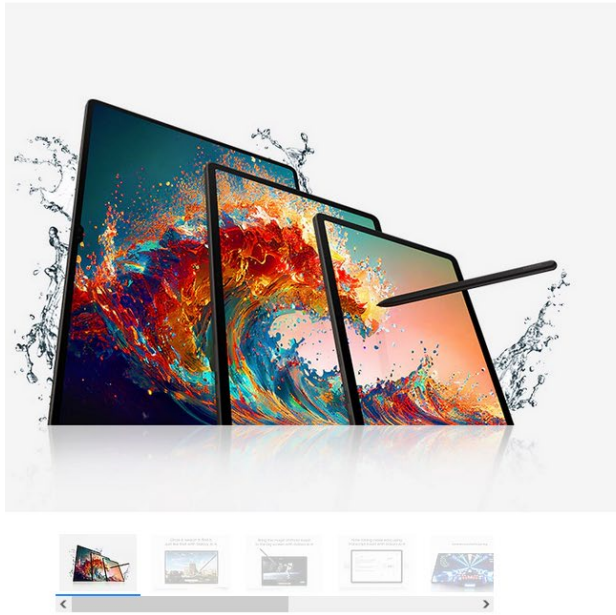
Galaxy Book4 Series

Model

Galaxy Book4 Laptop Full HD	\$899.99
Galaxy Book4 360 2-in-1 Laptop Full HD Touchscreen	\$1,349.99
Galaxy Book4 Pro Laptop 3K AMOLED Touchscreen	\$1,749.99
Galaxy Book4 Pro 360 2-in-1 Laptop 3K AMOLED S Pen Included	\$1,899.99
Galaxy Book4 Ultra Laptop 3K AMOLED Touchscreen NVIDIA GPU	\$2,399.99

Features available only on select Galaxy Book4 models as follows: (a) Book 360: S Pen (Included), rotating screen, touchscreen; (b) 360: S Pen (Gold) (separately), rotating screen, touchscreen; (c) Ultra and Pro: touchscreen.

Source: <https://www.samsung.com/us/computing/galaxy-books/galaxy-book4-series/buy/galaxy-book4-pro-16-intel-core-ultra-7-1tb-moonstone-gray-np960xgk-kg1us>



Galaxy Tab S9 Series Galaxy Tab S9 FE Series

Models

Galaxy Tab S9	\$799.99 \$919.99
Galaxy Tab S9+	\$899.99 \$999.99
Galaxy Tab S9 Ultra	\$1,049.99 \$1199.99

Memory and Storage

12GB (RAM) + 256GB (SSD) \$899.99 \$999.99	12GB (RAM) + 512GB (SSD) \$999.99 \$1199.99
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Source: <https://www.samsung.com/us/tablets/galaxy-tab-s9/buy/galaxy-tab-s9-plus-256gb-graphite-wi-fi-sm-x810nzaaxar/?modelCode=SM-X810NZAAXAR>

03 Multitask with 5G connectivity

Enjoy smooth streaming and gaming with virtually no lag with reliable, fast Wi-Fi 6E.⁸ Plus, optional 5G connectivity on Galaxy Tab S9+.⁹

Source: <https://www.samsung.com/us/tablets>



65" Class QN800C Samsung Neo QLED 8K Smart TV (2023)

QN65QN800CF / QN65QN800CFZA ★★★★★ 4.2 (106) Write a review



- See worlds within worlds with unparalleled 8K precision made possible by a universe of tiny lights with Quantum Matrix Pro with Mini LEDs.
- Upscale every movie night—and be ready for the future of 8K TV—with our prestigiously detail-oriented Neural Quantum Processor 8K.
- The Infinity One Design with Slim One Connect provides a sleek, slim, impossibly thin and clutter-free experience.
- Don't let your content fall flat. Bring huge contrast to even the smallest details with Neo Quantum HDR 8K+.

Series

Source: <https://www.samsung.com/us/televisions-home-theater/tvs/samsung-neo-qled-8k/65-class-qn800c-samsung-neo-qled-8k-smart-tv-2023-qn65qn800cfza/>

USB ? 3	USB-C 1	Ethernet (LAN) ? Yes
Digital Audio Out (Optical) ? 1	RF In (Terrestrial / Cable input / Satellite Input) 1/1(Common Use for Terrestrial)/0	Ex-Link (RS-232C) 1
WiFi <u>Yes (WiFi6E)</u>	Bluetooth ? Yes (BT5.2)	Anynet+ (HDMI-CEC) Yes

Source: <https://www.samsung.com/us/televisions-home-theater/tvs/samsung-neo-qled-8k/65-class-qn800c-samsung-neo-qled-8k-smart-tv-2023-qn65qn800cfxa/>



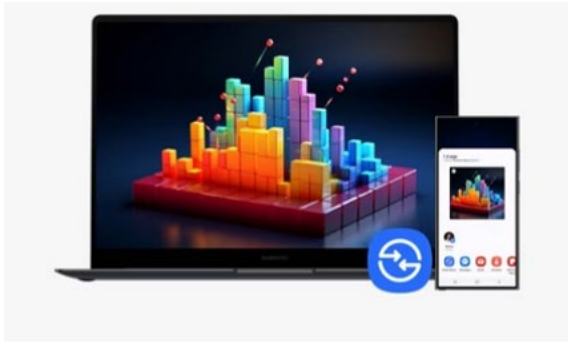
Seamless connectivity

No matter which laptop you choose, sync your Galaxy Book4 Series PC with your other Galaxy devices to do more than you ever thought possible.

Source: <https://www.samsung.com/us/computing/galaxy-books/galaxy-book4-series>

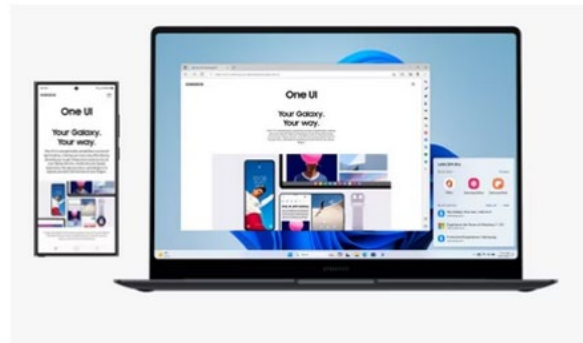
Network Connectivity **Wi-Fi 6E (Gig+)802.11 abgn / ac / ax**

Source: <https://www.samsung.com/us/televisions-home-theater/tvs/samsung-neo-qled-8k/65-class-qn800c-samsung-neo-qled-8k-smart-tv-2023-qn65qn800cfxa/>



Share files in a snap with Quick Share

Sharing files has never been easier. Quick Share easily sends large files like photos and videos to nearby devices, including Galaxy PCs — or an Android or iOS device.⁸



Connect your phone and PC for one experience

Link to Windows connects your Galaxy Book4 Pro with your phone so you can call, text and even mirror your phone's screen from the comfort of your laptop.¹⁰

⁸Quick Share between Galaxy devices available with the following OS: smartphones and tablets with Android OS version 10.0 (Q) and One UI 2.1 or above, PCs running Windows 10 or later. Requires Samsung account and Wi-Fi and Bluetooth connection. Quick Share to iOS and Android devices available by sending shared link. Individual files shared cannot exceed 3GB (for a total of 5GB per day) and link will expire after two days; requires a Samsung account and internet connection.

⁹Compatible only with Tab S Series.

¹⁰Multi Control available between Galaxy PCs with Windows 10 or later (2021 or later) and either a compatible Galaxy Tablet (Android 12, One UI 4.1 or later) or a compatible smartphone (Android 13, One UI 5.1 or later). Devices must have Bluetooth and be signed in to same Samsung account and Wi-Fi network.

¹¹Devices must be on same Samsung account and Wi-Fi network; to connect from a Galaxy Smartphone to Galaxy Book, requires Galaxy Smartphone with One UI 5.0 or above and Galaxy Book running Windows 10 v. 1809 or later.

Source: <https://www.samsung.com/us/computing/galaxy-books/galaxy-book4>



JBL AUTHENTICS 300

★★★★★ 4.8 (131) Write a review

\$449.99

— 1 + Add To Cart

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Experience everything from podcasts to internet radio in stunning high definition. Or stream music through AirPlay, Alexa Multi-Room Music (MRM), Chromecast built-in™, and Spotify Connect and leave the room or take a call without the music being interrupted. The Wi-Fi connection ensures your speaker gets automatic software and feature updates.

Source: <https://www.jbl.com/home-speakers/AUTHENTICS-300.html>

Control and Connection Specifications

Bluetooth version	5.3
Bluetooth profile	A2DP 1.3.2, AVRCP 1.5
Bluetooth transmitter frequency range:2400 MHz - 2483.5 MHzBluetooth transmitter power:<13 dBm (EIRP)	Wi-Fi network:IEEE 802.11 a/b/g/n/ac/ax (2.4GHz/5GHz)
2.4G Wi-Fi transmitter frequency range	2412 - 2472 MHz (2.4 GHz ISM Band, USA 11 Channels, Europe and others 13 Channels)
2.4G Wi-Fi transmitter power	<20 dBm (EIRP)
5G Wi-Fi transmitter frequency range	5.15 - 5.35GHz, 5.470 - 5.725GHz, 5.725 - 5.825GHz
5G Wi-Fi transmitter power	5.15 - 5.25GHz <23dBm, 5.25 - 5.35GHz & 5.470 - 5.725GHz <23dBm, 5.725 - 5.825GHz <14dBm (EIRP)

Source: <https://www.jbl.com/home-speakers/AUTHENTICS-300.html>

47. By doing so, Samsung has directly infringed (literally and/or under the doctrine of equivalents) at least Claim 1 of the '815 Patent. *See* Exhibit C. Samsung's infringement in this regard is ongoing.

48. The Samsung Galaxy S24+ smartphone, Galaxy Tab S9+, Neo QLED 65" Smart TV (QN800C), JBL Authentics 300 Smart Home Speaker, and Galaxy Book4 Pro are exemplary accused products.

49. Samsung directly infringes the '815 Patent when, for example, it and/or its agents use the accused products, including during testing of the accused products. Samsung also directly infringes the '815 Patent when the accused products are used after purchase by a customer or end user. For example, the accused products are built with hardware and/or

software components that control the operation of the accused products. These components cause the accused products to perform the steps of the claimed invention after, for example, receiving sounding packets. Samsung also directly infringes the '815 Patent by exercising direction or control over the use of the accused products by others, including its affiliates, its subsidiaries, its business partners (including certification and testing organizations), and/or its customers and end-users. Samsung contracts with, advises, and/or encourages such persons to engage in conduct satisfying one or more elements of the asserted claims, deriving a financial or other benefit (e.g., improved wireless communications) from doing so. Samsung conditions these benefits on, for example, such persons performing certain activities involving the accused products during specified conditions that cause the accused products to perform the steps of the claimed method (e.g., after receiving sounding packets).

50. Samsung has had knowledge of the '815 Patent at least as of the date when it was notified of the filing of this action.

51. In addition, Samsung has had knowledge of the '815 Patent at least as of September 19, 2011, when it was cited by the Examiner in a Notice of References Cited during prosecution of U.S. Patent No. 8,102,830, which is assigned to Samsung. Samsung employees, Atsuya Yokoi and Tsutomu Mitsui—who are named as inventors of U.S. Patent No. 8,102,830—and others involved in the prosecution of the patent, have had knowledge of the '815 Patent well before this lawsuit was filed.

52. Freedom Patents has been damaged as a result of the infringing conduct by Samsung alleged above. Thus, Samsung is liable to Freedom Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

53. Freedom Patents has neither made nor sold unmarked articles that practice the '815 Patent, and is entitled to collect pre-filing damages for the full period allowed by law for infringement of the '815 Patent.

**ADDITIONAL ALLEGATIONS REGARDING INFRINGEMENT
AND PERSONAL JURISDICTION**

54. Samsung has also indirectly infringed the '686 Patent, the '096 Patent, and the '815 Patent by inducing others to directly infringe the '686 Patent, the '096 Patent, and the '815 Patent.

55. Samsung has induced the end users and/or Samsung's customers to directly infringe (literally and/or under the doctrine of equivalents) the '686 Patent, the '096 Patent, and the '815 Patent by using the accused products.

56. Samsung took active steps, directly and/or through contractual relationships with others, with the specific intent to cause them to use the accused products in a manner that infringes one or more claims of the '686 Patent, the '096 Patent, and the '815 Patent, including, for example, claims 1 and 21 of the '686 Patent, claim 1 of the '096 Patent, and claim 1 of the '815 Patent.

57. Such steps by Samsung included, among other things, advising or directing customers, end users, and others (including distributors and equipment services entities) to use the accused products in an infringing manner; advertising and promoting the use of the accused products in an infringing manner; and/or distributing instructions that guide users to use the accused products in an infringing manner.

58. Samsung performed these steps, which constitute joint and/or induced infringement, with the knowledge of the '686 Patent, the '096 Patent, and the '815 Patent and with the knowledge that the induced acts constitute infringement.

59. Samsung was and is aware that the normal and customary use of the accused products by Samsung's customers would infringe the '686 Patent, the '096 Patent, and the '815 Patent. Samsung's inducement is ongoing.

60. Samsung has also induced its affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on its or its affiliates' behalf, to directly infringe (literally and/or under the doctrine of equivalents) at least claim 21 of the '686 Patent by importing, selling or offering to sell the accused products.

61. Samsung has a significant role in placing the accused products in the stream of commerce with the expectation and knowledge that they will be purchased by consumers in Texas and elsewhere in the United States.

62. Samsung purposefully directs or controls the making of accused products and their shipment to the United States, using established distribution channels, for sale in Texas and elsewhere within the United States.

63. Samsung purposefully directs or controls the sale of the accused products into established United States distribution channels, including sales to nationwide retailers and wholesalers, including, for example, Amazon, AT&T, Best Buy, T-Mobile, Target, and Walmart. Samsung's established United States distribution channels include one or more United States based affiliates (e.g., Samsung Electronics America, Inc. f/k/a Samsung Telecommunications America LLC and Harman International Industries, Inc.) and third-parties working on behalf of Samsung.

64. Samsung's United States based affiliates (e.g., Samsung Electronics America, Inc. f/k/a Samsung Telecommunications America LLC and Harman International Industries, Inc.)

operate entirely in support of Samsung and are not free to sell products of Samsung's competitors.

65. Samsung's United States based affiliates (e.g., Samsung Electronics America, Inc. f/k/a Samsung Telecommunications America LLC and Harman International Industries, Inc.) were formed by Samsung to further its domestic sales of the accused infringing products and are controlled by Samsung to ensure that result.

66. Samsung purposefully directs or controls the sale of the accused products online and in nationwide retailers and wholesalers, including for sale in Texas and elsewhere in the United States, and expects and intends that the accused products will be so sold.

67. Samsung purposefully places the accused products—whether by itself or through subsidiaries, affiliates, or third parties—into an international supply chain, knowing that the accused products will be sold in the United States, including Texas. Therefore, Samsung also facilitates the sale of the accused products in Texas.

68. Samsung took active steps, directly and/or through contractual relationships with others, with the specific intent to cause such persons to import, sell, or offer to sell the accused products in a manner that infringes claim 21 of the '686 Patent.

69. Such steps by Samsung included, among other things, making or selling the accused products outside of the United States for importation into or sale in the United States, or knowing that such importation or sale would occur; and directing, facilitating, or influencing its affiliates, or third-party manufacturers, shippers, distributors, retailers, or other persons acting on its or its affiliates' behalf, to import, sell, or offer to sell the accused products in an infringing manner.

70. Samsung performed these steps, which constitute induced infringement, with the knowledge of the '686 Patent, the '096 Patent, and the '815 Patent, and with the knowledge that the induced acts would constitute infringement.

71. Samsung performed such steps in order to profit from the eventual sale of the accused products in the United States.

72. Samsung's inducement is ongoing.

73. Samsung has also indirectly infringed by contributing to the infringement of the '686 Patent, the '096 Patent, and the '815 Patent. Samsung has contributed to the direct infringement of the '686 Patent, the '096 Patent, and the '815 Patent by the end user of the accused products.

74. The accused products have special features that are specially designed to be used in an infringing way and that have no substantial uses other than ones that infringe the '686 Patent, the '096 Patent, and the '815 Patent, including, for example, claims 1 and 21 of the '686 Patent, claim 1 of the '096 Patent, and claim 1 of the '815 Patent.

75. The special features include, for example, hardware and/or software components especially adapted for transmitting/receiving sounding packets and estimating channel matrices for the selection of antennas in a multiple-input, multiple-output wireless network, used in a manner that infringes the '686 Patent, the '096 Patent, and the '815 Patent.

76. These special features constitute a material part of the invention of one or more of the claims of the '686 Patent, the '096 Patent, and the '815 Patent, and are not staple articles of commerce suitable for substantial non-infringing use.

77. Samsung's contributory infringement is ongoing.

78. Samsung has had actual knowledge of the '686 Patent at least as early as February 20, 2013, when Samsung received notice of the '686 Patent during prosecution of one of its patents, and/or as of the date when it was notified of the filing of this action. Since at least that time, Samsung has known the scope of the claims of the '686 Patent and the products that practice the '686 Patent.

79. Samsung has had actual knowledge of the '096 Patent at least as early as February 20, 2013, when Samsung received notice of the '096 Patent during prosecution of one of its patents, and/or as of the date when it was notified of the filing of this action. Since at least that time, Samsung has known the scope of the claims of the '096 Patent and the products that practice the '096 Patent.

80. Samsung has had actual knowledge of the '815 Patent at least as early as September 19, 2011, when Samsung received notice of the '815 Patent during prosecution of one of its patents, and/or as of the date when it was notified of the filing of this action. Since at least that time, Samsung has known the scope of the claims of the '815 Patent and the products that practice the '815 Patent.

81. By the time of trial, Samsung will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '686 Patent, the '096 Patent, and the '815 Patent.

82. Furthermore, Samsung has a policy or practice of not reviewing the patents of others (including instructing its employees to not review the patents of others), and thus has been willfully blind of Freedom Patents' patent rights. *See, e.g.*, M. Lemley, "Ignoring Patents," 2008 Mich. St. L. Rev. 19 (2008).

83. Samsung's customers have infringed the '686 Patent, the '096 Patent, and the '815 Patent. Samsung encouraged its customers' infringement.

84. Samsung's direct and indirect infringement of the '686 Patent, the '096 Patent, and the '815 Patent has been, and/or continues to be willful, intentional, deliberate, and/or in conscious disregard of Freedom Patents' rights under the patents-in-suit.

85. Freedom Patents has been damaged as a result of Samsung's infringing conduct alleged above. Thus, Samsung is liable to Freedom Patents in an amount that adequately compensates it for such infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

JURY DEMAND

Freedom Patents hereby requests a trial by jury on all issues so triable by right.

PRAYER FOR RELIEF

Freedom Patents requests that the Court find in its favor and against Samsung, and that the Court grant Freedom Patents the following relief:

a. Judgment that one or more claims of the '686 Patent, the '096 Patent, and the '815 Patent have been infringed, either literally and/or under the doctrine of equivalents, by Samsung and/or all others acting in concert therewith;

b. A permanent injunction enjoining Samsung and its officers, directors, agents, servants, affiliates, employees, divisions, branches, subsidiaries, parents, and all others acting in concert therewith from infringement of the '686 Patent, the '096 Patent, and the '815 Patent; or, in the alternative, an award of a reasonable ongoing royalty for future infringement of the '686 Patent, the '096 Patent, and the '815 Patent by such entities;

c. Judgment that Samsung account for and pay to Freedom Patents all damages to and costs incurred by Freedom Patents because of Samsung's infringing activities and other

conduct complained of herein, including an award of all increased damages to which Freedom Patents is entitled under 35 U.S.C. § 284;

d. That Freedom Patents be granted pre-judgment and post-judgment interest on the damages caused by Samsung's infringing activities and other conduct complained of herein;

e. That this Court declare this an exceptional case and award Freedom Patents its reasonable attorney's fees and costs in accordance with 35 U.S.C. § 285; and

f. That Freedom Patents be granted such other and further relief as the Court may deem just and proper under the circumstances.

Dated: June 14, 2024

Respectfully submitted,

/s/ Zachariah S. Harrington

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