

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

SEVEN NETWORKS, LLC,

Plaintiff,

v.

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

Defendants.

Civil Action No. 2:18-cv-474

PATENT CASE

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff SEVEN Networks, LLC (“SEVEN”) files this Complaint for Patent Infringement of several United States patents as identified below (collectively, the “Patents-in-Suit”) and alleges as follows:

PARTIES

1. SEVEN is a company formed under the laws of Delaware with its principal place of business at 2660 East End Boulevard South, Marshall, Texas 75672.

2. Defendant Samsung Electronics America, Inc. is a corporation formed under the laws of New York with its principal place of business at 85 Challenger Road, Ridgefield Park, New Jersey 07660, and may be served through its agent C T Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201-3136.

3. Defendant Samsung Electronics Co., Ltd. is a corporation formed under the laws of Korea with its principal place of business at 129 Samsung-Ro, Yeongtong-Gu, Suwon, Gyeonggi-Do, Korea 443-742.

JURISDICTION AND VENUE

4. SEVEN brings this civil action for patent infringement under the Patent Laws of

the United States, 35 U.S.C. § 1 *et. seq.*, including 35 U.S.C. §§ 271, 281-285. This Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338.

5. Samsung Electronics America, Inc. (“SEA”) and Samsung Electronics Co., Ltd. (“SEC”) (also referred to collectively “Samsung”) transact and conduct business in this District and the State of Texas, and are subject to the personal jurisdiction of this Court. For example, SEA designs, markets, and sells mobile products, such as smartphones and tablets, throughout the United States including the State of Texas and this District. SEA maintains a major corporate office in Richardson, Texas that was formerly the principal place of business for Samsung Telecommunications America LLC (“STA”). STA was previously responsible for the design, marketing and sale of Samsung’s mobile products, but is now merged into SEA. SEC manufactures Samsung’s mobile devices and imports those products into the United States. For example, SEC has imported such mobile products into the United States through Dallas, Texas, and then products are distributed by SEA or SEC to other parts of the country, including to this District.

6. Samsung has admitted that this Court has personal jurisdiction over it in a number of other patent infringement matters, including but not limited to *Image Processing Technologies, LLC v. Samsung Electronics Co., Ltd. et al.*, C.A. No. 2:16-cv-505. Similarly, Samsung did not contest whether person jurisdiction over Samsung properly lies in this District in prior litigation between the Parties. *See SEVEN Networks, LLC v. Samsung Electronics America, Inc. et al.*, Case No. 2:17-cv-441-JRG, Doc. No. 53.

7. SEVEN’s causes of action arise, at least in part, from Samsung’s business contacts and activities in this District and elsewhere within the State of Texas. Samsung has committed acts of infringement in this District and within Texas by making, using, selling,

offering for sale, or importing into the United States products that infringe one or more claims of the Patents-in-Suit as set forth herein. Further, Samsung encourages others within this District to use its mobile products and thereby infringe one or more claims of the Patents-in-Suit. For example, Samsung advertises its mobile devices, such as its smart phones, through its website: <http://www.samsung.com/us/mobile/phones/> (last visited Oct. 4, 2018). Further, Samsung provides its customers with information regarding the use of the devices' features, such as its various battery saving modes: <https://www.samsung.com/us/support/mobile/phones/galaxy-s> (last visited Oct. 4, 2018).

8. Samsung actively solicits customers within this District and the State of Texas, and has sold many of its infringing mobile products to residents of Texas and this District.

9. Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400.

10. In other patent infringement matters involving Samsung's mobile products, such as *Image Processing Technologies*, Samsung has admitted that for patent infringement actions involving its mobile products venue is proper in this District. Similarly, Samsung did not contest whether venue in this District is proper in prior litigation between the Parties.

THE PATENTS-IN-SUIT

11. On November 8, 2016, the United States Patent and Trademark Office ("USPTO") duly and legally issued U.S. Patent No. 9,491,703, titled "Dynamic Adjustment of Keep-Alive Messages for Efficient Battery Usage in a Mobile Network," to inventors Ari Backholm *et al.* ("the '703 Patent"). A true and correct copy of the '703 Patent is attached as Exhibit A to this Complaint.

12. On March 21, 2017, the USPTO duly and legally issued U.S. Patent No. 9,603,056, titled "Mobile Application Traffic Optimization," to inventors Michael Luna *et al.*

(“the ’056 Patent”). A true and correct copy of the ’056 Patent is attached as Exhibit B to this Complaint.

13. On May 23, 2017, the USPTO duly and legally issued U.S. Patent No. 9,661,103, titled “Mobile Device Having Improved Polling Characteristics for Background Applications,” to inventors Michael Luna *et al.* (“the ’103 Patent”). A true and correct copy of the ’103 Patent is attached as Exhibit C to this Complaint.

14. On June 13, 2017, the USPTO duly and legally issued U.S. Patent No. 9,681,387, titled “Mobile Traffic Optimization and Coordination and User Experience Enhancement,” to inventors Michael Luna *et al.* (“the ’387 Patent”). A true and correct copy of the ’387 Patent is attached as Exhibit D to this Complaint.

15. On August 8, 2018, the USPTO duly and legally issued U.S. Patent No. 10,063,486, titled “Offloading Application Traffic to a Shared Communication Channel for Signal Optimization in a Wireless Network for Traffic Utilizing Proprietary and Non-Proprietary Protocols,” to inventors Rami Alisawi *et al.* (“the ’486 Patent”). A true and correct copy of the ’486 Patent is attached as Exhibit E to this Complaint.

16. On October 2, 2018, the USPTO duly and legally issued U.S. Patent No. 10,091,734, titled “Optimizing Mobile Network Traffic Coordination Across Multiple Applications Running on a Mobile Device,” to inventors Michael Luna *et al.* (“the ’734 Patent”). A true and correct copy of the ’734 Patent is attached as Exhibit F to this Complaint.

17. SEVEN owns the entire right and title to each of the Patents-in-Suit.

BACKGROUND

18. For nearly two decades, SEVEN has researched and developed innovative software solutions for mobile devices directed to enhancing the user experience. For example,

SEVEN has developed software technologies to manage mobile traffic in order to conserve network and battery resources. Software applications on mobile devices are frequently signaling the network for a variety of reasons. Much of the signaling from these software applications is unnecessary and simply consumes precious bandwidth and remaining battery power. This needless mobile traffic negatively impacts the user's overall experience by creating service overloads and outages or draining the limited battery of the mobile device. SEVEN's technologies are able to optimize mobile traffic to conserve both network and battery resources.

19. SEVEN has been recognized in the industry for its innovative technologies and products. For example, at the Mobile World Congress in 2011, the GSMA awarded SEVEN with its Global Mobile Award for Best Technology Breakthrough. Further, in 2013 SEVEN won the Mobile Merit Award for its outstanding innovations in the mobile industry and was identified as one of fifty mobile companies to watch by AlwaysOn. SEVEN was also awarded the Best Free Android App in 2013 by TechRadar. Additionally, and among other industry recognition, Telecoms.com identified SEVEN in its Best LTE Traffic Management Product Short List.

20. Samsung is aware of SEVEN's innovative products and technologies for traffic management. As a trusted supplier, SEVEN provided products and services to Samsung for several years. The technologies provided to Samsung included SEVEN's push-enabled mobile email and messaging solutions. Among other things, SEVEN's technologies helped to power Samsung's Premium Social Hub.

21. Samsung recognizes that the design of a smartphone's user experience must reflect what users want most from their devices. In a 2015 poll conducted by Samsung, a majority of those polled identified the battery as the most important feature in a mobile device. Accordingly, advances in technologies to improve battery life are of utmost importance to users.

While both hardware and software advancements are being pursued in the industry, there can be significant consequences for failures in battery hardware. For example, Samsung's Galaxy Note 7 handsets experienced catastrophic failures from defects in the device's battery. These defects in battery hardware led to devices spontaneously catching fire, and ultimately to one of the largest recalls for consumer products. Several sources estimate that the recall of the Note 7 handsets cost Samsung at least \$5.3 billion.

22. Samsung currently utilizes software technologies for conserving battery and extending the battery life of its mobile devices. As described below, Samsung's mobile devices implement software to manage mobile traffic to save battery power. These mobile devices infringe SEVEN's innovative and patented technology.

COUNT 1

(Infringement of U.S. Pat. No. 9,491,703)

23. Samsung infringes at least claim 15 of the '703 Patent under 35 U.S.C. §271(a) and (b). Samsung makes, uses, sells, offers to sell, or imports into the United States products, such as the Samsung Galaxy S9, that meet every limitation of at least claim 15.

24. Claim 15 of the '703 Patent is directed to a mobile device comprising a communications interface and a battery, the mobile terminal in conjunction with the communications interface is configured for: (1) establishing a first connection over a network between a mobile terminal and a remote entity; (2) sending, from the mobile terminal, keep-alive messages at varying intervals via the first connection in response to inactivity in the first connection; wherein the first connection is disconnected after a first period of inactivity; (3) establishing a second connection over the network between the mobile terminal and the remote entity; (4) sending, from the mobile terminal, keep-alive messages at varying intervals via the

second connection in response to inactivity in the second connection; wherein the second connection is disconnected after a second period of inactivity; and (5) sending, from the mobile terminal with a processor keep-alive messages at a safe interval via a subsequent connection over the network in response to inactivity in the subsequent connection, wherein the safe interval is based on the first disconnection and the second disconnection.

25. Samsung's products infringe at least claim 15 of the '703 Patent. For example, the Samsung Galaxy S9 is a mobile terminal that includes a 3000mAh battery and communications interfaces for multiple wireless networks, including Enhanced 4x4 MIMO/CA, LAA, LTE and Wi-Fi 802.11 a/b/g/n/ac interfaces. Samsung's Galaxy S9 includes the Android 8.0 operating system, which includes the Adaptive Heartbeat feature for sending keep-alive messages to Google's Firebase Cloud Messaging (FCM) servers. Samsung's Galaxy S9, and Samsung's other products including the Adaptive Heartbeat feature, are configured to establish a connection to Google's FCM servers and send keep-alive messages at varying intervals when that connection is idle. The interval for sending keep-alive messages varies, with the interval increasing based on the number of successfully returned keep-alive messages. If the first connection is lost after a period of inactivity, Samsung's Galaxy S9 is configured to establish a second connection to Google's FCM servers, and to send keep-alive messages according to the same varying interval scheme. However, if the second connection is lost after a period of inactivity, Samsung's Galaxy S9 is configured to send keep-alive messages over a subsequent connection at a safe interval based on the first and second disconnections.

26. Other Samsung products similarly infringe one or more claims of the '703 Patent. Such other products include Samsung's Galaxy S, Galaxy Note, and Galaxy Tab devices.

27. Samsung also induces infringement by end users of Samsung's mobile devices of

at least claim 15 of the '703 Patent. Samsung promotes and advertises the use of its products, especially the products' capability to preserve remaining battery support applications requiring network connectivity. The Adaptive Heartbeat feature embodying claim 15 as described above contributes to this capability by allowing Samsung Products' to efficiently discover keep-alive intervals that minimize keep-alive signaling while avoiding connection loss and the battery and service loss that results. The infringing power saving functionality is included in Samsung's mobile devices by default. Examples of Samsung's promotional materials appear on the company's website, such as <https://www.samsung.com/us/smartphones/galaxy-s9/specs/> (last visited Oct. 4, 2018).

28. Samsung has had notice of the '703 Patent since at least the filing of this suit. Accordingly, Samsung's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Samsung's specific intent to induce others to infringe the '703 Patent. Further, despite having knowledge of its infringement, Samsung continues to intentionally and willfully infringe at least claim 15 of the '703 patent.

COUNT 2

(Infringement of U.S. Pat. No. 9,603,056)

29. Samsung infringes at least claim 1 of the '056 Patent under at least 35 U.S.C. §271(a) and (b). Samsung makes, uses, sells, offers to sell, or imports into the United States products, such as the Galaxy S9, that meet every limitation of at least claim 1.

30. Claim 1 of the '056 Patent is directed to a mobile device configured to optimize connections made by the mobile device in a wireless network, the mobile device comprising a memory, a radio, and a processor, the mobile device configured to: (1) batch data from a first

application and a second application for transmission to a respective first application server and a second application server over the wireless network, wherein the batched data from the first application and the second application is batched while a backlight of the mobile device is off in response to inactivity of the mobile device; (2) allow a first message from a remote server distinct from the first application server and the second application server to be received while the batched data from the first application and the second application is batched; wherein the first message from the remote server is directed to the first application and contains data from the first application server and is associated with the mobile device and the first application; (3) transmit a second message associated with the first application to the remote server or the first application server in response to receipt of the first message from the remote server; and (4) transmit the batched data to the respective first application server and the second application server over the wireless network while the backlight of the mobile device remains off; wherein the batching of data for the first application and the second application can be enabled or disabled by a user of the mobile device on an application-by-application basis.

31. Samsung's products infringe at least claim 1 of the '056 Patent. For example, Samsung's Galaxy S9 is a mobile device comprising a memory (at least 4 GB of RAM and 64 GB of NAND Flash), a radio (at least an LTE and an 802.11 a/b/g/n/ac radio), and a processor (Qualcomm Snapdragon 845). The Galaxy S9 also includes an AMOLED screen, which includes a backlight. Samsung's Galaxy S9 has Google's Android 8.0 (Oreo) loaded into its memory, and is configured by that operating system and its pre-loaded apps to perform the functions detailed below. For example, Samsung's Galaxy S9 is configured to batch data from applications for transmission to their corresponding application servers over a wireless network through Android's JobScheduler API. JobScheduler collects information about jobs that need to run

across all apps and uses that information to schedule jobs to run at or around the same time, allowing the device to enter and stay in sleep states longer and preserving battery life.¹ Samsung's Galaxy S9 is configured to batch data from applications and transmit that batched data while a backlight of the device is off in response to inactivity of the mobile device: JobScheduler batches and executes jobs regardless of screen or backlight status, subject to other device restrictions (e.g., Doze mode). The Galaxy S9 is also configured to allow a message (a first message) from Google's FCM server (remote server distinct from the first application server and second application server) while data is batched. Messages from Google's FCM server are specifically associated with both the mobile device and a specific application on each device, and contain data from the application's corresponding application server.² The Galaxy S9 is configured to transmit a second message associated with the first application to its corresponding application server in response to the message from the FCM server—for example, the pre-loaded Gmail app on the Samsung Galaxy S9 is configured to send a message to its application server to initiate synchronization in response to receiving an FCM message. Samsung's Galaxy S9 is configured to permit the above-described batching to be enabled or disabled on an application by application basis—the “allow background activity” option permits users to disable background activity for applications, which prevents the batching described above.

32. Other Samsung products similarly infringe one or more claims of the '056 Patent. Such other products include Samsung's Galaxy S, Galaxy Note, and Galaxy Tab devices.

33. Samsung also induces infringement by end users of its mobile devices of at least claim 1 of the '056 Patent. Samsung promotes and advertises the use of its products, especially the products' capability to preserve remaining battery and avoid battery drain from background

¹ <https://developer.android.com/topic/performance/scheduling> (Last visited Oct. 4, 2018)

² <https://firebase.google.com/docs/cloud-messaging/> (Last visited Oct. 4, 2018)

applications. Further, the JobScheduler functionality is enabled on Samsung's mobile devices by default. Examples of Samsung's promotional materials appear on the company's website, such as <https://www.samsung.com/us/smartphones/galaxy-s9/specs/> (last visited Oct. 4, 2018).

34. Samsung has had notice of the '056 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Samsung's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Samsung's specific intent to induce others to infringe the '056 Patent. Further, despite having knowledge of its infringement, Samsung continues to intentionally and willfully infringe at least claim 1 of the '056 patent.

COUNT 3

(Infringement of U.S. Pat. No. 9,661,103)

35. Samsung infringes at least claim 1 of the '103 Patent under at least 35 U.S.C. §271(a) and (b). Samsung makes, uses, sells, offers to sell, or imports into the United States products, such as the Galaxy S9, that meet every limitation of at least claim 1.

36. Claim 1 of the '103 Patent is directed to a mobile device configured for aligning data transfer from the mobile device to optimize connections made by the mobile device in a wireless network, the mobile device comprising a memory; a backlight; a radio; and a processor; the mobile device configured to: while the backlight of the mobile device is on, (1) detect that a first application is executing in the background of the mobile device; (2) detect that a second application is executing in the foreground of the mobile device; (3) batch a first set of data for the first application; (4) transmit the first set of batched data for the first application; and (5) transmit data for the second application at a time when the second application requests transmission; and, while the backlight of the mobile device is off in response to inactivity of the

mobile device: (1) detect that the second application is executing in the background of the mobile device; (2) batch a second set of data for the first application and the second application; and (3) transmit the second set of batched data for the first application and the second application, wherein the transmission of the second set of batched data occurs after at least a predetermined period of time.

37. Samsung's products infringe at least claim 1 of the '103 Patent. For example, Samsung's Galaxy S9 is a mobile device comprising a memory (at least 4 GB of RAM and 64 GB of NAND Flash), a radio (at least an LTE and an 802.11 a/b/g/n/ac radio), and a processor (Qualcomm Snapdragon 845). The Galaxy S9 also includes an AMOLED screen, which includes a backlight. Samsung's Galaxy S9 has Google's Android 8.0 (Oreo) loaded into its memory, and is configured by that operating system and its pre-loaded apps to perform the functions detailed below. Samsung's Galaxy S9 is configured to, while the backlight of the device is on, detect whether an application is executing in a background or a foreground of the device—Android gives different privileges to background and foreground applications, and must therefore be able to detect whether an application is executing in the foreground or the background. Samsung's Galaxy S9 is configured to, while the backlight of the device is on, batch data from applications, including background applications. JobScheduler, part of the Android operating system on Samsung's Galaxy S9, is configured to batch data received from applications for transmission over the wireless network, and may be invoked by a foreground or background application. While the backlight is on, Samsung's Galaxy S9 is configured to allow an application executing in the foreground to transmit data when the application requests transmission. Samsung's Galaxy S9 is further configured, while its backlight is off due to inactivity, to detect that applications are executing in the background and batch data for those applications. Samsung's Galaxy S9 is

configured to enter Doze mode while the device's backlight is off in response to inactivity of the mobile device. While in Doze mode, Samsung's Galaxy S9 is configured to detect applications executing in the background, to batch data from those applications, and to transmit that batched data after at least a predetermined period of time. Doze mode on Samsung's Galaxy S9 is configured to batch data from applications during predetermined doze periods and then transmit that batched data during maintenance windows between the doze periods, as illustrated below:



Figure 1. Doze provides a recurring maintenance window for apps to use the network and handle pending activities.

<https://developer.android.com/training/monitoring-device-state/doze-standby> (last visited Oct. 4, 2018).

38. Other Samsung products similarly infringe one or more claims of the '103 Patent. Such other products include Samsung's Galaxy S, Galaxy Note, and Galaxy Tab devices.

39. Samsung also induces infringement by end users of its mobile devices of at least claim 1 of the '103 Patent. Samsung promotes and advertises the use of its products, especially the products' capability to preserve remaining battery power and avoid battery drain from background applications. Further, the Doze and JobScheduler functionalities are enabled on Samsung's mobile devices by default. Examples of Samsung's promotional materials appear on the company's website, such as <https://www.samsung.com/us/smartphones/galaxy-s9/specs/> (last visited Oct. 4, 2018).

40. Samsung has had notice of the '103 Patent and its infringement since at least as

early as the filing of this lawsuit. Accordingly, Samsung's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Samsung's specific intent to induce others to infringe the '103 Patent. Further, despite having knowledge of its infringement, Samsung continues to intentionally and willfully infringe at least claim 1 of the '103 patent.

COUNT 4

(Infringement of U.S. Pat. No. 9,681,387)

41. Samsung infringes at least claim 16 of the '387 Patent under at least 35 U.S.C. §271(a) and (b). Samsung makes, uses, sells, offers to sell, or imports into the United States products, such as the Galaxy S9, that meet every limitation of at least claim 16.

42. Claim 16 of the '387 Patent is directed to a mobile device comprising a radio, a memory, and a processor configured to allow the mobile device to: (1) monitor at least one characteristic of user activity on the mobile device, wherein one of the at least one characteristic of user activity is a determined inactivity of the user; and (2) locally adjust behavior of the mobile device to optimize battery consumption on the mobile device by entering the mobile device into a power save mode, wherein entry into the power save mode occurs in response to a duration of determined inactivity of the user exceeding a first predetermined amount of time, and, when in the power save mode, (3) suppress outgoing network communications to a first application server from the mobile device for a first suppression period for a first application while user activity is not detected, (4) suppress outgoing network communications to a second application server from the mobile device for the first suppression period for a second application while user activity is not detected, (5) receive a message during the first suppression period directed towards the first application, wherein the message is received from a remote server distinct from the first

application server, wherein the message contains data from the first application server, and (6) transmit communications after expiration of the first suppression period while user activity is not detected; and when user activity is detected after entry into the power save mode, exit the power save mode and transmit communications.

43. Samsung's products infringe at least claim 16 of the '387 Patent. For example, Samsung's Galaxy S9 is a mobile device comprising a memory (at least 4 GB of RAM and 64 GB of NAND Flash), a radio (at least an LTE and an 802.11 a/b/g/n/ac radio), and a processor (Qualcomm Snapdragon 845). Samsung's Galaxy S9 has Google's Android 8.0 (Oreo) loaded into its memory, and is configured by that operating system and its pre-loaded apps to perform the functions detailed below. Samsung's Galaxy S9 is configured to monitor indicators of user activity, including the time since the screen turned off, and whether the device is stationary, and to enter Doze mode in response to a duration of determined inactivity of the user (e.g., the device being stationary with its screen off) exceeding a first predetermined amount of time. When in doze (power save) mode, while user activity is not detected, Samsung's Galaxy S9 is configured to suppress communications from its applications to their respective application servers for suppression periods, e.g., doze periods. During those doze periods, while in power save mode, Samsung's Galaxy S9 is configured to receive messages from Google's Firebase Cloud Messaging (FCM) and/or Google Cloud Messaging (GCM) servers. FCM messages are directed towards individual applications and contain information from the application's respective application server, e.g., FCM messages for the pre-loaded Gmail application contain information from Gmail's servers to that new email has been received. When in Doze mode, Samsung's Galaxy S9 is configured to transmit communications during maintenance windows after each suppression period. The diagram below illustrates this behavior:



Figure 1. Doze provides a recurring maintenance window for apps to use the network and handle pending activities.

<https://developer.android.com/training/monitoring-device-state/doze-standby> (last visited Oct. 4, 2018). Samsung's Galaxy S9 is further configured to exit Doze mode (power save mode) when user activity is detected. Once Samsung's Galaxy S9 exits Doze mode, applications whose communications were suppressed by Doze mode are permitted to transmit communications.

44. Other Samsung products similarly infringe one or more claims of the '387 Patent. Such other products include Samsung's Galaxy S, Galaxy Note, and Galaxy Tab devices.

45. Samsung also induces infringement by end users of its mobile devices of at least claim 16 of the '387 Patent. Samsung promotes and advertises the use of its products, especially the products' capability to preserve remaining battery and avoid battery drain from background applications. The Doze functionality is enabled on Samsung's mobile devices by default. Examples of Samsung's promotional materials appear on the company's website, such as <https://www.samsung.com/us/smartphones/galaxy-s9/specs/> (last visited Oct. 4, 2018).

46. Samsung has had notice of the '387 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Samsung's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Samsung's specific intent to induce others to infringe the '387 Patent. Further, despite having knowledge of its infringement, Samsung continues to intentionally and willfully infringe at least claim 16 of the '387 patent.

COUNT 5

(Infringement of U.S. Pat. No. 10,063,486)

47. Samsung infringes at least claim 11 of the '486 Patent under at least 35 U.S.C. §271(a) and (b). Samsung makes, uses, sells, offers to sell, or imports into the United States products, such as its Galaxy S9, that meet each and every limitation of at least claim 11.

48. Claim 11 of the '486 Patent is directed to a mobile device comprising a memory and processor configured for: (1) detecting user inactivity on a mobile device; and, in response to detected inactivity, (2) blocking a first channel to reduce network signaling in a network and to reduce battery consumption, wherein the first channel is a channel specific to a first application executing on the mobile device; wherein the first application is configured to receive communications over a second channel that is established over the network, wherein a second application executing on the mobile device also receives communications over the second channel; (3) monitoring the application traffic for receipt of a message for the first application over the second channel, wherein the message informs the mobile device that there is new data for receipt at an application server associated with the first application; (4) unblocking the first channel based on the monitored application traffic so that the first application can perform an action over the first channel; and (5) re-blocking the first channel after a predetermined period of time; and (6) unblocking the first channel when user activity is detected, wherein the user activity is based on whether the mobile device is being interacted with by a user.

49. Samsung's products infringe at least claim 11 of the '486 Patent. For example, Samsung's Galaxy S9 is a mobile device comprising a memory (at least 4 GB of RAM and 64 GB of NAND Flash) and a processor (Qualcomm Snapdragon 845). Samsung's Galaxy S9 has Google's Android 8.0 (Oreo) loaded into its memory, and is configured by that operating system

and its pre-loaded apps to perform the functions detailed below. Samsung's Galaxy S9 is configured for detecting user inactivity on the device, including, for example, the time since the screen turned off and whether the device is stationary. Samsung's Galaxy S9 is configured for detecting inactivity (e.g., when the device is not moved and the screen not turned on for a period of time), and, in response to that detected inactivity, entering into Doze mode. In Doze mode, Samsung's Galaxy S9 is configured to block a first channel to reduce signaling in a network and to reduce battery consumption, where the first channel is a channel specific to a first application executing on the device. For example, during the doze period in Doze mode, applications are not permitted to transmit information to their respective application servers – those communications are blocked until the maintenance window. This reduces signaling in the network and battery use by the device. While in Doze mode, Samsung's Galaxy S9 and the applications on it are configured to receive communications over a second channel that is established over the network, e.g., the connection between Samsung's Galaxy S9 and Google's Firebase Cloud Messaging (FCM) or Google Cloud Messaging (GCM) servers. Multiple applications on Samsung's Galaxy S9 are configured to receive communications via the FCM channel, including Gmail, Google Play, Google Play Video, Google Play Music, YouTube, GoogleNow/Google App, Chrome, Google Maps, Google News, and Flipboard. Samsung's Galaxy S9 is configured for monitoring communications on the FCM channel (second channel) to at least each of the above applications. Such communications include high priority FCM messages, and inform the mobile device, and the receiving application, that the application server associated with the application has new data for the application. In response to receiving a high priority FCM message during Doze, Samsung's Galaxy S9 is configured for unblocking the channel between the application and its corresponding application server (the first channel) so that the application can perform an action

over the channel (e.g., request the new data from the application server). Samsung's Galaxy S9 unblocks the first channel by adding the first application to a temporary whitelist, which allows the application to access the network and communicate with its application server, after which the application is removed from the temporary whitelist and the channel is, again, blocked. Samsung's Galaxy S9 is configured to exit Doze mode (thereby unblocking the first channel) when the user interacts with the device by, e.g., moving the device or turning on its screen.

50. Other Samsung products similarly infringe one or more claims of the '486 Patent. Such other products include Samsung's Galaxy S, Galaxy Note, and Galaxy Tab devices.

51. Samsung also induces infringement by end users of its mobile devices of at least claim 11 of the '486 Patent. Samsung promotes and advertises the use of its products, especially the products' capability to preserve remaining battery power and avoid battery drain from background applications. The Doze functionality is enabled on Samsung's mobile devices by default. Examples of Samsung's promotional materials appear on the company's website, such as <https://www.samsung.com/us/smartphones/galaxy-s9/specs/> (last visited Oct. 4, 2018).

52. Samsung has had notice of the '486 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Samsung's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Samsung's specific intent to induce others to infringe the '486 Patent. Further, despite having knowledge of its infringement, Samsung continues to intentionally and willfully infringe at least claim 11 of the '486 patent.

COUNT 6

(Infringement of U.S. Pat. No. 10,091,734)

53. Samsung infringes at least claim 1 of the '734 Patent at least under 35 U.S.C.

§271(a) and (b). Samsung makes, uses, sells, offers to sell, or imports into the United States products, such as the Galaxy S9, that meet every limitation of at least claim 1.

54. Claim 1 of the '734 Patent is directed to a mobile device which improves network resource utilization in a wireless network, the mobile device, comprising: a memory; a radio; and a processor coupled to the memory and configured to: (1) receive instructions from a user to enter a power save mode; while in power save mode (2) block transmission of outgoing application data requests, wherein the outgoing application data requests are background application requests for more than one application; and, while in the power save mode, (2) allow transmission of additional outgoing application data requests in response to occurrence of receipt of data transfer from a remote entity, user input in response to a prompt displayed to the user, and a change in a background status of an application executing on the mobile device, wherein the additional outgoing application data requests are foreground application requests, wherein the remote entity is an intermediary server that provides connectivity between an application server for the application and the mobile device; and exit the power save mode based on received instructions from the user to exit the power save mode, wherein, when the power save mode is exited, the outgoing application data requests occurring while the mobile device is not in the power save mode are blocked by user selection on an application-by-application basis, wherein the user selection instructs the mobile device whether to block the outgoing application data requests for each application that is selected by the user for blocking.

55. Samsung's products infringe at least claim 1 of the '734 Patent. For example, Samsung's Galaxy S9 is a mobile device comprising a memory (at least 4 GB of RAM and 64 GB of NAND Flash), a radio (at least an LTE and an 802.11 a/b/g/n/ac radio), and a processor (Qualcomm Snapdragon 845). Samsung's Galaxy S9 has Google's Android 8.0 (Oreo) loaded

into its memory, and is configured by that operating system and its pre-loaded apps to perform the functions detailed below. Samsung's Galaxy S9 permits a user to manually enter or exit a power save mode to improve battery life. As part of that power saving mode, background data usage is disabled, blocking background application data requests from being transmitted. However, Samsung's Galaxy S9 is configured to allow transmission of additional outgoing application data requests (foreground application requests) in response to occurrence of receipt of data transfer (e.g., a message) from a Google Firebase Cloud Messaging (FCM) server (a remote entity), user input in response to a prompt displayed to a user (e.g., a user tapping a notification resulting from the FCM message), and a change in a background status of an application executing on the mobile device (e.g., tapping the notification to bring the application to the foreground). Google's FCM server (remote entity) is an intermediary server that provides connectivity between an application server for the application and the mobile device in the form of a push channel. Samsung's Galaxy S9 is also configured, outside of the power save mode, to allow a user to block background application data requests on an application-by-application basis: the user can allow or disallow background data usage for each application. Disallowing background data usage blocks outgoing data requests for that application.

56. Other Samsung products similarly infringe one or more claims of the '734 Patent. Such other products include Samsung's Galaxy S, Galaxy Note, and Galaxy Tab devices.

57. Samsung also induces infringement by end users of Samsung's mobile devices of at least claim 1 of the '734 Patent. Samsung promotes and advertises the use of its products, especially the products' capability to preserve remaining battery power and avoid battery drain from background applications. Further, the infringing power saving functionalities are included on Samsung's mobile devices by default. Examples of Samsung's promotional materials appear

on the company's website, such as <https://www.samsung.com/us/smartphones/galaxy-s9/specs/> (last visited Oct. 4, 2018).

58. Samsung has had notice of the '734 Patent and its infringement since at least as early as the filing of this lawsuit. Accordingly, Samsung's continued promotion, advertisement, and encouragement of its customers to utilize the products' capability to preserve battery life and avoid battery drain from background applications is evidence of Samsung's specific intent to induce others to infringe the '734 Patent. Further, despite having knowledge of its infringement, Samsung continues to intentionally and willfully infringe at least claim 1 of the '734 patent.

PRAYER FOR RELIEF

SEVEN requests that judgment be entered in its favor and against Samsung as follows:

- a. Entering judgment declaring that Samsung has infringed one or more claims of the Patents-in-Suit in violation of 35 U.S.C. §271;
- b. Ordering that SEVEN be awarded damages in an amount no less than a reasonable royalty for each asserted patent arising out of Samsung's infringement of the Patents-in-Suit, together with any other monetary amounts recoverable by SEVEN, such as treble damages;
- c. Declaring that Samsung's infringement has been willful;
- d. Declaring this an exceptional case under 35 U.S.C. §285 and awarding SEVEN its attorneys' fees; and
- e. Awarding SEVEN such other costs and further relief as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, SEVEN demands a trial by jury on all issues so triable.

Dated: November 7, 2018

Respectfully submitted,

/s/ Vishal Patel

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